APPENDIX A-1

Air Quality Assessment

Air Quality Assessment

Bridge Point Upland Project
City of Upland, California

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Appendix A: Air Quality Modeling Data

LIST OF ABBREVIATED TERMS

AQMP	air quality management plan
AB	Assembly Bill
ADT	average daily traffic
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CCAA	California Clean Air Act
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CO	carbon monoxide
cy	cubic yards
DPM	diesel particulate matter
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
H_2S	hydrogen sulfide
Pb	lead
LST	local significance threshold
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
O_3	ozone
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
UGP	Upland General Plan
SBCOG	San Bernardino Council of Governments
SB	Senate Bill
SRA	source receptor area
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF	square foot
SO_{4-2}	sulfates
SO_2	sulfur dioxide
TAC	toxic air contaminant
C_2H_3Cl	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

This report documents the results of an Air Quality Assessment completed for the Bridge Point Upland Project. The purpose of this Air Quality Assessment is to evaluate the potential construction and operational emissions associated with the proposed Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The Bridge Point Upland Project (proposed Project) is located in the City of Upland north of Interstate 10 (I-10), south of State Route 210 (SR-210), west of Interstate 15 (I-15), and east of State Route 57 (SR-57) as depicted in Exhibit 1: Regional Vicinity. The overall Project site is located on approximately 50.25 acres northeast of Central Avenue and Foothill Boulevard, as depicted in Exhibit 2: Site Vicinity.

The Project site is in a predominately industrial and commercial area. The land uses surrounding the Project site consist of a mix of uses including industrial, commercial, residential, an airport, and a major transportation corridor. Properties zoned for Highway Commercial uses are located immediately south of the site. Foothill Boulevard is located farther south of the site. Foothill Boulevard is located further south of the site. Cable Airport is located directly north of the site and a portion of the airport, along with industrial uses, are located west of the site. Commercial uses, including a Lowe's Home Improvement Store and a commercial shopping center, are located east of the site.

1.2 Project Description

The proposed Project is comprised of one warehouse/ parcel delivery service building with an ancillary office/retail space on approximately 50.25 acres as shown in Exhibit 3: Site Plan. The Project site is located on Assessor Parcel Nos. (APN) 1006-351-09, 1006-351-10, 1006-572-11, 1006-551-12, 1006-551-22, and 1006-574-10. Project entitlement includes a Design Review and Site Plan Review application; a Lot Line Adjustment; and a determination from the Airport Land Use Committee that the Project is compatible with the Cable Airport Land Use Compatibility Plan.

The Project building is proposed to be one level and total approximately 201,096 square feet (sf), of which approximately 191,096 sf would be warehouse/parcel delivery uses and 10,000 sf would be office/retail uses. The office/retail component would include an office area for employees, and a small area for visitors to pick up pre-ordered packages. To be conservative, this analysis evaluates a maximum development scenario that includes a 276,250 sf building.

The western building frontage would include 16 dock-hi doors for trucks, and 8 van loading doors would be located on both the northern and southern building frontages. The Project would require a minimum of 220 automobile parking spaces. Trailer parking for the warehouse building would include approximately 12 stalls and an additional 1,104 van parking stalls would be located on-site.

Building Design

The warehouse/parcel delivery service building is designed as a class A building. The building architecture features a modern aesthetic including glazing with brow projections to focus attention on the entries and street frontages. The major building material is concrete which lends itself to a modern palette with

reveals to enhance the building architecture. The building would have a maximum height of approximately 44 feet with parapets and façade, which would provide depth and shadowing and points of visual interest for the architecture. This relief in the design also provides locations for accents in the landscape design.

Access and Parking

Vehicular access to the Project would be provided via 13th Street, the north leg of Central Avenue/Foothill Boulevard, and two right-in/right-out driveways on Foothill Boulevard. The driveway on 13th Street would provide access to automobiles and vans only; trucks would access the site only via the driveway at the north leg of Central Avenue/Foothill Boulevard. Street improvements would be provided along Foothill Boulevard at the Project frontage to include improvements to curbs, gutters, sidewalks, street lights, traffic signal equipment and signing and striping as required. Street improvements would also be made to Central Avenue and 13th Street.

Landscaping

The Project would be landscaped along all four frontages of the site, including landscaped slopes along the western and southern portions of the site. Landscaping would also be installed throughout the parking areas. The conceptual landscape design would feature California drought tolerant and native species in an aesthetically pleasing and colorful palette.

The Project building would include 455,380 sf of landscaping, which would account for more than 21 percent in landscape coverage, more than four times the City's minimum requirement of 5 percent. The warehouse/parcel delivery service building would be setback more than 200 feet on the southern building frontage and would exceed minimum setback requirements of 5 feet for front and side setbacks and rear setbacks of 10 feet.

Construction

Construction of the proposed Project is expected to commence in the first quarter of 2020 with a construction duration of approximately 7 months. Project construction would be completed in one phase with buildout by the third quarter of 2020. Total excavation and fill of soils for the proposed Project is mostly balanced with approximately 431 cubic yards (cy) of exported soil.

Existing Project Site

The Project site consists of both disturbed land on the western portion of the site and undeveloped land on the eastern portion of the site. The disturbed portion of the land is used for outdoor dirt, sand, gravel and rock stockpiling, processing and crushing; the existing stockpiles are being processed and removed by the current operator as part of existing operations, and the removal of those materials is not a part of the Project. No structures are currently located on the site. There is existing utility access (water, sewer, electricity, gas) located in the immediate vicinity of the proposed Project and these services would be extended to the site to serve the proposed Project.

Exhibit 1: Regional Vicinity



Exhibit 2: Site Vicinity



Source: Google Maps, 2018.

Exhibit 3: Site Plan



Source: Herdman Architecture + Design, 2019.

Not to Scale

2 ENVIRONMENTAL SETTING

2.1 Climate and Meteorology

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The proposed Project is located within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, as well as all of Orange County. The basin is on a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean on the southwest and high mountains forming the remainder of the perimeter[1]. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below.

The SCAB is part of a semi-permanent high-pressure zone in the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. This usually mild weather pattern is occasionally interrupted by periods of extreme heat, winter storms, and Santa Ana winds. The annual average temperature throughout the 6,645-square-mile SCAB ranges from low 60 to high 80 degrees Fahrenheit with little variance. With more oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

Contrasting the very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rainfall occurs between the months of November and April. Summer rainfall is reduced to widely scattered thundershowers near the coast, with slightly heavier activity in the east and over the mountains.

Although the SCAB has a semiarid climate, the air closer to the Earth's surface is typically moist because of the presence of a shallow marine layer. Except for occasional periods when dry, continental air is brought into the basin by offshore winds, the "ocean effect" is dominant. Periods of heavy fog are frequent and low clouds known as high fog are characteristic climatic features, especially along the coast. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the basin.

Wind patterns across the basin are characterized by westerly or southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Wind speed is typically higher during the dry summer months than during the rainy winter.

Between periods of wind, air stagnation may occur in both the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During winter and fall, surface high-pressure systems over the basin, combined with other meteorological conditions, result in very strong, downslope Santa Ana winds. These winds normally continue for a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the diffusion of pollutants by inhibiting the eastward transport of pollutants. Air quality in the basin generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

[1] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.

In addition to the characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two distinct types of temperature inversions control the vertical depth through which air pollutants are mixed. These inversions are the marine inversion and the radiation inversion. The height of the base of the inversion at any given time is called the "mixing height." The combination of winds and inversions is a critical determinant leading to highly degraded air quality for the basin in the summer and generally good air quality in the winter.

2.2 Air Pollutants of Concern

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants.

Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead are primary air pollutants. Of these, CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. For example, the criteria pollutant ozone (O_3) is formed by a chemical reaction between ROG and NO_X in the presence of sunlight. O_3 and nitrogen dioxide (NO_2) are the principal secondary pollutants. Sources and health effects commonly associated with criteria pollutants are summarized in Table 1: Air Contaminants and Associated Public Health Concerns.

Table 1: Air Contaminants and Associated Public Health Concerns

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM_{10} and $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases/volatile organic compounds (ROG or VOC)[1] and nitrogen oxides (NO_X) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Sulfur Dioxide (SO_2)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.

Table 1: Air Contaminants and Associated Public Health Concerns (continued)		
Pollutant	**Major Man-Made Sources**	**Human Health Effects**
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead (Pb)	Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase out of leaded gasoline, metals processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.	Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ.
Notes: [1] Volatile Organic Compounds (VOCs or Reactive Organic Gases [ROG]) are hydrocarbons/organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and VOCs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).		
Source: California Air Pollution Control Officers Association (CAPCOA), *Health Effects*, http://www.capcoa.org/health-effects/, Accessed September 4, 2018.		

Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes more than 200 compounds, including particulate emissions from diesel-fueled engines.

CARB identified diesel particulate matter (DPM) as a toxic air contaminant. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Ambient Air Quality

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Existing levels of ambient air quality, historical trends, and projections near the Project are documented by measurements made by the South Coast Air Quality Management District (SCAQMD), the air pollution regulatory agency in the SCAB that maintains air quality monitoring stations which process ambient air quality measurements.

Ozone (O_3) and particulate matter (PM_{10} and $PM_{2.5}$) are pollutants of concern in the SCAB. The closest air monitoring station to the proposed Project that monitors ambient concentrations of these pollutants is the Upland Monitoring Station (located approximately 3.0 miles to the east). Local air quality data from 2016 to 2018 are provided in Table 2: Ambient Air Quality Data. Table 2 lists the monitored maximum concentrations and number of exceedances of federal or state air quality standards for each year.

Table 2: Ambient Air Quality Data

Pollutant	Upland Monitoring Station[1]		
	2016	2017	2018
Ozone (O_3)			
1-hour Maximum Concentration (ppm)	0.156	0.150	0.130
8-hour Maximum Concentration (ppm)	0.116	0.127	0.111
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	53	66	25
NAAQS 8-hour (>0.070 ppm)	88	87	52
Carbon Monoxide (CO)			
1-hour Maximum Concentration (ppm)	1.710	1.873	1.73
Number of Days Standard Exceeded			
NAAQS 1-hour (>35 ppm)	0	0	0
CAAQS 1-hour (>20 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
1-hour Maximum Concentration (ppm)	70.1	64.1	58.7
Number of Days Standard Exceeded			
NAAQS 1-hour (>100 ppm)	0	0	0
CAAQS 1-hour (>0.18 ppm)	0	0	0
Particulate Matter Less Than 10 Microns (PM_{10})			
National 24-hour Maximum Concentration	184.0	106.5	156.6
State 24-hour Maximum Concentration	—	—	—
State Annual Average Concentration (CAAQS=20 µg/m^3)	—	—	—
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 µg/m^3)	1	0	*
CAAQS 24-hour (>50 µg/m^3)	—	—	—
Particulate Matter Less Than 2.5 Microns ($PM_{2.5}$)			
National 24-hour Maximum Concentration	—	—	—
State 24-hour Maximum Concentration	44.9	53.2	47.9
Number of Days Standard Exceeded			
NAAQS 24-hour (>35 µg/m^3)	—	—	—

Notes:
NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m^3 = micrograms per cubic meter; NM = not measured; * = insufficient data available to determine value
[1] Measurements taken at the Upland Monitoring Station at 1350 San Bernardino Road, Upland, California 91786 (CARB# 36175)

footnotes continued on next page)

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Source: All pollutant measurements are from the CARB Aerometric Data Analysis and Management system database (https://www.arb.ca.gov/adam) except for CO, which were retrieved from the CARB Air Quality and Meteorological Information System (https://www.arb.ca.gov/aqmis2/aqdselect.php).

2.3 Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive receptors that are in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive land uses surrounding the Project consist mostly of single-family residences, educational institutions, and recreational facilities. Table 3: Sensitive Receptors, lists the distances and locations of sensitive receptors within the Project vicinity. The distances depicted in Table 3 are based on the distance from the Project site to the vicinity sensitive receptors.

Table 3: Sensitive Receptors

Receptor Type/Description	Distance and Direction from the Project Site
MG Parkview Apartments	1,040 feet southeast
Middle East Gospel Outreach	1,050 feet south
Single Family Residential Neighborhood	1,190 feet east
California Optical	1,250 feet northeast
Multi-Family Residential Neighborhood	1,270 feet east
Ovation School of the Performing Arts	1,300 feet northeast
Prime Time Dance School of the Arts	1,550 feet south
Cabrillo Elementary School	1,570 feet southeast
North Upland Terrace Apartments	1,710 feet southeast
Single Family Residential Neighborhood	1,860 feet northeast
Single Family Residential Neighborhood	1,880 feet southeast
Cabrillo Park	1,920 feet southeast
Corporate Center Office Buildings	1,990 feet west
Park Central Apartments	2,030 feet south
Greenbelt Park	2,350 feet northeast

3 REGULATORY SETTING

3.1 Federal

Federal Clean Air Act

Air quality is federally protected by the Clean Air Act and its amendments. Under the Federal Clean Air Act (FCAA), the EPA developed the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants including ozone, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The FCAA requires each state to prepare a State Implementation Plan to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The U.S. Environmental Protection Agency (EPA) can withhold certain transportation funds from states that fail to comply with the planning requirements of the FCAA. If a state fails to correct these planning deficiencies within two years of Federal notification, the EPA is required to develop a Federal implementation plan for the identified nonattainment area or areas. The provisions of 40 Code of Federal Regulations Parts 51 and 93 apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. The EPA has designated enforcement of air pollution control regulations to the individual states. Applicable federal standards are summarized in Table 4: State and Federal Ambient Air Quality Standards.

3.2 State of California

California Air Resources Board

CARB administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 4, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the State Implementation Plan for meeting federal clean air standards for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment. The applicable State standards are summarized in Table 4.

Table 4: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1]	Federal Standards[2]
Ozone (O_3) [2, 5, 7]	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm
	1 Hour	0.09 ppm (180 µg/m^3)	NA
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	0.10 ppm[11]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur Dioxide (SO_2) [8]	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)
	Annual Arithmetic Mean	NA	0.03 ppm (80 µg/m^3)
Particulate Matter (PM_{10}) [1, 3, 6]	24-Hour	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	NA
Fine Particulate Matter ($PM_{2.5}$) [3, 4, 6, 9]	24-Hour	NA	35 µg/m^3
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3
Sulfates (SO_{4-2})	24 Hour	25 µg/m^3	NA
Lead (Pb) [10, 11]	30-Day Average	1.5 µg/m^3	NA
	Calendar Quarter	NA	1.5 µg/m^3
	Rolling 3-Month Average	NA	0.15 µg/m^3
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (0.15 µg/m^3)	NA
Vinyl Chloride (C_2H_3Cl) [10]	24 Hour	0.01 ppm (26 µg/m^3)	NA

Notes:
ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; – = no information available.

1 California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. Measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe carbon monoxide standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

2 National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m$_3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3.

3 Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard. NAAQS are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.

4 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

5 The national 1-hour ozone standard was revoked by the EPA on June 15, 2005.

6 In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

7 The 8-hour California ozone standard was approved by the CARB on April 28, 2005 and became effective on May 17, 2006.

8 On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following EPA initial designations of the new 1-hour SO_2 NAAQS.

9 In December 2012, EPA strengthened the annual $PM_{2.5}$ NAAQS from 15.0 to 12.0 µg/m^3. In December 2014, the EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

10 CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.

11 National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

Source: South Coast Air Quality Management District, *Air Quality Management Plan*, 2016; California Air Resources Board, *Ambient Air Quality Standards*, May 6, 2016.

3.3 Regional

South Coast Air Quality Management District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino Counties. The agency's primary responsibility is ensuring that federal and state ambient air quality standards are attained and maintained in the SCAB. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and many other activities. All projects are subject to SCAQMD rules and regulations in effect at the time of construction.

The SCAQMD is also the lead agency in charge of developing the AQMP, with input from the Southern California Association of Governments (SCAG) and CARB. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. CARB, in coordination with federal agencies, provides the control element for mobile sources.

The 2016 AQMP was adopted by the SCAQMD Governing Board on March 3, 2017. The purpose of the AQMP is to set forth a comprehensive and integrated program that would lead the SCAB into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update to the SCAQMD's commitments towards meeting the federal 8-hour ozone standards. The AQMP incorporates the latest scientific and technological information and planning assumptions, including the 2016 *Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) and updated emission inventory methodologies for various source categories.

The SCAQMD has published the *CEQA Air Quality Handbook* (approved by the SCAQMD Governing Board in 1993 and augmented with guidance for Local Significance Thresholds [LST] in 2008). The SCAQMD guidance helps local government agencies and consultants to develop environmental documents required by California Environmental Quality Act (CEQA) and provides identification of suggested thresholds of significance for criteria pollutants for both construction and operation (see discussion of thresholds below). With the help of the *CEQA Air Quality Handbook* and associated guidance, local land use planners and consultants are able to analyze and document how proposed and existing projects affect air quality in order to meet the requirements of the CEQA review process. The SCAQMD periodically provides supplemental guidance and updates to the handbook on their website.

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. Under federal law, SCAG is designated as a Metropolitan Planning Organization and under state law as a Regional Transportation Planning Agency and a Council of Governments.

The state and national attainment status designations for the SCAB are summarized in Table 5: South Coast Air Basin Attainment Status. The SCAB is currently designated as a nonattainment area with respect to the state ozone, PM_{10}, and $PM_{2.5}$ standards, as well as the national 8-hour ozone and $PM_{2.5}$ standards. The SCAB is designated as attainment or unclassified for the remaining State and federal standards.

Table 5: South Coast Air Basin Attainment Status		
Pollutant	**Federal**	**State**
Ozone (O_3) (1 Hour Standard)	Non-Attainment (Extreme)	Non-Attainment
Ozone (O_3) (8 Hour Standard)	Non-Attainment (Extreme)	Non-Attainment
Particulate Matter ($PM_{2.5}$) (24 Hour Standard)	Non-Attainment (Serious)	--
Particulate Matter ($PM_{2.5}$) (Annual Standard)	Non-Attainment (Moderate)	Non-Attainment
Particulate Matter (PM_{10}) (24 Hour Standard)	Attainment (Maintenance)	Non-Attainment
Particulate Matter (PM_{10}) (Annual Standard)	--	Non-Attainment
Carbon Monoxide (CO) (1 Hour Standard)	Attainment (Maintenance)	Attainment
Carbon Monoxide (CO) (8 Hour Standard)	Attainment (Maintenance)	Attainment
Nitrogen Dioxide (NO_2) (1 Hour Standard)	Unclassifiable/Attainment	Attainment
Nitrogen Dioxide (NO_2) (Annual Standard)	Attainment (Maintenance)	Attainment
Sulfur Dioxide (SO_2) (1 Hour Standard)	Unclassifiable/Attainment	Attainment
Sulfur Dioxide (SO_2) (24 Hour Standard)	--	Attainment
Lead (Pb) (30 Day Standard)	Unclassifiable/Attainment	--
Lead (Pb) (3 Month Standard)	--	Attainment
Sulfates (SO_{4-2}) (24 Hour Standard)	--	Attainment
Hydrogen Sulfide (H_2S) (1 Hour Standard)	--	Unclassified
Source: South Coast Air Quality Management District, *Air Quality Management Plan*, 2016; U.S. EPA, *Nonattainment Areas for Criteria Pollutants (Green Book)*, October 24, 2018.		

The following is a list of SCAQMD rules that are required of construction activities associated with the proposed Project:

- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM_{10} suppression techniques are summarized below.

a) Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.

b) All on-site roads will be paved as soon as feasible or watered periodically or chemically stabilized.

c) All material transported off-site will be either sufficiently watered or securely covered to prevent excessive amounts of dust.

d) The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.

e) Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.

3.4 Local

City of Upland General Plan

The City of Upland General Plan (UGP) is a roadmap that encompasses the hopes, aspirations, values and dreams of the community. Project-relevant policies specific to air quality are mentioned in this section. Where inconsistencies exist, if any, they are addressed in the respective impact analysis below. UGP policies that address air quality impacts include the following:

Goal LU-2: **A community with stable and livable residential neighborhoods.**

Policy LU-2.3: Provide healthy, affordable and desirable living environments consistent with adopted code requirements that set forth the acceptable health and safety standards for the occupancy of housing.

Goal LU-4: **A community whose land use patterns focus growth in ways that are sustainable and environmentally responsible, including the implementation of smart growth practices and the reduction of greenhouse gas emissions consistent with Assembly Bill (AB) 32, Senate Bill (SB) 375, the Regional Transportation Plan and Sustainable Community Strategy.**

Policy LU-4.4: Work to identify and support financial and administrative incentives (i.e., fee reductions) to encourage desired land uses, development patterns, and alternative modes of transportation that reduce greenhouse gas emissions.

Goal OSC-4: Healthful air quality in Upland and the surrounding region, and reduced locally generated pollutant emissions.

Policy OSC-4.1: Promote land use patterns that reduce the number and length of motor vehicle trips.

Policy OSC-4.4: To the extent practicable, separate sensitive land uses (schools, senior centers, medical facilities, and residences) from significant sources of air pollutants, toxic air contaminants, or odor emissions.

Policy OSC-4.5: Require new development with sensitive uses located adjacent to mobile and stationary toxic air contaminants to be designed with consideration of site and building orientation, location of trees, and incorporation of appropriate technology for improved air quality (i.e., ventilation and filtration) to lessen any potential health risks.

Policy OSC-4.6: Ensure that all land use decisions are made in an equitable manner to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.

Policy OSC-4.8: Promote expansion of employment opportunities within Upland to reduce commuting to areas outside of the City.

Policy OSC-4.9: Encourage employers to offer employees incentives for ridesharing.

Policy OSC-4.10: Continue to enforce the vehicle idling restrictions established by the State.

Policy OSC-4.11: Review proposed development projects as required by CEQA to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides, and particulate matter (PM_{10} and $PM_{2.5}$) through project design.

Policy OSC-4.12: New sources of toxic air pollutants shall prepare a Health Risk Assessment as required by Section 44300 of the California Health and Safety Code. The Assessment shall be used to establish appropriate land use buffer zones around those areas posing substantial health risks based upon the California Air Resources Board's guidance provided in the Air Quality Land Use Handbook.

Policy OSC-4.13: Require best management practices to reduce air pollution associated with construction of development projects.

Policy OSC-4.14: Review construction plans associated with development projects to determine if all feasible mitigation measures are included.

Policy OSC-4.15: Promote green building practices that support healthy indoor living and working environments that are well-ventilated and contaminant-free.

Policy OSC-4.18: Coordinate air quality planning efforts with other local, regional and State agencies, and encourage community participation in air quality planning.

Policy OSC-4.19: Design and conduct efforts to involve the public and affected/interested parties in the implementation of air quality improvement plans and programs. This may include public forums and workshops, community and education programs, informational brochures and web postings, and a variety of other media forms to maximize citizen involvement.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Air Quality Thresholds

Based upon the criteria derived from Appendix G of the CEQA Guidelines, a Project normally would have a significant effect on the environment if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

SCAQMD Thresholds

The significance criteria established by SCAQMD may be relied upon to make the above determinations. According to the SCAQMD, an air quality impact is considered significant if the proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality during construction and operational activities of land use development projects, as shown in Table 6: South Coast Air Quality Management District Emissions Thresholds.

Table 6: South Coast Air Quality Management District Emissions Thresholds

Criteria Air Pollutants and Precursors (Regional)	Construction-Related Average Daily Emissions (pounds/day)	Operational-Related Average Daily Emission (pounds/day)
Reactive Organic Gases (ROG)	75	55
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO_X)	100	55
Sulfur Oxides (SO_X)	150	150
Coarse Particulates (PM_{10})	150	150
Fine Particulates ($PM_{2.5}$)	55	55

Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook,* 1993 ($PM_{2.5}$ threshold adopted June 1, 2007).

Localized Carbon Monoxide

In addition to the daily thresholds listed above, development associated with the proposed Project would also be subject to the ambient air quality standards. These are addressed though an analysis of localized CO impacts. The California 1-hour and 8-hour CO standards are:

- 1-hour = 20 ppm
- 8-hour = 9 ppm

The significance of localized impacts depends on whether ambient CO levels near the Project site are above state and federal CO standards. The SCAB has been designated as attainment under the 1-hour and 8-hour standards.

Localized Significance Thresholds

In addition to the CO hotspot analysis, the SCAQMD developed LSTs for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at new development sites (off-site mobile source emissions are not included in the LST analysis). LSTs represent the maximum emissions that can be generated at a Project site without expecting to cause or substantially contribute to an exceedance of the most stringent national or state ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the Project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. LST analysis for construction is applicable for all projects that disturb 5 acres or less on a single day. The City of Upland is located within SCAQMD SRA 32. Table 7: Local Significance Thresholds (Construction/Operations), shows the LSTs for a 1-acre, 2-acre, and 5-acre Project site in SRA 32 with sensitive receptors located within 200 meters of the Project site.

Table 7: Local Significance Thresholds (Construction/Operations)

Project Size	Nitrogen Oxide (NO_x) – lbs/day	Carbon Monoxide (CO) – lbs/day	Coarse Particulates (PM_{10}) – lbs/day	Fine Particulates ($PM_{2.5}$) – lbs/day
1 Acre	334/334	5,691/5,691	103/25	32/8
2 Acres	378/378	6,778/6,778	66/16	36/9
5 Acres	486/486	9,611/9,611	140/34	45/11

Source: South Coast Air Quality Management District, *Localized Significance Threshold Methodology,* July 2008.

4.2 Methodology

This air quality impact analysis considers construction and operational impacts associated with the proposed Project. Construction equipment, trucks, worker vehicles, and ground-disturbing activities associated with proposed Project construction would generate emissions of criteria air pollutants and precursors. Air quality impacts were assessed according to methodologies recommended by CARB and the SCAQMD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 Air Quality Analysis

Threshold 5.1 Would the Project conflict with or obstruct implementation of the applicable air quality plan?

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan that demonstrates the means to attain the federal standards. The State Implementation Plan must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Project site is located within the SCAB, which is under the jurisdiction of the SCAQMD. The SCAQMD is required, pursuant to the FCAA, to reduce emissions of criteria pollutants for which the SCAB is in nonattainment. To reduce such emissions, the SCAQMD drafted the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, the CARB, the SCAG, and the EPA. The plan's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016 RTP/SCS, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. The Project is subject to the SCAQMD's AQMP.

Criteria for determining consistency with the AQMP are defined by the following indicators:

- **Consistency Criterion No. 1**: The proposed Project will not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.
- **Consistency Criterion No. 2**: The proposed Project will not exceed the assumptions in the AQMP or increments based on the years of the Project build-out phase.

The violations to which Consistency Criterion No. 1 refers are CAAQS and NAAQS. As shown in Table 8, Table 9, and Table 10 below, the Project would not exceed the construction standards and net emissions would not exceed operational standards with the implementation of mitigation measures. Therefore, the project would not contribute to an existing air quality violation. Thus, the Project would be consistent with the first criterion.

Concerning Consistency Criterion No. 2, the AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The proposed Project is consistent with the land use designation and development density presented in the UGP and therefore would not exceed the

population or job growth projections used by the SCAQMD to develop the AQMP. Thus, no impact would occur, as the Project is also consistent with the second criterion.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-3.

Level of Significance: Less than significant impact with mitigation.

Threshold 5.2 **Would the Project** result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard**?**

Construction Emissions

Construction associated with the proposed Project would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the Project area include ozone-precursor pollutants (i.e., ROG and NO_x) and PM_{10} and $PM_{2.5}$. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD's thresholds of significance.

Construction results in the temporary generation of emissions resulting from site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities as well as weather conditions and the appropriate application of water.

The duration of construction activities associated with the proposed Project is estimated to last approximately 7 months. Project construction would include site preparation, grading, paving, construction of buildings, and architectural coating. Site grading is anticipated to be mostly balanced with 431 cubic yards (CY) of soil export. Project construction requires concrete/industrial saws, rubber-tired dozers, and excavators during demolition; dozers and tractors/loaders/backhoes during site preparation; graders, rubber-tired dozers, excavators, and tractors/loaders/backhoes during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, and paving equipment during paving; and air compressors during architectural coating. Emissions for each construction phase have been quantified based upon the phase durations and equipment types. Construction-generated emissions associated the proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Appendix A for more information regarding the construction assumptions used in this analysis. Predicted maximum daily construction-generated emissions for the proposed Project are summarized in in Table 8: Construction-Related Emissions.

Fugitive Dust Emissions. Construction would require grading of the entire Project site during the initial phases. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill operations, demolition, and truck travel on unpaved roadways. Dust emissions also vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions. Fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the Project vicinity. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby.

SCAQMD Rules 402 and 403 (prohibition of nuisances, watering of inactive and perimeter areas, track out requirements, etc.), are applicable to the Project and were applied in CalEEMod to minimize fugitive dust emissions. Mitigation Measure AQ-1 requires the implementation of Rule 402 and 403 dust control techniques to minimize PM_{10} and $PM_{2.5}$ concentrations. The recommended mitigation measures would be required to ensure compliance with SCAQMD Rules and Regulations, which would be verified and enforced through the City's development review process.

Table 8: Construction-Related Emissions (Maximum Pounds Per Day)

Construction Year	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
2020	52.22	85.20	61.70	0.19	11.56	6.32
SCAQMD Threshold	75	100	550	150	55	150
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: SCAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. The modeled emissions also includes the use of low VOC paints; refer to Mitigation Measure AQ-2. No mitigation was applied to construction equipment. Refer to Appendix A for Model Data Outputs.

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

Construction Exhaust. Exhaust emission factors for typical diesel-powered heavy equipment are based on the CalEEMod program defaults. Variables factored into estimating the total construction emissions include: level of activity, length of construction period, number of pieces/types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported onsite or offsite. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced on site as the equipment is used, and emissions from trucks transporting materials and workers to and from the site.

ROG Emissions. In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. ROG emissions from exhaust and architectural coatings were quantified in CalEEMod. The highest concentration of ROG emissions would be generated during the application of architectural coatings. As required by law, all architectural coatings for the Project structures would comply with SCAQMD Rule 1113. Rule 1113 provides specifications on painting practices and regulates the ROG content of paint. As indicated in Table 8, Project construction would not exceed ROG thresholds with the implementation of Mitigation Measures AQ-2, which limits the VOC content of paint to 50 grams per liter or less. Compliance with AQ-2 would ensure that construction ROG emissions would not exceed SCAQMD thresholds.

Total Daily Construction Emissions. As shown in Table 8, implementation of AQ-1 and AQ-2 would reduce construction emissions to a less than significant level.

Operational Emissions

Project-generated emissions would be associated with motor vehicle use and area sources, such as the use of landscape maintenance equipment and architectural coatings. Long-term operational emissions attributable to the proposed Project are summarized in Table 9: Long-Term Operational Emissions. Note

that emissions rates differ from summer to winter because weather factors are dependent on the season and these factors affect pollutant mixing, dispersion, ozone formation, and other factors.

Table 9: Long-Term Operational Emissions (Maximum Pounds Per Day)

Source	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Existing Gravel Processing Operations						
Summer Emissions	4.87	46.60	32.14	0.08	2.42	2.07
Winter Emissions	4.87	48.61	31.92	0.08	2.43	2.07
Proposed Project – Summer Emissions						
Area Source Emissions	6.76	0.0	0.12	0.0	0.0	0.0
Energy Emissions	0.02	0.15	0.13	0.0	0.01	0.01
Mobile Emissions	8.31	70.32	94.69	0.32	22.16	6.37
Off-Road Emissions	1.73	15.57	14.16	0.02	1.16	1.07
Total Emissions	*16.81*	*86.05*	*109.10*	*0.34*	*23.33*	*7.44*
Net Increase	**11.94**	**39.45**	**76.96**	**0.26**	**20.91**	**5.37**
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Proposed Project – Winter Emissions						
Area Source Emissions	6.76	0.0	0.12	0.0	0.0	0.0
Energy Emissions	0.02	0.15	0.13	0.0	0.01	0.01
Mobile Emissions	7.72	72.98	85.97	0.30	22.16	6.37
Off-Road Emissions	1.73	15.57	25.16	0.02	1.16	1.07
Total Emissions	*16.22*	*88.70*	*100.38*	*0.32*	*23.33*	*7.45*
Net Increase	**11.35**	**40.09**	**68.46**	**0.24**	**20.9**	**5.38**
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

The Project site is currently occupied with a sand and gravel processing plant. The sand and gravel processing plant uses eight pieces off-road heavy-duty diesel equipment, such as rubber tired loaders, stackers, static and mobile screens, cone and crushers, and water trucks. Additionally, the existing sand and gravel processing operations include approximately 78 trucks per day to off-haul materials processed on-site. Table 9 shows the existing emissions that are generated from the current on-site operations as well as the net increase in maximum daily emissions that would occur with implementation of the Project. As shown in Table 9, the Project's net emissions would not exceed SCAQMD operational thresholds.

Area Source Emissions. Area source emissions would be generated due to on-site equipment, architectural coating, consumer products, and landscaping that were previously not present on the site. As shown in Table 9, area source emissions from the proposed Project would not exceed SCAQMD thresholds for either the winter or summer seasons.

Energy Source Emissions. Energy source emissions would be generated due to electricity and natural gas usage associated with the proposed Project. Primary uses of electricity and natural gas by the Project would be for miscellaneous warehouse equipment, space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. As shown in Table 9, energy source emissions from the proposed Project would not exceed SCAQMD thresholds for criteria pollutants.

Mobile Source. Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern. NO_X and ROG react with sunlight to form O_3, known as photochemical smog. Additionally, wind currents readily transport PM_{10} and $PM_{2.5}$. However, CO tends to be a localized pollutant, dispersing rapidly at the source. Project-generated vehicle emissions have been estimated based on the trip generation data within the Project traffic study. As indicated in the traffic study, the proposed Project would generate 2,483 total daily trips (2,583 passenger car equivalent trips). The fleet mix in CalEEMod has been adjusted to account for Project specific vehicle classifications.

Conclusion. As shown in Table 9, the net operational emissions would not exceed the SCAQMD thresholds. Mitigation Measure AQ-3 includes best management practices to minimize operational mobile source emissions. Mitigation Measure AQ-3 requires buildings to include infrastructure to facilitate sufficient electric charging for trucks to plug in, electric vehicle charging stations, anti-idling signs, electric or natural gas-powered service equipment (e.g., forklifts, yard trucks/hostlers, etc.). The recommended mitigation measures would be required to ensure the Project's net emissions remain below SCAQMD thresholds, which would be verified and enforced through the City's site plan review process.

Cumulative Short-Term Emissions

The SCAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for Federal standards. As discussed above, the Project construction-related emissions by themselves would not have the potential to exceed the SCAQMD significance thresholds for criteria pollutants.

Since these thresholds indicate whether individual Project emissions have the potential to affect cumulative regional air quality, it can be expected that the Project-related construction emissions would not be cumulatively considerable. The SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to the federal Clean Air Act mandates. The analysis assumed fugitive dust controls would be utilized during construction, including frequent water applications. SCAQMD rules, mandates, and compliance with adopted AQMP emissions control measures would also be imposed on construction projects throughout the Air Basin, which would include related projects. Compliance with SCAQMD rules and regulations and implementation of Mitigation Measure AQ-1 and AQ-2 would reduce the proposed Project construction-related impacts to a less than significant level. Therefore, Project-related construction emissions, in combination with those from other projects in the area, would not substantially deteriorate the local air quality. Construction emissions associated with the proposed Project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Long-Term Impacts

The SCAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, individual project emissions contribute to existing cumulatively significant adverse air quality impacts. The SCAQMD developed the operational thresholds of significance based on the level above which individual project emissions would result in a cumulatively considerable contribution to the SCAB's existing air quality conditions. Therefore, a project that exceeds the SCAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As shown in Table 9, the proposed Project's net operational emissions would not exceed SCAQMD thresholds. As a result, operational emissions associated with the proposed Project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts. Adherence to SCAQMD rules and regulations would minimize potential impacts related to cumulative conditions on a project-by-project basis. Project operations would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Impacts would be less than significant in this regard.

Mitigation Measures:

AQ-1 Prior to the issuance of grading permits, the City Engineer shall confirm that the Grading Plan, Building Plans and Specifications require all construction contractors to comply with South Coast Air Quality Management District's (SCAQMD's) Rules 402 and 403 to minimize construction emissions of dust and particulates. The measures include, but are not limited to, the following:

- Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.
- All on-site roads will be paved as soon as feasible or watered periodically or chemically stabilized.
- All material transported off site will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.
- Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.

AQ-2 The applicant shall require by contract specifications that the interior and exterior architectural coatings (paint and primer including parking lot paint) products used would have a volatile organic compound rating of 50 grams per liter or less. Contract specifications shall be included in the construction documents for the Project, which shall be reviewed and approved by the City of Upland prior to the issuance of building permits.

AQ-3 Prior to the issuance of a certificate of occupancy, the Project Applicant shall demonstrate to the satisfaction of the City of Upland Planning Division that the following measures would be implemented during Project operations.

- The proposed warehouses shall be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug in, in anticipation of future technology that allows trucks to operate partially on electricity.
- At least 6 percent of all vehicle parking spaces (including for trucks) shall include electric vehicle charging stations. Further, electrical hookups should be provided at the onsite truck stop for truckers to plug in any onboard auxiliary equipment. At a minimum, electrical panels should be appropriately sized to allow for future expanded use.
- Legible, durable, weatherproof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations. At a minimum, each sign shall include (1) instructions for truck drivers to shut off engines when not in use; (2) instructions for drivers of diesel trucks to restrict idling to no more than 5 minutes; and (3) telephone numbers of the building facilities manager and CARB to report violations.
- All service equipment (e.g., forklifts, yard trucks, hostlers, etc.) used within the site shall be electric or powered by compressed natural gas.
- To promote alternative fuels and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants with information related to the SCAQMD's Carl Moyer Program, or other such programs that promote truck retrofits or "clean" vehicles and information including, but not limited to, the health effect of diesel particulates, benefits of reduced idling time, CARB regulations, and importance of not parking in residential areas. Tenants shall be notified about the availability of (1) alternatively fueled cargo handling equipment; (2) grant programs for diesel-fueled vehicle engine retrofit and/or replacement; (3) designated truck parking locations in the project vicinity; (4) access to alternative fueling stations proximate to the site that supply compressed natural gas; and (5) the US Environmental Protection Agency's SmartWay program.

Level of Significance: Less than significant impact with mitigation.

Threshold 5.3 Would the Project expose sensitive receptors to substantial pollutant concentrations?

Localized Construction Significance Analysis

The nearest sensitive receptors are the multi-family residences located 1,040 feet (317 meters) southeast of the Project site. To identify impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold*

Methodology (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with Project-specific emissions.

Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment. As discussed above, project construction includes concrete/industrial saws, rubber-tired dozers, and excavators during demolition; dozers and tractors/loaders/backhoes during site preparation; graders, rubber-tired dozers, excavators, and tractors/loaders/backhoes during grading; cranes, forklifts, generators, tractors, and welders during building construction. Table 10: Equipment-Specific Grading Rates, is used to determine the maximum daily disturbed acreage for comparison to LSTs. The appropriate SRA for the localized significance thresholds is the Northwest San Bernardino Valley area (SRA 32) since this area includes the Project site. LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The SCAQMD produced look-up tables for projects that disturb areas less than or equal to 5 acres in size. Project construction is anticipated to disturb a maximum of 6.5 acres in a single day. As the LST guidance provides thresholds for projects disturbing 1-, 2-, and 5-acres in size and the thresholds increase with size of the site, the LSTs for 5-acre threshold are conservatively utilized for this analysis.

Table 10: Equipment-Specific Grading Rates

Construction Phase	Equipment Type	Equipment Quantity	Acres Graded per 8-Hour Day	Operating Hours per Day	Acres Graded per Day
Grading	Tractors	2	0.5	8	1
	Graders	2	0.5	8	1
	Dozers	1	0.5	8	0.5
	Scrapers	4	1	8	4
				Total Acres Graded per Day	**6.5**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

The SCAQMD's methodology states that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered. The nearest sensitive receptors are the single-family residences located 1,040 feet (317 meters) southeast of the Project site. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, LSTs for receptors located at 200 meters were conservatively utilized in this analysis. Table 11: Localized Significance of Construction Emissions, presents the results of localized emissions during construction. Table 11 shows that the emissions of these pollutants on the peak day of construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, significant impacts would not occur concerning LSTs during construction activities.

Table 11: Localized Significance of Construction Emissions (Maximum Pounds Per Day)				
Construction Activity	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
Site Preparation (2020)	42.42	21.51	9.92	6.27
Grading (2020)	84.85	55.23	9.02	4.97
Building Construction (2020)	19.19	16.85	1.12	1.05
Paving (2020)	14.07	14.65	0.75	0.69
Architectural Coating (2020)	3.37	3.66	0.22	0.22
SCAQMD Localized Screening Threshold (adjusted for 5 acres at 200 meters)	486	9,611	140	45
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.				

Localized Operational Significance Analysis

According to the SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a proposed project only if the project includes stationary sources or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., warehouse or transfer facilities). Since the proposed Project is a warehouse, the operational phase LST protocol is conservatively applied to both the area source and all the mobile source emissions. LSTs for receptors located at 200 meters for SRA 32 were conservatively utilized in this analysis because the closest receptors are over 300 meters away. Although the project is 50.25 acres, the 5-acre LST threshold was also conservatively for the Project, as the LSTs increase with the size of the site.

The LST analysis only includes on-site sources. However, the CalEEMod model outputs do not separate on- and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table 12: Localized Significance of Operational Emissions, include all on-site Project-related stationary sources and 100 percent of the Project-related new mobile sources. This figure is conservative, considering only 5 percent of the Project-related new mobile sources would occur on-site[2]. Table 12 shows that the maximum daily emissions of these pollutants during operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, significant impacts would not occur concerning LSTs during operational activities.

Table 12: Localized Significance of Operational Emissions (Maximum Pounds Per Day)				
Activity	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
On-Site and Mobile Source Emissions	88.70	100.38	23.33	7.45
SCAQMD Localized Screening Threshold (adjusted for 5 acres at 200 meters)	486	9,611	34	11
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.				

[2] South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, 2009.

Criteria Pollutant Health Impacts

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (*Sierra Club v. County of Fresno* [Friant Ranch, L.P.] [2018] Cal.5th, Case No. S219783).

As shown in Table 11 and Table 12, localized effects of on-site project emissions on nearby receptors were found to be less than significant. The LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. The LSTs were developed by the SCAQMD based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. The ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect public health, including protecting the health of sensitive populations such as asthmatics, children, and the elderly.

Additionally, the SCAQMD has set its CEQA regional significance thresholds for NO_X and ROG (VOC) at 10 tons per year (expressed as 55 pounds per day) based on the FCAA, which defines a major stationary source (in extreme ozone nonattainment areas such as the South Coast Air Basin) as emitting 10 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program[3] was created by the FCAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based federal ambient air quality standards. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

As shown above, Project-related emissions would not exceed the SCAQMD's LSTs or regional thresholds, and therefore would not exceed the ambient air quality standards or cause an increase in the frequency or severity of existing violations of air quality standards. Therefore, sensitive receptors would not be exposed to criteria pollutant levels in excess of the health-based ambient air quality standards.

Carbon Monoxide Hotspots

An analysis of CO "hot spots" is needed to determine whether the change in the level of service of an intersection resulting from the proposed Project would have the potential to result in exceedances of the CAAQS or NAAQS. It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when vehicles are idling at intersections. Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined. Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard.

[3] Code of Federal Regulation (CFR) [i.e., PSD (40 CFR 52.21, 40 CFR 51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S)

The Basin was re-designated as attainment in 2007 and is no longer addressed in the SCAQMD's AQMP. The 2003 AQMP is the most recent version that addresses CO concentrations. As part of the SCAQMD *CO Hotspot Analysis*, the Wilshire Boulevard/Veteran Avenue intersection, one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day, was modeled for CO concentrations. This modeling effort identified a CO concentration high of 4.6 ppm, which is well below the 35-ppm Federal standard. The proposed Project considered herein would not produce the volume of traffic required to generate a CO hot spot in the context of SCAQMD's *CO Hotspot Analysis*. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection even as it accommodates 100,000 vehicles daily, it can be reasonably inferred that CO hotspots would not be experienced at any vicinity intersections resulting from 2,483 total daily trips (2,583 passenger car equivalent trips attributable to the Project. Therefore, impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.4 Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The SCAQMD *CEQA Air Quality Handbook* identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed Project would not include any of the land uses that have been identified by the SCAQMD as odor sources. Therefore, there would be no impacts from the proposed Project.

Mitigation Measures: No mitigation is required.

Level of Significance: No impact.

5.2 Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The cumulative setting for air quality includes the City of Upland and the SCAB. The SCAB is designated as a nonattainment area for state standards of ozone, PM_{10}, and $PM_{2.5}$. The SCAB is designated as a nonattainment area for federal standards of ozone and $PM_{2.5,}$ attainment and serious maintenance for federal PM_{10} standards, and is designated as unclassified or attainment for all other pollutants. Cumulative growth in population and vehicle use could inhibit efforts to improve regional air quality and attain the ambient air quality standards.

Cumulative Impacts and Mitigation Measures

The SCAQMD's approach to assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with requirements of the FCAA and CCAA. As discussed above, the proposed Project would be consistent with the AQMP, which is intended to bring the SCAB into attainment for all criteria pollutants. As discussed above, the proposed Project operational emissions would not exceed SCAQMD thresholds with the implementation of Mitigation Measures AQ-1 through

AQ-3. Therefore, the proposed Project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts. Adherence to SCAQMD rules and regulations would minimize potential impacts related to cumulative conditions on a project-by-project basis. Project operations would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Impacts would be less than significant in this regard.

Mitigation Measures: Refer to Mitigation Measures AQ-1 through AQ-3.

Level of Significance: Less than significant impact with mitigation.

6 REFERENCES

1. California Air Pollution Control Officers Association (CAPCOA), *Health Effects*, 2018.
2. California Air Pollution Control Officers Association (CAPCOA), *Health Risk Assessments for Proposed Land Use Projects*, 2009.
3. California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM) Top Four Summaries from 2014 to 2016*, 2018.
4. California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005.
5. California Air Resources Board, *Current Air Quality Standards*, 2016.
6. California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, 2000.
7. Federal Highway Administration*, Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents,* 2016.
8. Herdman Architecture and Design, *Site Plan,* 2019.
9. Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, 2015.
10. Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.
11. South Coast Air Quality Management District, *Air Quality Management Plan,* 2016.
12. South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.
13. South Coast Air Quality Management District, *Localized Significance Threshold Methodology*, 2009.
14. South Coast Air Quality Management District, *High-Cube Warehouse Vehicle Trip Generation Analysis*, 2016.
15. Translutions, Inc., *Foothill Boulevard Warehouse Traffic Impact Analysis,* October 2019.
16. United States Environmental Protection Agency, *National Ambient Air Quality Standards Table*, 2016.
17. United States Environmental Protection Agency, *Nonattainment Areas for Criteria Pollutants*, 2018.
18. United States Environmental Protection Agency, *Policy Assessment for the Review of the Lead National Ambient Air Quality Standards*, 2013.

Appendix A

Air Quality Modeling Data

Bridge Point Upland

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	266.82	1000sqft	6.13	266,825.00	0
Parking Lot	861.05	1000sqft	19.77	1,306,800.00	0
Regional Shopping Center	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 266.8 kSF buildings, 6.53 acres (284 KSF) landscaping, 1,306,800 KSF parking

Construction Phase - anticipated construction schedule

Off-road Equipment - anticipated construction equipment

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Off-road Equipment - anticipated construction equipment

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Trips and VMT - Export site is less 1 mile from project site

Demolition -

Grading - Anticipated export

Architectural Coating - low VOC paint mitigation

Vehicle Trips - trip rates from Translutions trip generation report using High Cube Warehouse

Construction Off-road Equipment Mitigation - mitigation per Rule 403

Area Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - anticipated operational equipment

Fleet Mix - Fleet mix from Translutions Traffic Study

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	2.00
tblConstructionPhase	NumDays	45.00	35.00
tblConstructionPhase	NumDays	440.00	105.00
tblConstructionPhase	NumDays	35.00	66.00
tblConstructionPhase	NumDays	35.00	10.00
tblConstructionPhase	PhaseEndDate	3/13/2020	1/31/2020
tblConstructionPhase	PhaseEndDate	4/10/2020	2/4/2020
tblConstructionPhase	PhaseEndDate	6/12/2020	3/24/2020
tblConstructionPhase	PhaseEndDate	2/18/2022	8/18/2020
tblConstructionPhase	PhaseEndDate	5/27/2022	8/31/2020
tblConstructionPhase	PhaseEndDate	4/8/2022	9/1/2020
tblConstructionPhase	PhaseStartDate	3/14/2020	2/1/2020

tblConstructionPhase	PhaseStartDate	4/11/2020	2/5/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	3/25/2020
tblConstructionPhase	PhaseStartDate	4/9/2022	6/1/2020
tblConstructionPhase	PhaseStartDate	2/19/2022	8/19/2020
tblFleetMix	HHD	0.06	0.02
tblFleetMix	LDA	0.55	0.23
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.18	0.18
tblFleetMix	LHD1	0.02	0.38
tblFleetMix	LHD2	5.2670e-003	5.4600e-003
tblFleetMix	MCY	6.0000e-003	6.1170e-003
tblFleetMix	MDV	0.12	0.12
tblFleetMix	MH	1.0100e-003	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.3480e-003	0.00
tblFleetMix	SBUS	8.1200e-004	0.00
tblFleetMix	UBUS	1.6070e-003	0.00
tblGrading	AcresOfGrading	175.00	225.00
tblGrading	MaterialExported	0.00	431.00
tblLandUse	LandUseSquareFeet	266,820.00	266,825.00
tblLandUse	LandUseSquareFeet	861,050.00	1,306,800.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	12.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	33.00	20.00
tblVehicleTrips	ST_TR	49.97	7.75

tblVehicleTrips	ST_TR	1.68	7.94
tblVehicleTrips	SU_TR	25.24	7.75
tblVehicleTrips	SU_TR	1.68	7.94
tblVehicleTrips	WD_TR	42.70	7.75
tblVehicleTrips	WD_TR	1.68	7.94

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	52.2162	85.1995	61.7018	0.1939	18.2675	3.5286	20.4662	9.9840	3.2464	12.0069	0.0000	19,561.3656	19,561.3656	3.4353	0.0000	19,596.9796
Maximum	**52.2162**	**85.1995**	**61.7018**	**0.1939**	**18.2675**	**3.5286**	**20.4662**	**9.9840**	**3.2464**	**12.0069**	**0.0000**	**19,561.3656**	**19,561.3656**	**3.4353**	**0.0000**	**19,596.9796**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	52.2162	85.1995	61.7018	0.1939	10.0380	3.5286	11.5615	4.2962	3.2464	6.3190	0.0000	19,561.3656	19,561.3656	3.4353	0.0000	19,596.9795
Maximum	**52.2162**	**85.1995**	**61.7018**	**0.1939**	**10.0380**	**3.5286**	**11.5615**	**4.2962**	**3.2464**	**6.3190**	**0.0000**	**19,561.3656**	**19,561.3656**	**3.4353**	**0.0000**	**19,596.9795**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.05**	**0.00**	**43.51**	**56.97**	**0.00**	**47.37**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Energy	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221
Mobile	7.2707	62.2075	81.9423	0.2926	20.3490	0.4165	20.7655	5.5506	0.3956	5.9461		29,647.7521	29,647.7521	1.0240		29,673.3518
Offroad	1.5519	14.1495	14.0142	0.0183		1.0044	1.0044		0.9240	0.9240		1,776.3700	1,776.3700	0.5745		1,790.7328
Total	**15.5968**	**76.5096**	**96.2004**	**0.3119**	**20.3490**	**1.4328**	**21.7817**	**5.5506**	**1.3315**	**6.8821**		**31,606.1132**	**31,606.1132**	**1.6026**	**3.3300e-003**	**31,647.1722**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Energy	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221

Mobile	7.2707	62.2075	81.9423	0.2926	20.3490	0.4165	20.7655	5.5506	0.3956	5.9461		29,647.7521	29,647.7521	1.0240		29,673.3518
Offroad	1.5519	14.1495	14.0142	0.0183		1.0044	1.0044		0.9240	0.9240		1,776.3700	1,776.3700	0.5745		1,790.7328
Total	**15.5968**	**76.5096**	**96.2004**	**0.3119**	**20.3490**	**1.4328**	**21.7817**	**5.5506**	**1.3315**	**6.8821**		**31,606.1132**	**31,606.1132**	**1.6026**	**3.3300e-003**	**31,647.1722**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2020	1/31/2020	5	0	
2	Site Preparation	Site Preparation	2/1/2020	2/4/2020	5	2	
3	Grading	Grading	2/5/2020	3/24/2020	5	35	
4	Building Construction	Building Construction	3/25/2020	8/18/2020	5	105	
5	Paving	Paving	8/19/2020	9/1/2020	5	10	
6	Architectural Coating	Architectural Coating	6/1/2020	8/31/2020	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 225

Acres of Paving: 19.77

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 415,238; Non-Residential Outdoor: 138,413; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	4	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	4	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	2	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	20.00	0.00	54.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	664.00	260.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	133.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0631	0.8095	2.0400e-003	0.2012	1.3200e-003	0.2025	0.0534	1.2100e-003	0.0546		203.4151	203.4151	6.2100e-003		203.5704
Total	**0.0982**	**0.0631**	**0.8095**	**2.0400e-003**	**0.2012**	**1.3200e-003**	**0.2025**	**0.0534**	**1.2100e-003**	**0.0546**		**203.4151**	**203.4151**	**6.2100e-003**		**203.5704**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975

Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.7233**	**2.1974**	**9.9207**	**4.2454**	**2.0216**	**6.2670**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0631	0.8095	2.0400e-003	0.1907	1.3200e-003	0.1920	0.0508	1.2100e-003	0.0520		203.4151	203.4151	6.2100e-003		203.5704
Total	**0.0982**	**0.0631**	**0.8095**	**2.0400e-003**	**0.1907**	**1.3200e-003**	**0.1920**	**0.0508**	**1.2100e-003**	**0.0520**		**203.4151**	**203.4151**	**6.2100e-003**		**203.5704**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.8410	0.0000	12.8410	4.0466	0.0000	4.0466			0.0000			0.0000
Off-Road	7.4017	84.8525	55.2256	0.1093		3.5266	3.5266		3.2445	3.2445		10,582.8510	10,582.8510	3.4227		10,668.4187
Total	**7.4017**	**84.8525**	**55.2256**	**0.1093**	**12.8410**	**3.5266**	**16.3676**	**4.0466**	**3.2445**	**7.2910**		**10,582.8510**	**10,582.8510**	**3.4227**		**10,668.4187**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.4400e-003	0.2769	0.0360	7.3000e-004	0.0135	5.9000e-004	0.0141	3.7100e-003	5.7000e-004	4.2800e-003		77.1877	77.1877	5.7000e-003		77.3303
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.0701	0.8995	2.2700e-003	0.2236	1.4600e-003	0.2250	0.0593	1.3500e-003	0.0606		226.0168	226.0168	6.9000e-003		226.1893
Total	**0.1156**	**0.3470**	**0.9355**	**3.0000e-003**	**0.2371**	**2.0500e-003**	**0.2391**	**0.0630**	**1.9200e-003**	**0.0649**		**303.2046**	**303.2046**	**0.0126**		**303.5196**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.4895	0.0000	5.4895	1.7299	0.0000	1.7299			0.0000			0.0000
Off-Road	7.4017	84.8525	55.2256	0.1093		3.5266	3.5266		3.2445	3.2445	0.0000	10,582.8510	10,582.8510	3.4227		10,668.4187
Total	**7.4017**	**84.8525**	**55.2256**	**0.1093**	**5.4895**	**3.5266**	**9.0161**	**1.7299**	**3.2445**	**4.9744**	**0.0000**	**10,582.8510**	**10,582.8510**	**3.4227**		**10,668.4187**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	6.4400e-003	0.2769	0.0360	7.3000e-004	0.0129	5.9000e-004	0.0135	3.5600e-003	5.7000e-004	4.1300e-003		77.1877	77.1877	5.7000e-003		77.3303
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.0701	0.8995	2.2700e-003	0.2119	1.4600e-003	0.2134	0.0564	1.3500e-003	0.0578		226.0168	226.0168	6.9000e-003		226.1893
Total	**0.1156**	**0.3470**	**0.9355**	**3.0000e-003**	**0.2248**	**2.0500e-003**	**0.2269**	**0.0600**	**1.9200e-003**	**0.0619**		**303.2046**	**303.2046**	**0.0126**		**303.5196**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7893	27.4375	5.3472	0.0705	1.6653	0.1263	1.7915	0.4795	0.1208	0.6003		7,438.6360	7,438.6360	0.4832		7,450.7151
Worker	3.6240	2.3259	29.8619	0.0754	7.4220	0.0486	7.4706	1.9683	0.0448	2.0131		7,503.7586	7,503.7586	0.2291		7,509.4854

Total	**4.4133**	**29.7633**	**35.2091**	**0.1459**	**9.0872**	**0.1749**	**9.2621**	**2.4478**	**0.1656**	**2.6134**		**14,942.3946**	**14,942.3946**	**0.7122**		**14,960.2005**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7893	27.4375	5.3472	0.0705	1.5941	0.1263	1.7204	0.4620	0.1208	0.5828		7,438.6360	7,438.6360	0.4832		7,450.7151
Worker	3.6240	2.3259	29.8619	0.0754	7.0348	0.0486	7.0834	1.8733	0.0448	1.9181		7,503.7586	7,503.7586	0.2291		7,509.4854
Total	**4.4133**	**29.7633**	**35.2091**	**0.1459**	**8.6289**	**0.1749**	**8.8038**	**2.3353**	**0.1656**	**2.5009**		**14,942.3946**	**14,942.3946**	**0.7122**		**14,960.2005**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	5.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.5363**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0525	0.6746	1.7000e-003	0.1677	1.1000e-003	0.1688	0.0445	1.0100e-003	0.0455		169.5126	169.5126	5.1700e-003		169.6420
Total	**0.0819**	**0.0525**	**0.6746**	**1.7000e-003**	**0.1677**	**1.1000e-003**	**0.1688**	**0.0445**	**1.0100e-003**	**0.0455**		**169.5126**	**169.5126**	**5.1700e-003**		**169.6420**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	5.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.5363**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0525	0.6746	1.7000e-003	0.1589	1.1000e-003	0.1600	0.0423	1.0100e-003	0.0433		169.5126	169.5126	5.1700e-003		169.6420
Total	**0.0819**	**0.0525**	**0.6746**	**1.7000e-003**	**0.1589**	**1.1000e-003**	**0.1600**	**0.0423**	**1.0100e-003**	**0.0433**		**169.5126**	**169.5126**	**5.1700e-003**		**169.6420**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219		562.8961	562.8961	0.0436		563.9856
Total	**44.8721**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**		**562.8961**	**562.8961**	**0.0436**		**563.9856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.7259	0.4659	5.9814	0.0151	1.4866	9.7400e-003	1.4964	0.3943	8.9700e-003	0.4032		1,503.0119	1,503.0119	0.0459		1,504.1590
Total	**0.7259**	**0.4659**	**5.9814**	**0.0151**	**1.4866**	**9.7400e-003**	**1.4964**	**0.3943**	**8.9700e-003**	**0.4032**		**1,503.0119**	**1,503.0119**	**0.0459**		**1,504.1590**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219	0.0000	562.8961	562.8961	0.0436		563.9856
Total	**44.8721**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**562.8961**	**562.8961**	**0.0436**		**563.9856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.7259	0.4659	5.9814	0.0151	1.4091	9.7400e-003	1.4188	0.3752	8.9700e-003	0.3842		1,503.0119	1,503.0119	0.0459		1,504.1590
Total	**0.7259**	**0.4659**	**5.9814**	**0.0151**	**1.4091**	**9.7400e-003**	**1.4188**	**0.3752**	**8.9700e-003**	**0.3842**		**1,503.0119**	**1,503.0119**	**0.0459**		**1,504.1590**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.2707	62.2075	81.9423	0.2926	20.3490	0.4165	20.7655	5.5506	0.3956	5.9461		29,647.7521	29,647.7521	1.0240		29,673.3518
Unmitigated	7.2707	62.2075	81.9423	0.2926	20.3490	0.4165	20.7655	5.5506	0.3956	5.9461		29,647.7521	29,647.7521	1.0240		29,673.3518

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	77.50	77.50	77.50	167,620	167,620
Unrefrigerated Warehouse-No Rail	2,118.55	2,118.55	2118.55	9,079,509	9,079,509

Total	2,196.05	2,196.05	2,196.05	9,247,129	9,247,129

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Regional Shopping Center	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Unrefrigerated Warehouse-No Rail	0.227299	0.037976	0.179086	0.122965	0.380000	0.005460	0.017497	0.023600	0.000000	0.000000	0.006117	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221
NaturalGas Unmitigated	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	60.8219	6.6000e-004	5.9600e-003	5.0100e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		7.1555	7.1555	1.4000e-004	1.3000e-004	7.1980
Unrefrigerated Warehouse-No Rail	1483.99	0.0160	0.1455	0.1222	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.5865	174.5865	3.3500e-003	3.2000e-003	175.6240
Total		**0.0167**	**0.1515**	**0.1272**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**		**181.7421**	**181.7421**	**3.4900e-003**	**3.3300e-003**	**182.8221**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0608219	6.6000e-004	5.9600e-003	5.0100e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		7.1555	7.1555	1.4000e-004	1.3000e-004	7.1980
Unrefrigerated Warehouse-No Rail	1.48399	0.0160	0.1455	0.1222	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.5865	174.5865	3.3500e-003	3.2000e-003	175.6240
Total		**0.0167**	**0.1515**	**0.1272**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**		**181.7421**	**181.7421**	**3.4900e-003**	**3.3300e-003**	**182.8221**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Unmitigated	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.9440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0109	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Total	**6.7575**	**1.0700e-003**	**0.1166**	**1.0000e-005**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**		**0.2490**	**0.2490**	**6.6000e-004**		**0.2656**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.8026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.9440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0109	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Total	**6.7575**	**1.0700e-003**	**0.1166**	**1.0000e-005**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**		**0.2490**	**0.2490**	**6.6000e-004**		**0.2656**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	12	8.00	260	89	0.20	CNG

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	1.5519	14.1495	14.0142	0.0183		1.0044	1.0044		0.9240	0.9240		1,776.3700	1,776.3700	0.5745		1,790.7328
Total	**1.5519**	**14.1495**	**14.0142**	**0.0183**		**1.0044**	**1.0044**		**0.9240**	**0.9240**		**1,776.3700**	**1,776.3700**	**0.5745**		**1,790.7328**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bridge Point Upland - San Bernardino-South Coast County, Winter

Bridge Point Upland

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	266.82	1000sqft	6.13	266,825.00	0
Parking Lot	861.05	1000sqft	19.77	1,306,800.00	0
Regional Shopping Center	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 266.8 kSF buildings, 6.53 acres (284 KSF) landscaping, 1,306,800 KSF parking

Construction Phase - anticipated construction schedule

Off-road Equipment - anticipated construction equipment

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Off-road Equipment - anticipated construction equipment

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Trips and VMT - Export site is less 1 mile from project site

Demolition -

Grading - Anticipated export

Architectural Coating - low VOC paint mitigation

Vehicle Trips - trip rates from Translutions trip generation report using High Cube Warehouse

Construction Off-road Equipment Mitigation - mitigation per Rule 403

Area Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - anticipated operational equipment

Fleet Mix - Fleet mix from Translutions Traffic Study

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	2.00
tblConstructionPhase	NumDays	45.00	35.00
tblConstructionPhase	NumDays	440.00	105.00
tblConstructionPhase	NumDays	35.00	66.00
tblConstructionPhase	NumDays	35.00	10.00
tblConstructionPhase	PhaseEndDate	3/13/2020	1/31/2020
tblConstructionPhase	PhaseEndDate	4/10/2020	2/4/2020
tblConstructionPhase	PhaseEndDate	6/12/2020	3/24/2020
tblConstructionPhase	PhaseEndDate	2/18/2022	8/18/2020
tblConstructionPhase	PhaseEndDate	5/27/2022	8/31/2020
tblConstructionPhase	PhaseEndDate	4/8/2022	9/1/2020
tblConstructionPhase	PhaseStartDate	3/14/2020	2/1/2020

tblConstructionPhase	PhaseStartDate	4/11/2020	2/5/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	3/25/2020
tblConstructionPhase	PhaseStartDate	4/9/2022	6/1/2020
tblConstructionPhase	PhaseStartDate	2/19/2022	8/19/2020
tblFleetMix	HHD	0.06	0.02
tblFleetMix	LDA	0.55	0.23
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.18	0.18
tblFleetMix	LHD1	0.02	0.38
tblFleetMix	LHD2	5.2670e-003	5.4600e-003
tblFleetMix	MCY	6.0000e-003	6.1170e-003
tblFleetMix	MDV	0.12	0.12
tblFleetMix	MH	1.0100e-003	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.3480e-003	0.00
tblFleetMix	SBUS	8.1200e-004	0.00
tblFleetMix	UBUS	1.6070e-003	0.00
tblGrading	AcresOfGrading	175.00	225.00
tblGrading	MaterialExported	0.00	431.00
tblLandUse	LandUseSquareFeet	266,820.00	266,825.00
tblLandUse	LandUseSquareFeet	861,050.00	1,306,800.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	12.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	33.00	20.00
tblVehicleTrips	ST_TR	49.97	7.75

tblVehicleTrips	ST_TR	1.68	7.94
tblVehicleTrips	SU_TR	25.24	7.75
tblVehicleTrips	SU_TR	1.68	7.94
tblVehicleTrips	WD_TR	42.70	7.75
tblVehicleTrips	WD_TR	1.68	7.94

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	52.2166	85.2004	56.1678	0.1818	18.2675	3.5287	20.4662	9.9840	3.2464	12.0069	0.0000	18,345.5478	18,345.5478	3.4351	0.0000	18,381.5937
Maximum	**52.2166**	**85.2004**	**56.1678**	**0.1818**	**18.2675**	**3.5287**	**20.4662**	**9.9840**	**3.2464**	**12.0069**	**0.0000**	**18,345.5478**	**18,345.5478**	**3.4351**	**0.0000**	**18,381.5937**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	52.2166	85.2004	56.1678	0.1818	10.0380	3.5287	11.5631	4.2962	3.2464	6.3190	0.0000	18,345.5478	18,345.5478	3.4351	0.0000	18,381.5937
Maximum	**52.2166**	**85.2004**	**56.1678**	**0.1818**	**10.0380**	**3.5287**	**11.5631**	**4.2962**	**3.2464**	**6.3190**	**0.0000**	**18,345.5478**	**18,345.5478**	**3.4351**	**0.0000**	**18,381.5937**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.05**	**0.00**	**43.50**	**56.97**	**0.00**	**47.37**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Energy	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221
Mobile	6.7916	64.6786	74.4005	0.2787	20.3490	0.4170	20.7660	5.5506	0.3960	5.9466		28,263.3903	28,263.3903	1.0034		28,288.4754
Offroad	1.5519	14.1495	14.0142	0.0183		1.0044	1.0044		0.9240	0.9240		1,776.3700	1,776.3700	0.5745		1,790.7328
Total	**15.1177**	**78.9806**	**88.6585**	**0.2980**	**20.3490**	**1.4333**	**21.7822**	**5.5506**	**1.3320**	**6.8826**		**30,221.7513**	**30,221.7513**	**1.5821**	**3.3300e-003**	**30,262.2958**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Energy	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221

Mobile	6.7916	64.6786	74.4005	0.2787	20.3490	0.4170	20.7660	5.5506	0.3960	5.9466		28,263.3903	28,263.3903	1.0034		28,288.4754
Offroad	1.5519	14.1495	14.0142	0.0183		1.0044	1.0044		0.9240	0.9240		1,776.3700	1,776.3700	0.5745		1,790.7328
Total	**15.1177**	**78.9806**	**88.6585**	**0.2980**	**20.3490**	**1.4333**	**21.7822**	**5.5506**	**1.3320**	**6.8826**		**30,221.7513**	**30,221.7513**	**1.5821**	**3.3300e-003**	**30,262.2958**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2020	1/31/2020	5	0	
2	Site Preparation	Site Preparation	2/1/2020	2/4/2020	5	2	
3	Grading	Grading	2/5/2020	3/24/2020	5	35	
4	Building Construction	Building Construction	3/25/2020	8/18/2020	5	105	
5	Paving	Paving	8/19/2020	9/1/2020	5	10	
6	Architectural Coating	Architectural Coating	6/1/2020	8/31/2020	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 225

Acres of Paving: 19.77

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 415,238; Non-Residential Outdoor: 138,413; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	4	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	4	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	2	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	20.00	0.00	54.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	664.00	260.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	133.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0983	0.0663	0.6653	1.8300e-003	0.2012	1.3200e-003	0.2025	0.0534	1.2100e-003	0.0546		182.4750	182.4750	5.4500e-003		182.6112
Total	**0.0983**	**0.0663**	**0.6653**	**1.8300e-003**	**0.2012**	**1.3200e-003**	**0.2025**	**0.0534**	**1.2100e-003**	**0.0546**		**182.4750**	**182.4750**	**5.4500e-003**		**182.6112**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.7233	0.0000	7.7233	4.2454	0.0000	4.2454			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975

Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.7233**	**2.1974**	**9.9207**	**4.2454**	**2.0216**	**6.2670**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0983	0.0663	0.6653	1.8300e-003	0.1907	1.3200e-003	0.1920	0.0508	1.2100e-003	0.0520		182.4750	182.4750	5.4500e-003		182.6112
Total	**0.0983**	**0.0663**	**0.6653**	**1.8300e-003**	**0.1907**	**1.3200e-003**	**0.1920**	**0.0508**	**1.2100e-003**	**0.0520**		**182.4750**	**182.4750**	**5.4500e-003**		**182.6112**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.8410	0.0000	12.8410	4.0466	0.0000	4.0466			0.0000			0.0000
Off-Road	7.4017	84.8525	55.2256	0.1093		3.5266	3.5266		3.2445	3.2445		10,582.8510	10,582.8510	3.4227		10,668.4187
Total	**7.4017**	**84.8525**	**55.2256**	**0.1093**	**12.8410**	**3.5266**	**16.3676**	**4.0466**	**3.2445**	**7.2910**		**10,582.8510**	**10,582.8510**	**3.4227**		**10,668.4187**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.8800e-003	0.2742	0.0442	7.0000e-004	0.0135	6.1000e-004	0.0141	3.7100e-003	5.8000e-004	4.2900e-003		73.8378	73.8378	6.2900e-003		73.9952
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.0737	0.7393	2.0400e-003	0.2236	1.4600e-003	0.2250	0.0593	1.3500e-003	0.0606		202.7500	202.7500	6.0500e-003		202.9013
Total	**0.1161**	**0.3479**	**0.7835**	**2.7400e-003**	**0.2371**	**2.0700e-003**	**0.2392**	**0.0630**	**1.9300e-003**	**0.0649**		**276.5878**	**276.5878**	**0.0123**		**276.8965**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.4895	0.0000	5.4895	1.7299	0.0000	1.7299			0.0000			0.0000
Off-Road	7.4017	84.8525	55.2256	0.1093		3.5266	3.5266		3.2445	3.2445	0.0000	10,582.8510	10,582.8510	3.4227		10,668.4187
Total	**7.4017**	**84.8525**	**55.2256**	**0.1093**	**5.4895**	**3.5266**	**9.0161**	**1.7299**	**3.2445**	**4.9744**	**0.0000**	**10,582.8510**	**10,582.8510**	**3.4227**		**10,668.4187**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	6.8800e-003	0.2742	0.0442	7.0000e-004	0.0129	6.1000e-004	0.0135	3.5600e-003	5.8000e-004	4.1400e-003		73.8378	73.8378	6.2900e-003		73.9952
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.0737	0.7393	2.0400e-003	0.2119	1.4600e-003	0.2134	0.0564	1.3500e-003	0.0578		202.7500	202.7500	6.0500e-003		202.9013
Total	**0.1161**	**0.3479**	**0.7835**	**2.7400e-003**	**0.2248**	**2.0700e-003**	**0.2269**	**0.0600**	**1.9300e-003**	**0.0619**		**276.5878**	**276.5878**	**0.0123**		**276.8965**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8324	27.2149	6.1975	0.0678	1.6653	0.1279	1.7931	0.4795	0.1223	0.6018		7,150.0028	7,150.0028	0.5342		7,163.3579
Worker	3.6259	2.4474	24.5430	0.0676	7.4220	0.0486	7.4706	1.9683	0.0448	2.0131		6,731.2986	6,731.2986	0.2010		6,736.3223

Total	**4.4584**	**29.6623**	**30.7405**	**0.1354**	**9.0872**	**0.1765**	**9.2637**	**2.4478**	**0.1671**	**2.6149**		**13,881.3014**	**13,881.3014**	**0.7352**		**13,899.6801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8324	27.2149	6.1975	0.0678	1.5941	0.1279	1.7220	0.4620	0.1223	0.5843		7,150.0028	7,150.0028	0.5342		7,163.3579
Worker	3.6259	2.4474	24.5430	0.0676	7.0348	0.0486	7.0834	1.8733	0.0448	1.9181		6,731.2986	6,731.2986	0.2010		6,736.3223
Total	**4.4584**	**29.6623**	**30.7405**	**0.1354**	**8.6289**	**0.1765**	**8.8054**	**2.3353**	**0.1671**	**2.5024**		**13,881.3014**	**13,881.3014**	**0.7352**		**13,899.6801**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	5.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.5363**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0553	0.5544	1.5300e-003	0.1677	1.1000e-003	0.1688	0.0445	1.0100e-003	0.0455		152.0625	152.0625	4.5400e-003		152.1760
Total	**0.0819**	**0.0553**	**0.5544**	**1.5300e-003**	**0.1677**	**1.1000e-003**	**0.1688**	**0.0445**	**1.0100e-003**	**0.0455**		**152.0625**	**152.0625**	**4.5400e-003**		**152.1760**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	5.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**6.5363**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0819	0.0553	0.5544	1.5300e-003	0.1589	1.1000e-003	0.1600	0.0423	1.0100e-003	0.0433		152.0625	152.0625	4.5400e-003		152.1760
Total	**0.0819**	**0.0553**	**0.5544**	**1.5300e-003**	**0.1589**	**1.1000e-003**	**0.1600**	**0.0423**	**1.0100e-003**	**0.0433**		**152.0625**	**152.0625**	**4.5400e-003**		**152.1760**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219		562.8961	562.8961	0.0436		563.9856
Total	**44.8721**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**		**562.8961**	**562.8961**	**0.0436**		**563.9856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.7263	0.4902	4.9160	0.0135	1.4866	9.7400e-003	1.4964	0.3943	8.9700e-003	0.4032		1,348.2872	1,348.2872	0.0403		1,349.2935
Total	**0.7263**	**0.4902**	**4.9160**	**0.0135**	**1.4866**	**9.7400e-003**	**1.4964**	**0.3943**	**8.9700e-003**	**0.4032**		**1,348.2872**	**1,348.2872**	**0.0403**		**1,349.2935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219	0.0000	562.8961	562.8961	0.0436		563.9856
Total	**44.8721**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**562.8961**	**562.8961**	**0.0436**		**563.9856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.7263	0.4902	4.9160	0.0135	1.4091	9.7400e-003	1.4188	0.3752	8.9700e-003	0.3842		1,348.2872	1,348.2872	0.0403		1,349.2935
Total	**0.7263**	**0.4902**	**4.9160**	**0.0135**	**1.4091**	**9.7400e-003**	**1.4188**	**0.3752**	**8.9700e-003**	**0.3842**		**1,348.2872**	**1,348.2872**	**0.0403**		**1,349.2935**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.7916	64.6786	74.4005	0.2787	20.3490	0.4170	20.7660	5.5506	0.3960	5.9466		28,263.3903	28,263.3903	1.0034		28,288.4754
Unmitigated	6.7916	64.6786	74.4005	0.2787	20.3490	0.4170	20.7660	5.5506	0.3960	5.9466		28,263.3903	28,263.3903	1.0034		28,288.4754

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	77.50	77.50	77.50	167,620	167,620
Unrefrigerated Warehouse-No Rail	2,118.55	2,118.55	2118.55	9,079,509	9,079,509

Total	2,196.05	2,196.05	2,196.05	9,247,129	9,247,129

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Regional Shopping Center	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Unrefrigerated Warehouse-No Rail	0.227299	0.037976	0.179086	0.122965	0.380000	0.005460	0.017497	0.023600	0.000000	0.000000	0.006117	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221
NaturalGas Unmitigated	0.0167	0.1515	0.1272	9.1000e-004		0.0115	0.0115		0.0115	0.0115		181.7421	181.7421	3.4800e-003	3.3300e-003	182.8221

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	60.8219	6.6000e-004	5.9600e-003	5.0100e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		7.1555	7.1555	1.4000e-004	1.3000e-004	7.1980
Unrefrigerated Warehouse-No Rail	1483.99	0.0160	0.1455	0.1222	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.5865	174.5865	3.3500e-003	3.2000e-003	175.6240
Total		**0.0167**	**0.1515**	**0.1272**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**		**181.7421**	**181.7421**	**3.4900e-003**	**3.3300e-003**	**182.8221**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0608219	6.6000e-004	5.9600e-003	5.0100e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004		7.1555	7.1555	1.4000e-004	1.3000e-004	7.1980
Unrefrigerated Warehouse-No Rail	1.48399	0.0160	0.1455	0.1222	8.7000e-004		0.0111	0.0111		0.0111	0.0111		174.5865	174.5865	3.3500e-003	3.2000e-003	175.6240
Total		**0.0167**	**0.1515**	**0.1272**	**9.1000e-004**		**0.0115**	**0.0115**		**0.0115**	**0.0115**		**181.7421**	**181.7421**	**3.4900e-003**	**3.3300e-003**	**182.8221**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Unmitigated	6.7575	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.9440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0109	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Total	**6.7575**	**1.0700e-003**	**0.1166**	**1.0000e-005**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**		**0.2490**	**0.2490**	**6.6000e-004**		**0.2656**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

SubCategory	lb/day										lb/day					
Architectural Coating	0.8026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.9440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0109	1.0700e-003	0.1166	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		0.2490	0.2490	6.6000e-004		0.2656
Total	**6.7575**	**1.0700e-003**	**0.1166**	**1.0000e-005**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**		**0.2490**	**0.2490**	**6.6000e-004**		**0.2656**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	12	8.00	260	89	0.20	CNG

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	1.5519	14.1495	14.0142	0.0183		1.0044	1.0044		0.9240	0.9240		1,776.3700	1,776.3700	0.5745		1,790.7328
Total	**1.5519**	**14.1495**	**14.0142**	**0.0183**		**1.0044**	**1.0044**		**0.9240**	**0.9240**		**1,776.3700**	**1,776.3700**	**0.5745**		**1,790.7328**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bridge Point Upland - Existing Rock Crushing

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	40.00	User Defined Unit	40.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Rock crushing on approx. 40 acre site

Construction Phase - current operation

Off-road Equipment - current-onsite equipment, cone, jaw, screen, loaders, stackers, water trucks

Grading - Approximately 78 trucks per day

Trips and VMT - approximately 78 trucks per day

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value

tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	75.00	261.00
tblConstructionPhase	PhaseEndDate	5/24/2019	12/31/2019
tblConstructionPhase	PhaseStartDate	2/11/2019	1/1/2019
tblGrading	MaterialExported	0.00	624.00
tblLandUse	LotAcreage	0.00	40.00
tblOffRoadEquipment	HorsePower	168.00	350.00
tblOffRoadEquipment	HorsePower	168.00	300.00
tblOffRoadEquipment	HorsePower	168.00	100.00
tblOffRoadEquipment	HorsePower	203.00	375.00
tblOffRoadEquipment	HorsePower	203.00	300.00
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8738	48.6047	32.1412	0.0767	0.2849	2.1455	2.4304	0.0756	1.9964	2.0720	0.0000	7,562.6253	7,562.6253	2.1472	0.0000	7,616.3057
Maximum	**4.8738**	**48.6047**	**32.1412**	**0.0767**	**0.2849**	**2.1455**	**2.4304**	**0.0756**	**1.9964**	**2.0720**	**0.0000**	**7,562.6253**	**7,562.6253**	**2.1472**	**0.0000**	**7,616.3057**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8738	48.6047	32.1412	0.0767	0.2700	2.1455	2.4155	0.0719	1.9964	2.0683	0.0000	7,562.6253	7,562.6253	2.1472	0.0000	7,616.3057
Maximum	**4.8738**	**48.6047**	**32.1412**	**0.0767**	**0.2700**	**2.1455**	**2.4155**	**0.0719**	**1.9964**	**2.0683**	**0.0000**	**7,562.6253**	**7,562.6253**	**2.1472**	**0.0000**	**7,616.3057**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**5.25**	**0.00**	**0.62**	**4.83**	**0.00**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2019	12/31/2019	5	261	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Other Material Handling Equipment	1	8.00	350	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Other Material Handling Equipment	1	8.00	300	0.40
Grading	Other Material Handling Equipment	3	8.00	100	0.40
Grading	Rubber Tired Loaders	1	8.00	375	0.36
Grading	Crushing/Proc. Equipment	1	8.00	85	0.78
Grading	Rubber Tired Loaders	1	8.00	300	0.36
Grading	Off-Highway Trucks	2	4.00	402	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	10	25.00	0.00	78.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	4.7236	48.4272	30.8835	0.0735		2.1434	2.1434		1.9944	1.9944		7,245.8804	7,245.8804	2.1361		7,299.2819
Total	**4.7236**	**48.4272**	**30.8835**	**0.0735**	**2.7000e-004**	**2.1434**	**2.1436**	**4.0000e-005**	**1.9944**	**1.9945**		**7,245.8804**	**7,245.8804**	**2.1361**		**7,299.2819**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0000e-003	0.0789	0.0114	2.4000e-004	5.2300e-003	2.6000e-004	5.5000e-003	1.4300e-003	2.5000e-004	1.6900e-003		25.1409	25.1409	1.3800e-003		25.1754
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1482	0.0986	1.2462	2.9300e-003	0.2794	1.8800e-003	0.2813	0.0741	1.7300e-003	0.0758		291.6040	291.6040	9.7800e-003		291.8484

Total	**0.1502**	**0.1775**	**1.2576**	**3.1700e-003**	**0.2847**	**2.1400e-003**	**0.2868**	**0.0755**	**1.9800e-003**	**0.0775**		**316.7449**	**316.7449**	**0.0112**		**317.0238**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	2.0000e-005	0.0000	2.0000e-005			0.0000			0.0000
Off-Road	4.7236	48.4272	30.8835	0.0735		2.1434	2.1434		1.9944	1.9944	0.0000	7,245.8804	7,245.8804	2.1361		7,299.2819
Total	**4.7236**	**48.4272**	**30.8835**	**0.0735**	**1.2000e-004**	**2.1434**	**2.1435**	**2.0000e-005**	**1.9944**	**1.9944**	**0.0000**	**7,245.8804**	**7,245.8804**	**2.1361**		**7,299.2819**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0000e-003	0.0789	0.0114	2.4000e-004	4.9900e-003	2.6000e-004	5.2600e-003	1.3800e-003	2.5000e-004	1.6300e-003		25.1409	25.1409	1.3800e-003		25.1754
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1482	0.0986	1.2462	2.9300e-003	0.2649	1.8800e-003	0.2667	0.0705	1.7300e-003	0.0723		291.6040	291.6040	9.7800e-003		291.8484
Total	**0.1502**	**0.1775**	**1.2576**	**3.1700e-003**	**0.2699**	**2.1400e-003**	**0.2720**	**0.0719**	**1.9800e-003**	**0.0739**		**316.7449**	**316.7449**	**0.0112**		**317.0238**

Bridge Point Upland - Existing Rock Crushing

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	40.00	User Defined Unit	40.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Rock crushing on approx. 40 acre site

Construction Phase - current operation

Off-road Equipment - current-onsite equipment, cone, jaw, screen, loaders, stackers, water trucks

Grading - Approximately 78 trucks per day

Trips and VMT - approximately 78 trucks per day

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value

tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	75.00	261.00
tblConstructionPhase	PhaseEndDate	5/24/2019	12/31/2019
tblConstructionPhase	PhaseStartDate	2/11/2019	1/1/2019
tblGrading	MaterialExported	0.00	624.00
tblLandUse	LotAcreage	0.00	40.00
tblOffRoadEquipment	HorsePower	168.00	350.00
tblOffRoadEquipment	HorsePower	168.00	300.00
tblOffRoadEquipment	HorsePower	168.00	100.00
tblOffRoadEquipment	HorsePower	203.00	375.00
tblOffRoadEquipment	HorsePower	203.00	300.00
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8737	48.6104	31.9228	0.0764	0.2849	2.1455	2.4304	0.0756	1.9964	2.0720	0.0000	7,531.9677	7,531.9677	2.1461	0.0000	7,585.6212
Maximum	**4.8737**	**48.6104**	**31.9228**	**0.0764**	**0.2849**	**2.1455**	**2.4304**	**0.0756**	**1.9964**	**2.0720**	**0.0000**	**7,531.9677**	**7,531.9677**	**2.1461**	**0.0000**	**7,585.6212**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8737	48.6104	31.9228	0.0764	0.2700	2.1455	2.4155	0.0719	1.9964	2.0683	0.0000	7,531.9677	7,531.9677	2.1461	0.0000	7,585.6212
Maximum	**4.8737**	**48.6104**	**31.9228**	**0.0764**	**0.2700**	**2.1455**	**2.4155**	**0.0719**	**1.9964**	**2.0683**	**0.0000**	**7,531.9677**	**7,531.9677**	**2.1461**	**0.0000**	**7,585.6212**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**5.25**	**0.00**	**0.62**	**4.83**	**0.00**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description

1	Grading	Grading	1/1/2019	12/31/2019	5	261	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Other Material Handling Equipment	1	8.00	350	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Other Material Handling Equipment	1	8.00	300	0.40
Grading	Other Material Handling Equipment	3	8.00	100	0.40
Grading	Rubber Tired Loaders	1	8.00	375	0.36
Grading	Crushing/Proc. Equipment	1	8.00	85	0.78
Grading	Rubber Tired Loaders	1	8.00	300	0.36
Grading	Off-Highway Trucks	2	4.00	402	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	10	25.00	0.00	78.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	4.0000e-005	0.0000	4.0000e-005			0.0000			0.0000
Off-Road	4.7236	48.4272	30.8835	0.0735		2.1434	2.1434		1.9944	1.9944		7,245.8804	7,245.8804	2.1361		7,299.2819
Total	**4.7236**	**48.4272**	**30.8835**	**0.0735**	**2.7000e-004**	**2.1434**	**2.1436**	**4.0000e-005**	**1.9944**	**1.9945**		**7,245.8804**	**7,245.8804**	**2.1361**		**7,299.2819**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0900e-003	0.0794	0.0131	2.3000e-004	5.2300e-003	2.7000e-004	5.5000e-003	1.4300e-003	2.6000e-004	1.6900e-003		24.4922	24.4922	1.5000e-003		24.5296
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1480	0.1038	1.0262	2.6300e-003	0.2794	1.8800e-003	0.2813	0.0741	1.7300e-003	0.0758		261.5951	261.5951	8.5800e-003		261.8097
Total	**0.1501**	**0.1832**	**1.0393**	**2.8600e-003**	**0.2847**	**2.1500e-003**	**0.2868**	**0.0755**	**1.9900e-003**	**0.0775**		**286.0873**	**286.0873**	**0.0101**		**286.3393**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	2.0000e-005	0.0000	2.0000e-005			0.0000			0.0000
Off-Road	4.7236	48.4272	30.8835	0.0735		2.1434	2.1434		1.9944	1.9944	0.0000	7,245.8804	7,245.8804	2.1361		7,299.2819
Total	**4.7236**	**48.4272**	**30.8835**	**0.0735**	**1.2000e-004**	**2.1434**	**2.1435**	**2.0000e-005**	**1.9944**	**1.9944**	**0.0000**	**7,245.8804**	**7,245.8804**	**2.1361**		**7,299.2819**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0900e-003	0.0794	0.0131	2.3000e-004	4.9900e-003	2.7000e-004	5.2600e-003	1.3800e-003	2.6000e-004	1.6300e-003		24.4922	24.4922	1.5000e-003		24.5296
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1480	0.1038	1.0262	2.6300e-003	0.2649	1.8800e-003	0.2667	0.0705	1.7300e-003	0.0723		261.5951	261.5951	8.5800e-003		261.8097
Total	**0.1501**	**0.1832**	**1.0393**	**2.8600e-003**	**0.2699**	**2.1500e-003**	**0.2720**	**0.0719**	**1.9900e-003**	**0.0739**		**286.0873**	**286.0873**	**0.0101**		**286.3393**

APPENDIX A-2

Greenhouse Gas Emissions Assessment

Greenhouse Gas Emissions Assessment

Bridge Point Upland Project
City of Upland, California

Prepared by:

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November 2019

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APPENDIX
Appendix A: Greenhouse Gas Emissions Data

LIST OF ABBREVIATED TERMS

AB	Assembly Bill
CARB	California Air Resource Board
CCR	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CALGreen Code	California Green Building Standards Code
CPUC	California Public Utilities Commission
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CCSP	Climate Change Scoping Plan
cy	cubic yard
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH_4	Methane
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	million tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF_3	nitrogen trifluoride
N_2O	nitrous oxide
PFC	Perfluorocarbon
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Government
Sf	square foot
SF_6	sulfur hexafluoride
TAC	toxic air contaminants

1 INTRODUCTION

This report documents the results of a Greenhouse Gas (GHG) Emissions Assessment completed for the Bridge Point Upland Project. The purpose of this GHG Emissions Assessment is to evaluate the potential construction and operational emissions associated with the proposed Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The Bridge Point Upland Project (proposed Project) is located in the City of Upland north of Interstate 10 (I-10), south of State Route 210 (SR-210), west of Interstate 15 (I-15), and east of State Route 57 (SR-57) as depicted in Exhibit 1: Regional Vicinity. The overall Project site is located on approximately 50.25 acres northeast of Central Avenue and Foothill Boulevard, as depicted in Exhibit 2: Site Vicinity.

The Project site is in a predominately industrial and commercial area. The land uses surrounding the Project site consist of a mix of uses including industrial, commercial, residential, an airport, and a major transportation corridor. Properties zoned for Highway Commercial uses are located immediately south of the site. Foothill Boulevard is located farther south of the site. Foothill Boulevard is located further south of the site. Cable Airport is located directly north of the site and a portion of the airport, along with industrial uses are located west of the site. Commercial uses, including a Lowe's Home Improvement Store and a commercial shopping center, are located east of the site.

1.2 Project Description

The proposed Project is comprised of one warehouse/ parcel delivery service building with an ancillary office/retail space on approximately 50.25 acres as shown in Exhibit 3: Site Plan. The Project site is located on Assessor Parcel Nos. (APN) 1006-351-09, 1006-351-10, 1006-572-11, 1006-551-12, 1006-551-22, and 1006-574-10. Project entitlement includes a Design Review and Site Plan Review application; a Lot Line Adjustment; and a determination from the Airport Land Use Committee that the Project is compatible with the Cable Airport Land Use Compatibility Plan.

The Project building is proposed to be one level and total approximately 201,096 square feet (sf), of which approximately 191,096 sf would be warehouse/parcel delivery uses and 10,000 sf would be office/retail uses. The office/retail component would include an office area for employees, and a small area for visitors to pick up pre-ordered packages. To be conservative, this analysis evaluates a maximum development scenario that includes a 276,250 sf building.

The western building frontage would include 16 dock-hi doors for trucks, and 8 van loading doors would be located on both the northern and southern building frontages. The Project would require a minimum of 220 automobile parking spaces. Trailer parking for the warehouse building would include approximately 12 stalls and an additional 1,104 van parking stalls would be located on-site.

Building Design

The warehouse/parcel delivery service building is designed as a class A building. The building architecture features a modern aesthetic including glazing with brow projections to focus attention on the entries and street frontages. The major building material is concrete which lends itself to a modern palette with

reveals to enhance the building architecture. The building would have a maximum height of approximately 44 feet with parapets and façade, which would provide depth and shadowing and points of visual interest for the architecture. This relief in the design also provides locations for accents in the landscape design.

Access and Parking

Vehicular access to the Project would be provided via 13th Street, the north leg of Central Avenue/Foothill Boulevard, and two right-in/right-out driveways on Foothill Boulevard. The driveway on 13th Street would provide access to automobiles and vans only; trucks would access the site only via the driveway at the north leg of Central Avenue/Foothill Boulevard. Street improvements would be provided along Foothill Boulevard at the Project frontage to include improvements to curbs, gutters, sidewalks, street lights, traffic signal equipment and signing and striping as required. Street improvements would also be made to Central Avenue and 13th Street.

Landscaping

The Project would be landscaped along all four frontages of the site, including landscaped slopes along the western and southern portions of the site. Landscaping would also be installed throughout the parking areas. The conceptual landscape design would feature California drought tolerant and native species in an aesthetically pleasing and colorful palette.

The Project building would include 455,380 sf of landscaping, which would account for more than 21 percent in landscape coverage, more than four times the City's minimum requirement of 5 percent. The warehouse/parcel delivery service building would be setback more than 200 feet on the southern building frontage and would exceed minimum setback requirements of 5 feet for front and side setbacks and rear setbacks of 10 feet.

Construction

Construction of the proposed Project is expected to commence in the first quarter of 2020 with a construction duration of approximately 7 months. Project construction would be completed in one phase with buildout by the third quarter of 2020. Total excavation and fill of soils for the proposed Project is mostly balanced with approximately 431 cubic yards (cy) of exported soil.

Existing Project Site

The Project site consists of both disturbed land on the western portion of the site and undeveloped land on the eastern portion of the site. The disturbed portion of the land is used for outdoor dirt, sand, gravel and rock stockpiling, processing and crushing; the existing stockpiles are being processed and removed by the current operator as part of existing operations, and the removal of those materials is not a part of the Project. No structures are currently located on the site. There is existing utility access (water, sewer, electricity, gas) located in the immediate vicinity of the proposed Project and these services would be extended to the site to serve the proposed Project.

Exhibit 1: Regional Vicinity



Exhibit 2: Site Vicinity



Source: Google Maps, 2018.

Exhibit 3: Site Plan



Source: Herdman Architecture and Design, 2019.

Not to Scale

2 ENVIRONMENTAL SETTING

2.1 Greenhouse Gases and Climate Change

Certain gases in the earth's atmosphere classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere[1]. Table 1: Description of Greenhouse Gases describes the primary GHGs attributed to global climate change, including their physical properties.

[1] Intergovernmental Panel on Climate Change, *Carbon and Other Biogeochemical Cycles. In: Climate Change 2013: The Physical Science Basis*, *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013. http://www.climatechange2013.org/ images/report/WG1AR5_ALL_FINAL.pdf.

Table 1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	CO_2 is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO_2 is variable because it is readily exchanged in the atmosphere. CO_2 is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N_2O)	N_2O is largely attributable to agricultural practices and soil management. Primary human-related sources of N_2O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N_2O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years. The Global Warming Potential of N_2O is 298.
Methane (CH_4)	CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, about 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH_4 include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH_4 is about 12 years and the Global Warming Potential is 25.
Hydrofluorocarbons (HFCs)	HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is increasing, as the continued phase out of CFCs and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF_6)	SF_6 is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF_6 is 23,900.
Hydrochlorofluorocarbons (HCFCs)	HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, HCFCs are subject to a consumption cap and gradual phase out. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen Trifluoride (NF_3)	NF_3 was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.

Source: Compiled from U.S. EPA, *Overview of Greenhouse Gases*, April 11, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018; Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007; National Research Council, Advancing the Science of Climate Change, 2010; U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, April 2010.

3 REGULATORY SETTING

3.1 Federal

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding. The U.S. Environmental Protection Agency (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year

2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the U.S. EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan (CPP). These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: one fossil-fuel-fired electric utility steam-generating unit and two stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the CPP pending resolution of several lawsuits. Additionally, in March 2017, the federal government directed the EPA Administrator to review the CPP to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783. Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth* issued on March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of CO_2, N_2O, and CH_4.

3.2 State of California

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce

California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO_2 equivalents (CO_2e) in the world and produced 459 million gross metric tons of CO_2e in 2013. In the State, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark Assembly Bill (AB) 32, *California Global Warming Solutions Act of 2006*, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan. CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual")[2]. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the State's Climate Action Team, identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program[3]. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several sustainable community strategies have been adopted).

[2] CARB defines business-as-usual (BAU) in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

[3] The Climate Action Team, led by the secretary of the California Environmental Protection Agency, is a group of State agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the State's Climate Adaptation Strategy.

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated in light of current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO_2e ($MMTCO_2e$) to 545 $MMTCO_2e$. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

In 2016, the Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017 CARB adopted a second update to the Scoping Plan[4]. The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and, support the Clean Power Plan and other Federal actions.

Senate Bill 32 (California Global Warming Solutions Act of 2006: Emissions Limit). Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

SB 375 (The Sustainable Communities and Climate Protection Act of 2008). Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional

[4] California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed May 9, 2018.

transportation plans for reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards). AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards). SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, for 1,100 pounds of CO_2 per megawatt-hour.

SB 1078 and SBX1-2 (Renewable Electricity Standards). SB 1078 requires California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SBX1-2, which codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015). Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 25 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs using executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

Executive Order S-3-05. Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07. Issued on January 18, 2007, Executive Order S 01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the LCFS on April 23, 2009.

Executive Order S-13-08. Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-14-08. Issued on November 17, 2008, Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the Renewable Electricity Standard on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09. Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's RPS to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15. Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2e (MMTCO2e). The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards. California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and take effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code. The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017.

3.3 REGIONAL

South Coast Air Quality Management District Thresholds

The South Coast Air Quality Management District (SCAQMD) formed a GHG California Environmental Quality Act (CEQA) Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency.

With the tiered approach, the Project is compared with the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32

GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. For all industrial projects, the SCAQMD is proposing a screening threshold of 10,000 million tons of CO_2e ($MTCO_2e$) per year. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact.

Tier 4 consists of three decision tree options. Under the Tier 4 first option, SCAQMD initially outlined that a project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. However, the Working Group did not provide a recommendation for this approach. The Working Group folded the Tier 4 second option into the third option. Under the Tier 4 third option, the project would be excluded if it was below an efficiency-based threshold of 4.8 $MTCO_2e$ per service population per year. Tier 5 would exclude projects that implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level.

GHG efficiency metrics are utilized as thresholds to assess the GHG efficiency of a project on a per capita basis or on a service population basis (the sum of the number of jobs and the number of residents provided by a project) such that the project would allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020 and 2035). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal of the State, by the estimated 2035 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32, and is appropriate, because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use).

As the Project involves the construction of a new warehouse, the 10,000 $MTCO_2e$ per year industrial screening threshold has been selected as the significance threshold, as it is most applicable to the proposed Project.

Southern California Association of Governments

On April 7, 2016, the Southern California Association of Governments (SCAG) Regional Council adopted the *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy* (RTP/SCS). The RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The strategy was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The RTP/SCS is a long-range vision plan that balances future mobility and housing needs with economic, environmental, and public health goals. The SCAG region strives toward sustainability through integrated land use and transportation planning. The SCAG region must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions.

3.4 Local

City of Upland General Plan

The City of Upland General Plan (UGP) is a roadmap that encompasses the hopes, aspirations, values and dreams of the community. Project-relevant policies specific to GHG emissions are mentioned in this section. Where inconsistencies exist, if any, they are addressed in the respective impact analysis below. UGP policies that address GHG emissions impacts include the following:

Goal LU-2: **A community with stable and livable residential neighborhoods.**

Policy LU-2.3: Provide healthy, affordable and desirable living environments consistent with adopted code requirements that set forth the acceptable health and safety standards for the occupancy of housing.

Goal LU-4: **A community whose land use patterns focus growth in ways that are sustainable and environmentally responsible, including the implementation of smart growth practices and the reduction of greenhouse gas emissions consistent with Assembly Bill (AB) 32, Senate Bill (SB) 375, the Regional Transportation Plan and Sustainable Community Strategy.**

Policy LU-4.4: Work to identify and support financial and administrative incentives (i.e., fee reductions) to encourage desired land uses, development patterns, and alternative modes of transportation that reduce greenhouse gas emissions.

Goal OSC-5: **Greenhouse gas emissions will be at 1990 levels by 2020.**

Policy OSC-5.1: Comply with pertinent State regulations to assess citywide greenhouse gas emissions for existing land uses and the adopted General Plan buildout.

Policy OSC-5.2: Reduce greenhouse gas emissions from new development by promoting water conservation and recycling; promoting development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions.

Policy OSC-5.3: Assess and monitor the effects of climate change on an ongoing basis with periodic inventories of greenhouse gas emissions in the City and compare those to historical levels to monitor the efficacy of climate change mitigation efforts.

Policy OSC-5.4: Evaluate greenhouse gas emission impacts from proposed development projects as required by the California Environmental Quality Act.

Policy OSC-5.5: Require development projects that exceed AQMD ROG and NOX operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.

Policy OSC-5.8: Encourage the use of zero emission vehicles, low-emission vehicles, non-motorized vehicles and bicycles, and carsharing programs by requiring sufficient and convenient infrastructure and parking facilities in residential developments and employment centers to accommodate these vehicles.

Policy OSC-5.9: Give preference to professional maintenance providers using reduced emission equipment for contracts for services (e.g., landscape maintenance), as well as businesses which practice sustainable operations, to the extent that it is economically feasible to do so.

Policy OSC-5.11: Require new development to comply with the California Green Building Code (CalGreen) adopted by the California Building Standards Commission at the time of building permit application.

City of Upland Climate Action Plan

The City of Upland has developed a Climate Action Plan (UCAP) to address potential global climate change impacts and incorporate more sustainable practices throughout the City. The UCAP provides a framework for the reduction of greenhouse gas (GHG) emissions by providing emission reduction targets consistent with state and federal strategies. Within the UCAP, the City's main sources of emissions are addressed, guidance is provided regarding development, and implementation of UGP policies is described.

The City will implement reduction strategies to achieve its goals for emissions reduction. Project-relevant strategies are mentioned in this section. Any inconsistencies are addressed in the impact analysis below. UCAP climate action strategies include the following:

Measure T-2: Encourage the use of zero emission vehicles, low-emission vehicles, non-motorized vehicles and bicycles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities in residential developments and employment centers to accommodate these vehicles.

Measure T-3: Give preference to professional maintenance providers using reduced emission equipment for contracts for services (e.g., landscape maintenance), as well as businesses which practice sustainable operations, to the extent that it is economically feasible to do so.

Measure T-11: Reduce commute times for Upland residents and employees by providing more local employment near transit.

Measure T-34: Promote expansion of employment opportunities within Upland to reduce commuting to areas outside of the City.

Measure E-1: Reduce greenhouse gas emissions from new development by; promoting water conservation and recycling; promoting development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions.

Measure E-4: Require that deciduous trees be planted on the south- and west-facing sides of new buildings onsite to reduce energy use in the summer and winter months.

Measure E-10: Promote green building practices that support healthy indoor living and working environments that are well ventilated and contaminant-free.

Measure E-11: Require new development to comply with the California Green Building Code (CalGreen) adopted by the California Building Standards Commission at the time of building permit application.

Measure E-13: Encourage the installation and construction of renewable energy systems and facilities such as wind, solar, hydropower, geothermal, and biomass facilities.

Measure W-1: Establish water demand reduction standards for new development and redevelopment to reduce per capita and total demand for water.

Measure W-2: Require new development projects to adopt best management practices for water use efficiency and demonstrate specific water conservation measures.

Measure W-3: Implement cost-effective water conservation programs, such as the existing rebates and grants for water efficiency and conservation, and enforce the Upland Municipal Code water conservation standards, to improve water-use efficiency, reduce water demand, and preserve the City's supplies.

Measure W-5: Encourage new and existing public and private development to incorporate California-friendly and drought tolerant vegetation into landscape plans to reduce water demand.

Measure W-6: As appropriate, require all businesses and industries to use recycled water for irrigation.

Measure W-8: Review new development projects to determine which are appropriate for recycled water piping systems ("purple pipe") and require these projects to incorporate dual potable and recycled water facilities into their design.

Measure W-9: Encourage new industrial/commercial and residential developers to construct recycled water backbone facilities for their development. Additionally, continue to work with the IEUA to provide facilities for recycled water distribution.

Measure SW-5: Encourage the use of recycled materials in new construction.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Thresholds and significant criteria

Addressing GHG emissions generation impacts requires an agency to determine what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions will have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions[5].

Multiple expert agencies throughout the state have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. The different thresholds include compliance with a qualified GHG reduction strategy, performance-based reductions, numeric bright-line thresholds, and efficiency-based thresholds. The California Supreme Court decision in the *Centers for Biological Diversity et al. v. California Department of Fish and Wildlife*, the Newhall Land and Farming Company (November 30, 2015, Case S217763) (hereafter Newhall Ranch)[6] confirmed that when an "agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method."

Based upon the criteria derived from Appendix G of the CEQA Guidelines, a project normally would have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

South Coast Air Quality Management District Thresholds

The SCAQMD has not announced when staff is expecting to present a finalized version of its GHG thresholds to the governing board. On September 28, 2010, the SCAQMD recommended an interim screening level numeric "bright-line" threshold of 10,000 metric tons per year of CO_2e for industrial land uses. These efficiency-based thresholds were developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. This working group was formed to assist SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State Office of Planning and Research, CARB, the Attorney General's Office, a variety of city and county planning departments in the SCAB, various utilities such as sanitation and power companies throughout the SCAB, industry groups, and environmental and professional organizations. The numeric "bright line" was developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provides guidance to CEQA practitioners in determining whether GHG emissions from a proposed project are significant.

[5] 14 California Code of Regulations, Section 15064.4a
[6] Association of Environmental Professionals, 2016.

4.2 Methodology

The Project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). Details of the modeling assumptions and emission factors are provided in Appendix A: Greenhouse Gas Emissions Data. For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. GHG emissions during construction were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from CalEEMod. The Project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The Project's operations-related GHG emissions would be generated by vehicular traffic, area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 Greenhouse Gas Emissions

Threshold 5.1 Would the Project generate greenhouse gas emissions, either directly or indirectly, that could have a significant impact on the environment?

Short-Term Construction Greenhouse Gas Emissions

The proposed Project would result in direct emissions of GHGs from construction. The approximate quantity of daily GHG emissions generated by construction equipment utilized to build the proposed Project is depicted in Table 2: Construction-Related Greenhouse Gas Emissions.

Table 2: Construction-Related Greenhouse Gas Emissions

Category	$MTCO_2e$
Total Construction Emissions	**1,012**
30- Year Amortized Construction	34

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

As shown, Project construction would result in the generation of approximately 1,012 $MTCO_2e$ over the course of construction. Construction GHG emissions are typically summed and amortized over the lifetime of the Project (assumed to be 30 years), then added to the operational emissions[7]. The amortized Project construction emissions would be 34 $MTCO_2e$ per year. Once construction is complete, the generation of these GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions occur over the life of the proposed Project. GHG emissions would result from direct emissions such as Project generated vehicular traffic, on-site combustion of natural gas, and operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to, and wastewater from the Project site, the emissions associated with solid waste generated from the Project site, and any fugitive refrigerants from air conditioning or refrigerators.

The Project site is currently occupied with a sand and gravel processing plant. The sand and gravel processing plant uses eight pieces off-road heavy-duty diesel equipment, such as rubber tired loaders, stackers, static and mobile screens, cone and crushers, and water trucks. Additionally, the existing sand and gravel processing operations include approximately 78 trucks per day to off-haul materials processed on-site. Table 10 shows the existing emissions that are generated from the current on-site operations as well as the net increase in maximum daily emissions that would occur with implementation of the Project.

[7] The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13,* August 26, 2009).

Total GHG emissions associated with proposed Project are summarized in Table 3: Project Greenhouse Gas Emissions. Table 3 shows the existing emissions that are generated from the current on-site operations as well as the net emissions increase that would occur with implementation of the Project. As shown in Table 3, the Project would generate approximately 6,121 $MTCO_2e$ annually from both construction and operations and the proposed Project. The net increase of emissions would be 5,222 $MTCO_2e$ per year and would not exceed the SCAQMD GHG threshold of 10,000 $MTCO_2e$ per year. Therefore, Project-related GHG emissions would be less than significant and no mitigation measures are required.

Table 3: Project Greenhouse Gas Emissions

Emissions Source	**$MTCO_2e$ per Year**
Construction Amortized Over 30 Years	34
Area Source	0.03
Energy	418
Mobile	5,114
Off-road	211
Waste	66
Water and Wastewater	278
Total	*6,121*
Existing Emissions	899
Net Increase	**5,222**
SCAQMD Industrial Project Threshold	10,000
Exceeds SCAQMD Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.2 GREENHOUSE GAS REDUCTION PLAN COMPLIANCE

Threshold 5.2 Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions?

Upland Climate Action Plan Consistency

The City of Upland has prepared a Climate Action Plan (UCAP) to identify opportunities for a cleaner city. The UCAP serves as a long-term vision for how Upland can be more environmentally friendly and provides guidance for residents, City staff, and decision makers in the community on how to achieve future sustainability goals. The goals outlined in the UCAP target GHG emissions in 2035; see Table 4: City of Upland Climate Action Plan Consistency for Project consistency with these goals. As shown in Table 4, the Project would not conflict with City's goals within the UCAP.

Table 4: City of Upland Climate Action Plan Consistency

Upland Goals		Compliance	
GOAL 1:	Encourage the use of zero emission vehicles, low-emission vehicles, non-motorized vehicles and bicycles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities in employment centers to accommodate these vehicles.	Consistent:	The current CalGreen Code would require six percent of the project's parking spaces to be electric vehicle charging spaces.
GOAL 2:	Give preference to professional maintenance providers using reduced emission equipment for contracts for services (e.g., landscape maintenance), as well as businesses which practice sustainable operations, to the extent that it is economically feasible to do so.	N/A:	This is not a project-specific goal and is therefore not applicable. The City does not have a policy in place to provide guidance or regulate the selection of contracts for services between private entities.
GOAL 3:	Reduce commute times for Upland residents and employees by providing more local employment near transit.	Consistent:	The Project provides employment opportunities for Upland residents. There are several bus stops located adjacent to the project site.
GOAL 4:	Promote expansion of employment opportunities within Upland to reduce commuting to areas outside of the City.	Consistent:	The Project provides employment opportunities within the City for Upland residents.
GOAL 5:	Reduce greenhouse gas emissions from new development by; promoting water conservation and recycling; promoting development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions.	Consistent:	Project would comply with the General Plan Update and the 2014 Zoning Code Update to facilitate reductions in GHG emissions. The Project would also meet CalGreen and Title 24 energy standards to use energy efficiently and to include drought-tolerant landscaping and water efficient irrigation systems. The Project is also located adjacent to several bus stops along Foothill Boulevard and Central Avenue.
GOAL 6:	Require that deciduous trees be planted on the south- and west-facing sides of new buildings onsite to reduce energy use in the summer and winter months.	Consistent:	The Project complies with Chapter 17.12 Landscaping in the City of Upland Municipal Code.
GOAL 7:	Promote green building practices that support healthy indoor living and working environments that are well ventilated and contaminant-free.	Consistent:	The Project would comply with CalGreen and Title 24 energy standards and will use energy efficiently.
GOAL 8:	Require new development to comply with the California Green Building Code (CalGreen) adopted by the California Building Standards Commission at the time of building permit application.	Consistent:	See response to UCAP Goal 7.
GOAL 9:	Encourage the installation and construction of renewable energy systems and facilities such as wind, solar, hydropower, geothermal, and biomass facilities.	N/A:	This is not a project-specific policy and is therefore not applicable. Project would comply with the 2014 Zoning Code Update.
GOAL 10:	Establish water demand reduction standards for new development and redevelopment to reduce per capita and total water demand.	Consistent:	See response to UCAP Goal 7.

Table 4: City of Upland Climate Action Plan Consistency

Upland Goals		Compliance	
GOAL 11:	Require new development projects to adopt best management practices for water use efficiency and demonstrate specific water conservation measures.	Consistent:	See response to UCAP Goal 7.
GOAL 12:	Implement cost-effective water conservation programs, such as the existing rebates and grants for water efficiency and conservation, and enforce the Upland Municipal Code water conservation standards, to improve water-use efficiency, reduce water demand, and preserve the City's supplies.	N/A:	This is not a project-specific policy and is therefore not applicable. Project will comply with CalGreen and Title 24 energy standards and will use energy efficiently.
GOAL 13:	Encourage new and existing public and private development to incorporate California-friendly and drought tolerant vegetation into landscape plans to reduce water demand.	N/A:	This is not a project-specific policy and is therefore not applicable. Project will comply with Chapter 17.12 Landscaping of the City of Upland Municipal Code.
GOAL 14:	As appropriate, require all businesses and industries to use recycled water for irrigation.	N/A:	This is not a project-specific policy and is therefore not applicable.
GOAL 15:	Review new development projects to determine which are appropriate for recycled water piping systems ("purple pipe") and require these projects to incorporate dual potable and recycled water facilities into their design.	N/A:	This is not a project-specific policy and is therefore not applicable. The Project would comply with current City of Upland Municipal Code design requirements and policies for recycled water piping systems.
GOAL 16:	Encourage new industrial/commercial and residential developers to construct recycled water backbone facilities for their development. Additionally, continue to work with the IEUA to provide facilities for recycled water distribution.	N/A:	See response to UCAP Goal 15.
GOAL 17:	Encourage the use of recycled materials in new construction.	N/A:	See response to UCAP Goal 12.

Source: City of Upland, *Climate Action Plan*, 2014.

The Open Space and Conservation Element of the City's General Plan also includes GHG related policies. The majority of these policies are municipal measures, such as requiring a Citywide GHG assessment, climate change assessment and monitoring, reduced emissions for City operations, preference for reduced-emissions equipment, City employee transportation systems management and trip reduction, adopting green buildings standards, and LEED standards for public buildings. Policies relevant to development projects include Policy OSC-5.2 (GHG reduction in new development) and Policy OSC-5.5 (requiring emissions reductions for development projects that exceed SCAQMD thresholds), Policy OSC-5.2 promotes water conservation and recycling, promoting energy efficient building design, and improving the jobs/housing ratio. The Project proposes warehouses that would implement water conservation and energy efficiency measures pursuant to the latest building codes and City requirements. Regarding Policy OSC-5.5, the project would not exceed SCAQMD thresholds and would not be required to further reduce emissions. Also, per Policy OSC-5.8 and the latest building codes, the Project would be required to include electric vehicle infrastructure and charging stations.

SCAG RTP/SCS Consistency

On April 7, 2016, the Southern California Association of Governments (SCAG) Regional Council adopted the *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy* (RTP/SCS). The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCAG's RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 as well as an overall GHG target for the Project region consistent with both the target date of AB 32 and the post-2020 GHG reduction goals of Executive Orders 5-03-05 and B-30-15.

The RTP/SCS contains over 4,000 transportation projects, ranging from highway improvements, railroad grade separations, bicycle lanes, new transit hubs and replacement bridges. These future investments were included in county plans developed by the six county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices for everyone. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding.

The plan accounts for operations and maintenance costs to ensure reliability, longevity, and cost effectiveness. The RTP/SCS is also supported by a combination of transportation and land use strategies that help the region achieve state GHG emissions reduction goals and Federal Clean Air Act (FCAA) requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry, and utilize resources more efficiently. GHG emissions resulting from development-related mobile sources are the most potent source of emissions, and therefore Project comparison to the RTP/SCS is an appropriate indicator of whether the proposed Project would inhibit the post-2020 GHG reduction goals promulgated by the state. The proposed Project's consistency with the RTP/SCS goals is analyzed in detail in Table 5: Regional Transportation Plan/Sustainable Communities Strategy Consistency.

Table 5: Regional Transportation Plan/Sustainable Communities Strategy Consistency

SCAG Goals		Compliance	
GOAL 1:	Align the plan investments and policies with improving regional economic development and competitiveness.	N/A:	This is not a project-specific policy and is therefore not applicable.
GOAL 2:	Maximize mobility and accessibility for all people and goods in the region.	N/A:	This is not a transportation improvement project and is therefore not applicable.
GOAL 3:	Ensure travel safety and reliability for all people and goods in the region.	N/A:	This is not a transportation improvement project and is therefore not applicable.
GOAL 4:	Preserve and ensure a sustainable regional transportation system.	N/A:	This is not a transportation improvement project and is therefore not applicable.
GOAL 5:	Maximize the productivity of our transportation system.	N/A:	This is not a transportation improvement project and is therefore not applicable.
GOAL 6:	Protect the environment and health of our residents by improving air quality and	N/A:	This is not a project-specific policy. However, the Project is required to comply with the provisions

Table 5: Regional Transportation Plan/Sustainable Communities Strategy Consistency			
SCAG Goals		**Compliance**	
	encouraging active transportation (e.g., bicycling and walking).		of the California Building Energy Efficiency Standards and the Green Building Standards Code (CALGreen) and is located in an infill area near existing development and transit.
GOAL 7:	Actively encourage and create incentives for energy efficiency, where possible.	N/A:	This is not a project-specific policy and is therefore not applicable.
GOAL 8:	Encourage land use and growth patterns that facilitate transit as well as non-motorized transportation.	Consistent:	See response to RTP/SCS Goal 6.
GOAL 9:	Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	N/A:	This is not a transportation improvement project and is therefore not applicable.
Source: Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.			

The UCAP determined that implementation of GHG policies as well as compliance with applicable State standards would ensure consistency with state and regional GHG reduction planning efforts. The goals stated in the RTP/SCS were used to determine consistency with the planning efforts previously stated. As shown in Table 6, the proposed Project would be consistent with the stated goals of the RTP/SCS and the CARB Scoping Plan. Therefore, the proposed Project would not result in any significant impacts or interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets.

Consistency with the CARB Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, CARB adopted the *Climate Change Scoping Plan* (CCSP) in 2008, which outlines actions recommended to obtain that goal. The CCSP provides a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as the cap-and-trade program, and an AB 32 implementation fee to fund the program. As shown in Table 6: Project Consistency with Applicable CARB Scoping Plan Measures, the proposed Project is consistent with most of the strategies, while others are not applicable to the proposed Project.

The 2017 CCSP Update identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the first update to the CCSP in 2013. Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets. As such, impacts related to consistency with the Scoping Plan would be less than significant.

Table 6: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The proposed Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the proposed Project would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent.** The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with the site would comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The proposed Project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the proposed Project would utilize low carbon transportation fuels as required under this measure.
	Regional Transportation-Related Greenhouse Gas Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The proposed Project would provide development in the region that is consistent with the growth projections in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).
	Goods Movement	Goods Movement Action Plan January 2007	**Not applicable**. The proposed Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation	**Consistent**. This measure applies to medium and heavy-duty vehicles that operate in the state. The proposed Project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the proposed Project would be required to comply with the requirements of this regulation.

Table 6: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	High Speed Rail	Funded under SB 862	**Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	**Consistent.** The proposed Project would not conflict with implementation of this measure. The proposed Project would comply with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent**. The Project would obtain electricity from the electric utility, Southern California Edison (SCE). SCE obtained 28 percent of its power supply from renewable sources in 2016. Therefore, the utility would provide power when needed on site that is composed of a greater percentage of renewable sources.
	Million Solar Roofs Program	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
	Million Solar Roofs Program	Tax Incentive Program	**Consistent.** This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The proposed Project would comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The proposed Project would also comply with the City's Water-Efficient Landscaping Regulations (Chapter 17.12 of the Upland Municipal Code).
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The State is to increase the use of green building practices. The proposed Project would implement required green building strategies through existing regulation that requires the proposed Project to comply with various CalGreen requirements. The proposed Project includes sustainability design features that support the Green Building Strategy.
Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	**Not applicable.** The Mandatory Reporting Regulation requires facilities and entities with more than 10,000 $MTCO_2e$ of combustion and process emissions, all facilities belonging to certain industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. As shown above, total Project GHG emissions would not exceed 10,000 $MTCO_2e$. Therefore, this regulation would not apply.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The proposed Project would not conflict with implementation of these measures. The proposed Project is required to achieve the recycling mandates

Table 6: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
		AB 341 Statewide 75 Percent Diversion Goal	via compliance with the CALGreen code. The City has consistently achieved its state recycling mandates.
Forests	Sustainable Forests	Cap and Trade Offset Projects	**Not applicable.** The proposed Project site is in an area designated for urban uses. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	**Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The proposed Project would not conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	**Not applicable**. The proposed Project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the proposed Project.

Source: California Air Resources Board, *California's 2017 Climate Change Scoping Plan*, November 2017 and CARB, *Climate Change Scoping Plan*, December 2008.

The Project is estimated to emit approximately 6,121 $MTCO_2e$ per year (5,222 $MTCO_2e$ per year net emissions) directly from on-site activities and indirectly from off-site motor vehicles, see Table 3. The GHG emissions caused by long-term operation of the proposed would be less than significant.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the proposed Project would comply with all applicable measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.3 Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

Cumulative Impacts and Mitigation Measures

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission

impacts from a climate change perspective. The additive effect of project-related GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the proposed Project as well as other cumulative related projects would also be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As shown in Table 4, Table 5, and Table 6, the proposed Project would not conflict with the UCAP or the RTP/SCS. As a result, the Project would not conflict with any GHG reduction plans including the CARB Scoping Plan. Therefore, the Project's cumulative contribution of GHG emissions would be less than significant and the Project's cumulative GHG impacts would also be less than cumulatively considerable.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

1. California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* 2017.
2. City of Upland, *Climate Action Plan*, 2014.
3. Herdman Architecture and Design, *Site Plan*, 2019.
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5. Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013.
6. National Research Council, *Advancing the Science of Climate Change*, 2010.
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8. State of California, *Code of Regulations Section 15065.5a*, 2018.
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10. South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13*, 2009.
11. Translutions, Inc., *Foothill Boulevard Warehouse Traffic Impact Analysis,* October 2019.
12. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018.
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14. U.S. EPA, *Overview of Greenhouse Gases*, 2018.

Appendix A

Greenhouse Gas Emissions Data

Bridge Point Upland

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	266.82	1000sqft	6.13	266,825.00	0
Parking Lot	861.05	1000sqft	19.77	1,306,800.00	0
Regional Shopping Center	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 266.8 kSF buildings, 6.53 acres (284 KSF) landscaping, 1,306,800 KSF parking

Construction Phase - anticipated construction schedule

Off-road Equipment - anticipated construction equipment

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Off-road Equipment - anticipated construction equipment

Off-road Equipment - anticipated construction equipment

Off-road Equipment -

Trips and VMT - Export site is less 1 mile from project site

Demolition -

Grading - Anticipated export

Architectural Coating - low VOC paint mitigation

Vehicle Trips - trip rates from Translutions trip generation report using High Cube Warehouse

Construction Off-road Equipment Mitigation - mitigation per Rule 403

Area Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - anticipated operational equipment

Fleet Mix - Fleet mix from Translutions Traffic Study

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	2.00
tblConstructionPhase	NumDays	45.00	35.00
tblConstructionPhase	NumDays	440.00	105.00
tblConstructionPhase	NumDays	35.00	66.00
tblConstructionPhase	NumDays	35.00	10.00
tblConstructionPhase	PhaseEndDate	3/13/2020	1/31/2020
tblConstructionPhase	PhaseEndDate	4/10/2020	2/4/2020
tblConstructionPhase	PhaseEndDate	6/12/2020	3/24/2020
tblConstructionPhase	PhaseEndDate	2/18/2022	8/18/2020
tblConstructionPhase	PhaseEndDate	5/27/2022	8/31/2020
tblConstructionPhase	PhaseEndDate	4/8/2022	9/1/2020
tblConstructionPhase	PhaseStartDate	3/14/2020	2/1/2020

tblConstructionPhase	PhaseStartDate	4/11/2020	2/5/2020
tblConstructionPhase	PhaseStartDate	6/13/2020	3/25/2020
tblConstructionPhase	PhaseStartDate	4/9/2022	6/1/2020
tblConstructionPhase	PhaseStartDate	2/19/2022	8/19/2020
tblFleetMix	HHD	0.06	0.02
tblFleetMix	LDA	0.55	0.23
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.18	0.18
tblFleetMix	LHD1	0.02	0.38
tblFleetMix	LHD2	5.2670e-003	5.4600e-003
tblFleetMix	MCY	6.0000e-003	6.1170e-003
tblFleetMix	MDV	0.12	0.12
tblFleetMix	MH	1.0100e-003	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.3480e-003	0.00
tblFleetMix	SBUS	8.1200e-004	0.00
tblFleetMix	UBUS	1.6070e-003	0.00
tblGrading	AcresOfGrading	175.00	225.00
tblGrading	MaterialExported	0.00	431.00
tblLandUse	LandUseSquareFeet	266,820.00	266,825.00
tblLandUse	LandUseSquareFeet	861,050.00	1,306,800.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOperationalOffRoadEquipment	OperFuelType	Diesel	CNG
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	12.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	33.00	20.00
tblVehicleTrips	ST_TR	49.97	7.75

tblVehicleTrips	ST_TR	1.68	7.94
tblVehicleTrips	SU_TR	25.24	7.75
tblVehicleTrips	SU_TR	1.68	7.94
tblVehicleTrips	WD_TR	42.70	7.75
tblVehicleTrips	WD_TR	1.68	7.94

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.9969	4.3322	3.9115	0.0115	0.7643	0.1432	0.9075	0.2212	0.1338	0.3550	0.0000	1,042.5587	1,042.5587	0.1250	0.0000	1,045.6847
Maximum	**1.9969**	**4.3322**	**3.9115**	**0.0115**	**0.7643**	**0.1432**	**0.9075**	**0.2212**	**0.1338**	**0.3550**	**0.0000**	**1,042.5587**	**1,042.5587**	**0.1250**	**0.0000**	**1,045.6847**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.9969	4.3322	3.9115	0.0115	0.5990	0.1432	0.7422	0.1686	0.1338	0.3023	0.0000	1,042.5583	1,042.5583	0.1250	0.0000	1,045.6843
Maximum	**1.9969**	**4.3322**	**3.9115**	**0.0115**	**0.5990**	**0.1432**	**0.7422**	**0.1686**	**0.1338**	**0.3023**	**0.0000**	**1,042.5583**	**1,042.5583**	**0.1250**	**0.0000**	**1,045.6843**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**21.63**	**0.00**	**18.21**	**23.81**	**0.00**	**14.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**2-1-2020**	**4-30-2020**	2.4222	2.4222
2	**5-1-2020**	**7-31-2020**	2.8999	2.8999
3	**8-1-2020**	**9-30-2020**	1.0076	1.0076
		Highest	2.8999	2.8999

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2326	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0282	0.0282	7.0000e-005	0.0000	0.0301
Energy	3.0400e-003	0.0276	0.0232	1.7000e-004		2.1000e-003	2.1000e-003		2.1000e-003	2.1000e-003	0.0000	416.7005	416.7005	0.0165	3.8500e-003	418.2625
Mobile	1.2115	11.9882	13.8800	0.0512	3.6365	0.0758	3.7123	0.9938	0.0719	1.0657	0.0000	4,712.1687	4,712.1687	0.1651	0.0000	4,716.2960
Offroad	0.2018	1.8394	1.8218	2.3800e-003		0.1306	0.1306		0.1201	0.1201	0.0000	209.4944	209.4944	0.0678	0.0000	211.1883
Waste						0.0000	0.0000		0.0000	0.0000	53.0436	0.0000	53.0436	3.1348	0.0000	131.4132
Water						0.0000	0.0000		0.0000	0.0000	19.8102	260.6681	280.4783	2.0455	0.0503	346.5954
Total	**2.6490**	**13.8554**	**15.7396**	**0.0538**	**3.6365**	**0.2085**	**3.8450**	**0.9938**	**0.1942**	**1.1880**	**72.8538**	**5,599.0599**	**5,671.9137**	**5.4297**	**0.0541**	**5,823.7855**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2326	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0282	0.0282	7.0000e-005	0.0000	0.0301
Energy	3.0400e-003	0.0276	0.0232	1.7000e-004		2.1000e-003	2.1000e-003		2.1000e-003	2.1000e-003	0.0000	416.7005	416.7005	0.0165	3.8500e-003	418.2625
Mobile	1.2115	11.9882	13.8800	0.0512	3.6365	0.0758	3.7123	0.9938	0.0719	1.0657	0.0000	4,712.1687	4,712.1687	0.1651	0.0000	4,716.2960
Offroad	0.2018	1.8394	1.8218	2.3800e-003		0.1306	0.1306		0.1201	0.1201	0.0000	209.4944	209.4944	0.0678	0.0000	211.1883
Waste						0.0000	0.0000		0.0000	0.0000	26.5218	0.0000	26.5218	1.5674	0.0000	65.7066
Water						0.0000	0.0000		0.0000	0.0000	15.8482	208.7579	224.6060	1.6364	0.0402	277.5005
Total	**2.6490**	**13.8554**	**15.7396**	**0.0538**	**3.6365**	**0.2085**	**3.8450**	**0.9938**	**0.1942**	**1.1880**	**42.3700**	**5,547.1497**	**5,589.5197**	**3.4532**	**0.0441**	**5,688.9840**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**41.84**	**0.93**	**1.45**	**36.40**	**18.57**	**2.31**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/1/2020	1/31/2020	5	0	
2	Site Preparation	Site Preparation	2/1/2020	2/4/2020	5	2	
3	Grading	Grading	2/5/2020	3/24/2020	5	35	
4	Building Construction	Building Construction	3/25/2020	8/18/2020	5	105	
5	Paving	Paving	8/19/2020	9/1/2020	5	10	
6	Architectural Coating	Architectural Coating	6/1/2020	8/31/2020	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 225

Acres of Paving: 19.77

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 415,238; Non-Residential Outdoor: 138,413; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	4	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	4	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	2	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	13	20.00	0.00	54.00	14.70	6.90	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	664.00	260.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	133.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0181	0.0000	0.0181	9.9300e-003	0.0000	9.9300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0800e-003	0.0424	0.0215	4.0000e-005		2.2000e-003	2.2000e-003		2.0200e-003	2.0200e-003	0.0000	3.3431	3.3431	1.0800e-003	0.0000	3.3701
Total	**4.0800e-003**	**0.0424**	**0.0215**	**4.0000e-005**	**0.0181**	**2.2000e-003**	**0.0203**	**9.9300e-003**	**2.0200e-003**	**0.0120**	**0.0000**	**3.3431**	**3.3431**	**1.0800e-003**	**0.0000**	**3.3701**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1692	0.1692	1.0000e-005	0.0000	0.1693
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1692**	**0.1692**	**1.0000e-005**	**0.0000**	**0.1693**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.7200e-003	0.0000	7.7200e-003	4.2500e-003	0.0000	4.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0800e-003	0.0424	0.0215	4.0000e-005		2.2000e-003	2.2000e-003		2.0200e-003	2.0200e-003	0.0000	3.3431	3.3431	1.0800e-003	0.0000	3.3701
Total	**4.0800e-003**	**0.0424**	**0.0215**	**4.0000e-005**	**7.7200e-003**	**2.2000e-003**	**9.9200e-003**	**4.2500e-003**	**2.0200e-003**	**6.2700e-003**	**0.0000**	**3.3431**	**3.3431**	**1.0800e-003**	**0.0000**	**3.3701**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1692	0.1692	1.0000e-005	0.0000	0.1693
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1692**	**0.1692**	**1.0000e-005**	**0.0000**	**0.1693**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2247	0.0000	0.2247	0.0708	0.0000	0.0708	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1295	1.4849	0.9665	1.9100e-003		0.0617	0.0617		0.0568	0.0568	0.0000	168.0105	168.0105	0.0543	0.0000	169.3690
Total	**0.1295**	**1.4849**	**0.9665**	**1.9100e-003**	**0.2247**	**0.0617**	**0.2864**	**0.0708**	**0.0568**	**0.1276**	**0.0000**	**168.0105**	**168.0105**	**0.0543**	**0.0000**	**169.3690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.9000e-003	7.0000e-004	1.0000e-005	2.3000e-004	1.0000e-005	2.4000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	1.2031	1.2031	9.0000e-005	0.0000	1.2054
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7300e-003	1.3600e-003	0.0136	4.0000e-005	3.8400e-003	3.0000e-005	3.8600e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	3.2894	3.2894	1.0000e-004	0.0000	3.2918
Total	**1.8500e-003**	**6.2600e-003**	**0.0143**	**5.0000e-005**	**4.0700e-003**	**4.0000e-005**	**4.1000e-003**	**1.0800e-003**	**3.0000e-005**	**1.1100e-003**	**0.0000**	**4.4925**	**4.4925**	**1.9000e-004**	**0.0000**	**4.4973**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0961	0.0000	0.0961	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.1295	1.4849	0.9665	1.9100e-003		0.0617	0.0617		0.0568	0.0568	0.0000	168.0103	168.0103	0.0543	0.0000	169.3688
Total	**0.1295**	**1.4849**	**0.9665**	**1.9100e-003**	**0.0961**	**0.0617**	**0.1578**	**0.0303**	**0.0568**	**0.0871**	**0.0000**	**168.0103**	**168.0103**	**0.0543**	**0.0000**	**169.3688**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.9000e-003	7.0000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	1.2031	1.2031	9.0000e-005	0.0000	1.2054
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7300e-003	1.3600e-003	0.0136	4.0000e-005	3.6400e-003	3.0000e-005	3.6600e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	3.2894	3.2894	1.0000e-004	0.0000	3.2918
Total	**1.8500e-003**	**6.2600e-003**	**0.0143**	**5.0000e-005**	**3.8600e-003**	**4.0000e-005**	**3.8900e-003**	**1.0300e-003**	**3.0000e-005**	**1.0600e-003**	**0.0000**	**4.4925**	**4.4925**	**1.9000e-004**	**0.0000**	**4.4973**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1113	1.0073	0.8846	1.4100e-003		0.0587	0.0587		0.0551	0.0551	0.0000	121.5952	121.5952	0.0297	0.0000	122.3369
Total	**0.1113**	**1.0073**	**0.8846**	**1.4100e-003**		**0.0587**	**0.0587**		**0.0551**	**0.0551**	**0.0000**	**121.5952**	**121.5952**	**0.0297**	**0.0000**	**122.3369**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0424	1.4572	0.3047	3.6400e-003	0.0861	6.6600e-003	0.0927	0.0248	6.3700e-003	0.0312	0.0000	348.5078	348.5078	0.0241	0.0000	349.1107
Worker	0.1722	0.1353	1.3520	3.6300e-003	0.3822	2.5500e-003	0.3848	0.1015	2.3500e-003	0.1039	0.0000	327.6213	327.6213	9.8400e-003	0.0000	327.8673
Total	**0.2146**	**1.5925**	**1.6568**	**7.2700e-003**	**0.4683**	**9.2100e-003**	**0.4775**	**0.1264**	**8.7200e-003**	**0.1351**	**0.0000**	**676.1291**	**676.1291**	**0.0340**	**0.0000**	**676.9779**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1113	1.0073	0.8846	1.4100e-003		0.0586	0.0586		0.0551	0.0551	0.0000	121.5951	121.5951	0.0297	0.0000	122.3367
Total	**0.1113**	**1.0073**	**0.8846**	**1.4100e-003**		**0.0586**	**0.0586**		**0.0551**	**0.0551**	**0.0000**	**121.5951**	**121.5951**	**0.0297**	**0.0000**	**122.3367**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0424	1.4572	0.3047	3.6400e-003	0.0824	6.6600e-003	0.0891	0.0239	6.3700e-003	0.0303	0.0000	348.5078	348.5078	0.0241	0.0000	349.1107
Worker	0.1722	0.1353	1.3520	3.6300e-003	0.3624	2.5500e-003	0.3649	0.0966	2.3500e-003	0.0990	0.0000	327.6213	327.6213	9.8400e-003	0.0000	327.8673
Total	**0.2146**	**1.5925**	**1.6568**	**7.2700e-003**	**0.4448**	**9.2100e-003**	**0.4540**	**0.1206**	**8.7200e-003**	**0.1293**	**0.0000**	**676.1291**	**676.1291**	**0.0340**	**0.0000**	**676.9779**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7800e-003	0.0703	0.0733	1.1000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.0141	10.0141	3.2400e-003	0.0000	10.0951
Paving	0.0259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0327**	**0.0703**	**0.0733**	**1.1000e-004**		**3.7600e-003**	**3.7600e-003**		**3.4600e-003**	**3.4600e-003**	**0.0000**	**10.0141**	**10.0141**	**3.2400e-003**	**0.0000**	**10.0951**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	3.7000e-004	2.9000e-004	2.9100e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7049	0.7049	2.0000e-005	0.0000	0.7054
Total	**3.7000e-004**	**2.9000e-004**	**2.9100e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7049**	**0.7049**	**2.0000e-005**	**0.0000**	**0.7054**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7800e-003	0.0703	0.0733	1.1000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.0141	10.0141	3.2400e-003	0.0000	10.0951
Paving	0.0259					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0327**	**0.0703**	**0.0733**	**1.1000e-004**		**3.7600e-003**	**3.7600e-003**		**3.4600e-003**	**3.4600e-003**	**0.0000**	**10.0141**	**10.0141**	**3.2400e-003**	**0.0000**	**10.0951**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	2.9100e-003	1.0000e-005	7.8000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.1000e-004	0.0000	0.7049	0.7049	2.0000e-005	0.0000	0.7054
Total	**3.7000e-004**	**2.9000e-004**	**2.9100e-003**	**1.0000e-005**	**7.8000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.7049**	**0.7049**	**2.0000e-005**	**0.0000**	**0.7054**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4648					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0160	0.1111	0.1209	2.0000e-004		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	16.8515	16.8515	1.3000e-003	0.0000	16.8841
Total	**1.4808**	**0.1111**	**0.1209**	**2.0000e-004**		**7.3200e-003**	**7.3200e-003**		**7.3200e-003**	**7.3200e-003**	**0.0000**	**16.8515**	**16.8515**	**1.3000e-003**	**0.0000**	**16.8841**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0217	0.0170	0.1702	4.6000e-004	0.0481	3.2000e-004	0.0485	0.0128	3.0000e-004	0.0131	0.0000	41.2487	41.2487	1.2400e-003	0.0000	41.2797
Total	**0.0217**	**0.0170**	**0.1702**	**4.6000e-004**	**0.0481**	**3.2000e-004**	**0.0485**	**0.0128**	**3.0000e-004**	**0.0131**	**0.0000**	**41.2487**	**41.2487**	**1.2400e-003**	**0.0000**	**41.2797**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Archit. Coating	1.4648					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0160	0.1111	0.1209	2.0000e-004		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	16.8515	16.8515	1.3000e-003	0.0000	16.8841
Total	**1.4808**	**0.1111**	**0.1209**	**2.0000e-004**		**7.3200e-003**	**7.3200e-003**		**7.3200e-003**	**7.3200e-003**	**0.0000**	**16.8515**	**16.8515**	**1.3000e-003**	**0.0000**	**16.8841**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0217	0.0170	0.1702	4.6000e-004	0.0456	3.2000e-004	0.0459	0.0122	3.0000e-004	0.0125	0.0000	41.2487	41.2487	1.2400e-003	0.0000	41.2797
Total	**0.0217**	**0.0170**	**0.1702**	**4.6000e-004**	**0.0456**	**3.2000e-004**	**0.0459**	**0.0122**	**3.0000e-004**	**0.0125**	**0.0000**	**41.2487**	**41.2487**	**1.2400e-003**	**0.0000**	**41.2797**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Mitigated	1.2115	11.9882	13.8800	0.0512	3.6365	0.0758	3.7123	0.9938	0.0719	1.0657	0.0000	4,712.1687	4,712.1687	0.1651	0.0000	4,716.2960
Unmitigated	1.2115	11.9882	13.8800	0.0512	3.6365	0.0758	3.7123	0.9938	0.0719	1.0657	0.0000	4,712.1687	4,712.1687	0.1651	0.0000	4,716.2960

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	77.50	77.50	77.50	167,620	167,620
Unrefrigerated Warehouse-No Rail	2,118.55	2,118.55	2118.55	9,079,509	9,079,509
Total	2,196.05	2,196.05	2,196.05	9,247,129	9,247,129

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Regional Shopping Center	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Unrefrigerated Warehouse-No Rail	0.227299	0.037976	0.179086	0.122965	0.380000	0.005460	0.017497	0.023600	0.000000	0.000000	0.006117	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	386.6111	386.6111	0.0160	3.3000e-003	387.9942
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	386.6111	386.6111	0.0160	3.3000e-003	387.9942
NaturalGas Mitigated	3.0400e-003	0.0276	0.0232	1.7000e-004		2.1000e-003	2.1000e-003		2.1000e-003	2.1000e-003	0.0000	30.0894	30.0894	5.8000e-004	5.5000e-004	30.2682
NaturalGas Unmitigated	3.0400e-003	0.0276	0.0232	1.7000e-004		2.1000e-003	2.1000e-003		2.1000e-003	2.1000e-003	0.0000	30.0894	30.0894	5.8000e-004	5.5000e-004	30.2682

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	22200	1.2000e-004	1.0900e-003	9.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1847	1.1847	2.0000e-005	2.0000e-005	1.1917
Unrefrigerated Warehouse-No Rail	541655	2.9200e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	28.9048	28.9048	5.5000e-004	5.3000e-004	29.0765
Total		**3.0400e-003**	**0.0276**	**0.0232**	**1.7000e-004**		**2.1000e-003**	**2.1000e-003**		**2.1000e-003**	**2.1000e-003**	**0.0000**	**30.0894**	**30.0894**	**5.7000e-004**	**5.5000e-004**	**30.2683**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	22200	1.2000e-004	1.0900e-003	9.1000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1847	1.1847	2.0000e-005	2.0000e-005	1.1917
Unrefrigerated Warehouse-No Rail	541655	2.9200e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	28.9048	28.9048	5.5000e-004	5.3000e-004	29.0765
Total		**3.0400e-003**	**0.0276**	**0.0232**	**1.7000e-004**		**2.1000e-003**	**2.1000e-003**		**2.1000e-003**	**2.1000e-003**	**0.0000**	**30.0894**	**30.0894**	**5.7000e-004**	**5.5000e-004**	**30.2683**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	457380	145.7311	6.0200e-003	1.2400e-003	146.2524
Regional Shopping Center	126300	40.2419	1.6600e-003	3.4000e-004	40.3859
Unrefrigerated Warehouse-No Rail	629707	200.6381	8.2800e-003	1.7100e-003	201.3559
Total		**386.6111**	**0.0160**	**3.2900e-003**	**387.9942**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Parking Lot	457380	145.7311	6.0200e-003	1.2400e-003	146.2524
Regional Shopping Center	126300	40.2419	1.6600e-003	3.4000e-004	40.3859
Unrefrigerated Warehouse-No Rail	629707	200.6381	8.2800e-003	1.7100e-003	201.3559
Total		**386.6111**	**0.0160**	**3.2900e-003**	**387.9942**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2326	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0282	0.0282	7.0000e-005	0.0000	0.0301
Unmitigated	1.2326	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0282	0.0282	7.0000e-005	0.0000	0.0301

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1465					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	1.0848					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0282	0.0282	7.0000e-005	0.0000	0.0301
Total	**1.2326**	**1.3000e-004**	**0.0146**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0282**	**0.0282**	**7.0000e-005**	**0.0000**	**0.0301**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1465					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0848					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3600e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0282	0.0282	7.0000e-005	0.0000	0.0301
Total	**1.2326**	**1.3000e-004**	**0.0146**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0282**	**0.0282**	**7.0000e-005**	**0.0000**	**0.0301**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	224.6060	1.6364	0.0402	277.5005
Unmitigated	280.4783	2.0455	0.0503	346.5954

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.740725 / 0.453993	4.9152	0.0243	6.1000e-004	5.7052
Unrefrigerated Warehouse-No Rail	61.7021 / 0	275.5631	2.0211	0.0497	340.8902
Total		**280.4783**	**2.0455**	**0.0503**	**346.5954**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Regional Shopping Center	0.59258 / 0.426299	4.1555	0.0195	4.9000e-004	4.7883
Unrefrigerated Warehouse-No Rail	49.3617 / 0	220.4505	1.6169	0.0397	272.7122
Total		**224.6060**	**1.6364**	**0.0402**	**277.5005**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.5218	1.5674	0.0000	65.7066
Unmitigated	53.0436	3.1348	0.0000	131.4132

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Regional Shopping Center	10.5	2.1314	0.1260	0.0000	5.2805
Unrefrigerated Warehouse-No Rail	250.81	50.9122	3.0088	0.0000	126.1327
Total		**53.0436**	**3.1348**	**0.0000**	**131.4132**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	5.25	1.0657	0.0630	0.0000	2.6402
Unrefrigerated Warehouse-No Rail	125.405	25.4561	1.5044	0.0000	63.0664
Total		**26.5218**	**1.5674**	**0.0000**	**65.7066**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	12	8.00	260	89	0.20	CNG

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					

Forklifts	0.2018	1.8394	1.8218	2.3800e-003		0.1306	0.1306		0.1201	0.1201	0.0000	209.4944	209.4944	0.0678	0.0000	211.1883
Total	**0.2018**	**1.8394**	**1.8218**	**2.3800e-003**		**0.1306**	**0.1306**		**0.1201**	**0.1201**	**0.0000**	**209.4944**	**209.4944**	**0.0678**	**0.0000**	**211.1883**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Bridge Point Upland - Existing Rock Crushing

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	40.00	User Defined Unit	40.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Rock crushing on approx. 40 acre site

Construction Phase - current operation

Off-road Equipment - current-onsite equipment, cone, jaw, screen, loaders, stackers, water trucks

Grading - Approximately 78 trucks per day

Trips and VMT - approximately 78 trucks per day

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value

tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	75.00	261.00
tblConstructionPhase	PhaseEndDate	5/24/2019	12/31/2019
tblConstructionPhase	PhaseStartDate	2/11/2019	1/1/2019
tblGrading	MaterialExported	0.00	624.00
tblLandUse	LotAcreage	0.00	40.00
tblOffRoadEquipment	HorsePower	168.00	350.00
tblOffRoadEquipment	HorsePower	168.00	300.00
tblOffRoadEquipment	HorsePower	168.00	100.00
tblOffRoadEquipment	HorsePower	203.00	375.00
tblOffRoadEquipment	HorsePower	203.00	300.00
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Material Handling Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.6342	6.3446	4.1724	9.9700e-003	0.0365	0.2800	0.3165	9.6900e-003	0.2605	0.2702	0.0000	892.4149	892.4149	0.2541	0.0000	898.7674
Maximum	**0.6342**	**6.3446**	**4.1724**	**9.9700e-003**	**0.0365**	**0.2800**	**0.3165**	**9.6900e-003**	**0.2605**	**0.2702**	**0.0000**	**892.4149**	**892.4149**	**0.2541**	**0.0000**	**898.7674**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.6342	6.3446	4.1724	9.9700e-003	0.0346	0.2800	0.3146	9.2200e-003	0.2605	0.2698	0.0000	892.4139	892.4139	0.2541	0.0000	898.7664
Maximum	**0.6342**	**6.3446**	**4.1724**	**9.9700e-003**	**0.0346**	**0.2800**	**0.3146**	**9.2200e-003**	**0.2605**	**0.2698**	**0.0000**	**892.4139**	**892.4139**	**0.2541**	**0.0000**	**898.7664**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**5.24**	**0.00**	**0.61**	**4.85**	**0.00**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**2-11-2019**	**5-10-2019**	1.6999	1.6999
2	**5-11-2019**	**8-10-2019**	1.7572	1.7572
3	**8-11-2019**	**9-30-2019**	0.9741	0.9741
		Highest	1.7572	1.7572

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0000e-005**	**0.0000**	**5.2000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**9.9000e-004**	**9.9000e-004**	**0.0000**	**0.0000**	**1.0600e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	5.0000e-005	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2019	12/31/2019	5	261	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Other Material Handling Equipment	1	8.00	350	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Other Material Handling Equipment	1	8.00	300	0.40
Grading	Other Material Handling Equipment	3	8.00	100	0.40
Grading	Rubber Tired Loaders	1	8.00	375	0.36
Grading	Crushing/Proc. Equipment	1	8.00	85	0.78
Grading	Rubber Tired Loaders	1	8.00	300	0.36

Grading	Off-Highway Trucks	2	4.00	402	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	10	25.00	0.00	78.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6164	6.3197	4.0303	9.5900e-003		0.2797	0.2797		0.2603	0.2603	0.0000	857.8225	857.8225	0.2529	0.0000	864.1445
Total	**0.6164**	**6.3197**	**4.0303**	**9.5900e-003**	**4.0000e-005**	**0.2797**	**0.2798**	**1.0000e-005**	**0.2603**	**0.2603**	**0.0000**	**857.8225**	**857.8225**	**0.2529**	**0.0000**	**864.1445**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	0.0106	1.5900e-003	3.0000e-005	6.7000e-004	3.0000e-005	7.1000e-004	1.8000e-004	3.0000e-005	2.2000e-004	0.0000	2.9441	2.9441	1.7000e-004	0.0000	2.9484
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0175	0.0143	0.1405	3.5000e-004	0.0358	2.5000e-004	0.0360	9.5000e-003	2.3000e-004	9.7300e-003	0.0000	31.6484	31.6484	1.0500e-003	0.0000	31.6745
Total	**0.0178**	**0.0248**	**0.1421**	**3.8000e-004**	**0.0364**	**2.8000e-004**	**0.0367**	**9.6800e-003**	**2.6000e-004**	**9.9500e-003**	**0.0000**	**34.5925**	**34.5925**	**1.2200e-003**	**0.0000**	**34.6229**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6164	6.3197	4.0303	9.5900e-003		0.2797	0.2797		0.2603	0.2603	0.0000	857.8214	857.8214	0.2529	0.0000	864.1435
Total	**0.6164**	**6.3197**	**4.0303**	**9.5900e-003**	**2.0000e-005**	**0.2797**	**0.2797**	**0.0000**	**0.2603**	**0.2603**	**0.0000**	**857.8214**	**857.8214**	**0.2529**	**0.0000**	**864.1435**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	0.0106	1.5900e-003	3.0000e-005	6.4000e-004	3.0000e-005	6.8000e-004	1.8000e-004	3.0000e-005	2.1000e-004	0.0000	2.9441	2.9441	1.7000e-004	0.0000	2.9484

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0175	0.0143	0.1405	3.5000e-004	0.0339	2.5000e-004	0.0342	9.0400e-003	2.3000e-004	9.2700e-003	0.0000	31.6484	31.6484	1.0500e-003	0.0000	31.6745
Total	**0.0178**	**0.0248**	**0.1421**	**3.8000e-004**	**0.0346**	**2.8000e-004**	**0.0348**	**9.2200e-003**	**2.6000e-004**	**9.4800e-003**	**0.0000**	**34.5925**	**34.5925**	**1.2200e-003**	**0.0000**	**34.6229**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.541740	0.038987	0.178620	0.126833	0.019742	0.005671	0.017070	0.060066	0.001326	0.001715	0.006244	0.000823	0.001163

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Unmitigated	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Total	**5.0000e-005**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.9000e-004**	**9.9000e-004**	**0.0000**	**0.0000**	**1.0600e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.9000e-004	9.9000e-004	0.0000	0.0000	1.0600e-003
Total	**5.0000e-005**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.9000e-004**	**9.9000e-004**	**0.0000**	**0.0000**	**1.0600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

Habitat Assessment

APPROXIMATELY 48-ACRE PROPERTY

CITY OF UPLAND, SAN BERNARDINO COUNTY, CALIFORNIA

Habitat Assessment

Prepared For:

Bridge Development Partners
1334 Parkview Avenue, Suite 310
Manhattan Beach, California 90266
Contact: *Brendan Kotler*

Prepared By:

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Santa Ana, California 92711
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November 2019

APPROXIMATELY 48-ACRE PROPERTY

CITY OF UPLAND, SAN BERNARDINO COUNTY, CALIFORNIA

Habitat Assessment

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Travis J. McGill
Director Biologist



Thomas J. McGill, Ph.D.
Managing Director

November 2019

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APPENDIX

Appendix A Site Photographs
Appendix B Potentially Occurring Special-Status Biological Resources
Appendix C Regulations

Section 1 Introduction

This report contains the findings of ELMT Consulting (ELMT) Habitat Assessment for the Approximately 48-Acre Property (Project) located in the City of Upland, San Bernardino County, California. ELMT biologists Travis J. McGill and Jacob H. Lloyd Davies inventoried and evaluated the condition of the habitat within the project site on August 29, 2019. The habitat assessment was conducted to characterize existing site conditions and to assess the probability of occurrence of special-status[1] plant and wildlife species that could pose a constraint to project implementation. This report provides an in-depth assessment of the suitability of the on-site habitat to support sensitive habitats (i.e., Riversidean alluvial fan sage scrub [RAFSS]), as well as several other special-status plant and wildlife species identified by the California Natural Diversity Data Base (CNDDB) and other electronic databases as potentially occurring in the vicinity of the project site.

1.1 PROJECT LOCATION

The project site is generally located north of Interstate 10, south of State Route 210, west of Interstate 15, and east of State Route 57 in the City of Upland, San Bernardino County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Ontario quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in Section 2 of Township 1 South, Range 8 West (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north of Foothill Boulevard (Route 66), west of Benson Avenue, East of Central Avenue, and south of Cable Airport within Assessor Parcel Numbers (APNs) 1006-351-09, 1006-351-10, 1006-572-11, 1006-551-12, 1006-551-22, and 1006-574-10. (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

The proposed Bridge Point Upland Project (proposed Project) is comprised of one warehouse/parcel delivery service building with an ancillary office/retail space on approximately 50.25 acres, as shown in Exhibit 4, *Depiction of Proposed Project.* The Project site is located on Assessor Parcel Nos. (APN) 1006-351-09, 1006-351-10, 1006-572-11, 1006-551-12, 1006-551-22, and 1006-574-10.

Project entitlement includes a Design Review and Site Plan Review application; a Lot Line Adjustment; and a determination from the Airport Land Use Committee that the Project is compatible with the Cable Airport Land Use Compatibility Plan. For additional information regarding the requested land use entitlements, please reference *Section III, Requested Approvals*.

The Project building is proposed to be one level and total approximately 201,096 square feet (sf), of which approximately 201,096 sf would be warehouse/parcel delivery uses and 10,000 sf would be office/retail uses. The office/retail component would include an office area for employees, and a small area for visitors to pick up pre-ordered packages. The site plan for the Project is shown in Exhibit 4. To be conservative, the

[1] As used in this report, "special-status" refers to plant and wildlife species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society (CNPS) Rare Plant Rank; and wildlife species that are designated by the California Department of Fish and Wildlife (CDFW) as fully protected, species of special concern, or watch list species.

Initial Study and technical studies prepared for this Project analyzed a 276,250 sf building, which is 75,154 square feet more than the 201,096 sf building shown in Figure 3. Therefore, the Initial Study and technical analyses likely overestimate the environmental impacts of the Project that will be constructed substantially consistent with Exhibit 4.

The western building frontage would include 16 dock-hi doors for trucks, and 8 van loading doors would be located on each of the northern and southern building frontages. The Project would require a minimum of 220 automobile parking spaces, and approximately 337 automobile parking spaces would be provided. Trailer parking for the warehouse building would include approximately 12 trailer stalls and an additional 1,104 van parking stalls would be located on-site.

Building Design

The warehouse/parcel delivery service building is designed as a class A building. The building architecture features a modern aesthetic including glazing with brow projections to focus attention on the entries and street frontages. The major building material is concrete which lends itself to a modern palette with reveals to enhance the building architecture. The building would have a maximum height of approximately 44 feet with parapets and façade, which would provide depth and shadowing and points of visual interest for the architecture. This relief in the design also provides locations for accents in the landscape design.

Access and Parking

Vehicular access to the Project would be provided via 13th Street, the north leg of Central Avenue/Foothill Boulevard, and two right-in/right-out driveways on Foothill Boulevard. The driveway on 13th Street and two easterly driveways on Foothill Boulevard would provide access to automobiles and vans only; trucks would access the site only via the driveway at the north leg of Central Avenue/Foothill Boulevard. Street improvements would be provided along Foothill Boulevard parallel to the Project frontage for curbs, gutters, sidewalks, street lights, traffic signal equipment and signing and striping as required. Street improvements would also be made to Central Avenue and 13th Street.

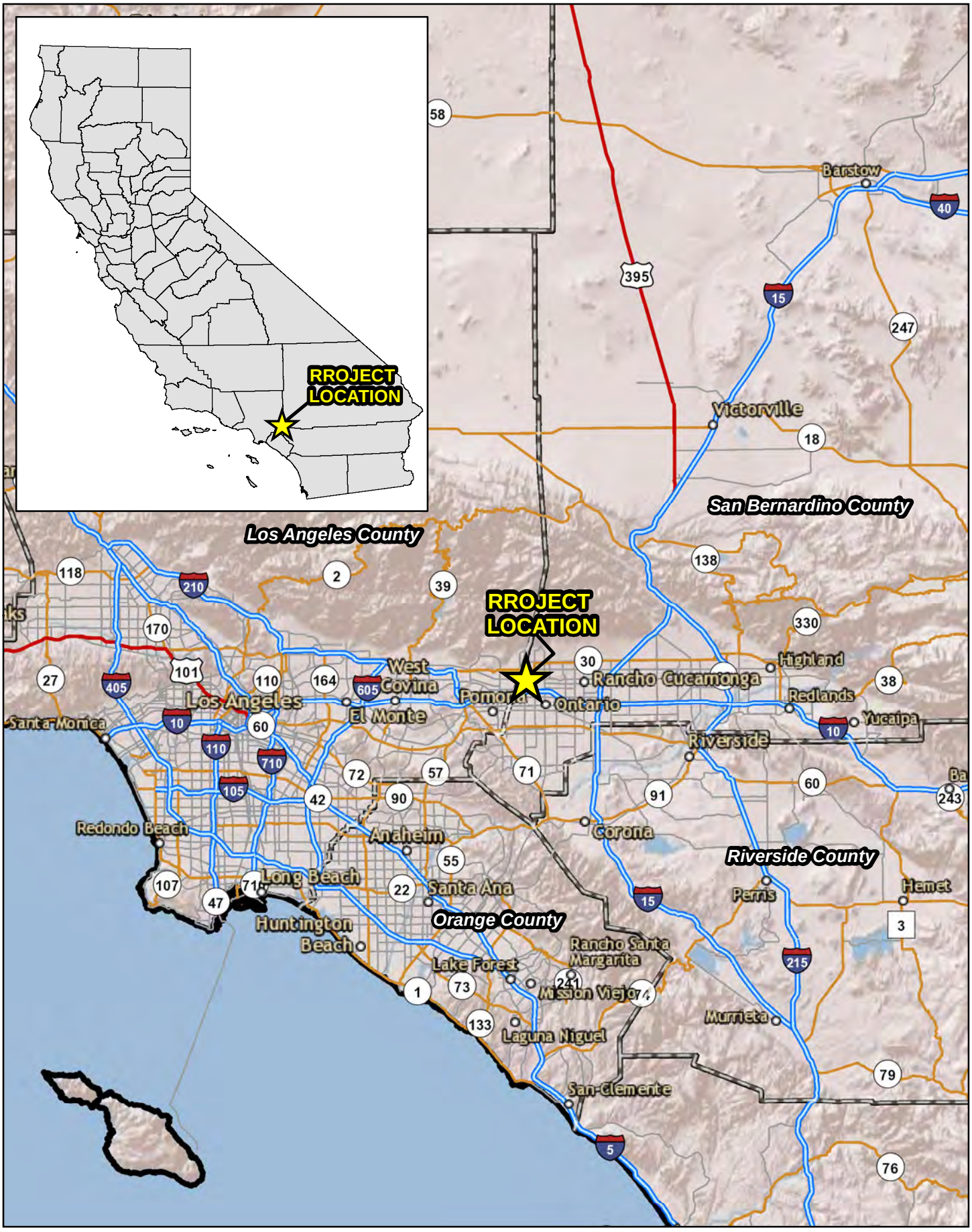
Landscaping

The Project would be landscaped along all four frontages of the site, including landscaped slopes along the western and southern portions of the site. Landscaping would also be installed throughout the parking areas. The conceptual landscape design would feature California drought tolerant and native species in an aesthetically pleasing and colorful palette.

The Project building would include 1,000 new trees and in excess of 10 acres (464,380 sf) of landscaping, which would account for more than 21% landscape coverage, more than four times the City's minimum requirement of 5%. The warehouse/parcel delivery service building would be setback more than 200 feet on the southern building frontage and would exceed minimum setback requirements of 5 feet for front and side setbacks and rear setbacks of 10 feet. Trees and other vegetation would serve to screen the van loading areas on the southern side of the building from Foothill Boulevard.

Construction

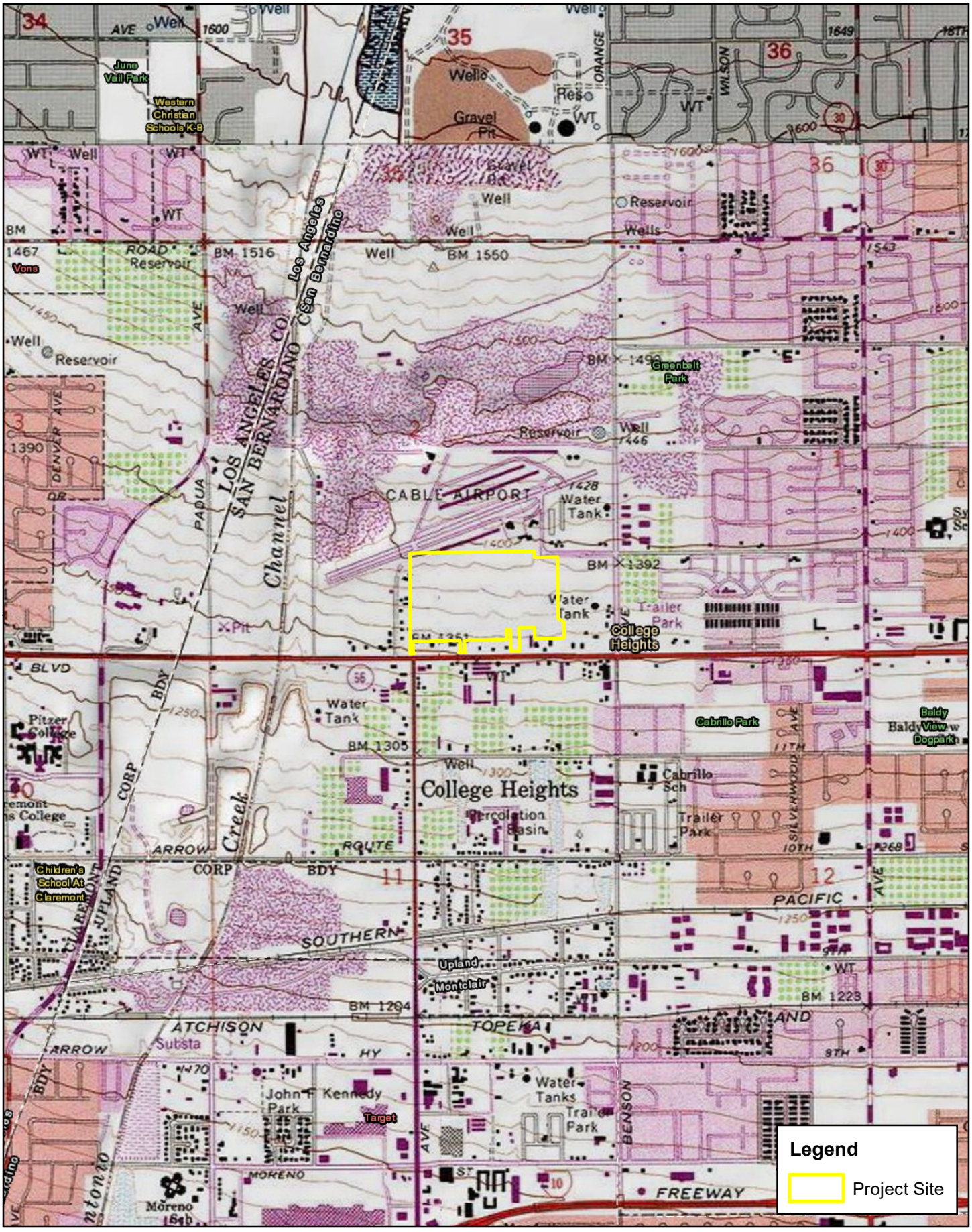
Construction of the proposed Project is expected to commence in the first Quarter of 2020 with a construction duration of approximately 7 months. Project construction would be completed in one phase with buildout by the third quarter of 2020. Total excavation and fill of soils for the proposed Project is mostly balanced with approximately 431 cubic yards (cy) of exported soil.



APPROXIMATELY 48-ACRE PROPERTY

Regional Vicinity

Exhibit 1



0 500 1,000 2,000 Feet

Source:USA Topographic Maps

APPROXIMATELY 48-ACRE PROPERTY

Site Vicinity

Exhibit 2



ELMT CONSULTING

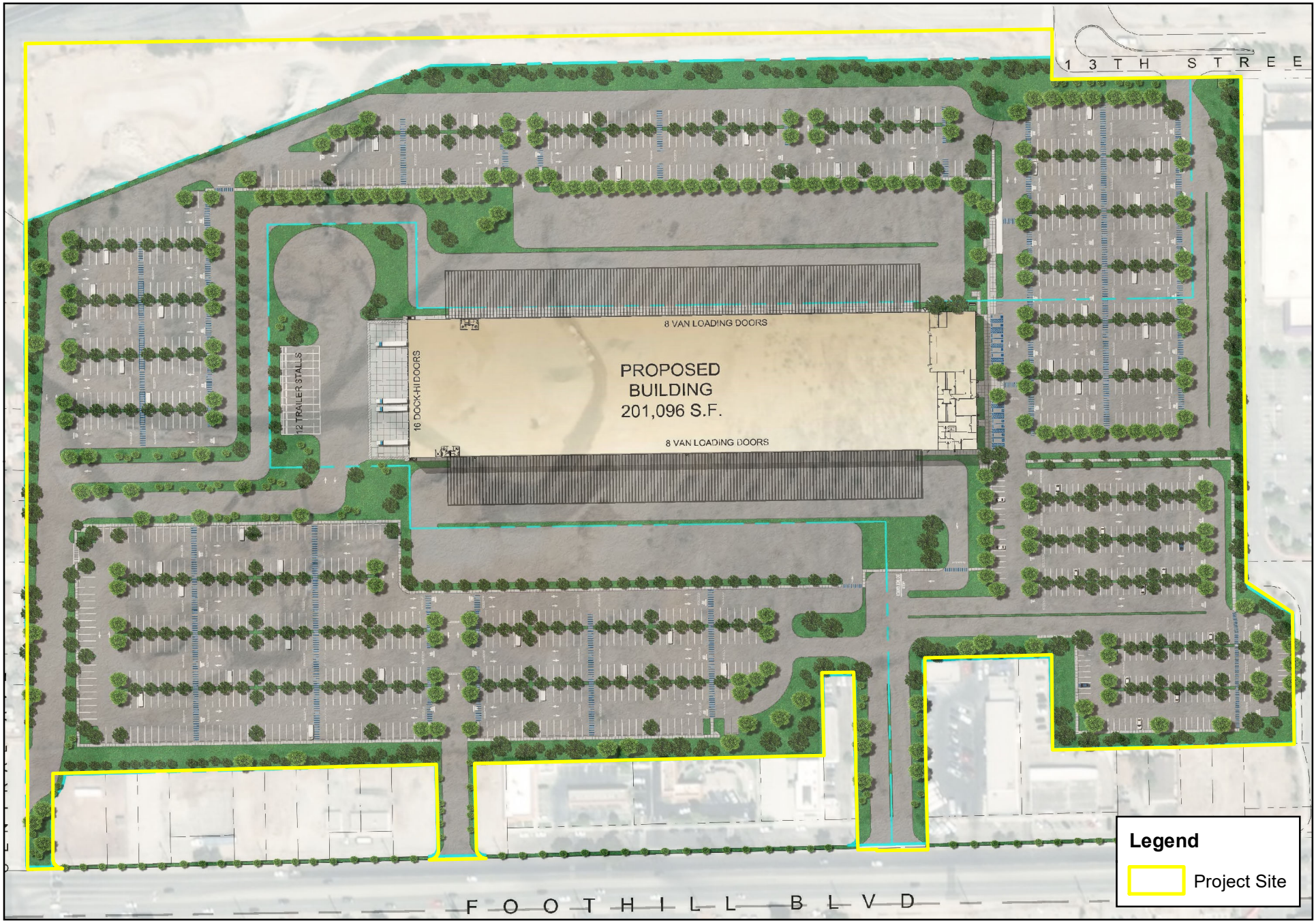
0 250 500 1,000 Feet

Source: ESRI Aerial Imagry, San Bernardino County

APPROXIMATELY 48-ACRE PROPERTY

Project Site

Exhibit 3



ELMT CONSULTING

0 125 250 500 Feet

Source: ESRI Aerial Imagry, San Bernardino County

APPROXIMATELY 48-ACRE PROPERTY

Depiction of Propsoed Project

Exhibit 4

Section 2 Methodology

A literature review and records search were conducted to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site. In addition to the literature review, a general habitat assessment or field investigation of the project site was conducted. The field investigation was conducted to document existing conditions within the project site and assess the potential for special-status biological resources to occur.

2.1 LITERATURE REVIEW

Prior to conducting the field investigation, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW QuickView Tool in the Biogeographic Information and Observation System (BIOS), CNDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

All available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site were reviewed to understand existing site conditions and note the extent of any disturbances that have occurred on the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources, as well as the following resources:

- Google Earth Pro historic aerial imagery (1993-2018);
- Historic Aerial Viewer imagery (1938-2016);
- San Bernardino County General Plan;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey; and
- USFWS Critical Habitat designations for Threatened and Endangered Species.

The literature review provided a baseline from which to inventory the biological resources potentially occurring on the subject property. The CNDDB database was used, in conjunction with ArcGIS software, to locate the nearest recorded occurrences of special-status species and determine the distance from the project site.

2.2 FIELD INVESTIGATION

ELMT biologists Travis J. McGill and Jacob H. Lloyd Davies evaluated the extent and conditions of the plant communities found within the boundaries of the project site on August 29, 2019. Plant communities identified on aerial photographs during the literature review were verified in the field by walking meandering transects through the on-site plant communities and along boundaries between plant communities. The plant communities were evaluated for their potential to support special-status plant and wildlife species. In addition, field staff identified any natural corridors and linkages that may support the movement of wildlife through the area. Special attention was given to special-status habitats and/or undeveloped areas, which have higher potentials to support special-status plant and wildlife species.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted.

2.3 SOIL SERIES ASSESSMENT

On-site and adjoining soils were researched prior to the field survey using the USDA NRCS Soil Survey for San Bernardino County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes that the project site has undergone.

2.4 PLANT COMMUNITIES

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were classified in accordance with Sawyer, Keeler-Wolf and Evens (2009), CDFW (2010) and Holland (1986), delineated on an aerial photograph, and then digitized into ArcGIS. The ArcGIS application was used to compute the area of each plant community in acres.

2.5 PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.6 WILDLIFE

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides were used to assist with identification of wildlife species during the survey included The Sibley Field Guide to the Birds of Western North America (Sibley 2003), A Field Guide to Western Reptiles and Amphibians (Stebbins 2003), and A Field Guide to Mammals of North

America (Reid 2006). Although common names of wildlife species are fairly well standardized, scientific names are provided immediately following common names in this report (first reference only).

2.7 JURISDICTIONAL DRAINAGES AND WETLANDS

Aerial photography was reviewed prior to conducting a field investigation in order to locate and inspect any potential natural drainage features, ponded areas, or water bodies that may be considered riparian/riverine habitat and/or fall under the jurisdiction of the United State Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory jurisdiction.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

San Bernardino County is characterized by cool winter temperatures and warm summer temperatures, with its rainfall occurring almost entirely in the winter. Relative to other areas in Southern California, winters are colder with chilly to cold morning temperatures common. Climatological data obtained for the City of Highland indicates the annual precipitation averages 1.37 inches per year. Almost all of the precipitation occurs in the months between January and March, with hardly any occurring in July. The wettest month is February, with a monthly average total precipitation of 3.70 inches. The average maximum and minimum temperatures for the region are 80.2 and 51.7 degrees Fahrenheit (F) respectively with July and August (monthly average 96° F) being the hottest months and December (monthly average 41° F) being the coldest. The temperature during the site visit was in the mid-80s ° F with minimal clouds present overhead and calm winds.

3.2 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 1,350 to 1,400 feet above mean sea level and generally slopes from north to south. The project site is generally flat with no areas of significant topographic relief except for the northwest corner of the project site that supports a sand and gravel processing plant. This processing plant has created small mounds of earthen material altering the topography of the northwest corner. According to the Custom Soil Resource Report, the subject property is underlain by the following soil units: Soboba stony loamy sand (2 to 9 percent slopes), and Soboba gravelly loamy sand (0 to 9 percent slopes) (Exhibit 5, *Soils*). Soils on-site have been mechanically disturbed from historic land uses (i.e., sand and gravel processing plant, and weed abatement activities) and support rocky and compacted soils.

3.3 SURROUNDING LAND USES

The project site is located in an urbanized area and is completely surrounding by existing development. The project site is bordered by Cable Airport to the north, and commercial developments to the south, east and west.



ELMT CONSULTING

0 250 500 1,000 Feet

Source: ESRI Aerial Imagry, San Bernardino County

APPROXIMATELY 48-ACRE PROPERTY

Soils

Exhibit 5

Section 4 Discussion

4.1 SITE CONDITIONS

The project site consists of both disturbed and undeveloped land that has been subject to a variety of human-related disturbances from sand and gravel processing activities, surrounding developments, weed abatement activities, illegal dumping, and homeless encampments. A sand and gravel processing plant is located on the northwest corner of the project site which has eliminated the natural plant communities that once occurred on the northwest corner of the project site. Further, due to many years of illegal trespassing and dumping, numerous trash and debris piles were observed throughout the project site. Recent mowing and weed abatement activities have added to the refuse piles and significantly thinned vegetation on-site. These activities left many of the larger canopy species (i.e. scale broom [*Lepidospartum squamatum*], laurel sumac [*Malosma laurina*], etc.) intact, but have cleared the areas around them of low-growing plant species. As a result, plant communities on-site have been heavily disturbed and fragmented. These land uses have resulted in the majority of the project site being converted to a mosaic of highly disturbed plant communities that have been cut off from the influences of San Antonio Creek.

4.2 VEGETATION

Two (2) plant communities were observed within the boundaries of the project site during the habitat assessment: disturbed scalebroom scrub and non-native grassland (Exhibit 6, *Vegetation*). In addition, the project site contains a land cover type that would be classified as disturbed. These plant communities and land cover type are described in further detail below.

4.2.1 Disturbed Scalebroom Scrub

The disturbed scalebroom scrub plant community was primarily observed on the eastern half of the project site. This plant community has been heavily disturbed by surrounding development, illegal dumping, and weed abatement activities. Soils within this plant community are rocky and compacted. Trash and debris piles were observed throughout this plant community. Further, this plant community has been cut off from the fluvial processes since Cable Airport was developed to the north. Predominant plant species observed within this plant community on-site, that were observed in patches throughout the site, include scalebroom, laurel sumac, California buckwheat (*Eriogonum fasciculatum*), yerba santa (*Eriodictyon trichocalyx*), coyote bush (*Baccharis pilularis*), pine goldenbush (*Ericameria pinifolia*), poison oak (*Toxicodendron diversifolum*), sugarbush (*Rhus ovata*), common phacelia (*Phacelia distans*), sapphire woollystar (*Eriastrum sapphirinum*), showy penstemon (*Penstemon spectabilis*), and prickly pear (*Opuntia littoralis*). Short-podded mustard (*Hirschfeldia incana*) was observed interspersed throughout the understory of this plant community.

4.2.2 Non-Native Grassland

On the southwest corner of the project site, south of the existing sand and gravel processing plant, a heavily disturbed non-native grassland plant community was observed that was dominated non-native and early successional plant species. Additional patches of disturbed non-native grassland plant community were



ELMT CONSULTING

0 250 500 1,000 Feet

APPROXIMATELY 48-ACRE PROPERTY

Vegetation

Exhibit 6

observed along the southern boundary of the project site and eastern half of the project site, intermixed in a mosaic with native patches across the eastern half of the project site. Many of these patches are likely the result of mowing activities. Dominant plant species observed within this plant community include short-podded mustard, tree tobacco (*Nicotiana glauca*), Bermuda grass (*Cynodon dactylon*), Russian thistle (*Salsola tragus*), white horehound (*Marrubium vulgare*), tumbling pigweed (*Amaranthus albus*), and castor bean (*Ricinus communis*).

4.2.3 Disturbed

Disturbed areas are generally areas that have been subject to a high level of human disturbances and no longer comprise a native plant community. These areas are unpaved and are primarily or entirely devoid of vegetation, or support ruderal/weedy plant species. Within the project site, disturbed areas were observed on the northwest corner of the project site in association with the sand and gravel processing plant and on the northeastern portion of the project site. In addition, disturbed areas within the project site include several dirt access roads that traverse the project site.

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting and denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that were observed during the field survey or that are expected to occur within the project site. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the field survey was conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation.

4.3.1 Fish

No fish or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) with frequent sources of water that would that would provide suitable habitat for fish were observed on or within the vicinity of the project site. Therefore, no fish are expected to occur and are presumed absent from the project site.

4.3.2 Amphibians

No amphibians or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) that would provide suitable habitat for amphibian species were observed on or within the vicinity of the project site. Therefore, no amphibians are expected to occur on the project site and are presumed absent.

4.3.3 Reptiles

The project site provides a limited amount of habitat for a few reptile species adapted to a high degree of human disturbance associated with the on-site agricultural activities and surrounding development. The only reptilain species obseved on-stie during the field investigaiton were Great Basin fence lizard (*Sceloporus occidentalis longipes*), and common side-blotched lizard (*Uta stansburiana elegans*). Other common reptilian species expected to occur on-site include gopher snake (*Pituophis catenifer*), and southern alligator lizard (*Elgaria multicarinata*). Due to the high level of anthropogenic disturbances on-site, and surrounding development, no special-status reptilian species are expected to occur on-site.

4.3.4 Birds

The project site provides suitable foraging and cover habitat for a variety of resident and migrant bird species. Bird species detected during the field survey include Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), California towhee (*Melozone crissalis*), and rock pigeon (*Columba livia*). Due to the high level of anthropogenic disturbances on-site, and surrounding development, no special-status bird species are expected to occur on-site.

4.3.5 Mammals

The project site and surrounding areas have the potential to support mammalian species adapted to human presence and disturbance. The only mammalian species observed during the field investigation was Audubon's cottontail (*Sylvilagus audubonii*) and California ground squirrel (*Otospermophilus beecheyi*). Other common mammalian species expected to occur include coyote (*Canis latrans*), opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*). No bat species are expected to occur due to a lack of suitable roosting habitat (i.e., trees, crevices, abandoned structures) within and surrounding the project site.

4.4 NESTING BIRDS

No active nests or birds displaying nesting behavior were observed during the field survey. The project site and surrounding area provides suitable foraging and minimal nesting habitat for year-round and seasonal avian residents, as well as migrating songbirds that could occur in the area that area adapted to urban environments. The project site has the potential to provide suitable nesting opportunities for birds. A pre-construction nesting bird clearance survey shall be conducted within three (3) days prior to ground disturbance to ensure no nesting birds will be impacted from site development.

4.5 WILDLIFE CORRIDORS AND LINKAGES

Habitat linkages provide links between larger undeveloped habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The project site has not been identified as a wildlife corridor or linkage in accordance with the San Bernardino County General Plan. The proposed development will be confined to existing areas that have been heavily disturbed and surrounded by development. The project site is isolated from regional wildlife corridors and linkages, and there are no riparian corridors, creeks, or useful patches of stepping stone habitat (natural areas) within or connecting the project site to the San Gabriel Mountains. As such, development of the project site is not expected to impact wildlife movement opportunities or prevent existing wildlife movement corridors in the region from functioning. Therefore, impacts to wildlife corridors or linkages are not expected to occur.

4.6 STATE AND FEDERAL JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge and/or fill materials into "waters of the United States" pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act and the CDFW regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the California Fish and Game Code.

No jurisdictional drainage and/or wetland features were observed within the project site during the field survey. Therefore, development of the project site will not result in impacts to Corps, Regional Board, or CDFW jurisdiction and regulatory approvals will not be required. There are no existing blueline streams traversing the project site. Further, the development of Cable Airport north of the project site and channelization of San Antonio Creek has eliminated any potential water movement from north to south across the project site.

4.7 SPECIAL-STATUS BIOLOGICAL RESOURCES

The CNDDB Rarefind 5 and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California were queried for reported locations of special-status plant and wildlife species as well as special-status natural plant communities in the Ontario USGS 7.5-minute quadrangle. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified eighteen (18) special-status plant species, forty (40) special-status wildlife species, and one (1) special-status plant community as having potential to occur within the Ontario quadrangle. Special-status plant and wildlife species were evaluated for their potential to occur within the project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in *Table B-1: Potentially Occurring Special-Status Biological Resources*, provided in Appendix B. Refer to Table B-1 for a determination regarding the potential occurrence of special-status plant and wildlife species within the project site.

4.7.1 Special-Status Plants

According to the CNDDB and CNPS, eighteen (18) special-status plant species have been recorded in the Ontario quadrangle (refer to Appendix B). The project site primarily consists of vacant, undeveloped land that has been subject to a variety of anthropogenic disturbances from sand and gravel activities and weed abatement activities, surrounding development, and illegal trash dumping. These disturbances, and surrounding development have isolated the proposed project site form undisturbed native plant communities which has reduced, if not eliminated, the ability of the project site to provide suitable habitat for special-status plant species. Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, it was determined that the project site does

not provide suitable habitat for any of the special-status plant species known to occur in the area and are presumed to be absent from the project site.

4.7.2 Special-Status Wildlife

According to the CNDDB, forty (40) special-status wildlife species have been reported in the Ontario quadrangle (refer to Appendix B). No special-status wildlife species were observed on-site during the habitat assessment. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the proposed project site has a moderate potential to provide suitable habitat for Cooper's hawk (*Accipiter cooperii*), a low potential to provide suitable habitat for Costa's hummingbird (*Calypte costae*). Further, it was determined that the project site does not provide suitable habitat for any of the other special-status wildlife species known to occur in the area since the project site has been heavily disturbed from on-site disturbances and existing development.

In order to ensure impacts to Cooper's hawk and Costa's hummingbird do not occur from site development, a pre-construction nesting bird clearance survey shall be conducted within three (3) days prior to ground disturbance. With implementation of a pre-construction nesting bird clearance survey, impacts to these species will be less than significant and no mitigation will be required.

4.7.3 Special-Status Plant Communities

The CNDDB lists one (1) special-status plant community as being identified within the Ontario USGS 7.5-minute quadrangle: Riversidean Alluvial Fan Sage Scrub. A heavily disturbed/fragmented scalebroom scrub plant community was observed on the project site during the field investigation, that has been cut off from fluvial processes and is isolated from natural undisturbed habitats. No special-status plant communities were observed on-site.

4.7.3.1 Riversidean Alluvial Fan Sage Scrub

Riversidean alluvial fan sage scrub (RAFSS) is considered a sensitive plant community and is listed by CDFW as rare. RAFSS is a vegetation type in which scale broom (*Lepidospartum squamatum*) is dominant, co-dominant, or conspicuous in the shrub canopy. Scale broom, a member of the aster family, is a long-lived, deep-rooted shrub found in riverine or alluvial soils, often in dry washes.

RAFSS is a plant community restricted to intermittently or rarely-flooded, low-gradient alluvial deposits along streams, washes, and fans within large canyons on the coastal slopes of the San Gabriel Mountains and San Bernardino Mountains in San Bernardino County. This community is composed of a variety of drought-deciduous subshrubs and large evergreen woody shrubs. In addition to scale broom, woody shrubs such as chamise (*Adenostoma fasciculatum*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and yerba santa (*Eriodictyon trichocalyx*) are present in RAFSS. Common subshrubs include deerweed (*Acmispon glaber*), matchweed (*Gutierrezia californica*), and Douglas' nightshade (*Solanum douglasii*). Native species found within the herbaceous understory include common fiddleneck (*Amsinckia intermedia*), croton (*Croton californicus*), and cryptantha (*Cryptantha* spp.). Due to intense, periodic flooding and erosion within the alluvial plain, a series of step-like terraces are created above wash channels, each exhibiting a different successional phase. These phases are related to the amount of time

elapsed since the most recent flood and occur as a sequential gradation of terrace types with increasing distance from the active channel.

Three phases (pioneers, intermediate, and mature), as well as two associated terrace levels of RAFSS plant communities have been described. The descriptions and the locations of the phases and terrace levels are provided below:

Terrace 1: Young or Pioneer Phase:

Sparsely vegetated with low species diversity and it is typically located within active stream channels or recently scoured streambeds. This terrace requires approximately 3 to 6 years to become established after a flood disturbance.

Terrace 2: Intermediate Phase:

Consists of relatively dense vegetation dominated by scale broom and California buckwheat, as well as grasses and other herbaceous species. This terrace requires approximately 5 to 14 years to become established after a flood disturbance.

Terrace 3: Old or Mature Phase:

Denser that Terrace 2, but includes yerba santa, cacti (*Opuntia* spp.), and chaparral yucca (*Hesperoyucca whipplei*). Very few annual species are present. This terrace requires approximately 6 to 18 years to become established after a flood disturbance.

Terrace 4: Isolated Phase:

Consists of other fully developed shrubs such as chamise, yerba santa, white sage, black sage (*Salvia mellifera*), and chaparral yucca. Emergent trees including mountain mahogany (*Cercocarpus betuloides*) and blue elderberry (*Sambucus nigra ssp. caerulea*) are also present at low cover. This terrace requires up to 15 years to become established after a flood disturbance.

Terrace 5: Isolated Phase:

Terrace 5 is another designation that was given to terraces located outside of the floodplain that are cut off from the active stream channel. Terrace 5 vegetation is succeeding to upland chaparral. Additional species present in this terrace include bigpod ceanothus (*Ceanothus megacarpus*), laurel sumac (*Malosma laurina*), holly-leaved cherry (*Prunus ilicifolia*), and California sycamore (*Platanus racemosa*).

A heavily disturbed/fragmented scalebroom scrub plant community was observed on the eastern half of the project site. This disturbed scalebroom scrub plant community has been effectively cut-off from the historic fluvial flow patterns and scouring regimes of San Antonio Creek and historic water flows exiting the San Gabriel Mountains due to the construction of Interstate 210, Cable Airport, surrounding developments, and flood control structures since 1945 when Cable Airport was installed. Channelization of San Antonio Creek for flood control purposes has changed the hydrology of the area, further altering the natural habitats in the

immediate vicinity of the project site. These activities have eliminated the fluvial processes from this area which are needed to maintain the physical and biotic attributes needed to provide suitable habitat for special-status plant and wildlife species associated with the RAFSS plant communities. Flooding events that characterize this plant community have not occurred in the general vicinity since the construction of Cable Airport, resulting in a change in soil and vegetation characteristics altering the composition of the plant community.

The isolated, heavily disturbed, and senescing scalebroom scrub habitat that occurs on the project site, can be classified as Terrace 5 RAFSS habitat. The habitats have either succeeded to upland chaparral habitat or are no longer functioning as viable RAFSS habitat with long-term conservation value for the following reasons:

- The project site's RAFSS habitat has been extensively disturbed by human activity for decades, and is heavily fragmented by roads, trails, and other human development. A sand and gravel processing plant is located on the northwest corner of the project site and the project site is surrounding be existing development. Additionally, due to many years of illegal trespassing and dumping, numerous trash and debris piles of varying size were observed throughout the project site.

- The RAFSS habitat is isolated from the historic fluvial flow patterns and scouring regimes due to the development of Cable Airport in 1945 and surrounding commercial development. Surrounding development has isolated the project site from undisturbed, natural plant communities in the region, and channelization of natural drainages has further isolated the habitat on the project site.

- The elimination of fluvial processes from the project area has removed the physical and biotic attributes needed to support viable RAFSS habitat and special-status plant and wildlife species. Flooding events vital to maintaining this plant community have not occurred on the project site since the development of Cable Airport in 1945, approximately 74 years ago.

- The RAFSS habitat is not occupied by any listed or otherwise special-status plant or animal species, indicating minimal or no value as biological habitat.

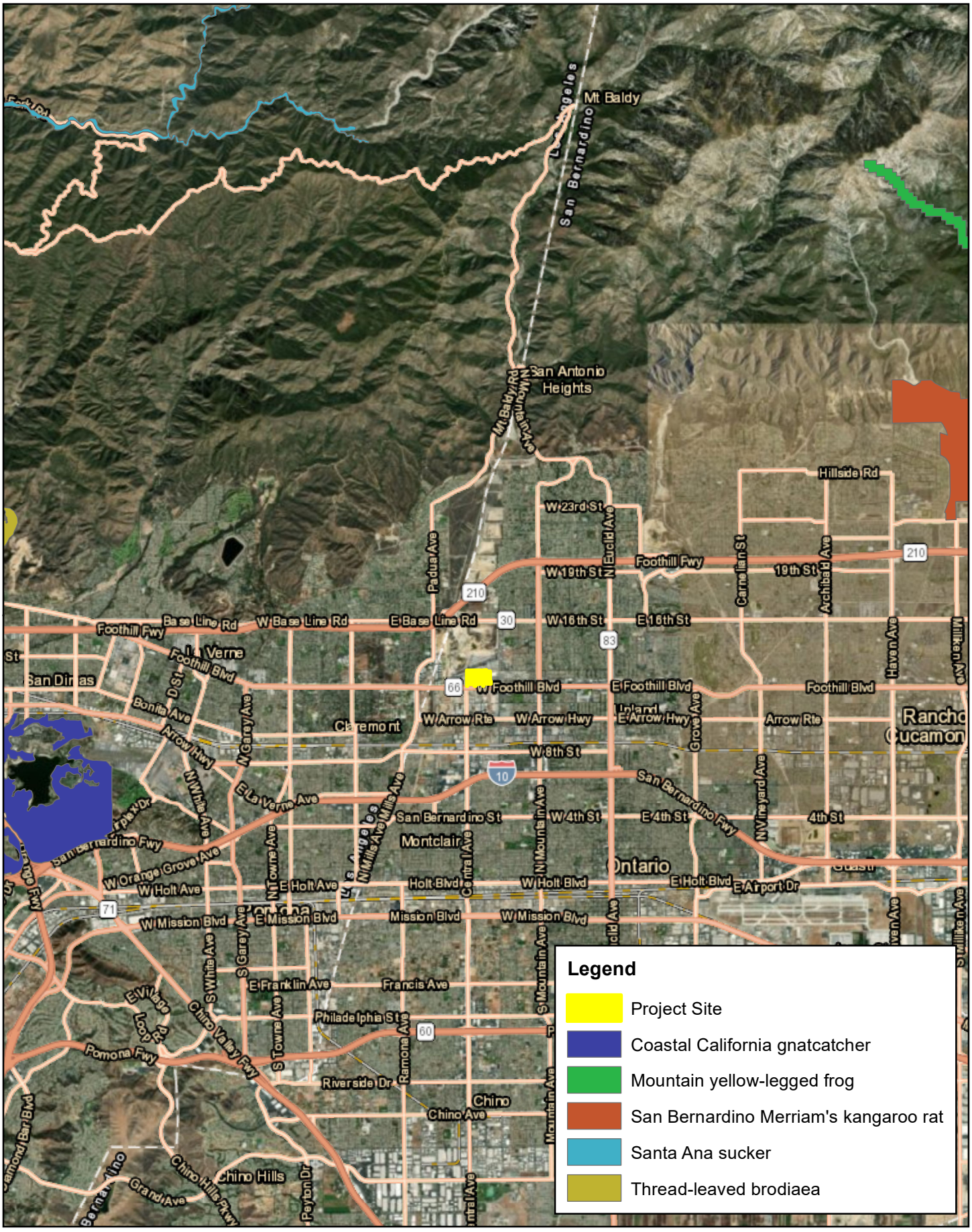
Accordingly, the loss of the disturbed, fragmented, low-quality scalebroom scrub on the project site is not considered a significant impact and requires no mitigation.

4.8 CRITICAL HABITAT

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. All federal agencies are required to consult with the United States Fish and Wildlife Service (USFWS) regarding activities they authorize, fund, or permit which may affect a federally listed species or its

designated Critical Habitat. The purpose of the consultation is to ensure that projects will not jeopardize the continued existence of the listed species or adversely modify or destroy its designated Critical Habitat. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing is on federal lands, uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highways Administration or a CWA Permit from the Corps). If a there is a federal nexus, then the federal agency that is responsible for providing the funding or permit would consult with the USFWS.

The project site is not located within federally designated Critical Habitat. The closest Critical Habitat designation is located approximately 6 miles southwest of the project site in association with Puddingstone Reservoir for California gnatcatcher (*Polioptila californica*) (Exhibit 7, *Critical Habitat*).



ELMT CONSULTING

0 5,000 10,000 20,000 Feet

Source: ESRI World Imagery, San Bernardino County

APPROXIMATELY 48-ACRE PROPERTY

Critical Habitat

Exhibit 7

Section 5 Conclusion and Recommendations

The project site consists of both disturbed and undeveloped land that has been subject to a variety of human-related disturbances from sand and gravel processing activities, surrounding developments, weed abatement activities, illegal trash dumping, and homeless encampments. These land uses have resulted in the majority of the project site being converted to a mosaic of highly disturbed plant communities that have been cut off from the influences of San Antonio Creek. Two (2) plant communities were observed within the boundaries of the project site during the habitat assessment: disturbed scalebroom scrub and non-native grassland. In addition, the project site contains a land cover type that would be classified as disturbed.

No special-status plant species were observed on-site during the field survey. On-site disturbances have reduced, if not eliminated, the ability of the project site to provide suitable habitat for special-status plant species. Based on habitat requirements for specific special-status plant species and the availability and quality of habitat needed by each species, it was determined that the project site does not provide suitable habitat for any of the special-status plant species that were determined to have the potential to occur in the vicinity of the project site.

No special-status wildlife species were observed during the field investigation. Based on the field investigation, it was determined that the project site has a moderate potential to provide habitat for Cooper's hawk and Costa's hummingbird. All remaining special-status wildlife species are presumed to be absent from the project site based on habitat requirements, availability and quality of habitat needed by each species, and known distributions.

No jurisdictional drainage, and/or wetland features were observed within or adjacent to the project site. Therefore, development of the project site will not result in impacts to Corps, Regional Board, and/or CDFW jurisdictional areas and regulatory approvals will not be required.

Based on the proposed project footprint, and with the implementation of a pre-construction nesting bird clearance survey, none of the special-status species known to occur in the general vicinity of the project site will be directly or indirectly impacted from implementation of the proposed project. Therefore, it was determined that this project will have "no effect" on federally or State listed species or habitats known to occur in the general vicinity of the project site. Additionally, the project will have "no effect" on designated Critical Habitats.

Migratory Bird Treaty Act and Fish and Game Code Compliance

In order to ensure compliance with the Migratory Bird Treaty Act (MBTA) and Fish and Game Code, it is recommended that construction activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. Nesting birds are protected pursuant to the MBTA and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the

clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For listed and raptor species, this buffer should be expanded to 500 feet. A biological monitor should be present to delineate the boundaries of the buffer area and monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

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U.S. Department of the Interior, Geological Survey (USGS). 1979. 7.5-minute topographic map for the Corona South quadrangle.

Appendix A Site Photographs



Photograph 1: From the southeast corner of the project site looking north along the eastern boundary.



Photograph 2: From the northeast corner of the project site looking south along the eastern boundary.



Photograph 3: Looking west at the rocky soils on the eastern portion of the project site.



Photograph 4: From the southeastern portion of the project site looking north.



Photograph 5: Looking at the eastern portion of the site. Recent mowing activities have thinned the non-native grasses/shrubby understory.



Photograph 6: Looking at vegetation on the eastern boundary of the project site.



Photograph 7: Illegal trash piles onsite.



Photograph 8: Looking north at the dirt and gravel piles from the on-site processing plants on the north west corner of the site.



Photograph 9: From the southwest corner of the project site looking northeast at the non-native grassland/disturbed habitats.



Photograph 10: Looking southwest from the northwest corner towards the on-site rock and gravel piles.



Photograph 11: Piles of plant material resulting from weed abatement activities, combined with existing illegal dumping.



Photograph 12: Non-native grassland habitat on dirt and gravel piles.

Appendix B Potentially Occurring Special-Status Biological Resources

Table B-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
SPECIAL-STATUS WILDLIFE SPECIES				
Accipiter cooperii Cooper's hawk	Fed: None CA: WL	Generally found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests, but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	**Moderate**. The project site provides suitable foraging opportunities for this species, but no suitable nesting opportunities.
Anniella stebbinsi southern California legless lizard	Fed: None CA: SSC	Mostly found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. They live mostly underground, burrowing in the loose sandy soils.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Anodonta californiensis California floater	Fed: None CA: None	Limited to fresh water shallow muddy or sandy habitat in large rivers, reservoirs, and lakes.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Antrozous pallidus pallid bat	Fed: None CA: SSC	Locally common species of low elevation in California. Occurs in grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Arizona elegans occidentalis California glossy snake	Fed: None CA: SSC	Inhabits arid scrub, rocky washes, grassland, and chaparral. Appears in microhabitats of open areas and areas with soil loose enough for easy burrowing.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Artemisiospiza belli belli Bell's sage sparrow	Fed: None CA: WL	Occurs in chaparral dominated by fairly dense stands of chamise. Also found in coastal sage scrub in south of range.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Aspidoscelis tigris stejnegeri coastal whiptail	Fed: None CA: SSC	Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage - chaparral, woodland, and riparian areas.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Athene cunicularia burrowing owl	Fed: None CA: SSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Bombus crotchii Crotch bumble bee	Fed: None CA: None	Exclusive to coastal California east towards the Sierra-Cascade Crest; less common in western Nevada.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Buteo swainsoni Swainson's hawk	Fed: None CA: **THR**	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Calypte costae Costa's hummingbird	Fed: None CA: None	Desert and semi-desert, arid brushy foothills and chaparral. A desert hummingbird that breeds in the Sonoran and Mojave Deserts. Departs desert heat moving into chaparral, scrub, and woodland habitats.	No	**Low**. The project site provides marginal habitat for this species.
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	Fed: None CA: SSC	Occurs in coastal sage scrub with patches of tall *Opuntia* cacti for nesting and breeding. This coastal population appears to nest almost exclusively in *Opuntia* cacti of at least 1m in height.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	Fed: None CA: SSC	Occurs in desert and coastal habitats in southern California, Mexico, and northern Baja California, from sea level to at least 1,400 meters above msl. Found in a variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Requires low growing vegetation or rocky outcroppings, as well as sandy soils for burrowing.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Circus hudsonius northern harrier	Fed: None CA: SSC	Most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. They breed in freshwater and brackish marshes, lightly grazed meadows, old fields, tundra, dry upland prairies, drained marshlands, high-desert shrubsteppe, and riverside woodlands. During winter they use a range of habitats with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Diadophis punctatus modestus San Bernardino ringneck snake	Fed: None CA: None	Common in open, relatively rocky areas within valley-foothill, mixed chaparral, and annual grass habitats.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Diplectrona californica California diplectronan caddisfly	Fed: None CA: None	Occurs in well-vegetated aquatic habitats, especially fast-flowing, cool streams. Larvae live in fixed retreats made from mostly plant materials and spin attached silken nets to filter food particles from the water.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat	Observed Onsite	Potential to Occur
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: **END** CA: SSC	Primarily found in Riversidian alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidian upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidian alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Emys marmorata western pond turtle	Fed: None CA: CSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 feet (1,800 m).	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Eumops perotis californicus western mastiff bat	Fed: None CA: SSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least three meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Falco columbarius merlin	Fed: None CA: WL	Nest in forested openings, edges, and along rivers across northern North America. Found in open forests, grasslands, and especially coastal areas with flocks of small songbirds or shorebirds.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Falco mexicanus prairie falcon	Fed: None CA: WL	In the winter, they prefer open desert habitat and grassland habitat. Breed in open, arid grassland with cliffs and bluffs for nesting.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Gonidea angulate western ridged mussel	Fed: None CA: None	Occurs on stable, highly oxygenated benthos in streams, rivers, and lakes. Requires water ways with low shear stress and high refuge availability. They rely on glochidial host fish for larvae survival and upstream migration.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Icteria virens yellow-breasted chat	Fed: None CA: SSC	Primarily found in tall, dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. Breeding habitat must be dense to provide shade and concealment. It winters south the Central America.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Lanius ludovicianus loggerhead shrike	Fed: None CA: SSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Lasiurus xanthinus western yellow bat	Fed: None CA: SSC	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Laterallus jamaicensis coturniculus California black rail	Fed: None CA: FP	Shallow marshes, and wet meadows; in winter, drier fresh-water and brackish marshes, as well as dense, deep grass.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Neotoma lepida intermedia San Diego desert woodrat	Fed: None CA: SSC	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Nyctinomops macrotis big free-tailed bat	Fed: None CA: SSC	Mainly inhabits rugged and rocky terrain. They prefer rocky cliffs in weather rock fissures and crevices. Also known to roost in buildings, and in terrestrial plants including ponderosa pine, Douglas firs, and desert shrubs.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Perognathus longimembris brevinasus Los Angeles pocket mouse	Fed: None CA: SSC	Resides in lower elevation grasslands and coastal sage scrub communities in and around the Los Angeles Basin. Prefers open ground with fine sandy soils. May not dig extensive burrows, but instead will seek refuge under weeds and dead leaves instead.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Phrynosoma blainvillii coast horned lizard	Fed: None CA: SSC	Found in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Polioptila californica californica coastal California gnatcatcher	Fed: **THR** CA: SSC	Obligate resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It prefers habitat with more low-growing vegetation.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Rana draytonii California red-legged frog	Fed: **THR** CA: SSC	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Salvadora hexalepis virgultea coast patch-nosed snake	Fed: None CA: SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Setophaga petechia yellow warbler	Fed: None CA: SSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Spea hammondii western spadefoot	Fed: None CA: SSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washed, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Spinus lawrencei Lawrence's goldfinch	Fed: None CA: None	Typical habitats include valley foothill hardwood, valley foothill hardwood-conifer, and, in southern California, desert riparian, palm oasis, pinyon-juniper, and lower montane habitats. Nearby herbaceous habitats often used for feeding. Open woodlands, chaparral, and weedy fields. Closely associated with oaks. Nests in open oak or other arid woodland and chaparral near water.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Taricha torosa Coast Range newt	Fed: None CA: SSC	Occurs in wet forests, oak forests, chaparral, and rolling grasslands. In southern California, drier chaparral, oak woodland, and grassland are used.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Thamnophis hammondii two-striped gartersnake	Fed: None CA: SSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
Thamnophis sirtalis ssp. south coast gartersnake	Fed: None CA: SSC	Utilizes a wide variety of habitats - forests, mixed woodlands, grassland, chaparral, farmlands, often near ponds, marshes, or streams.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Xanthocephalus xanthocephalus yellow-headed blackbird	Fed: None CA: SSC	Occurs in freshwater emergent wetlands, and moist, open areas along croplands and mud flats of lacustrine habitats. Prefers to nest in dense wetland vegetation characterized by tules, cattails, or other similar plant species along the border of lakes and ponds.	No	**Presumed Absent** There is no suitable habitat within or adjacent to the project site.
SPECIAL-STATUS PLANT SPECIES				
Berberis nevinii Nevin's barberry	Fed: **END** CA: **END** CNPS: 1B.1	Grows in sandy or gravelly soils within chaparral, cismontane woodland, coastal scrub, and riparian scrub habitats. Found at elevations ranging from 229 to 2,707 feet. Blooming period is from February to June.	No	**Presumed Absent** There is no suitable habitat on the project site.
Calochortus catalinae Catalina mariposa-lily	Fed: None CA: None CNPS: 4.2	Occurs on steep, north-facing slopes or in low-grade sandy washes in chaparral, cismontane woodland, coastal scrub, and riparian scrub. From 951 to 5,167 feet in elevation. Blooming period is from February to June.	No	**Presumed Absent** There is no suitable habitat on the project site.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley and foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. From 328 to 5,577 feet in elevation. Blooming period is from May to July.	No	**Presumed Absent** There is no suitable habitat on the project site.
Calystegia felix lucky morning-glory	Fed: None CA: None CNPS: 1B.1	Historically associated with wetland and marshy places, but possibly in drier in situations with silty loam and alkaline soils. Found in meadows and seeps and riparian scrub. Blooming period ranges from March to September.	No	**Presumed Absent** There is no suitable habitat on the project site.
Centromadia pungens* ssp. *laevis smooth tarplant	Fed: None CA: None CNPS: 1B.1	Occurs in alkaline soils within chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland habitats. Grows in elevation ranging from 0 to 2,100 feet. Blooming period ranges from April to September.	No	**Presumed Absent** There is no suitable habitat on the project site.
Chorizanthe parryi* var. *parryi Parry's spineflower	Fed: None CA: None CNPS: 1B.2	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. Found at elevations ranging from 951 to 3,773 feet. Blooming period is from April to June.	No	**Presumed Absent** There is no suitable habitat on the project site.
Cladium californicum California saw-grass	Fed: None CA: None CNPS: 2B.2	Found in meadows and seeps, marshes and swamps (alkaline or freshwater). Found at elevations ranging from -75 to 5,940 feet. Blooming period is from June to September.	No	**Presumed Absent** There is no suitable habitat on the project site.
Dodecahema leptoceras slender-horned spineflower	Fed: **END** CA: **END** CNPS: 1B.1	Chaparral, coastal scrub (alluvial fan sage scrub). Flood deposited terraces and washes. Found at elevations ranging from 1,181 to 2,690 feet. Blooming period is from April to June.	No	**Presumed Absent** There is no suitable habitat on the project site.
Horkelia cuneata* var. *puberula mesa horkelia	Fed: None CA: None CNPS: 1B.1	Occurs on sandy or gravelly soils in chaparral, woodlands, and coastal scrub plant communities. Found at elevations ranging from 230 to 2,657 feet. Blooming period is from February to September.	No	**Presumed Absent** There is no suitable habitat on the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Juglas californica southern California black walnut	Fed: None CA: None CNPS: 4.2	Found in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 164 to 2,953 feet. Blooming period is from March to August.	No	**Presumed Absent** There is no suitable habitat on the project site.
Juncus acutus ssp. leopoldiii Southwestern spiny rush	Fed: None CA: None CNPS: 4.2	Found in coastal dunes (mesic), meadows and seeps (alkaline seeps), and marshes and swamps (coastal salt). Found at elevations ranging from 0 to 3,115 feet. Blooming period is from May to July.	No	**Presumed Absent** There is no suitable habitat on the project site.
Lepidium virginicum* var. *robinsonii Robinson's pepper-grass	Fed: None CA: None CNPS: 4.3	Dry soils on chaparral and coastal sage scrub. Found at elevations ranging from 3 to 2,904 feet. Blooming period is from January to July.	No	**Presumed Absent** There is no suitable habitat on the project site.
Muhlenbergia californica California muhly	Fed: None CA: None CNPS: 4.3	Found in chaparral, coastal scrub, lower montane coniferous forest, meadows and seeps. Only known to occur in the San Bernardino Mountains. Found at elevations ranging from 328 to 6,562 feet. Blooming period is from June to September.	No	**Presumed Absent** There is no suitable habitat on the project site.
Navarretia prostrata prostrate vernal pool navarretia	Fed: None CA: None CNPS: 1B.1	Found in mesic soils in coastal scrub, meadows and seeps, valley and foothill grasslands (alkaline), and vernal pools. Found at elevations ranging from 65 to 2,100 feet. Blooming period is from April to July.	No	**Presumed Absent** There is no suitable habitat on the project site.
Pseudognaphalium leucocephalum white rabbit-tobacco	Fed: None CA: None CNPS: 2B.2	Grows in sandy, gravelly soils within chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 0 to 6,890 feet. Blooming period is from July to December.	No	**Presumed Absent** There is no suitable habitat on the project site.
Sidalcea neomexicana salt spring checkerbloom	Fed: None CA: None CNPS: 2B.2	Grows in alkaline, mesic soils in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Found at elevations ranging from 0 to 4,560 feet. Blooming period is from May to June.	No	**Presumed Absent** There is no suitable habitat on the project site.
Symphyotrichum defoliatum San Bernardino aster	Fed: None CA: None CNPS: 1B.2	Grows in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic). Can be found growing near ditches, streams, and springs within these habitats. Found at elevations ranging from 7 to 6,693 feet. Blooming period is from July to November.	No	**Presumed Absent** There is no suitable habitat on the project site.
Thysanocarpus rigidus rigid fringepod	Fed: None CA: None CNPS: 1B.2	Found in riparian dry rocky slopes, pinyon and juniper woodland. Blooming period is from February to May.	No	**Presumed Absent** There is no suitable habitat on the project site.

SPECIAL-STATUS PLANT COMMUNITIES				
Riversidian Alluvial Fan Sage Scrub	CDFW Sensitive Habitat	Occur within broad washes of sandy alluvial drainages that carry rainfall runoff sporadically in winter and spring, but remain relatively dry through the remainder of the year. Is restricted to drainages and floodplains with very sandy substrates that have a dearth of decomposed plant material. These areas do not develop into riparian woodland or scrub due to the limited water resources and scouring by occasional floods.	No	**Absent.** A heavily disturbed/fragmented scalebroom scrub plant community was observed onsite that has been cut off from fluvial processes and is isolated from natural, undisturbed habitats.

U.S. Fish and Wildlife Service (USFWS) - Federal
END- Federal Endangered
THR- Federal Threatened
Candidate END – Under Review

California Department of Fish and Wildlife (CDFW) - California
END- California Endangered
CSC- California Species of Concern
WL- Watch List
FP- California Fully Protected

California Native Plant Society (CNPS)
California Rare Plant Rank
1A- Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B- Plants Rare, Threatened, or Endangered in California and Elsewhere
2B- Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
4- Plants of Limited Distribution – A Watch List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Appendix C Regulations

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Regulations

Endangered Species Act of 1973

Federally listed threatened and endangered species and their habitats are protected under provisions of the Federal Endangered Species Act (ESA). Section 9 of the ESA prohibits "take" of threatened or endangered species. "Take" under the ESA is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The presence of any federally threatened or endangered species that are in a project area generally imposes severe constraints on development, particularly if development would result in "take" of the species or its habitat. Under the regulations of the ESA, the United States Fish and Wildlife Service (USFWS) may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

Critical Habitat is designated for the survival and recovery of species listed as threatened or endangered under the ESA. Critical Habitat includes those areas occupied by the species, in which are found physical and biological features that are essential to the conservation of an ESA listed species and which may require special management considerations or protection. Critical Habitat may also include unoccupied habitat if it is determined that the unoccupied habitat is essential for the conservation of the species.

Whenever federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the ESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers (Corps)).

If USFWS determines that Critical Habitat will be adversely modified or destroyed from a proposed action, the USFWS will develop reasonable and prudent alternatives in cooperation with the federal institution to ensure the purpose of the proposed action can be achieved without loss of Critical Habitat. If the action is not likely to adversely modify or destroy Critical Habitat, USFWS will include a statement in its biological opinion concerning any incidental take that may be authorized and specify terms and conditions to ensure the agency is in compliance with the opinion.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) makes it unlawful to pursue, capture, kill, possess, or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21).

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered "take." This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

State Regulations

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an Initial Study (IS); if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines "endangered" and "rare" species separately from the definitions of the California Endangered Species Act (CESA). Under CEQA, "endangered" species of plants or animals are defined as those whose survival and reproduction in the wild are in immediate jeopardy, while "rare" species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Endangered Species Act (CESA)

In addition to federal laws, the state of California implements the CESA which is enforced by CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in "take" of individuals (defined in CESA as; "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by CDFW. Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the

absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. At the federal level, USFWS also uses the label species of concern, as an informal term that refers to species which might be in need of concentrated conservation actions. As the Species of Concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

Fish and Game Code

Fish and Game Code Sections 3503, 3503.5, 3511, and 3513 are applicable to natural resource management. For example, Section 3503 of the Code makes it unlawful to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks, eagles, and owls) are protected under Section 3503.5 of the Fish and Game Code which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW may be required prior to the removal of any bird of prey nest that may occur on a project site. Section 3511 of the Fish and Game Code lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are State fully protected by the State include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). Section 3513 of the Fish and Game Code makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Native Plant Protection Act

Sections 1900–1913 of the Fish and Game Code were developed to preserve, protect, and enhance Rare and Endangered plants in the state of California. The act requires all state agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

California Native Plant Society Rare and Endangered Plant Species

Vascular plants listed as rare or endangered by the CNPS, but which have no designated status under FESA or CESA are defined as follows:

California Rare Plant Rank

1A- Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere

1B- Plants Rare, Threatened, or Endangered in California and Elsewhere

2A- Plants Presumed Extirpated in California, But More Common Elsewhere

2B- Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3- Plants about Which More Information is Needed - A Review List

4- Plants of Limited Distribution - A Watch List

Threat Ranks

.1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3- Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFG regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Federal Regulations

Section 404 of the Clean Water Act

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of "waters of the U.S.," including wetlands, pursuant to Section 404 of the Clean Water Act (CWA). The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. The Corps and EPA define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." In order to further define the scope of waters protected under the CWA, the Corps and EPA published the Clean Water Rule on June 29, 2015. Pursuant to the Clean Water Rule, the term "*waters of the United States*" is defined as follows:

(i) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

(ii) All interstate waters, including interstate wetlands[1].

(iii) The territorial seas.

(iv) All impoundments of waters otherwise defined as waters of the United States under the definition.

(v) All tributaries[2] of waters identified in paragraphs (i) through (iii) mentioned above.

(vi) All waters adjacent[3] to a water identified in paragraphs (i) through (v) mentioned above, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters.

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1 The term *wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

2 The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (iv) mentioned above), to a water identified in paragraphs (i) through (iii) mentioned above, that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark.

3 The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (i) through (v) mentioned above, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like.

(vii) All prairie potholes, Carolina bays and Delmarva bays, Pocosins, western vernals pools, Texas coastal prairie wetlands, where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (i) through (iii) meantioned above.

(viii) All waters located within the 100-year floodplain of a water identified in paragraphs (i) through (iii) mentioned above and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (i) through (v) mentioned above, where they are determined on a case-specific basis to have a significant nexus to a waters identified in paragraphs (i) through (iii) mentioned above.

The following features are not defined as "waters of the United States" even when they meet the terms of paragraphs (iv) through (viii) mentioned above:

(i) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act.

(ii) Prior converted cropland.

(iii) The following ditches:

(A) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
(B) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
(C) Ditches that do not flow, either directly or through another water, into a water of the United States as identified in paragraphs (i) through (iii) of the previous section.

(iv) The following features:

(A) Artificially irrigated areas that would revert to dry land should application of water to that area cease;
(B) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
(C) Artificial reflecting pools or swimming pools created in dry land;
(D) Small ornamental waters created in dry land;
(E) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
(F) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of a tributary, non-wetland swales, and lawfully constructed grassed waterways; and
(G) Puddles.

(v) Groundwater, including groundwater drained through subsurface drainage systems.

(vi) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

(vii) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

Section 401 of the Clean Water Act

Pursuant to Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity which may result in any discharge to waters of the United States must provide certification from the State or Indian tribe in which the discharge originates. This certification provides for the protection of the physical, chemical, and biological integrity of waters, addresses impacts to water quality that may result from issuance of federal permits, and helps insure that federal actions will not violate water quality standards of the State or Indian tribe. In California, there are nine Regional Water Quality Control Boards (Regional Board) that issue or deny certification for discharges to waters of the United States and waters of the State, including wetlands, within their geographical jurisdiction. The State Water Resources Control Board assumed this responsibility when a project has the potential to result in the discharge to waters within multiple Regional Boards.

State Regulations

Fish and Game Code

Fish and Game Code Sections 1600 et. seq. establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

(1) substantially obstruct or divert the natural flow of a river, stream, or lake;
(2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or
(3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. CDFW's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. A Section 1602 Streambed Alteration Agreement would be required if impacts to identified CDFW jurisdictional areas occur.

Porter Cologne Act

The California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC and Rapanos regulatory environment, with respect to the state's authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

APPENDIX C

Geotechnical Investigation

GEOTECHNICAL INVESTIGATION
PROPOSED WAREHOUSE

NEC Foothill Boulevard and Central Avenue
Upland, California
for
Bridge Development Partners

SoCalGeo

SOUTHERN
CALIFORNIA
GEOTECHNICAL
A California Corporation

November 12, 2019

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Bridge Development Partners
1334 Parkview Avenue, Suite 310
Manhattan Beach, California 90266

Attention: Mr. Brendan Kotler

Project No.: **18G122-1R2**

Subject: **Geotechnical Investigation**
Proposed Warehouse
NEC Foothill Boulevard and Central Avenue
Upland, California

Gentlemen:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

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1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Geotechnical Design Considerations

- Artificial fill soils were encountered at most of the trench locations, extending from either the ground surface or from beneath the existing pavements to depths of 1½ to 7½± feet.
- The fill soils and near-surface alluvial soils possess variable strengths. The fill soils possessed varying amounts of trash and debris including fragments of brick, wire, paper, plastic, metal, wood, tree stumps, glass, concrete, and asphalt. In addition, the existing fill soils are considered to represent undocumented fill. These soils, in their present condition, are not considered suitable for support of the foundation loads of the new structure.
- Remedial grading will be necessary to remove the undocumented fill soils in their entirety as well as the upper portion of the near-surface native alluvium and replace these materials as compacted structural fill.
- The native alluvial soils possess significant amounts of oversized materials, including cobbles and boulders. Where grading will require excavation into these materials, consideration should be given to using selective grading techniques to remove the cobbles and/or boulders from these soils prior to reuse as fill. Recommendations regarding selective grading and handling of oversized materials are provided in Section 6.3 and Appendix D of this report.

Site Preparation Recommendations

- Initial site preparation should include stripping of any topsoil or vegetation. The site is moderately to heavily vegetated with shrubs, grasses, and weeds. Also, a significant amount of trash was observed at the surface throughout the site. These materials should be disposed of off-site.
- Remedial grading is recommended to be performed within the proposed building area in order to remove all of the artificial fill soils and a portion of the near-surface native alluvial soils. The soils within the proposed building area should be overexcavated to a depth of 3 feet below existing grade and to a depth of at least 3 feet below proposed building pad subgrade elevations.
- The depth of overexcavation should also be sufficient to remove any existing fill soils. The proposed foundation influence zones should be overexcavated to a depth of at least 2 feet below proposed foundation bearing grade.
- Following completion of the overexcavation, the exposed soils should be scarified and moisture conditioned to achieve a moisture content of 0 to 4 percent above optimum moisture, to a depth of at least 12 inches. The overexcavation subgrade soils should then be recompacted to at least 90% of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, thoroughly moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Foundation Design Recommendations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 3,000 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least two (2) No. 5 rebars (1 top and 1 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slab Design Recommendations

- Conventional Slab-on-Grade: minimum 6 inches thick.
- Modulus of Subgrade Reaction: k = 150 psi/in.
- Reinforcement is not necessary for geotechnical considerations.
- The actual thickness and reinforcement of the floor slab should be determined by the structural engineer.

Pavement Design Recommendations

ASPHALT PAVEMENTS (R=60)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	3	3	3	3	4
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R=60)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6	7	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 18P177, dated March 1, 2018. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located near the northeast corner of Foothill Boulevard and Central Avenue in Upland, California. The site is also referenced as Assessor Parcel Nos. (APN) 1006-351-09, 1006-351-10, 1006-572-11, 1006-551-12, 1006-551-22, and 1006-574-10. The site is bounded to the north by Cable Airport and 13th Street, to the west by existing commercial/industrial buildings, to the south by existing retail/commercial/restaurant buildings and Foothill Boulevard, and to the east by a Lowe's Home Improvement Store. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The subject site consists of six (6) nearly rectangular-shaped parcels which total 50.25± acres. The northwestern portion of the site is currently developed as a material crushing and screening facility. This portion of the site contains various stockpiles of recycled concrete, asphalt, and brick as well as screened aggregate. These stockpiles vary in height with the largest stockpiles ranging from 20 to 30± feet in height. There are also some track-mounted conveying and screening equipment on site as well as some large construction vehicles. The remainder of the site is undeveloped with ground cover consisting of exposed soil with moderate to heavy vegetation and weed growth. A significant amount of garbage and makeshift structures are scattered throughout the undeveloped regions of the site.

Detailed topographic was obtained from a conceptual grading plan prepared by Thienes Engineering, Inc. With the exception of the existing stockpiles, the overall site topography slopes downward to the south and southwest at gradients ranging from 3 to 5 percent. The site topography ranges from an elevation high of 1400± feet mean sea level (msl) along the northern boundary of the site to an elevation low of 1360± feet msl in the southwestern region of the site. There are significant elevation fluctuations due to the large stockpiles within the western portion of the site.

3.2 Proposed Development

Based on a site plan dated November 8, 2019, prepared by Herdman Architecture + Design, the site will be developed with one (1) warehouse building located in the central area of the site. The warehouse will be 201,096± ft^2 in size, with dock-high doors constructed along the west building wall. The building will be surrounded by asphaltic concrete pavements in the parking and drive lane areas, Portland cement concrete pavements in the loading dock areas, concrete flatwork, and landscape planters throughout.

Detailed structural information has not been provided. It is assumed that the new building will be a single-story structure of concrete tilt-up construction supported by conventional shallow foundations with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 3 to 6 kips per linear foot,

respectively.

No significant amounts of below grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the conceptual grading plan prepared by Thienes Engineering, Inc., and aside from the aforementioned stockpiles, cuts and fills of 10 to 20± feet are expected to be necessary to achieve the proposed site grades.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of twenty-one (21) exploratory trenches (identified as Trench Nos. T-1 through T-21) excavated to depths of 5 to 10± feet below the existing site grades. The trenches were excavated using a backhoe with a 24-inch wide bucket. All of the trenches were logged during excavation by a member of our staff.

Representative bulk and in-situ soil samples were taken during excavation. Bulk samples were collected in plastic bags to retain their original moisture content. The bulk samples were then sealed and transported to our laboratory.

The approximate trench locations are indicated on the Trench Location Plan, included as Plate 2 in Appendix A of this report. The Trench Logs, which illustrate the conditions encountered at the trench locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Pavements

Pavements consisting of base material was encountered at Trench Nos. T-1, T-2, T-3, T-6, T-8 and T-20 to T-21. The base material generally extended to depths of 6 inches to 2½ feet below existing grades.

Artificial Fill

Artificial fill soils were encountered at the ground surface or beneath the existing pavements at Trench Nos. T-2 to T-4, T-6, T-8, T-10, T-12, T-13, T-14, T-15 and T-20 to T-21. The fill soils extend to depths of 1 to 8± feet below existing site grades. These fill soils generally consist of medium dense to very dense silty fine sands and gravelly fine to coarse sands with varying amounts of cobbles and boulders. The fill soils possess a disturbed appearance and significant debris content (including fragments of brick, wire, paper, plastic, metal, wood, tree stumps, glass, concrete, and asphalt), resulting in their classification as artificial fill. Varying amounts of tree limbs, roots and rootlets were observed within the fill soils. A layer of organic material 6±-inches thick was observed at Trench No. T-14 at a depth of 2½ to 3± feet.

Alluvium

Alluvial soils were encountered at all trenches, except for Trench Nos. T-2 and T-21 which met refusal conditions in fill. The alluvial soils generally consisted of dense to very dense gravelly fine to coarse sand with extensive cobbles and boulders extending to a maximum depth explored of

10 feet below existing site grades. Varying amounts of tree limbs, roots and rootlets were observed within the native alluvial soils.

Groundwater

Free water was not encountered during the excavation of any of the trenches. Based on the lack of any water within the trenches, and the moisture contents of the recovered soil samples, the static groundwater is considered to have existed at a depth in excess of 10± feet at the time of the subsurface exploration.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well is located approximately 1.1 miles northwest from the site. Water level readings within this monitoring well indicates a high groundwater level of 120± feet (Fall 2017).

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Trench Logs and are periodically referenced throughout this report.

In-situ Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Trench Logs.

Maximum Dry Density and Optimum Moisture Content

Three (3) representative soil samples have been tested for their maximum dry densities and optimum moisture contents. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557, and are presented on Plates C-1 through C-3 in Appendix C of this report. These tests are generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Soluble Sulfates

Representative samples of the near-surface soils were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
T-3 @ 0 to 5 feet	<0.001	Negligible
T-10 @ 0 to 5 feet	0.016	Negligible
T-13 @ 0 to 5 feet	<0.001	Negligible

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structure should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Furthermore, SCG did not identify any evidence of faulting during the geotechnical investigation. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

The California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

Based on standards in place at the time of this report, the proposed development is expected to be designed in accordance with the requirements of the 2016 edition of the California Building Code (CBC). However, it is also possible that the proposed development may be designed using the 2019 CBC, which will take effect on January 1, 2020. Therefore, this report provides design parameters for both the 2016 CBC and the 2019 CBC. Other design consultants should verify the version of the code under which the proposed development will be submitted.

The 2016 and 2019 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website www.seismicmaps.org. This software application calculates seismic design parameters in accordance with several building code reference documents, including the ASCE 7-10 and ASCE 7-16, upon which the 2016 CBC and 2019 CBC are based, respectively. The application utilizes a database of risk-targeted maximum considered earthquake (MCE_R) site accelerations at 0.01-degree intervals for each of the code documents. The tables below were created using data obtained from the application. The output generated from this program is included as Plates E-1A (2016 CBC) and E-1B (2019 CBC) in Appendix E of this report. Based on this output, the following parameters may be utilized for the subject site:

2016 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	2.495
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.933
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	2.495
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.400
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.663
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.933

The 2019 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than 0.2. However, Section 11.4.8 of ASCE 7-16 also indicates an exception from the requirement for a site-specific ground motion hazard analysis for certain structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16 (Page 534 of Section C11 of ASCE 7-16) indicates that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." **Based on our understanding of the proposed development, the seismic design parameters presented below were calculated assuming that the exception in Section 11.8.4 applies to the proposed structure(s) at this site. However, the structural engineer should verify that this exception is applicable to the proposed structures.** Based on the exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2019 CBC.

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped MCE_R Acceleration at 0.2 sec Period	S_S	1.701
Mapped MCE_R Acceleration at 1.0 sec Period	S_1	0.641
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	1.701
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.090
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.134
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.726

It should be noted that the site coefficient F_v and the parameters S_{M1} and S_{D1} were not included in the SEAOC/OSHPD Seismic Design Maps Tool output for the 2019 CBC. We calculated these parameters-based on Table 1613.2.3(2) in Section 16.4.4 of the 2019 CBC using the value of S_1 obtained from the Seismic Design Maps Tool, assuming that a site-specific ground motion hazards analysis is not required for the proposed buildings at this site.

Liquefaction

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The California Geological Survey (CGS) has not yet conducted detailed seismic hazards mapping in the area of the subject site. The general liquefaction susceptibility of the site was determined by research of the San Bernardino County Official Land Use Plan, General Plan, Geologic Hazard Overlay. Map FH27C for the Ontario Quadrangle indicates that the site is not located within an area of liquefaction susceptibility. Based on the mapping performed by the county of San Bernardino and the lack of a historic high ground water table within the upper 50± feet of the ground surface, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

The ground surface at the site generally consists of exposed soil and pavements comprised of compacted base material. Artificial fill soils were encountered at the ground surface or beneath the existing pavements at Trench Nos. T-2 to T-4, T-6, T-8, T-10, T-12, T-13, T-14, T-15 and T-20 to T-21, extending to depths of 1 to 8± feet below existing site grades. No documentation regarding the placement or compaction of these fill soils is known to exist. Based on their characteristics and the lack of documentation, the existing fill materials are considered to represent undocumented fill. Alluvial soils were encountered at all of the trenches, except for Trench Nos. T-2 and T-21 which met refusal conditions in fill, extending to the maximum depth explored of 10± feet. The alluvial soils generally consist of dense to very dense gravelly fine to coarse sand with extensive cobbles and boulders. The fill soils and near-surface alluvial soils possess variable strengths. Based on these conditions, remedial grading is recommended within the proposed building area to remove the existing undocumented fill materials and a portion of the underlying alluvium and replace these materials as compacted structural fill.

Significant amounts of oversize rock materials consisting of cobbles and boulders are present at the site. An important geotechnical-related aspect in developing this site will be properly handling the oversize materials. Geotechnical recommendations for the proper handling of these oversized materials are contained in later sections of this report. Another significant aspect of this site is the presence of the large stockpiles in the western portion of the subject site. Stockpiled materials meeting the requirements of the "Imported Structural Fill" section and other applicable sections of this report may be utilized within the site fills.

Settlement

The recommended remedial grading will remove the existing undocumented fill soils and a portion of the near-surface native alluvium soils and replace these materials as compacted structural fill. The native alluvium soils that will remain in place below the recommended depth of overexcavation will not be subject to significant stress increases from the foundations of the new structure. Therefore, following completion of the recommended grading, post-construction settlements are expected to be within tolerable limits.

Expansion

The near-surface soils generally consist of silty sands, sands, and gravelly sands. These materials have been visually classified as very low to non-expansive. Therefore, no design considerations related to expansive soils are considered warranted for this site.

Soluble Sulfates

The results of the soluble sulfate testing indicate that the selected samples of the on-site soils contain negligible concentrations of soluble sulfates, in accordance with American Concrete Institute (ACI) guidelines. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that

additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building area.

Shrinkage/Subsidence

Removal and recompaction of the artificial fill and near-surface native soils is estimated to result in an average shrinkage of 6 to 14 percent. The shrinkage potential of the different soil strata at the site is expected to vary significantly due to the highly variable cobble and boulder content. It should be noted that this shrinkage estimate is based on our experience with similar projects in the area since collecting small-diameter soil samples was difficult due to the presence of cobbles and boulders. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test pits where in-place densities are determined using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

Minor ground subsidence is expected to occur in the soils below the zone of removal due to settlement and machinery working. The subsidence is estimated to be 0.1 feet. This estimate is based on previous experience and the subsurface conditions encountered at the test boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely. Additionally, volume loss due to removal of oversized rock materials and root masses is difficult to assess precisely.

Grading and Foundation Plan Review

This report was prepared in consideration of the conceptual grading plan that was provided to our office. However, it is recommended that we be provided with copies of the preliminary precise grading and foundation plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the trench locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping

Initial site stripping should include removal of any surficial vegetation. These materials should be disposed of off-site. A significant amount of above-ground and buried trash and other miscellaneous debris was observed throughout the site. These materials should also be disposed of off-site. Additionally, the existing stockpiles, tree roots, tree limbs, vegetation, grass and weed growth and organic topsoil should be stripped from the site. The actual extent of site stripping should be determined during grading by a representative of the geotechnical engineer, based on the organic content of the encountered materials.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building pad area in order to remove the existing undocumented fill soils and a portion of the underlying near-surface alluvium. Based on conditions encountered at the trench locations, the existing soils within the proposed building area are recommended to be overexcavated to a depth of at least 3 feet below existing grade and to a depth of at least 3 feet below proposed building pad subgrade elevations, whichever is greater. **The depth of the overexcavation should also extend to a depth sufficient to remove all undocumented fill soils**. Undocumented fill soils at the trench locations extend to depths of 2 to 5½± feet. Additional overexcavation should be performed within the influence zones of the new foundations, to provide for a new layer of compacted structural fill extending to a depth of at least 2 feet below proposed bearing grades.

The overexcavation areas should extend at least 5 feet beyond the building and foundation perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches and moisture conditioned to achieve a moisture content of 0 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The building pad areas may then be raised to grade with previously excavated soils or imported structural fill.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of proposed retaining and non-retaining site walls should be overexcavated to a depth of at least 2 feet below foundation bearing grade and replaced as compacted structural fill. Any undocumented fill soils within any of these foundation areas should be removed in their entirety. In both cases, the overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing near-surface soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength or unstable soils are identified by the geotechnical engineer during grading.

Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping operations. Fill soils containing excessive roots, tree limbs, trash, and/or other debris should be removed. The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. The subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not mitigate the extent of undocumented fill soils in the parking and drive areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 0 to 4 percent above the optimum moisture content, and compacted.
- **On-site soils may be used for fill provided they are cleaned of any debris (including, but not limited to trash, oversized materials, tree roots, tree limbs, etc.) to the satisfaction of the geotechnical engineer.**
- All grading and fill placement activities should be completed in accordance with the requirements of the CBC and the grading code of the city of Upland.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Selective Grading and Oversized Material Placement

The native alluvial soils possess significant cobble and/or boulder content. It is expected that large scrapers (Caterpillar 657 or equivalent) will be adequate to move the cobble containing soils as well as some of the soils containing smaller boulders. However, some larger boulders (2± feet in size) were also encountered at the trench locations. It will likely be necessary to move such larger boulders individually, and place them as oversized materials in accordance with the Grading Guide Specifications, in Appendix D of this report. **Based on observations during our subsurface exploration activities, the on-site soils possessed approximately 20 to 35% cobble content and approximately 20 to 35% boulder content.**

Since the proposed grading will require excavation of cobble and boulder containing soils, it may be desirable to selectively grade the proposed building pad area. The presence of particles greater than 3 inches in diameter within the upper 1 to 3 feet of the building pad subgrade will impact the utility and foundation excavations. Depending on the depths of fills required within the proposed parking areas, it may be feasible to sort the on-site soils, placing the materials greater than 3 inches in diameter within the lower depths of the fills, and limiting the upper 1 to 3 feet of soils to materials less than 3 inches in size. Oversized materials could also be placed within the lower depths of the recommended overexcavations. In order to achieve this grading, it would likely be necessary to use rock buckets and/or rock sieves to separate the oversized materials from the remaining soil. Although such selective grading will facilitate further construction activities, it is not considered mandatory and a suitable subgrade could be achieved without such

extensive sorting. However, in any case, it is recommended that all materials greater than 6 inches in size be excluded from the upper 1 foot of the surface of any compacted fills.

The placement of any oversized materials should be performed in accordance with the Grading Guide Specifications included in Appendix D of this report. If disposal of oversized materials is required, rock blankets or windrows should be used and such areas should be observed during construction and placement by a representative of the geotechnical engineer.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that materials in excess of 3 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Upland. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of sands, silty sands and gravelly sands with varying cobble and boulder content. Some of these materials will likely be subject to minor caving within shallow excavations. Where caving does occur, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the inclination of temporary slopes should not exceed 2h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

The static groundwater table is considered to have existed at a depth in excess of 10± feet at the time of the subsurface exploration. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by new structural fill soils used to replace existing undocumented fill soils and near surface alluvial soils. These structural fill soils are expected to extend to depths of at least 2 feet below proposed foundation bearing grades, underlain by 1± foot of additional soil that has been densified and moisture conditioned in place. Based on this subsurface profile, the proposed structure may be supported on conventional shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Two (2) No. 5 rebars (1 top and 1 bottom).
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to at least 0 to 4 percent of the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. **Since it is typically not feasible to increase the moisture content of the floor slab and**

foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slab and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 350 lbs/ft^3
- Friction Coefficient: 0.35

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill soils. The maximum allowable passive pressure is 3,000 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support the new floor slab should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the proposed structure may be constructed as a conventional slab-on-grade supported on newly placed structural fill, extending to a depth of at least 3 feet below finished pad grades. Based on geotechnical considerations, the floor slab may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: k = 150 psi/in.

- Minimum slab reinforcement: Reinforcement is not considered necessary from a geotechnical standpoint. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed slab loading.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area of the proposed slab where such moisture sensitive floor coverings are anticipated. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or

equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 0 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some small (less than 6 feet in height) retaining walls may be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the trench locations, the following parameters may be used in the design of new retaining walls for this site. The following parameters assume that only the on-site soils will be utilized for retaining wall backfill. The near-surface soils generally consist of silty sands, sands and gravelly sands. Based on their composition, the on-site soils have been assigned a friction angle of 32 degrees when compacted to at least 90 percent of the ASTM D-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type
		On-site Silty Sands
Internal Friction Angle (ϕ)		32°
Unit Weight		130 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	40 lbs/ft^3
	Active Condition (2h:1v backfill)	61 lbs/ft^3
	At-Rest Condition (level backfill)	61 lbs/ft^3

The walls should be designed using a soil-footing coefficient of friction of 0.35 and an equivalent passive pressure of 350 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 2 feet below proposed foundation bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. **However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches.**

Some sorting and/or crushing operations may be required. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 8-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The near-surface soils generally consist of sands, silty sands and gravelly sands. These soils

are generally considered to possess good to excellent pavement support characteristics, with R-values in the range of 60 to 70. The subsequent pavement design is therefore based upon an assumed R-value of 60. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=60)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	3	3	3	3	4
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and

Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R=60)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6	7	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. Any reinforcement within the PCC pavements should be determined by the project structural engineer. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

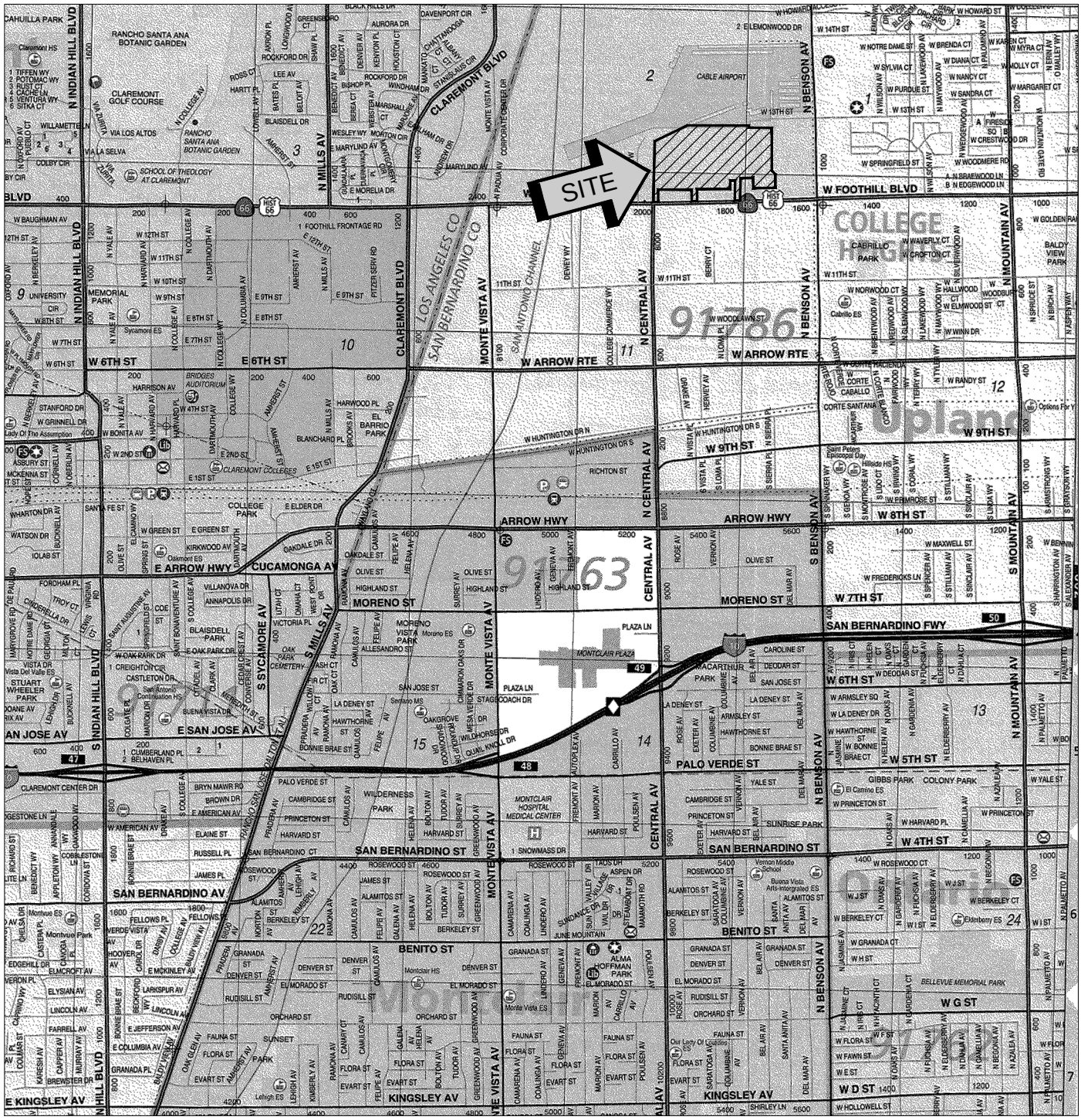
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: SAN BERNARDINO COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP

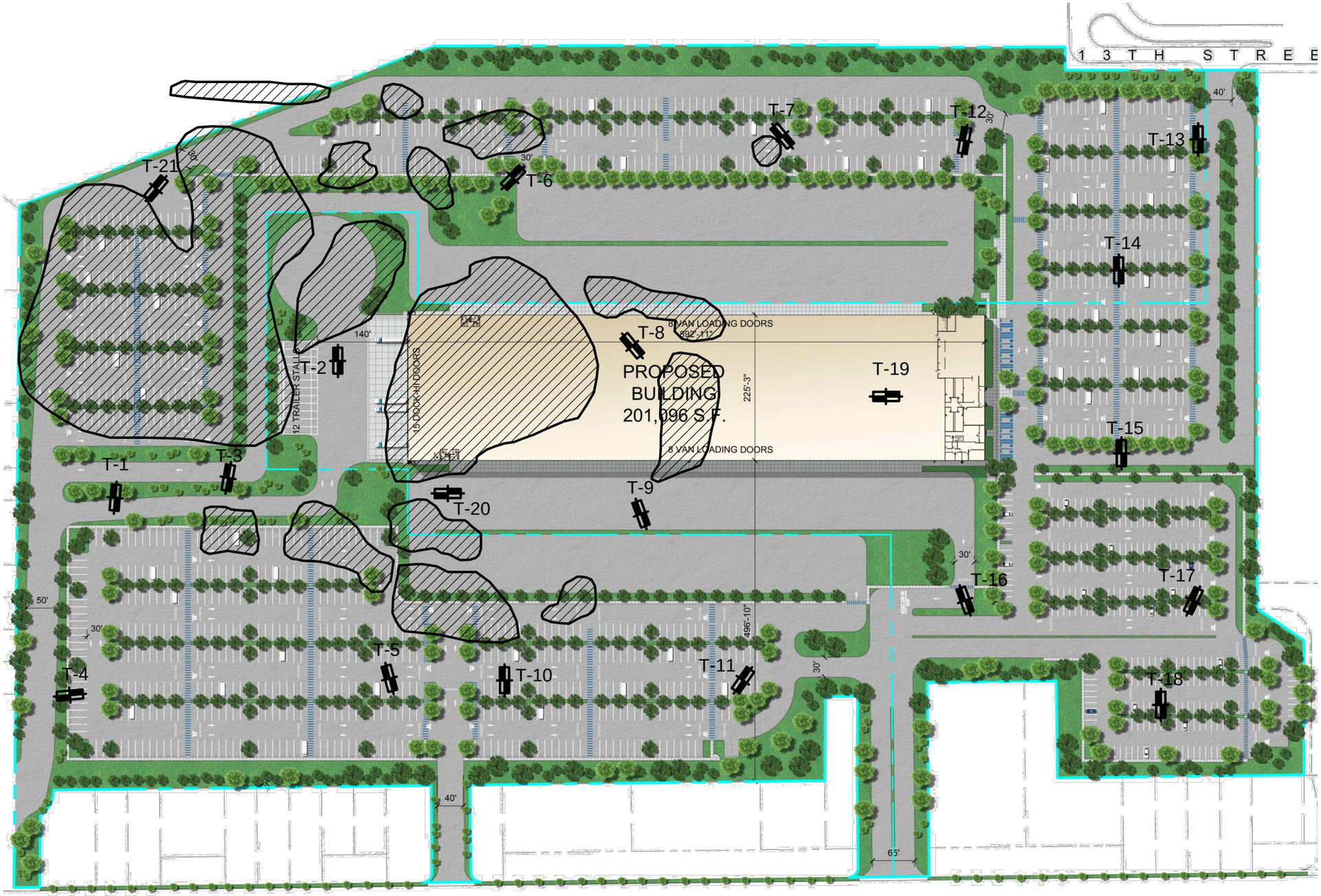
PROPOSED WAREHOUSE

UPLAND, CALIFORNIA

SCALE: 1" = 2400'	
DRAWN: JH CHKD: RGT	
SCG PROJECT 18G122-1R2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

APPROXIMATE TRENCH LOCATION

APPROXIMATE STOCKPILE LOCATION

NOTE: SITE PLAN PROVIDED BY THE CLIENT.

TRENCH LOCATION PLAN

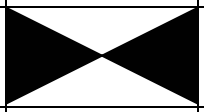
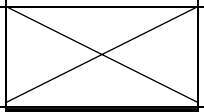
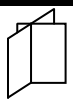
PROPOSED WAREHOUSE

UPLAND, CALIFORNIA

SCALE: 1" = 160'	SOUTHERN CALIFORNIA GEOTECHNICAL
DRAWN: JH CHKD: RGT	
SCG PROJECT 18G122-1R2	
PLATE 2	

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

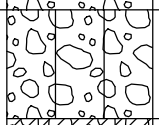
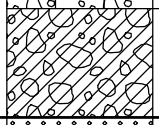
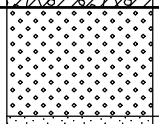
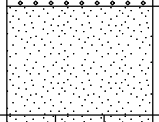
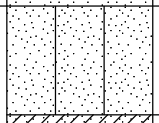
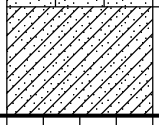
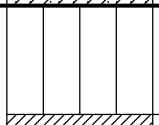
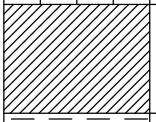
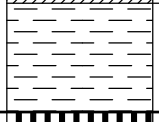
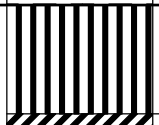
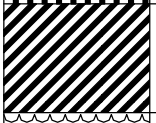
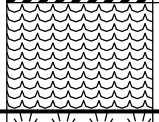
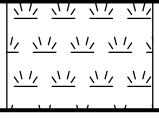
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-1

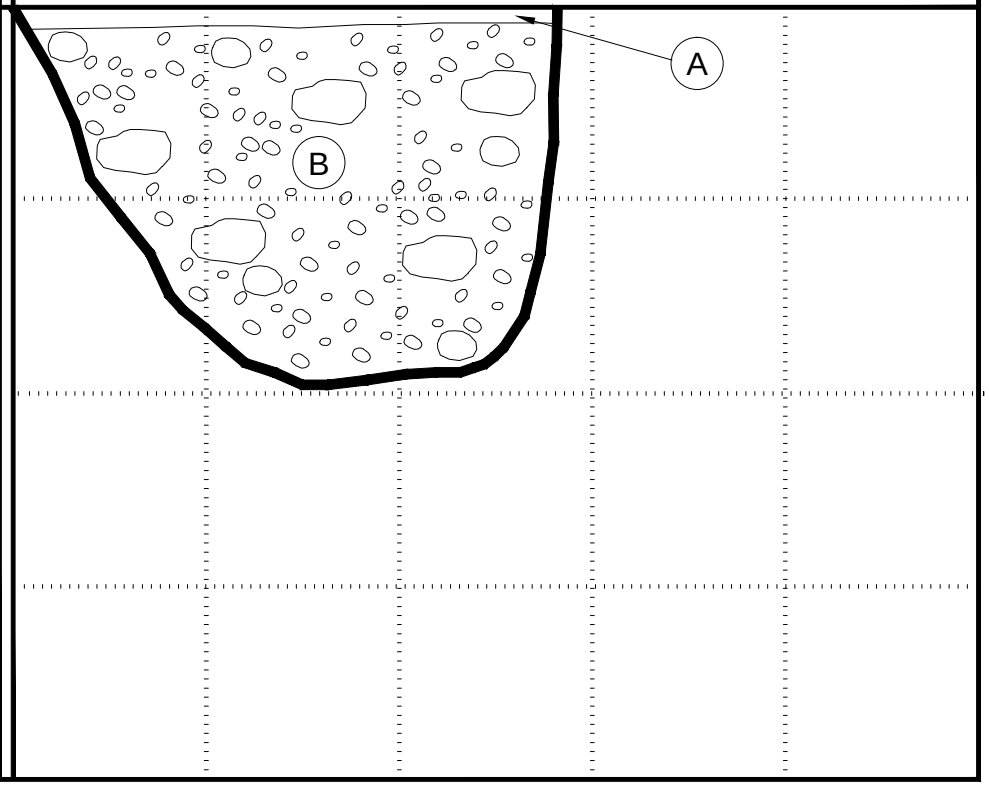
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-22-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N05E

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		4	A: PAVEMENTS: 6 inches Aggregate base
	b		3	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp
5	b		4	
	b		5	
10	b		4	Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-2

JOB NO.: 18G122-1

PROJECT: Proposed Warehouse

LOCATION: Upland, CA

DATE: 3-22-2018

EQUIPMENT USED: Backhoe

LOGGED BY: Jason Hiskey

ORIENTATION: N00W

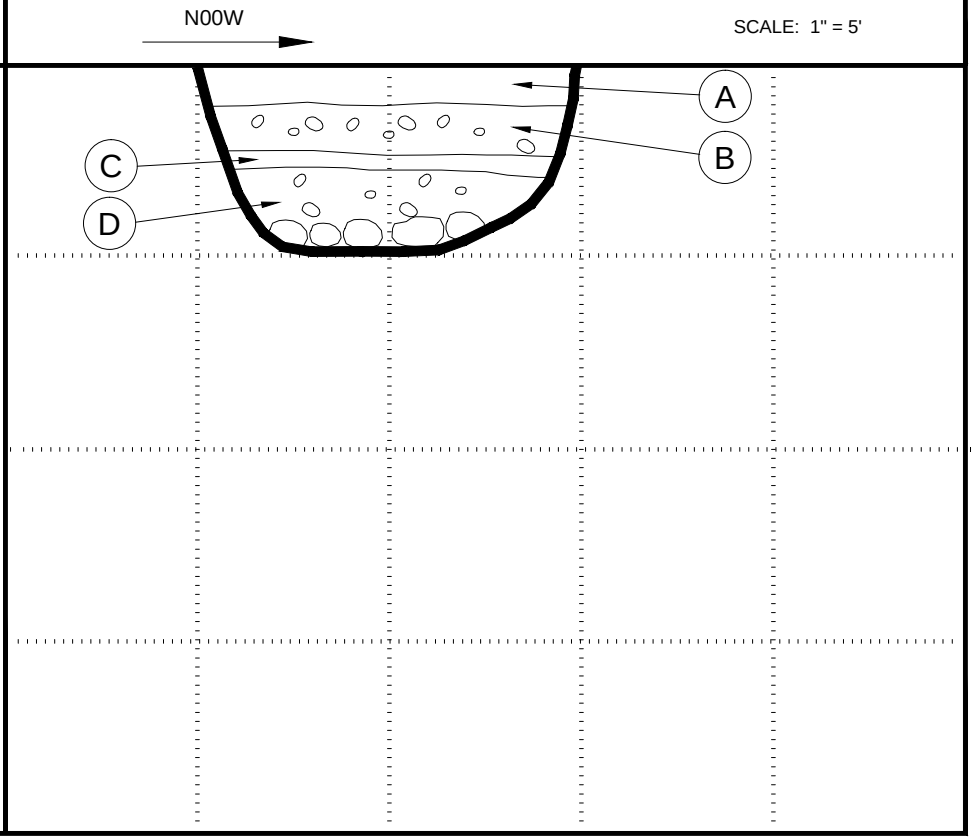
WATER DEPTH: Dry

SEEPAGE DEPTH: Dry

READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		5	A and C: PAVEMENTS: 12 inches Aggregate base at (A) 6 inches at (C)
				B: FILL: Light Brown Silty fine to medium Sand, some coarse sand, some fine to coarse gravel, occasional cobbles, dense-damp
	b		7	D: FILL: Brown Silty fine Sand, trace medium to coarse Sand, abundant Cobbles and Boulders at base of excavation, very dense-damp to moist
5				Trench Refusal @ 5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-3

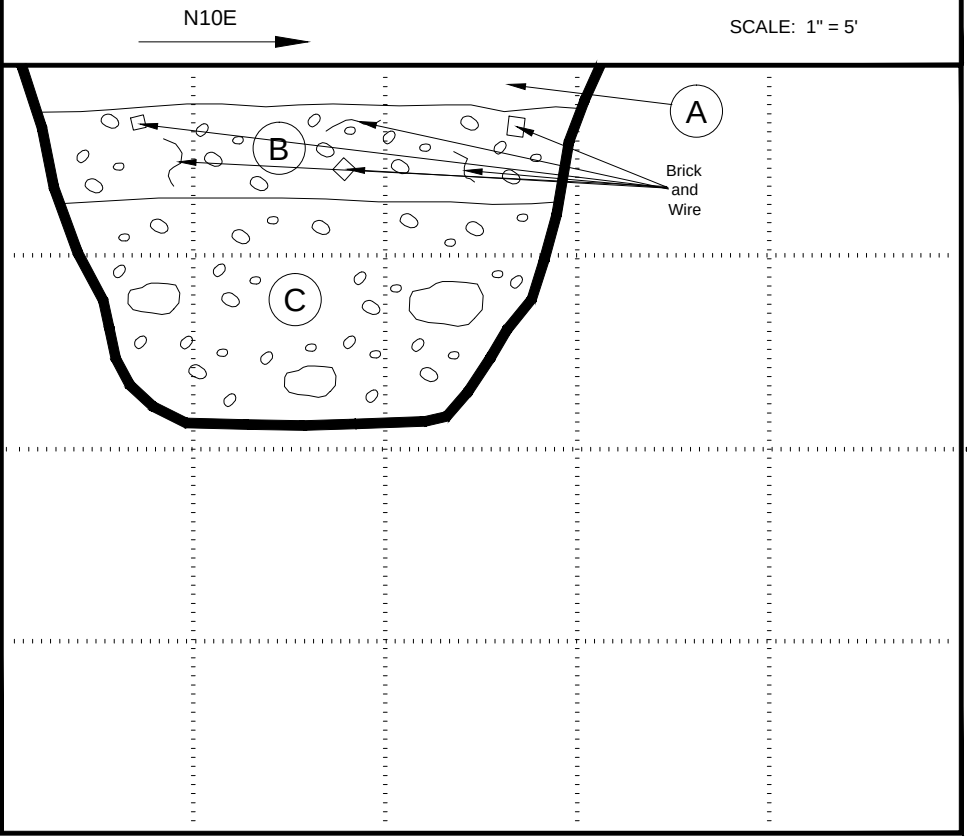
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-22-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N10E

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		5	A: PAVEMENTS: 12 inches Aggregate base
				B: FILL: Dark Brown Silty fine to coarse Sand, abundant fine to coarse Gravel, occasional Cobbles, trace wires, brick fragments and plastic fragments, very dense-dry to damp
	b		2	
				C: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp
5	b		3	
	b		3	
10				Trench Terminated @ 9.5 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-4

JOB NO.: 18G122-1

PROJECT: Proposed Warehouse

LOCATION: Upland, CA

DATE: 3-22-2018

EQUIPMENT USED: Backhoe

LOGGED BY: Jason Hiskey

ORIENTATION: N85E

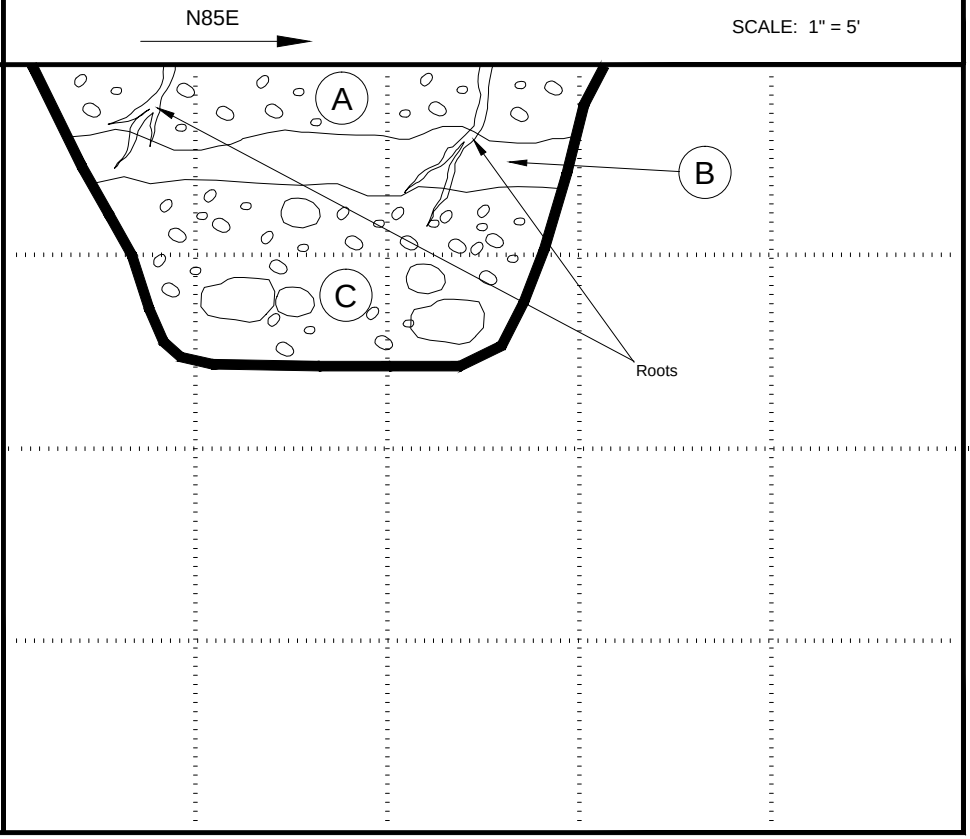
WATER DEPTH: Dry

SEEPAGE DEPTH: Dry

READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		10	A: FILL: Brown Silty fine to medium Sand, some coarse Sand, some Cobbles, some fine to coarse Gravel, some Roots, medium dense-moist
	b		11	B: FILL: Brown fine Sand, little medium to coarse Sand, little fine Gravel, little Silt, some Roots- medium dense-moist
	b		5	C: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, trace Roots very dense-damp
5	b		6	
	b		4	
				Trench Terminated @ 8 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-4

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-5

JOB NO.: 18G122-1

PROJECT: Proposed Warehouse

LOCATION: Upland, CA

DATE: 3-21-2018

EQUIPMENT USED: Backhoe

LOGGED BY: Jason Hiskey

ORIENTATION: N15W

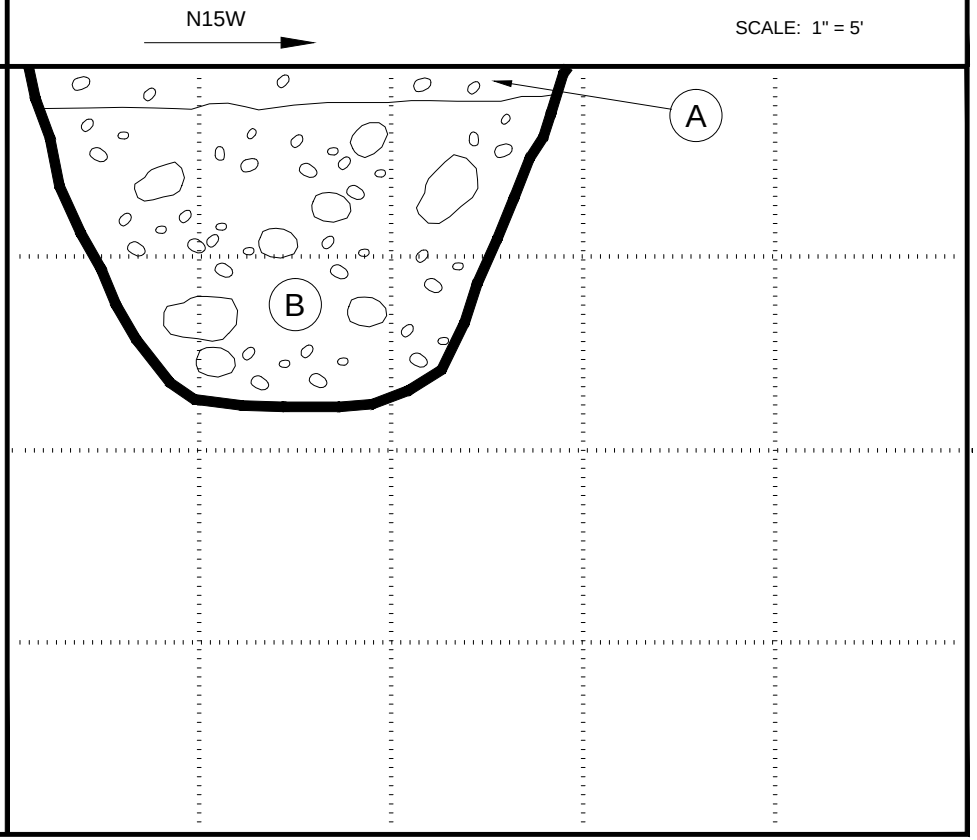
WATER DEPTH: Dry

SEEPAGE DEPTH: Dry

READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		8	A: DISTURBED ALLUVIUM: Brown Silty fine Sand, some fine to coarse Gravel, occasional Cobbles, abundant Root content, medium dense-moist
	b		2	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp
5	b		2	
	b		1	
				Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-5

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-6

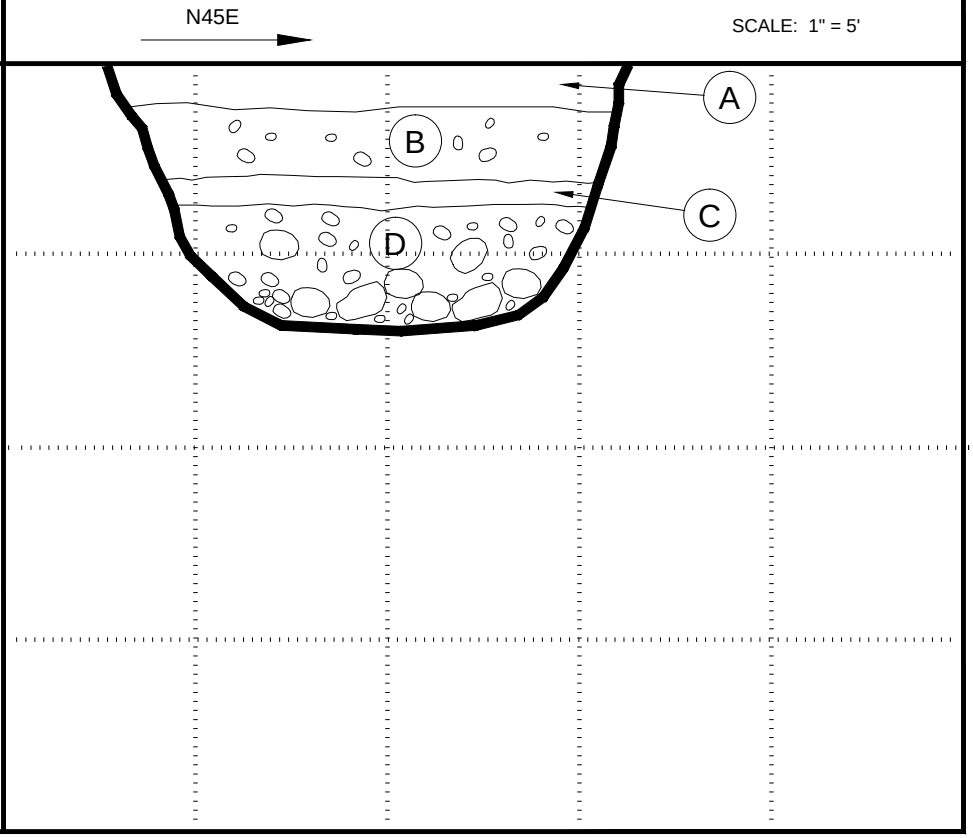
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-22-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N45E

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		15	A: PAVEMENTS: 12 inches Aggregate base B: FILL: Brown Silty fine Sand, occasional Cobbles, trace medium to coarse Sand, trace Paper and Plastic fragments, dense-moist C: PAVEMENTS: 6 inches Aggregate base
5	b		6	D: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp
	b		3	Trench Refusal @ 7 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-6

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-7

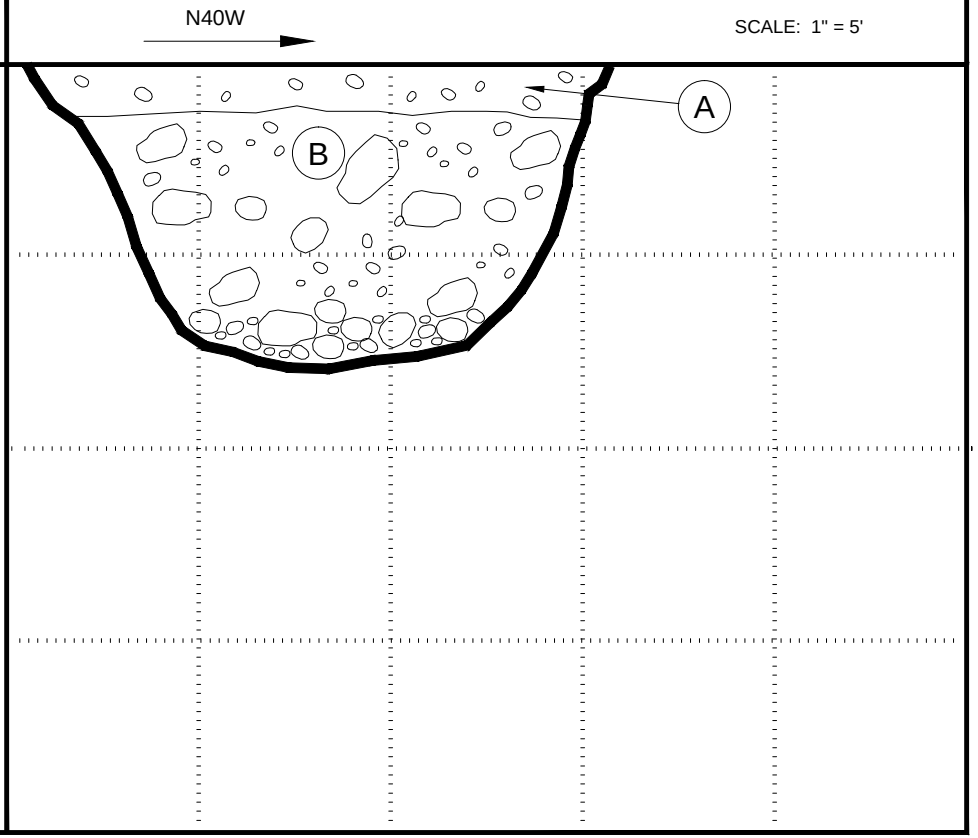
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-22-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N40W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		13	A: DISTURBED ALLUVIUM: Brown Silty fine Sand, some fine to coarse Gravel, occasional Cobbles, abundant Root content, medium dense-moist
	b		3	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp
5	b		5	
	b		5	Trench Refusal @ 8 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-7

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-8

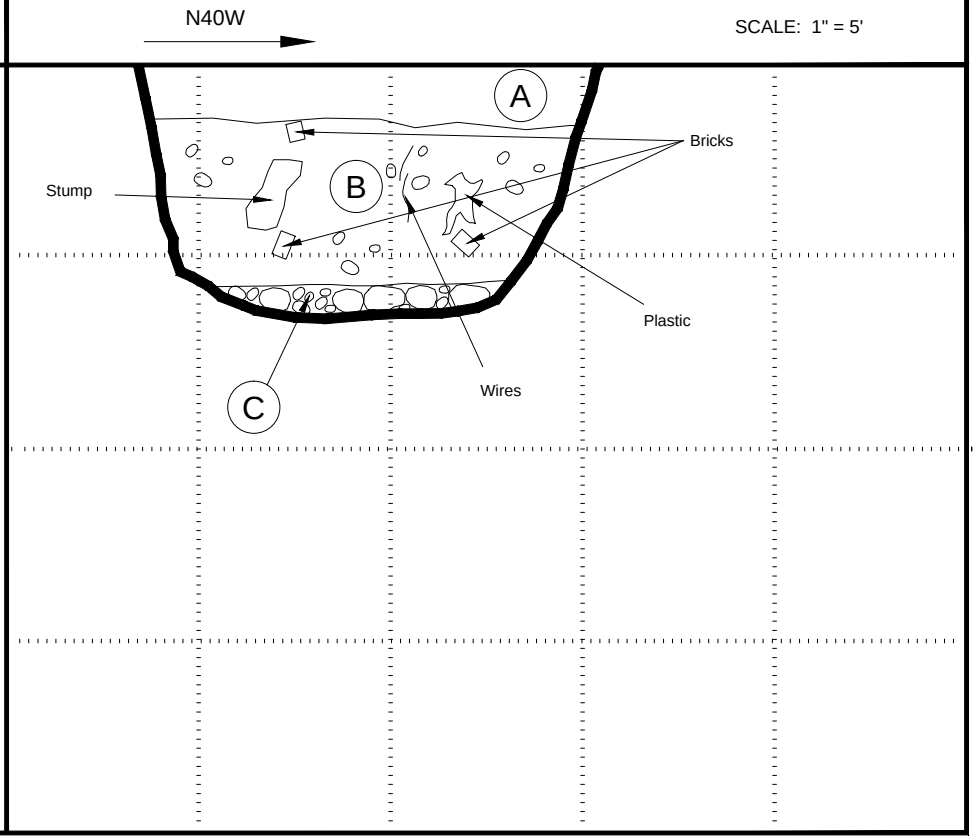
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-22-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N40W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: PAVEMENTS: 18 inches Aggregate base
	b		7	B: FILL: Dark Brown Silty fine Sand, some medium to coarse Sand, occasional Cobbles, some tree debris, Brick fragments, Plastic and Metal fragments medium dense-moist
				C: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders very dense-damp
5	b		3	
				Trench Refusal @ 6.5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-8

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-9

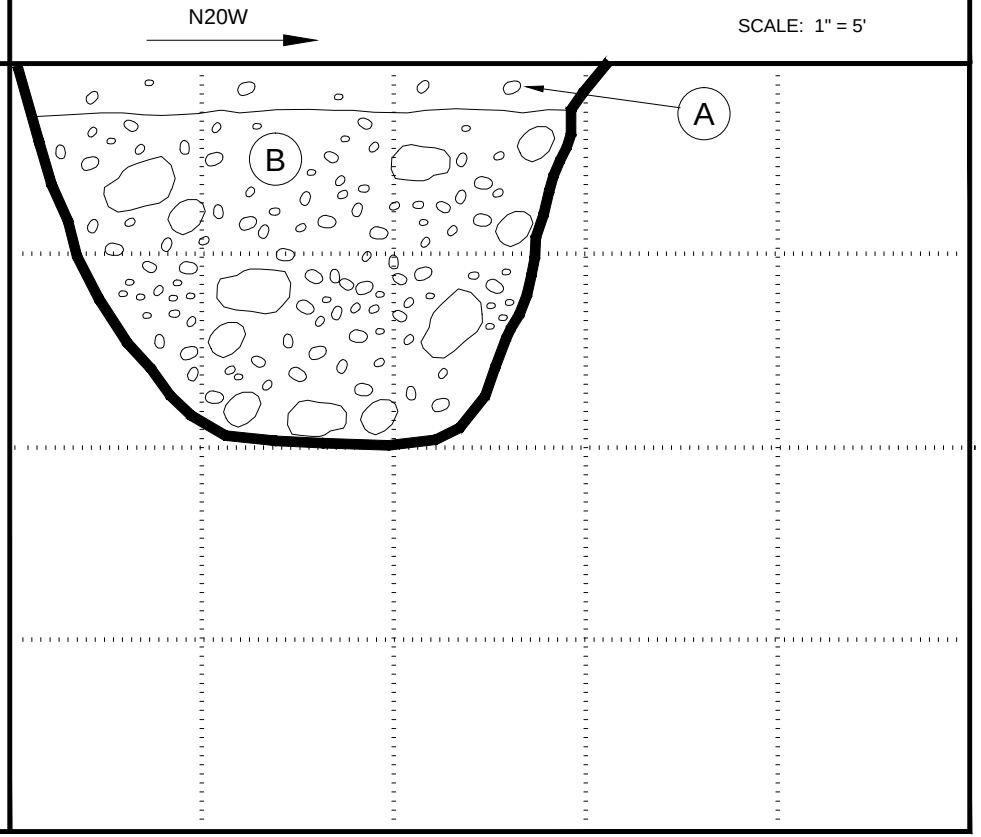
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N20W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		8	A: DISTURBED ALLUVIUM: Brown Silty fine Sand, some fine to coarse Gravel, occasional Cobbles, abundant Root content, medium dense-moist
	b		3	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-dry to damp
5	b		2	
10	b		1	Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-9

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-10

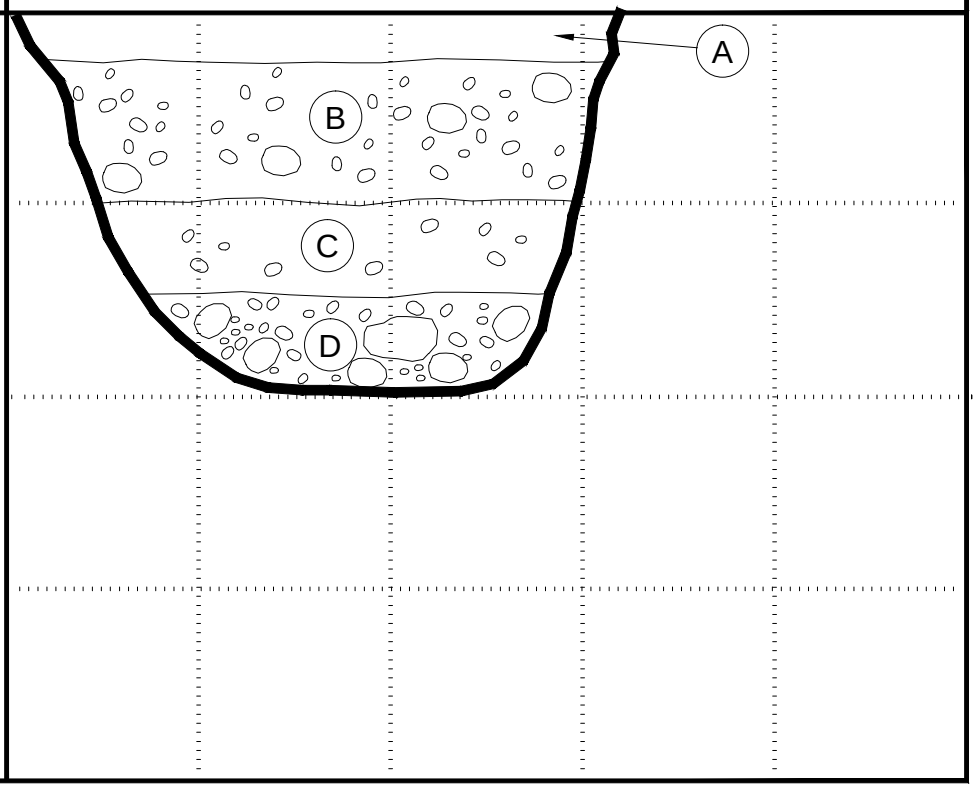
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N00W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		3	A: FILL: Brown Silty fine to coarse Sand, some fine Gravel, abundant Root content, medium dense-moist
	b		4	B: FILL: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles, trace Silt, mottled, dense-damp
5				C: FILL: Brown Silty fine Sand, little medium to coarse Sand, occasional Cobbles, mottled medium dense-damp to moist
	b		8	D: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-dry to damp
	b		2	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-10

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-11

JOB NO.: 18G122-1

PROJECT: Proposed Warehouse

LOCATION: Upland, CA

DATE: 3-21-2018

EQUIPMENT USED: Backhoe

LOGGED BY: Jason Hiskey

ORIENTATION: N35E

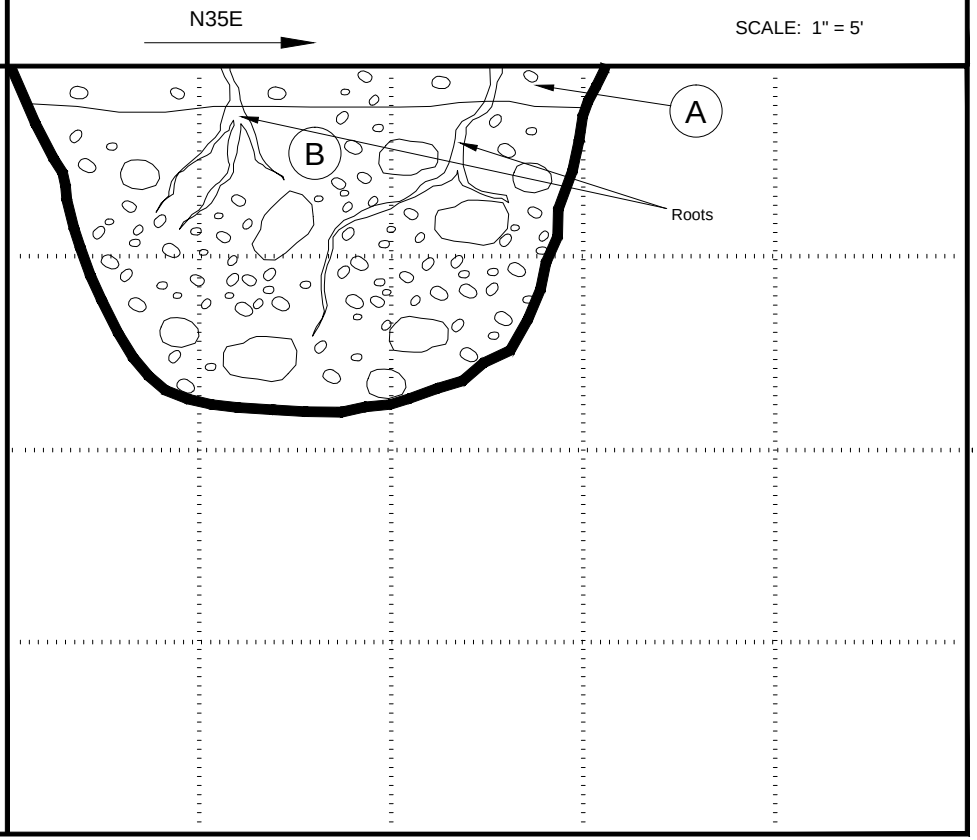
WATER DEPTH: Dry

SEEPAGE DEPTH: Dry

READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		9	A: DISTURBED ALLUVIUM: Brown Silty fine to coarse Sand, some Cobbles, some fine to coarse Gravel, abundant Root content, medium dense-moist
	b		3	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, some Roots, very dense-damp to moist
5	b		4	
	b		12	
				Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-11

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-12

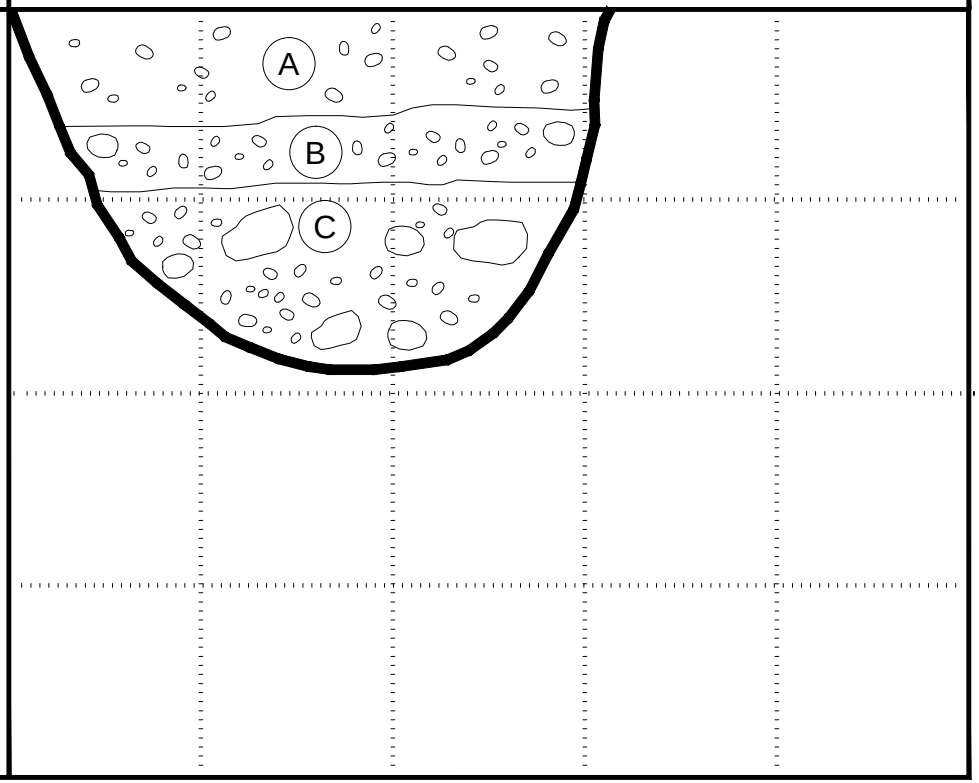
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N10E

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		10	A: FILL: Brown Silty fine to coarse Sand, some fine to coarse Gravel, occasional Cobbles, some Roots medium dense-moist
	b		5	B: FILL: Light Brown Silty fine to coarse Sand, some fine to coarse Gravel, occasional Cobbles, some Roots dense-moist
5	b		10	C: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp to moist
	b		7	
10				Trench Terminated @ 9.5 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-12

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-13

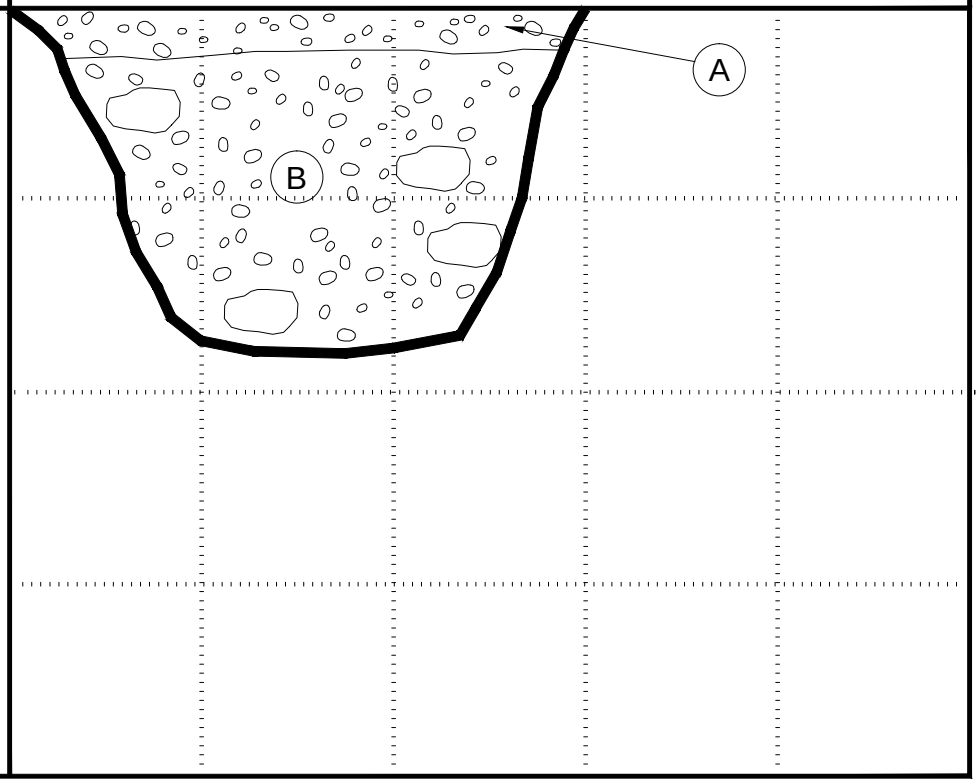
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N00W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		7	A: FILL: Brown Silty fine to coarse Sand, abundant fine to coarse Gravel, occasional Cobbles, medium dense-moist
	b		6	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp to moist
5	b		7	
	b		9	
				Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-13

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-14

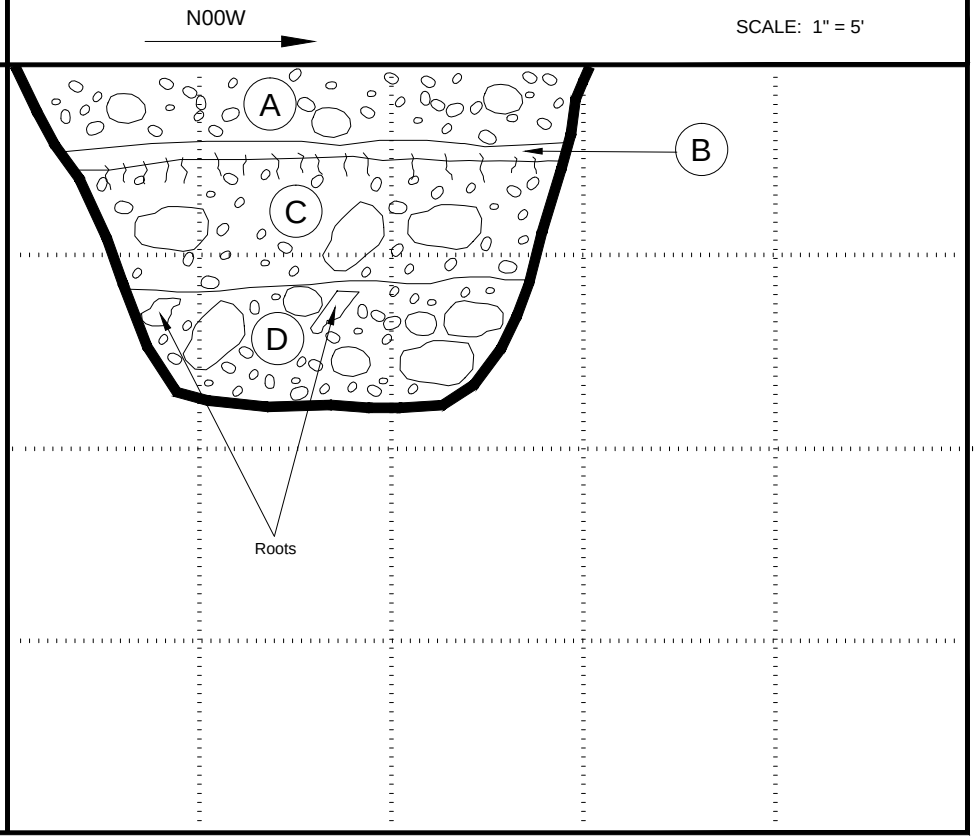
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N00W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		7	A: FILL: Brown Silty fine to coarse Sand, abundant Cobbles, abundant fine to coarse Gravel, occasional Boulders, trace fine root fibers, mottled, medium dense-moist
	b		8	B: ORGANICS: Silty fine Sand, abundant organics, abundant roots, loose-medium dense-damp to moist
5				C: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-damp to moist
	b		6	D: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, some roots, extensive Cobbles and Boulders, very dense-damp to moist
	b		6	Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-14

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO.
T-15

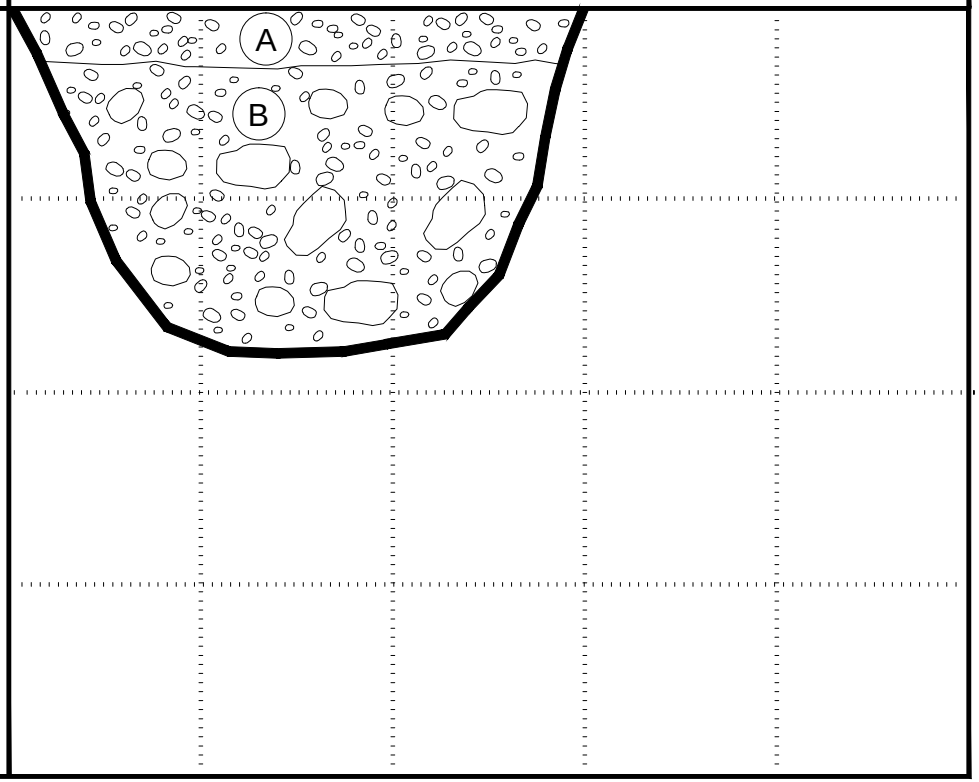
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N00W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		10	A: FILL: Brown Silty fine to coarse Sand, abundant Gravel, extensive Cobbles, medium dense-moist
	b		1	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-dry to damp
5	b		2	
	b		2	
				Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER
(RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-15

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-16

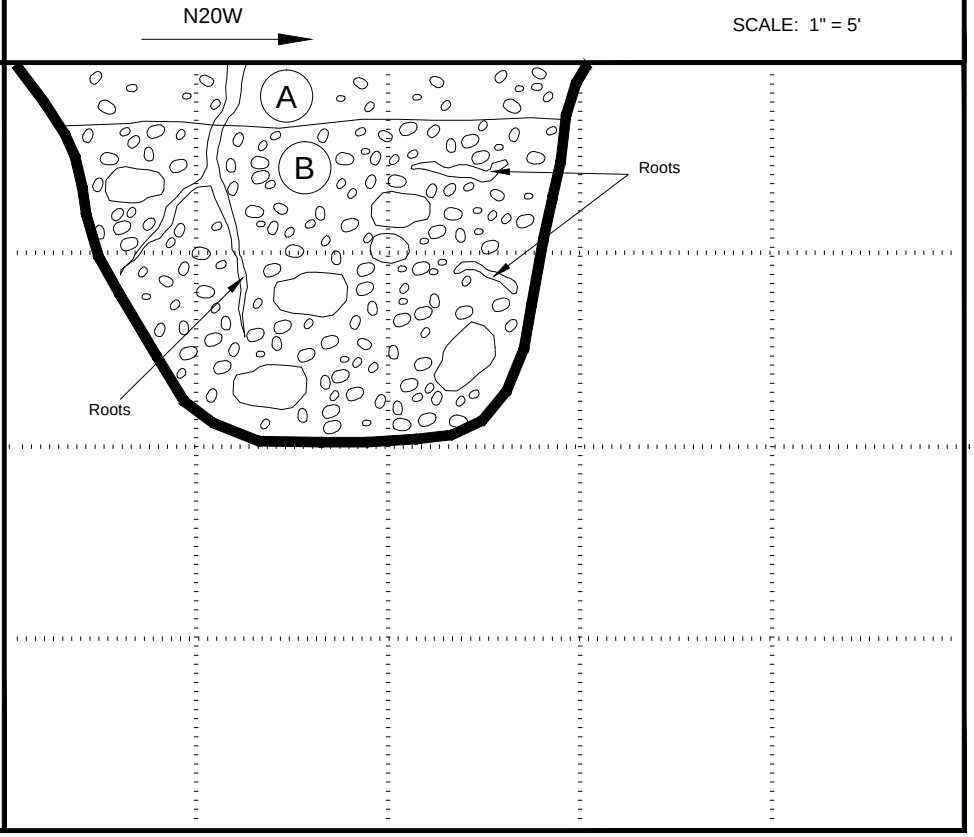
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N20W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		5	A: DISTURBED ALLUVIUM: Brown Silty fine to coarse Sand, occasional Cobbles, some fine to coarse Gravel, some large Roots, medium dense-moist
	b		2	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, some Roots very dense-dry to damp
5	b		2	
	b		7	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-16

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-17

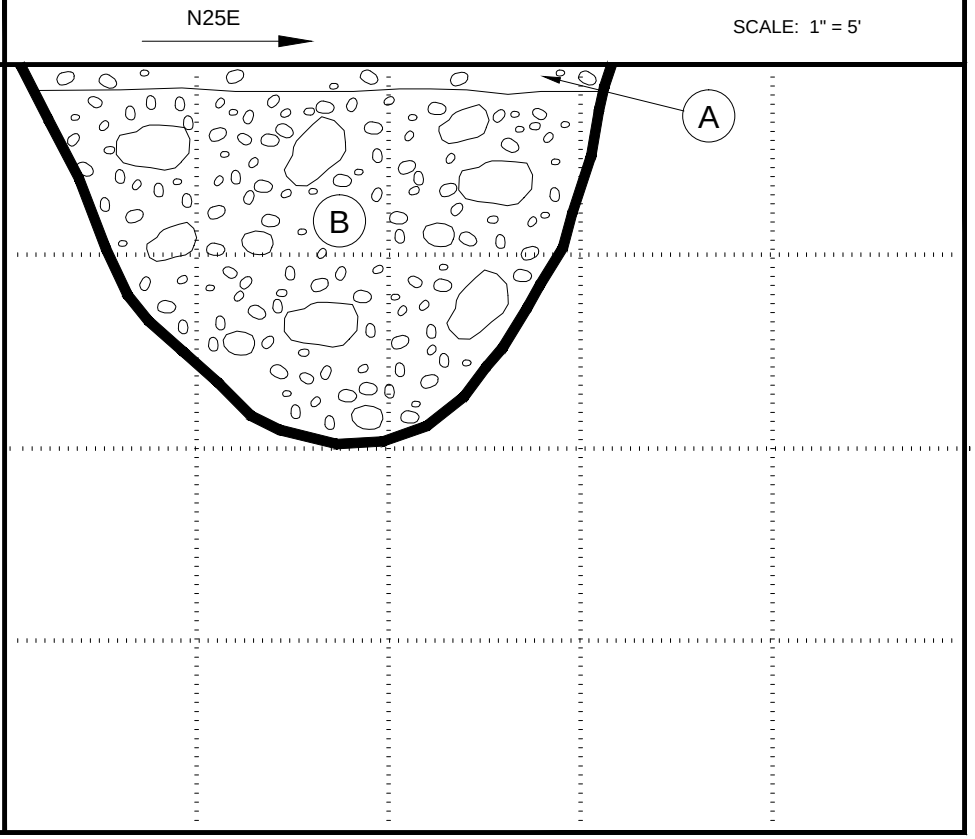
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N25E

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		7	A: DISTURBED ALLUVIUM: Brown Silty fine to coarse Sand, occasional Cobbles, some fine to coarse Gravel, some large Roots, trace fine root fibers, medium dense-moist
	b		3	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-dry to damp
5	b		3	
	b		2	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-17

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-18

JOB NO.: 18G122-1

PROJECT: Proposed Warehouse

LOCATION: Upland, CA

DATE: 3-21-2018

EQUIPMENT USED: Backhoe

LOGGED BY: Jason Hiskey

ORIENTATION: N00W

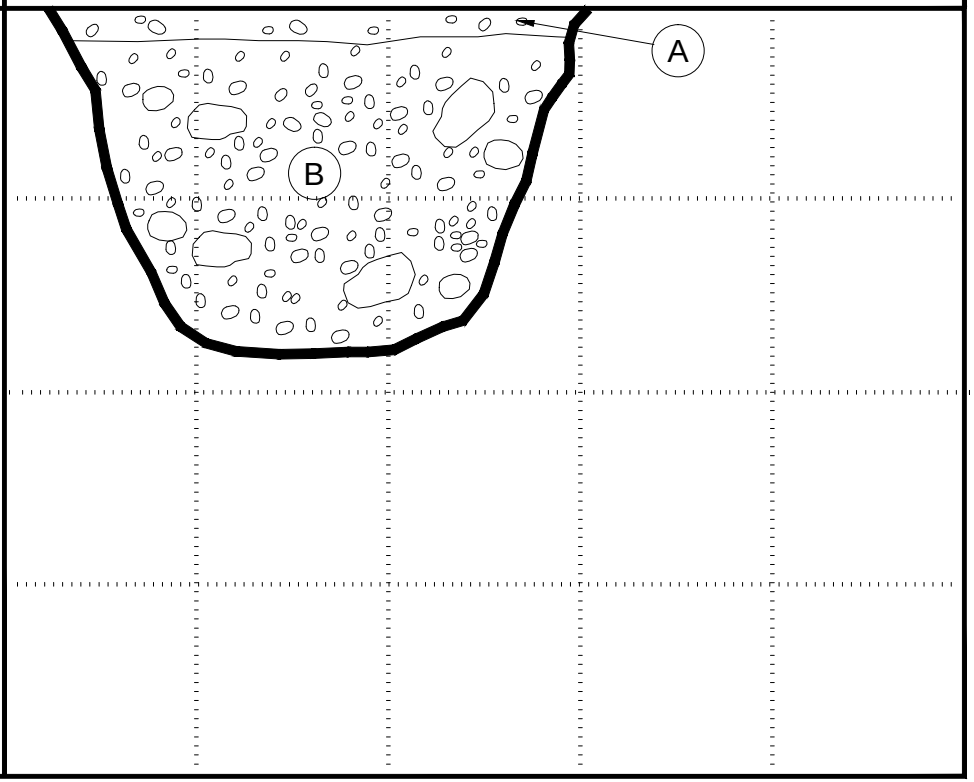
WATER DEPTH: Dry

SEEPAGE DEPTH: Dry

READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		7	A: DISTURBED ALLUVIUM: Brown Silty fine to coarse Sand, occasional Cobbles, some fine to coarse Gravel, abundant Root content, medium dense-moist
	b		2	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-dry to damp
5	b		4	
	b		3	
				Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-18

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-19

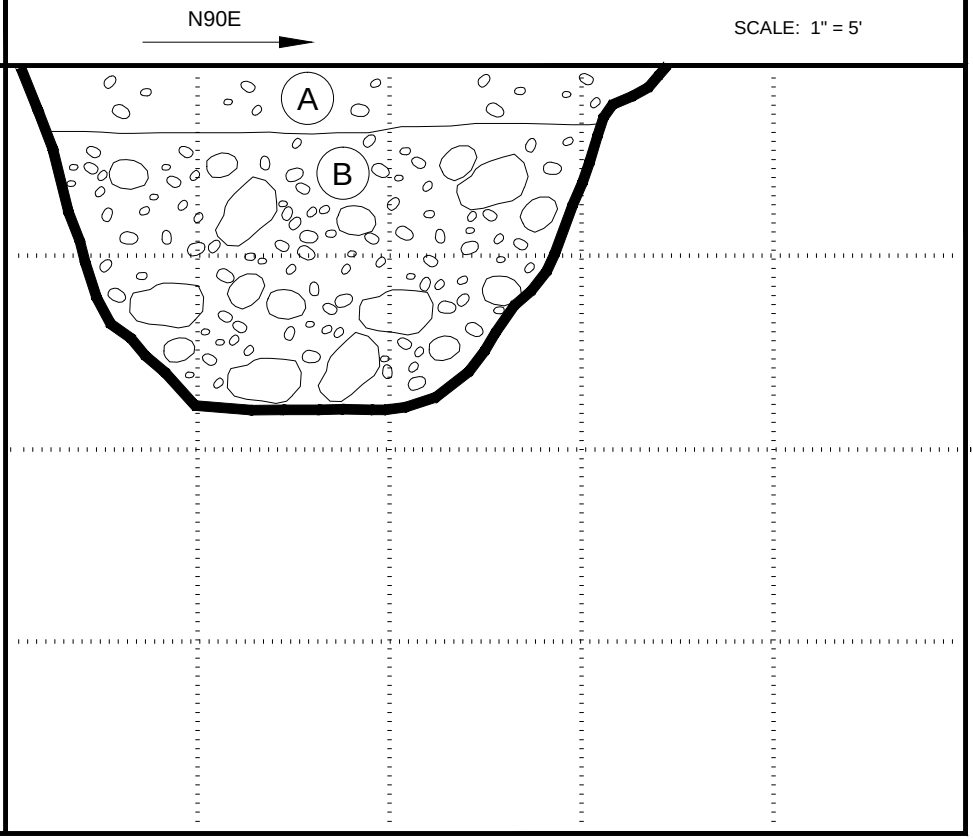
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-21-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION:N90E

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		13	A: DISTURBED ALLUVIUM: Brown Silty fine to coarse Sand, occasional Cobbles, some fine to coarse Gravel, abundant Root content, medium dense-moist
	b		4	B: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, some Roots, very dense-dry to damp
5	b		6	
	b		2	
				Trench Terminated @ 9 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-19

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-20

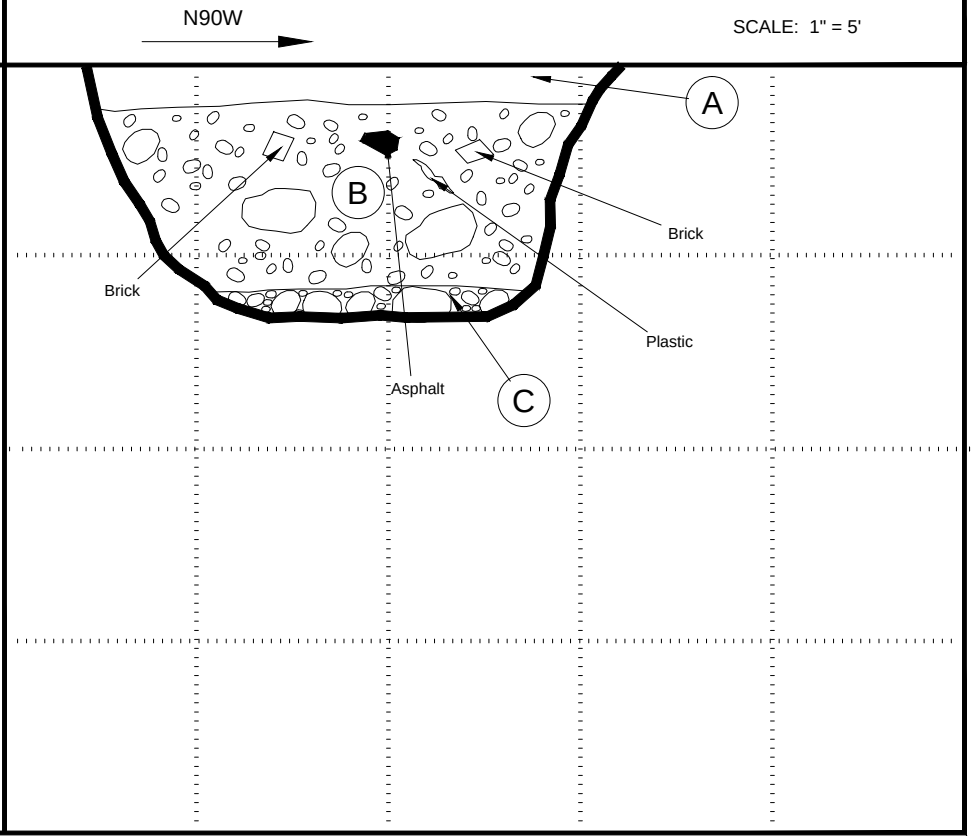
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-22-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N90W

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		8	A: PAVEMENTS: 12 inches Aggregate base
	b		12	B: FILL: Dark Brown Silty fine to medium Sand, some coarse Sand, extensive Cobbles, occasional Boulders, some brick fragments, asphaltic concrete fragments, trace Plastic and Glass fragments, medium dense to dense-moist to very moist
5				C: ALLUVIUM: Gray to Brown Gravelly fine to coarse Sand, extensive Cobbles and Boulders, very dense-dry
	b		1	
				Trench Terminated @ 6.5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-20

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-21

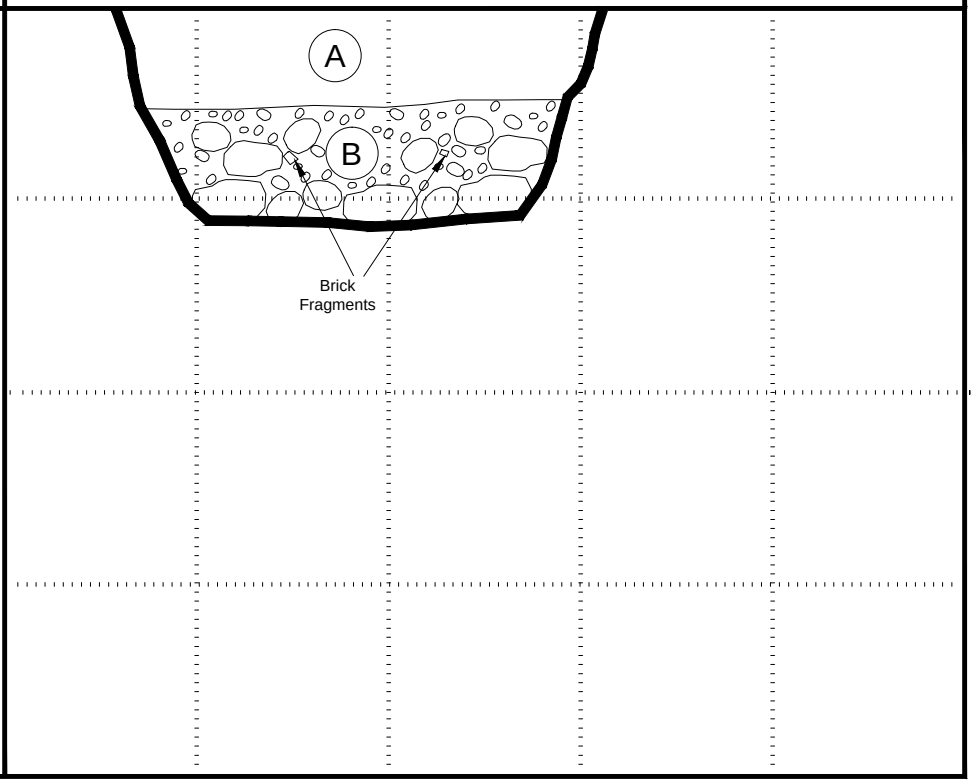
JOB NO.: 18G122-1
PROJECT: Proposed Warehouse
LOCATION: Upland, CA
DATE: 3-22-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N40E

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		7	A: PAVEMENTS: 30 inches Aggregate base B: FILL: Dark Brown Silty fine to medium Sand, some coarse Sand, some fine to coarse Gravel, occasional Cobbles, extensive Boulders, trace brick fragments, very dense-damp to moist
5	b		9	Trench Terminated @ 5.5 feet
10				
15				

GRAPHIC REPRESENTATION



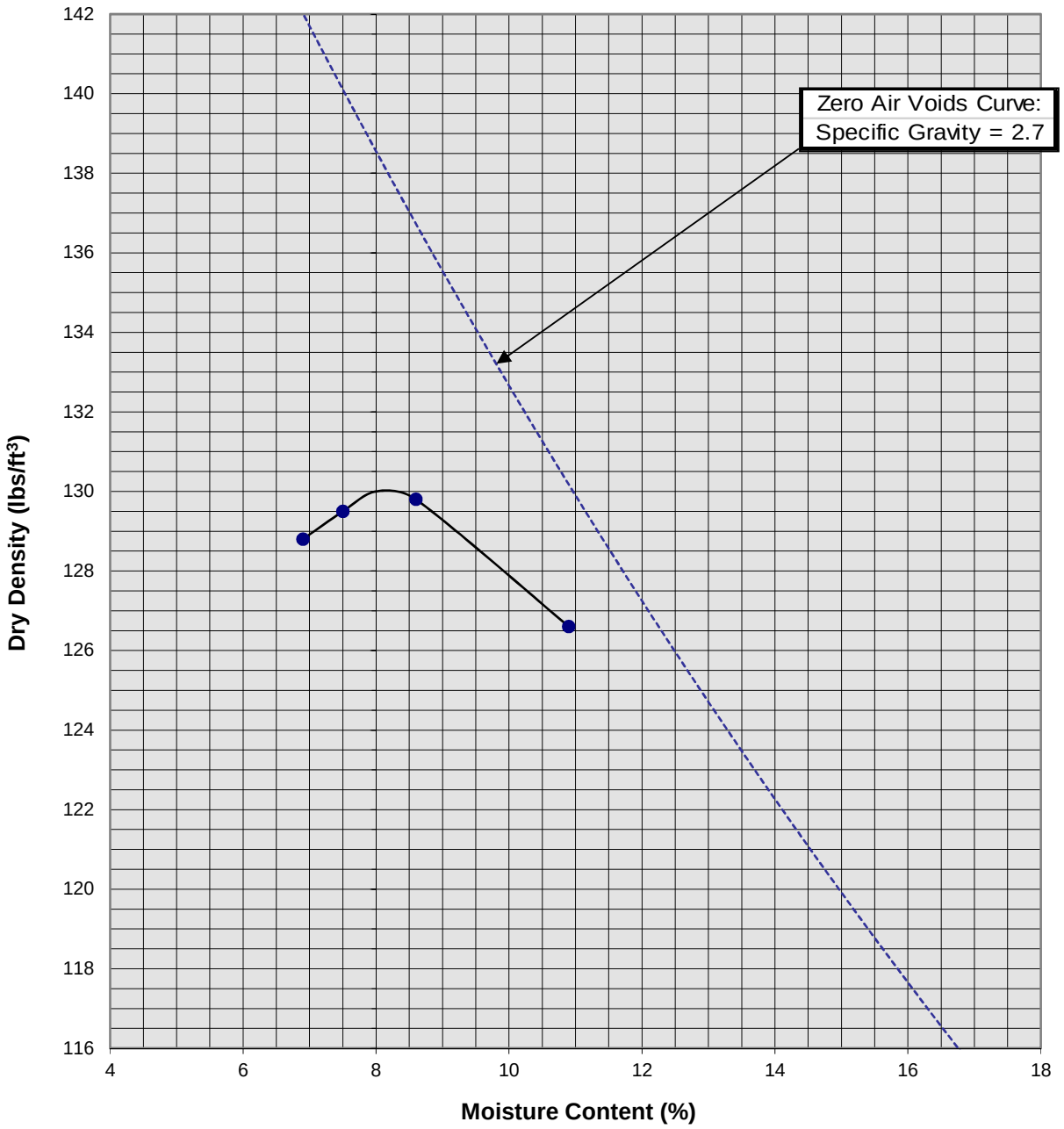
KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-21

APPENDIX C

Moisture/Density Relationship
ASTM D-1557



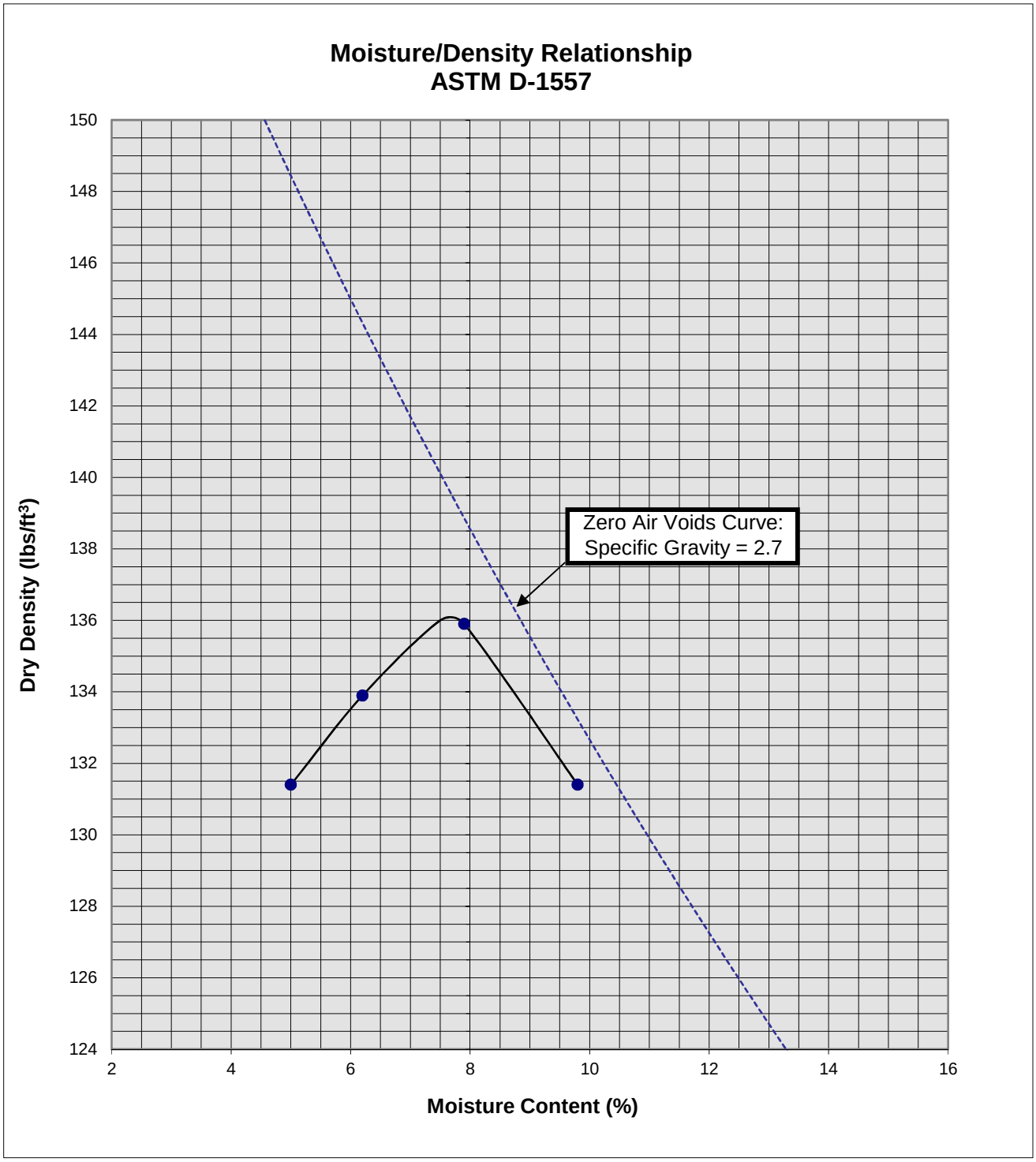
Soil ID Number	T-3 @ 0 to 5'
Optimum Moisture (%)	8
Maximum Dry Density (pcf)	130
Soil Classification	Gray Brown Silty fine to coarse Sand, trace fine Gravel, some Cobbles

Proposed Warehouse
Upland, California
Project No. 18G122

PLATE C-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557

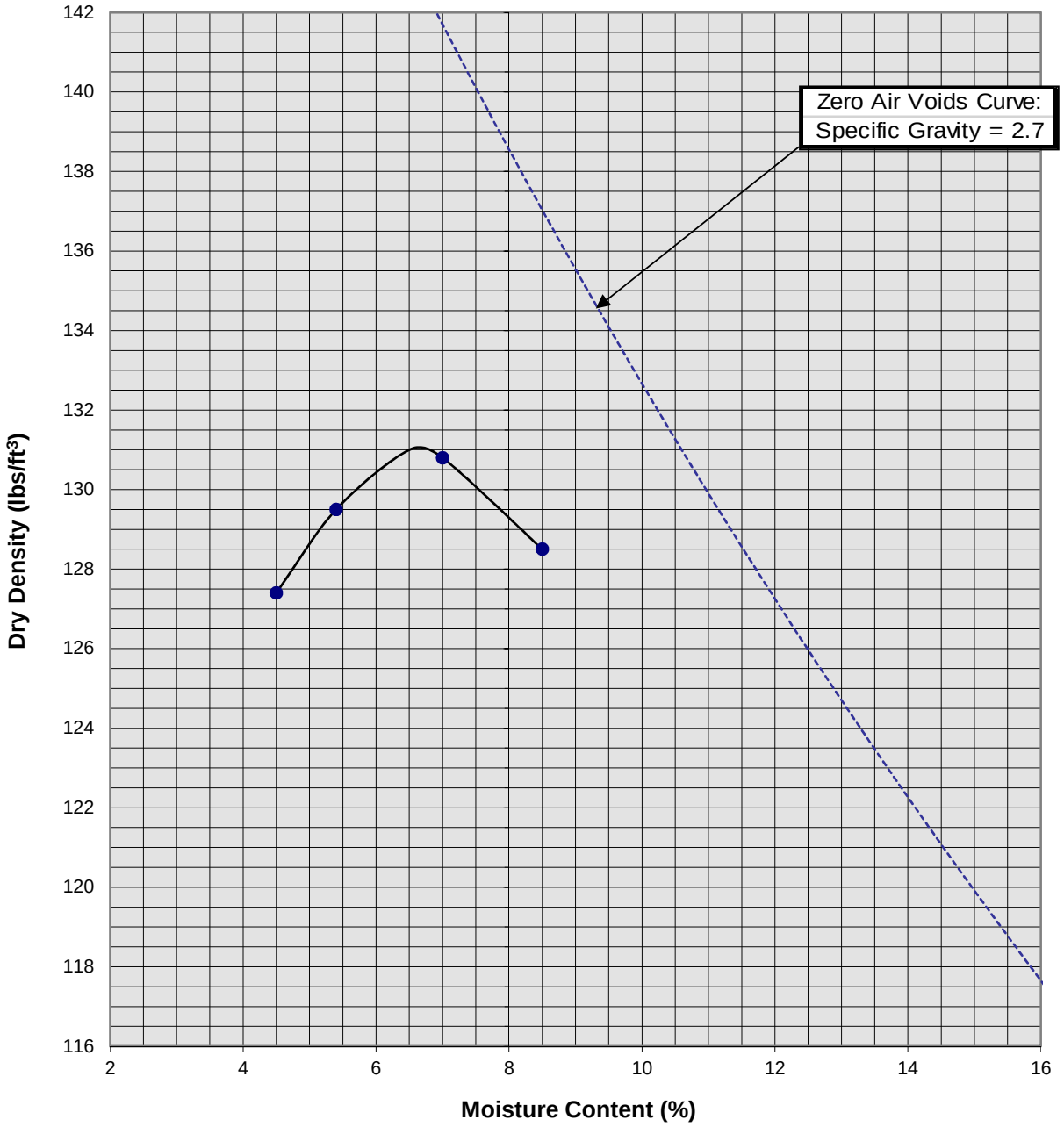


Soil ID Number	T-10 @ 0 to 5'
Optimum Moisture (%)	7.5
Maximum Dry Density (pcf)	136
Soil Classification	Gray Brown Silty fine to coarse Sand, trace fine Gravel, some Cobbles

Proposed Warehouse
Upland, California
Project No. 18G122
PLATE C-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number		T-13 @ 0 to 5'
Optimum Moisture (%)		6.5
Maximum Dry Density (pcf)		131
Soil Classification	Gray Brown fine to coarse Sand, some fine to coarse Gravel, Cobbles	

Proposed Warehouse
Upland, California
Project No. 18G122

PLATE C-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

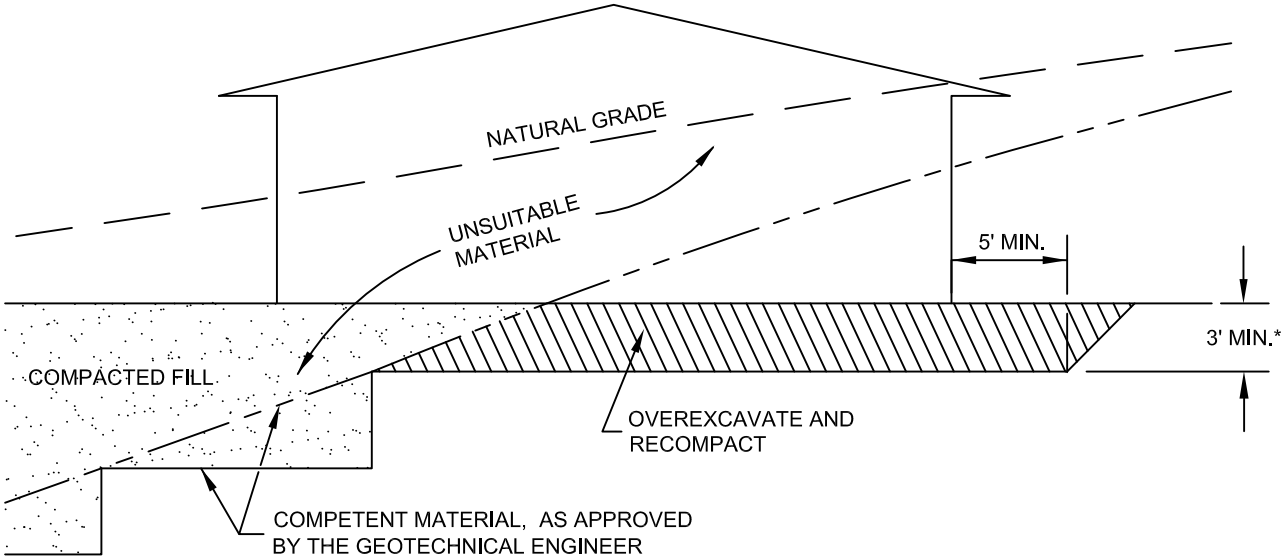
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

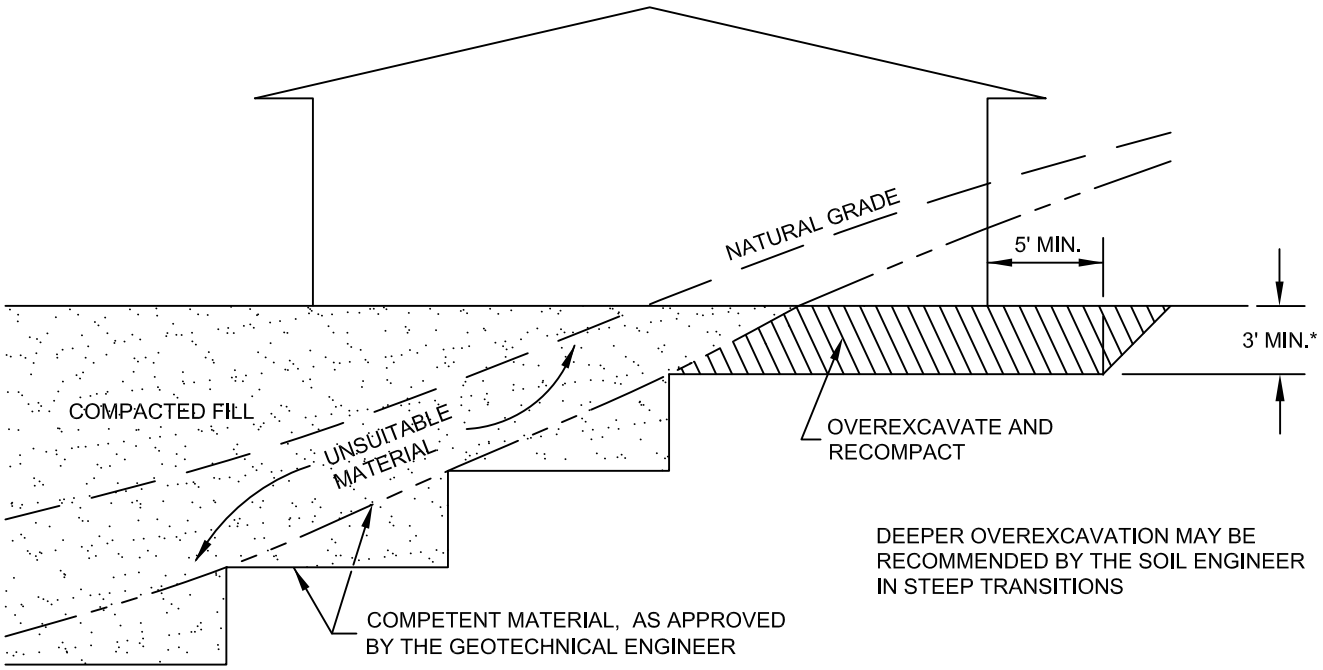
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

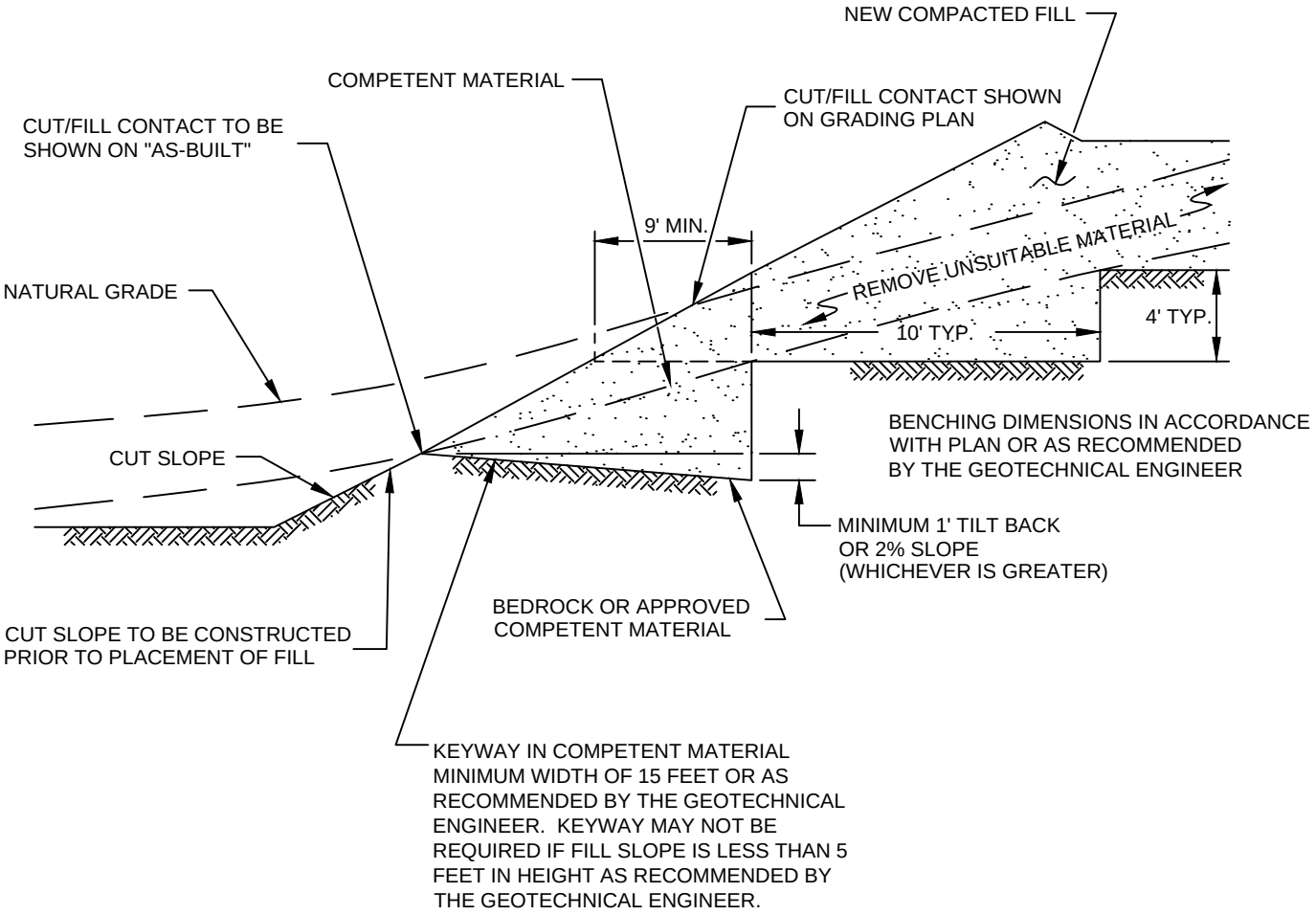
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

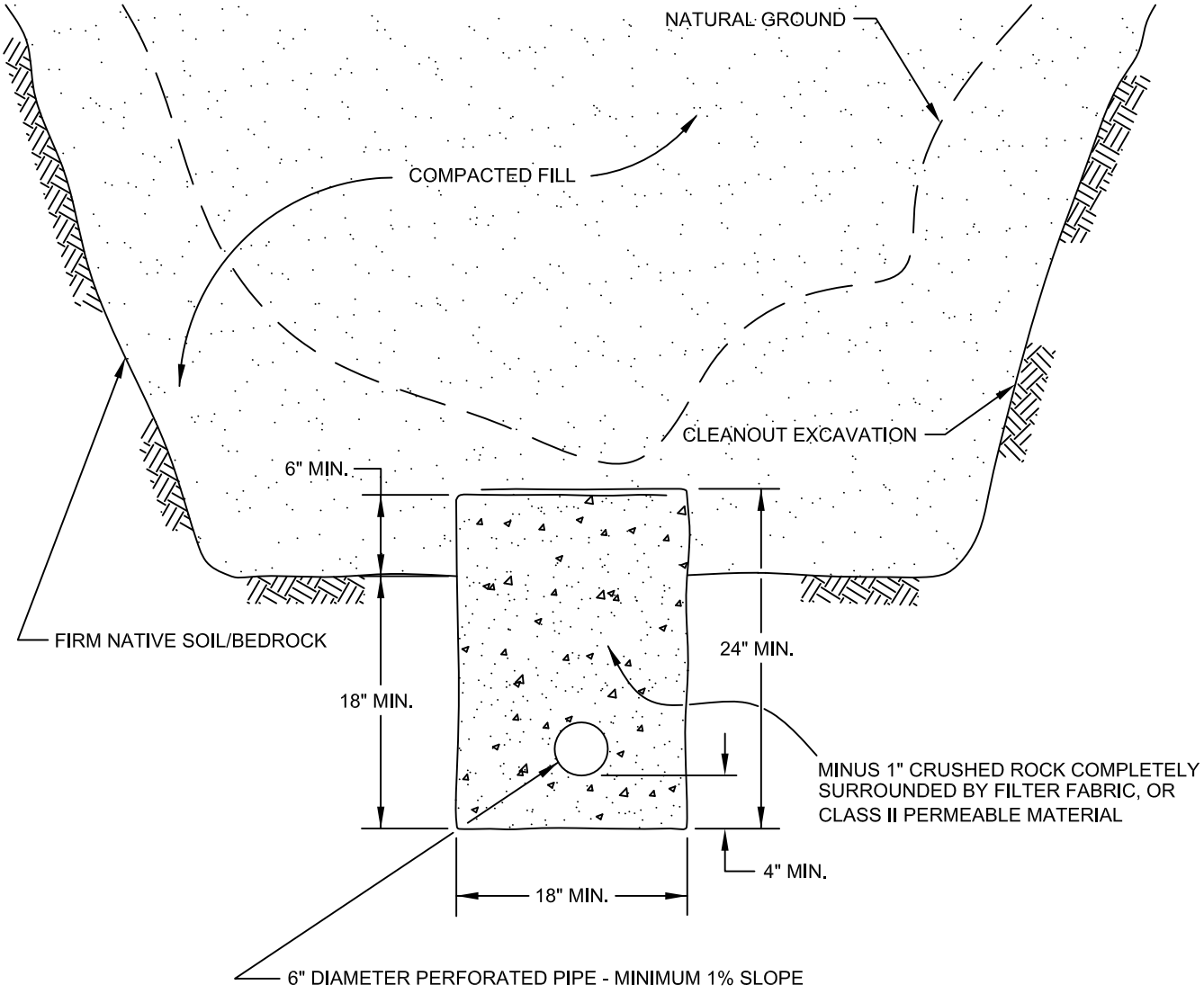
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

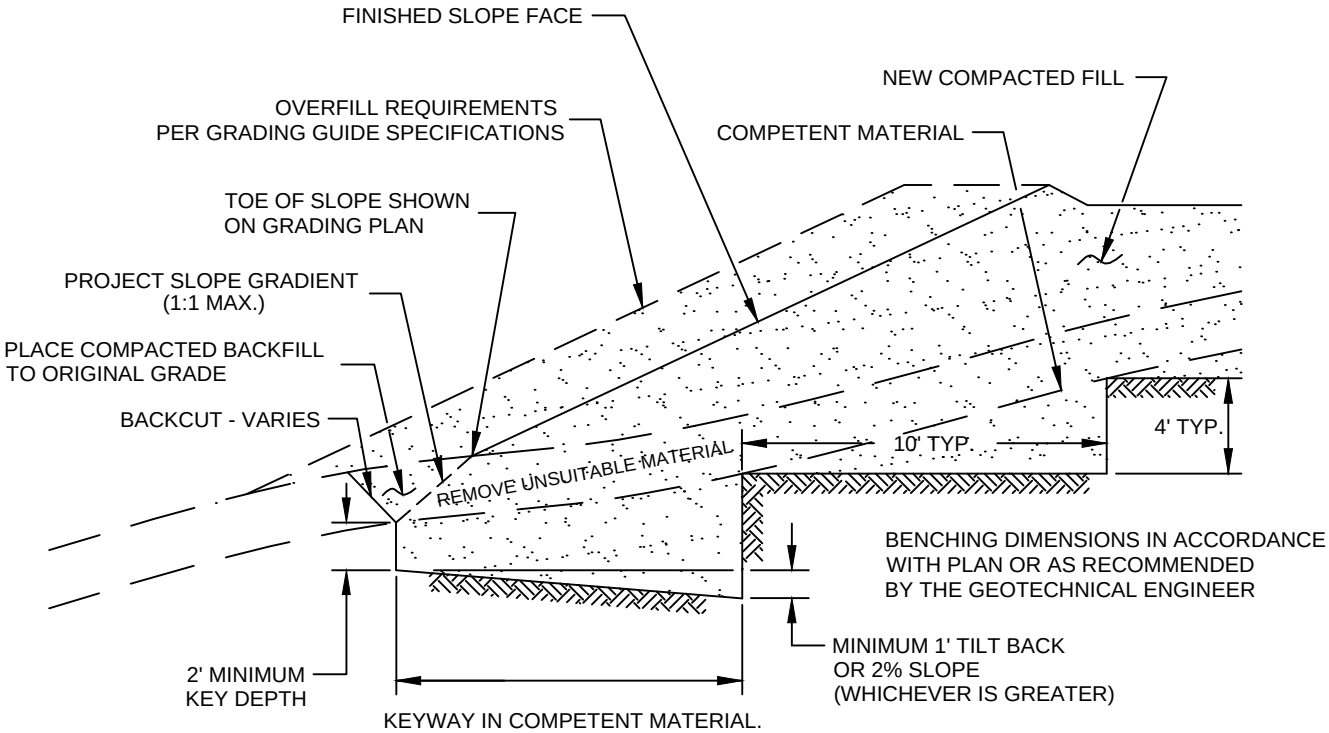
SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE
DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED
WHEN NATURAL SLOPES ARE
EQUAL TO OR STEEPER THAN 5:1
OR WHEN RECOMMENDED BY
THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

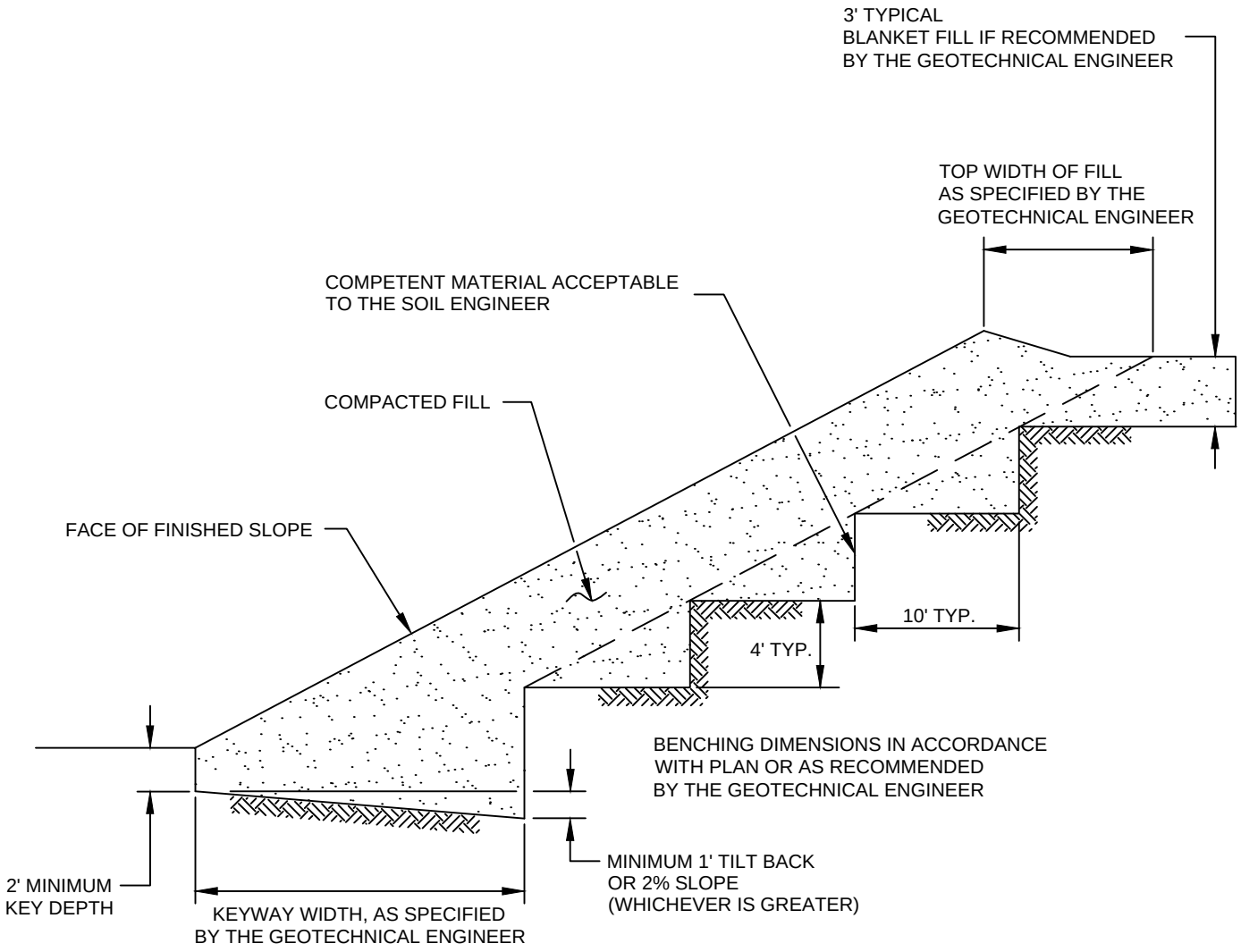
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

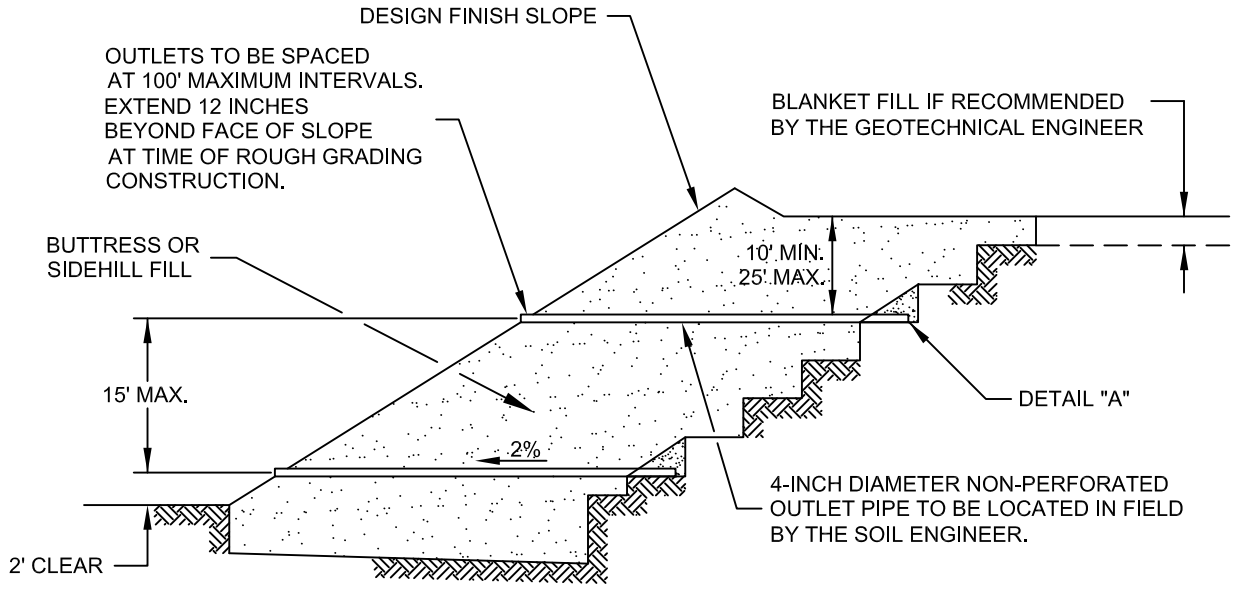
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



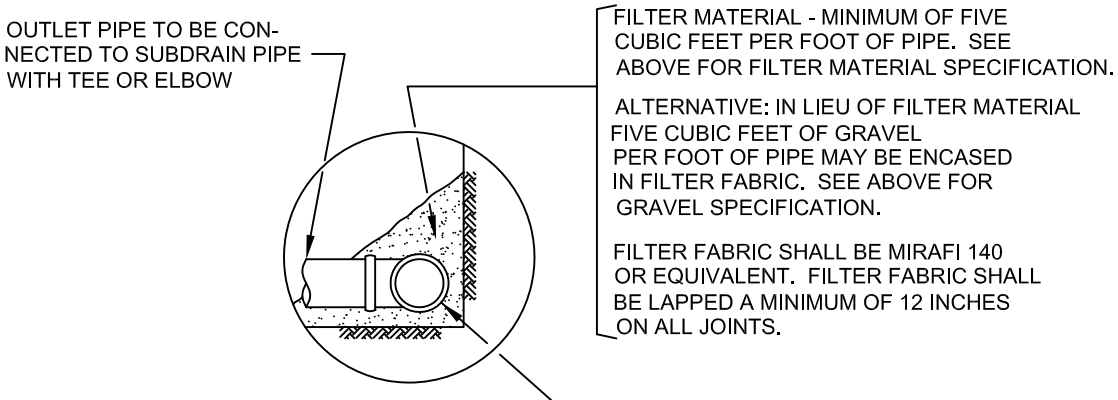
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

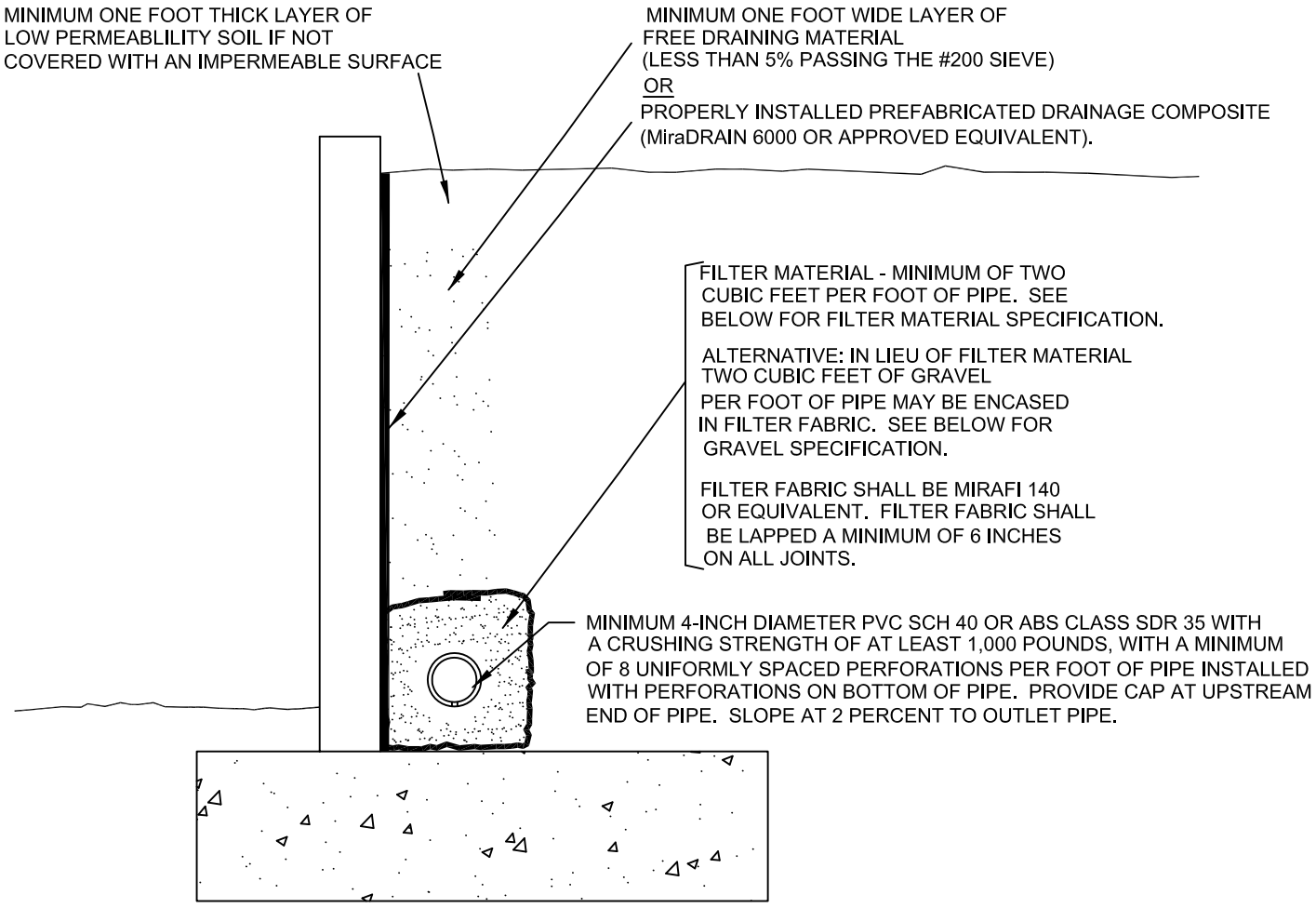
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

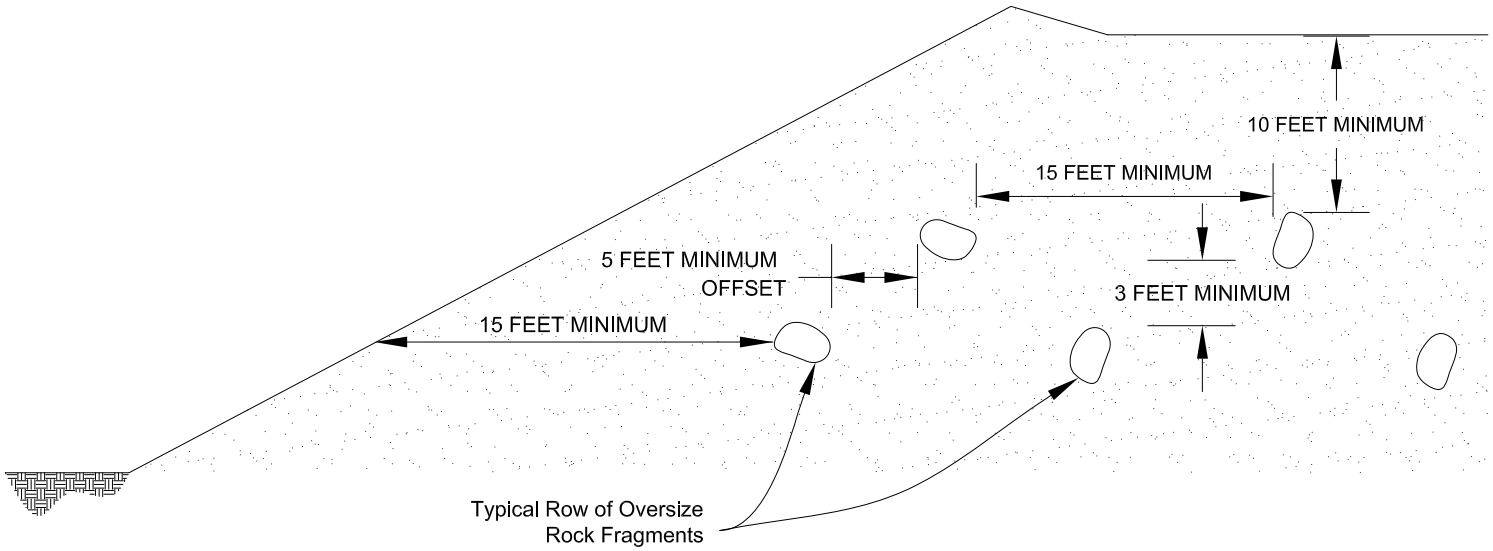
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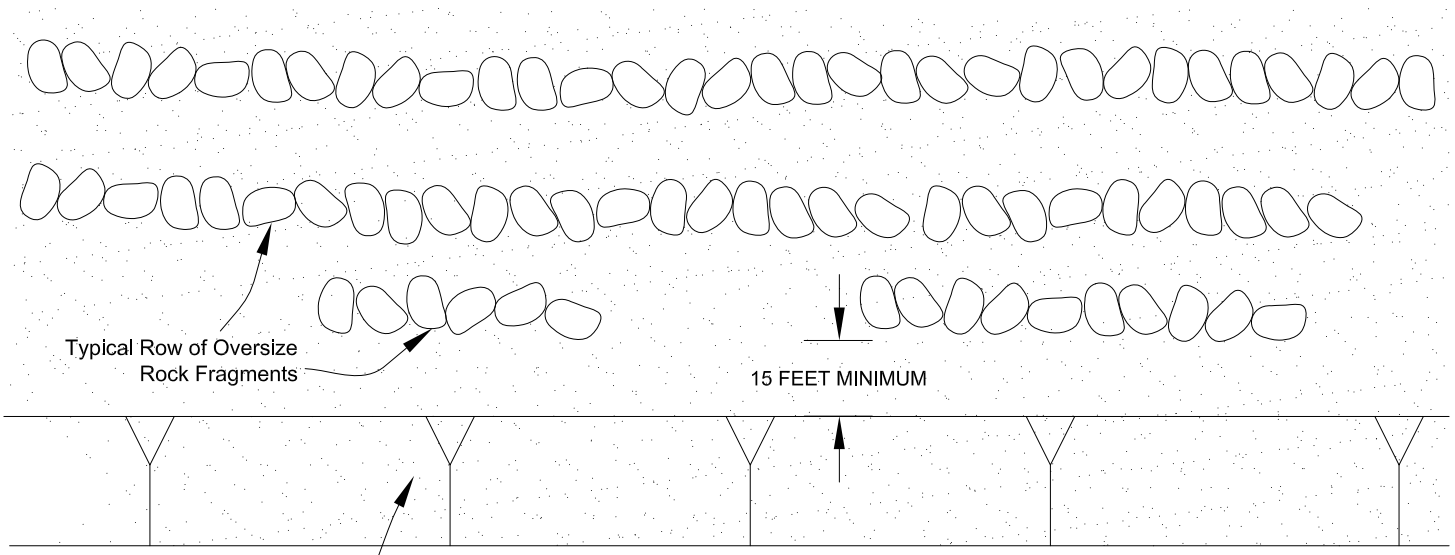
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

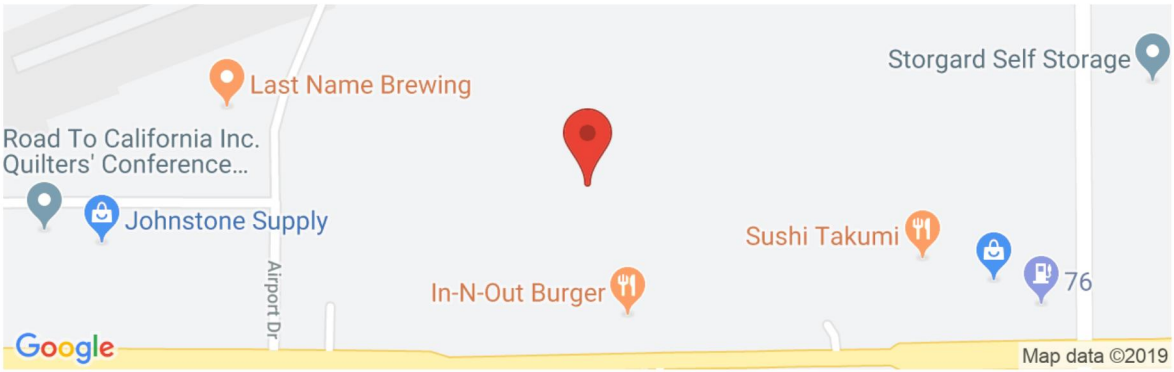
SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

OSHPD

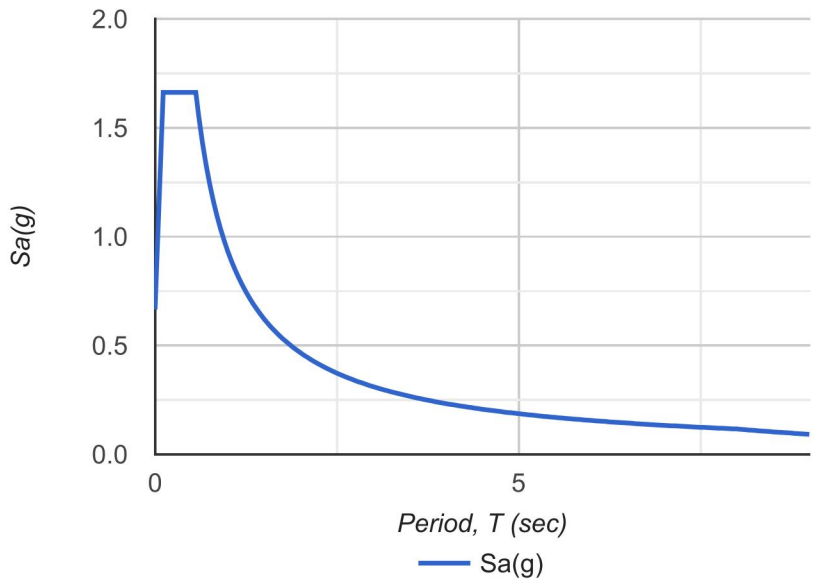
Latitude, Longitude: 34.108500, -117.686704



Date	11/11/2019, 10:30:50 AM
Design Code Reference Document	ASCE7-10
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description	Type	Value	Description
S_S	2.495	MCE_R ground motion. (for 0.2 second period)	SDC	E	Seismic design category
S_1	0.933	MCE_R ground motion. (for 1.0s period)	F_a	1	Site amplification factor at 0.2 second
S_{MS}	2.495	Site-modified spectral acceleration value	F_v	1.5	Site amplification factor at 1.0 second
S_{M1}	1.4	Site-modified spectral acceleration value	PGA	0.973	MCE_G peak ground acceleration
S_{DS}	1.663	Numeric seismic design value at 0.2 second SA	F_{PGA}	1	Site amplification factor at PGA
S_{D1}	0.933	Numeric seismic design value at 1.0 second SA	PGA_M	0.973	Site modified peak ground acceleration

Design Response Spectrum



SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2016 CBC

PROPOSED WAREHOUSE

UPLAND, CALIFORNIA

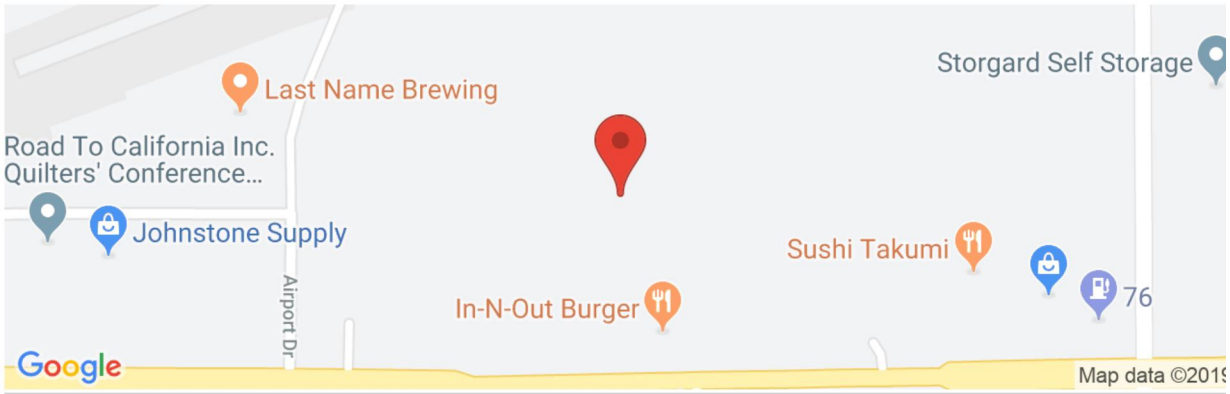
DRAWN: JH
CHKD: RGT

SCG PROJECT
18G122-1R2

PLATE E-1A

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

Latitude, Longitude: 34.108500, -117.686704



Date	11/11/2019, 10:31:27 AM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.701	MCE_R ground motion. (for 0.2 second period)
S_1	0.641	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.701	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.134	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.723	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.795	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.701	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.83	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.102	Factored deterministic acceleration value. (0.2 second)
S1RT	0.641	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.702	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.685	Factored deterministic acceleration value. (1.0 second)
PGAd	0.863	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.929	Mapped value of the risk coefficient at short periods
C_{R1}	0.913	Mapped value of the risk coefficient at a period of 1 s

SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2019 CBC

PROPOSED WAREHOUSE

UPLAND, CALIFORNIA

DRAWN: JH
CHKD: RGT

SCG PROJECT
18G122-1R2

PLATE E-1B

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX D

Phase I Environmental Site Assessment

Phase I Environmental Site Assessment

48.44-Acre Vacant Property
Upland, California

Prepared for:
Bridge Development Partners, LLC
1334 Park View Avenue, Suite 310
Manhattan Beach, California 90266

Prepared by:
Ardent Environmental Group, Inc.
1827 Capital Street, Suite 103
Corona, California 92880

May 2, 2018
Project No. 100986001

ARDENT
ENVIRONMENTAL GROUP, INC.

May 2, 2018
Project No. 100986001

Mr. Tom Ashcraft
Bridge Development Partners, LLC
1334 Park View Avenue, Suite 310
Manhattan Beach, California 90266

Subject: Phase I Environmental Site Assessment
48.44-Acre Vacant Property
Upland, California

Dear Mr. Ashcraft:

Ardent Environmental Group, Inc. (Ardent) has performed a Phase I Environmental Site Assessment of the above-referenced property (site). Work was completed in general accordance with the proposal dated March 1, 2018 between Bridge Development Partners, LLC (Bridge) and Ardent. The attached report presents our methodology, findings, opinions, and conclusions regarding the environmental conditions at the site. We appreciate the opportunity to be of service to you on this project. If there are any questions, please feel free to call the undersigned at your convenience.

Sincerely,
Ardent Environmental Group, Inc.

Taylor Nesby
Staff Scientist

Paul A. Roberts, P.G.
Principal Geologist

PAR/TN/nw

Distribution: (1) Addressee (electronic copy)

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EXECUTIVE SUMMARY

Ardent Environmental Group, Inc. (Ardent) was retained by Bridge Development Partners, LLC (Bridge) to perform a Phase I Environmental Site Assessment (ESA) for a 48.44-Acre Vacant Property located in the city of Upland, California (site). The site was historically vacant land, and from approximately 2002, a portion of the site was occupied by a concrete, asphalt, and rock crushing facility for the production of road base, sand, and gravel. Bridge is considering purchasing the property for commercial redevelopment. Document review and site assessment activities for this report were conducted between March 1, 2018 and March 23, 2018.

In summary, the following items were noted:

- The site was vacant undeveloped land from at least 1928 through 1994. By 2002, the northwestern portion of the site was occupied by a concrete and asphalt crushing operation for the production of road base. In approximately 2015, the operations slightly changed to include crushing of natural materials (i.e. rock) into smaller grain size sand and gravel used in construction activities. The eastern and southern portions of the site remain vacant, undeveloped land. No buildings are located on the site.
- Groundwater has been reported in the site vicinity at depths of approximately 400 feet below the ground surface (bgs) and flows in a southerly direction.
- No on- or off-site environmental concerns were noted.

Ardent has performed this Phase I ESA in general conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E 1527-13, ASTM Practice E 2600-15, and the EPA Standards and Practices for All Appropriate Inquires (AAI), Final Rule (40 CFR, Part 312), for a 48.44-Acre Vacant Property located in the city of Upland, California. Any limitations or exceptions encountered during completion of this report are stated in Section 1.4. No evidence or indication of recognized environmental conditions (RECs), or conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the site has been revealed. Based on the results of this assessment, Ardent recommends no further investigations at this time.

1 INTRODUCTION

Ardent Environmental Group, Inc. (Ardent) was retained by Bridge Development Partners, LLC (Bridge) to perform a Phase I Environmental Site Assessment (ESA) for a 48.44-Acre Vacant Property located in the city of Upland, California (site; Figure 1). Work was conducted in general accordance with the proposal dated March 1, 2018 between Bridge and Ardent. The site was historically vacant land, and from approximately 2002, a portion of the site was occupied by a concrete, asphalt, and rock crushing facility for the production of road base, sand, and gravel. Bridge is considering purchasing the property for commercial redevelopment. The following sections identify the purpose, the involved parties, the scope of work, and the limitations and exceptions associated with the Phase I ESA.

1.1 Purpose of Phase I ESA

In accordance with the American Society for Testing and Materials (ASTM) E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Standard E 1527-13), the objective of the Phase I ESA was to identify, to the extent feasible pursuant to ASTM Standard E 1527-13, recognized environmental conditions (RECs), which are defined by ASTM as "…the presence or likely presence of any hazardous substance or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

The United States Environmental Protection Agency ("USEPA" or "EPA") has stated that ASTM Standard E 1527-13, is consistent with the Standards and Practices for All Appropriate Inquires (AAI), Final Rule (40 Code of Federal Regulations [CFR], Part 312) and is compliant with the statutory criteria for all appropriate inquires. All appropriate inquires, as defined in the AAI Final Rule, must be conducted by persons seeking the landowner liability protections under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) prior to acquiring a property or seeking or receiving federal Brownfields grants under the authorities of CERCLA. The purpose of AAI, as defined in the AAI Final Rule, was to identify releases and threatened releases of hazardous substances which cause or threaten to cause the incurrence of response costs.

As part of this Phase I ESA, Ardent also assessed whether a vapor encroachment condition (VEC) exists at the site. The VEC assessment was completed following the ASTM E 2600-15 Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions (ASTM Standard E 2600-15). The objective of this work was to evaluate whether possible contaminants (e.g. volatile organic compounds [VOCs]) are present in soil and/or groundwater in the site vicinity which might pose a possible vapor intrusion into existing or future buildings at the site.

1.2 Involved Parties

Mr. Taylor Nesby of Ardent conducted the historical research, site reconnaissance, regulatory inquiries, and document review. Mr. Paul Roberts of Ardent completed oversight and management of the project. Mr. Roberts meets the definition of an environmental professional as set forth in the AAI Final Rule.

1.3 Scope of Work

Ardent's scope of work for this Phase I ESA is consistent with ASTM Standard E1527-13 and included the activities listed below.

- **Review of User Provided Information** – Review of information regarding title and judicial records for environmental liens or activity and use limitations, recorded environmental liens, actual or specialized knowledge or commonly known information regarding environmental conditions at the site, the relationship of the purchase price of the property to the fair market value, readily available maps, environmental reports, and other environmental documents pertaining to the site, as available and obtained from the user/client.
- **Records Review** – Acquisition and review of records, including federal, state, tribal, and local regulatory agency databases, for the site and for properties located within a specified radius of the site; local regulatory agency files for the site and selected nearby properties of potential environmental concern; physical setting sources, including topographic maps, geologic maps, and geologic and hydrogeologic reference documents; and historic land use information including aerial photographs, historical fire insurance rate maps, building department records, and city directories, as necessary, that are reasonably ascertainable, publicly available, can be obtained within reasonable time and cost, and are practically reviewable.
- **Vapor Encroachment Condition (VEC) –** Review available regulatory and client provided data to assess Tier 1 non-numeric screening for the site. Ardent evaluated whether contaminants were present in soil and/or groundwater in the site vicinity which might pose a VEC at the site.

- **Site Reconnaissance** – Performance of a site reconnaissance to visually observe the site and any structure(s) located on the site to the extent not obstructed by bodies of water, adjacent buildings, or other obstacles. The purpose of the site reconnaissance is to obtain information indicating the likelihood of identifying RECs in connection with the site, including the general site setting, site usage, use and storage of hazardous materials and petroleum products, disposal of waste products and materials, sources of polychlorinated biphenyls (PCBs), and evidence of releases and possible risks of contamination from activities at adjacent properties.
- **Interviews** – Interviews with site representatives, including owners, occupants, and site managers, regarding the environmental condition of the site to the extent necessary and such persons are available. Interviews with state and/or local government officials as necessary.
- **Report** – Evaluation of the information and data obtained by the Phase I ESA process outlined above and preparation of this Phase I ESA report documenting findings and providing opinions and conclusions regarding possible environmental impacts and RECs at the site.

1.4 Limitations and Exceptions

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ardent should be contacted if the reader requires any additional information or has questions regarding the content, interpretations presented, or completeness of this document.

The findings, opinions, and conclusions are based on an analysis of the observed site conditions and the referenced literature. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ardent has no control. Ardent cannot warrant or guarantee that not finding indicators of any particular hazardous material means that this particular hazardous material or any other hazardous materials do not exist on the site. Additional research, including invasive testing, can reduce the uncertainty, but no techniques now commonly employed can eliminate the uncertainty altogether.

1.5 Special Terms and Conditions

As indicated in Section 13.1.5 of ASTM Standard E 1527-13, the following, which is not intended to be all inclusive, represents out-of-scope items with respect to a Phase I ESA: asbestos-containing materials (ACMs), radon, lead-based paint (LBP), lead in drinking water, wetlands, regulatory compliance, cultural and historic risk, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment, biological agents, and mold. As part of our agreement with the client, Ardent visually assessed site buildings (if present) for possible ACMs, LBP, and mold. In addition, ASTM Standard E 2600-15 supplements the ASTM Standard E 1527-13 to include evaluation of VEC using Tier 1 screening.

This study did not include an evaluation of geotechnical conditions or potential geologic hazards. In addition, Ardent did not address interpretations of zoning regulations, building code requirements, or property title issues.

1.6 User Reliance

This report may be relied upon and is intended exclusively for use by the client, its partners, members, investors, affiliates, successors and assigns, and lenders. Any use or reuse of the findings, opinions, and/or conclusions of this report by parties other than the foregoing parties is undertaken at said parties' sole risk.

1.7 Physical Limitations

No physical limitations were encountered during the completion of this report.

1.8 Data Gaps

No significant data gaps were noted during the preparation of this Phase I ESA report.

2 GENERAL SITE CHARACTERISTICS

The following sections describe the location and the current uses of the site and adjacent properties. A site location map is presented as Figure 1 and a site vicinity map is presented as Figure 2. Selected photographs of the site and surrounding properties are provided in Appendix A.

2.1 Location and Legal Description

The site generally takes up a whole city block with Lowe's Home Improvement and other commercial properties to the east, West Foothill Boulevard to the south, Airport Drive to the west, and Cable Airport to the north (Figure 2). The site is located in the city of Upland, San Bernardino County, California. The address 1254 Airport Drive has been assigned to the site. No other site addresses were provided to Ardent or identified during the completion of this Phase I ESA.

The site has been assigned four APNs, including 1006-351-09-0000, 1006-351-10-0000, 1006-551-12-0000, and 1006-551-22-0000. A complete legal description of the site is presented in the Preliminary Title Reports provided in Appendix B.

The site is bounded as presented in Figure 2. Site boundary information was obtained during the site reconnaissance and information provided by the client.

2.2 Site Description and Current Site Uses/Operations

The following subsections present a description of the structures present at the site, the tenants currently occupying the site, the activities being conducted on-site, the heating and cooling systems utilized in the site building, the sewage disposal system, and the potable water provider for the site, if any.

2.2.1 Site Description

The site is irregular-shaped, comprising approximately 48.44-acres. There are no buildings on the site.

2.2.2 Occupants

The site is currently occupied by Upland Rock, a rock crushing facility.

2.2.3 Heating and Cooling Systems

The site does not have heating and cooling systems in place. Future heating and cooling systems will be powered by electricity and/or natural gas which will likely be provided by the local utility companies.

2.2.4 Sewage Disposal/Septic Systems

On-site sewage or septic systems, such as septic tanks or leach fields were not observed or historically reported for the site. Future sewage systems will be connected to the city sewage system.

2.2.5 Potable Water

On-site potable water is supplied by the local water purveyor. Potable water for future development will also likely be supplied by the local water purveyor.

2.3 Adjacent Properties

In general, the site vicinity is used for commercial, retail, and residential purposes (Figure 2). Surrounding properties include Cable Airport located immediately north of the site and Lowe's Home Improvement is located immediately east of the site. Small "mom-and-pop" businesses are located south of the site which front West Foothill Boulevard. These businesses include automobile repair shops, bicycle retail, restaurants, and a car wash. Residences are also sparsely located between these businesses. Other small "mom-and-pop" businesses are also located immediately west of the site which front Airport Drive. These businesses include trucking companies, welders, and warehouses. Some residences are also located between these businesses. Other commercial properties are located further south of the site and beyond West Foothill Boulevard.

Evidence of underground storage tanks (USTs), above ground storage tanks (ASTs), or possible hazardous materials or wastes being stored by off-site facilities along the site property line were not noted. These off-site properties would not be considered an environmental concern to the site.

3 USER PROVIDED INFORMATION

The following sections summarize information provided by the user to assist the environmental professional in identifying the possibility of RECs in connection with the subject property, and to fulfill the user's responsibilities in accordance with Section 6 of ASTM Standard E1527-13. A copy of the user questionnaire as completed by Mr. Tom Ashcraft of Bridge is presented in Appendix B.

3.1 Current Title Information

A Preliminary Title Report was provided by the client and reviewed by Ardent. The Preliminary Title Report was prepared by First American Title Insurance Company National Commercial Services dated March 12, 2018. According to the Preliminary Title Report, the current owner of the site is "Bongiovanni Construction Co., LLC, a California limited liability company, Successor by Conversion to Bongiovanni Construction Co., a California General Partnership, who acquired title as Bongiovanni Construction Company, a Co-Partnership". A copy of this Preliminary Title Report is provided in Appendix B.

3.2 Environmental Liens or Activity and Use Limitations

Based on our review of available documentation, no records of environmental liens or activity and use limitations (AULs) were noted associated with the subject property. In addition, Mr. Ashcraft was not aware of any environmental liens or AULs against the subject property that are filed or recorded under federal, state, or local law.

3.3 Specialized Knowledge

Mr. Ashcraft indicated that, for purposes of this assessment, the client has no specialized knowledge or experience pertaining to the site or the adjacent properties that is material to RECs in connection with the subject property.

3.4 Commonly Known or Reasonably Ascertainable Information

Mr. Ashcraft indicated that the client was not aware of commonly known or reasonably ascertainable information pertaining to the site that is material to RECs in connection with the subject property.

3.5 Valuation Reduction for Environmental Issues

In a transaction involving the purchase of a parcel of commercial real estate, the user shall consider the relationship of the purchase price of the property to fair market value of the property if the property was not affected by hazardous substances or petroleum products. Mr. Ashcraft indicated that the purchase price being paid for the subject property reasonably reflects the fair market value of the subject property.

3.6 Reason for Performing Phase I ESA

Ardent was retained by Bridge to perform the Phase I ESA as part of its real estate due diligence during purchase of the property.

4 PHYSICAL SETTING

The following sections include discussions of topographic, geologic, and hydrogeologic conditions in the vicinity of the site, based upon our document review and our visual reconnaissance of the site and adjacent areas.

4.1 Site Topography

Based on the review of the United States Geological Survey (USGS) 7.5 Minute Series, San Bernardino County, California, Topographic Quadrangle Map dated 2012 the site has approximate elevation of 1,396 above mean sea level (msl). Local and regional surface topography generally slopes to the south.

4.2 Geology

The site lies on the northern edge of the Chino Basin, which is comprised of permeable water-bearing sediments in the center, with an impermeable bedrock perimeter. The sediments are divided into younger and older-aged alluvium. The younger alluvium consists of layers of boulders, cobbles, sand, gravel, silt and clay. The underlying, older alluvium supplies most of the water to wells in the Chino Basin. Historical meandering of streams has created a poorly stratified and discontinuous sequence of alluvial fan deposits in the site vicinity.

4.3 Oil and Gas Maps

Based on a review of the Division of Oil, Gas, and Geothermal Resources (DOGGR) on-line well finder, the site is not located in an active oil field and no oil or natural gas wells have been drilled on the site or adjacent properties.

4.4 Site Hydrology

The following sections discuss the site hydrology in terms of both surface waters and groundwater.

4.4.1 Surface Waters

No natural surface water bodies, including ponds, streams, or other bodies of water are present on or adjacent to the site.

4.4.2 Groundwater

No groundwater information for the site was available in regulatory agency files. To obtain groundwater information, Ardent reviewed the State Water Resources Control Board (SWRCB) GeoTracker website (GeoTracker) for properties undergoing groundwater investigations in the site vicinity. Groundwater information was obtained from the San Bernardino County Fire Department (SBCFD) for a facility located approximately 0.75-mile southeast of the site. According to the SBCFD, groundwater in 2006 was reported at a depth of approximately 400 feet below ground surface (bgs). Groundwater flow direction is presumed to follow local topography to the south.

5 HISTORICAL LAND USE

Ardent conducted a historical record search for both the site and surrounding areas. This included a review of one or more of the following sources that were found to be both reasonably ascertainable and useful for the purposes of this Phase I ESA: historical aerial photographs, historical fire insurance maps, historical city directories, building permits and plans, topographic maps, property tax records, zoning/land use records, and a review of prior environmental assessment reports regarding the site. Copies of historical data obtained during this assessment are provided in Appendix C.

5.1 Summary of Historical Land Use of the Property

The site was vacant undeveloped land from at least 1928 through 1994. By 2002, the northwestern portion of the site was occupied by a concrete and asphalt crushing operation for the production of road base. In approximately 2015, the operations slightly changed to include crushing of natural materials (i.e. rock) into smaller grain size sand and gravel used in construction activities. The eastern and southern portions of the site remain vacant, undeveloped land. No buildings are located on site.

5.2 Summary of Historical Land Use of Adjoining Properties

The site vicinity was used for residential and agricultural purposes or vacant land from at least 1923 through 1949. By the 1950s, an increase in commercial property use was noted in the site vicinity, including the development of Cable Airport immediately north of the site. Currently, the site vicinity is largely composed of commercial properties.

5.3 Fire Insurance Rate Maps

Historical Sanborn Fire Insurance Rate Maps (Sanborn maps) were requested from Environmental Data Resources, Inc. (EDR) of Milford, Connecticut. According to EDR, there were no Sanborn maps available for the site.

5.4 Historical Aerial Photographs

Historical aerial photographs for selected years between 1928 and 2014 were provided by EDR.

- **1928, 1938, and 1949 –** The site was vacant land. The site vicinity was vacant or used for agricultural and residential purposes. In 1949, the tarmac for Cable Airport is visible immediately north of the site.
- **1953, 1959, 1964, 1966, 1975, 1979, 1981, 1989, 1990 and 1994 –** The site remains vacant land. An increase in commercial use was noted through the years.
- **2002, 2006, 2010, and 2014 –** The northeastern portion of the site appears to be utilized as a rock crushing operation. The remaining areas of the site are vacant. The site vicinity is used for commercial purposes, similar to that observed during Ardent's site vicinity reconnaissance.

5.5 Building Department

The City of Upland Building Department (UBD) maintains building permits for the site and surrounding properties. Ardent requested information from the UBD based on the address of 1254 Airport Drive. According to the UBD, two permits were available for review; both associated with an addition to an existing home in 1967. There were no permits noted in the file that would suggest a possible environmental concern with respect to the site.

5.6 City Directories

A city directory search for selected years from 1922 through 2014 was obtained from EDR for the site and immediate site vicinity. The site address was not listed. Site vicinity listings generally included residential (single-family homes and apartments) and commercial

properties, such as automobile repair shops, engineering firms, and banking companies, to name a few. In 1951, a gasoline station at address 1775 West Foothill Boulevard was located immediately south of the site (currently occupied by Route 66 Auto Repair; Figure 2). Based on the direction and depth to groundwater, this historic listing would not be considered an environmental concern to the site.

5.7 Historical Topographic Maps

Ardent reviewed historical topographic maps obtained from EDR. The maps were dated 1897, 1900, 1903, 1928, 1933, 1940, 1944, 1954, 1967, 1973, 1976, 1981, and 2012. The topographical maps depict the site as being vacant. The maps dated post-1954 depict Cable Airport north of the site.

5.8 Interviews

Interviews were conducted by Ardent with key site personnel (e.g., past and present owners, operators, and/or occupants), with the objective of obtaining information indicating RECs in connection with the site. The following are the site personnel interviewed for purposes of this assessment, and a summary of their comments with regards to site conditions.

5.8.1 Interview with Owner

The site owner was not available for an interview.

5.8.2 Interview with Site Manager

No Site Manager was available for interview during completion of this assessment.

5.8.3 Interviews with Occupant

Mr. Randy Rogers, Operations Manager of Upland Rock and Mr. Neil Grabowski, Manager of Upland Rock, were interviewed during completion of this report. Information obtained from these interviews is presented throughout the report.

5.8.4 Interviews with Local Government Officials

Representatives of local regulatory agencies were interviewed during completion of this report. Information obtained from these interviews are presented throughout the report.

5.8.5 Interviews with Others

No other interviews were completed.

6 SITE RECONNAISSANCE

The site and site vicinity reconnaissance was performed by Ardent personnel on March 19, 2018. The site reconnaissance involved a walking tour of the site and visual observations of adjoining properties. At the time of the site reconnaissance, the weather was sunny, and no weather related visual obstructions were noted. The northwestern portion of the site was occupied by Upland Rock. The southern and eastern portions of the site were vacant, undeveloped land.

Upland Rock uses the site to crush rock into smaller grain size sand and gravel for use in construction activities. Large rocks are brought to the site and crushed with a portable crusher. The end product is stored on-site in stockpiles and segregated by grain size. Front-end loaders and crushing equipment are powered by diesel fuel that is stored on-site in an AST, within secondary containment. No USTs have been used on-site. The materials are sold to construction companies who pick up the materials with their own trucks. No fleet trucks are used by Upland Rock. Dust suppression is maintained using a water truck.

According to Mr. Rogers of Upland Rock, Upland Rock started operation at the site in approximately 2015. Prior to that, this area was used by Dineen Trucking, Inc. who accepted concrete and asphalt which was crushed for road base. Some piles of concrete and asphalt from Dineen Trucking, Inc. remain stockpiled on-site.

Trash and debris, such as shopping carts and clothing, were scattered throughout the vacant areas of the site. No hazardous materials or wastes such as 55-gallon drums, containers of waste oil, automobile batteries, Transite piping, or stained or odorous soil was noted. Selected photographs taken during these activities are included in Appendix A.

6.1 Use and Storage of Hazardous Substances and Petroleum Products

Upland Rock uses one 500-gallon diesel fuel AST for on-site equipment. The AST is situated in secondary containment. No stains or evidence of a release were noted. Based on this information, this AST would not be considered an environmental concern to the site.

6.2 Storage and Disposal of Hazardous Wastes

There was no storage or disposal of hazardous wastes noted during the site reconnaissance.

6.3 Unidentified Substance Containers

Unidentified substance containers were not observed on site during the site reconnaissance.

6.4 Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs)

As mentioned above, there is one 500-gallon diesel fuel AST located on-site. Based on the lack of evidence of release, leaks and stains, this feature is not considered an environmental concern to the site. No USTs have been reportedly used on the site.

6.5 Evidence of Releases

There was no evidence of releases noted during the site reconnaissance.

6.6 Polychlorinated Biphenyls (PCBs)

Historically, PCBs (a group of hazardous substances and suspected human carcinogens) were widely used as an additive in cooling oils for electrical components. Typical sources of PCBs can include electrical transformers. Transformers were not observed to be located on-site during the site reconnaissance.

6.7 Suspect Asbestos-Containing Building Materials (ACMs)

The manufacture of most ACMs was phased out in the 1970s, ending in 1980. Previously manufactured ACMs that were in stock continued to be used through approximately 1981. Some non-friable ACMs are still manufactured. In general, buildings constructed after 1981 have a negligible potential to contain friable ACMs and a low potential for most non-friable ACMs. Buildings were not observed on the site, therefore, ACMs are not likely present.

6.8 Lead Based Paint (LBP)

The manufacture of LBP was phased out in approximately 1978. Building structures were not observed on the site, therefore, LBP is not likely present.

6.9 Indications of Water Damage or Mold Growth

Since no structures were present at the site, no visual indications of water damage or visible mold growth were noted.

6.10 Wastewater Systems

Wastewater systems were not observed during the site reconnaissance.

6.11 Stormwater Systems

Stormwater systems were not observed during the site reconnaissance.

6.12 Wells

Wells (e.g., groundwater monitoring wells, water supply wells, etc.) were not noted during the site reconnaissance.

6.13 Other Subsurface Structures

No other subsurface structures were observed during the site reconnaissance.

6.14 Other Issues

No other on- or off-site issues of environmental concern were noted during the site reconnaissance.

7 ENVIRONMENTAL DATABASE SEARCH

A computerized environmental information database search was performed by EDR for this Phase I ESA on March 6, 2018. The database search includes federal, state, local, and tribal databases. A summary of the environmental databases searched, their corresponding search radii, and number of noted facilities of environmental concern is presented in Appendix D. In addition, a description of the assumptions and approach to the database search is provided in Appendix D. The review was conducted to evaluate whether the site or properties within the vicinity of the site have been reported as having experienced significant unauthorized releases of hazardous substances or other events with potentially adverse environmental effects.

Four unmapped properties, due to poor or inadequate address information, were identified in the database report. Based on the reviewed location information provided for these properties, and/or the types of databases on which the properties are listed, there is a low likelihood that the environmental integrity of the site has been adversely impacted by these off-site sources.

The following paragraphs describe the databases that contain noted properties of environmental concern, and include a discussion of the regulatory status of the facilities and potential environmental impact to the subject site.

7.1 Federal National Priorities List (NPL): Distance Searched – 1 mile

The NPL is the USEPA's database of uncontrolled or abandoned hazardous waste properties identified for priority remedial actions under the Superfund program. This database includes proposed NPL listings.

Neither the site nor properties located within a 1-mile radius were listed in this database.

7.2 Federal Delisted NPL: Distance Searched – 1 mile

This database contains delisted NPL properties under the Superfund program. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the USEPA uses to delete properties from the NPL. In accordance with 40 Code of Federal Regulations (CFR) 300.425. (e), properties may be deleted from the NPL where no further response is appropriate.

Neither the site nor properties located within a 1-mile radius were listed in this database.

7.3 Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List: Distance Searched – 0.5 mile

The CERCLIS database has been replaced by the Superfund Enterprise Management System (SEMS) database, which tracks hazardous waste sites and remedial activities performed in support of the EPA's Superfund Program. This database also includes properties listed on the SEMS-ARCHIVE database for facilities with statuses of No Further Remedial Action Planned (NFRAP).

Neither the site nor properties located within a 0.5-mile radius were listed in this database.

7.4 Federal Corrective Action Report (CORRACTS): Distance Searched – 1 mile

The USEPA maintains this database of Resource Conservation and Recovery Act (RCRA) facilities that are undergoing corrective action. A corrective action order is issued when there has been a release of hazardous waste or constituents into the environment from a RCRA facility.

Neither the site nor properties located within a 1-mile radius were listed in this database.

7.5 Federal Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Facilities List: Distance Searched – 0.5 mile

The RCRA TSD database (non-CORRACTS) is a compilation by the EPA of facilities that report generation, storage, transportation, treatment, or disposal of hazardous waste.

Neither the site nor properties located within a 0.5-mile radius were listed on this database.

7.6 Federal RCRA Generators List: Distance Searched – Site and Adjoining Properties

This list identifies sites that generate hazardous waste as defined by RCRA. Inclusion on this list is for permitting purposes and is not indicative of a release.

The site was not listed on this database. Three adjacent facilities were listed on this database. “Upland Aircraft” at 1749 West 13th Street is located immediately north of and potentially upgradient from the site. “Benson Town Cleaners” at 1651 West Foothill Boulevard is located immediately east of and potentially crossgradient from the site. “Upland Automotive” at 1803 West Foothill Boulevard is located immediately south of and potentially downgradient from the site. There were no violations noted.

7.7 Federal Institutional Control/Engineering Control Registries: Distance Searched – Site

These lists identify properties with engineering and/or institutional controls. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or affect human health. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on the site. Deed restrictions are generally required as part of the institutional controls.

The site is not listed on this database.

7.8 Federal Emergency Response Notification System (ERNS) List: Distance Searched – Site

The ERNS database, maintained by the USEPA, contains information on reported releases of oil and hazardous substances.

The site is not listed on this database.

7.9 Federal Brownfield List: Distance Searched – 0.5 mile

The USEPA Brownfield database, entitled Targeted Brownfield's Assessments (TBA), lists properties for which the USEPA is providing funding and/or technical support for environmental assessments and investigations. The objective of the TBA is to promote cleanup and redevelopment of undesirable properties with environmental issues.

Neither the site nor properties located within a 0.5-mile radius were listed on this database.

7.10 State Calsites Database (Calsites) or State-Equivalent CERCLIS: Distance Searched – 1 mile

The Calsites database, also known as the State-equivalent CERCLIS, is maintained by the Cal-EPA Department of Toxic Substances Control (DTSC). This database contains information on Federal Superfund Sites, State Responses, including Military Facilities and State Superfund Sites, Voluntary Cleanup, and School Sites.

The site was not listed. Two properties located within a 1-mile radius from the site were listed on this database. "Laidlaw Environmental Services CA Inc", at 1369 West 9th Street is located approximately 0.9-mile southeast of and potentially crossgradient from the site. "Property At 1333 West 9th Street", is located approximately 0.91-mile southeast of and potentially crossgradient from the site. Based on distance, direction, and depth to groundwater, these properties would not be considered an environmental concern to the site.

7.11 State Solid Waste Landfill Sites (SWLF): Distance Searched – 0.5 mile

The SWLF database consists of open and closed solid waste disposal facilities and transfer stations. The data comes from the Integrated Waste Management Board's Solid Waste Information System (SWIS) and the SWRCB Waste Management Unit Database (WMUD) database.

The site was not listed. One facility, listed twice by EDR, was noted within the 0.5-mile radius. The facility, referred to as the City of Claremont/Corp Yard at 1616 Monte Vista Avenue is located approximately 0.48-mile west to northwest of and potentially crossgradient from the site. Based on distance, direction, and depth to groundwater, these listings would not be considered an environmental concern to the site.

7.12 State Leaking Underground Storage Tank (LUST) Lists: Distance Searched – 0.5 mile

The LUST information system is obtained from by the SWRCB and the RWQCB.

The site was not listed. Nine facilities located within a 0.5-mile radius were listed on this database as closed cases. None of which are located immediately adjacent to the site. Based on the distance, direction, and regulatory status, these facilities are not considered an environmental concern to the site.

7.13 State Underground Storage Tank (UST) and Aboveground Storage Tank (AST) Registration List: Distance Searched – Site and Adjoining Properties

UST and AST databases are provided by the SWRCB. Inclusion on these lists is for permitting purposes and is not indicative of a release.

The site was not listed. Three facilities were listed immediately adjacent to the site. All of which were for use of ASTs. “Cable Airport Inc” at 1749 West 13th Street located immediately north of and potentially upgradient from the site, is listed twice on the AST database. “Reach 13” at 1257 Airport Drive is located west to southwest of and potentially crossgradient from the site. There were no adjacent facilities identified on the UST database.

7.14 State Voluntary Cleanup Programs (VCPs): Distance Searched – 0.5 mile

The State VCP database lists low threat level properties with either confirmed or unconfirmed releases. Project proponents have requested that the DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC’s costs.

Neither the site nor properties located within a 0.5-mile radius were listed on this database.

7.15 Indian Reservations: Distance Searched – 1 mile

This list depicts Indian administered lands of the United States that have an area equal to or greater than 640 acres. Indian Reservations were not listed in the database within a 1-mile radius from the site. Due to the lack of Indian Reservations within 1-mile of the site, other tribal database listings required by ASTM and AAI were deemed not applicable. These listings would include tribal-equivalent NPL, CERCLIS, Landfill and/or Solid Waste

Disposal, LUST, UST and AST Registrations, Institutional Control/Engineering Control Registries, VCPs, and Brownfields.

7.16 Other Non-ASTM and AAI Database: Distance Searched – Site

Other databases were included in the EDR report, but are not required by ASTM or AAI. Based on our review of these databases, the site was not listed on these databases.

8 VAPOR ENCROACHMENT CONDITION (VEC)

Ardent completed a VEC study for the site using Tier 1 criteria as recommended by ASTM E 2600-15. The Tier 1 screening identifies surrounding facilities that pose a possible vapor intrusion source to the site based on the results of the Phase I ESA investigations and certain criteria outlined by ASTM. These criteria include a certain distance from the target site (referred to by ASTM as within the “area of concern”); the types of chemicals used (referred to by ASTM as the “chemicals of concern”); and a plume test to determine if the plume associated with a source of contamination is close enough to the site to impact indoor air quality. Based on our review of regulatory records, files, databases, client furnished data, and site reconnaissance activities, the site would be considered a “low risk” for vapor intrusion.

9 REGULATORY RECORDS REVIEW

The Regional Water Quality Control Board, Santa Ana Region (RWQCB), DTSC, South Coast Air Quality Management District (SCAQMD), and San Bernardino County Fire Department (SBCFD) are the lead regulatory agencies for permitting and regulating USTs, ASTs, LUST cases, and/or facilities that use, store, or generate hazardous waste or hazardous materials. The San Bernardino County Division of Environmental Health Services (DEHS) maintains records and permits pertaining to public health and environmental hazards. Ardent requested information regarding possible files for the site using APNs associated with the site or reviewed available on-line data. No addresses were available at the time requests were submitted.

9.1 Regional Water Quality Control Board, San Bernardino Region (RWQCB)

Ardent reviewed the SWRCB GeoTracker website. No information regarding the site was available.

9.2 Department of Toxic Substances Control (DTSC)

Ardent researched information regarding the site on the DTSC's EnviroStor and Hazardous Waste Tracking System (HWTS) databases. The site was not listed.

9.3 South Coast Air Quality Management District (SCAQMD)

Ardent searched the SCAQMD FINDs database. No information was provided.

9.4 San Bernardino County Fire Department (SBCFD)

Records regarding the site were requested from the SBCFD. At the time of this report, the SBCFD indicated that no records exist for the site.

9.5 San Bernardino County Division of Environmental Health Services (DEHS)

Records regarding the site were requested from the DEHS. In response, DEHS issued a letter stating that no records exist for the site.

10 FINDINGS, OPINIONS AND CONCLUSIONS

Based upon the results of this Phase I ESA the following findings, opinions and conclusions are provided.

10.1 Findings and Opinions

The following presents a summary of findings and opinions associated with this Phase I ESA performed for the site, including known or suspect RECs, controlled RECs, and de minimis environmental conditions (i.e., conditions that generally do not present a material risk of harm to public health or the environment).

In summary, the following items were noted:

- The site was vacant undeveloped land from at least 1928 through 1994. By 2002, the northwestern portion of the site was occupied by a concrete and asphalt crushing operation for the production of road base. In approximately 2015, the operations slightly changed to include crushing of natural materials (i.e. rock) into smaller grain size sand and gravel used in construction activities. The eastern and southern portions of the site remain vacant, undeveloped land. No buildings are located on the site.
- Groundwater has been reported in the site vicinity at depths of approximately 400 feet bgs and flows in a southerly direction.
- No on- or off-site environmental concerns were noted.

10.2 Conclusions

Ardent has performed this Phase I ESA in general conformance with the scope and limitations of the ASTM Practice E 1527-13, ASTM Practice E 2600-15, and the EPA Standards and Practices for AAI, Final Rule (40 CFR, Part 312), for a 48.44-Acre Vacant Property located in the city of Upland, California. Any limitations or exceptions encountered during completion of this report are stated in Section 1.4. No evidence or indication of RECs, or conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the site has been revealed. Based on the results of this assessment, Ardent recommends no further investigations at this time.

11 RECOMMENDATIONS

Ardent recommends no further investigations at this time.

12 SELECTED REFERENCES

Environmental Data Resources, Inc. (EDR), 2018, Regulatory Database Report, dated March 6.

San Bernardino County Fire Department, 2006, Underground Storage Tank (UST) Case Closure, Arco Station #9690, 475 North Mountain Avenue, Upland, California, dated October 4.

13 QUALIFICATIONS STATEMENT AND SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

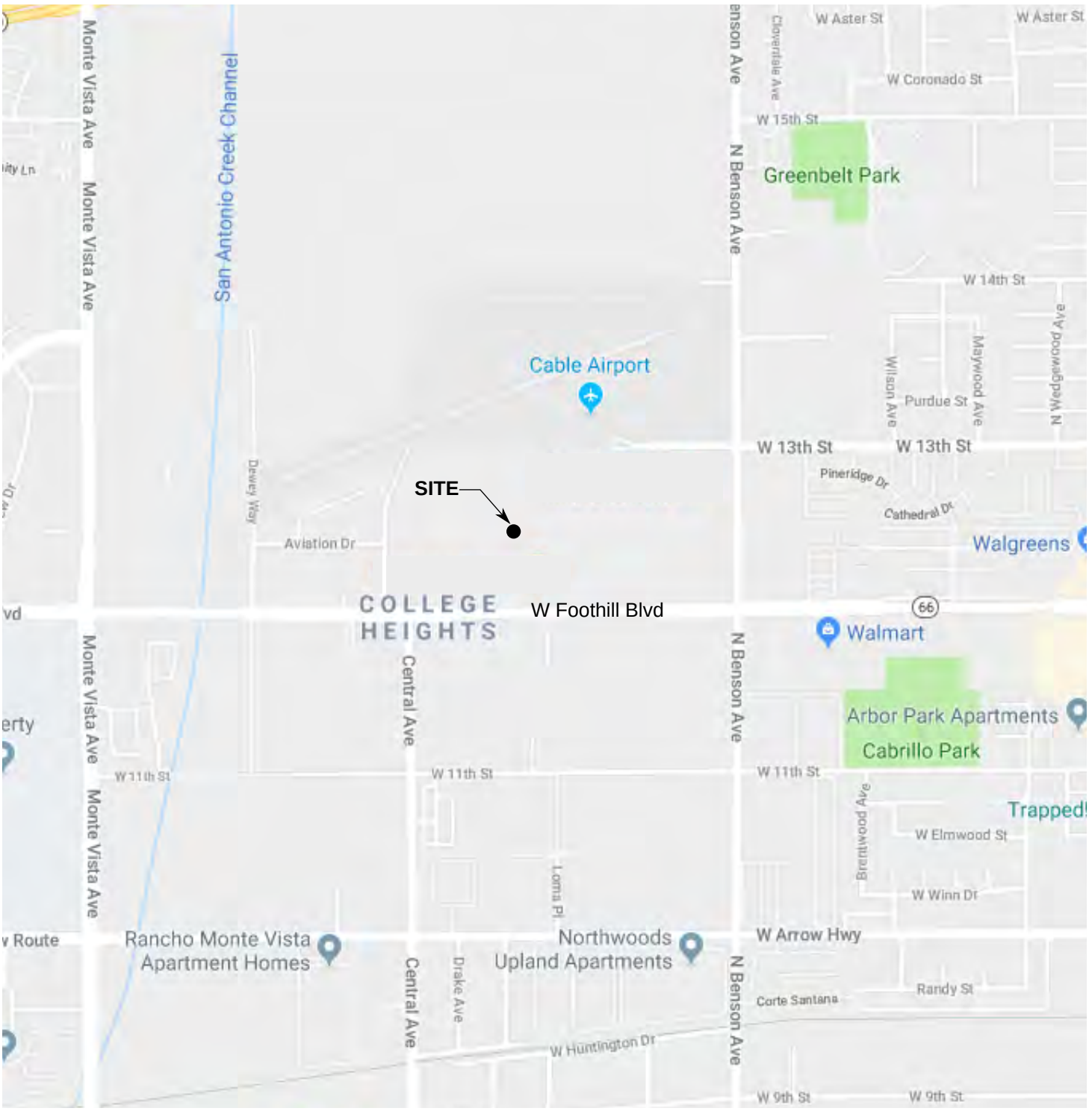
Mr. Paul Roberts states that the Phase I ESA was performed under his direct supervision, and that he has reviewed and approved the report, and the methods and procedures employed in the development of the report conform to the minimum industry standards. Mr. Roberts certifies that Ardent project personnel and subcontractors are properly licensed and/or certified to do the work described herein.

Pursuant to Paragraph 12.13 of the ASTM Standard E1527-13:

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the site. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Paul Roberts, P.G.
Principal Geologist



NO SCALE

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

ARDENT ENVIRONMENTAL GROUP, INC.	PROJECT NO. **100986001**	**SITE LOCATION MAP**	FIGURE **1**
	DATE **05/18**	48.44-ACRE VACANT PROPERTY UPLAND, CALIFORNIA	

1. Cable Airport
   (1749 West 13th Street)

2. Lowe's Home Improvement
   (1659 West Foothill Boulevard)

3. Retail Center
   (1651 West Foothill Boulevard)

4. Del Taco
   (1653 West Foothill Boulevard)

5. Vacant Land

6. Single Family Residences
   (1727, 1735, 1735A, and 1735B West Foothill Boulevard)

7. Day Spa 909
   (1743 West Foothill Boulevard)

8. Smokes N' Puff Smoke Shop
   (1745 West Foothill Boulevard)

9. Luxury Car Sales
   (1747 West Foothill Boulevard)

10. Route 66 Auto Repair - former gasoline station
    (1775 West Foothill Boulevard)

11. Road Runner Donuts
    (1801 West Foothill Boulevard)

12. Upland Automotive
    (1805 West Foothill Boulevard)

13. Defense Arts Center
    (1811 West Foothill Boulevard)

14. In-n-Out Burger
    (1837 West Foothill Boulevard)

15. Foothill Express Car Wash
    (1837-1859 West Foothill Boulevard)

16. Competitive Edge Cyclery
    (1869 West Foothill Boulevard)

17. Hub Cap Annie and Wheels
    (1917 West Foothill Boulevard)

18. Romance Upland
    (2009 West Foothill Boulevard)

19. M and C Welding
    (1062 Airport Drive)

20. Advanced Systems Services Inc.
    (1082 Airport Drive)

21. Smalling Auto and Truck Repair
    (1102 Airport Drive)

22. Unknown
    (1154 Airport Drive)

23. Warehouse Storage Lot for Sale
    (1160 Airport Drive)

24. Dineen Trucking, Inc.
    (1284 Airport Drive)

25. Single Family Residence
    (1284 Airport Drive)



LEGEND

—·—·— Approximate Site Boundary

N

NO SCALEAY

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

ARDENT
ENVIRONMENTAL GROUP, INC.

PROJECT NO.	SITE VICINITY MAP	FIGURE
100986001		2
DATE **05/18**	48.44-ACRE VACANT PROPERTY UPLAND, CALIFORNIA	

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION



Photograph No. 1: Entrance to the site from Airport Drive, looking east.



Photograph No. 2: Typical sand and rock stockpiles segregated by grain size.



Photograph No. 3: Rock sorting equipment.



Photograph No. 4: On-site 500-gallon fuel aboveground storage tank in secondary confinement.



Photograph No. 5: Vacant and undeveloped portion of the site.



Photograph No. 6: Typical trash and debris deposited at the site.



Photograph No. 7: Hub Cap Annie and Wheel along West Foothill Boulevard.



Photograph No. 8: Smalling Auto and Truck Repair along West Foothill Boulevard, looking east.



Photograph No. 9: Cable Airport, from the site looking north.

APPENDIX B

USER PROVIDED INFORMATION

PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)
USER QUESTIONNAIRE

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *user of the Phase I ESA* must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

Project Information	
Facility Name and Address:	Bongiovanni Property Upland
Reason for the Phase I ESA:	Potential Property Acquisition for Development
Type of Property:	Vacant Land
Site Owner and Contact Information:	Charles Reinhart Bongiovanni Construction Co., LLC P.O. Box 2414 Palos Verdes Peninsula, CA 90274
Site Contact Name and Contact Information:	Charles Reinhart Bongiovanni Construction Co., LLC P.O. Box 2414 Palos Verdes Peninsula, CA 90274
Tax Assessors Parcel Number (APN):	1006-351-09-0000, 1006-351-10-0000, 1006-551-12-0000, and 1006-551-22-0000.

	Yes	No
1. Are you aware of any environmental cleanup liens against the subject property that are filed or recorded under federal, state, or local law?		X
2. Are you aware of any activity use limitations, such as engineering controls (engineered caps, liners, treatment methods, etc.), land use restrictions, or institutional controls (administrative measures restricting groundwater use, construction, or property use, etc.) that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law?		X
3. Do you have any specialized knowledge or experience related to the subject property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the subject property so that you would have specialized knowledge of the chemicals or processes used by this type of business?		X
4a. Does the purchase price being paid for the subject property reasonably reflects the fair market value of the subject property?	X	
4b. If you conclude that there is a difference in fair market price, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?		X
5. Are you aware of any commonly known or reasonably ascertainable information about the subject property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as a user,		X
5 (a) Do you know of the past uses of the property?		X
5 (b) Do you know of any specific chemicals that are present or were once present on the subject property?		X
5 (c) Do you know of spills or other chemical releases that have taken place at the subject property?		X

5 (d) Do you know of any environmental cleanups that have taken place at the subject property?		X
6. As the user of this ESA, based on your knowledge and experience related to the subject property, are there any obvious indicators that point to the presence or likely presence of contamination at the subject property?		X

If you answered "yes" to any of the questions (except 4a) above, please provide more detail below, or attach additional information to this document:

Name and title of person completing questionnaire: (Please Print)	
Tom Ashcraft, Senior Vice President, Bridge Development Partners, LLC	
Signature of person completing questionnaire:	Date:
	3/7/18

First American Title Insurance Company
National Commercial Services

3281 E Guasti Road, Suite 440
Ontario, CA 91761

March 12, 2018

Tom Ashcraft
Bridge Development Partners
1334 Park View Ave Ste 310
Manhattan Beach, CA 90266-3713
Phone: (213)805-6350

Customer Reference: Bongiovanni

Title Officer:	Matthew Hooks	Title Assistant:	Erin West
Phone:	(909)510-6207	Phone:	(909)510-6200
Email:	mhooks@firstam.com	Email:sss	ewest@firstam.com
Order Number:	NCS-895345-ONT1		

Property: Vacant/APN 1006-351-09-0-000, 1006-351-10-0-000, 1006-551-12-0-000 and 1006-551-22-0-000, Upland, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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3.	Interest in the Land and Owner	4
4.	Description of the Land	4
Schedule B-1 - Requirements		
Schedule B-2 - Exceptions		
Conditions		

YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: March 05, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

   (A) ALTA Owner's Policy $To Be Determined
   ALTA Standard Leasehold Owners Policy
   Proposed Insured:

   To Be Determined

   (B) ALTA Loan Policy $To Be Determined
   To Be Determined
   Proposed Insured:

   To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

   Fee Simple

   (B) Title to said estate or interest at the date hereof is vested in:

   Bongiovanni Construction Co., LLC., a California limited liability company, Successor by Conversion to Bongiovanni Construction Co., a California General Partnership, who acquired title as Bongiovanni Construction Company, a Co-Partnership

4. The land referred to in this Commitment is situated in the City of Upland, County of San Bernardino, State of California, and is described as follows:

   PARCEL 1:

   THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER IN SECTION 2, TOWNSHIP 1 SOUTH, RANGE 8 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE CITY OF UPLAND, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE GOVERNMENT PLAT THEREOF.

   EXCEPTING THEREFROM ANY PORTION LYING WITHIN LOTS 1 THROUGH 23 OF TRACT NO. 2561, IN THE CITY OF UPLAND, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA RECORDED AUGUST 2, 1938, IN BOOK 36, PAGES 76 AND 77 OF MAPS, SAN BERNARDINO COUNTY RECORDS.

   ALSO EXCEPTING THEREFROM ANY PORTION LYING WITHIN PARCEL 1 OF PARCEL MAP NO. 7312, IN THE CITY OF UPLAND, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA RECORDED MARCH 26, 1982, IN BOOK 72, PAGE 79 OF PARCEL MAPS, SAN BERNARDINO COUNTY RECORDS.

   PARCEL 2:

   THAT PORTION OF PARCEL MAP NO. 15471, DESIGNATED AS "REMAINDER PARCEL" OF SAID PARCEL MAP NO. 15471, IN THE CITY OF UPLAND, COUNTY OF SAN BERNARDINO, STATE OF

CALIFORNIA, AS PER PARCEL MAP RECORDED IN BOOK 190, PAGES 24 THROUGH 26 OF PARCEL MAPS, SAN BERNARDINO COUNTY RECORDS.

APN:
1006-351-09-0-000 Portion Parcel 1
1006-351-10-0-000 Portion Parcel 1
1006-551-12-0-000 Portion Parcel 1
1006-551-22-0-000 Parcel 2

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. An easement for pipe line and incidental purposes, recorded April 21, 1887 in Book 56 of Deeds, Page 426.
   In Favor of: Peter Fleming
   Affects: as described therein

   The location of the easement cannot be determined from record information.

4. The terms and provisions contained in the document entitled "Water Rights Resolution" recorded November 9, 1891 as Book 140, Page 321 of Deeds.

5. An easement for pipe line and incidental purposes, recorded October 1, 1895 in Book 217 of Deeds, Page 218.
   In Favor of: Sycamore Water District
   Affects: as described therein

   The location of the easement cannot be determined from record information.

6. An easement for pipe line and incidental purposes, recorded November 14, 1896 in Book 227 of Deeds, Page 265.
   In Favor of: Mountain View Water Company
   Affects: as described therein

   The location of the easement cannot be determined from record information.

7. A right of way for ditches and canals as reserved by the United States of America in the patent recorded February 5, 1925 in Book O of Patents, Page 120.

   SUBJECT TO ANY VESTED AND ACCRUED WATER RIGHTS FOR MINING, AGRICULTURAL, MANUFACTURING OR OTHER PURPOSES, AND RIGHTS TO DITCHES AND RESERVOIRS USED IN CONNECTION WITH SUCH WATER RIGHTS AS MAY BE RECOGNIZED AND ACKNOWLEDGED BY THE LOCAL CUSTOMS, LAWS AND DECISIONS OF COURTS, AND A RIGHT OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES.

8. An easement for pipe line and water rights and incidental purposes, recorded June 6, 1927 as Book 238, Page 212 of Official Records.
In Favor of: Mountain View Water Company, a corporation
Affects: as described therein

The location of the easement cannot be determined from record information.

9. The effect of a map purporting to show the land and other property, filed October 7, 1933 in Book 2, Page 51 of Record of Surveys.

10. An easement for water works and incidental purposes, recorded February 13, 1951 as Book 2716, Page 484 of Official Records.
In Favor of: Mountain View Water Company, a corporation
Affects: as described therein

The location of the easement cannot be determined from record information.

11. Avigation and Noise Easements recorded July 17, 1991 as Instrument No. 91-269412 and November 5, 1992 as Instrument No. 92-460022. Said land lies within the impacted area disclosed by the map attached and referenced as Exhibit C.

The location of the easement cannot be determined from record information.

12. The fact that the land lies within the boundaries of the City of Upland Redevelopment Project Area No. 1, as disclosed by the document recorded July 22, 1982 as Instrument No. 82-142955 of Official Records.

13. The terms, provisions and easement(s) contained in the document entitled "No Building Easement Agreement" recorded July 31, 2000 as Instrument No. 20000273401 of Official Records.

(Affects Parcel 2)

14. The terms, provisions and easement(s) contained in the document entitled "Access Easement and Agreement" recorded July 31, 2000 as Instrument No. 20000273403 of Official Records.

(Affects Parcel 2)

15. The terms, provisions and easement(s) contained in the document entitled "Slope Easement Agreement" recorded July 31, 2000 as Instrument No. 20000273406 of Official Records.

(Affects Parcel 2)

16. The terms and provisions contained in the document entitled "Covenant and Declaration of Restriction" recorded July 31, 2000 as Instrument No. 20000273408 of Official Records.

(Affects Parcel 2)

17. Water rights, claims or title to water, whether or not shown by the public records.

18. Rights of the public in and to that portion of the land lying within any public road, street or highway.

(Affects Parcel 1)

19. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Taxes for proration purposes only for the fiscal year 2017-2018.
   First Installment: $97.15, Paid
   Second Installment: $97.13, Paid
   Tax Rate Area: 008007
   APN: 1006-351-010-0-000

   (Affects Portion of Parcel 1)

2. Taxes for proration purposes only for the fiscal year 2017-2018.
   First Installment: $121.37, Paid
   Second Installment: $121.36, Paid
   Tax Rate Area: 008007
   APN: 1006-351-09-0-000

   (Affects Portion of Parcel 1)

3. Taxes for proration purposes only for the fiscal year 2017-2018.
   First Installment: $1,747.34, Paid
   Second Installment: $1,747.33, Paid
   Tax Rate Area: 008032
   APN: 1006-551-12-0-000

   (Affects Portion of Parcel 1)

4. Taxes for proration purposes only for the fiscal year 2017-2018.
   First Installment: $883.28, Paid
   Second Installment: $883.27, Paid
   Tax Rate Area: 008032
   APN: 1006-551-22-0-000

   (Affects Parcel 2)

5. The property covered by this report is vacant land.

6. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

7. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

*****To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.



First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)
EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

APPENDIX C

HISTORICAL DATA

Not Reported

Not Reported

Upland, CA 91786

Inquiry Number: 5210223.9

March 06, 2018

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

03/06/18

Site Name:

Not Reported
Not Reported
Upland, CA 91786
EDR Inquiry # 5210223.9

Client Name:

Ardent Environmental Group
1827 Capital Street, SUite 103
Corona, CA 92880
Contact: Taylor Nesby

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2002	1"=500'	Flight Date: June 05, 2002	USDA
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: August 29, 1990	USDA
1989	1"=500'	Flight Date: August 03, 1989	USDA
1981	1"=500'	Flight Date: February 21, 1981	EDR Proprietary Brewster Pacific
1979	1"=500'	Flight Date: February 05, 1979	EDR Proprietary Brewster Pacific
1975	1"=500'	Flight Date: December 01, 1975	USGS
1966	1"=500'	Flight Date: April 21, 1966	USGS
1964	1"=500'	Flight Date: August 15, 1964	USGS
1959	1"=500'	Flight Date: October 15, 1959	USDA
1953	1"=500'	Flight Date: February 11, 1953	USDA
1949	1"=500'	Flight Date: May 21, 1949	USDA
1938	1"=500'	Flight Date: June 03, 1938	USDA
1928	1"=500'	Flight Date: January 01, 1928	USGS

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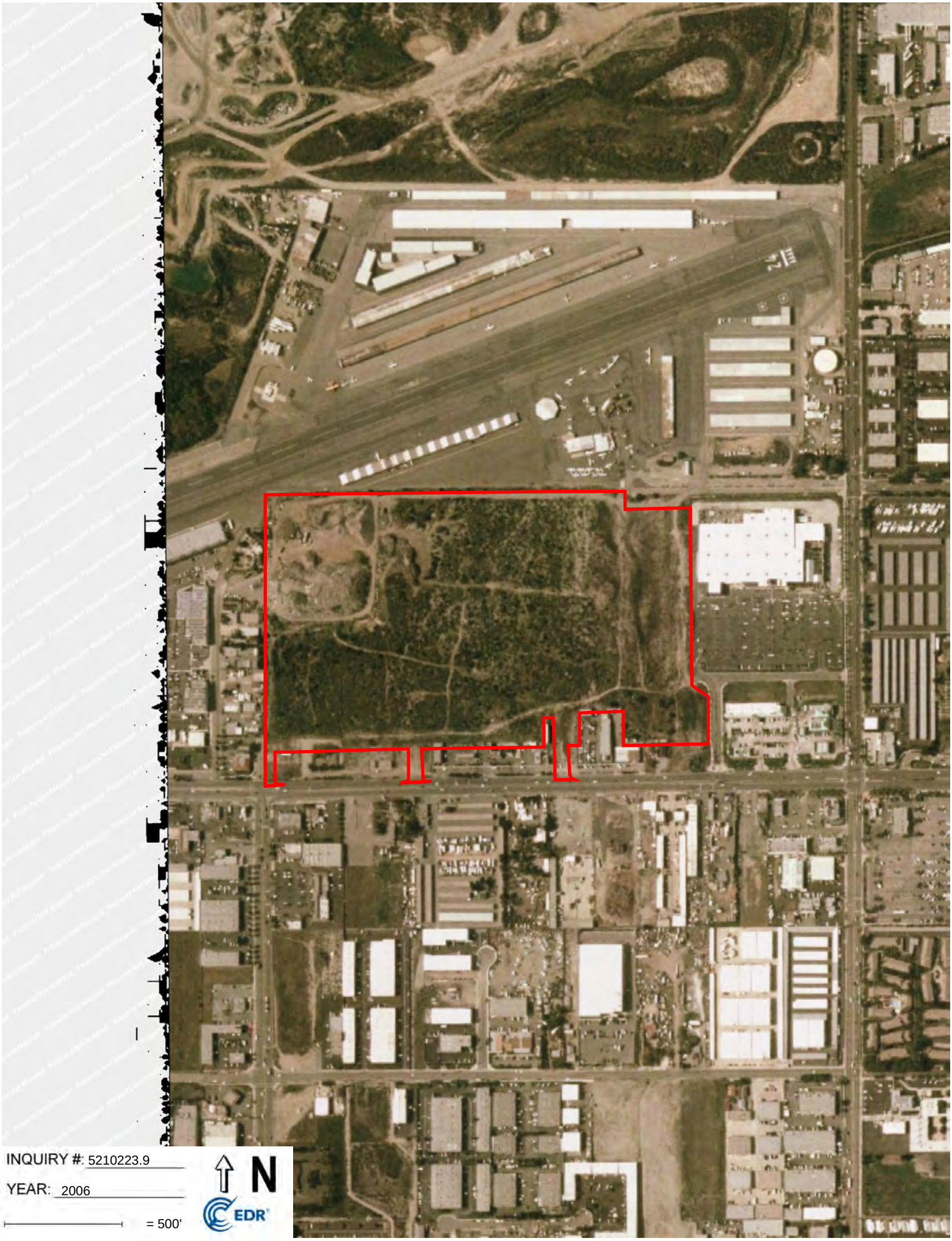
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INQUIRY #: 5210223.9
YEAR: 2014
= 500'
N
EDR


INQUIRY #: 5210223.9
YEAR: 2010
= 500'
N
EDR



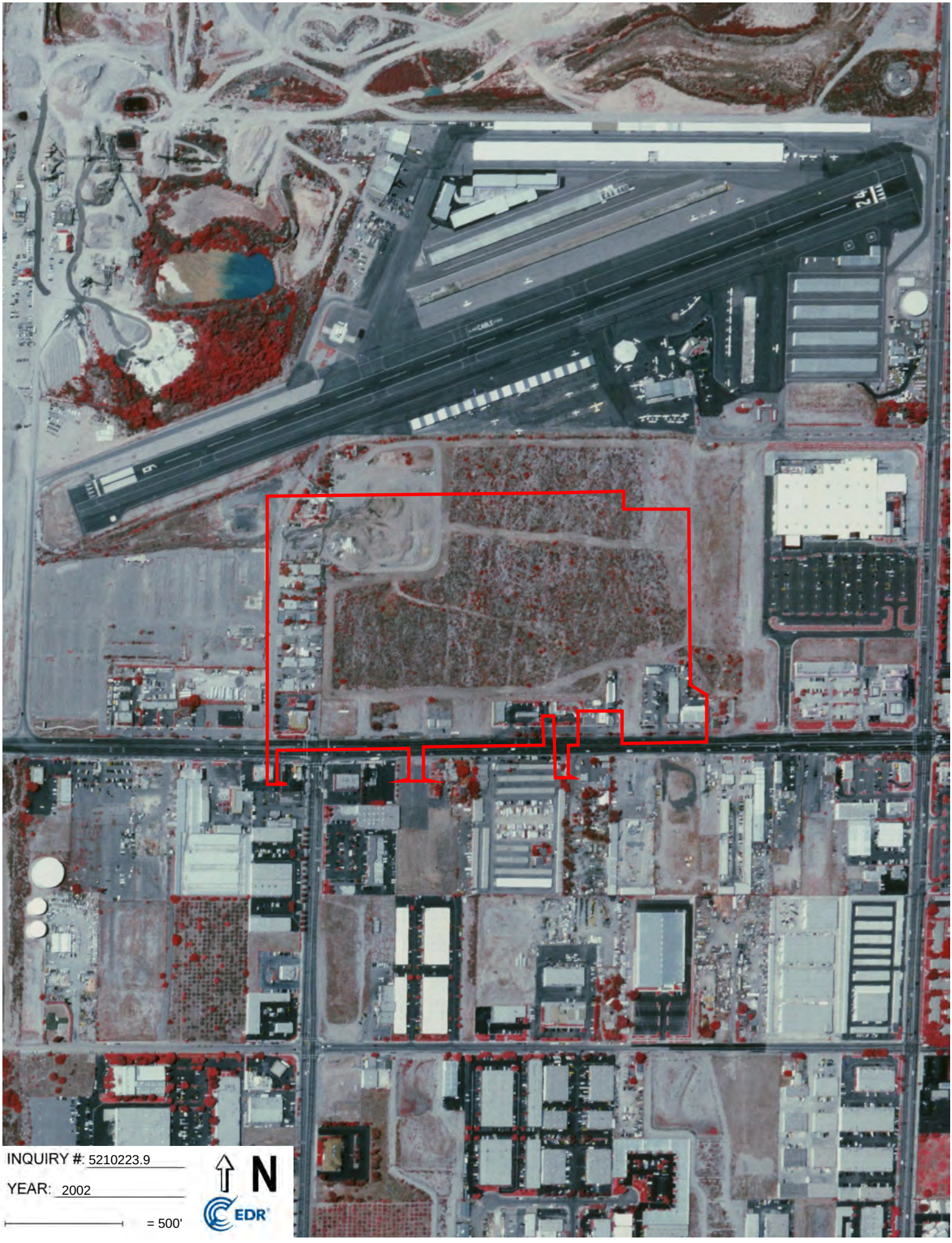
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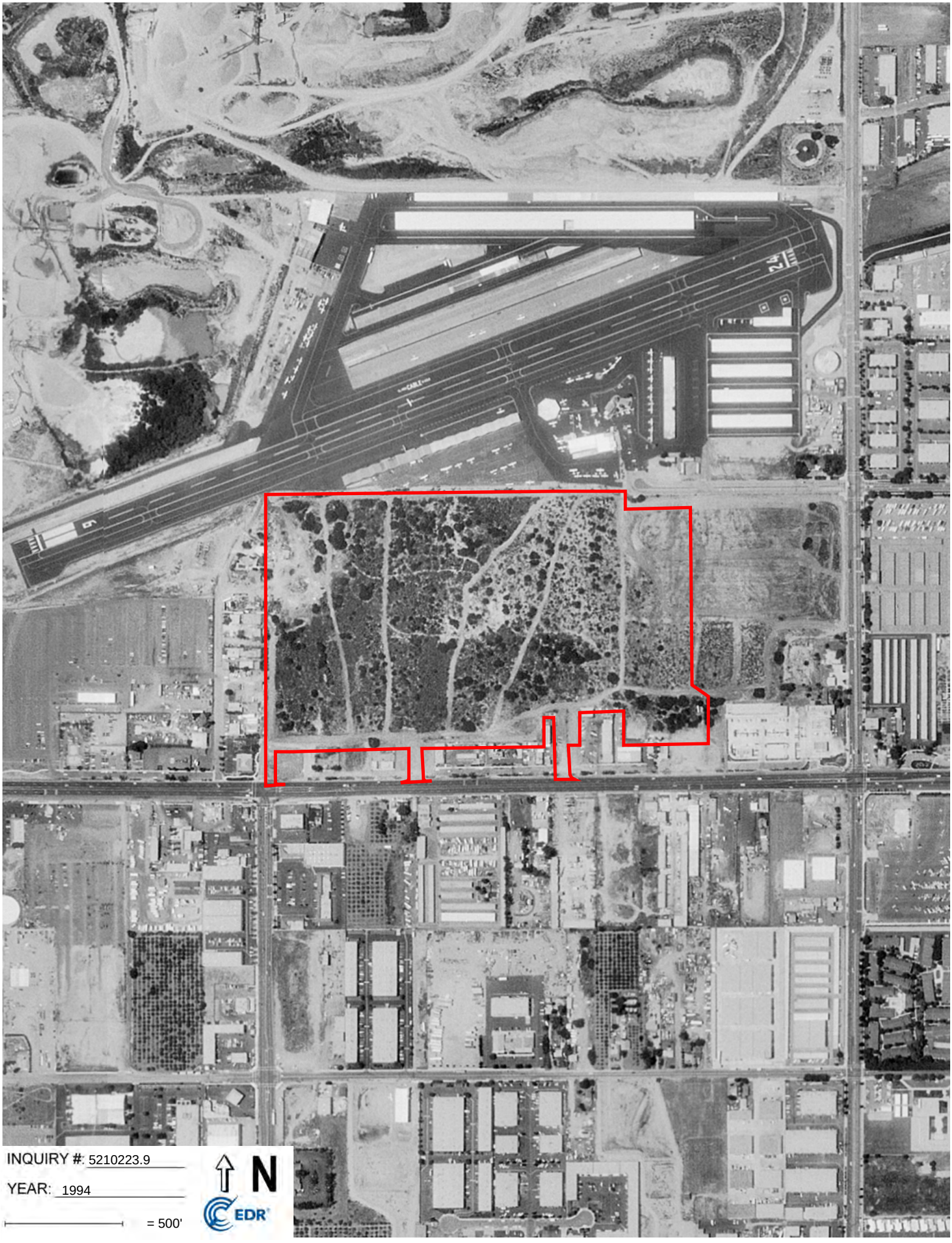
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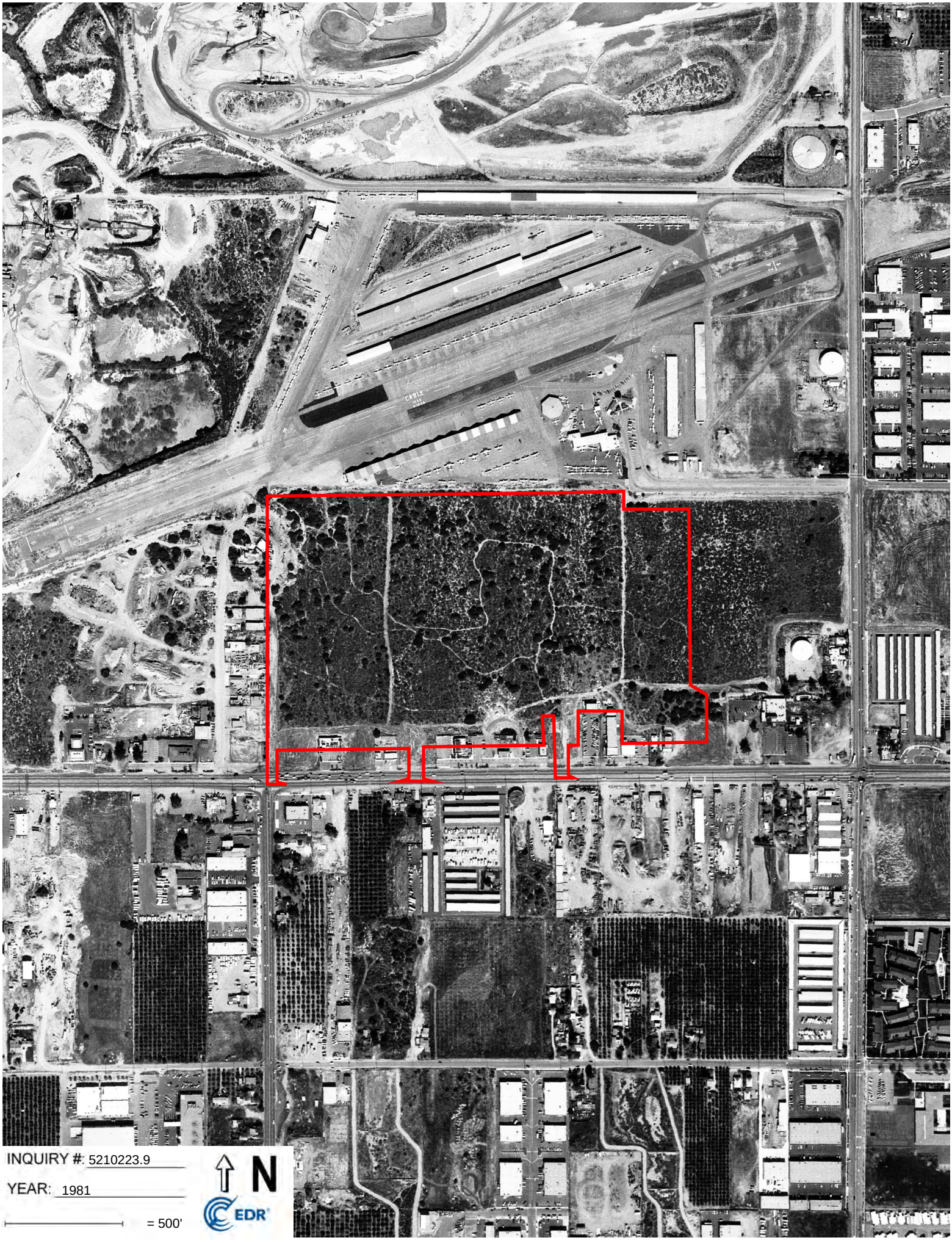
EDR


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EDR


INQUIRY #: 5210223.9
YEAR: 1994
= 500'
N
EDR


INQUIRY #: 5210223.9
YEAR: 1990
= 500'
N
EDR


INQUIRY #: 5210223.9
YEAR: 1989
= 500'
N
EDR



INQUIRY #: 5210223.9

YEAR: 1981

= 500'

N

EDR

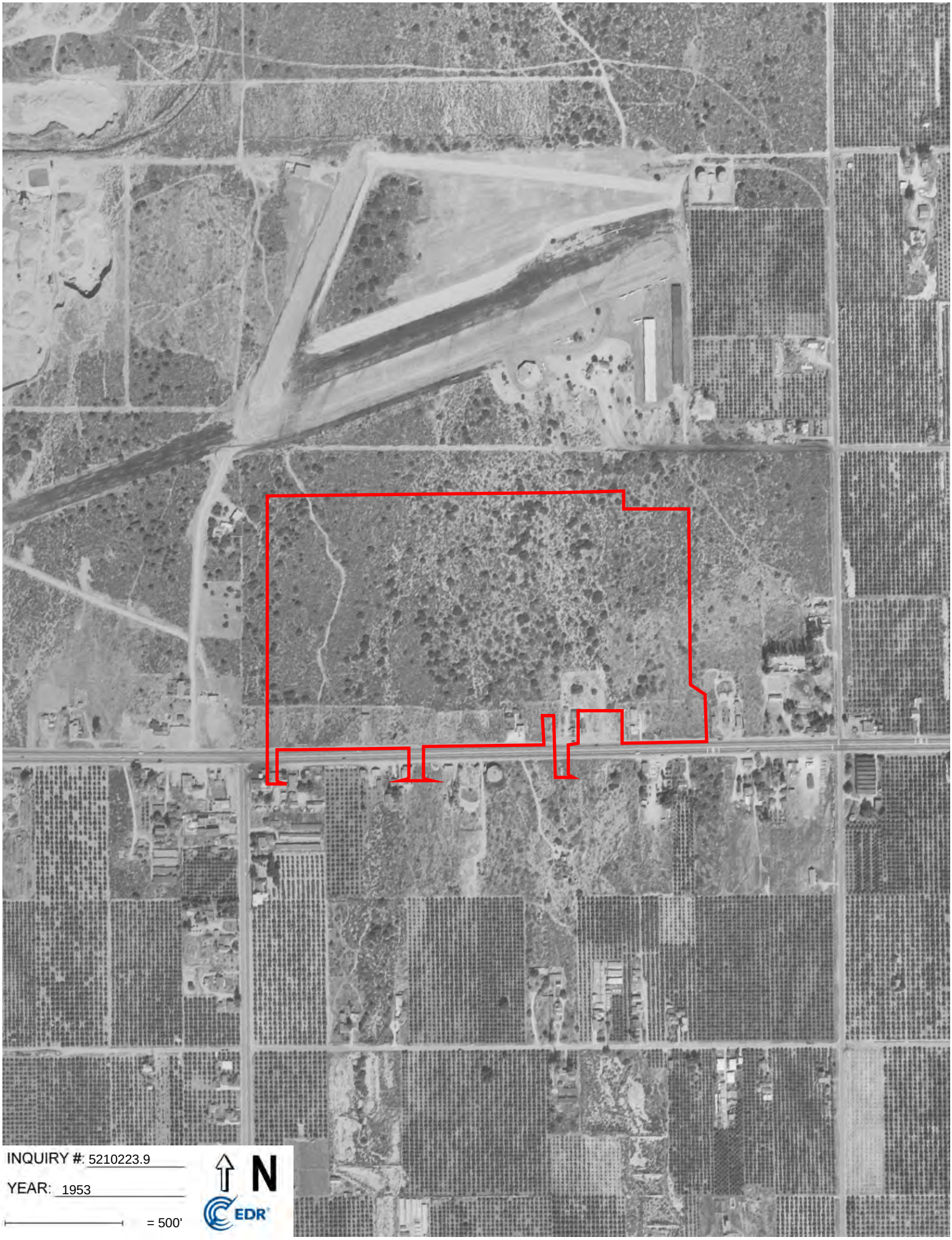

CABLE
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N
EDR


INQUIRY #: 5210223.9
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N
EDR


INQUIRY #: 5210223.9
YEAR: 1966
= 500'
N
EDR

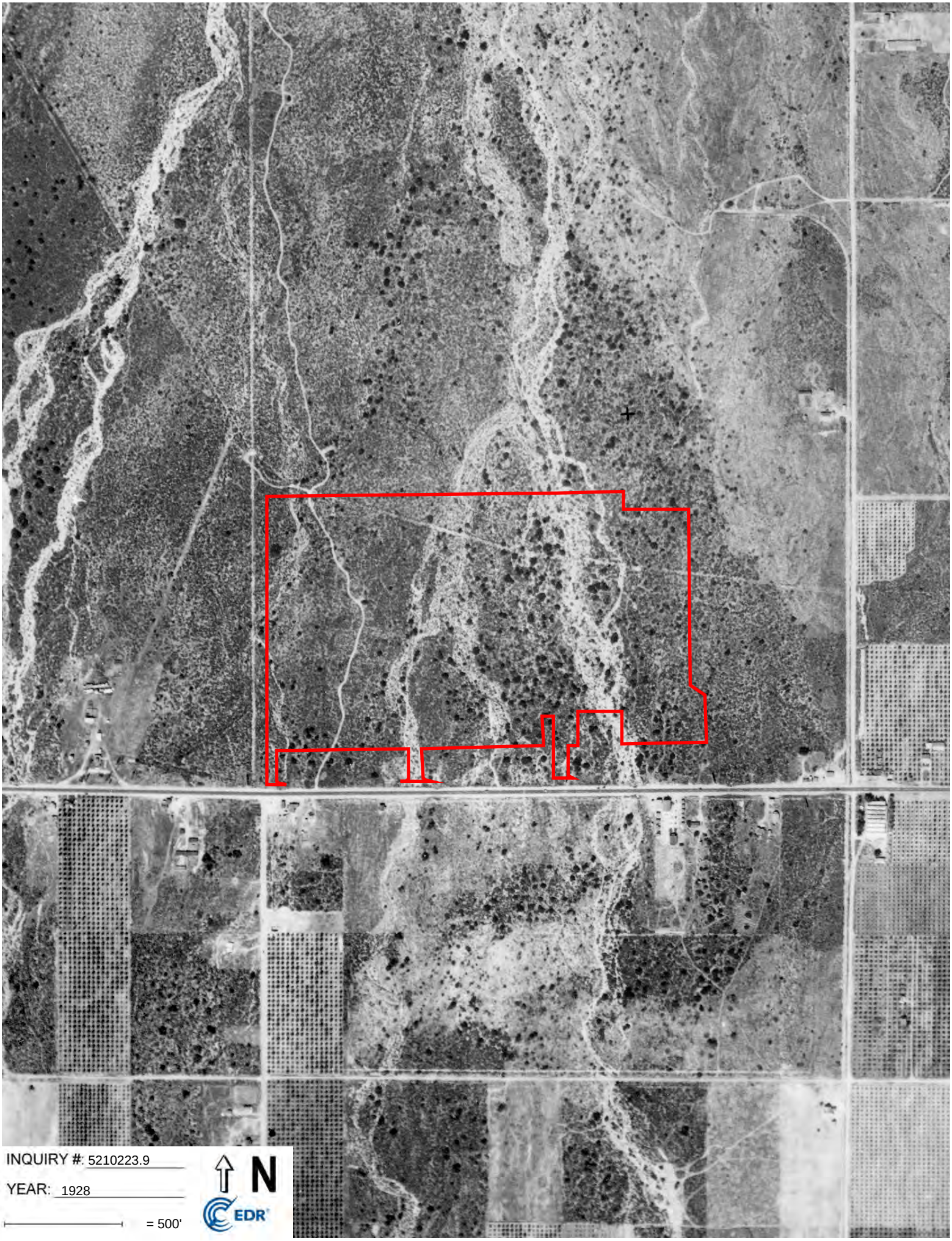

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EDR


INQUIRY #: 5210223.9
YEAR: 1959
= 500'
N
EDR


INQUIRY #: 5210223.9
YEAR: 1953
= 500'
N
EDR


INQUIRY #: 5210223.9
YEAR: 1949
= 500'
N
EDR


INQUIRY #: 5210223.9
YEAR: 1938
= 500'
N
EDR


INQUIRY #: 5210223.9
YEAR: 1928
= 500'
N
EDR

Not Reported
Not Reported
Upland, CA 91786

Inquiry Number: 5210223.5
March 06, 2018

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1922 through 2014. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by infoUSA®

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2014	EDR Digital Archive	-	X	X	-
2010	EDR Digital Archive	-	X	X	-
2008	Haines Company, Inc.	-	X	X	-
2003	Haines & Co Publishers	-	X	X	-
2002	Cole Information Services	-	-	-	-
1996	GTE Directories	-	-	-	-
1995	GTE Directories	-	X	X	-
1991	GTE California Incorporated	-	-	-	-
1990	GTE	-	X	X	-
1985	GTE	-	X	X	-
1981	General Telephone Company of California	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1980	GTE General Telephone Company of California	-	X	X	-
1975	GTE Directories	-	X	X	-
1970	General Telephone Company of California	-	X	X	-
1965	Luskey Brothers & Co	-	-	-	-
1964	Luskey Brothers & Co	-	X	X	-
1961	Luskey Brothers& Co Publishers	-	-	-	-
1960	General Telephone Company Publishers	-	X	X	-
1956	General Telephone Company Publishers	-	-	-	-
1955	Luskey Brothers Co Publishers	-	-	-	-
1951	Los Angeles Directory Company Publishers	-	X	X	-
1950	The Pacific Telephone and Telegraph Co	-	-	-	-
1949	San Bernardino Directory Co. Publishers	-	-	-	-
1946	Los Angeles Directory Company Publishers	-	-	-	-
1945	Southern California Telephone Company	-	-	-	-
1942	San Bernardino Directory Co Publisher	-	-	-	-
1941	Associated Telephone Company Limited	-	-	-	-
1940	Los Angeles Directory Co.	-	-	-	-
1938	Los Angeles Directory Co.	-	-	-	-
1936	San Bernardino Directory Co Publisher	-	-	-	-
1934	Los Angeles Directory Co.	-	-	-	-
1931	Los Angeles Directory Co.	-	-	-	-
1930	San Bernardino Directory Co Publisher	-	-	-	-
1926	Los Angeles Directory Co Publisher	-	-	-	-
1923	Los Angeles Directory Company	-	-	-	-
1922	R.L. Polk & Co Publishers	-	-	-	-

EXECUTIVE SUMMARY

SELECTED ADDRESSES

The following addresses were selected by the client, for EDR to research. An "X" indicates where information was identified.

Address	***Type***	***Findings***
1284 Airport Drive	Client Entered	X
1254 Airport Drive	Client Entered	X
1082 Airport Drive	Client Entered	X
1749 W 13th Street	Client Entered	X
1775 W Foothill Blvd	Client Entered	X
1869 W Foothill Blvd	Client Entered	X
1917 W Foothill Blvd	Client Entered	X
2009 W Foothill Blvd	Client Entered	X

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

Not Reported
Upland, CA 91786

FINDINGS DETAIL

Target Property research detail.

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

13TH ST W

1749 13TH ST W

Year	*Uses*	*Source*
2003	CABLE AIRPORT	Haines & Co Publishers
	NO# MURPHY W G	Haines & Co Publishers
	NO# LEONARD Lane C	Haines & Co Publishers
	WILSON IMAGING & PUBLISHING INC	Haines & Co Publishers
	VOGEL SALES ENGINEERING	Haines & Co Publishers
	U S ENTERPRISES	Haines & Co Publishers
	TORREY Larsen	Haines & Co Publishers
	TOPS	Haines & Co Publishers
	NO# SKY WEST INSTRUMENTS	Haines & Co Publishers
	ASTFALK Dale	Haines & Co Publishers
	BLEDSOES AVIATION ART	Haines & Co Publishers
	BRONSON Evertt	Haines & Co Publishers
	BUSHMEIER Christine	Haines & Co Publishers
	CABLE AIRPORT	Haines & Co Publishers
	CABLEAIR	Haines & Co Publishers
	CIVIL AIR PATROL SQUADRON 25	Haines & Co Publishers
	DONNELLY Frank	Haines & Co Publishers
	ELK RIVER AVIATORS INC	Haines & Co Publishers
	EXPERIMENTAL AIRCRFT ASN 448	Haines & Co Publishers
	FOOTHL AIRCRAFT SALES & SERV INC	Haines & Co Publishers
	GRADY Charles	Haines & Co Publishers
	GRAHAM Jimmie L	Haines & Co Publishers
	HILTON JOHN AIR SHOWS	Haines & Co Publishers
	HUNTINGTON Scott	Haines & Co Publishers
	KRUGGEL K	Haines & Co Publishers
	KUNTZ G L	Haines & Co Publishers
	MANIAC MIKES CAFE	Haines & Co Publishers
	MCCULLOUGH Ken	Haines & Co Publishers
	PACIFIC COAST RADIO	Haines & Co Publishers
	PRE FLITE INC	Haines & Co Publishers
	SETTEMBER Linda	Haines & Co Publishers

Year	Uses	Source
2003	SONLINE SPORTSWEAR	Haines & Co Publishers
	SPORT AEROCOLOR	Haines & Co Publishers

AIRPORT DR

1082 AIRPORT DR

Year	Uses	Source
2014	ADVANCED SYSTEMS SERVICES INC	EDR Digital Archive
2010	MOBILE ENVIRONMENT TECH	EDR Digital Archive
	ADVANCED SYSTEMS SERVICES INC	EDR Digital Archive

1284 AIRPORT DR

Year	Uses	Source
2014	DINEEN TRUCKING INC	EDR Digital Archive
2010	DINEEN TRUCKING INC	EDR Digital Archive
	ALLCONSTRUCTION TRANSPORT	EDR Digital Archive

Airport Drive

1082 Airport Drive

Year	Uses	Source
2008	XXXX	Haines Company, Inc.
2003	XXXX	Haines & Co Publishers
1975	VALLEY RADIO CO	GTE Directories
	Amos Raymond Leo	GTE Directories

1254 Airport Drive

Year	Uses	Source
2003	DINEEN Jack	Haines & Co Publishers

1284 Airport Drive

Year	Uses	Source
2008	DINEEN JACK B	Haines Company, Inc.
	DINEEN TRUCKING INC	Haines Company, Inc.
2003	DINEEN JACK B	Haines & Co Publishers
	DINEEN TRUCKING INC	Haines & Co Publishers
1990	Dineen Wm J Upl	GTE
	DINEEN JACK B trkng	GTE
	DINEEN TRUCKING INC	GTE
1985	DINEEN TRUCKING INC	GTE

FINDINGS

Year	Uses	Source
1980	DINEEN TRUCKING INC	GTE General Telephone Company of California
1975	DINEEN JACK B trkng	GTE Directories
	DINEEN TRUCKING INC	GTE Directories
	Dineen Virginia	GTE Directories

W 13TH

1749 W 13TH

Year	Uses	Source
1990	Grey Eagle Aviation Services	GTE
	Foothill Aircraft Service	GTE
	Foothill Aircraft Sales	GTE
	Foothill Aircraft Parts Center	GTE
	Ashby Dennis	GTE
	Heer Gregory	GTE
	FOOTHILL ANIMAL HOSPITAL	GTE

W 13TH ST

1748 W 13TH ST

Year	Uses	Source
1995	PRE PLITE INC	GTE Directories
	SAFETY MANAGEMENT	GTE Directories

W 13th St

1749 W 13th St

Year	Uses	Source
2014	RICCHIAZZI AVIATION LLC	EDR Digital Archive
	FOOTHILL AIRCRAFT SALES & SVC	EDR Digital Archive
	CABLE AIRPORT INC	EDR Digital Archive
	CABLE LAND COMPANY LP	EDR Digital Archive
	ELK RIVER AVIATORS INC	EDR Digital Archive
	WILSON IMAGING & PUBLISHING	EDR Digital Archive
	PHASED POWER LLC	EDR Digital Archive
	EERIE CLOTHING	EDR Digital Archive
	MANIAC MIKES CAFE INC	EDR Digital Archive
	CS INVESTIGATIVE SERVICES LLC	EDR Digital Archive
	CIVIL AIR PATROL INC	EDR Digital Archive

FINDINGS

Year	Uses	Source
2014	CABLE AIRPORT INC	EDR Digital Archive
	PHASED POWER LLC	EDR Digital Archive
	EERIE CLOTHING	EDR Digital Archive
	CABLE LAND COMPANY LP	EDR Digital Archive
	ELK RIVER AVIATORS INC	EDR Digital Archive
	WILSON IMAGING & PUBLISHING	EDR Digital Archive
	MANIAC MIKES CAFE INC	EDR Digital Archive
	CS INVESTIGATIVE SERVICES LLC	EDR Digital Archive
	CIVIL AIR PATROL INC	EDR Digital Archive
	FOOTHILL AIRCRAFT SALES & SVC	EDR Digital Archive
	RICCHIAZZI AVIATION LLC	EDR Digital Archive
2010	FOOTHILL AIRCRAFT SALES & SVC	EDR Digital Archive
	BLEDSOES	EDR Digital Archive
	MANIAC MIKES CAFE INC	EDR Digital Archive
	W W ENTERPRISES	EDR Digital Archive
	CABLE AIRPORT INC	EDR Digital Archive
	CIVIL AIR PATROL INC	EDR Digital Archive
	BAC PUBLISHERS INC	EDR Digital Archive
	HEMPHILL ROBERT F	EDR Digital Archive
	PACIFIC COAST RADIO INC	EDR Digital Archive
	SONLINE SPORTSWEAR	EDR Digital Archive
	ELECTRA VISION ADVERTISING	EDR Digital Archive
	PA FINANCIAL LEASING LLC	EDR Digital Archive
	ALL-N-ONE MAINTENANCE	EDR Digital Archive
	PRE FLITE INC	EDR Digital Archive
	PRECISION SURVEY SUPPLY	EDR Digital Archive
	CIVIL AIR PATROL INC	EDR Digital Archive
	BLEDSOES	EDR Digital Archive
	MANIAC MIKES CAFE INC	EDR Digital Archive
	W W ENTERPRISES	EDR Digital Archive
	ELECTRA VISION ADVERTISING	EDR Digital Archive
	BAC PUBLISHERS INC	EDR Digital Archive
	HEMPHILL ROBERT F	EDR Digital Archive
	SONLINE SPORTSWEAR	EDR Digital Archive
	PACIFIC COAST RADIO INC	EDR Digital Archive
	CABLE AIRPORT INC	EDR Digital Archive
	PA FINANCIAL LEASING LLC	EDR Digital Archive
	ALL-N-ONE MAINTENANCE	EDR Digital Archive

FINDINGS

Year	Uses	Source
2010	PRE FLITE INC	EDR Digital Archive
	PRECISION SURVEY SUPPLY	EDR Digital Archive
	FOOTHILL AIRCRAFT SALES & SVC	EDR Digital Archive

W 13TH ST

1749 W 13TH ST

Year	Uses	Source
2008	NO# SKY WEST INSTRUMENTS	Haines Company, Inc.
	CABLE AIRPORT	Haines Company, Inc.
	AIRCRAFT INTERIORS BY SILL	Haines Company, Inc.
	B A C PUBLISHERS INC	Haines Company, Inc.
	BRONSON Evertt	Haines Company, Inc.
	CABLE AIRPORT	Haines Company, Inc.
	CABLEAIR	Haines Company, Inc.
	CIVIL AIR PATROL SQUADRON 25	Haines Company, Inc.
	ELECTRA VISION ADVERTISING	Haines Company, Inc.
	ELK RIVER AVAITORS INC	Haines Company, Inc.
	EXPERIMENTAL AIRCRFT ASN 448	Haines Company, Inc.
	FOOTHL AIRCRAFT SLS & SV INC	Haines Company, Inc.
	GRADY Charles	Haines Company, Inc.
	JOHNSON Steven	Haines Company, Inc.
	LEVY STANLEY	Haines Company, Inc.
	MALM AVIATION	Haines Company, Inc.
	MANIAC MIKES CAFE	Haines Company, Inc.
	NUNEZ Rocio	Haines Company, Inc.
	P A FINANCIAL LEASING LLC	Haines Company, Inc.
	PACIFIC COAST RADIO	Haines Company, Inc.
	PRE FLITE INC	Haines Company, Inc.
	TORREY Larsen	Haines Company, Inc.
	US ENTERPRISES	Haines Company, Inc.
	VOGEL SALES ENGINEERING	Haines Company, Inc.
	W & W ENTERPRISES	Haines Company, Inc.
	WILSON IMAGING & PUBLISHING INC	Haines Company, Inc.
1995	Building	GTE Directories
	PACIFIC COAST RADIO	GTE Directories
	FRY& FRY	GTE Directories
	VIC S NEW CONCEPTS	GTE Directories
	VANKEMPEN EWALD	GTE Directories

FINDINGS

Year	Uses	Source
1995	BLEDSOE S AVIATION ART	GTE Directories
	Blades Ben	GTE Directories
	Murphy W G	GTE Directories
	CABLEAIR	GTE Directories
	CABLE CAFE	GTE Directories
	FOOTHILL AIRCRAFT	GTE Directories
	SKY WEST INSTRUMENTS	GTE Directories
	SOBEK GARY A	GTE Directories
1990	Andrews Robt	GTE
	Blades Ben	GTE
	Blake O E Bud	GTE
	Cable Airport	GTE
	Cable Cafe	GTE
	CALIFORNIA PRECISION AVIONICS	GTE
	Cole Jas D	GTE
	De Wolf Leonard	GTE
	FOOTHILL AIRCRAFT	GTE
	Grady Chas	GTE
	Jencks Wm	GTE
	JET SUPREME AIRCRAFT SERVICES INC	GTE
	Kruggel K	GTE
	La Forge Allan	GTE
	Musser Richard	GTE
	Prentiss Frank	GTE
	Pryor Durham	GTE
	Sari David	GTE
	Williams Russ	GTE
	Young Wm R	GTE
	Blake Orlando	GTE
	Blake P Pma	GTE
	California Pregnancy Counseling Service Inc	GTE
	Dewoody D	GTE
	Musser Richard A	GTE
1985	APARTMENT	GTE
	BLAKE 0 E	GTE
	BLADES BEN	GTE
	CABLE CAFE	GTE

FINDINGS

Year	Uses	Source
1985	CABLEAIR	GTE
	D ANTONIO CARMEN	GTE
	i FOOTHILL AIRCRAFT	GTE
	JENCKS M	GTE
	KENMAR AVIATION	GTE
	LA FORGE ALLAN	GTE
	MURPHY W G	GTE
	PRENTISS FRANK	GTE
	SARI DAVID	GTE
	SKY WEST INSTRUMENTS	GTE
1980	ASHBY DENNIS	GTE General Telephone Company of California
	BLAKE 0 E BUD	GTE General Telephone Company of California
	OCABLE AIRPORT CAFE	GTE General Telephone Company of California
	CABLE CAFE	GTE General Telephone Company of California
	o CABLEAIR	GTE General Telephone Company of California
	D ANTONIO CARMEN	GTE General Telephone Company of California
	D ANTONIO CARMEN	GTE General Telephone Company of California
	FOOTHILL AIRCRAFT	GTE General Telephone Company of California
	GILLESPIE WAYLAND	GTE General Telephone Company of California
	ILUND AVIATION	GTE General Telephone Company of California
	JENCKS WM	GTE General Telephone Company of California
	MARRIOTT BOB	GTE General Telephone Company of California
	MURPHY W G	GTE General Telephone Company of California
	PRENTISS FRANK	GTE General Telephone Company of California
	SCHMITZ EARL	GTE General Telephone Company of California
	SKY WEST INSTRUMENTS	GTE General Telephone Company of California
1975	Blake O E Bud Livestock	GTE Directories
	Cable Cafe	GTE Directories

FINDINGS

W 13th Street

1749 W 13th Street

Year	*Uses*	*Source*
2008	NO# SKY WEST INSTRUMENTS	Haines Company, Inc.
	AIRCRAFT INTERIORS BY SILL	Haines Company, Inc.
	B A C PUBLISHERS INC	Haines Company, Inc.
	BRONSON Evertt	Haines Company, Inc.
	CABLE AIRPORT	Haines Company, Inc.
	CABLEAIR	Haines Company, Inc.
	ELECTRA VISION ADVERTISING	Haines Company, Inc.
	ELK RIVER AVAITORS INC	Haines Company, Inc.
	EXPERIMENTAL AIRCRFT ASN 448	Haines Company, Inc.
	FOOTHL AIRCRAFT SLS & SV INC	Haines Company, Inc.
	GRADY Charles	Haines Company, Inc.
	JOHNSON Steven	Haines Company, Inc.
	LEVY STANLEY	Haines Company, Inc.
	MALM AVIATION	Haines Company, Inc.
	MANIAC MIKES CAFE	Haines Company, Inc.
	NUNEZ Rocio	Haines Company, Inc.
	P A FINANCIAL LEASING LLC	Haines Company, Inc.
	PACIFIC COAST RADIO	Haines Company, Inc.
	PRE FLITE INC	Haines Company, Inc.
	TORREY Larsen	Haines Company, Inc.
	VOGEL SALES ENGINEERING	Haines Company, Inc.
	CIVIL AIR PATROL SQUADRON 25	Haines Company, Inc.
	W & W ENTERPRISES	Haines Company, Inc.
	US ENTERPRISES	Haines Company, Inc.
	CABLE AIRPORT	Haines Company, Inc.
	WILSON IMAGING & PUBLISHING INC	Haines Company, Inc.
2003	GRADY Charles	Haines & Co Publishers
	ASTFALK Dale	Haines & Co Publishers
	BLEDSOES AVIATION ART	Haines & Co Publishers
	BRONSON Evertt	Haines & Co Publishers
	BUSHMEIER Christine	Haines & Co Publishers
	CABLE AIRPORT	Haines & Co Publishers
	CABLEAIR	Haines & Co Publishers
	CIVIL AIR PATROL SQUADRON 25	Haines & Co Publishers
	DONNELLY Frank	Haines & Co Publishers

FINDINGS

Year	Uses	Source
2003	EXPERIMENTAL AIRCRFT ASN 448	Haines & Co Publishers
	FOOTHL AIRCRAFT SALES & SERV INC	Haines & Co Publishers
	GRAHAM Jimmie L	Haines & Co Publishers
	HILTON JOHN AIR SHOWS	Haines & Co Publishers
	HUNTINGTON Scott	Haines & Co Publishers
	KRUGGEL K	Haines & Co Publishers
	MANIAC MIKES CAFE	Haines & Co Publishers
	MCCULLOUGH Ken	Haines & Co Publishers
	PACIFIC COAST RADIO	Haines & Co Publishers
	PRE FLITE INC	Haines & Co Publishers
	SETTEMBER Linda	Haines & Co Publishers
	SONLINE SPORTSWEAR	Haines & Co Publishers
	SPORT AEROCOLOR	Haines & Co Publishers
	TOPS	Haines & Co Publishers
	U S ENTERPRISES	Haines & Co Publishers
	WILSON IMAGING & PUBLISHING INC	Haines & Co Publishers
	KUNTZ G L	Haines & Co Publishers
	VOGEL SALES ENGINEERING	Haines & Co Publishers
	CABLE AIRPORT	Haines & Co Publishers
	ELK RIVER AVIATORS INC	Haines & Co Publishers
	TORREY Larsen	Haines & Co Publishers
	NO# LEONARD Lane C	Haines & Co Publishers
	NO# MURPHY W G	Haines & Co Publishers
	NO# SKY WEST INSTRUMENTS	Haines & Co Publishers
1995	VIC S NEW CONCEPTS	GTE Directories
	CABLE CAFE	GTE Directories
	Building	GTE Directories
	PACIFIC COAST RADIO	GTE Directories
	FRY& FRY	GTE Directories
	VANKEMPEN EWALD	GTE Directories
	BLEDSOE S AVIATION ART	GTE Directories
	Blades Ben	GTE Directories
	Murphy W G	GTE Directories
	CABLEAIR	GTE Directories
	FOOTHILL AIRCRAFT	GTE Directories
	SKY WEST INSTRUMENTS	GTE Directories
	SOBEK GARY A	GTE Directories
1990	Blake Orlando	GTE

FINDINGS

Year	Uses	Source
1990	Blake P Pma	GTE
	California Pregnancy Counseling Service Inc	GTE
	Musser Richard A	GTE
	Dewoody D	GTE
	FOOTHILL ANIMAL HOSPITAL	GTE
	Prentiss Frank	GTE
	Pryor Durham	GTE
	FOOTHILL AIRCRAFT	GTE
	Grady Chas	GTE
	Sari David	GTE
	Andrews Robt	GTE
	Kruggel K	GTE
	Jencks Wm	GTE
	JET SUPREME AIRCRAFT SERVICES INC	GTE
	Blake O E Bud	GTE
	Blades Ben	GTE
	La Forge Allan	GTE
	Cable Airport	GTE
	Cable Cafe	GTE
	CALIFORNIA PRECISION AVIONICS	GTE
	Young Wm R	GTE
	Williams Russ	GTE
	Cole Jas D	GTE
	Musser Richard	GTE
	De Wolf Leonard	GTE
	Grey Eagle Aviation Services	GTE
	Foothill Aircraft Parts Center	GTE
	Foothill Aircraft Sales	GTE
	Foothill Aircraft Service	GTE
	Heer Gregory	GTE
	Ashby Dennis	GTE
	Foothill Aircraft Cable Airport	GTE
1985	i FOOTHILL AIRCRAFT	GTE
	APARTMENT	GTE
	BLAKE 0 E	GTE
	BLADES BEN	GTE
	CABLE CAFE	GTE

FINDINGS

Year	*Uses*	*Source*
1985	CABLEAIR	GTE
	D ANTONIO CARMEN	GTE
	JENCKS M	GTE
	KENMAR AVIATION	GTE
	LA FORGE ALLAN	GTE
	MURPHY W G	GTE
	PRENTISS FRANK	GTE
	SARI DAVID	GTE
	SKY WEST INSTRUMENTS	GTE
1980	FOOTHILL AIRCRAFT	GTE General Telephone Company of California
	ASHBY DENNIS	GTE General Telephone Company of California
	OCABLE AIRPORT CAFE	GTE General Telephone Company of California
	CABLE CAFE	GTE General Telephone Company of California
	o CABLEAIR	GTE General Telephone Company of California
	D ANTONIO CARMEN	GTE General Telephone Company of California
	D ANTONIO CARMEN	GTE General Telephone Company of California
	GILLESPIE WAYLAND	GTE General Telephone Company of California
	ILUND AVIATION	GTE General Telephone Company of California
	JENCKS WM	GTE General Telephone Company of California
	MARRIOTT BOB	GTE General Telephone Company of California
	MURPHY W G	GTE General Telephone Company of California
	SCHMITZ EARL	GTE General Telephone Company of California
	SKY WEST INSTRUMENTS	GTE General Telephone Company of California
	PRENTISS FRANK	GTE General Telephone Company of California
	BLAKE 0 E BUD	GTE General Telephone Company of California
1975	Cable Cafe	GTE Directories
	Blake O E Bud Livestock	GTE Directories

FINDINGS

W 13TH UPL 9851977

1749 W 13TH UPL 9851977

Year	Uses	Source
1990	Foothill Aircraft Cable Airport	GTE

W FOOTHILL BLVD

1775 W FOOTHILL BLVD

Year	Uses	Source
2014	ROUTE 66 AUTO REPAIR CENTER	EDR Digital Archive
	ADVANCE AUTO SMOG CHECK CNTRER	EDR Digital Archive
	BUDGET TRUCK RENTAL-ONE-WAY	EDR Digital Archive
	ON TIME COLLISION CENTER	EDR Digital Archive
	INGRAM HOWARD	EDR Digital Archive
2010	BUDGET TRUCK RENTAL-ONE-WAY	EDR Digital Archive
	ON TIME COLLISION CENTER	EDR Digital Archive
	PERFECT DUTCH COLLISION CENTER	EDR Digital Archive
	ANY DREAM WILL DO INC	EDR Digital Archive
	ROUTE 66 AUTO REPAIR CENTER	EDR Digital Archive

W Foothill Blvd

1775 W Foothill Blvd

Year	Uses	Source
2008	BUDGETTRUCK RENTAL	Haines Company, Inc.
	ON TIME COLLISION CENTER	Haines Company, Inc.
	ROUTE 66 AUTO REPAIR CENTER	Haines Company, Inc.
	RYDER TRUCK RENTAL ONE WAY INC	Haines Company, Inc.
	U C C AUTO SALES	Haines Company, Inc.
	PERFECT ONE COLLISION CENTER	Haines Company, Inc.
	UPLAND COLLISION CENTER	Haines Company, Inc.
2003	A PLUS AUTO REPAIR	Haines & Co Publishers
	ON TIME COLLISION CENTER	Haines & Co Publishers
	UPLAND COLLISION CENTER	Haines & Co Publishers
	YOUNG William	Haines & Co Publishers
1995	A FOOTHILL AUTO SVC	GTE Directories
1990	FOOTHILL BAPTIST CHURCH	GTE
	FOOTHILL AUTO SERVICE A. 912	GTE
	Or	GTE

FINDINGS

Year	Uses	Source
1990	A FOOTHILL AUTO SERVICE	GTE
1985	BUILDING	GTE
	A FOOTHILL AUTO SVC	GTE
	A CALIF POOLS 8 SPAS	GTE
	A CAL SUN SOLAR INC	GTE
1980	FRANKS PAINT SHOP	GTE General Telephone Company of California
	BATISTA AUTOMOTIVE	GTE General Telephone Company of California
	FLIEDERMAUS	GTE General Telephone Company of California
1975	FLIEDERMAUS	GTE Directories
1970	n A FOOTHLL BRKS/MFFLR	General Telephone Company of California
	DICKS INDUST RENTALS	General Telephone Company of California
1960	Steely Floyd	General Telephone Company Publishers
	Steely Floyd	General Telephone Company Publishers
1951	Richard 0ons Mobil Serv gas	Los Angeles Directory Company Publishers
	Richardson : NT	Los Angeles Directory Company Publishers

W FOOTHILL BLVD

1869 W FOOTHILL BLVD

Year	Uses	Source
2010	SECURED AUTO INSURANCE SERVICE	EDR Digital Archive
	SECURED AUTO INSURANCE SERVICE	EDR Digital Archive
	CALFOOD INC	EDR Digital Archive
	AHMAD A KARRAN	EDR Digital Archive

W Foothill Blvd

1869 W Foothill Blvd

Year	Uses	Source
2008	SECURED AUTO INSURANCE SERVICE	Haines Company, Inc.
2003	ATLAS BUYING GROUP	Haines & Co Publishers
	COBB Michael	Haines & Co Publishers
	SECURED AUTO INSURANCE SERVICE	Haines & Co Publishers
1990	Foothill Express	GTE
1980	OLIVERS	GTE General Telephone Company of California
1975	Boudenes	GTE Directories
1964	BUZZIES Jon C Currie	Luskey Brothers & Co

Year	Uses	Source
1964	Buzzies Restaurant	Luskey Brothers & Co
1960	Clark John	General Telephone Company Publishers
	JACKS DRIVE IN	General Telephone Company Publishers
	Clark John	General Telephone Company Publishers
	JACKS DRIVE IN	General Telephone Company Publishers

1917 W Foothill Blvd

Year	Uses	Source
2008	HUB CAP ANNIE	Haines Company, Inc.
2003	HUB CAP ANNIE	Haines & Co Publishers
1990	FOOTHILL DRAPERY SERV	GTE
	Physical Therapy	GTE
	From Pomona Telephones Call	GTE
	Foothill Drywall Inc	GTE
1985	FOOTHILL DRAPERY SVC	GTE
1980	FOOTHILL DRAPERY SVC	GTE General Telephone Company of California
1970	n FOOTHILL DRAPERY SVC	General Telephone Company of California
1964	Foothill Drapery Service	Luskey Brothers & Co
1960	Foothill Upholstery	General Telephone Company Publishers
	Foothill Upholstery	General Telephone Company Publishers

W FOOTHILL BLVD

2009 W FOOTHILL BLVD

Year	Uses	Source
2014	AQUA DEPOT INC	EDR Digital Archive
2010	CALIFORNIA BANK & TRUST	EDR Digital Archive

W Foothill Blvd

2009 W Foothill Blvd

Year	Uses	Source
2008	VINEYARD BANK	Haines Company, Inc.
2003	XXXX	Haines & Co Publishers
1995	RANCHO BANK	GTE Directories
1990	Rancho Bank	GTE
	Upland	GTE
1985	RANCHO BANK	GTE

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
Not Reported	2014, 2010, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
1082 AIRPORT DR	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1082 Airport Drive	2014, 2010, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1254 Airport Drive	2014, 2010, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1284 AIRPORT DR	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1284 Airport Drive	2014, 2010, 2002, 1996, 1995, 1991, 1981, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1748 W 13TH ST	2014, 2010, 2008, 2003, 2002, 1996, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1749 13TH ST W	2014, 2010, 2008, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1749 W 13TH	2014, 2010, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1749 W 13th St	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1749 W 13TH ST	2014, 2010, 2003, 2002, 1996, 1991, 1981, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1749 W 13th St	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

FINDINGS

Address Researched	Address Not Identified in Research Source
1749 W 13th Street	2014, 2010, 2002, 1996, 1991, 1981, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1749 W 13TH UPL 9851977	2014, 2010, 2008, 2003, 2002, 1996, 1995, 1991, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1775 W FOOTHILL BLVD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1775 W Foothill Blvd	2014, 2010, 2002, 1996, 1991, 1981, 1965, 1964, 1961, 1956, 1955, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1869 W Foothill Blvd	2014, 2010, 2002, 1996, 1995, 1991, 1985, 1981, 1970, 1965, 1961, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1869 W FOOTHILL BLVD	2014, 2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
1917 W Foothill Blvd	2014, 2010, 2002, 1996, 1995, 1991, 1981, 1975, 1965, 1961, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
2009 W Foothill Blvd	2014, 2010, 2002, 1996, 1991, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922
2009 W FOOTHILL BLVD	2008, 2003, 2002, 1996, 1995, 1991, 1990, 1985, 1981, 1980, 1975, 1970, 1965, 1964, 1961, 1960, 1956, 1955, 1951, 1950, 1949, 1946, 1945, 1942, 1941, 1940, 1938, 1936, 1934, 1931, 1930, 1926, 1923, 1922

Not Reported

Not Reported

Upland, CA 91786

Inquiry Number: 5210223.3

March 06, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

03/06/18

Site Name:

Not Reported
Not Reported
Upland, CA 91786
EDR Inquiry # 5210223.3

Client Name:

Ardent Environmental Group
1827 Capital Street, SUite 103
Corona, CA 92880
Contact: Taylor Nesby

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Certified Sanborn Results:

Certification # C637-46F5-8727

PO # 100986001

Project 100986001

UNMAPPED PROPERTY

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Sanborn® Library search results

Certification #: C637-46F5-8727

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

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Not Reported

Not Reported

Upland, CA 91786

Inquiry Number: 5210223.4

March 06, 2018

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

03/06/18

Site Name:

Not Reported
Not Reported
Upland, CA 91786
EDR Inquiry # 5210223.4

Client Name:

Ardent Environmental Group
1827 Capital Street, SUite 103
Corona, CA 92880
Contact: Taylor Nesby

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Ardent Environmental Group were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 100986001
Project: 100986001

Coordinates:

Latitude:	34.110438 34° 6' 38" North
Longitude:	-117.684805 -117° 41' 5" West
UTM Zone:	Zone 11 North
UTM X Meters:	436841.14
UTM Y Meters:	3774612.91
Elevation:	1397.16' above sea level

Maps Provided:

2012	1940
1981	1933
1976	1928, 1933
1973	1903
1967	1900
1954	1897
1944	
1942	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

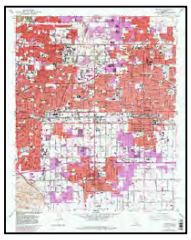


Mount Baldy
2012
7.5-minute, 24000



Ontario
2012
7.5-minute, 24000

1981 Source Sheets



Ontario
1981
7.5-minute, 24000
Aerial Photo Revised 1978

1976 Source Sheets

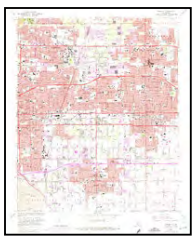


ONTARIO
1976
15-minute, 50000

1973 Source Sheets



Mt. Baldy
1973
7.5-minute, 24000
Aerial Photo Revised 1966



Ontario
1973
7.5-minute, 24000
Aerial Photo Revised 1973

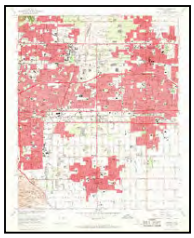
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1967 Source Sheets



Mt. Baldy
1967
7.5-minute, 24000
Aerial Photo Revised 1966



Ontario
1967
7.5-minute, 24000
Aerial Photo Revised 1966

1954 Source Sheets



Mt. Baldy
1954
7.5-minute, 24000
Aerial Photo Revised 1952



Ontario
1954
7.5-minute, 24000
Aerial Photo Revised 1952

1944 Source Sheets



CUCAMONGA
1944
15-minute, 50000

1942 Source Sheets



Ontario and Vicinity
1942
7.5-minute, 31680

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1940 Source Sheets



La Verne
1940
7.5-minute, 20000



Evey Canyon
1940
7.5-minute, 20000

1933 Source Sheets



Ontario
1933
7.5-minute, 31680

1928, 1933 Source Sheets



Claremont
1928
7.5-minute, 24000



La Verne
1928
7.5-minute, 24000



La Verne and Evey Canyon
1933
7.5-minute, 24000

1903 Source Sheets



Cucamonga
1903
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1900 Source Sheets



Cucamonga
1900
15-minute, 62500

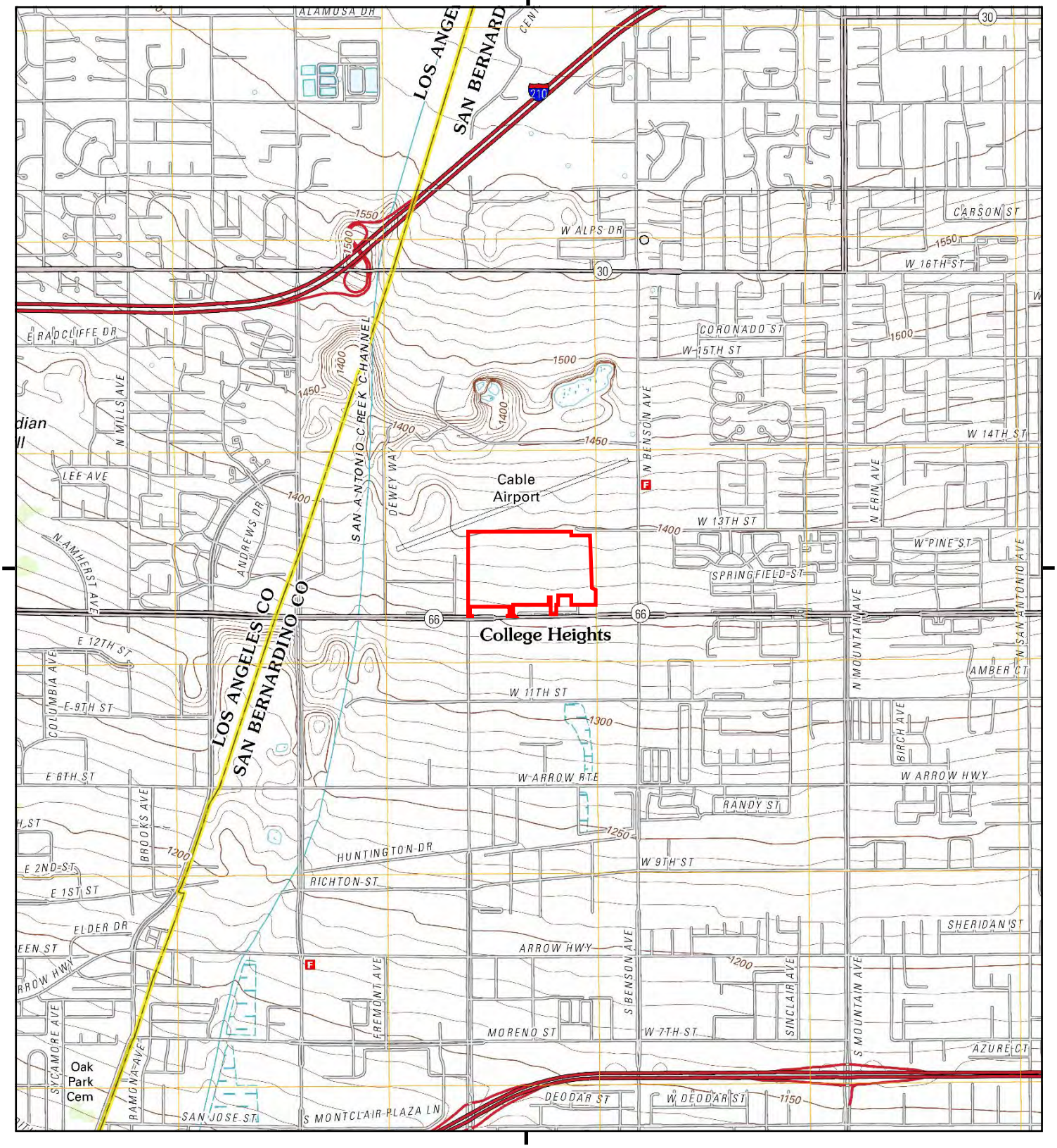
1897 Source Sheets



Cucamonga
1897
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

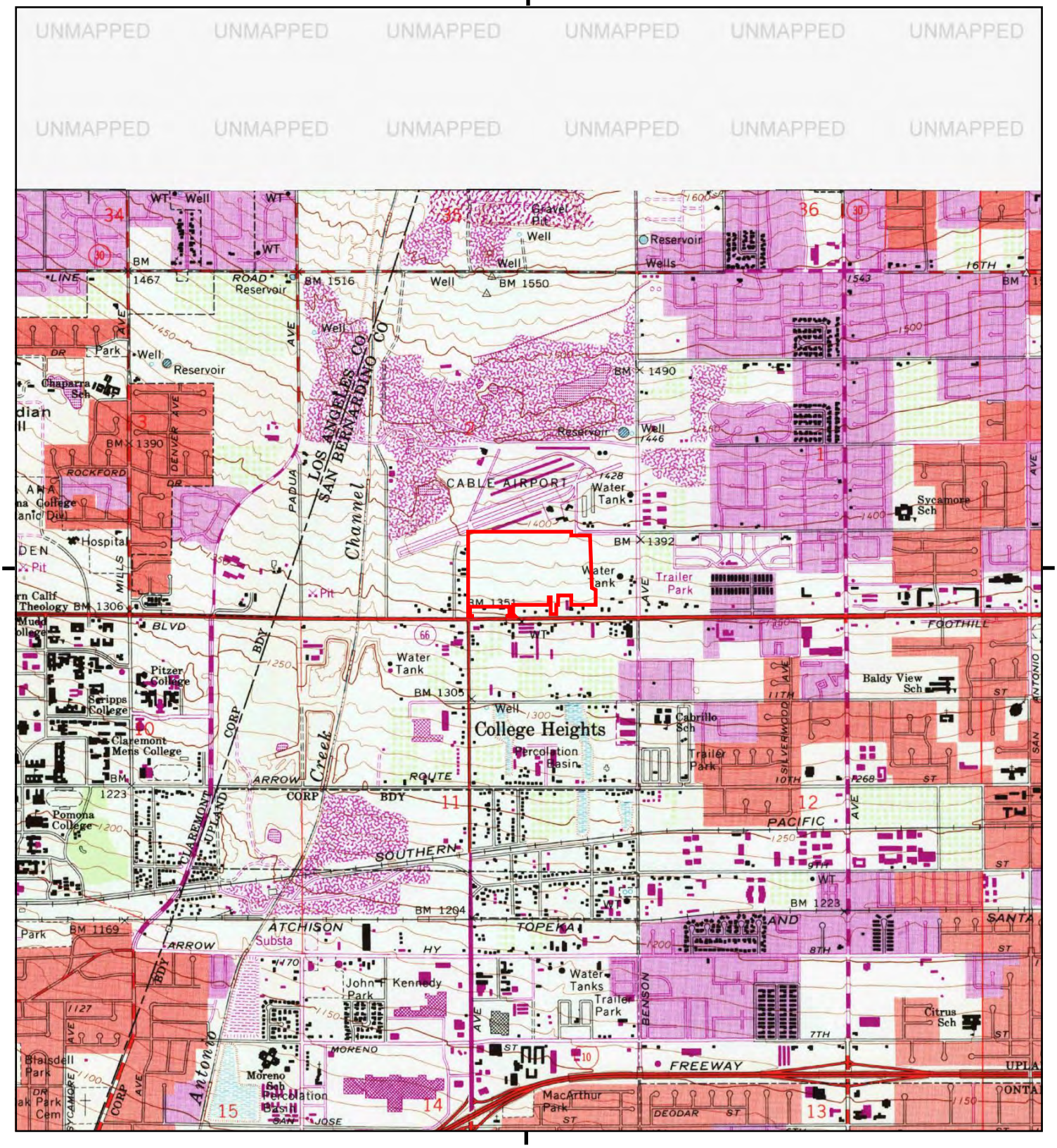
TP, Ontario, 2012, 7.5-minute
N, Mount Baldy, 2012, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N

Historical Topo Map

1981



This report includes information from the following map sheet(s).

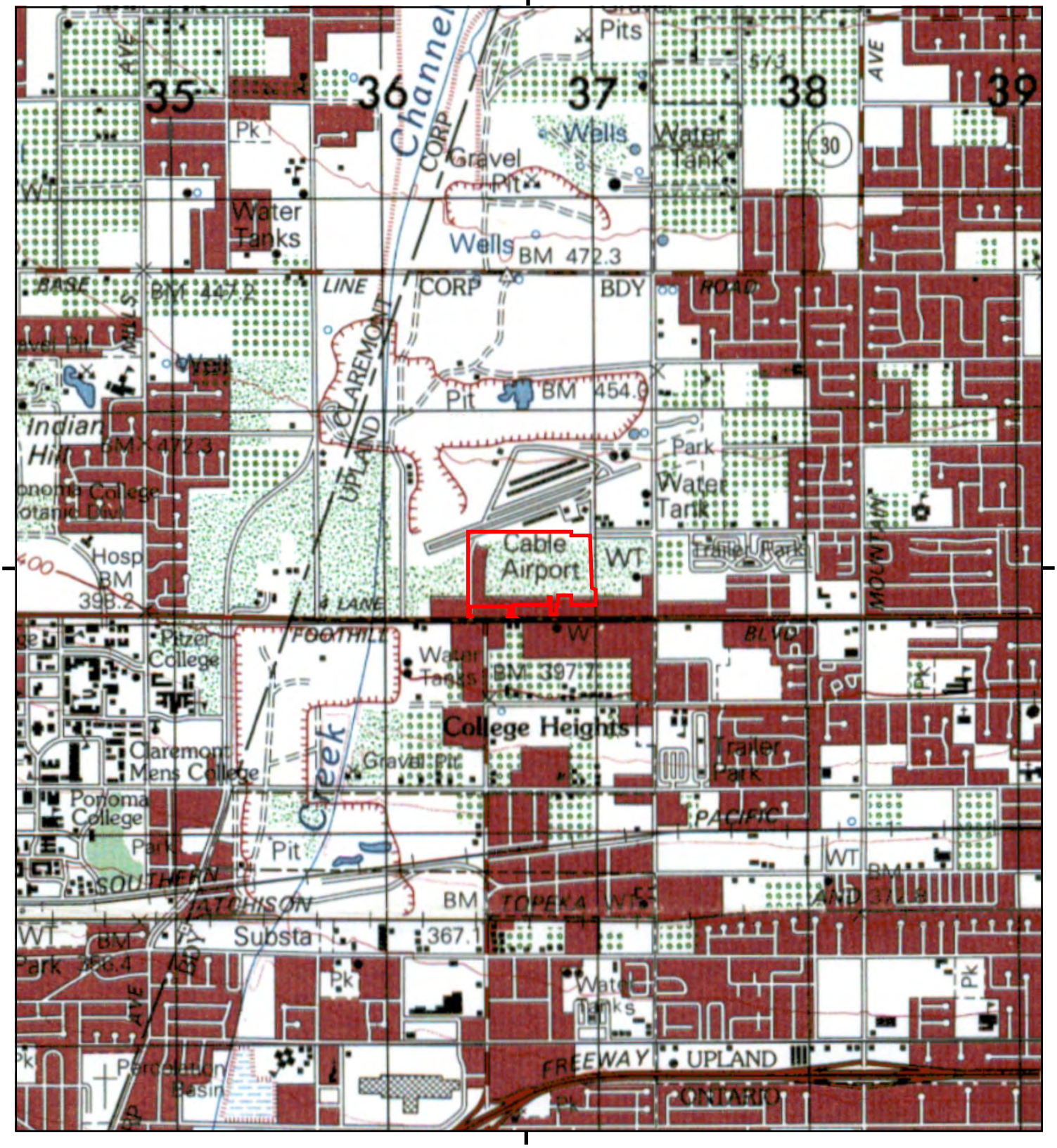
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Ontario, 1981, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N



This report includes information from the following map sheet(s).

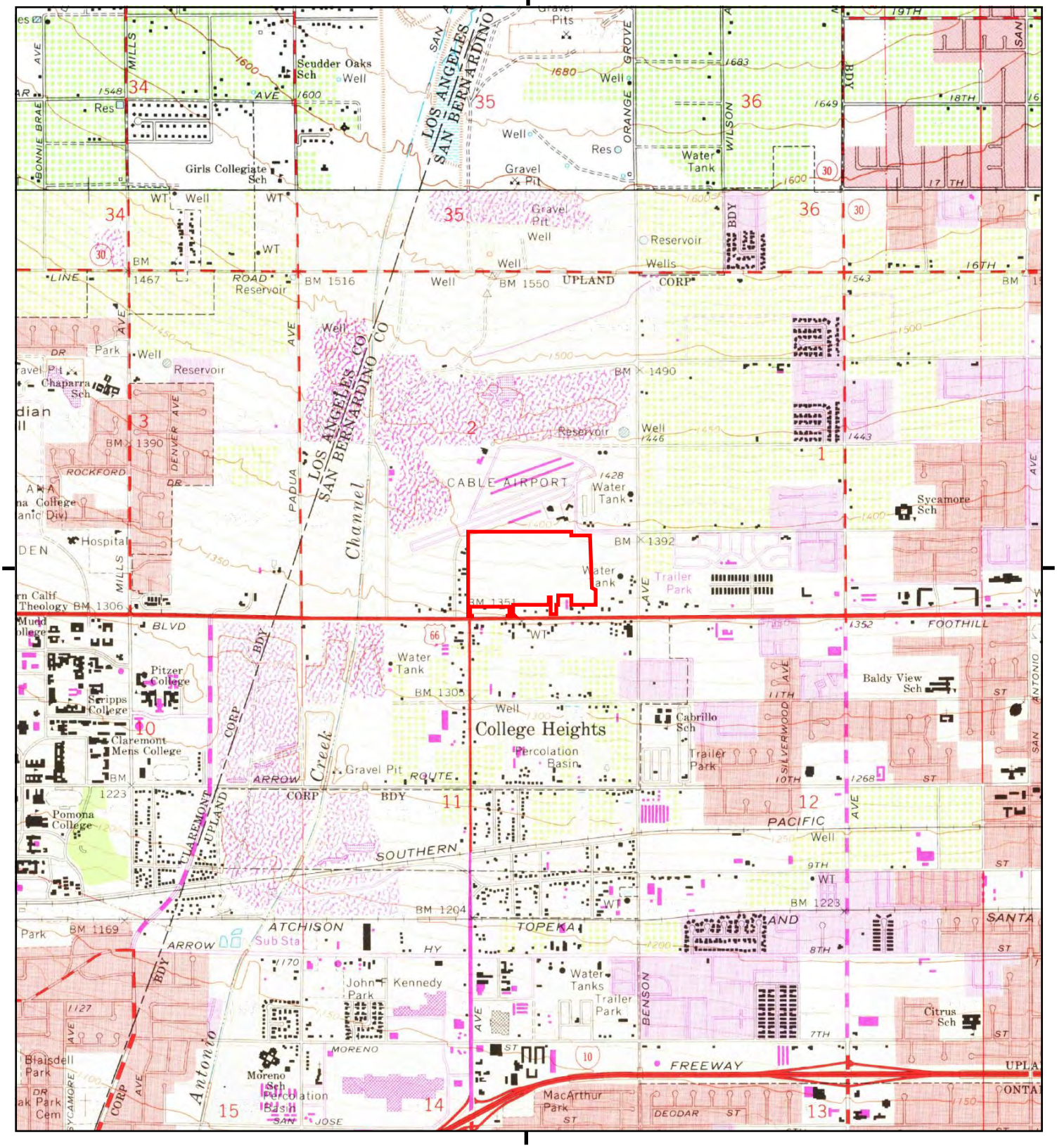
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, ONTARIO, 1976, 15-minute

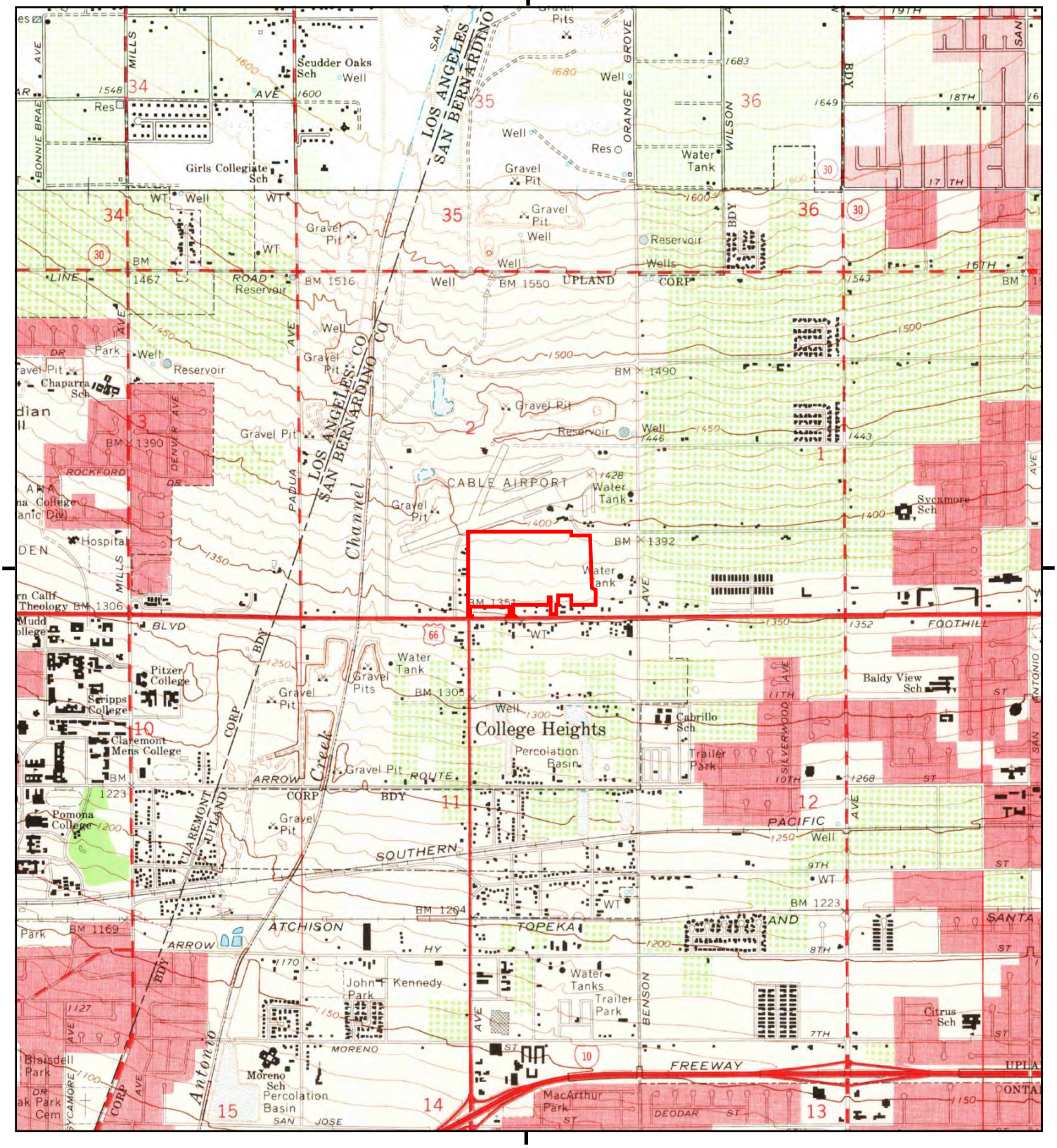
SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N


College Heights
CABLE AIRPORT
Reservoir
Water Tank
Trailer Park
Percolation Basin
Gravel Pit
Well
Pitzer College
Scripps College
Claremont Mens College
Pomona College
Chaparral Sch
Girls Collegiate Sch
Scudder Oaks Sch
Sycamore Sch
Baldy View Sch
Cabrillo Sch
Citrus Sch
Moreno Sch
John F Kennedy Park
MacArthur Park
Blaisdell Park
Water Tanks
Hospital
Res
Gravel Pits
Wells
Water Tank
Trailer Park
Percolation Basin
Gravel Pit
Reservoir
Well
Water Tank
Trailer Park
Water Tanks
Trailer Park
Percolation Basin
Gravel Pit
Well
Reservoir
Water Tank
Trailer Park
Water Tank
Trailer Park
Water Tanks
Trailer Park
Percolation Basin
Gravel Pit
Well
Reservoir

Historical Topo Map

1967



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

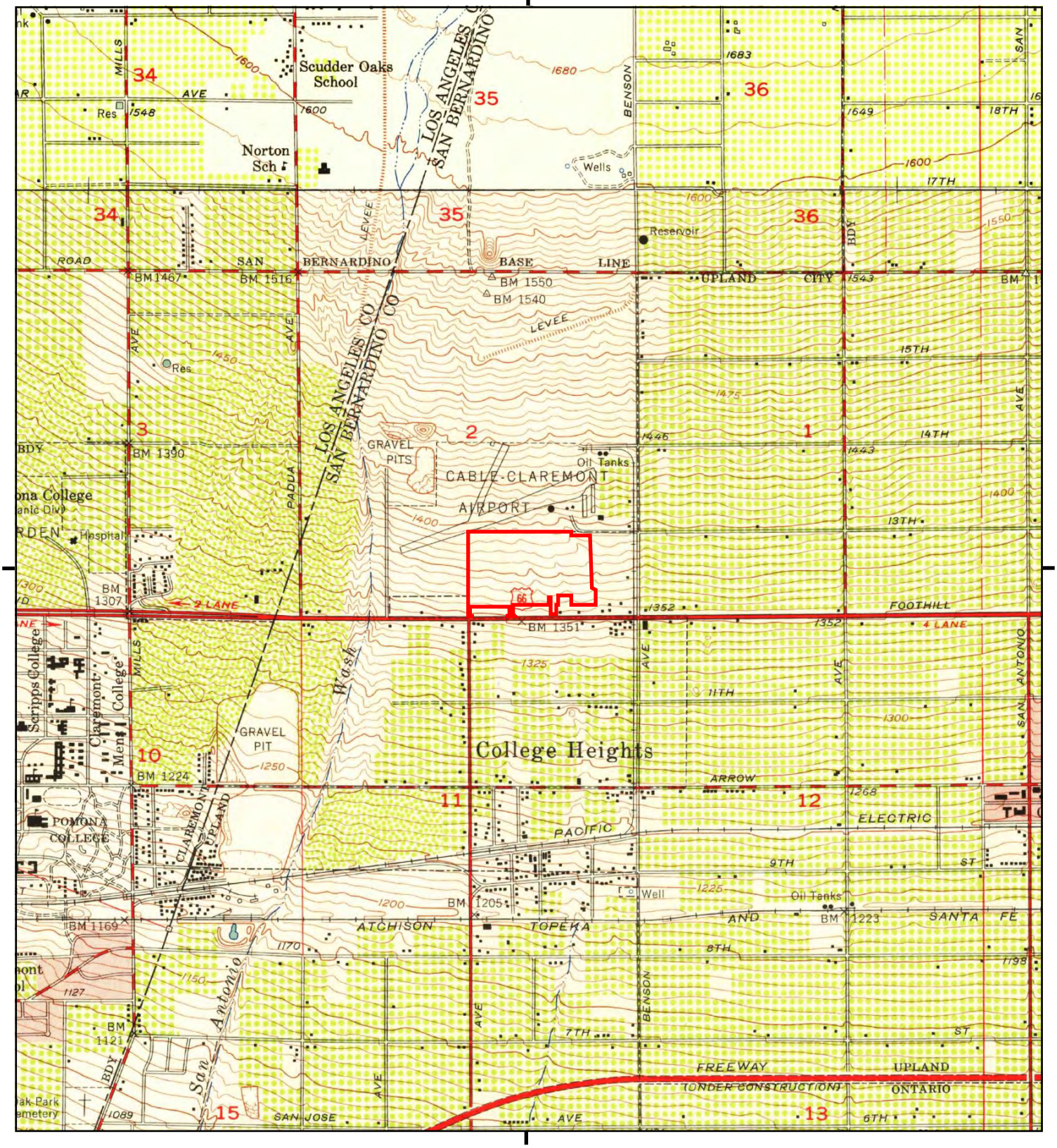
TP, Ontario, 1967, 7.5-minute
N, Mt. Baldy, 1967, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N

Historical Topo Map

1954



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

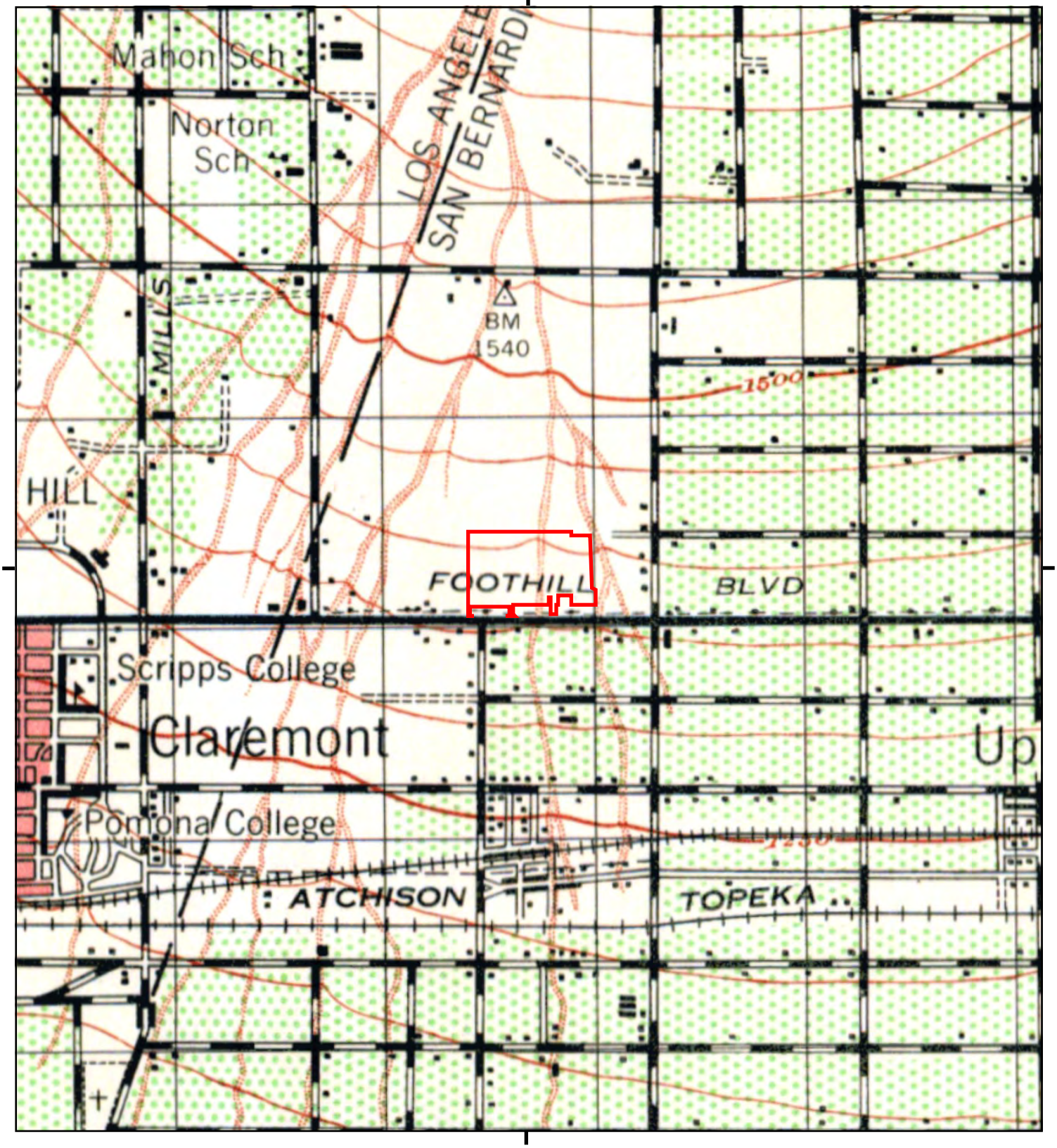
TP, Ontario, 1954, 7.5-minute
N, Mt. Baldy, 1954, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N

Historical Topo Map

1944



This report includes information from the following map sheet(s).

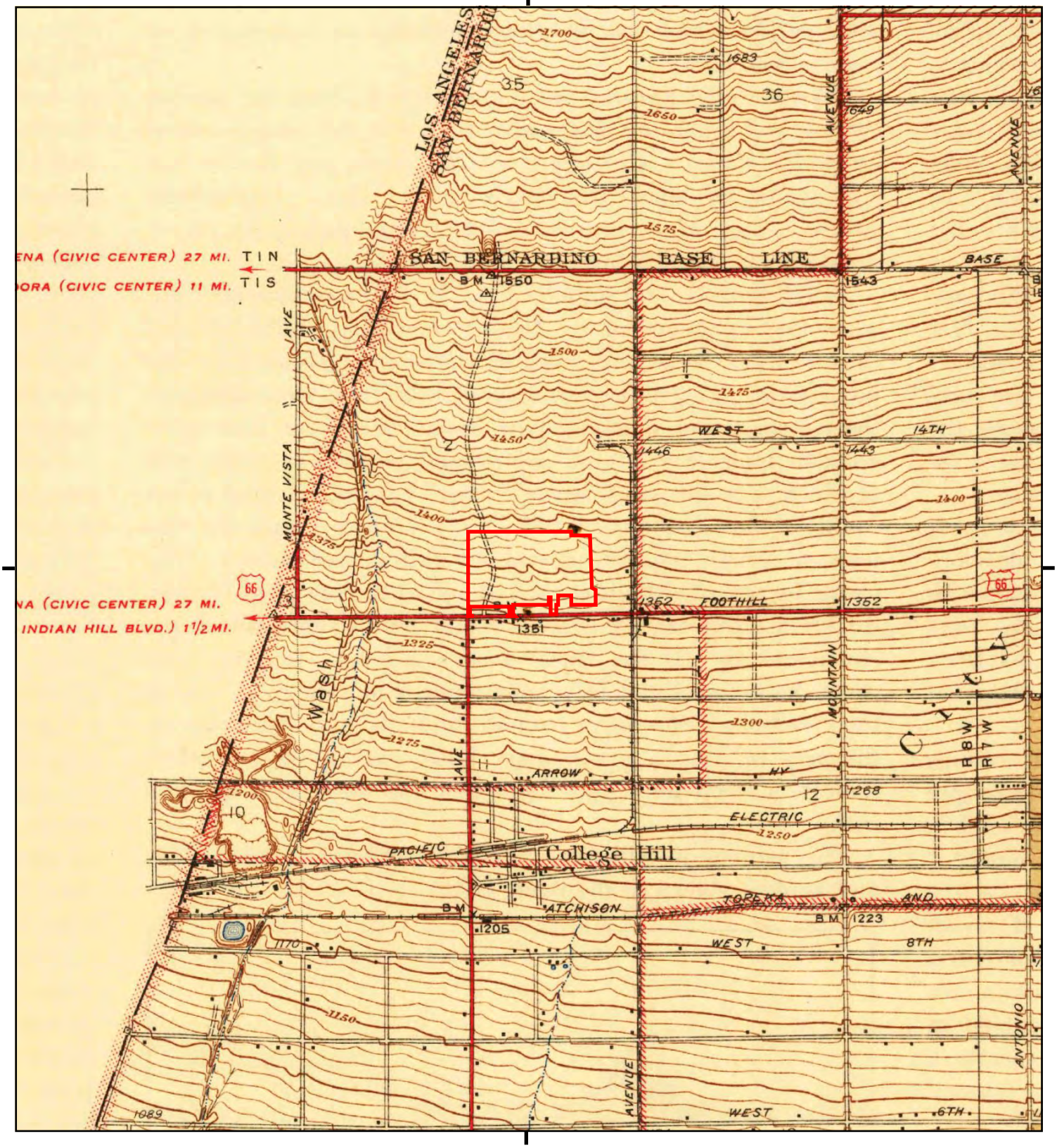
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, CUCAMONGA, 1944, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Ontario and Vicinity, 1942, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N

Historical Topo Map

1940



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

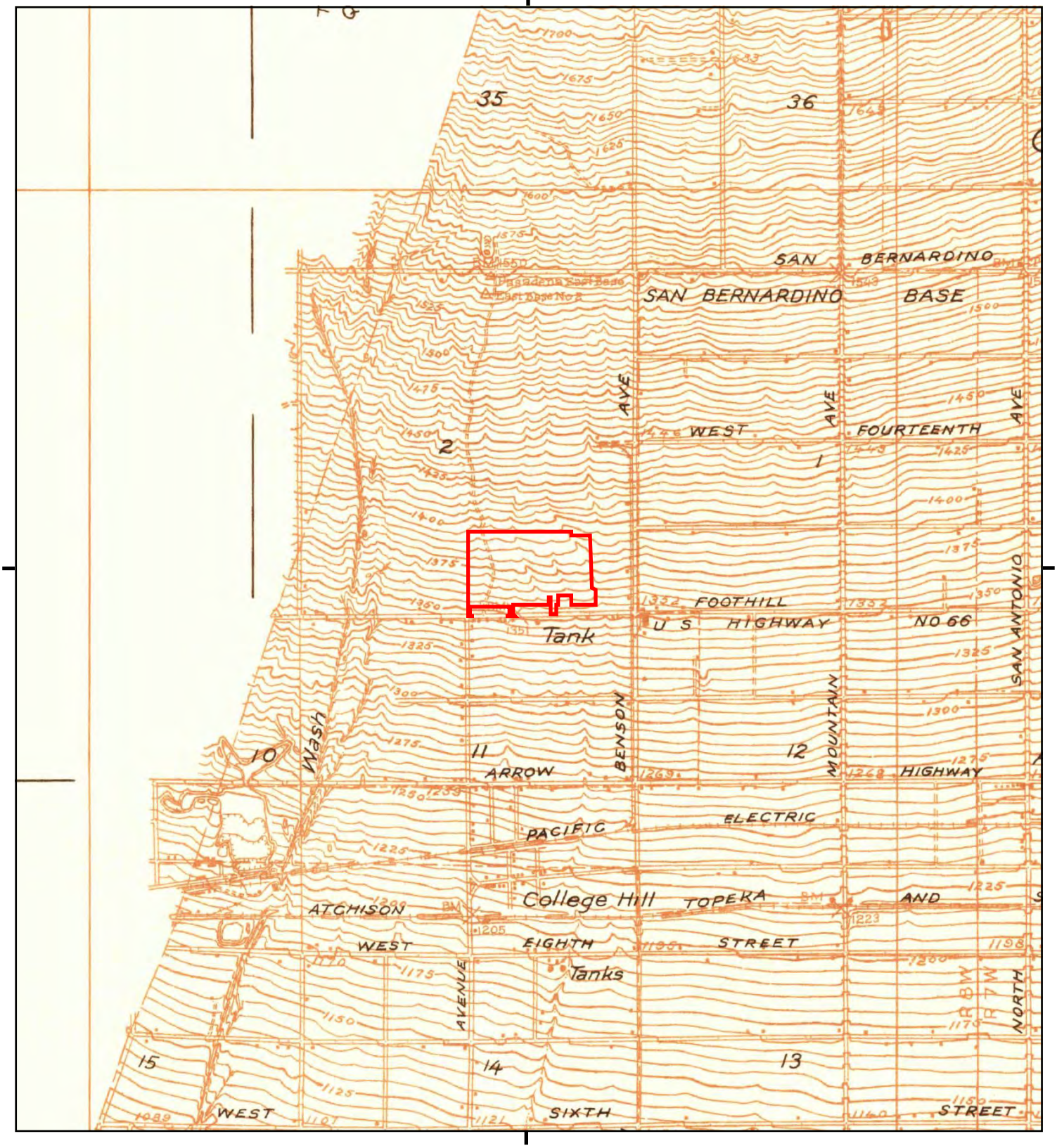
TP, Evey Canyon, 1940, 7.5-minute
NW, La Verne, 1940, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N

Historical Topo Map

1933



This report includes information from the following map sheet(s).

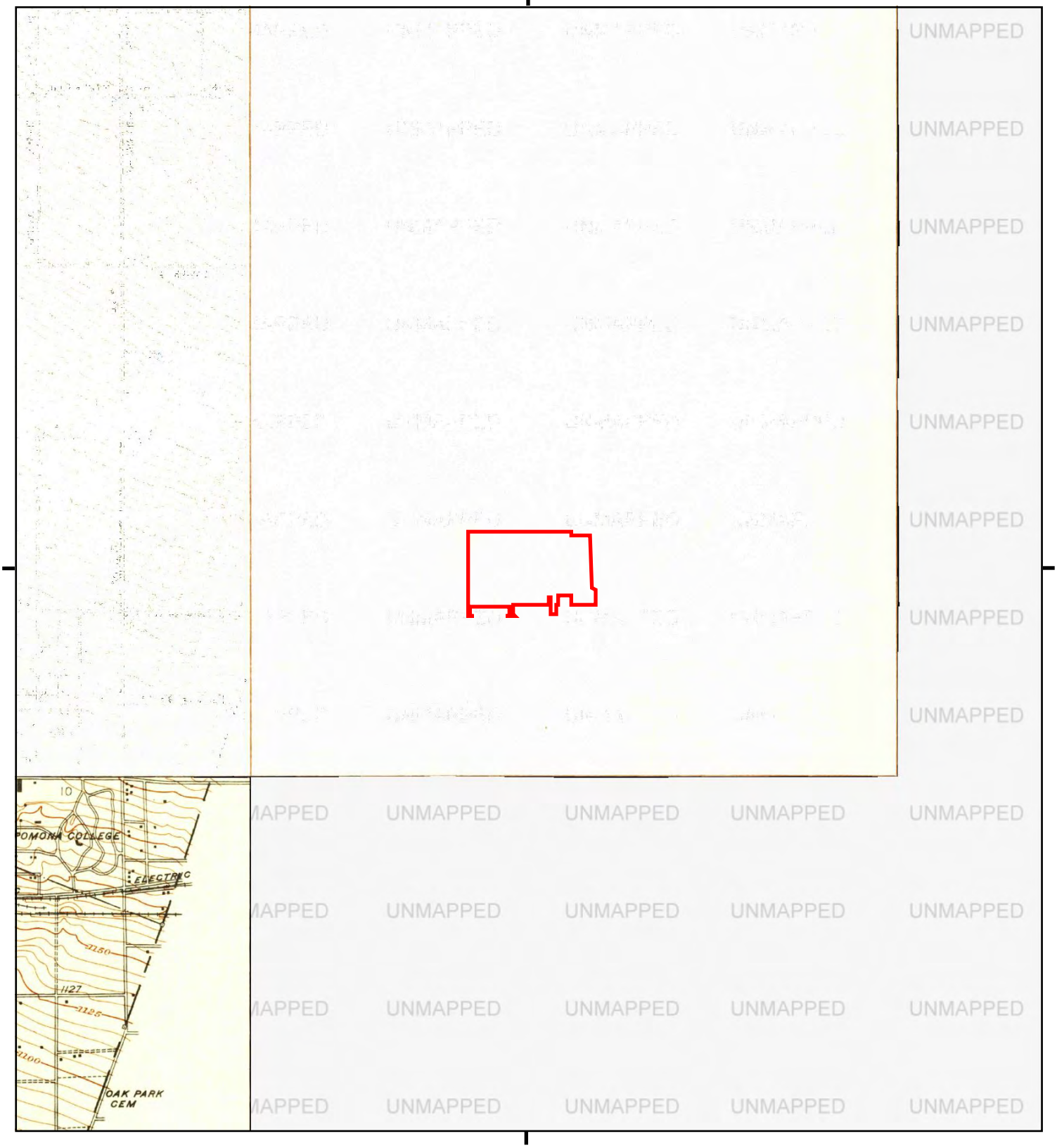
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Ontario, 1933, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N



This report includes information from the following map sheet(s).

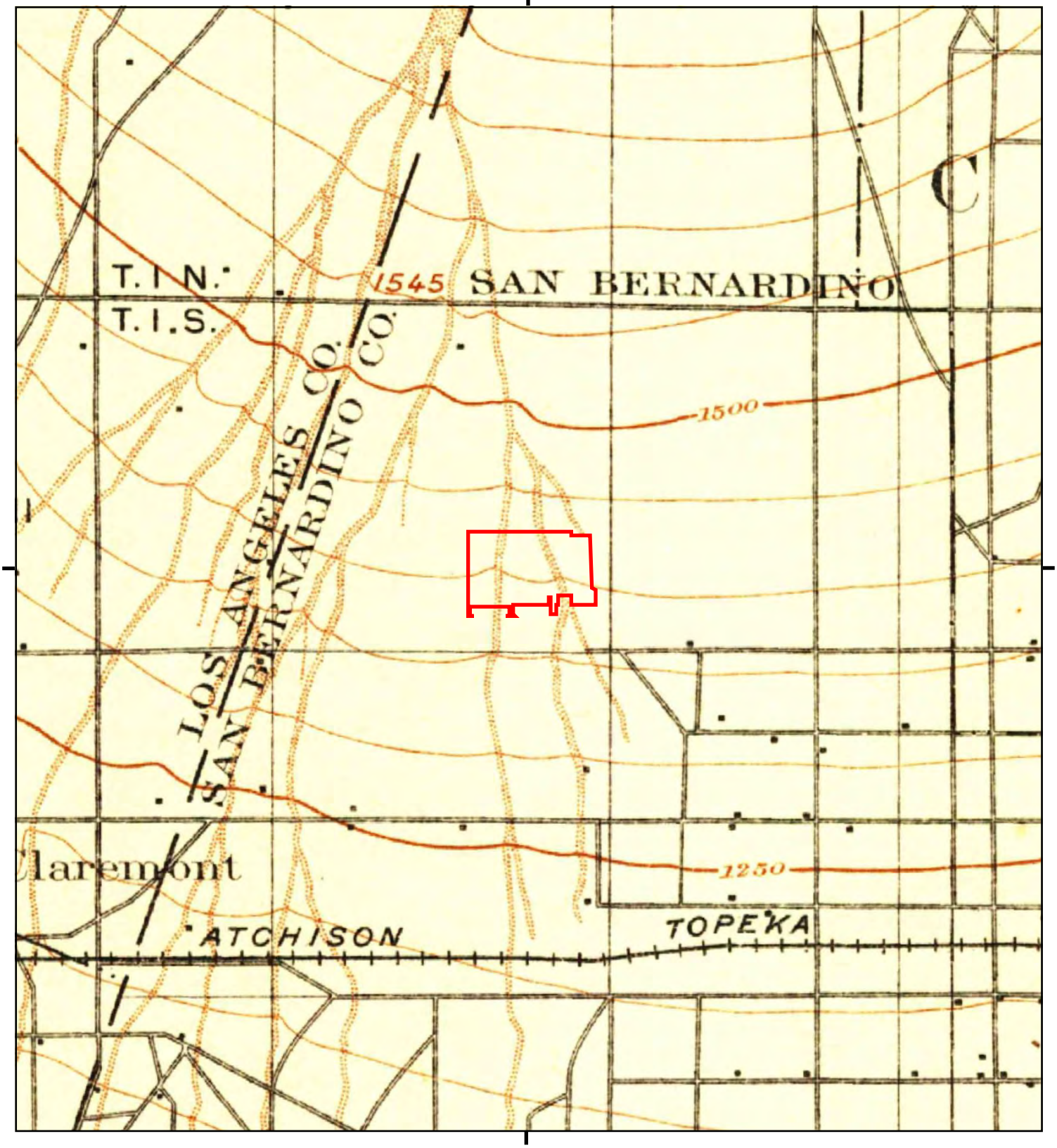
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Verne and Evey Canyon, 1933, 7.5-minute
SW, Claremont, 1928, 7.5-minute
NW, La Verne, 1928, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N



This report includes information from the following map sheet(s).

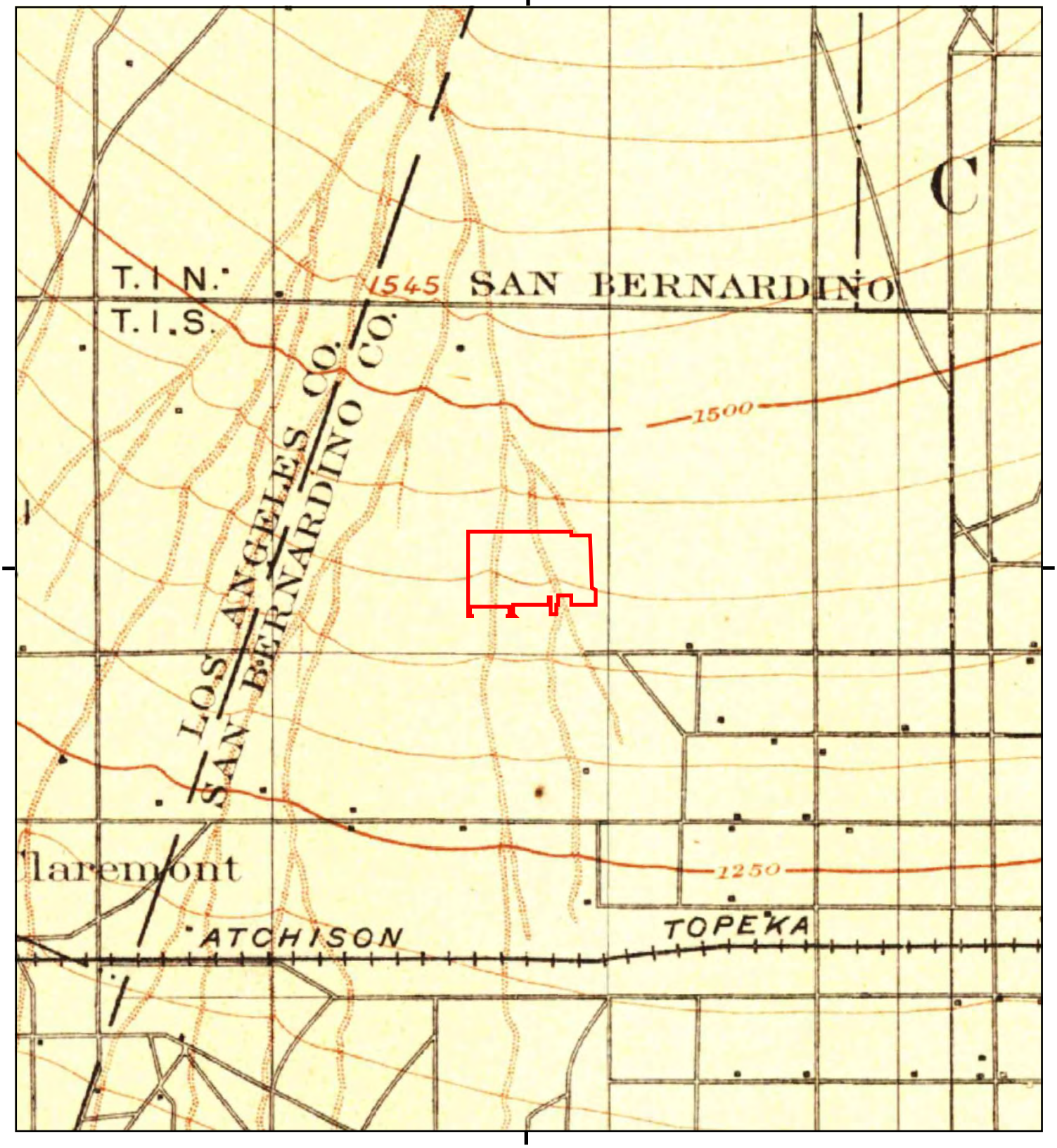
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Cucamonga, 1903, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N



This report includes information from the following map sheet(s).

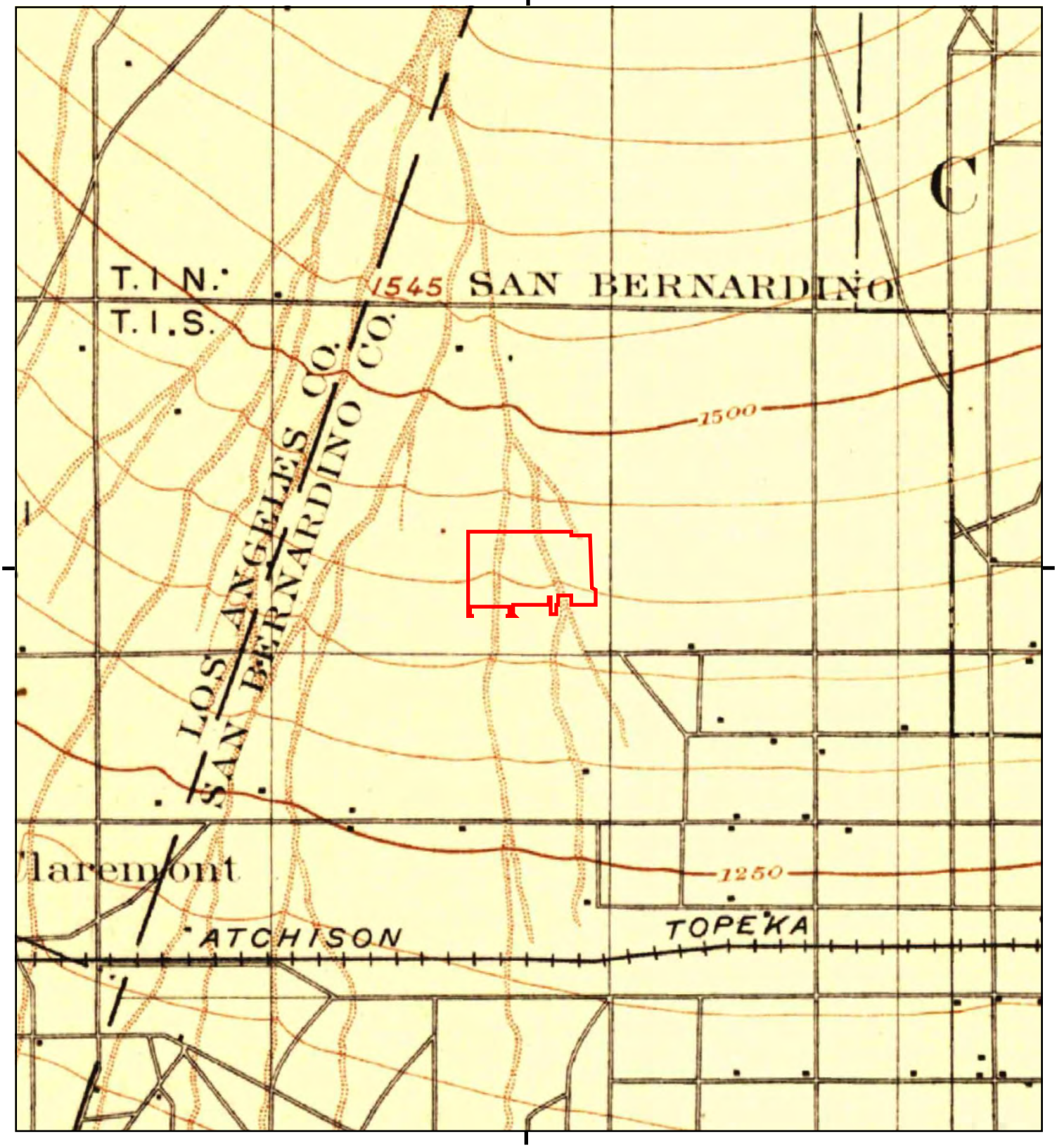
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Cucamonga, 1900, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Cucamonga, 1897, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Upland, CA 91786
CLIENT: Ardent Environmental Group

N

APPENDIX D

ENVIRONMENTAL DATABASE REPORT

Not Reported
Not Reported
Upland, CA 91786

Inquiry Number: 5210223.2s
March 06, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	184
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-8
Physical Setting Source Map Findings	A-10
Physical Setting Source Records Searched	PSGR-1

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with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

NOT REPORTED
UPLAND, CA 91786

COORDINATES

Latitude (North):	34.1104380 - 34° 6' 37.57''
Longitude (West):	117.6848050 - 117° 41' 5.29''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	436839.7
UTM Y (Meters):	3774418.0
Elevation:	1396 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5619074 ONTARIO, CA
Version Date:	2012
North Map:	5630625 MOUNT BALDY, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140527, 20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
NOT REPORTED
UPLAND, CA 91786

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	ALL AROUND PEST & TE	1810 FOOTHILL BLVD A	San Bern. Co. Permit	Lower	67, 0.013, SSW
A2	EMPIRE COLLISION CEN	1775 1/2 W FOOTHILL	San Bern. Co. Permit	Lower	74, 0.014, South
A3	FLIEDER MAUS	1775 W FOOTHILL BLVD	EDR Hist Auto	Lower	74, 0.014, South
A4	MEJIA AUTO BODY SHOP	1775 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	74, 0.014, South
A5	A+ AUTO REPAIR	1775 W FOOTHILL BLVD	HAZNET, San Bern. Co. Permit	Lower	74, 0.014, South
B6	UPLAND AUTOMOTIVE	1803 W FOOTHILL	RCRA-SQG, FINDS, ECHO, HAZNET, San Bern. Co....	Lower	78, 0.015, South
C7	DINEEN TRUCKING INC.	1284 AIRPORT DR	LUST, SWEEPS UST, CA FID UST, HIST CORTESE, WDS	Lower	123, 0.023, West
C8	DINEEN TRUCKING	1284 AIRPORT DR	LUST, HIST UST, NPDES, San Bern. Co. Permit	Lower	123, 0.023, West
B9	UPLAND MERCEDES REPA	1785 1/2 W FOOTHILL	San Bern. Co. Permit	Lower	139, 0.026, SSW
D10	SMALLING AUTO & TRUC	1102 N AIRPORT DR	San Bern. Co. Permit	Lower	150, 0.028, WSW
A11	INTRAVAIA ROCK & SAN	1770 W FOOTHILL BLVD	SWEEPS UST, HIST UST, CA FID UST	Lower	205, 0.039, South
A12	INTRAVAIA ROCK & SAN	1770 W FOOTHILL BLVD	HIST UST	Lower	205, 0.039, South
D13	REBECK, T W	1160 AIRPORT DR	San Bern. Co. Permit	Lower	211, 0.040, WSW
C14	REACH 13	1257 AIRPORT DRIVE	AST	Lower	224, 0.042, WSW
C15	REACH 13	1257 AIRPORT DR	HAZNET, San Bern. Co. Permit	Lower	224, 0.042, WSW
E16	BENSON TOWN CLEANERS	1651 W FOOTHILL BLVD	EDR Hist Cleaner	Lower	274, 0.052, SE
D17	MOUNTAIN VIEW CHEVRO	2110 AVIATION DR	HAZNET, San Bern. Co. Permit	Lower	316, 0.060, WSW
D18	ALPINE COLLISION CEN	2110 AVIATION DR	San Bern. Co. Permit	Lower	316, 0.060, WSW
F19	LOWE'S OF UPLAND #10	1659 W FOOTHILL BLVD	AST	Lower	340, 0.064, ESE
F20	LOWES HIW #1041	1659 W FOOTHILL BLVD	HAZNET, San Bern. Co. Permit	Lower	340, 0.064, ESE
F21	LOWE'S OF UPLAND #10	1659 W FOOTHILL	AST	Lower	340, 0.064, ESE
G22	HONDA NISSAN SPECIAL	1710 W FOOTHILL BLVD	RCRA-SQG, FINDS, ECHO	Lower	343, 0.065, South
E23	R A PHOTO LAB	1651 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	368, 0.070, SSE
E24	DEL TACO #243	1653 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	368, 0.070, SSE
E25	BENSON TOWN CLEANERS	1651 W FOOTHILL BVLD	RCRA-SQG, FINDS, ECHO, DRYCLEANERS	Lower	368, 0.070, SSE
G26	FENCE CRAFT OF UPLAN	1780 W FOOTHILL BLVD	HIST UST	Lower	396, 0.075, South
G27	FENCE CRAFT OF UPLAN	1780 W FOOTHILL BLVD	SWEEPS UST, CA FID UST	Lower	396, 0.075, South
28	DAVID SPENCER PAINTI	1810 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	405, 0.077, SSW
H29	FOOTHILL CAR WASH &D	2016 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	410, 0.078, SW
H30	CAR WASH USA	2016 W FOOTHILL BLVD	UST	Lower	410, 0.078, SW
H31	CAR WASH USA	2016 FOOTHILL BLVD	SWEEPS UST	Lower	410, 0.078, SW
H32	BEST GUYS FAST LUBE	2018 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	410, 0.078, SW
I33	JIFFY LUBE #1876	1640 W FOOTHILL BLVD	AST	Lower	422, 0.080, SSE
I34	JIFFY LUBE #1876	1640 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	422, 0.080, SSE
H35	TIRE PROS OF UPLAND	2020 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	437, 0.083, SW
J36	AMERICAN AUTOMOTIVE	933 N CENTRAL UNIT D	San Bern. Co. Permit	Lower	445, 0.084, SW
J37	MINA CLEANERS	933 N CENTRAL AVE ST	EDR Hist Cleaner	Lower	445, 0.084, SW
J38	JOELS AUTOMOTIVE REP	933D N CENTRAL AVE	EDR Hist Auto	Lower	445, 0.084, SW
G39	MOHS ROBERT	1784 W FOOTHILL BLVD	EDR Hist Auto	Lower	447, 0.085, South

MAPPED SITES SUMMARY

Target Property Address:
NOT REPORTED
UPLAND, CA 91786

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
G40	JOEL GILLINGWATORS	1784 W FOOTHILL BLVD	SWEEPS UST, CA FID UST	Lower	447, 0.085, South
G41	JOEL GILLINGWATORS	1784 WEST FOOTHILL B	HIST UST	Lower	447, 0.085, South
G42	JOEL GILLINGWATORS	1784 W FOOTHILL BLVD	HIST UST, San Bern. Co. Permit	Lower	447, 0.085, South
J43	R & R ROTARY	933 CENTRAL D	San Bern. Co. Permit	Lower	492, 0.093, SW
E44	PACIFIC OIL COMPANY	1639 W FOOTHILL BLVD	EDR Hist Auto	Lower	509, 0.096, SE
E45	CABLE CAR WASH	1639 W FOOTHILL BLVD	SWEEPS UST, San Bern. Co. Permit	Lower	509, 0.096, SE
E46	UNOCAL	1639 W FOOTHILL BLVD	UST	Lower	509, 0.096, SE
J47	UPLAND MERCEDES REPA	923 CENTRAL AVE	San Bern. Co. Permit	Lower	553, 0.105, SW
J48	M AND N TRANSMISSION	923 CENTRAL AVE STE	RCRA-SQG, FINDS, ECHO, HAZNET	Lower	553, 0.105, SW
K49	BENRI MOTOR	1710 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	553, 0.105, SSE
K50	TOYOTA SPECIALITIES	1710 W FOOTHILL BLVD	RCRA-SQG, FINDS, ECHO, San Bern. Co. Permit	Lower	553, 0.105, SSE
K51	TOYLEXURA	1710 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	553, 0.105, SSE
K52	UNDERGROUND AUTOMOTI	1710 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	553, 0.105, SSE
K53	REIDS GM AUTO SERV	1710 W FOOTHILL BLVD	RCRA-SQG, FINDS, ECHO	Lower	553, 0.105, SSE
K54	LEDEZMA AUTO BODY PA	1710 W FOOTHILL BLVD	RCRA-SQG, FINDS, ECHO	Lower	553, 0.105, SSE
K55	VALLEY RADIATOR	1710 W FOOTHILL C-1	RCRA-SQG, FINDS, ECHO	Lower	553, 0.105, SSE
K56	REPAIR SOLUTIONS	1710 W FOOTHILL BLVD	RCRA-SQG, FINDS, ECHO	Lower	553, 0.105, SSE
K57	VALLEY TRANSMISSIONS	1700 W FOTHILL BLVD	EDR Hist Auto	Lower	554, 0.105, SSE
K58	SPEEDWAY MUFFLER	1700 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	554, 0.105, SSE
K59	VALLEY TRANSMISSIONS	1700 W FOOTHILL	RCRA-SQG, FINDS, ECHO, HAZNET, San Bern. Co....	Lower	554, 0.105, SSE
L60	DINEEN TRUCKING INC	1062 AIRPORT DR	HIST UST	Lower	562, 0.106, WSW
L61	DINEEN TRUCKING INC	1062 AIRPORT DR	SWEEPS UST, CA FID UST	Lower	562, 0.106, WSW
J62	AFFORDABLE AUTO CARE	923 N CENTRAL AVE	San Bern. Co. Permit	Lower	614, 0.116, SW
J63	TERRY'S AUTOMOTIVE M	923 N CENTRAL AVE UN	San Bern. Co. Permit	Lower	614, 0.116, SW
J64	EXOTIC MOTORCARS	923 N CENTRAL STE G	San Bern. Co. Permit	Lower	614, 0.116, SW
J65	M & V TRANSMISSIONS	923 N CENTRAL AVE ST	EDR Hist Auto	Lower	614, 0.116, SW
M66	CARL'S JR #270	1610 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	633, 0.120, SE
M67	DOLLAR CLEANERS	1630 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	633, 0.120, SE
N68	CABLE AIRPORT, INC.	1749 W 013TH ST	SWEEPS UST, CA FID UST	Higher	692, 0.131, North
N69	CABLE AIRPORT	1749 W 13TH ST	AST, HIST UST, NPDES, San Bern. Co. Permit	Higher	692, 0.131, North
N70	SPORT AEROCOLOR	1749 W 13TH ST 9 A	San Bern. Co. Permit	Higher	692, 0.131, North
N71	CABLE AIRPORT INC	1749 W 13TH ST	AST, WDS	Higher	692, 0.131, North
72	UPLAND AIRCRAFT	1749 W 13TH ST	RCRA-SQG, FINDS, ECHO	Higher	696, 0.132, NNW
O73	JOEL'S AUTOMOTIVE, I	933 N CENTRAL AVE B	San Bern. Co. Permit	Lower	761, 0.144, SW
O74	GERMAN AUTO WORKS	903 N CENTRAL #C	RCRA-SQG, FINDS, ECHO	Lower	783, 0.148, SW
O75	GERMAN AUTO WORKS	903 N CENTRAL AVE ST	San Bern. Co. Permit	Lower	783, 0.148, SW
P76	TIRE PROS OF UPLAND	2084 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	790, 0.150, WSW
Q77	JADE CONTROLS	959 N. BENSON AVENUE	RCRA-LQG	Lower	822, 0.156, SE
P78	POMONA VALLEY POOLCH	2133 W FOOTHILL	SWEEPS UST, CA FID UST	Lower	851, 0.161, WSW

MAPPED SITES SUMMARY

Target Property Address:
NOT REPORTED
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Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
P79	POMONA VALLEY POOL C	2133 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	851, 0.161, WSW
P80	FOOTHILLS AUTO SVC	2133 W FOOTHILL	RCRA-SQG, FINDS, ECHO, HAZNET	Lower	851, 0.161, WSW
Q81	A FOOTHILL AUTO SERV	939 N BENSON AVE	San Bern. Co. Permit	Lower	859, 0.163, SSE
R82	CARNIELLO ENTERPRISE	1333 N BENSON	San Bern. Co. Permit	Higher	878, 0.166, ENE
Q83	PARAGON FLUID POWER	687 N BENSON AVE E &	San Bern. Co. Permit	Lower	883, 0.167, SSE
O84	NEW YORK SELTZER	903 F CENTRAL	RCRA-SQG, FINDS, ECHO	Lower	924, 0.175, SW
R85	EJK PRODUCTS, INC	1320 N BENSON AVE UN	San Bern. Co. Permit	Higher	963, 0.182, ENE
P86	RV READY	2106 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	974, 0.184, WSW
S87	BERRY CONSTRUCTION I	1921 WEST 11TH STREE	HIST UST, HAZNET	Lower	993, 0.188, South
S88	BERRY CONSTRUCTION	1921 W 11TH ST	RCRA-SQG, SWEEPS UST, HIST UST, CA FID UST, FINDS,...	Lower	993, 0.188, South
R89	GROCSIL AIRCRAFT COR	1328 N BENSON C	San Bern. Co. Permit	Higher	1012, 0.192, ENE
R90	STRESSCOAT INC	1334 N BENSON AVE A	San Bern. Co. Permit, WDS	Higher	1052, 0.199, ENE
T91	UPLAND QUALITY FURNI	1551 W 13TH ST B&C	San Bern. Co. Permit	Lower	1089, 0.206, East
T92	CABLE COLOR PROFESSI	1551 W 13TH ST 101A	San Bern. Co. Permit	Higher	1098, 0.208, East
R93	CIRLAB INC	1342 BENSON AV	RCRA-SQG, FINDS, ECHO	Higher	1108, 0.210, ENE
S94	INTERSTATE BATTERY I	822 BERRY CT	San Bern. Co. Permit	Lower	1116, 0.211, SSW
U95	WALMART #1992	1540 W FOOTHILL BLVD	San Bern. Co. Permit	Lower	1172, 0.222, SE
U96	WAL-MART STORE #1992	1540 W. FOOTHILL BLV	AST	Lower	1172, 0.222, SE
U97	WALMART #1992	1540 W FOOTHILL BLVD	RCRA-SQG, AST, HAZNET	Lower	1172, 0.222, SE
V98	AAMCO TRANSMISSION C	825 N CENTRAL AVE #E	San Bern. Co. Permit	Lower	1213, 0.230, SSW
V99	EXPRESS SMOG & LUBE	825 N CENTRAL AVE	San Bern. Co. Permit	Lower	1213, 0.230, SSW
V100	PAT'S AUTO REPAIR	825 N CENTRAL AVE UN	San Bern. Co. Permit	Lower	1213, 0.230, SSW
V101	AAMCO UPLAND	825 N CENTRAL UNIT A	San Bern. Co. Permit	Lower	1213, 0.230, SSW
V102	CUSTOM GARAGE AUTO F	825 N CENTRAL AVE B	San Bern. Co. Permit	Lower	1213, 0.230, SSW
V103	SUPER AUTOMOTIVE	825 N CENTRAL UNIT E	San Bern. Co. Permit	Lower	1213, 0.230, SSW
W104	HOLLIDAY ROCK COINC	2193 W FOOTHILL BLVD	HIST UST	Lower	1241, 0.235, WSW
W105	HOLLIDAY ROCK	2193 W. FOOTHILL BLV	AST	Lower	1241, 0.235, WSW
W106	HOLLIDAY ROCK CO INC	2193 W FOOTHILL BLVD	AST, SWEEPS UST, CA FID UST, EMI, NPDES, San Bern....	Lower	1241, 0.235, WSW
W107	HOLLIDAY ROCK CO., I	2193 WEST FOOTHILL B	RCRA-LQG	Lower	1241, 0.235, WSW
X108	FLEET MAINTENANCE DI	1360 N BENSON AVE	HAZNET, San Bern. Co. Permit	Higher	1245, 0.236, NE
X109	UPLAND CITY OF	1360 N BENSON AVE	RCRA-SQG, FINDS, ECHO	Higher	1245, 0.236, NE
X110	FLEET MAINTENANCE DI	1360 N BENSON AVE	UST	Higher	1245, 0.236, NE
Y111	WALTON FABRICATION	1933 W 11TH ST UNIT	San Bern. Co. Permit	Lower	1274, 0.241, SSW
Y112	CJ MEDIA	1933 W 11TH ST UNIT	San Bern. Co. Permit	Lower	1274, 0.241, SSW
Y113	CATTRAC CONSTRUCTION	1953 WEST 11TH STREE	HIST UST	Lower	1282, 0.243, SSW
Y114	CATTRAC CONSTRUCTION	1953 W 11TH ST	HIST UST, San Bern. Co. Permit	Lower	1282, 0.243, SSW
Y115	KENGRAPHICS PRINTING	1935 W 11TH ST A	San Bern. Co. Permit	Lower	1292, 0.245, SSW
Y116	CALAWAY & BROOKS INC	1937 W 11TH ST STE F	HAZNET, San Bern. Co. Permit	Lower	1294, 0.245, SSW
X117	UPLAND CITY YARD	1370 N BENSON AVE	LUST, San Bern. Co. Permit	Higher	1324, 0.251, NE

MAPPED SITES SUMMARY

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MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
X118	UPLAND CITY YARD	1370 BENSON AVE	LUST, HIST CORTESE	Higher	1324, 0.251, NE
Z119	11TH STREET YARD	2085 W 11TH ST	LUST, HIST UST	Lower	1657, 0.314, SW
Z120	WESTON E. MONTGOMERY	2085 11TH ST	LUST, HIST CORTESE	Lower	1657, 0.314, SW
121	LANDCARE, INC	8475 LOMA PL	LUST, HIST CORTESE, San Bern. Co. Permit	Lower	2308, 0.437, South
122	CITY OF CLAREMONT/CO	1616 MONTE VISTA AVE	SWF/LF, NPDES, San Bern. Co. Permit	Higher	2520, 0.477, WNW
AA123	DOSH PROPERTY	1853 W ARROW RTE	LUST, SWEEPS UST, CA FID UST	Lower	2556, 0.484, South
AA124	DOSH PROPERTY	1853 ARROW RTE	LUST, HIST CORTESE	Lower	2556, 0.484, South
125	CITY OF CLAREMONT CO	1616 NORTH MONTE VIS	SWF/LF	Lower	2587, 0.490, West
126	LAIDLAW ENVIRONMENTA	1369 W 9TH ST	ENVIROSTOR, SWEEPS UST, HIST UST, CA FID UST, EMI,...	Lower	4770, 0.903, SSE
127	PROPERTY AT 1333 WES	1333 WEST 9TH STREET	ENVIROSTOR, SCH, DEED, NPDES	Lower	4842, 0.917, SSE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

EXECUTIVE SUMMARY

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State and tribal leaking storage tank lists

INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
SLIC ..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ..... Voluntary Cleanup Program Properties
INDIAN VCP ..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites ..... Historical Calsites Database
SCH ..... School Property Evaluation Program
CDL ..... Clandestine Drug Labs
Toxic Pits ..... Toxic Pits Cleanup Act Sites
US CDL ..... National Clandestine Laboratory Register

Local Land Records

LIENS ..... Environmental Liens Listing
LIENS 2 ..... CERCLA Lien Information
DEED ..... Deed Restriction Listing

EXECUTIVE SUMMARY

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
ECHO	Enforcement & Compliance History Information
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing

HAZNET Facility and Manifest Data
ICE ICE
HWT Registered Hazardous Waste Transporter Database
MINES Mines Site Location Listing
MWMP Medical Waste Management Program Listing
NPDES NPDES Permits Listing
PEST LIC Pesticide Regulation Licenses Listing
PROC Certified Processors Database
Notify 65 Proposition 65 Records
UIC UIC Listing
WASTEWATER PITS Oil Wastewater Pits Listing
WDS Waste Discharge System
WIP Well Investigation Program Case List

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 12/11/2017 has revealed that there are 2

RCRA-LQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
JADE CONTROLS	959 N. BENSON AVENUE	SE 1/8 - 1/4 (0.156 mi.)	Q77	89
HOLLIDAY ROCK CO., I	2193 WEST FOOTHILL B	WSW 1/8 - 1/4 (0.235 mi.)	W107	143

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/11/2017 has revealed that there are 18 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UPLAND AIRCRAFT	***1749 W 13TH ST***	***NNW 1/8 - 1/4 (0.132 mi.)***	***72***	***85***
CIRLAB INC	***1342 BENSON AV***	***ENE 1/8 - 1/4 (0.210 mi.)***	***R93***	***106***
UPLAND CITY OF	***1360 N BENSON AVE***	***NE 1/8 - 1/4 (0.236 mi.)***	***X109***	***148***

Lower Elevation	Address	Direction / Distance	Map ID	Page
UPLAND AUTOMOTIVE	***1803 W FOOTHILL***	***S 0 - 1/8 (0.015 mi.)***	***B6***	***11***
HONDA NISSAN SPECIAL	***1710 W FOOTHILL BLVD***	***S 0 - 1/8 (0.065 mi.)***	***G22***	***36***
BENSON TOWN CLEANERS	***1651 W FOOTHILL BVLD***	***SSE 0 - 1/8 (0.070 mi.)***	***E25***	***38***
M AND N TRANSMISSION	***923 CENTRAL AVE STE***	***SW 0 - 1/8 (0.105 mi.)***	***J48***	***54***
TOYOTA SPECIALITIES	***1710 W FOOTHILL BLVD***	***SSE 0 - 1/8 (0.105 mi.)***	***K50***	***57***
REIDS GM AUTO SERV	***1710 W FOOTHILL BLVD***	***SSE 0 - 1/8 (0.105 mi.)***	***K53***	***59***
LEDEZMA AUTO BODY PA	***1710 W FOOTHILL BLVD***	***SSE 0 - 1/8 (0.105 mi.)***	***K54***	***61***
VALLEY RADIATOR	***1710 W FOOTHILL C-1***	***SSE 0 - 1/8 (0.105 mi.)***	***K55***	***63***
REPAIR SOLUTIONS	***1710 W FOOTHILL BLVD***	***SSE 0 - 1/8 (0.105 mi.)***	***K56***	***64***
VALLEY TRANSMISSIONS	***1700 W FOOTHILL***	***SSE 0 - 1/8 (0.105 mi.)***	***K59***	***67***
GERMAN AUTO WORKS	***903 N CENTRAL #C***	***SW 1/8 - 1/4 (0.148 mi.)***	***O74***	***87***
FOOTHILLS AUTO SVC	***2133 W FOOTHILL***	***WSW 1/8 - 1/4 (0.161 mi.)***	***P80***	***92***
NEW YORK SELTZER	***903 F CENTRAL***	***SW 1/8 - 1/4 (0.175 mi.)***	***O84***	***98***
BERRY CONSTRUCTION	***1921 W 11TH ST***	***S 1/8 - 1/4 (0.188 mi.)***	***S88***	***101***
WALMART #1992	***1540 W FOOTHILL BLVD***	***SE 1/8 - 1/4 (0.222 mi.)***	***U97***	***110***

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 10/30/2017 has revealed that there are

2 ENVIROSTOR sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LAIDLAW ENVIRONMENTA	***1369 W 9TH ST***	***SSE 1/2 - 1 (0.903 mi.)***	***126***	***171***
Facility Id: 80001858				
Status: Inactive - Needs Evaluation				
PROPERTY AT 1333 WES	***1333 WEST 9TH STREET***	***SSE 1/2 - 1 (0.917 mi.)***	***127***	***177***
Facility Id: 36350023				
Status: Certified O&M - Land Use Restrictions Only				

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there are 2 SWF/LF sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CITY OF CLAREMONT/CO	***1616 MONTE VISTA AVE***	***WNW 1/4 - 1/2 (0.477 mi.)***	***122***	***162***
Database: LOS ANGELES CO. LF, Date of Government Version: 01/16/2018				
Site ID: 222				
Status: Active				

Lower Elevation	Address	Direction / Distance	Map ID	Page
CITY OF CLAREMONT CO	1616 NORTH MONTE VIS	W 1/4 - 1/2 (0.490 mi.)	125	170
Database: SWF/LF (SWIS), Date of Government Version: 11/13/2017				
Facility ID: 36-AA-0425				
Operational Status: Active				
Regulation Status: Permitted				

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 9 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UPLAND CITY YARD	***1370 N BENSON AVE***	***NE 1/4 - 1/2 (0.251 mi.)***	***X117***	***153***
Database: LUST, Date of Government Version: 12/11/2017				
Status: Completed - Case Closed				
Global Id: T0607100633				
UPLAND CITY YARD	***1370 BENSON AVE***	***NE 1/4 - 1/2 (0.251 mi.)***	***X118***	***155***
Database: LUST REG 8, Date of Government Version: 02/14/2005				

Facility Status: Case Closed
Global ID: T0607100633

Lower Elevation	Address	Direction / Distance	Map ID	Page
DINEEN TRUCKING INC.	***1284 AIRPORT DR***	***W 0 - 1/8 (0.023 mi.)***	***C7***	***15***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0607100057				
DINEEN TRUCKING	***1284 AIRPORT DR***	***W 0 - 1/8 (0.023 mi.)***	***C8***	***19***
Database: LUST, Date of Government Version: 12/11/2017 Status: Completed - Case Closed Global Id: T0607100057				
11TH STREET YARD	***2085 W 11TH ST***	***SW 1/4 - 1/2 (0.314 mi.)***	***Z119***	***157***
Database: LUST, Date of Government Version: 12/11/2017 Status: Completed - Case Closed Global Id: T0607100397				
WESTON E. MONTGOMERY	***2085 11TH ST***	***SW 1/4 - 1/2 (0.314 mi.)***	***Z120***	***158***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0607100397				
LANDCARE, INC	***8475 LOMA PL***	***S 1/4 - 1/2 (0.437 mi.)***	***121***	***160***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Database: LUST, Date of Government Version: 12/11/2017 Status: Completed - Case Closed Facility Status: Case Closed Global Id: T0607100625 Global ID: T0607100625				
DOSH PROPERTY	***1853 W ARROW RTE***	***S 1/4 - 1/2 (0.484 mi.)***	***AA123***	***166***
Database: LUST, Date of Government Version: 12/11/2017 Status: Completed - Case Closed Global Id: T0607100338				
DOSH PROPERTY	***1853 ARROW RTE***	***S 1/4 - 1/2 (0.484 mi.)***	***AA124***	***169***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed Global ID: T0607100338				

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 3 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FLEET MAINTENANCE DI	1360 N BENSON AVE	NE 1/8 - 1/4 (0.236 mi.)	X110	149
Database: UST, Date of Government Version: 12/11/2017 Facility Id: FA0002097				

Lower Elevation	Address	Direction / Distance	Map ID	Page
CAR WASH USA	2016 W FOOTHILL BLVD	SW 0 - 1/8 (0.078 mi.)	H30	43
Database: UST, Date of Government Version: 12/11/2017				

Facility Id: 88016900

UNOCAL 1639 W FOOTHILL BLVD SE 0 - 1/8 (0.096 mi.) E46 54
Database: UST, Date of Government Version: 12/11/2017
Facility Id: FA0006931
Facility Id: 99047800

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, and dated 07/06/2016 has revealed that there are 10 AST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABLE AIRPORT	***1749 W 13TH ST***	***N 1/8 - 1/4 (0.131 mi.)***	***N69***	***77***
CABLE AIRPORT INC	***1749 W 13TH ST***	***N 1/8 - 1/4 (0.131 mi.)***	***N71***	***83***

Lower Elevation	Address	Direction / Distance	Map ID	Page
REACH 13	1257 AIRPORT DRIVE	WSW 0 - 1/8 (0.042 mi.)	C14	27
LOWE'S OF UPLAND #10	1659 W FOOTHILL BLVD	ESE 0 - 1/8 (0.064 mi.)	F19	32
LOWE'S OF UPLAND #10	1659 W FOOTHILL	ESE 0 - 1/8 (0.064 mi.)	F21	35
JIFFY LUBE #1876	1640 W FOOTHILL BLVD	SSE 0 - 1/8 (0.080 mi.)	I33	45
WAL-MART STORE #1992	1540 W. FOOTHILL BLV	SE 1/8 - 1/4 (0.222 mi.)	U96	109
WALMART #1992	***1540 W FOOTHILL BLVD***	***SE 1/8 - 1/4 (0.222 mi.)***	***U97***	***110***
HOLLIDAY ROCK	2193 W. FOOTHILL BLV	WSW 1/8 - 1/4 (0.235 mi.)	W105	130
HOLLIDAY ROCK CO INC	***2193 W FOOTHILL BLVD***	***WSW 1/8 - 1/4 (0.235 mi.)***	***W106***	***131***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 11 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABLE AIRPORT, INC.	***1749 W 013TH ST***	***N 1/8 - 1/4 (0.131 mi.)***	***N68***	***75***
Status: A				
Tank Status: A				
Comp Number: 9343				

Lower Elevation	Address	Direction / Distance	Map ID	Page
DINEEN TRUCKING INC.	***1284 AIRPORT DR***	***W 0 - 1/8 (0.023 mi.)***	***C7***	***15***
Status: A				
Tank Status: A				

Comp Number: 9733				
INTRAVAIA ROCK & SAN	***1770 W FOOTHILL BLVD***	***S 0 - 1/8 (0.039 mi.)***	***A11***	***24***
Comp Number: 19230				
FENCE CRAFT OF UPLAN	***1780 W FOOTHILL BLVD***	***S 0 - 1/8 (0.075 mi.)***	***G27***	***41***
Status: A				
Comp Number: 17811				
CAR WASH USA	2016 FOOTHILL BLVD	SW 0 - 1/8 (0.078 mi.)	H31	43
Status: A				
Tank Status: A				
Comp Number: 6905				
JOEL GILLINGWATORS	***1784 W FOOTHILL BLVD***	***S 0 - 1/8 (0.085 mi.)***	***G40***	***49***
Status: A				
Tank Status: A				
Comp Number: 64519				
CABLE CAR WASH	***1639 W FOOTHILL BLVD***	***SE 0 - 1/8 (0.096 mi.)***	***E45***	***52***
Status: A				
Tank Status: A				
Comp Number: 353				
DINEEN TRUCKING INC	***1062 AIRPORT DR***	***WSW 0 - 1/8 (0.106 mi.)***	***L61***	***72***
Status: A				
Tank Status: A				
Comp Number: 9732				
POMONA VALLEY POOLCH	***2133 W FOOTHILL***	***WSW 1/8 - 1/4 (0.161 mi.)***	***P78***	***90***
Status: A				
Tank Status: A				
Comp Number: 22818				
Comp Number: 12542				
BERRY CONSTRUCTION	***1921 W 11TH ST***	***S 1/8 - 1/4 (0.188 mi.)***	***S88***	***101***
Status: A				
Tank Status: A				
Comp Number: 42419				
HOLLIDAY ROCK CO INC	***2193 W FOOTHILL BLVD***	***WSW 1/8 - 1/4 (0.235 mi.)***	***W106***	***131***
Status: A				
Tank Status: A				
Comp Number: 19790				

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 13 HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABLE AIRPORT	***1749 W 13TH ST***	***N 1/8 - 1/4 (0.131 mi.)***	***N69***	***77***
Facility Id: 00000001656				

Lower Elevation	Address	Direction / Distance	Map ID	Page
DINEEN TRUCKING	***1284 AIRPORT DR***	***W 0 - 1/8 (0.023 mi.)***	***C8***	***19***
Facility Id: 00000009733				
INTRAVAIA ROCK & SAN	***1770 W FOOTHILL BLVD***	***S 0 - 1/8 (0.039 mi.)***	***A11***	***24***
INTRAVAIA ROCK & SAN	1770 W FOOTHILL BLVD	S 0 - 1/8 (0.039 mi.)	A12	26

Facility Id: 00000019230				
FENCE CRAFT OF UPLAN Facility Id: 00000017811	1780 W FOOTHILL BLVD	S 0 - 1/8 (0.075 mi.)	G26	40
JOEL GILLINGWATORS	1784 WEST FOOTHILL B	S 0 - 1/8 (0.085 mi.)	G41	50
JOEL GILLINGWATORS Facility Id: 00000064519	***1784 W FOOTHILL BLVD***	***S 0 - 1/8 (0.085 mi.)***	***G42***	***51***
DINEEN TRUCKING INC Facility Id: 00000009732	1062 AIRPORT DR	WSW 0 - 1/8 (0.106 mi.)	L60	71
BERRY CONSTRUCTION I	***1921 WEST 11TH STREE***	***S 1/8 - 1/4 (0.188 mi.)***	***S87***	***100***
BERRY CONSTRUCTION Facility Id: 00000042419	***1921 W 11TH ST***	***S 1/8 - 1/4 (0.188 mi.)***	***S88***	***101***
HOLLIDAY ROCK COINC Facility Id: 00000019790	2193 W FOOTHILL BLVD	WSW 1/8 - 1/4 (0.235 mi.)	W104	129
CATTRAC CONSTRUCTION	1953 WEST 11TH STREE	SSW 1/8 - 1/4 (0.243 mi.)	Y113	150
CATTRAC CONSTRUCTION Facility Id: 00000042420	***1953 W 11TH ST***	***SSW 1/8 - 1/4 (0.243 mi.)***	***Y114***	***151***

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 9 CA FID UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABLE AIRPORT, INC. Facility Id: 36008315 Status: A	***1749 W 013TH ST***	***N 1/8 - 1/4 (0.131 mi.)***	***N68***	***75***

Lower Elevation	Address	Direction / Distance	Map ID	Page
DINEEN TRUCKING INC. Facility Id: 36000259 Status: A	***1284 AIRPORT DR***	***W 0 - 1/8 (0.023 mi.)***	***C7***	***15***
INTRAVAIA ROCK & SAN Facility Id: 36001023 Status: I	***1770 W FOOTHILL BLVD***	***S 0 - 1/8 (0.039 mi.)***	***A11***	***24***
FENCE CRAFT OF UPLAN Facility Id: 36001473 Status: A	***1780 W FOOTHILL BLVD***	***S 0 - 1/8 (0.075 mi.)***	***G27***	***41***
JOEL GILLINGWATORS Facility Id: 36006231 Status: A	***1784 W FOOTHILL BLVD***	***S 0 - 1/8 (0.085 mi.)***	***G40***	***49***
DINEEN TRUCKING INC Facility Id: 36007461 Status: A	***1062 AIRPORT DR***	***WSW 0 - 1/8 (0.106 mi.)***	***L61***	***72***
POMONA VALLEY POOLCH Facility Id: 36005948 Status: A	***2133 W FOOTHILL***	***WSW 1/8 - 1/4 (0.161 mi.)***	***P78***	***90***
BERRY CONSTRUCTION	***1921 W 11TH ST***	***S 1/8 - 1/4 (0.188 mi.)***	***S88***	***101***

Facility Id: 36008986
Status: A

HOLLIDAY ROCK CO INC	***2193 W FOOTHILL BLVD***	***WSW 1/8 - 1/4 (0.235 mi.)***	***W106***	***131***

Facility Id: 36001259
Status: A

Other Ascertainable Records

DRYCLEANERS: A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the DRYCLEANERS list, as provided by EDR, and dated 08/02/2017 has revealed that there is 1 DRYCLEANERS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BENSON TOWN CLEANERS	***1651 W FOOTHILL BVLD***	***SSE 0 - 1/8 (0.070 mi.)***	***E25***	***38***

EPA Id: CAL000191826

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 5 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UPLAND CITY YARD	***1370 BENSON AVE***	***NE 1/4 - 1/2 (0.251 mi.)***	***X118***	***155***

Reg Id: 083603644T

Lower Elevation	Address	Direction / Distance	Map ID	Page
DINEEN TRUCKING INC.	***1284 AIRPORT DR***	***W 0 - 1/8 (0.023 mi.)***	***C7***	***15***

Reg Id: 083600599T

WESTON E. MONTGOMERY	***2085 11TH ST***	***SW 1/4 - 1/2 (0.314 mi.)***	***Z120***	***158***

Reg Id: 083602753T

LANDCARE, INC	***8475 LOMA PL***	***S 1/4 - 1/2 (0.437 mi.)***	***121***	***160***

Reg Id: 083603600T

DOSH PROPERTY	***1853 ARROW RTE***	***S 1/4 - 1/2 (0.484 mi.)***	***AA124***	***169***

Reg Id: 083602506T

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 11/20/2017 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LAIDLAW ENVIRONMENTA	***1369 W 9TH ST***	***SSE 1/2 - 1 (0.903 mi.)***	***126***	***171***
EPA Id: CAT080034184				
Cleanup Status: CLOSED				

San Bern. Co. Permit: San Bernardino County Fire Department Hazardous Materials Division.

A review of the San Bern. Co. Permit list, as provided by EDR, and dated 11/30/2017 has revealed that there are 66 San Bern. Co. Permit sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CABLE AIRPORT	***1749 W 13TH ST***	***N 1/8 - 1/4 (0.131 mi.)***	***N69***	***77***
Facility Status: ACTIVE				
Facility Status: INACTIVE				
Facility Id: FA0001662				
Facility Id: FA0003298				
Facility Id: FA0012103				
SPORT AEROCOLOR	1749 W 13TH ST 9 A	N 1/8 - 1/4 (0.131 mi.)	N70	83
Facility Status: ACTIVE				
Facility Id: FA0006349				
CARNIELLO ENTERPRISE	1333 N BENSON	ENE 1/8 - 1/4 (0.166 mi.)	R82	96
Facility Status: ACTIVE				
Facility Status: INACTIVE				
Facility Id: FA0001785				
Facility Id: FA0013897				
Facility Id: FA0003448				
EJK PRODUCTS, INC	1320 N BENSON AVE UN	ENE 1/8 - 1/4 (0.182 mi.)	R85	99
Facility Status: INACTIVE				
Facility Id: FA0014747				
GROCSIL AIRCRAFT COR	1328 N BENSON C	ENE 1/8 - 1/4 (0.192 mi.)	R89	104
Facility Status: INACTIVE				
Facility Id: FA0003570				
STRESSCOAT INC	***1334 N BENSON AVE A***	***ENE 1/8 - 1/4 (0.199 mi.)***	***R90***	***105***
Facility Status: INACTIVE				
Facility Id: FA0006486				
CABLE COLOR PROFESSI	1551 W 13TH ST 101A	E 1/8 - 1/4 (0.208 mi.)	T92	106
Facility Status: INACTIVE				
Facility Id: FA0001663				
FLEET MAINTENANCE DI	***1360 N BENSON AVE***	***NE 1/8 - 1/4 (0.236 mi.)***	***X108***	***145***
Facility Status: ACTIVE				
Facility Status: INACTIVE				
Facility Id: FA0002097				

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALL AROUND PEST & TE	1810 FOOTHILL BLVD A	SSW 0 - 1/8 (0.013 mi.)	1	8

Facility Status: INACTIVE Facility Id: FA0000821				
EMPIRE COLLISION CEN Facility Status: INACTIVE Facility Id: FA0008597 Facility Id: FA0005073	1775 1/2 W FOOTHILL	S 0 - 1/8 (0.014 mi.)	A2	8
MEJIA AUTO BODY SHOP Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0015132 Facility Id: FA0008598	1775 W FOOTHILL BLVD	S 0 - 1/8 (0.014 mi.)	A4	10
A+ AUTO REPAIR Facility Status: ACTIVE Facility Id: FA0011410	***1775 W FOOTHILL BLVD***	***S 0 - 1/8 (0.014 mi.)***	***A5***	***10***
UPLAND AUTOMOTIVE Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0006949	***1803 W FOOTHILL***	***S 0 - 1/8 (0.015 mi.)***	***B6***	***11***
DINEEN TRUCKING Facility Status: ACTIVE Facility Id: FA0002744	***1284 AIRPORT DR***	***W 0 - 1/8 (0.023 mi.)***	***C8***	***19***
UPLAND MERCEDES REPA Facility Status: INACTIVE Facility Id: FA0012801	1785 1/2 W FOOTHILL	SSW 0 - 1/8 (0.026 mi.)	B9	24
SMALLING AUTO & TRUC Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0006218	1102 N AIRPORT DR	WSW 0 - 1/8 (0.028 mi.)	D10	24
REBECK, T W Facility Status: INACTIVE Facility Id: FA0005616	1160 AIRPORT DR	WSW 0 - 1/8 (0.040 mi.)	D13	26
REACH 13 Facility Status: ACTIVE Facility Id: FA0016129	***1257 AIRPORT DR***	***WSW 0 - 1/8 (0.042 mi.)***	***C15***	***27***
MOUNTAIN VIEW CHEVRO Facility Status: ACTIVE Facility Id: FA0016134	***2110 AVIATION DR***	***WSW 0 - 1/8 (0.060 mi.)***	***D17***	***30***
ALPINE COLLISION CEN Facility Status: INACTIVE Facility Id: FA0012621	2110 AVIATION DR	WSW 0 - 1/8 (0.060 mi.)	D18	32
LOWES HIW #1041 Facility Status: ACTIVE Facility Id: FA0011737	***1659 W FOOTHILL BLVD***	***ESE 0 - 1/8 (0.064 mi.)***	***F20***	***33***
R A PHOTO LAB Facility Status: INACTIVE Facility Id: FA0005515	1651 W FOOTHILL BLVD	SSE 0 - 1/8 (0.070 mi.)	E23	37
DEL TACO #243 Facility Status: INACTIVE Facility Id: FA0012548	1653 W FOOTHILL BLVD	SSE 0 - 1/8 (0.070 mi.)	E24	38
DAVID SPENCER PAINTI	1810 W FOOTHILL BLVD	SSW 0 - 1/8 (0.077 mi.)	28	42

Facility Status: INACTIVE Facility Id: FA0007558				
FOOTHILL CAR WASH &D Facility Status: INACTIVE Facility Id: FA0001769	2016 W FOOTHILL BLVD	SW 0 - 1/8 (0.078 mi.)	H29	42
BEST GUYS FAST LUBE Facility Status: INACTIVE Facility Id: FA0015804 Facility Id: FA0015498 Facility Id: FA0014297 Facility Id: FA0012053 Facility Id: FA0000896	2018 W FOOTHILL BLVD	SW 0 - 1/8 (0.078 mi.)	H32	44
JIFFY LUBE #1876 Facility Status: ACTIVE Facility Id: FA0004131	1640 W FOOTHILL BLVD	SSE 0 - 1/8 (0.080 mi.)	I34	46
TIRE PROS OF UPLAND Facility Status: ACTIVE Facility Id: FA0012081	2020 W FOOTHILL BLVD	SW 0 - 1/8 (0.083 mi.)	H35	47
AMERICAN AUTOMOTIVE Facility Status: ACTIVE Facility Id: FA0012068	933 N CENTRAL UNIT D	SW 0 - 1/8 (0.084 mi.)	J36	47
JOEL GILLINGWATORS Facility Status: INACTIVE Facility Id: FA0008121	***1784 W FOOTHILL BLVD***	***S 0 - 1/8 (0.085 mi.)***	***G42***	***51***
R & R ROTARY Facility Status: INACTIVE Facility Id: FA0005182	933 CENTRAL D	SW 0 - 1/8 (0.093 mi.)	J43	52
CABLE CAR WASH Facility Status: ACTIVE Facility Id: FA0006931	***1639 W FOOTHILL BLVD***	***SE 0 - 1/8 (0.096 mi.)***	***E45***	***52***
UPLAND MERCEDES REPA Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0013653	923 CENTRAL AVE	SW 0 - 1/8 (0.105 mi.)	J47	54
BENRI MOTOR Facility Status: INACTIVE Facility Id: FA0015110	1710 W FOOTHILL BLVD	SSE 0 - 1/8 (0.105 mi.)	K49	56
TOYOTA SPECIALITIES Facility Status: INACTIVE Facility Id: FA0009087	***1710 W FOOTHILL BLVD***	***SSE 0 - 1/8 (0.105 mi.)***	***K50***	***57***
TOYLEXURA Facility Status: INACTIVE Facility Id: FA0006759	1710 W FOOTHILL BLVD	SSE 0 - 1/8 (0.105 mi.)	K51	59
UNDERGROUND AUTOMOTI Facility Status: ACTIVE Facility Status: FEE EXEMPT Facility Id: FA0015881	1710 W FOOTHILL BLVD	SSE 0 - 1/8 (0.105 mi.)	K52	59
SPEEDWAY MUFFLER Facility Status: ACTIVE Facility Id: FA0006338	1700 W FOOTHILL BLVD	SSE 0 - 1/8 (0.105 mi.)	K58	67
VALLEY TRANSMISSIONS	***1700 W FOOTHILL***	***SSE 0 - 1/8 (0.105 mi.)***	***K59***	***67***

Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0000293 Facility Id: FA0007029				
AFFORDABLE AUTO CARE Facility Status: INACTIVE Facility Id: FA0008013	923 N CENTRAL AVE	SW 0 - 1/8 (0.116 mi.)	J62	72
TERRY'S AUTOMOTIVE M Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0012403 Facility Id: FA0005507	923 N CENTRAL AVE UN	SW 0 - 1/8 (0.116 mi.)	J63	73
EXOTIC MOTORCARS Facility Status: ACTIVE Facility Id: FA0002972	923 N CENTRAL STE G	SW 0 - 1/8 (0.116 mi.)	J64	73
CARL'S JR #270 Facility Status: INACTIVE Facility Id: FA0012456	1610 W FOOTHILL BLVD	SE 0 - 1/8 (0.120 mi.)	M66	75
DOLLAR CLEANERS Facility Status: INACTIVE Facility Id: FA0002768	1630 W FOOTHILL BLVD	SE 0 - 1/8 (0.120 mi.)	M67	75
JOEL'S AUTOMOTIVE, I Facility Status: INACTIVE Facility Id: FA0004153	933 N CENTRAL AVE B	SW 1/8 - 1/4 (0.144 mi.)	O73	86
GERMAN AUTO WORKS Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0003464	903 N CENTRAL AVE ST	SW 1/8 - 1/4 (0.148 mi.)	O75	89
TIRE PROS OF UPLAND Facility Status: INACTIVE Facility Id: FA0001464	2084 W FOOTHILL BLVD	WSW 1/8 - 1/4 (0.150 mi.)	P76	89
POMONA VALLEY POOL C Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0005368	2133 W FOOTHILL BLVD	WSW 1/8 - 1/4 (0.161 mi.)	P79	92
A FOOTHILL AUTO SERV Facility Status: ACTIVE Facility Id: FA0000051	939 N BENSON AVE	SSE 1/8 - 1/4 (0.163 mi.)	Q81	96
PARAGON FLUID POWER Facility Status: ACTIVE Facility Id: FA0007592	687 N BENSON AVE E &	SSE 1/8 - 1/4 (0.167 mi.)	Q83	97
RV READY Facility Status: INACTIVE Facility Id: FA0011588	2106 W FOOTHILL BLVD	WSW 1/8 - 1/4 (0.184 mi.)	P86	100
UPLAND QUALITY FURNI Facility Status: INACTIVE Facility Id: FA0006963	1551 W 13TH ST B&C	E 1/8 - 1/4 (0.206 mi.)	T91	106
INTERSTATE BATTERY I Facility Status: ACTIVE Facility Id: FA0013664	822 BERRY CT	SSW 1/8 - 1/4 (0.211 mi.)	S94	108
WALMART #1992	1540 W FOOTHILL BLVD	SE 1/8 - 1/4 (0.222 mi.)	U95	109

Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0007200				
AAMCO TRANSMISSION C Facility Status: INACTIVE Facility Id: FA0008436	825 N CENTRAL AVE #E	SSW 1/8 - 1/4 (0.230 mi.)	V98	126
EXPRESS SMOG & LUBE Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0008438 Facility Id: FA0016500 Facility Id: FA0002751	825 N CENTRAL AVE	SSW 1/8 - 1/4 (0.230 mi.)	V99	126
PAT'S AUTO REPAIR Facility Status: INACTIVE Facility Id: FA0005244	825 N CENTRAL AVE UN	SSW 1/8 - 1/4 (0.230 mi.)	V100	127
AAMCO UPLAND Facility Status: ACTIVE Facility Id: FA0013313	825 N CENTRAL UNIT A	SSW 1/8 - 1/4 (0.230 mi.)	V101	128
CUSTOM GARAGE AUTO F Facility Status: INACTIVE Facility Id: FA0015814	825 N CENTRAL AVE B	SSW 1/8 - 1/4 (0.230 mi.)	V102	128
SUPER AUTOMOTIVE Facility Status: INACTIVE Facility Id: FA0014873 Facility Id: FA0014133 Facility Id: FA0006956	825 N CENTRAL UNIT E	SSW 1/8 - 1/4 (0.230 mi.)	V103	128
HOLLIDAY ROCK CO INC Facility Status: ACTIVE Facility Id: FA0003836	***2193 W FOOTHILL BLVD***	***WSW 1/8 - 1/4 (0.235 mi.)***	***W106***	***131***
WALTON FABRICATION Facility Status: INACTIVE Facility Id: FA0006699	1933 W 11TH ST UNIT	SSW 1/8 - 1/4 (0.241 mi.)	Y111	150
CJ MEDIA Facility Status: INACTIVE Facility Id: FA0013395	1933 W 11TH ST UNIT	SSW 1/8 - 1/4 (0.241 mi.)	Y112	150
CATTRAC CONSTRUCTION Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0013167 Facility Id: FA0004005	***1953 W 11TH ST***	***SSW 1/8 - 1/4 (0.243 mi.)***	***Y114***	***151***
KENGRAPHICS PRINTING Facility Status: INACTIVE Facility Id: FA0004243	1935 W 11TH ST A	SSW 1/8 - 1/4 (0.245 mi.)	Y115	152
CALAWAY & BROOKS INC Facility Status: ACTIVE Facility Status: INACTIVE Facility Id: FA0010633	***1937 W 11TH ST STE F***	***SSW 1/8 - 1/4 (0.245 mi.)***	***Y116***	***152***

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 6 EDR Hist Auto sites within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FLIEDER MAUS	1775 W FOOTHILL BLVD	S 0 - 1/8 (0.014 mi.)	A3	9
JOELS AUTOMOTIVE REP	933D N CENTRAL AVE	SW 0 - 1/8 (0.084 mi.)	J38	48
MOHS ROBERT	1784 W FOOTHILL BLVD	S 0 - 1/8 (0.085 mi.)	G39	49
PACIFIC OIL COMPANY	1639 W FOOTHILL BLVD	SE 0 - 1/8 (0.096 mi.)	E44	52
VALLEY TRANSMISSIONS	1700 W FOTHILL BLVD	SSE 0 - 1/8 (0.105 mi.)	K57	66
M & V TRANSMISSIONS	923 N CENTRAL AVE ST	SW 0 - 1/8 (0.116 mi.)	J65	74

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there are 2 EDR Hist Cleaner sites within approximately 0.125 miles of the target property.

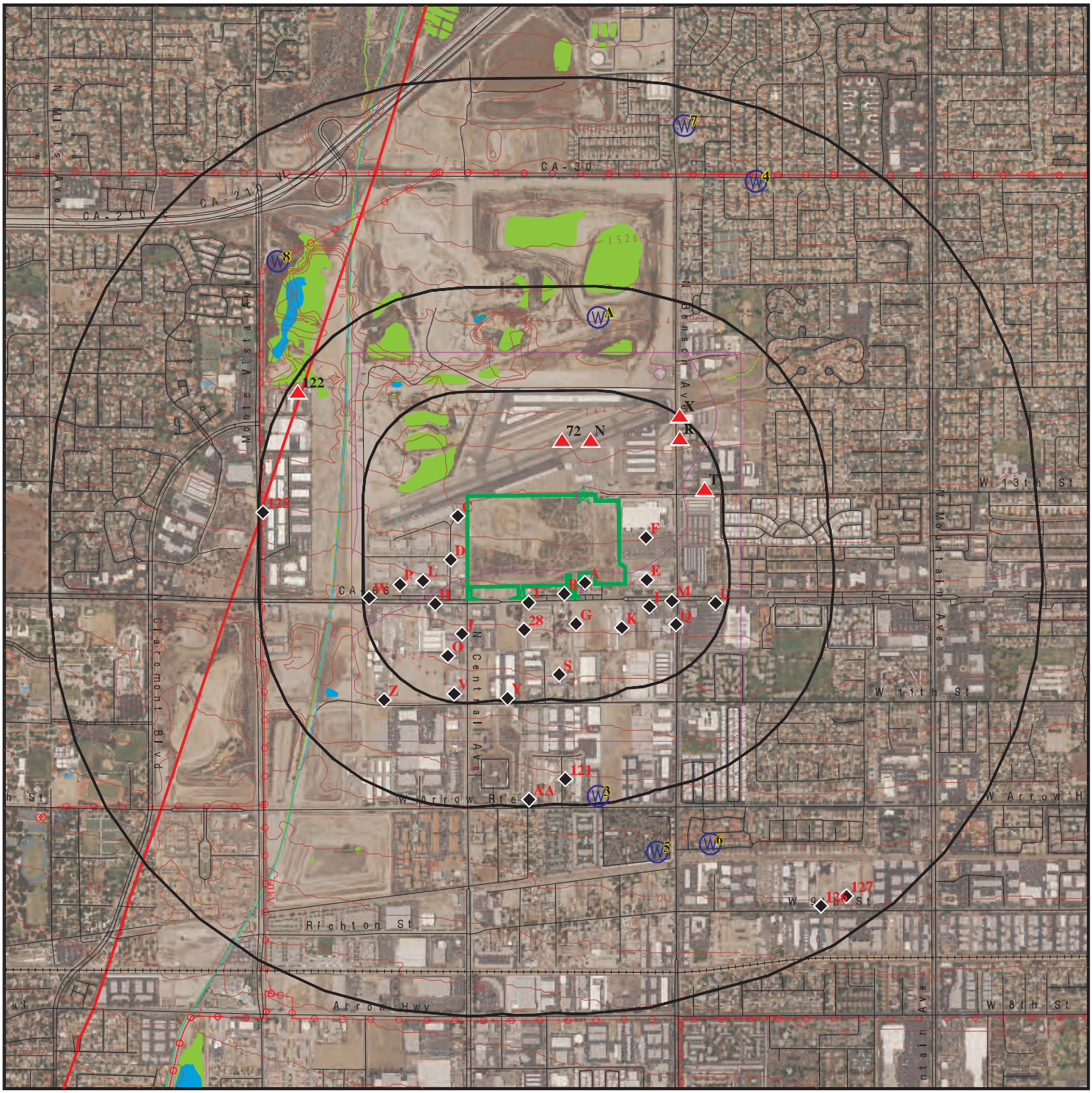
Lower Elevation	Address	Direction / Distance	Map ID	Page
BENSON TOWN CLEANERS	1651 W FOOTHILL BLVD	SE 0 - 1/8 (0.052 mi.)	E16	29
MINA CLEANERS	933 N CENTRAL AVE ST	SW 0 - 1/8 (0.084 mi.)	J37	48

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 7 records.

Site Name	Database(s)
TERRY'S SHELL	LUST, HIST CORTESE
	CDL
	CDL
	CDL
DEMPSEY PROPERTY	SEMS
THRIFTY OIL # / ARCO # 9691	LUST
CITY OF UPLAND SANITARY LANDFILL S	ODI

OVERVIEW MAP - 5210223.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

County Boundary

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Upgradient Area

Areas of Concern

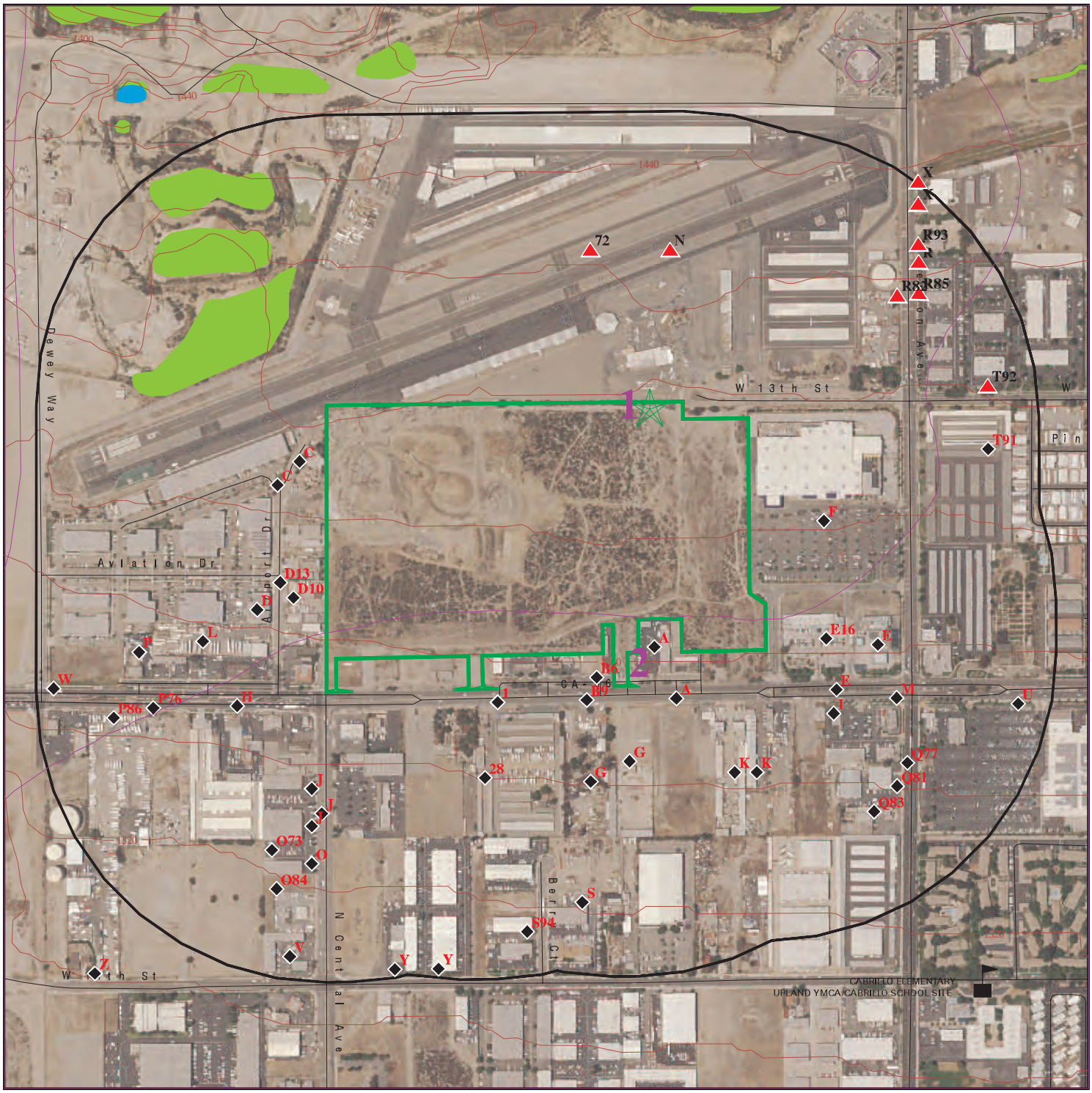
N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Not Reported	CLIENT:	Ardent Environmental Group
ADDRESS:	Not Reported Upland CA 91786	CONTACT:	Taylor Nesby
LAT/LONG:	34.110438 / 117.684805	INQUIRY #:	5210223.2s
		DATE:	March 06, 2018 1:42 pm

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DETAIL MAP - 5210223.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Not Reported	CLIENT: Ardent Environmental Group
ADDRESS: Not Reported	CONTACT: Taylor Nesby
Upland CA 91786	INQUIRY #: 5210223.2s
LAT/LONG: 34.110438 / 117.684805	DATE: March 06, 2018 1:44 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	2	NR	NR	NR	2
RCRA-SQG	0.250		10	8	NR	NR	NR	18
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	2	NR	2
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	2	NR	NR	2
State and tribal leaking storage tank lists								
LUST	0.500		2	0	7	NR	NR	9

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		2	1	NR	NR	NR	3
AST	0.250		4	6	NR	NR	NR	10
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		7	4	NR	NR	NR	11
HIST UST	0.250		7	6	NR	NR	NR	13
CA FID UST	0.250		5	4	NR	NR	NR	9
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		1	0	NR	NR	NR	1
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		1	0	4	NR	NR	5
HWP	1.000		0	0	0	1	NR	1
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
San Bern. Co. Permit	0.250		36	30	NR	NR	NR	66
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		6	NR	NR	NR	NR	6
EDR Hist Cleaner	0.125		2	NR	NR	NR	NR	2
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	83	61	13	3	0	160

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
SSW
< 1/8
0.013 mi.
67 ft.

ALL AROUND PEST & TERMITE
1810 FOOTHILL BLVD A
UPLAND, CA 91786

San Bern. Co. Permit

S106910664
N/A

Relative:
Lower

Actual:
1354 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0000821
Owner:	ALL AROUND PEST & TERMITE
Permit Number:	PT0004267
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status:	INACTIVE
Expiration Date:	05/31/2004

Region:	SAN BERNARDINO
Facility ID:	FA0000821
Owner:	ALL AROUND PEST & TERMITE
Permit Number:	PT0004266
Permit Category:	HAZARDOUS WASTE GENERATOR - 0-10 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	05/31/2004

A2
South
< 1/8
0.014 mi.
74 ft.

EMPIRE COLLISION CENTER
1775 1/2 W FOOTHILL BLVD
UPLAND, CA 91786

Site 1 of 6 in cluster A

San Bern. Co. Permit

S106112384
N/A

Relative:
Lower

Actual:
1362 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0008597
Owner:	Marco Cardenas
Permit Number:	PT0024002
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status:	INACTIVE
Expiration Date:	02/28/2013

Region:	SAN BERNARDINO
Facility ID:	FA0008597
Owner:	Marco Cardenas
Permit Number:	PT0014907
Permit Category:	CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	02/28/2013

Region:	SAN BERNARDINO
Facility ID:	FA0005073
Owner:	MARTHA JOHNSON
Permit Number:	PT0001019
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status:	INACTIVE
Expiration Date:	09/30/2001

Region:	SAN BERNARDINO
Facility ID:	FA0005073
Owner:	MARTHA JOHNSON
Permit Number:	PT0001020
Permit Category:	HAZARDOUS WASTE GENERATOR - 0-10 EMPLOYEES
Facility Status:	INACTIVE

EMPIRE COLLISION CENTER (Continued) **S106112384**

Expiration Date: 09/30/2001

A3 **FLIEDER MAUS** **EDR Hist Auto** **1020425524**
South **1775 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.014 mi.
74 ft. **Site 2 of 6 in cluster A**

Relative: EDR Hist Auto
Lower

Actual: Year: Name: Type:
1362 ft.

Year:	Name:	Type:
1977	YOUNG WILLIAM R	Automotive Repair Shops, NEC
1978	YOUNG WILLIAM R	Automotive Repair Shops, NEC
1978	FLIEDER MAUS	General Automotive Repair Shops
1979	YOUNG WILLIAM R	Automotive Repair Shops, NEC
1979	FLIEDER MAUS	General Automotive Repair Shops
1980	YOUNG WILLIAM R	Automotive Repair Shops, NEC
1980	FLIEDER MAUS	General Automotive Repair Shops
1982	YOUNG WILLIAM R	Automotive Repair Shops, NEC
1982	FLIEDER MAUS	General Automotive Repair Shops
1983	YOUNG WILLIAM R	Automotive Repair Shops, NEC
1983	FLIEDER MAUS	General Automotive Repair Shops
1985	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1985	YOUNG WILLIAM R	Automotive Repair Shops, NEC
1985	FLIEDER MAUS	General Automotive Repair Shops
1986	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1986	FLIEDER MAUS	General Automotive Repair Shops
1987	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1987	FLIEDER MAUS	General Automotive Repair Shops
1988	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1988	FLIEDER MAUS	General Automotive Repair Shops
1989	FLIEDER MAUS	General Automotive Repair Shops
1989	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1990	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1990	FLIEDER MAUS	General Automotive Repair Shops
1991	FLIEDER MAUS	General Automotive Repair Shops
1991	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1992	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1992	FLIEDER MAUS	General Automotive Repair Shops
1993	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1993	FLIEDER MAUS	General Automotive Repair Shops
1994	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1995	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1995	A1 AUTO REPAIR CENTER INC	General Automotive Repair Shops
1996	A FOOTHILL AUTO SERVICE	General Automotive Repair Shops
1996	A1 AUTO REPAIR CENTER INC	General Automotive Repair Shops
1997	A1 AUTO REPAIR CENTER INC	General Automotive Repair Shops
2005	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2006	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2007	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2008	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2009	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2010	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2011	INGRAM HOWARD	Automotive Transmission Repair Shops
2011	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2012	INGRAM HOWARD	Automotive Transmission Repair Shops
2012	ROUTE 66 AUTO REPAIR CENTER	General Automotive Repair Shops
2013	INGRAM HOWARD	Automotive Transmission Repair Shops

FLIEDER MAUS (Continued) **1020425524**

2013 ROUTE 66 AUTO REPAIR CENTER Automotive Repair Shops
2014 ROUTE 66 AUTO REPAIR CENTER Automotive Repair Shops
2014 INGRAM HOWARD Automotive Transmission Repair Shops

A4 **MEJIA AUTO BODY SHOP, INC.** **San Bern. Co. Permit** **S100853819**
South **1775 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.014 mi.
74 ft. **Site 3 of 6 in cluster A**

Relative: San Bern. Co. Permit:
Lower
Actual: Region: SAN BERNARDINO
1362 ft. Facility ID: FA0015132
Owner: Humberto Mejia
Permit Number: PT0026381
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 09/30/2018

Region: SAN BERNARDINO
Facility ID: FA0008598
Owner: ABUJUDEH, NASSER N.
Permit Number: PT0014908
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 07/31/2005

Region: SAN BERNARDINO
Facility ID: FA0008598
Owner: ABUJUDEH, NASSER N.
Permit Number: PT0014909
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 07/31/2005

A5 **A+ AUTO REPAIR** **HAZNET** **S113095164**
South **1775 W FOOTHILL BLVD** **San Bern. Co. Permit** **N/A**
< 1/8 **UPLAND, CA 91786**
0.014 mi.
74 ft. **Site 4 of 6 in cluster A**

Relative: HAZNET:
Lower
Actual: envid: S113095164
1362 ft. Year: 2000
GEPAID: CAL000179724
Contact: NASSER ABUJUDEH
Telephone: 9099206476
Mailing Name: Not reported
Mailing Address: 1775 W FOOTHILL BLVD
Mailing City,St,Zip: UPLAND, CA 917860000
Gen County: Not reported
TSD EPA ID: CAT000613927
TSD County: Not reported
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Transfer Station
Tons: 0.12

A+ AUTO REPAIR (Continued) **S113095164**

Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0011410
Owner: frank cope
Permit Number: PT0019749
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 02/28/2018

Region: SAN BERNARDINO
Facility ID: FA0011410
Owner: frank cope
Permit Number: PT0019750
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 02/28/2018

B6 **UPLAND AUTOMOTIVE** **RCRA-SQG** **1000594892**
South **1803 W FOOTHILL** **FINDS** **CAD983587767**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.015 mi. **HAZNET**
78 ft. **Site 1 of 2 in cluster B** **San Bern. Co. Permit**

Relative:
Lower

Actual:
1358 ft.

RCRA-SQG:
Date form received by agency: 06/28/1991
Facility name: UPLAND AUTOMOTIVE
Facility address: 1803 W FOOTHILL
UPLAND, CA 91786
EPA ID: CAD983587767
Contact: WILLIAM SMITH
Contact address: 1803 W FOOTHILL
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-985-8514
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private

UPLAND AUTOMOTIVE (Continued) **1000594892**

Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: WILLIAM SMITH
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002848116

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

UPLAND AUTOMOTIVE (Continued) **1000594892**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000594892
Registry ID:	110002848116
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002848116

HAZNET:

envid:	1000594892
Year:	2009
GEPAID:	CAD983587767
Contact:	WILLIAM SMITH/OWNER
Telephone:	9099858514
Mailing Name:	Not reported
Mailing Address:	1803 W FOOTHILL BLVD
Mailing City,St,Zip:	UPLAND, CA 917863537
Gen County:	Not reported
TSD EPA ID:	CAD981696420
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.21
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000594892
Year:	2009
GEPAID:	CAD983587767
Contact:	WILLIAM SMITH/OWNER
Telephone:	9099858514
Mailing Name:	Not reported
Mailing Address:	1803 W FOOTHILL BLVD
Mailing City,St,Zip:	UPLAND, CA 917863537
Gen County:	Not reported
TSD EPA ID:	CAD981696420
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.21
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000594892
Year:	2006
GEPAID:	CAD983587767
Contact:	WILLIAM SMITH/OWNER
Telephone:	9099858514
Mailing Name:	Not reported
Mailing Address:	1803 W FOOTHILL BLVD
Mailing City,St,Zip:	UPLAND, CA 917863537

UPLAND AUTOMOTIVE (Continued) **1000594892**

Gen County: Not reported
TSD EPA ID: CAD099452708
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 1.04
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: 1000594892
Year: 2006
GEPAID: CAD983587767
Contact: WILLIAM SMITH/OWNER
Telephone: 9099858514
Mailing Name: Not reported
Mailing Address: 1803 W FOOTHILL BLVD
Mailing City,St,Zip: UPLAND, CA 917863537
Gen County: Not reported
TSD EPA ID: CAD099452708
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 1.04
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: 1000594892
Year: 2005
GEPAID: CAD983587767
Contact: WILLIAM SMITH/OWNER
Telephone: 9099858514
Mailing Name: Not reported
Mailing Address: 1803 W FOOTHILL BLVD
Mailing City,St,Zip: UPLAND, CA 917863537
Gen County: Not reported
TSD EPA ID: CAD099452708
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 1.04
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0006949
Owner: SMITH, WILLIAM
Permit Number: PT0007676
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 05/31/2018

UPLAND AUTOMOTIVE (Continued) **1000594892**

Region: SAN BERNARDINO
Facility ID: FA0006949
Owner: SMITH, WILLIAM
Permit Number: PT0007675
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 05/31/2018

Region: SAN BERNARDINO
Facility ID: FA0006949
Owner: SMITH, WILLIAM
Permit Number: PT0023296
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: INACTIVE
Expiration Date: 05/31/2011

C7 **DINEEN TRUCKING INC.** **LUST** **S101619062**
West **1284 AIRPORT DR** **SWEEPS UST** **N/A**
< 1/8 **UPLAND, CA 91786** **CA FID UST**
0.023 mi. **HIST CORTESE**
123 ft. **Site 1 of 4 in cluster C** **WDS**

Relative: **Lower**
Actual: **1391 ft.**

LUST REG 8:
Region: 8
County: San Bernardino
Regional Board: Santa Ana Region
Facility Status: Case Closed
Case Number: 083600599T
Local Case Num: 87064
Case Type: Soil only
Substance: Diesel
Qty Leaked: Not reported
Abate Method: Not reported
Cross Street: FOOTHILL
Enf Type: Not reported
Funding: Not reported
How Discovered: Tank Test
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global ID: T0607100057
How Stopped Date: Not reported
Enter Date: 8/28/1987
Date Confirmation of Leak Began: Not reported
Date Preliminary Assessment Began: Not reported
Discover Date: Not reported
Enforcement Date: Not reported
Close Date: 5/27/1988
Date Prelim Assessment Workplan Submitted: Not reported
Date Pollution Characterization Began: 8/28/1987
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring: Not reported
Enter Date: 8/28/1987
GW Qualifies: Not reported
Soil Qualifies: Not reported
Operator: Not reported
Facility Contact: Not reported

DINEEN TRUCKING INC. (Continued) **S101619062**

Interim: Not reported
Oversite Program: LUST
Latitude: 34.1090184
Longitude: -117.6910699
MTBE Date: Not reported
Max MTBE GW: Not reported
MTBE Concentration: 0
Max MTBE Soil: Not reported
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
MTBE Class: *
Staff: VJJ
Staff Initials: DR
Lead Agency: Local Agency
Local Agency: 36000L
Hydr Basin #: UPPER SANTA ANA VALL
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Summary: Not reported

SWEEPS UST:
Status: Active
Comp Number: 9733
Number: 9
Board Of Equalization: 44-020220
Referral Date: 07-07-88
Action Date: 07-07-88
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 36-000-009733-000001
Tank Status: A
Capacity: 5000
Active Date: 07-07-88
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 4

Status: Active
Comp Number: 9733
Number: 9
Board Of Equalization: 44-020220
Referral Date: 07-07-88
Action Date: 07-07-88
Created Date: 02-29-88
Owner Tank Id: 3
SWRCB Tank Id: 36-000-009733-000002
Tank Status: A
Capacity: 8000
Active Date: 07-07-88
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

DINEEN TRUCKING INC. (Continued) **S101619062**

Status: Active
Comp Number: 9733
Number: 9
Board Of Equalization: 44-020220
Referral Date: 07-07-88
Action Date: 07-07-88
Created Date: 02-29-88
Owner Tank Id: 4
SWRCB Tank Id: 36-000-009733-000003
Tank Status: A
Capacity: 4000
Active Date: 07-07-88
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Status: Active
Comp Number: 9733
Number: 9
Board Of Equalization: 44-020220
Referral Date: 07-07-88
Action Date: 07-07-88
Created Date: 02-29-88
Owner Tank Id: 5
SWRCB Tank Id: 36-000-009733-000004
Tank Status: A
Capacity: 5000
Active Date: 07-07-88
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 36000259
Regulated By: UTNKA
Regulated ID: 00009733
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 1284 AIRPORT DR
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

HIST CORTESE:
Region: CORTESE
Facility County Code: 36

DINEEN TRUCKING INC. (Continued) **S101619062**

Reg By: LTNKA
Reg Id: 083600599T

WDS:
Facility ID: Santa Ana River 36I018208
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 8
Facility Telephone: 9099859718
Facility Contact: Ken Beck
Agency Name: DINEEN TRUCKING INC
Agency Address: 1284 Airport Dr
Agency City,St,Zip: Upland 917862156
Agency Contact: Ken Beck
Agency Telephone: 9099859718
Agency Type: ?
SIC Code: 0
SIC Code 2: Not reported
Primary Waste Type: Not reported
Primary Waste: Not reported
Waste Type2: Not reported
Waste2: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported
POTW: Not reported
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

C8 **DINEEN TRUCKING** **LUST** **U001570666**
West **1284 AIRPORT DR** **HIST UST** **N/A**
< 1/8 **UPLAND, CA 91786** **NPDES**
0.023 mi. **San Bern. Co. Permit**
123 ft. **Site 2 of 4 in cluster C**

Relative:
Lower

Actual:
1391 ft.

LUST:
Lead Agency: SAN BERNARDINO COUNTY
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100057
Global Id: T0607100057
Latitude: 34.1090184
Longitude: -117.6910699
Status: Completed - Case Closed
Status Date: 05/27/1988
Case Worker: Not reported
RB Case Number: 083600599T
Local Agency: Not reported
File Location: Local Agency
Local Case Number: 87064
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0607100057
Contact Type: Regional Board Caseworker
Contact Name: VALERIE JAHN-BULL
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: valerie.jahn-bull@waterboards.ca.gov
Phone Number: 9517824903

LUST:
Global Id: T0607100057
Action Type: Other
Date: 07/24/1987
Action: Leak Reported

LUST:
Global Id: T0607100057
Status: Open - Case Begin Date
Status Date: 07/24/1987

Global Id: T0607100057
Status: Open - Site Assessment
Status Date: 08/28/1987

Global Id: T0607100057
Status: Completed - Case Closed
Status Date: 05/27/1988

HIST UST:
File Number: 00029DB1
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029DB1.pdf
Region: STATE

DINEEN TRUCKING (Continued) **U001570666**

Facility ID: 00000009733
Facility Type: Other
Other Type: TRUCKING
Contact Name: Not reported
Telephone: 7149859718
Owner Name: DINEEN TRUCKING INC.
Owner Address: 1284 AIRPORT DR.
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0004

Tank Num: 001
Container Num: 002
Year Installed: 1976
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Visual

Tank Num: 002
Container Num: 003
Year Installed: 1976
Tank Capacity: 00008000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Visual

Tank Num: 003
Container Num: 004
Year Installed: 1976
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Visual

Tank Num: 004
Container Num: 005
Year Installed: 1976
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Visual

Click here for Geo Tracker PDF:

NPDES:
Npdes Number: Not reported
Facility Status: Not reported
Agency Id: Not reported
Region: 8
Regulatory Measure Id: 213710
Order No: Not reported
Regulatory Measure Type: Industrial
Place Id: Not reported

DINEEN TRUCKING (Continued) **U001570666**

WDID: 8 36I018208
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Not reported
Discharge Address: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
RECEIVED DATE: 05/09/2008
PROCESSED DATE: 06/24/2003
STATUS CODE NAME: Active
STATUS DATE: 11/12/2015
PLACE SIZE: 2
PLACE SIZE UNIT: Acres
FACILITY CONTACT NAME: Brenda Beck
FACILITY CONTACT TITLE: CEO
FACILITY CONTACT PHONE: 909-985-9718
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: b.dineen@hotmail.com
OPERATOR NAME: Dineen Trucking Inc
OPERATOR ADDRESS: 1284 Airport Dr
OPERATOR CITY: Upland
OPERATOR STATE: California
OPERATOR ZIP: 91786
OPERATOR CONTACT NAME: Brenda Beck
OPERATOR CONTACT TITLE: CEO
OPERATOR CONTACT PHONE: 909-985-9718
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: b.dineen@hotmail.com
OPERATOR TYPE: Other
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: California
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: 909-985-9718
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND: Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION: Not reported

DINEEN TRUCKING (Continued) **U001570666**

CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: N
RECEIVING WATER NAME: San Gabriel River
CERTIFIER NAME: Brenda McClendon
CERTIFIER TITLE: CEO
CERTIFICATION DATE: 15-JUL-15
PRIMARY SIC: 4212-Local Trucking Without Storage
SECONDARY SIC: Not reported
TERTIARY SIC: Not reported

Npdes Number: CAS000001
Facility Status: Active
Agency Id: 0
Region: 8
Regulatory Measure Id: 213710
Order No: 97-03-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 8 36I018208
Program Type: Industrial
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 06/24/2003
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Dineen Trucking Inc
Discharge Address: 1284 Airport Dr
Discharge City: Upland
Discharge State: California
Discharge Zip: 91786
RECEIVED DATE: Not reported
PROCESSED DATE: Not reported
STATUS CODE NAME: Not reported
STATUS DATE: Not reported
PLACE SIZE: Not reported
PLACE SIZE UNIT: Not reported
FACILITY CONTACT NAME: Not reported
FACILITY CONTACT TITLE: Not reported
FACILITY CONTACT PHONE: Not reported
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: Not reported
OPERATOR NAME: Not reported
OPERATOR ADDRESS: Not reported
OPERATOR CITY: Not reported
OPERATOR STATE: Not reported
OPERATOR ZIP: Not reported
OPERATOR CONTACT NAME: Not reported
OPERATOR CONTACT TITLE: Not reported
OPERATOR CONTACT PHONE: Not reported
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: Not reported
OPERATOR TYPE: Not reported
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: Not reported
DEVELOPER ZIP: Not reported

DINEEN TRUCKING (Continued) **U001570666**

DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: Not reported
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION Not reported
CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: Not reported
RECEIVING WATER NAME: Not reported
CERTIFIER NAME: Not reported
CERTIFIER TITLE: Not reported
CERTIFICATION DATE: Not reported
PRIMARY SIC: Not reported
SECONDARY SIC: Not reported
TERTIARY SIC: Not reported

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0002744
Owner: DINEEN TRUCKING INC
Permit Number: PT0027030
Permit Category: APSA 1,320-10,000 GAL FAC CAPACITY
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0002744
Owner: DINEEN TRUCKING INC
Permit Number: PT0002527
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0002744
Owner: DINEEN TRUCKING INC
Permit Number: PT0002528
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 08/31/2018

B9 **UPLAND MERCEDES REPAIR** **San Bern. Co. Permit** **S110071627**
SSW **1785 1/2 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.026 mi.
139 ft. **Site 2 of 2 in cluster B**

Relative: **Lower**
Actual: **1355 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0012801
Owner:	AWADALLA, ASSAAD
Permit Number:	PT0022363
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	10/31/2011

Region:	SAN BERNARDINO
Facility ID:	FA0012801
Owner:	AWADALLA, ASSAAD
Permit Number:	PT0022364
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	10/31/2011

D10 **SMALLING AUTO & TRUCK REPAIR** **San Bern. Co. Permit** **S104770200**
WSW **1102 N AIRPORT DR** **N/A**
< 1/8 **UPLAND, CA 91786**
0.028 mi.
150 ft. **Site 1 of 4 in cluster D**

Relative: **Lower**
Actual: **1366 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0006218
Owner:	SMALLING, ROBIN
Permit Number:	PT0004301
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	ACTIVE
Expiration Date:	05/31/2018

Region:	SAN BERNARDINO
Facility ID:	FA0006218
Owner:	SMALLING, ROBIN
Permit Number:	PT0004300
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	05/31/2013

A11 **INTRAVAIA ROCK & SAND** **SWEEPS UST** **S101619070**
South **1770 W FOOTHILL BLVD** **HIST UST** **N/A**
< 1/8 **UPLAND, CA 91786** **CA FID UST**
0.039 mi.
205 ft. **Site 5 of 6 in cluster A**

Relative: **Lower**
Actual: **1355 ft.**

SWEEPS UST:

Status:	Not reported
Comp Number:	19230
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported

INTRAVAIA ROCK & SAND (Continued) **S101619070**

Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-019230-000001
Tank Status: Not reported
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL
Number Of Tanks: 1

HIST UST:
File Number: 00029FE4
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029FE4.pdf
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

CA FID UST:
Facility ID: 36001023
Regulated By: UTNKI
Regulated ID: 00019230
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 1770 W FOOTHILL BLVD
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

A12
South
< 1/8
0.039 mi.
205 ft.

INTRAVAIA ROCK & SAND
1770 W FOOTHILL BLVD
UPLAND, CA 91786

Site 6 of 6 in cluster A

HIST UST **U001570680**
N/A

Relative:
Lower

Actual:
1355 ft.

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000019230
Facility Type:	Other
Other Type:	TRUCKING CO.
Contact Name:	IGGY INTRAVAIA
Telephone:	7149826713
Owner Name:	IGNAZIO INTRAVAIA
Owner Address:	1770 W. FOOTHILL BLVD.
Owner City,St,Zip:	UPLAND, CA 91786
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	1977
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

D13
WSW
< 1/8
0.040 mi.
211 ft.

REBECK, T W
1160 AIRPORT DR
UPLAND, CA 91786

Site 2 of 4 in cluster D

San Bern. Co. Permit **S108756548**
N/A

Relative:
Lower

Actual:
1368 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0005616
Owner:	REBECK, THEODORE W.
Permit Number:	PT0001882
Permit Category:	HAZARDOUS WASTE GENERATOR - 0-10 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	05/31/2006
Region:	SAN BERNARDINO
Facility ID:	FA0005616
Owner:	REBECK, THEODORE W.
Permit Number:	PT0001881
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status:	INACTIVE
Expiration Date:	05/31/2006

C14
WSW
< 1/8
0.042 mi.
224 ft.

REACH 13
1257 AIRPORT DRIVE
UPLAND, CA 91786

Site 3 of 4 in cluster C

AST **A100423775**
N/A

Relative:
Lower

Actual:
1386 ft.

AST:

Certified Unified Program Agencies:	Not reported
Owner:	Reach Air Medical Services, LLC
Total Gallons:	Not reported
CERSID:	10585969
Facility ID:	FA0016129
Business Name:	Reach Air Medical Services, LLC
Phone:	707-303-3652
Fax:	Not reported
Mailing Address:	1257 Airport Drive
Mailing Address City:	Upland
Mailing Address State:	CA
Mailing Address Zip Code:	91786
Operator Name:	Reach Air Medical Services, LLC
Operator Phone:	707-303-3652
Owner Phone:	707-303-3652
Owner Mail Address:	451 Aviation Blvd
Owner State:	CA
Owner Zip Code:	95403
Owner Country:	United States
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	Not reported

C15
WSW
< 1/8
0.042 mi.
224 ft.

REACH 13
1257 AIRPORT DR
UPLAND, CA 91786

Site 4 of 4 in cluster C

HAZNET **S118236588**
San Bern. Co. Permit **N/A**

Relative:
Lower

Actual:
1386 ft.

HAZNET:

envid:	S118236588
Year:	2016
GEPAID:	CAL000399025
Contact:	JIM WALKER
Telephone:	7073242400
Mailing Name:	Not reported
Mailing Address:	1400 SKY HARBOR DR
Mailing City,St,Zip:	OLIVEHURST, CA 959617418
Gen County:	San Bernardino
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.2
Cat Decode:	Off-specification, aged or surplus organics
Method Decode:	Fuel Blending Prior To Energy Recovery At Another Site
Facility County:	San Bernardino

REACH 13 (Continued) **S118236588**

envid: S118236588
Year: 2016
GEPAID: CAL000399025
Contact: JIM WALKER
Telephone: 7073242400
Mailing Name: Not reported
Mailing Address: 1400 SKY HARBOR DR
Mailing City,St,Zip: OLIVEHURST, CA 959617418
Gen County: San Bernardino
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.075
Cat Decode: Waste oil and mixed oil
Method Decode: Fuel Blending Prior To Energy Recovery At Another Site
Facility County: San Bernardino

envid: S118236588
Year: 2015
GEPAID: CAL000399025
Contact: DANIELLE KUREK
Telephone: 7073242400
Mailing Name: Not reported
Mailing Address: 209 STATE HIGHWAY 121 BYP STE 21
Mailing City,St,Zip: LEWISVILLE, TX 750674231
Gen County: San Bernardino
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Not reported
Tons: 0.2
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: S118236588
Year: 2015
GEPAID: CAL000399025
Contact: DANIELLE KUREK
Telephone: 7073242400
Mailing Name: Not reported
Mailing Address: 209 STATE HIGHWAY 121 BYP STE 21
Mailing City,St,Zip: LEWISVILLE, TX 750674231
Gen County: San Bernardino
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: Not reported
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: S118236588
Year: 2014
GEPAID: CAL000399025

REACH 13 (Continued) **S118236588**

Contact:	DANIELLE KUREK
Telephone:	9728298421
Mailing Name:	Not reported
Mailing Address:	209 STATE HIGHWAY 121 BYP STE 21
Mailing City,St,Zip:	LEWISVILLE, CA 750674231
Gen County:	San Bernardino
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.2
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0016129
Owner:	Reach Air Medical Services, LLC
Permit Number:	PT0034865
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	08/31/2018

Region:	SAN BERNARDINO
Facility ID:	FA0016129
Owner:	Reach Air Medical Services, LLC
Permit Number:	PT0034866
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	08/31/2018

E16 **BENSON TOWN CLEANERS** **EDR Hist Cleaner** **1019937780**
SE **1651 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.052 mi.
274 ft. **Site 1 of 7 in cluster E**

Relative: EDR Hist Cleaner
Lower

Actual: **1362 ft.**

Year:	Name:	Type:
1994	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
1995	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
1996	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
1997	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
1998	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
1999	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2000	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2001	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2002	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2003	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2004	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2005	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2006	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC

BENSON TOWN CLEANERS (Continued) **1019937780**

2007	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2008	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2009	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2010	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2011	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2012	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2013	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC
2014	BENSON TOWN CLEANERS	Drycleaning Plants, Except Rugs, NEC

D17 **MOUNTAIN VIEW CHEVROLET INC/MOUNTAIN VIEW COLLISIO** **HAZNET** **S113134590**
WSW **2110 AVIATION DR** **San Bern. Co. Permit** **N/A**
< 1/8 **UPLAND, CA 91786**
0.060 mi.
316 ft. **Site 3 of 4 in cluster D**

Relative: **Lower**

Actual: **1364 ft.**

HAZNET:

envid:	S113134590
Year:	2016
GEPAID:	CAL000404994
Contact:	SHARON LAWRENCE
Telephone:	4699489630
Mailing Name:	Not reported
Mailing Address:	401 E CORPORATE DR STE 150
Mailing City,St,Zip:	LEWISVILLE, TX 750576449
Gen County:	San Bernardino
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Not reported
Tons:	0.1251
Cat Decode:	Aqueous solution with total organic residues 10 percent or more
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	S113134590
Year:	2016
GEPAID:	CAL000404994
Contact:	SHARON LAWRENCE
Telephone:	4699489630
Mailing Name:	Not reported
Mailing Address:	401 E CORPORATE DR STE 150
Mailing City,St,Zip:	LEWISVILLE, TX 750576449
Gen County:	San Bernardino
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.72558
Cat Decode:	Aqueous solution with total organic residues 10 percent or more
Method Decode:	Fuel Blending Prior To Energy Recovery At Another Site
Facility County:	San Bernardino

envid:	S113134590
Year:	2016
GEPAID:	CAL000404994
Contact:	SHARON LAWRENCE
Telephone:	4699489630
Mailing Name:	Not reported

MOUNTAIN VIEW CHEVROLET INC/MOUNTAIN VIEW COLLISION CTR (Continued) **S113134590**

Mailing Address: 401 E CORPORATE DR STE 150
Mailing City,St,Zip: LEWISVILLE, TX 750576449
Gen County: San Bernardino
TSD EPA ID: MXC130619001
TSD County: Not reported
Waste Category: Unspecified solvent mixture
Disposal Method: Solvents Recovery
Tons: 0.6588
Cat Decode: Unspecified solvent mixture
Method Decode: Solvents Recovery
Facility County: San Bernardino

envid: S113134590
Year: 2016
GEPAID: CAL000404994
Contact: SHARON LAWRENCE
Telephone: 4699489630
Mailing Name: Not reported
Mailing Address: 401 E CORPORATE DR STE 150
Mailing City,St,Zip: LEWISVILLE, TX 750576449
Gen County: San Bernardino
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: Not reported
Cat Decode: Not reported
Method Decode: Fuel Blending Prior To Energy Recovery At Another Site
Facility County: San Bernardino

envid: S113134590
Year: 2016
GEPAID: CAL000404994
Contact: SHARON LAWRENCE
Telephone: 4699489630
Mailing Name: Not reported
Mailing Address: 401 E CORPORATE DR STE 150
Mailing City,St,Zip: LEWISVILLE, TX 750576449
Gen County: San Bernardino
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.2736
Cat Decode: Waste oil and mixed oil
Method Decode: Fuel Blending Prior To Energy Recovery At Another Site
Facility County: San Bernardino

Click this hyperlink while viewing on your computer to access
10 additional CA_HAZNET: record(s) in the EDR Site Report.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0016134
Owner: CALIBER COLLISION CENTERS
Permit Number: PT0034893
Permit Category: SMALL QUANTITY GENERATOR

MOUNTAIN VIEW CHEVROLET INC/MOUNTAIN VIEW COLLISION CTR (Continued) **S113134590**

Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0016134
Owner: CALIBER COLLISION CENTERS
Permit Number: PT0034892
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 08/31/2018

D18 **ALPINE COLLISION CENTER** **San Bern. Co. Permit** **S109849302**
WSW **2110 AVIATION DR** **N/A**
< 1/8 **UPLAND, CA 91786**
0.060 mi.
316 ft. **Site 4 of 4 in cluster D**

Relative: San Bern. Co. Permit:
Lower
Actual:
1364 ft.
Region: SAN BERNARDINO
Facility ID: FA0012621
Owner: HEZAR, SHAWN
Permit Number: PT0022041
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 11/30/2015

Region: SAN BERNARDINO
Facility ID: FA0012621
Owner: HEZAR, SHAWN
Permit Number: PT0022042
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: INACTIVE
Expiration Date: 11/30/2015

F19 **LOWE'S OF UPLAND #1041** **AST** **A100422053**
ESE **1659 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.064 mi.
340 ft. **Site 1 of 3 in cluster F**

Relative: AST:
Lower
Actual:
1381 ft.
Certified Unified Program Agencies: Not reported
Owner: Lowe's Home Centers, LLC
Total Gallons: Not reported
CERSID: 10053421
Facility ID: FA0011737
Business Name: Lowe's HIW, Inc.
Phone: (888) 429-6281
Fax: (909) 931-1649
Mailing Address: 1000 Lowe's Blvd., Mail Code A2ELP
Mailing Address City: Mooresville
Mailing Address State: NC
Mailing Address Zip Code: 28117
Operator Name: Lowe's Home Centers, LLC
Operator Phone: (909) 982-4795
Owner Phone: (704) 758-6033

LOWE'S OF UPLAND #1041 (Continued) **A100422053**

Owner Mail Address:	1605 Curtis Bridge Rd, Mailcode A2ELP
Owner State:	NC
Owner Zip Code:	28697
Owner Country:	United States
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	CAL000248314

F20 **LOWES HIW #1041** **HAZNET S113118034**
ESE **1659 W FOOTHILL BLVD** **San Bern. Co. Permit N/A**
< 1/8 **UPLAND, CA 91786**
0.064 mi.
340 ft. **Site 2 of 3 in cluster F**

Relative: **Lower**

Actual: **1381 ft.**

HAZNET:

envid:	S113118034
Year:	2016
GEPAID:	CAL000248314
Contact:	ROB GASS
Telephone:	7047586033
Mailing Name:	Not reported
Mailing Address:	1000 LOWE'S BLVD
Mailing City,St,Zip:	MOORESVILLE, NC 281170000
Gen County:	San Bernardino
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.136
Cat Decode:	Off-specification, aged or surplus organics
Method Decode:	Fuel Blending Prior To Energy Recovery At Another Site
Facility County:	San Bernardino

envid:	S113118034
Year:	2016
GEPAID:	CAL000248314
Contact:	ROB GASS
Telephone:	7047586033
Mailing Name:	Not reported
Mailing Address:	1000 LOWE'S BLVD
Mailing City,St,Zip:	MOORESVILLE, NC 281170000
Gen County:	San Bernardino
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.008
Cat Decode:	Alkaline solution without metals pH >= 12.5
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Bernardino

LOWES HIW #1041 (Continued) **S113118034**

envid: S113118034
Year: 2016
GEPAID: CAL000248314
Contact: ROB GASS
Telephone: 7047586033
Mailing Name: Not reported
Mailing Address: 1000 LOWE'S BLVD
Mailing City,St,Zip: MOORESVILLE, NC 281170000
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.335
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: S113118034
Year: 2016
GEPAID: CAL000248314
Contact: ROB GASS
Telephone: 7047586033
Mailing Name: Not reported
Mailing Address: 1000 LOWE'S BLVD
Mailing City,St,Zip: MOORESVILLE, NC 281170000
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.026
Cat Decode: Liquids with pH <= 2
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: S113118034
Year: 2016
GEPAID: CAL000248314
Contact: ROB GASS
Telephone: 7047586033
Mailing Name: Not reported
Mailing Address: 1000 LOWE'S BLVD
Mailing City,St,Zip: MOORESVILLE, NC 281170000
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.294
Cat Decode: Off-specification, aged or surplus organics
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery

LOWES HIW #1041 (Continued) **S113118034**

(H010-H129) Or (H131-H135)
Facility County: San Bernardino

Click this hyperlink while viewing on your computer to access
56 additional CA_HAZNET: record(s) in the EDR Site Report.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0011737
Owner: Lowe's Home Centers, LLC
Permit Number: PT0020362
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0011737
Owner: Lowe's Home Centers, LLC
Permit Number: PT0020363
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0011737
Owner: Lowe's Home Centers, LLC
Permit Number: PT0020888
Permit Category: APSA 1,320-10,000 GAL FAC CAPACITY
Facility Status: ACTIVE
Expiration Date: 08/31/2018

F21 **LOWE'S OF UPLAND #1041** **AST** **S106093042**
ESE **1659 W FOOTHILL** **N/A**
< 1/8 **UPLAND, CA**
0.064 mi.
340 ft. **Site 3 of 3 in cluster F**

Relative: AST:
Lower Certified Unified Program Agencies: San Bernardino
Actual: Owner: LOWE'S COMPANIES INC.
1381 ft. Total Gallons: 1,500
CERSID: Not reported
Facility ID: Not reported
Business Name: Not reported
Phone: Not reported
Fax: Not reported
Mailing Address: Not reported
Mailing Address City: Not reported
Mailing Address State: Not reported
Mailing Address Zip Code: Not reported
Operator Name: Not reported
Operator Phone: Not reported
Owner Phone: Not reported
Owner Mail Address: Not reported
Owner State: Not reported
Owner Zip Code: Not reported
Owner Country: Not reported

LOWE'S OF UPLAND #1041 (Continued) **S106093042**

Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: Not reported

G22 **HONDA NISSAN SPECIALIST** **RCRA-SQG 1000184455**
South **1710 W FOOTHILL BLVD D7 & D8** **FINDS CAD982321291**
< 1/8 **UPLAND, CA 91784** **ECHO**
0.065 mi.
343 ft. **Site 1 of 7 in cluster G**

Relative:
Lower

Actual:
1345 ft.

RCRA-SQG:
Date form received by agency: 08/27/1990
Facility name: HONDA NISSAN SPECIALIST
Facility address: 1710 W FOOTHILL BLVD D7 & D8
UPLAND, CA 91784
EPA ID: CAD982321291
Mailing address: 1710 W FOOTHILL BLVD D8
UPLAND, CA 91754
Contact: ENVIRONMENTAL MANAGER
Contact address: 1710 W FOOTHILL BLVD D7 & D8
UPLAND, CA 91754
Contact country: US
Contact telephone: 714-981-1121
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: FRED MORGART
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported

HONDA NISSAN SPECIALIST (Continued) **1000184455**

Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110008276034

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000184455
Registry ID: 110008276034
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110008276034

E23 **R A PHOTO LAB** **San Bern. Co. Permit** **S106112382**
SSE **1651 W FOOTHILL BLVD G** **N/A**
< 1/8 **UPLAND, CA 91786**
0.070 mi.
368 ft. **Site 2 of 7 in cluster E**

Relative: San Bern. Co. Permit:
Lower Region: SAN BERNARDINO
Facility ID: FA0005515
Actual: Owner: TANIT THANTANARAT
1356 ft.

R A PHOTO LAB (Continued) **S106112382**

Permit Number: PT0007917
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 07/31/2005

Region: SAN BERNARDINO
Facility ID: FA0005515
Owner: TANIT THANTANARAT
Permit Number: PT0007916
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 07/31/2005

E24 **DEL TACO #243** **San Bern. Co. Permit** **S109849271**
SSE **1653 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.070 mi.
368 ft. **Site 3 of 7 in cluster E**

Relative: San Bern. Co. Permit:
Lower
Region: SAN BERNARDINO
Actual: Facility ID: FA0012548
1356 ft. Owner: DEL TACO INC
Permit Number: PT0021949
Permit Category: BULK CO2 AT RETAIL FOOD FACILITIES
Facility Status: INACTIVE
Expiration Date: 05/31/2010

E25 **BENSON TOWN CLEANERS** **RCRA-SQG** **1000686168**
SSE **1651 W FOOTHILL BVLD STE L** **FINDS** **CAD983634031**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.070 mi. **DRYCLEANERS**
368 ft. **Site 4 of 7 in cluster E**

Relative: RCRA-SQG:
Lower
Date form received by agency: 04/14/1992
Actual: Facility name: BENSON TOWN CLEANERS
1356 ft. Facility address: 1651 W FOOTHILL BVLD STE L
UPLAND, CA 91786
EPA ID: CAD983634031
Mailing address: W FOOTHILL BVLD STE L
UPLAND, CA 91786
Contact: SAMUEL JEONG
Contact address: 1651 W FOOTHILL BVLD STE L
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-931-2969
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

BENSON TOWN CLEANERS (Continued) **1000686168**

Owner/Operator Summary:
- Owner/operator name: SAMUEL JEONG
- Owner/operator address: 1651 FOOTHILLS BLVD STE L
  UPLAND, CA 91786
- Owner/operator country: Not reported
- Owner/operator telephone: 714-931-2969
- Owner/operator email: Not reported
- Owner/operator fax: Not reported
- Owner/operator extension: Not reported
- Legal status: Private
- Owner/Operator Type: Owner
- Owner/Op start date: Not reported
- Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002874792

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
- Envid: 1000686168
- Registry ID: 110002874792
- DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002874792

DRYCLEANERS:
- EPA Id: CAL000191826

BENSON TOWN CLEANERS (Continued) **1000686168**

NAICS Code: 81232
NAICS Description: Drycleaning and Laundry Services (except Coin-Operated)
SIC Code: 7211
SIC Description: Power Laundries, Family and Commercial
Create Date: 09/13/2000
Facility Active: Yes
Inactive Date: Not reported
Facility Addr2: Not reported
Owner Name: JONG YOUN KIM
Owner Address: 1651 W FOOTHILL BLVD UNIT L
Owner Address 2: Not reported
Owner Telephone: 9094351506
Contact Name: JONG YOUN KIM/OWNER
Contact Address: 1651 W FOOTHILL BLVD UNIT L
Contact Address 2: Not reported
Contact Telephone: 9099312969
Mailing Name: Not reported
Mailing Address 1: 1651 W FOOTHILL BLVD UNIT L
Mailing Address 2: Not reported
Mailing City: UPLAND
Mailing State: CA
Mailing Zip: 917860000
Owner Fax: 0000000000
Region Code: 4

G26 **FENCE CRAFT OF UPLAND** **HIST UST** **U001570671**
South **1780 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.075 mi.
396 ft. **Site 2 of 7 in cluster G**

Relative: HIST UST:
Lower
File Number: 00029E8E
Actual: URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029E8E.pdf
1343 ft. Region: STATE
Facility ID: 00000017811
Facility Type: Other
Other Type: FENCE INSTALLATION &
Contact Name: JAMES H. SPEARS
Telephone: 7149817095
Owner Name: FENCE CRAFT OF UPLAND
Owner Address: 1780 W. FOOTHILL BLVD.
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00001800
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Visual, None

Click here for Geo Tracker PDF:

G27 **FENCE CRAFT OF UPLAND, INC** **SWEEPS UST** **S101619065**
South **1780 W FOOTHILL BLVD** **CA FID UST** **N/A**
< 1/8 **UPLAND, CA 91786**
0.075 mi.
396 ft. **Site 3 of 7 in cluster G**

Relative:
Lower

Actual:
1343 ft.

SWEEPS UST:

Status:	Active
Comp Number:	17811
Number:	1
Board Of Equalization:	44-020659
Referral Date:	03-27-90
Action Date:	03-27-90
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	Not reported
Tank Status:	Not reported
Capacity:	Not reported
Active Date:	Not reported
Tank Use:	Not reported
STG:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	17811
Number:	Not reported
Board Of Equalization:	44-020659
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	36-000-017811-000001
Tank Status:	Not reported
Capacity:	1800
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	1

CA FID UST:

Facility ID:	36001473
Regulated By:	UTNKA
Regulated ID:	00017811
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	1780 W FOOTHILL BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	UPLAND 91786
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

28
SSW
< 1/8
0.077 mi.
405 ft.

DAVID SPENCER PAINTING
1810 W FOOTHILL BLVD
UPLAND, CA 91786

San Bern. Co. Permit

S105698413
N/A

Relative:
Lower

Actual:
1340 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0007558
Owner:	SPENCER, DAVID & DESHANNA
Permit Number:	PT0012975
Permit Category:	CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	12/31/2008

H29
SW
< 1/8
0.078 mi.
410 ft.

FOOTHILL CAR WASH &DETAIL
2016 W FOOTHILL BLVD
UPLAND, CA 91786

Site 1 of 5 in cluster H

San Bern. Co. Permit

S102042447
N/A

Relative:
Lower

Actual:
1347 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0001769
Owner:	DKD CARWASH INC
Permit Number:	PT0010988
Permit Category:	UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status:	INACTIVE
Expiration Date:	04/30/2014

Region:	SAN BERNARDINO
Facility ID:	FA0001769
Owner:	DKD CARWASH INC
Permit Number:	PT0010989
Permit Category:	UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status:	INACTIVE
Expiration Date:	04/30/2014

Region:	SAN BERNARDINO
Facility ID:	FA0001769
Owner:	DKD CARWASH INC
Permit Number:	PT0010990
Permit Category:	UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status:	INACTIVE
Expiration Date:	04/30/2014

Region:	SAN BERNARDINO
Facility ID:	FA0001769
Owner:	DKD CARWASH INC
Permit Number:	PT0004088
Permit Category:	HAZMAT HANDLER - UST ONLY
Facility Status:	INACTIVE
Expiration Date:	04/30/2014

H30 **CAR WASH USA** **UST** **U003785103**
SW **2016 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.078 mi.
410 ft. **Site 2 of 5 in cluster H**

Relative: UST:
Lower
Facility ID: 88016900
Actual: Permitting Agency: SAN BERNARDINO COUNTY
1347 ft. Latitude: 34.1074855
Longitude: -117.6895109

H31 **CAR WASH USA** **SWEEPS UST** **S106924011**
SW **2016 FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.078 mi.
410 ft. **Site 3 of 5 in cluster H**

Relative: SWEEPS UST:
Lower
Status: Active
Actual: Comp Number: 6905
1347 ft. Number: 2
Board Of Equalization: 44-035722
Referral Date: 06-28-94
Action Date: 06-28-94
Created Date: 06-28-94
Owner Tank Id: 1
SWRCB Tank Id: 36-000-006905-000001
Tank Status: A
Capacity: 12000
Active Date: 06-28-94
Tank Use: M.V. FUEL
STG: P
Content: PRM UNLEADED
Number Of Tanks: 3

Status: Active
Comp Number: 6905
Number: 2
Board Of Equalization: 44-035722
Referral Date: 06-28-94
Action Date: 06-28-94
Created Date: 06-28-94
Owner Tank Id: 2
SWRCB Tank Id: 36-000-006905-000002
Tank Status: A
Capacity: 1200
Active Date: 06-29-94
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 6905
Number: 2
Board Of Equalization: 44-035722
Referral Date: 06-28-94
Action Date: 06-28-94
Created Date: 06-28-94

CAR WASH USA (Continued) **S106924011**

Owner Tank Id:	3
SWRCB Tank Id:	36-000-006905-000003
Tank Status:	A
Capacity:	1200
Active Date:	06-29-94
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

H32 **BEST GUYS FAST LUBE & REPAIR** **San Bern. Co. Permit** **S100854706**
SW **2018 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.078 mi.
410 ft. **Site 4 of 5 in cluster H**

Relative: San Bern. Co. Permit:
Lower

Actual:
1347 ft.

Region:	SAN BERNARDINO
Facility ID:	FA0015804
Owner:	BEST GUYS FAST LUBE & REPAIR
Permit Number:	PT0034437
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	02/28/2017

Region:	SAN BERNARDINO
Facility ID:	FA0015804
Owner:	BEST GUYS FAST LUBE & REPAIR
Permit Number:	PT0034436
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	INACTIVE
Expiration Date:	02/28/2017

Region:	SAN BERNARDINO
Facility ID:	FA0015498
Owner:	GUTIERREZ SAMUEL
Permit Number:	PT0034021
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	04/30/2015

Region:	SAN BERNARDINO
Facility ID:	FA0014297
Owner:	MUSTAFA, MAYAR
Permit Number:	PT0025116
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	04/30/2015

Region:	SAN BERNARDINO
Facility ID:	FA0015498
Owner:	GUTIERREZ SAMUEL
Permit Number:	PT0034020
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	INACTIVE
Expiration Date:	04/30/2015

Region: SAN BERNARDINO

BEST GUYS FAST LUBE & REPAIR (Continued) **S100854706**

Facility ID: FA0014297
Owner: MUSTAFA, MAYAR
Permit Number: PT0025115
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: INACTIVE
Expiration Date: 04/30/2015

Region: SAN BERNARDINO
Facility ID: FA0012053
Owner: ANTHONY AUTOMOTIVE
Permit Number: PT0021211
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 02/28/2012

Region: SAN BERNARDINO
Facility ID: FA0012053
Owner: ANTHONY AUTOMOTIVE
Permit Number: PT0021212
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 02/28/2011

Region: SAN BERNARDINO
Facility ID: FA0000896
Owner: LA SCALA, MICHAEL
Permit Number: PT0004179
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 09/30/2008

Region: SAN BERNARDINO
Facility ID: FA0000896
Owner: LA SCALA, MICHAEL
Permit Number: PT0004178
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 09/30/2008

I33 **JIFFY LUBE #1876** **AST** **A100345836**
SSE **1640 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.080 mi.
422 ft. **Site 1 of 2 in cluster I**

Relative: AST:
Lower
Actual: Certified Unified Program Agencies: San Bernardino
1353 ft. Owner: A FANTICOLA COMPANIES, INC.
Total Gallons: 5,610
CERSID: Not reported
Facility ID: Not reported
Business Name: Not reported
Phone: Not reported
Fax: Not reported
Mailing Address: Not reported
Mailing Address City: Not reported
Mailing Address State: Not reported
Mailing Address Zip Code: Not reported

JIFFY LUBE #1876 (Continued) **A100345836**

Operator Name: Not reported
Operator Phone: Not reported
Owner Phone: Not reported
Owner Mail Address: Not reported
Owner State: Not reported
Owner Zip Code: Not reported
Owner Country: Not reported
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: Not reported

Certified Unified Program Agencies: Not reported
Owner: A FANTICOLA COMPANIES, INC
Total Gallons: Not reported
CERSID: 10040914
Facility ID: FA0004131
Business Name: Heartland Group
Phone: 9099816033
Fax: 8479604990
Mailing Address: 105 DECKER COURT, STE 900
Mailing Address City: IRVING
Mailing Address State: TX
Mailing Address Zip Code: 75062
Operator Name: A. FANTICOLA COMPANIES, INC.
Operator Phone: 9728127900
Owner Phone: 9728127900
Owner Mail Address: 105 DECKER CT STE 900
Owner State: TX
Owner Zip Code: 75062
Owner Country: United States
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: CAL000205459

I34 **JIFFY LUBE #1876** **San Bern. Co. Permit** **S104905298**
SSE **1640 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.080 mi.
422 ft. **Site 2 of 2 in cluster I**

Relative:
Lower

Actual:
1353 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0004131
Owner: Heartland Automotive Services II
Permit Number: PT0000389
Permit Category: LARGE QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 11/30/2018

JIFFY LUBE #1876 (Continued) **S104905298**

Region: SAN BERNARDINO
Facility ID: FA0004131
Owner: Heartland Automotive Services II
Permit Number: PT0000398
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 11/30/2018

Region: SAN BERNARDINO
Facility ID: FA0004131
Owner: Heartland Automotive Services II
Permit Number: PT0000410
Permit Category: APSA 1,320-10,000 GAL FAC CAPACITY
Facility Status: ACTIVE
Expiration Date: 11/30/2018

H35 **TIRE PROS OF UPLAND** **San Bern. Co. Permit** **S109521179**
SW **2020 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.083 mi.
437 ft. **Site 5 of 5 in cluster H**

Relative: **Lower**
Actual: **1346 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0012081
Owner: SUNNY,YS KIM.
Permit Number: PT0021267
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 03/31/2018

Region: SAN BERNARDINO
Facility ID: FA0012081
Owner: SUNNY,YS KIM.
Permit Number: PT0021268
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 03/31/2018

J36 **AMERICAN AUTOMOTIVE** **San Bern. Co. Permit** **S110374450**
SW **933 N CENTRAL UNIT D** **N/A**
< 1/8 **UPLAND, CA 91786**
0.084 mi.
445 ft. **Site 1 of 10 in cluster J**

Relative: **Lower**
Actual: **1336 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0012068
Owner: LA SCALA, MICHAEL
Permit Number: PT0021236
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 02/28/2018

Region: SAN BERNARDINO
Facility ID: FA0012068

AMERICAN AUTOMOTIVE (Continued) **S110374450**

Owner: LA SCALA, MICHAEL
Permit Number: PT0021235
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 02/28/2018

J37 **MINA CLEANERS** **EDR Hist Cleaner** **1020041478**
SW **933 N CENTRAL AVE STE A** **N/A**
< 1/8 **UPLAND, CA 91786**
0.084 mi.
445 ft. **Site 2 of 10 in cluster J**

Relative: EDR Hist Cleaner
Lower

Actual: **1336 ft.**

Year:	Name:	Type:
1995	MINA CLEANERS	Drycleaning Plants, Except Rugs
1996	MINA CLEANERS	Drycleaning Plants, Except Rugs
1997	MINA CLEANERS	Drycleaning Plants, Except Rugs
1998	MINA CLEANERS	Drycleaning Plants, Except Rugs
1999	MINA CLEANERS	Drycleaning Plants, Except Rugs
2000	MINA CLEANERS	Drycleaning Plants, Except Rugs
2001	MINA CLEANERS	Drycleaning Plants, Except Rugs
2002	MINA CLEANERS	Drycleaning Plants, Except Rugs
2003	MINA CLEANERS	Drycleaning Plants, Except Rugs
2004	MINA CLEANERS	Drycleaning Plants, Except Rugs
2005	MINA CLEANERS	Drycleaning Plants, Except Rugs
2006	MINA CLEANERS	Drycleaning Plants, Except Rugs
2007	MINA CLEANERS	Drycleaning Plants, Except Rugs
2008	MINA CLEANERS	Drycleaning Plants, Except Rugs
2009	MINA CLEANERS	Drycleaning Plants, Except Rugs

J38 **JOELS AUTOMOTIVE REPAIR** **EDR Hist Auto** **1020509097**
SW **933D N CENTRAL AVE** **N/A**
< 1/8 **UPLAND, CA 91786**
0.084 mi.
445 ft. **Site 3 of 10 in cluster J**

Relative: EDR Hist Auto
Lower

Actual: **1336 ft.**

Year:	Name:	Type:
1992	SAVE ON AUTO CARE INC	General Automotive Repair Shops
1995	KIMS AUTO REPAIR	General Automotive Repair Shops
1997	JOELS AUTOMOTIVE REPAIR	General Automotive Repair Shops
1998	JOELS AUTOMOTIVE REPAIR	General Automotive Repair Shops
1999	JOELS AUTOMOTIVE REPAIR	General Automotive Repair Shops
2000	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2001	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2002	TRANS TIME TRANSMISSION	Automotive Transmission Repair Shops
2002	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2003	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2003	R & R ROTARY SPECIALIST	General Automotive Repair Shops
2003	TRANS TIME TRANSMISSION	Automotive Transmission Repair Shops
2004	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2004	TRANS TIME TRANSMISSION	Automotive Transmission Repair Shops
2004	R & R ROTARY SPECIALIST	General Automotive Repair Shops
2005	R & R ROTARY SPECIALIST	General Automotive Repair Shops

JOELS AUTOMOTIVE REPAIR (Continued) **1020509097**

2005	TRANS TIME TRANSMISSION	Automotive Transmission Repair Shops
2005	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2006	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2006	R & R ROTARY SPECIALIST	General Automotive Repair Shops
2007	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2008	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2009	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2010	AMERICAN AUTOMOTIVE	Automotive Repair Shops, NEC
2010	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2011	AMERICAN AUTOMOTIVE	Automotive Repair Shops, NEC
2011	JOELS AUTOMOTIVE INC	General Automotive Repair Shops
2011	KIMS AUTO REPAIR	General Automotive Repair Shops
2012	KIMS AUTO REPAIR	General Automotive Repair Shops
2012	STAR AUTOMOTIVE	Automotive Repair Shops, NEC
2012	AMERICAN AUTOMOTIVE	Automotive Repair Shops, NEC
2013	STAR AUTOMOTIVE	Automotive Repair Shops, NEC
2013	AMERICAN AUTOMOTIVE	Automotive Repair Shops, NEC
2013	KIMS AUTO REPAIR	General Automotive Repair Shops
2014	STAR AUTOMOTIVE	Automotive Repair Shops, NEC
2014	AMERICAN AUTOMOTIVE	Automotive Repair Shops, NEC
2014	KIMS AUTO REPAIR	General Automotive Repair Shops

G39 **MOHS ROBERT** **EDR Hist Auto** **1020675519**
South **1784 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.085 mi.
447 ft. **Site 4 of 7 in cluster G**

Relative: EDR Hist Auto
Lower

Actual:
1340 ft.

Year:	Name:	Type:
1989	MINI TRUCK SHOP	General Automotive Repair Shops
1989	A&M TOWING & BODY SHOP	General Automotive Repair Shops
1991	A&M TOWING & BODY SHOP	General Automotive Repair Shops
1991	MINI TRUCK SHOP	General Automotive Repair Shops
1992	A&M TOWING & BODY SHOP	General Automotive Repair Shops
1992	MINI TRUCK SHOP	General Automotive Repair Shops
1993	A&M TOWING & BODY SHOP	General Automotive Repair Shops
1993	MINI TRUCK SHOP	General Automotive Repair Shops
2012	ROUTE 66 FOOTHILL LLC	Gasoline Service Stations, NEC

G40 **JOEL GILLINGWATORS** **SWEEPS UST** **S101619071**
South **1784 W FOOTHILL BLVD** **CA FID UST** **N/A**
< 1/8 **UPLAND, CA 91786**
0.085 mi.
447 ft. **Site 5 of 7 in cluster G**

Relative: SWEEPS UST:
Lower

Actual:
1340 ft.

Status:	Active	
Comp Number:	64519	
Number:	9	
Board Of Equalization:		44-021390
Referral Date:	07-06-88	
Action Date:	07-06-88	
Created Date:	02-29-88	
Owner Tank Id:	1	

JOEL GILLINGWATORS (Continued) **S101619071**

SWRCB Tank Id: 36-000-064519-000001
Tank Status: A
Capacity: 2000
Active Date: 07-06-88
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: 1

CA FID UST:
Facility ID: 36006231
Regulated By: UTNKA
Regulated ID: 00064519
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 1090 TERRACE DR
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

G41 **JOEL GILLINGWATORS** **HIST UST** **S118411708**
South **1784 WEST FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.085 mi.
447 ft. **Site 6 of 7 in cluster G**

Relative: HIST UST:
Lower
File Number: 0002A070
Actual: URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002A070.pdf
1340 ft. Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

JOEL GILLINGWATORS (Continued) **S118411708**

Click here for Geo Tracker PDF:

G42 **JOEL GILLINGWATORS** **HIST UST** **U001570682**
South **1784 W FOOTHILL BLVD** **San Bern. Co. Permit** **N/A**
< 1/8 **UPLAND, CA 91786**
0.085 mi.
447 ft. **Site 7 of 7 in cluster G**

Relative:
Lower

Actual:
1340 ft.

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000064519
Facility Type: Other
Other Type: RANCH USE
Contact Name: Not reported
Telephone: 7149828665
Owner Name: JOEL GILLINGWATORS
Owner Address: 1090 TERRACE DRIVE
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: 1980
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: 6
Leak Detection: Stock Inventor

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0008121
Owner: MALCOLM, BODLEY N.
Permit Number: PT0014219
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 05/31/2002

Region: SAN BERNARDINO
Facility ID: FA0008121
Owner: MALCOLM, BODLEY N.
Permit Number: PT0014220
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 05/31/2002

J43 **R & R ROTARY** **San Bern. Co. Permit** **S105482105**
SW **933 CENTRAL D** **N/A**
< 1/8 **UPLAND, CA 91786**
0.093 mi.
492 ft. **Site 4 of 10 in cluster J**

Relative: **Lower**
Actual: **1334 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0005182
Owner:	SINGH, RICHARD L. & RUBY
Permit Number:	PT0010117
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	05/31/2007

Region:	SAN BERNARDINO
Facility ID:	FA0005182
Owner:	SINGH, RICHARD L. & RUBY
Permit Number:	PT0010118
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	05/31/2007

E44 **PACIFIC OIL COMPANY LLC** **EDR Hist Auto** **1020540519**
SE **1639 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.096 mi.
509 ft. **Site 5 of 7 in cluster E**

Relative: **Lower**
Actual: **1361 ft.**

EDR Hist Auto

Year:	Name:	Type:
2005	PACIFIC OIL CO LLC	Gasoline Service Stations, NEC
2006	PACIFIC OIL COMPANY LLC	Gasoline Service Stations, NEC
2007	PACIFIC OIL COMPANY LLC	Gasoline Service Stations, NEC
2008	PACIFIC OIL COMPANY LLC	Gasoline Service Stations, NEC
2009	PACIFIC OIL COMPANY LLC	Gasoline Service Stations, NEC

E45 **CABLE CAR WASH** **SWEEPS UST** **S105698409**
SE **1639 W FOOTHILL BLVD** **San Bern. Co. Permit** **N/A**
< 1/8 **UPLAND, CA 91786**
0.096 mi.
509 ft. **Site 6 of 7 in cluster E**

Relative: **Lower**
Actual: **1361 ft.**

SWEEPS UST:

Status:	Active
Comp Number:	353
Number:	1
Board Of Equalization:	Not reported
Referral Date:	02-16-93
Action Date:	02-16-93
Created Date:	02-16-93
Owner Tank Id:	1
SWRCB Tank Id:	36-000-000353-000001
Tank Status:	A
Capacity:	12000
Active Date:	02-16-93
Tank Use:	M.V. FUEL

CABLE CAR WASH (Continued) **S105698409**

STG: P
Content: DIESEL
Number Of Tanks: 1

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0006931
Owner: MIKE CHOO
Permit Number: PT0010628
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 12/31/2018

Region: SAN BERNARDINO
Facility ID: FA0006931
Owner: MIKE CHOO
Permit Number: PT0010629
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 12/31/2018

Region: SAN BERNARDINO
Facility ID: FA0006931
Owner: MIKE CHOO
Permit Number: PT0010630
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 12/31/2018

Region: SAN BERNARDINO
Facility ID: FA0006931
Owner: MIKE CHOO
Permit Number: PT0010631
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 12/31/2018

Region: SAN BERNARDINO
Facility ID: FA0006931
Owner: MIKE CHOO
Permit Number: PT0009813
Permit Category: HAZMAT HANDLER - UST ONLY
Facility Status: ACTIVE
Expiration Date: 12/31/2018

Region: SAN BERNARDINO
Facility ID: FA0006931
Owner: MIKE CHOO
Permit Number: PT0022120
Permit Category: WASTE INCIDENTAL UST OPERATION ONLY
Facility Status: ACTIVE
Expiration Date: 12/31/2018

E46 **UNOCAL** **UST** **U003785525**
SE **1639 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.096 mi.
509 ft. **Site 7 of 7 in cluster E**

Relative: UST:
Lower
Facility ID: 99047800
Actual: Permitting Agency: SAN BERNARDINO COUNTY
1361 ft. Latitude: 34.1088939
Longitude: -117.6800301

Facility ID: FA0006931
Permitting Agency: San Bernardino County Fire Department
Latitude: 34.107468
Longitude: -117.681396

J47 **UPLAND MERCEDES REPAIR** **San Bern. Co. Permit** **S103676333**
SW **923 CENTRAL AVE** **N/A**
< 1/8 **UPLAND, CA 91786**
0.105 mi.
553 ft. **Site 5 of 10 in cluster J**

Relative: San Bern. Co. Permit:
Lower
Region: SAN BERNARDINO
Facility ID: FA0013653
Actual: Owner: AWADALLA, ASSAAD
1332 ft. Permit Number: PT0023959
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 12/31/2017

Region: SAN BERNARDINO
Facility ID: FA0013653
Owner: AWADALLA, ASSAAD
Permit Number: PT0023958
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: INACTIVE
Expiration Date: 12/31/2014

J48 **M AND N TRANSMISSIONS** **RCRA-SQG** **1004678113**
SW **923 CENTRAL AVE STE J** **FINDS** **CAR000105213**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.105 mi. **HAZNET**
553 ft. **Site 6 of 10 in cluster J**

Relative: RCRA-SQG:
Lower
Date form received by agency: 09/13/2001
Actual: Facility name: M AND N TRANSMISSIONS
1332 ft. Facility address: 923 CENTRAL AVE STE J
UPLAND, CA 91786
EPA ID: CAR000105213
Contact: MARIO ACEVES
Contact address: 923 CENTRAL AVE STE J
UPLAND, CA 91786
Contact country: US
Contact telephone: 909-373-0566
Contact email: Not reported

M AND N TRANSMISSIONS (Continued) **1004678113**

EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: MARIO ACEVES
Owner/operator address: 923 CENTRAL AVE STE J
UPLAND, CA 91786
Owner/operator country: Not reported
Owner/operator telephone: 909-375-0567
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D000
. Waste name: Not Defined

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

Violation Status: No violations found

FINDS:

Registry ID: 110012232057

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

M AND N TRANSMISSIONS (Continued) **1004678113**

corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1004678113
Registry ID:	110012232057
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110012232057

HAZNET:

envid:	1004678113
Year:	2001
GEPAID:	CAR000105213
Contact:	Mario Aceves
Telephone:	9093730566
Mailing Name:	Not reported
Mailing Address:	923 Central Ave Ste J
Mailing City,St,Zip:	Upland, CA 91786
Gen County:	Not reported
TSD EPA ID:	CAT000613927
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.27
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

K49 **BENRI MOTOR** **San Bern. Co. Permit** **S113883384**
SSE **1710 W FOOTHILL BLVD STE A2** **N/A**
< 1/8 **UPLAND, CA 91786**
0.105 mi.
553 ft. **Site 1 of 11 in cluster K**

Relative:
Lower

Actual:
1343 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0015110
Owner:	JEFF SANGARI
Permit Number:	PT0026343
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	09/30/2015

Region:	SAN BERNARDINO
Facility ID:	FA0015110
Owner:	JEFF SANGARI
Permit Number:	PT0026342
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	INACTIVE
Expiration Date:	09/30/2015

K50 **TOYOTA SPECIALITIES** **RCRA-SQG** **1000342889**
SSE **1710 W FOOTHILL BLVD A-3** **FINDS** **CAD982321242**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.105 mi. **San Bern. Co. Permit**
553 ft. **Site 2 of 11 in cluster K**

Relative: Lower

Actual: 1343 ft.

RCRA-SQG:
Date form received by agency: 03/10/1988
Facility name: TOYOTA SPECIALITIES
Facility address: 1710 W FOOTHILL BLVD A-3
UPLAND, CA 91786
EPA ID: CAD982321242
Mailing address: W FOOTHILL BLVD A-3
UPLAND, CA 91786
Contact: ENVIRONMENTAL MANAGER
Contact address: 1710 W FOOTHILL BLVD A-3
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-982-1630
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KEN WILLIAMS
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No

TOYOTA SPECIALITIES (Continued) **1000342889**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110009543618

Environmental Interest/Information System
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000342889
Registry ID:	110009543618
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110009543618

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0009087
Owner:	KHOSROW NOOROHANI
Permit Number:	PT0015134
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	08/31/2005

Region:	SAN BERNARDINO
Facility ID:	FA0009087
Owner:	KHOSROW NOOROHANI
Permit Number:	PT0015133
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	08/31/2005

K51 **TOYLEXURA** **San Bern. Co. Permit** **S107448077**
SSE **1710 W FOOTHILL BLVD A-3** **N/A**
< 1/8 **UPLAND, CA 91786**
0.105 mi.
553 ft. **Site 3 of 11 in cluster K**

Relative: **Lower**
Actual: **1343 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0006759
Owner:	LAING, CONRAD
Permit Number:	PT0004690
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	03/31/2004

Region:	SAN BERNARDINO
Facility ID:	FA0006759
Owner:	LAING, CONRAD
Permit Number:	PT0004691
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	03/31/2004

K52 **UNDERGROUND AUTOMOTIVE** **San Bern. Co. Permit** **S117896842**
SSE **1710 W FOOTHILL BLVD D-11** **N/A**
< 1/8 **UPLAND, CA 91786**
0.105 mi.
553 ft. **Site 4 of 11 in cluster K**

Relative: **Lower**
Actual: **1343 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0015881
Owner:	JEFF LEWIS
Permit Number:	PT0034569
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	ACTIVE
Expiration Date:	03/31/2018

Region:	SAN BERNARDINO
Facility ID:	FA0015881
Owner:	JEFF LEWIS
Permit Number:	PT0037828
Permit Category:	HAZMAT HANDLER GENERAL ACT.(NB)
Facility Status:	FEE EXEMPT
Expiration Date:	03/31/2018

K53 **REIDS GM AUTO SERV** **RCRA-SQG** **1000192413**
SSE **1710 W FOOTHILL BLVD D14** **FINDS** **CAD982407405**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.105 mi.
553 ft. **Site 5 of 11 in cluster K**

Relative: **Lower**
Actual: **1343 ft.**

RCRA-SQG:

Date form received by agency:	08/29/1990
Facility name:	REIDS GM AUTO SERV
Facility address:	1710 W FOOTHILL BLVD D14 UPLAND, CA 91786
EPA ID:	CAD982407405

REIDS GM AUTO SERV (Continued) **1000192413**

Mailing address: W FOOTHILL BLVD D14
UPLAND, CA 91786
Contact: ENVIRONMENTAL MANAGER
Contact address: 1710 W FOOTHILL BLVD D14
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-949-1386
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: AL REID
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No

REIDS GM AUTO SERV (Continued) **1000192413**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009544653

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000192413
Registry ID: 110009544653
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110009544653

K54 **LEDEZMA AUTO BODY PAINT** **RCRA-SQG** **1000226515**
SSE **1710 W FOOTHILL BLVD B1** **FINDS** **CAD982407751**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.105 mi.
553 ft. **Site 6 of 11 in cluster K**

Relative:
Lower

Actual:
1343 ft.

RCRA-SQG:
Date form received by agency: 08/29/1990
Facility name: LEDEZMA AUTO BODY PAINT
Facility address: 1710 W FOOTHILL BLVD B1
UPLAND, CA 91786
EPA ID: CAD982407751
Mailing address: W FOOTHILL BLVD B1
UPLAND, CA 91786
Contact: ENVIRONMENTAL MANAGER
Contact address: 1710 W FOOTHILL BLVD B1
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-982-2722
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: LEDEZMA CARLOS

LEDEZMA AUTO BODY PAINT (Continued) **1000226515**

Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009544699

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

LEDEZMA AUTO BODY PAINT (Continued) **1000226515**

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ECHO:
Envid: 1000226515
Registry ID: 110009544699
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110009544699

K55 **VALLEY RADIATOR** **RCRA-SQG** **1000283342**
SSE **1710 W FOOTHILL C-1** **FINDS** **CAD982481301**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.105 mi.
553 ft. **Site 7 of 11 in cluster K**

Relative:
Lower

Actual:
1343 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: VALLEY RADIATOR
Facility address: 1710 W FOOTHILL C-1
UPLAND, CA 91786
EPA ID: CAD982481301
Mailing address: W FOOTHILL C-1
UPLAND, CA 91786
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: LINDA BRIGHT
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported

VALLEY RADIATOR (Continued) **1000283342**

Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009546321

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000283342
Registry ID: 110009546321
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110009546321

K56 **REPAIR SOLUTIONS** **RCRA-SQG** **1000146911**
SSE **1710 W FOOTHILL BLVD D-6** **FINDS** **CAD982321226**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.105 mi.
553 ft. **Site 8 of 11 in cluster K**

Relative: **Lower**

Actual: **1343 ft.**

RCRA-SQG:
Date form received by agency: 03/10/1988
Facility name: REPAIR SOLUTIONS
Facility address: 1710 W FOOTHILL BLVD D-6

REPAIR SOLUTIONS (Continued) **1000146911**

UPLAND, CA 91786
EPA ID: CAD982321226
Mailing address: W FOOTHILL BLVD D-6
UPLAND, CA 91786
Contact: ENVIRONMENTAL MANAGER
Contact address: 1710 W FOOTHILL BLVD D-6
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-949-0781
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: BRIAN WISHARD
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No

REPAIR SOLUTIONS (Continued) **1000146911**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002793674

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000146911
Registry ID: 110002793674
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002793674

K57 **VALLEY TRANSMISSIONS CORP** **EDR Hist Auto** **1020974950**
SSE **1700 W FOTHILL BLVD STE D** **N/A**
< 1/8 **UPLAND, CA 91786**
0.105 mi.
554 ft. **Site 9 of 11 in cluster K**

Relative: EDR Hist Auto
Lower

Actual: **1343 ft.**

Year:	Name:	Type:
1979	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1980	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1982	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1983	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1985	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1986	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1987	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1987	ADVANCED ALTERNATORS	Automotive Repair Shops, NEC
1988	ADVANCED ALTERNATORS	Automotive Repair Shops, NEC
1988	VALLEY TRANSMISSION	Automotive Repair Shops, NEC
1989	ADVANCED ALTERNATORS	Automotive Repair Shops, NEC
1990	ADVANCED ALTERNATORS	Automotive Repair Shops, NEC
1991	VALLEY TRANSMISSION	Automotive Transmission Repair Shops
1991	ADVANCED ALTERNATORS	Automotive Repair Shops, NEC
1992	ADVANCED ALTERNATORS	Automotive Repair Shops, NEC
1997	VALLEY TRANSMISSIONS	Automotive Transmission Repair Shops
1998	VALLEY TRANSMISSIONS	Automotive Transmission Repair Shops
1999	VALLEY TRANSMISSIONS	Automotive Transmission Repair Shops
2000	VALLEY TRANSMISSIONS	Automotive Transmission Repair Shops
2001	VALLEY TRANSMISSIONS	Automotive Transmission Repair Shops

VALLEY TRANSMISSIONS CORP (Continued) **1020974950**

2002	VALLEY TRANSMISSIONS	Automotive Transmission Repair Shops
2003	VALLEY TRANSMISSIONS	Automotive Transmission Repair Shops
2004	VALLEY TRANSMISSIONS CORP	Automotive Transmission Repair Shops
2005	VALLEY TRANSMISSIONS CORP	Automotive Transmission Repair Shops
2006	VALLEY TRANSMISSIONS CORP	Automotive Transmission Repair Shops
2006	SIGNATURE AUTO COSMETICS	General Automotive Repair Shops
2007	SIGNATURE AUTO COSMETICS	General Automotive Repair Shops
2007	VALLEY TRANSMISSIONS CORP	Automotive Transmission Repair Shops
2008	VALLEY TRANSMISSIONS CORP	Automotive Transmission Repair Shops
2008	SIGNATURE AUTO COSMETICS	General Automotive Repair Shops
2009	SIGNATURE AUTO COSMETICS	General Automotive Repair Shops
2010	SO CAL TINT	General Automotive Repair Shops

K58 **SPEEDWAY MUFFLER** **San Bern. Co. Permit** **S104770399**
SSE **1700 W FOOTHILL BLVD UNIT B** **N/A**
< 1/8 **UPLAND, CA 91786**
0.105 mi.
554 ft. **Site 10 of 11 in cluster K**

Relative: **Lower**

Actual: **1343 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0006338
Owner:	SARO GIRGOSIAN
Permit Number:	PT0005542
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status:	ACTIVE
Expiration Date:	11/30/2018

K59 **VALLEY TRANSMISSIONS** **RCRA-SQG** **1000455544**
SSE **1700 W FOOTHILL** **FINDS** **CAD982495822**
< 1/8 **UPLAND, CA 91786** **ECHO**
0.105 mi. **HAZNET**
554 ft. **Site 11 of 11 in cluster K** **San Bern. Co. Permit**

Relative: **Lower**

Actual: **1343 ft.**

RCRA-SQG:

Date form received by agency:	08/14/1990
Facility name:	VALLEY TRANSMISSIONS
Facility address:	1700 W FOOTHILL UPLAND, CA 91786
EPA ID:	CAD982495822
Mailing address:	W FOOTHILL UPLAND, CA 91786
Contact:	ENVIRONMENTAL MANAGER
Contact address:	1700 W FOOTHILL UPLAND, CA 91786
Contact country:	US
Contact telephone:	714-981-5824
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

VALLEY TRANSMISSIONS (Continued) **1000455544**

Owner/Operator Summary:
Owner/operator name: DIAZ DE TUESTA
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002831348

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource

VALLEY TRANSMISSIONS (Continued) **1000455544**

Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000455544
Registry ID:	110002831348
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002831348

HAZNET:

envid:	1000455544
Year:	2004
GEPAID:	CAD982495822
Contact:	GALO DIAZ DE TUESTA
Telephone:	9099815824
Mailing Name:	Not reported
Mailing Address:	1700 W FOOTHILL BLVD STE D
Mailing City,St,Zip:	UPLAND, CA 917863517
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	0.43
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000455544
Year:	2004
GEPAID:	CAD982495822
Contact:	GALO DIAZ DE TUESTA
Telephone:	9099815824
Mailing Name:	Not reported
Mailing Address:	1700 W FOOTHILL BLVD STE D
Mailing City,St,Zip:	UPLAND, CA 917863517
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Not reported
Tons:	2.37
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000455544
Year:	2003
GEPAID:	CAD982495822
Contact:	GALO DIAZ DE TUESTA

VALLEY TRANSMISSIONS (Continued) **1000455544**

Telephone: 9099815824
Mailing Name: Not reported
Mailing Address: 1700 W FOOTHILL BLVD STE D
Mailing City,St,Zip: UPLAND, CA 917863517
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 3.41
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: 1000455544
Year: 2002
GEPAID: CAD982495822
Contact: GALO DIAZ DE TUESTA
Telephone: 9099815824
Mailing Name: Not reported
Mailing Address: 1700 W FOOTHILL BLVD STE D
Mailing City,St,Zip: UPLAND, CA 917863517
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 3.04
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: 1000455544
Year: 2001
GEPAID: CAD982495822
Contact: GALO DIAZ DE TUESTA
Telephone: 9099815824
Mailing Name: Not reported
Mailing Address: 1700 W FOOTHILL BLVD STE D
Mailing City,St,Zip: UPLAND, CA 917863517
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 3.33
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

Click this hyperlink while viewing on your computer to access
6 additional CA_HAZNET: record(s) in the EDR Site Report.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0000293
Owner: RAFFI DAVOUDI

VALLEY TRANSMISSIONS (Continued) **1000455544**

Permit Number: PT0005541
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 11/30/2018

Region: SAN BERNARDINO
Facility ID: FA0007029
Owner: GALO, DIAZ DE TUESTA
Permit Number: PT0005544
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 07/31/2005

Region: SAN BERNARDINO
Facility ID: FA0007029
Owner: GALO, DIAZ DE TUESTA
Permit Number: PT0005543
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 07/31/2005

L60 **DINEEN TRUCKING INC** **HIST UST** **U001570665**
WSW **1062 AIRPORT DR** **N/A**
< 1/8 **UPLAND, CA 91786**
0.106 mi.
562 ft. **Site 1 of 2 in cluster L**

Relative: HIST UST:
Lower
Actual: File Number: 00029DAF
1356 ft. URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029DAF.pdf
Region: STATE
Facility ID: 00000009732
Facility Type: Other
Other Type: TRUCKING
Contact Name: Not reported
Telephone: 7149859718
Owner Name: DINEEN TRUCKING INC.
Owner Address: 1284 AIRPORT DR.
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0001

Tank Num: 001
Container Num: 001
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Visual

Click here for Geo Tracker PDF:

L61 **DINEEN TRUCKING INC** **SWEEPS UST** **S101619061**
WSW **1062 AIRPORT DR** **CA FID UST** **N/A**
< 1/8 **UPLAND, CA 91786**
0.106 mi.
562 ft. **Site 2 of 2 in cluster L**

Relative:
Lower

Actual:
1356 ft.

SWEEPS UST:

Status:	Active
Comp Number:	9732
Number:	9
Board Of Equalization:	44-020219
Referral Date:	07-07-88
Action Date:	07-07-88
Created Date:	02-29-88
Owner Tank Id:	1
SWRCB Tank Id:	36-000-009732-000001
Tank Status:	A
Capacity:	1000
Active Date:	07-07-88
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	1

CA FID UST:

Facility ID:	36007461
Regulated By:	UTNKA
Regulated ID:	00009732
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	SAME AS OWNER
Mailing Address 2:	Not reported
Mailing City,St,Zip:	UPLAND 91786
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

J62 **AFFORDABLE AUTO CARE** **San Bern. Co. Permit** **S106911258**
SW **923 N CENTRAL AVE** **N/A**
< 1/8 **UPLAND, CA 91786**
0.116 mi.
614 ft. **Site 7 of 10 in cluster J**

Relative:
Lower

Actual:
1330 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0008013
Owner:	KIM GRAY/ LORI DIKES
Permit Number:	PT0014127
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	12/31/2004

Region:	SAN BERNARDINO

AFFORDABLE AUTO CARE (Continued) **S106911258**

Facility ID: FA0008013
Owner: KIM GRAY/ LORI DIKES
Permit Number: PT0014128
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 12/31/2004

J63 **TERRY'S AUTOMOTIVE MOTORSPORTS** **San Bern. Co. Permit** **S109598640**
SW **923 N CENTRAL AVE UNIT L** **N/A**
< 1/8 **UPLAND, CA 91786**
0.116 mi.
614 ft. **Site 8 of 10 in cluster J**

Relative:
Lower

Actual:
1330 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0012403
Owner: LOEPP, AARON
Permit Number: PT0021698
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 05/31/2016

Region: SAN BERNARDINO
Facility ID: FA0012403
Owner: LOEPP, AARON
Permit Number: PT0021697
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 05/31/2016

Region: SAN BERNARDINO
Facility ID: FA0005507
Owner: RICARDO ACEVES
Permit Number: PT0001147
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 02/28/2003

Region: SAN BERNARDINO
Facility ID: FA0005507
Owner: RICARDO ACEVES
Permit Number: PT0001152
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 02/28/2003

J64 **EXOTIC MOTORCARS** **San Bern. Co. Permit** **S110496973**
SW **923 N CENTRAL STE G** **N/A**
< 1/8 **UPLAND, CA 91786**
0.116 mi.
614 ft. **Site 9 of 10 in cluster J**

Relative:
Lower

Actual:
1330 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0002972
Owner: EXOTIC MOTOR CARS LLC

EXOTIC MOTORCARS (Continued) **S110496973**

Permit Number: PT0007057
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 09/30/2018

Region: SAN BERNARDINO
Facility ID: FA0002972
Owner: EXOTIC MOTOR CARS LLC
Permit Number: PT0007058
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 09/30/2018

J65 **M & V TRANSMISSIONS** **EDR Hist Auto** **1020217019**
SW **923 N CENTRAL AVE STE J** **N/A**
< 1/8 **UPLAND, CA 91786**
0.116 mi.
614 ft. **Site 10 of 10 in cluster J**

Relative: EDR Hist Auto
Lower

Actual: **1330 ft.**

Year:	Name:	Type:
1991	PENTZ AUTOMOTIVE REPAIR	General Automotive Repair Shops
1992	JAGUAR INDEPENDENT SERVICE	General Automotive Repair Shops
1992	PENTZ AUTOMOTIVE REPAIR	General Automotive Repair Shops
1993	PENTZ AUTOMOTIVE REPAIR	General Automotive Repair Shops
1995	ABC ALTERNATORS STARTERS EXCH	Electrical Services
1995	BRADLEY GREG R	Computer Integrated Systems Design
1996	ABC ALTERNATORS STARTERS EXCH	Electrical Services
1997	JOSEPH MUNGRIA ADVANCED AUTO	Automotive Repair Shops, NEC
1998	JOSEPH MUNGRIA ADVANCED AUTO	Automotive Repair Shops, NEC
1999	JOSEPH MUNGRIA ADVANCED AUTO	Automotive Repair Shops, NEC
2000	JAGUAR INDEPENDENT SERVICE	General Automotive Repair Shops
2001	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2001	JAGUAR INDEPENDENT SERVICE	General Automotive Repair Shops
2002	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2002	JAGUAR INDEPENDENT SERVICE	General Automotive Repair Shops
2003	JAGUAR INDEPENDENT SERVICE	General Automotive Repair Shops
2004	JAGUAR INDEPENDENT SERVICE	General Automotive Repair Shops
2004	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2005	TERRYS AUTOMOTIVE & MOTOR SPO	General Automotive Repair Shops
2005	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2006	TERRYS AUTOMOTIVE & MOTOR SPO	General Automotive Repair Shops
2006	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2007	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops
2007	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2008	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops
2008	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2008	AMERICA OIL CO INC 9	Gasoline Service Stations, NEC
2009	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2009	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops
2010	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2010	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops
2011	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops
2011	M & V TRANSMISSIONS	Automotive Transmission Repair Shops
2012	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops
2013	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops
2014	TERRYSS AUTOMATIVE & MOTOR SP	General Automotive Repair Shops

M66 **CARL'S JR #270** **San Bern. Co. Permit** **S109598470**
SE **1610 W FOOTHILL BLVD** **N/A**
< 1/8 **UPLAND, CA 91786**
0.120 mi.
633 ft. **Site 1 of 2 in cluster M**

Relative: **Lower**
Actual: **1354 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0012456
Owner:	CKE RESTAURANTS INC
Permit Number:	PT0021817
Permit Category:	BULK CO2 AT RETAIL FOOD FACILITIES
Facility Status:	INACTIVE
Expiration Date:	05/31/2010

M67 **DOLLAR CLEANERS** **San Bern. Co. Permit** **S106910806**
SE **1630 W FOOTHILL BLVD D** **N/A**
< 1/8 **UPLAND, CA 91786**
0.120 mi.
633 ft. **Site 2 of 2 in cluster M**

Relative: **Lower**
Actual: **1354 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0002768
Owner:	BART MANUWANI
Permit Number:	PT0000351
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	11/30/2002

Region:	SAN BERNARDINO
Facility ID:	FA0002768
Owner:	BART MANUWANI
Permit Number:	PT0000344
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	11/30/2002

N68 **CABLE AIRPORT, INC.** **SWEEPS UST** **S101619056**
North **1749 W 013TH ST** **CA FID UST** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.131 mi.
692 ft. **Site 1 of 4 in cluster N**

Relative: **Higher**
Actual: **1427 ft.**

SWEEPS UST:

Status:	Not reported
Comp Number:	9343
Number:	Not reported
Board Of Equalization:	44-019815
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	36-000-009343-000001
Tank Status:	Not reported
Capacity:	1000
Active Date:	Not reported
Tank Use:	M.V. FUEL

CABLE AIRPORT, INC. (Continued) **S101619056**

STG: PRODUCT
Content: REG UNLEADED
Number Of Tanks: 2

Status: Not reported
Comp Number: 9343
Number: Not reported
Board Of Equalization: 44-019815
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-009343-000002
Tank Status: Not reported
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: AVIA. GAS
Number Of Tanks: Not reported

Status: Active
Comp Number: 9343
Number: 9
Board Of Equalization: 44-019815
Referral Date: 07-28-92
Action Date: 05-24-94
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 36-000-009343-000003
Tank Status: A
Capacity: 10000
Active Date: 06-28-88
Tank Use: M.V. FUEL
STG: P
Content: AVIA. GAS
Number Of Tanks: 3

Status: Active
Comp Number: 9343
Number: 9
Board Of Equalization: 44-019815
Referral Date: 07-28-92
Action Date: 05-24-94
Created Date: 02-29-88
Owner Tank Id: 3
SWRCB Tank Id: 36-000-009343-000004
Tank Status: A
Capacity: 12000
Active Date: 06-28-88
Tank Use: M.V. FUEL
STG: P
Content: AVIA. GAS
Number Of Tanks: Not reported

Status: Active
Comp Number: 9343

CABLE AIRPORT, INC. (Continued) **S101619056**

Number: 9
Board Of Equalization: 44-019815
Referral Date: 07-28-92
Action Date: 05-24-94
Created Date: 02-29-88
Owner Tank Id: 4
SWRCB Tank Id: 36-000-009343-000005
Tank Status: A
Capacity: 1000
Active Date: 06-28-88
Tank Use: M.V. FUEL
STG: P
Content: AVIA. GAS
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 36008315
Regulated By: UTNKA
Regulated ID: 00001656
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 1749 W 013TH ST
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

N69 **CABLE AIRPORT** **AST** **U001570656**
North **1749 W 13TH ST** **HIST UST** **N/A**
1/8-1/4 **UPLAND, CA 91786** **NPDES**
0.131 mi. **San Bern. Co. Permit**
692 ft. **Site 2 of 4 in cluster N**

Relative:
Higher

Actual:
1427 ft.

AST:
Certified Unified Program Agencies: Not reported
Owner: CABLE AIRPORT INC
Total Gallons: Not reported
CERSID: 10036681
Facility ID: FA0001662
Business Name: CABLE AIRPORT INC
Phone: (909) 982-6021
Fax: (909) 920-3608
Mailing Address: 1749 W 13TH ST
Mailing Address City: UPLAND
Mailing Address State: CA
Mailing Address Zip Code: Not reported
Operator Name: Cable Airport Inc.
Operator Phone: 951-315-9224
Owner Phone: 909-982-6021
Owner Mail Address: 1749 W 13TH ST

CABLE AIRPORT (Continued) **U001570656**

Owner State: CA
Owner Zip Code: 91786
Owner Country: United States
Property Owner Name: Cable Land Co.
Property Owner Phone: 909-982-6021
Property Owner Mailing Address: 1749 W 13TH ST
Property Owner City: UPLAND
Property Owner Stat : CA
Property Owner Zip Code: 91786
Property Owner Country: United States
EPAID: CAL000023429

HIST UST:
File Number: 00029AA1
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029AA1.pdf
Region: STATE
Facility ID: 00000001656
Facility Type: Gas Station
Other Type: Not reported
Contact Name: PAUL N. CABLE
Telephone: 7149826021
Owner Name: CABLE AIRPORT, INC.
Owner Address: 1749 W. 13TH STREET
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0007

Tank Num: 001
Container Num: 7
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: 06
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: 06
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00012000

CABLE AIRPORT (Continued) **U001570656**

Tank Used for: PRODUCT
Type of Fuel: 06
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 005
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: 06
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 006
Container Num: 5
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: 06
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 007
Container Num: 6
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

NPDES:
Npdes Number: CAS000001
Facility Status: Active
Agency Id: 0
Region: 8
Regulatory Measure Id: 213121
Order No: 97-03-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 8 36I001965
Program Type: Industrial
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 03/30/1992
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Cable Land Co
Discharge Address: 1749 W 13th St
Discharge City: Upland
Discharge State: California
Discharge Zip: 91786
RECEIVED DATE: Not reported
PROCESSED DATE: Not reported
STATUS CODE NAME: Not reported

CABLE AIRPORT (Continued) **U001570656**

STATUS DATE: Not reported
PLACE SIZE: Not reported
PLACE SIZE UNIT: Not reported
FACILITY CONTACT NAME: Not reported
FACILITY CONTACT TITLE: Not reported
FACILITY CONTACT PHONE: Not reported
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: Not reported
OPERATOR NAME: Not reported
OPERATOR ADDRESS: Not reported
OPERATOR CITY: Not reported
OPERATOR STATE: Not reported
OPERATOR ZIP: Not reported
OPERATOR CONTACT NAME: Not reported
OPERATOR CONTACT TITLE: Not reported
OPERATOR CONTACT PHONE: Not reported
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: Not reported
OPERATOR TYPE: Not reported
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: Not reported
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: Not reported
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION Not reported
CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: Not reported
RECEIVING WATER NAME: Not reported
CERTIFIER NAME: Not reported
CERTIFIER TITLE: Not reported
CERTIFICATION DATE: Not reported
PRIMARY SIC: Not reported
SECONDARY SIC: Not reported
TERTIARY SIC: Not reported

Npdes Number: Not reported
Facility Status: Not reported
Agency Id: Not reported

CABLE AIRPORT (Continued) **U001570656**

Region: 8
Regulatory Measure Id: 213121
Order No: Not reported
Regulatory Measure Type: Industrial
Place Id: Not reported
WDID: 8 36I001965
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Not reported
Discharge Address: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
RECEIVED DATE: 05/09/2008
PROCESSED DATE: 03/30/1992
STATUS CODE NAME: Active
STATUS DATE: 03/30/1992
PLACE SIZE: 90
PLACE SIZE UNIT: Acres
FACILITY CONTACT NAME: Stephen Dunn
FACILITY CONTACT TITLE: Airport Manager
FACILITY CONTACT PHONE: 909-982-6021
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: sdunn@cableairport.com
OPERATOR NAME: Cable Land Co
OPERATOR ADDRESS: 1749 W 13th St
OPERATOR CITY: Upland
OPERATOR STATE: California
OPERATOR ZIP: 91786
OPERATOR CONTACT NAME: Stephen Dunn
OPERATOR CONTACT TITLE: Airport Manager
OPERATOR CONTACT PHONE: 909-982-6021
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: sdunn@cableairport.com
OPERATOR TYPE: Private Business
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: California
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: 951-315-9224
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND: Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported

CABLE AIRPORT (Continued) **U001570656**

CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION: Not reported
CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: N
RECEIVING WATER NAME: San Antonio Creek Channel
CERTIFIER NAME: Stephen Dunn
CERTIFIER TITLE: Airport Manager
CERTIFICATION DATE: 29-JAN-15
PRIMARY SIC: 4581-Airports, Flying Fields, and Airport Terminal Services
SECONDARY SIC: Not reported
TERTIARY SIC: Not reported

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0001662
Owner: CABLE AIRPORT INC
Permit Number: PT0002494
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0003298
Owner: CABLE, CURTIS Y.
Permit Number: PT0003858
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0003298
Owner: CABLE, CURTIS Y.
Permit Number: PT0021309
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0001662
Owner: CABLE AIRPORT INC
Permit Number: PT0002493
Permit Category: APSA 10,001-100,000 GAL FAC CAPACITY
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0001662
Owner: CABLE AIRPORT INC
Permit Number: PT0002495
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 08/31/2018

CABLE AIRPORT (Continued) **U001570656**

Region: SAN BERNARDINO
Facility ID: FA0012103
Owner: BUDDINGH, TRENTON
Permit Number: PT0021300
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 03/31/2012

Region: SAN BERNARDINO
Facility ID: FA0012103
Owner: BUDDINGH, TRENTON
Permit Number: PT0021301
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 03/31/2012

N70 **SPORT AEROCOLOR** **San Bern. Co. Permit** **S105159143**
North **1749 W 13TH ST 9 A** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.131 mi.
692 ft. **Site 3 of 4 in cluster N**

Relative: **Higher**
Actual: **1427 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0006349
Owner: WILSON, KENT
Permit Number: PT0021462
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 12/31/2017

Region: SAN BERNARDINO
Facility ID: FA0006349
Owner: WILSON, KENT
Permit Number: PT0001061
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 12/31/2017

N71 **CABLE AIRPORT INC** **AST** **S102042442**
North **1749 W 13TH ST** **WDS** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.131 mi.
692 ft. **Site 4 of 4 in cluster N**

Relative: **Higher**
Actual: **1427 ft.**

AST:
Certified Unified Program Agencies: San Bernardino
Owner: CABLE AIRPORT INC
Total Gallons: 24,450
CERSID: Not reported
Facility ID: Not reported
Business Name: Not reported
Phone: Not reported
Fax: Not reported
Mailing Address: Not reported
Mailing Address City: Not reported

CABLE AIRPORT INC (Continued) **S102042442**

Mailing Address State: Not reported
Mailing Address Zip Code: Not reported
Operator Name: Not reported
Operator Phone: Not reported
Owner Phone: Not reported
Owner Mail Address: Not reported
Owner State: Not reported
Owner Zip Code: Not reported
Owner Country: Not reported
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: Not reported

WDS:
Facility ID: Santa Ana River 36I001965
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 8
Facility Telephone: 7149826021
Facility Contact: CHARLES BARNETT
Agency Name: CABLE LAND CO
Agency Address: 1749 W 13th St
Agency City,St,Zip: Upland 917862100
Agency Contact: PAUL CABLE
Agency Telephone: 7149826021
Agency Type: Private
SIC Code: 0
SIC Code 2: Not reported
Primary Waste Type: Not reported
Primary Waste: Not reported
Waste Type2: Not reported
Waste2: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported
POTW: Not reported
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to

CABLE AIRPORT INC (Continued) **S102042442**

represent no threat to water quality.

Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

72
NNW
1/8-1/4
0.132 mi.
696 ft.

UPLAND AIRCRAFT
1749 W 13TH ST
UPLAND, CA 91786

RCRA-SQG **1000355801**
FINDS **CAD981972672**
ECHO

Relative:
Higher

Actual:
1422 ft.

RCRA-SQG:
Date form received by agency: 04/26/1991
Facility name: UPLAND AIRCRAFT
Facility address: 1749 W 13TH ST
UPLAND, CA 91786
EPA ID: CAD981972672
Mailing address: W THIRTEEN ST
UPLAND, CA 91786
Contact: ENVIRONMENTAL MANAGER
Contact address: 1749 W THIRTEEN ST
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-985-2909
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NICK DELEO
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported

UPLAND AIRCRAFT (Continued) **1000355801**

Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002760744

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000355801
Registry ID: 110002760744
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002760744

O73 **JOEL'S AUTOMOTIVE, INC.** **San Bern. Co. Permit** **S104767427**
SW **933 N CENTRAL AVE B** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.144 mi.
761 ft. **Site 1 of 4 in cluster O**

Relative:
Lower

Actual:
1323 ft.

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0004153
Owner: JOEL'S AUTOMOTIVE INC
Permit Number: PT0007054

JOEL'S AUTOMOTIVE, INC. (Continued) **S104767427**

Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 04/30/2011

Region: SAN BERNARDINO
Facility ID: FA0004153
Owner: JOEL'S AUTOMOTIVE INC
Permit Number: PT0007055
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 04/30/2011

O74 **GERMAN AUTO WORKS** **RCRA-SQG 1000295520**
SW **903 N CENTRAL #C** **FINDS CAD982473944**
1/8-1/4 **UPLAND, CA 91786** **ECHO**
0.148 mi.
783 ft. **Site 2 of 4 in cluster O**

Relative:
Lower

Actual:
1324 ft.

RCRA-SQG:
Date form received by agency: 05/23/1988
Facility name: GERMAN AUTO WORKS
Facility address: 903 N CENTRAL #C
UPLAND, CA 91786
EPA ID: CAD982473944
Mailing address: N CENTRAL #C
UPLAND, CA 91786
Contact: ENVIRONMENTAL MANAGER
Contact address: 903 N CENTRAL #C
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-981-9073
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: RAY ZAMORA
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999

GERMAN AUTO WORKS (Continued) **1000295520**

Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002821812

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000295520
Registry ID: 110002821812
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002821812

O75
SW
1/8-1/4
0.148 mi.
783 ft.

GERMAN AUTO WORKS
903 N CENTRAL AVE STE C
UPLAND, CA 91786

Site 3 of 4 in cluster O

San Bern. Co. Permit

S104905677
N/A

Relative:
Lower

Actual:
1324 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0003464
Owner:	ZAMORA, RAYMOND
Permit Number:	PT0007685
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	ACTIVE
Expiration Date:	05/31/2018

Region:	SAN BERNARDINO
Facility ID:	FA0003464
Owner:	ZAMORA, RAYMOND
Permit Number:	PT0007684
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	05/31/2013

P76
WSW
1/8-1/4
0.150 mi.
790 ft.

TIRE PROS OF UPLAND
2084 W FOOTHILL BLVD
UPLAND, CA 91786

Site 1 of 5 in cluster P

San Bern. Co. Permit

S102042432
N/A

Relative:
Lower

Actual:
1345 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0001464
Owner:	SUNNY,YS KIM.
Permit Number:	PT0005230
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	10/31/2008

Region:	SAN BERNARDINO
Facility ID:	FA0001464
Owner:	SUNNY,YS KIM.
Permit Number:	PT0005229
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	10/31/2008

Q77
SE
1/8-1/4
0.156 mi.
822 ft.

JADE CONTROLS
959 N. BENSON AVENUE
UPLAND, CA 91786

Site 1 of 3 in cluster Q

RCRA-LQG

1007198793
CAD009661174

Relative:
Lower

Actual:
1344 ft.

RCRA-LQG:

Date form received by agency:	01/31/1992
Facility name:	JADE CONTROLS
Facility address:	959 N. BENSON AVENUE UPLAND, CA 91786-3549
EPA ID:	CAD009661174

JADE CONTROLS (Continued) **1007198793**

Mailing address: 9797 REAVIS ROAD
ST. LOUIS, MO 63123-5329
Contact: ROBERT L TWEDDLE
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: 314-577-5244
Contact email: Not reported
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

P78 **POMONA VALLEY POOLCHLOR** **SWEEPS UST** **1000926084**
WSW **2133 W FOOTHILL** **CA FID UST** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.161 mi.
851 ft. **Site 2 of 5 in cluster P**

Relative: SWEEPS UST:
Lower
Status: Not reported
Actual: Comp Number: 22818
1352 ft. Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-022818-000001

POMONA VALLEY POOLCHLOR (Continued) **1000926084**

Tank Status: Not reported
Capacity: 400
Active Date: Not reported
Tank Use: OIL
STG: WASTE
Content: WASTE OIL
Number Of Tanks: 2

Status: Not reported
Comp Number: 22818
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-022818-000002
Tank Status: Not reported
Capacity: 5000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 12542
Number: 1
Board Of Equalization: 44-020403
Referral Date: 09-11-91
Action Date: 09-11-91
Created Date: 09-19-88
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-012542-000001
Tank Status: A
Capacity: 1
Active Date: 09-19-88
Tank Use: UNKNOWN
STG: P
Content: UNKNOWN
Number Of Tanks: 1

CA FID UST:
Facility ID: 36005948
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 2133 W FOOTHILL
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported

POMONA VALLEY POOLCHLOR (Continued) **1000926084**

EPA ID: Not reported
Comments: Not reported
Status: Active

P79 **POMONA VALLEY POOL CHLOR** **San Bern. Co. Permit** **1005979657**
WSW **2133 W FOOTHILL BLVD STE B** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.161 mi.
851 ft. **Site 3 of 5 in cluster P**

Relative:
Lower

Actual:
1352 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0005368
Owner:	HOCKETT, DAN
Permit Number:	PT0003142
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0005368
Owner:	HOCKETT, DAN
Permit Number:	PT0003145
Permit Category:	RISK MANAGEMENT PLAN - LEVEL III
Facility Status:	INACTIVE
Expiration Date:	09/30/2009

Region:	SAN BERNARDINO
Facility ID:	FA0005368
Owner:	HOCKETT, DAN
Permit Number:	PT0003146
Permit Category:	EPCRA FACILITY
Facility Status:	INACTIVE
Expiration Date:	09/30/2009

Region:	SAN BERNARDINO
Facility ID:	FA0005368
Owner:	HOCKETT, DAN
Permit Number:	PT0003144
Permit Category:	CALARP FACILITY PERMIT
Facility Status:	INACTIVE
Expiration Date:	09/30/2009

P80 **FOOTHILLS AUTO SVC** **RCRA-SQG** **1000886280**
WSW **2133 W FOOTHILL** **FINDS** **CA0000134940**
1/8-1/4 **UPLAND, CA 91786** **ECHO**
0.161 mi. **HAZNET**
851 ft. **Site 4 of 5 in cluster P**

Relative:
Lower

Actual:
1352 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	FOOTHILLS AUTO SVC
Facility address:	2133 W FOOTHILL
	UPLAND, CA 91786
EPA ID:	CA0000134940
Mailing address:	W FOOTHILL

FOOTHILLS AUTO SVC (Continued) **1000886280**

UPLAND, CA 91786
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: PARVIZ BABAAHMADI
Owner/operator address: 2133 W FOOTHILL
UPLAND, CA 91786
Owner/operator country: Not reported
Owner/operator telephone: 909-946-3386
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009526664

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

FOOTHILLS AUTO SVC (Continued) **1000886280**

program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000886280
Registry ID:	110009526664
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110009526664

HAZNET:

envid:	1000886280
Year:	1997
GEPAID:	CA0000134940
Contact:	PARVIZ BABAAHMADI
Telephone:	9099463386
Mailing Name:	Not reported
Mailing Address:	2133 W FOOTHILL BLVD
Mailing City,St,Zip:	UPLAND, CA 917863543
Gen County:	Not reported
TSD EPA ID:	CAD093459485
TSD County:	Not reported
Waste Category:	Unspecified solvent mixture
Disposal Method:	Transfer Station
Tons:	.0417
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000886280
Year:	1997
GEPAID:	CA0000134940
Contact:	PARVIZ BABAAHMADI
Telephone:	9099463386
Mailing Name:	Not reported
Mailing Address:	2133 W FOOTHILL BLVD
Mailing City,St,Zip:	UPLAND, CA 917863543
Gen County:	Not reported
TSD EPA ID:	CAT000613927
TSD County:	Not reported
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	.2584
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000886280
Year:	1997
GEPAID:	CA0000134940
Contact:	PARVIZ BABAAHMADI
Telephone:	9099463386
Mailing Name:	Not reported
Mailing Address:	2133 W FOOTHILL BLVD

FOOTHILLS AUTO SVC (Continued) **1000886280**

Mailing City,St,Zip:	UPLAND, CA 917863543
Gen County:	Not reported
TSD EPA ID:	CAT000613927
TSD County:	Not reported
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	Transfer Station
Tons:	.9382
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000886280
Year:	1996
GEPAID:	CA0000134940
Contact:	PARVIZ BABAAHMADI
Telephone:	9099463386
Mailing Name:	Not reported
Mailing Address:	2133 W FOOTHILL BLVD
Mailing City,St,Zip:	UPLAND, CA 917863543
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution
Disposal Method:	Recycler
Tons:	1.8765
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

envid:	1000886280
Year:	1996
GEPAID:	CA0000134940
Contact:	PARVIZ BABAAHMADI
Telephone:	9099463386
Mailing Name:	Not reported
Mailing Address:	2133 W FOOTHILL BLVD
Mailing City,St,Zip:	UPLAND, CA 917863543
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Recycler
Tons:	.1668
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Bernardino

Click this hyperlink while viewing on your computer to access
6 additional CA_HAZNET: record(s) in the EDR Site Report.

Q81 **A FOOTHILL AUTO SERVICE** **San Bern. Co. Permit** **S102042391**
SSE **939 N BENSON AVE** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.163 mi.
859 ft. **Site 2 of 3 in cluster Q**

Relative:
Lower

Actual:
1340 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0000051
Owner:	Patrick Van Dusen, Inc.
Permit Number:	PT0008108
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	11/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0000051
Owner:	Patrick Van Dusen, Inc.
Permit Number:	PT0008109
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	11/30/2018

R82 **CARNIELLO ENTERPRISES** **San Bern. Co. Permit** **S104905669**
ENE **1333 N BENSON** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.166 mi.
878 ft. **Site 1 of 5 in cluster R**

Relative:
Higher

Actual:
1416 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0001785
Owner:	CARNIELLO, TRENTON J.
Permit Number:	PT0005827
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0013897
Owner:	WILTSHIRE, MIKE
Permit Number:	PT0024429
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	09/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0013897
Owner:	WILTSHIRE, MIKE
Permit Number:	PT0024428
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0001785
Owner:	CARNIELLO, TRENTON J.
Permit Number:	PT0005828
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE

CARNIELLO ENTERPRISES (Continued) **S104905669**

Expiration Date: 09/30/2018

Region: SAN BERNARDINO
Facility ID: FA0003448
Owner: BUTLER, BOB
Permit Number: PT0017198
Permit Category: ABOVEGROUND PETROLEUM STORAGE (AST) (SPCC)
Facility Status: INACTIVE
Expiration Date: 09/30/2007

Region: SAN BERNARDINO
Facility ID: FA0003448
Owner: BUTLER, BOB
Permit Number: PT0005825
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 09/30/2007

Region: SAN BERNARDINO
Facility ID: FA0003448
Owner: BUTLER, BOB
Permit Number: PT0005826
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 09/30/2007

Q83 **PARAGON FLUID POWER** **San Bern. Co. Permit** **S104768868**
SSE **687 N BENSON AVE E & F** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.167 mi.
883 ft. **Site 3 of 3 in cluster Q**

Relative: **Lower**
Actual: **1337 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0007592
Owner: HIDALGO, FELIX
Permit Number: PT0013045
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 10/31/2018

Region: SAN BERNARDINO
Facility ID: FA0007592
Owner: HIDALGO, FELIX
Permit Number: PT0013044
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 10/31/2018

O84
SW
1/8-1/4
0.175 mi.
924 ft.

NEW YORK SELTZER
903 F CENTRAL
UPLAND, CA 91786

Site 4 of 4 in cluster O

RCRA-SQG
FINDS
ECHO

1000137083
CAD982372096

Relative:
Lower

Actual:
1319 ft.

RCRA-SQG:
Date form received by agency: 04/22/1988
Facility name: NEW YORK SELTZER
Facility address: 903 F CENTRAL
UPLAND, CA 91786
EPA ID: CAD982372096
Mailing address: F CENTRAL
UPLAND, CA 91786
Contact: ENVIRONMENTAL MANAGER
Contact address: 903 F CENTRAL
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-985-3514
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: REED CARTER
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No

NEW YORK SELTZER (Continued) **1000137083**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002802977

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000137083
Registry ID:	110002802977
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002802977

R85 **EJK PRODUCTS, INC** **San Bern. Co. Permit** **S112274063**
ENE **1320 N BENSON AVE UNIT D** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.182 mi.
963 ft. **Site 2 of 5 in cluster R**

Relative:
Higher

Actual:
1416 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0014747
Owner:	EJK PRODUCTS, INC
Permit Number:	PT0025729
Permit Category:	CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	11/30/2013

P86 **RV READY** **San Bern. Co. Permit** **S109849241**
WSW **2106 W FOOTHILL BLVD** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.184 mi.
974 ft. **Site 5 of 5 in cluster P**

Relative:
Lower

Actual:
1343 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0011588
Owner:	RV READY
Permit Number:	PT0022286
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	04/30/2010

Region:	SAN BERNARDINO
Facility ID:	FA0011588
Owner:	RV READY
Permit Number:	PT0022285
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	04/30/2010

S87 **BERRY CONSTRUCTION INC** **HIST UST** **S112929254**
South **1921 WEST 11TH STREET** **HAZNET** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.188 mi.
993 ft. **Site 1 of 3 in cluster S**

Relative:
Lower

Actual:
1321 ft.

HIST UST:

File Number:	00029A00
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029A00.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported

Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

HAZNET:

envid:	S112929254
Year:	2003
GEPAID:	CAC002564256
Contact:	ROY BROWN

BERRY CONSTRUCTION INC (Continued) **S112929254**

Telephone: 9099460905
Mailing Name: Not reported
Mailing Address: 1921 WEST 11TH ST
Mailing City,St,Zip: UPLAND, CA 917860000
Gen County: Not reported
TSD EPA ID: CAT080033681
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 0.1
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: S112929254
Year: 2003
GEPAID: CAC002564256
Contact: ROY BROWN
Telephone: 9099460905
Mailing Name: Not reported
Mailing Address: 1921 WEST 11TH ST
Mailing City,St,Zip: UPLAND, CA 917860000
Gen County: Not reported
TSD EPA ID: CAT080033681
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 0.2
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

S88 **BERRY CONSTRUCTION** **RCRA-SQG** **1000372175**
South **1921 W 11TH ST** **SWEEPS UST** **CAD981970437**
1/8-1/4 **UPLAND, CA 91786** **HIST UST**
0.188 mi. **CA FID UST**
993 ft. **Site 2 of 3 in cluster S** **FINDS**
ECHO

Relative:
Lower

Actual:
1321 ft.

RCRA-SQG:
Date form received by agency: 05/21/1986
Facility name: BERRY CONSTRUCTION
Facility address: 1921 W 11TH ST
UPLAND, CA 91786
EPA ID: CAD981970437
Contact: ENVIRONMENTAL MANAGER
Contact address: 1921 W 11TH ST
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-985-9661
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

BERRY CONSTRUCTION (Continued) **1000372175**

Owner/Operator Summary:
Owner/operator name: BERRY CONSTRUCTION
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

SWEEPS UST:
Status: Active
Comp Number: 42419
Number: 9
Board Of Equalization: 44-021015
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 36-000-042419-000001
Tank Status: A

BERRY CONSTRUCTION (Continued) **1000372175**

Capacity: 9940
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 2

Status: Active
Comp Number: 42419
Number: 9
Board Of Equalization: 44-021015
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 36-000-042419-000002
Tank Status: A
Capacity: 5000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000042419
Facility Type: Other
Other Type: CONTRACTOR
Contact Name: CRAIG M. BERRY
Telephone: 7149859661
Owner Name: BERRY CONSTRUCTION, INC.
Owner Address: 1921 WEST 11TH STREET
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0002

Tank Num: 001
Container Num: 1
Year Installed: 1982
Tank Capacity: 00009940
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: 1982
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

BERRY CONSTRUCTION (Continued) **1000372175**

CA FID UST:
- Facility ID: 36008986
- Regulated By: UTNKA
- Regulated ID: 00042419
- Cortese Code: Not reported
- SIC Code: Not reported
- Facility Phone: Not reported
- Mail To: Not reported
- Mailing Address: 1921 W 011TH ST
- Mailing Address 2: Not reported
- Mailing City,St,Zip: UPLAND 91786
- Contact: Not reported
- Contact Phone: Not reported
- DUNs Number: Not reported
- NPDES Number: Not reported
- EPA ID: Not reported
- Comments: Not reported
- Status: Active

FINDS:

Registry ID: 110002759934

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
- Envid: 1000372175
- Registry ID: 110002759934
- DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002759934

R89 **GROCSIL AIRCRAFT CORP** **San Bern. Co. Permit** **S106910882**
ENE **1328 N BENSON C** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.192 mi.
1012 ft. **Site 3 of 5 in cluster R**

Relative:
Higher

Actual:
1421 ft.

San Bern. Co. Permit:
- Region: SAN BERNARDINO
- Facility ID: FA0003570
- Owner: GROCSIL AIRCRAFT CORP
- Permit Number: PT0004417
- Permit Category: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
- Facility Status: INACTIVE
- Expiration Date: 07/31/2002

R90 **STRESSCOAT INC** **San Bern. Co. Permit** **S104770724**
ENE **1334 N BENSON AVE A** **WDS** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.199 mi.
1052 ft. **Site 4 of 5 in cluster R**

Relative:
Higher

Actual:
1423 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0006486
Owner:	STRESSCOAT INC
Permit Number:	PT0004302
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status:	INACTIVE
Expiration Date:	05/31/2008

Region:	SAN BERNARDINO
Facility ID:	FA0006486
Owner:	STRESSCOAT INC
Permit Number:	PT0004303
Permit Category:	HAZARDOUS WASTE GENERATOR - 0-10 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	05/31/2003

WDS:

Facility ID:	Santa Ana River 36I011408
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	8
Facility Telephone:	9099816990
Facility Contact:	JOHNSON HALL
Agency Name:	HALL JOHNSON
Agency Address:	1334 N Benson Ave Ste A
Agency City,St,Zip:	Upland 917862188
Agency Contact:	JOHNSON HALL
Agency Telephone:	9099816990
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared

STRESSCOAT INC (Continued) **S104770724**

to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.

Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

T91 **UPLAND QUALITY FURNITURE** **San Bern. Co. Permit** **S104905270**
East **1551 W 13TH ST B&C** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.206 mi.
1089 ft. **Site 1 of 2 in cluster T**

Relative: **Lower**
Actual: **1392 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0006963
Owner: DARREN MUSO
Permit Number: PT0001228
Permit Category: HAZMAT HANDLER 0-10 EMPLOYEES
Facility Status: INACTIVE
Expiration Date: 11/30/2006

T92 **CABLE COLOR PROFESSIONAL PHOTO** **San Bern. Co. Permit** **S104764498**
East **1551 W 13TH ST 101A** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.208 mi.
1098 ft. **Site 2 of 2 in cluster T**

Relative: **Higher**
Actual: **1402 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0001663
Owner: SPEICH, RANDY
Permit Number: PT0004736
Permit Category: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 09/30/2010

R93 **CIRLAB INC** **RCRA-SQG** **1000275739**
ENE **1342 BENSON AV** **FINDS** **CAD076051895**
1/8-1/4 **UPLAND, CA 91786** **ECHO**
0.210 mi.
1108 ft. **Site 5 of 5 in cluster R**

Relative: **Higher**
Actual: **1426 ft.**

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: CIRLAB INC
Facility address: 1342 BENSON AV
UPLAND, CA 91786
EPA ID: CAD076051895
Mailing address: BENSON AV
UPLAND, CA 91786

CIRLAB INC (Continued) **1000275739**

Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No

CIRLAB INC (Continued) **1000275739**

Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002657946

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000275739
Registry ID: 110002657946
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002657946

S94 **INTERSTATE BATTERY INLAND EMPIRE** **San Bern. Co. Permit** **S121309865**
SSW **822 BERRY CT** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.211 mi.
1116 ft. **Site 3 of 3 in cluster S**

Relative: **Lower**
Actual: **1317 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0013664
Owner: LARRY BURKE ENTERPRISES
Permit Number: PT0023980
Permit Category: LARGE QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 12/31/2017

Region: SAN BERNARDINO
Facility ID: FA0013664
Owner: LARRY BURKE ENTERPRISES
Permit Number: PT0023979
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 12/31/2017

U95 **WALMART #1992** **San Bern. Co. Permit** **S103994830**
SE **1540 W FOOTHILL BLVD** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.222 mi.
1172 ft. **Site 1 of 3 in cluster U**

Relative: **Lower**
Actual: **1354 ft.**

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0007200
Owner:	Walmart Stores, Inc.
Permit Number:	PT0006732
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	11/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0007200
Owner:	Walmart Stores, Inc.
Permit Number:	PT0006733
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	11/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0007200
Owner:	Walmart Stores, Inc.
Permit Number:	PT0030382
Permit Category:	APSA 1,320-10,000 GAL FAC CAPACITY
Facility Status:	ACTIVE
Expiration Date:	11/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0007200
Owner:	Walmart Stores, Inc.
Permit Number:	PT0020763
Permit Category:	ABOVEGROUND PETROLEUM STORAGE (AST) (SPCC)
Facility Status:	INACTIVE
Expiration Date:	11/30/2013

U96 **WAL-MART STORE #1992** **AST** **A100346252**
SE **1540 W. FOOTHILL BLVD** **N/A**
1/8-1/4 **UPLAND, CA**
0.222 mi.
1172 ft. **Site 2 of 3 in cluster U**

Relative: **Lower**
Actual: **1354 ft.**

AST:

Certified Unified Program Agencies:	San Bernardino
Owner:	WAL-MART STORES INC.
Total Gallons:	1,540
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported

WAL-MART STORE #1992 (Continued) **A100346252**

Owner Phone: Not reported
Owner Mail Address: Not reported
Owner State: Not reported
Owner Zip Code: Not reported
Owner Country: Not reported
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: Not reported

U97 **WALMART #1992** **RCRA-SQG 1014387195**
SE **1540 W FOOTHILL BLVD** **AST CAR000206714**
1/8-1/4 **UPLAND, CA 91786** **HAZNET**
0.222 mi.
1172 ft. **Site 3 of 3 in cluster U**

Relative: **Lower**
Actual: **1354 ft.**

RCRA-SQG:
Date form received by agency: 06/20/2016
Facility name: WALMART #1992
Facility address: 1540 W FOOTHILL BLVD
UPLAND, CA 91786
EPA ID: CAR000206714
Mailing address: PO BOX 8041
BENTONVILLE, AR 72712-8041
Contact: ROSE ARNOLD
Contact address: PO BOX 8041
BENTONVILLE, AR 72712-8041
Contact country: US
Contact telephone: 479-277-8972
Contact email: ROSE.ARNOLD@WALMART.COM
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: WAL-MART STORES INC
Owner/operator address: PO BOX 8041
BENTONVILLE, AR 72712
Owner/operator country: US
Owner/operator telephone: 479-277-8972
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/27/1993
Owner/Op end date: Not reported

Owner/operator name: WAL-MART STORES INC

WALMART #1992 (Continued) **1014387195**

Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 07/27/1993
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 213
. Waste name: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 221
. Waste name: Waste oil and mixed oil

. Waste code: 223
. Waste name: Unspecified oil-containing waste

. Waste code: 232
. Waste name: Pesticides and other waste associated with pesticide production

. Waste code: 311
. Waste name: Pharmaceutical waste

. Waste code: 331

WALMART #1992 (Continued) **1014387195**

. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 791
. Waste name: Liquids with pH < 2

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D024
. Waste name: M-CRESOL

. Waste code: D026
. Waste name: CRESOL

. Waste code: D027

WALMART #1992 (Continued) **1014387195**

. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: D043
. Waste name: VINYL CHLORIDE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U035
. Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL

. Waste code: U058
. Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-, 2-OXIDE (OR) CYCLOPHOSPHAMIDE

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U089
. Waste name: DIETHYLSTILBESTEROL (OR) PHENOL, 4,4'-(1,2-DIETHYL-1,2-ETHENEDIYL)BIS, (E)-

. Waste code: U122
. Waste name: FORMALDEHYDE

. Waste code: U129
. Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA, 2ALPHA, 3BETA, 4ALPHA, 5ALPHA, 6BETA)- (OR) LINDANE

. Waste code: U132
. Waste name: HEXACHLOROPHENE (OR) PHENOL, 2,2'-METHYLENEBIS[3,4,6-TRICHLORO-

. Waste code: U134
. Waste name: HYDROFLUORIC ACID (C,T) (OR) HYDROGEN FLUORIDE (C,T)

. Waste code: U150
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U154

WALMART #1992 (Continued) **1014387195**

. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U159
. Waste name: 2-BUTANONE (I,T) (OR) METHYL ETHYL KETONE (MEK) (I,T)

. Waste code: U165
. Waste name: NAPHTHALENE

. Waste code: U188
. Waste name: PHENOL

. Waste code: U200
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER, (3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U205
. Waste name: SELENIUM SULFIDE (OR) SELENIUM SULFIDE SES2 (R,T)

. Waste code: U210
. Waste name: ETHENE, TETRACHLORO- (OR) TETRACHLOROETHYLENE

. Waste code: U249
. Waste name: ZINC PHOSPHIDE ZN3P2, WHEN PRESENT AT CONCENTRATIONS OF 10% OR LESS

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

. Waste code: U409
. Waste name: CARBAMIC ACID, [1,2-PHENYLENEBIS (IMINOCARBONOTHIOYL)]BIS-, DIMETHYL ESTER (OR) THIOPHANATE-METHYL

Historical Generators:
Date form received by agency: 10/28/2014
Site name: WALMART NO 1992
Classification: Small Quantity Generator

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 213
. Waste name: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 221
. Waste name: Waste oil and mixed oil

. Waste code: 232
. Waste name: Pesticides and other waste associated with pesticide production

WALMART #1992 (Continued) **1014387195**

. Waste code: 311
. Waste name: Pharmaceutical waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 541
. Waste name: Photochemicals / photo processing waste

. Waste code: 791
. Waste name: Liquids with pH < 2

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

WALMART #1992 (Continued) **1014387195**

. Waste code: D024
. Waste name: M-CRESOL

. Waste code: D026
. Waste name: CRESOL

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: D043
. Waste name: VINYL CHLORIDE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U035
. Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL

. Waste code: U058
. Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-, 2-OXIDE (OR) CYCLOPHOSPHAMIDE

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U112
. Waste name: ACETIC ACID, ETHYL ESTER (I) (OR) ETHYL ACETATE (I)

. Waste code: U122
. Waste name: FORMALDEHYDE

. Waste code: U129
. Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA, 2ALPHA, 3BETA, 4ALPHA, 5ALPHA, 6BETA)- (OR) LINDANE

. Waste code: U132
. Waste name: HEXACHLOROPHENE (OR) PHENOL, 2,2'-METHYLENEBIS[3,4,6-TRICHLORO-

. Waste code: U134

WALMART #1992 (Continued) **1014387195**

. Waste name: HYDROFLUORIC ACID (C,T) (OR) HYDROGEN FLUORIDE (C,T)

. Waste code: U150
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U159
. Waste name: 2-BUTANONE (I,T) (OR) METHYL ETHYL KETONE (MEK) (I,T)

. Waste code: U165
. Waste name: NAPHTHALENE

. Waste code: U188
. Waste name: PHENOL

. Waste code: U200
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER, (3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U205
. Waste name: SELENIUM SULFIDE (OR) SELENIUM SULFIDE SES2 (R,T)

. Waste code: U210
. Waste name: ETHENE, TETRACHLORO- (OR) TETRACHLOROETHYLENE

. Waste code: U249
. Waste name: ZINC PHOSPHIDE ZN3P2, WHEN PRESENT AT CONCENTRATIONS OF 10% OR LESS

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

. Waste code: U409
. Waste name: CARBAMIC ACID, [1,2-PHENYLENEBIS (IMINOCARBONOTHIOYL)]BIS-, DIMETHYL ESTER (OR) THIOPHANATE-METHYL

Date form received by agency: 06/27/2011
Site name: WALMART NO 1992
Classification: Small Quantity Generator

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 135
. Waste name: Unspecified aqueous solution

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 212
. Waste name: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)

WALMART #1992 (Continued) **1014387195**

. Waste code: 213
. Waste name: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 221
. Waste name: Waste oil and mixed oil

. Waste code: 223
. Waste name: Unspecified oil-containing waste

. Waste code: 232
. Waste name: Pesticides and other waste associated with pesticide production

. Waste code: 281
. Waste name: Adhesives

. Waste code: 291
. Waste name: Latex waste

. Waste code: 311
. Waste name: Pharmaceutical waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 343
. Waste name: Unspecified organic liquid mixture

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 561
. Waste name: Detergent and soap

. Waste code: 791
. Waste name: Liquids with pH < 2

. Waste code: 792
. Waste name: Liquids with pH < 2 with metals

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

WALMART #1992 (Continued) **1014387195**

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D024
. Waste name: M-CRESOL

. Waste code: D026
. Waste name: CRESOL

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

WALMART #1992 (Continued) **1014387195**

. Waste code: U035
. Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL

. Waste code: U058
. Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-, 2-OXIDE (OR) CYCLOPHOSPHAMIDE

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U080
. Waste name: METHANE, DICHLORO- (OR) METHYLENE CHLORIDE

. Waste code: U122
. Waste name: FORMALDEHYDE

. Waste code: U129
. Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA, 2ALPHA, 3BETA, 4ALPHA, 5ALPHA, 6BETA)- (OR) LINDANE

. Waste code: U132
. Waste name: HEXACHLOROPHENE (OR) PHENOL, 2,2'-METHYLENEBIS[3,4,6-TRICHLORO-

. Waste code: U150
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U159
. Waste name: 2-BUTANONE (I,T) (OR) METHYL ETHYL KETONE (MEK) (I,T)

. Waste code: U165
. Waste name: NAPHTHALENE

. Waste code: U182
. Waste name: 1,3,5-TRIOXANE, 2,4,6-TRIMETHYL- (OR) PARALDEHYDE

. Waste code: U188
. Waste name: PHENOL

. Waste code: U200
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER, (3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U205
. Waste name: SELENIUM SULFIDE (OR) SELENIUM SULFIDE SES2 (R,T)

. Waste code: U248
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYL-BUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS OF 0.3% OR LESS (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS OF 0.3% OR LESS

. Waste code: U249
. Waste name: ZINC PHOSPHIDE ZN3P2, WHEN PRESENT AT CONCENTRATIONS OF 10% OR LESS

WALMART #1992 (Continued) **1014387195**

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

. Waste code: U409
. Waste name: CARBAMIC ACID, [1,2-PHENYLENEBIS (IMINOCARBONOTHIOYL)]BIS-, DIMETHYL ESTER (OR) THIOPHANATE-METHYL

. Waste code: U411
. Waste name: PHENOL, 2-(1-METHYLETHOXY)-, METHYLCARBAMATE (OR) PROPOXUR

Date form received by agency: 04/04/2010
Site name: WALMART NO 1992
Classification: Small Quantity Generator

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 232
. Waste name: Pesticides and other waste associated with pesticide production

. Waste code: 311
. Waste name: Pharmaceutical waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

. Waste code: 791
. Waste name: Liquids with pH < 2

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005

WALMART #1992 (Continued) **1014387195**

. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D026
. Waste name: CRESOL

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P046
. Waste name: ALPHA,ALPHA-DIMETHYLPHENETHYLAMINE (OR) BENZENEETHANAMINE, ALPHA, ALPHA-DIMETHYL-

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

WALMART #1992 (Continued) **1014387195**

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U080
. Waste name: METHANE, DICHLORO- (OR) METHYLENE CHLORIDE

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U159
. Waste name: 2-BUTANONE (I,T) (OR) METHYL ETHYL KETONE (MEK) (I,T)

. Waste code: U165
. Waste name: NAPHTHALENE

. Waste code: U182
. Waste name: 1,3,5-TRIOXANE, 2,4,6-TRIMETHYL- (OR) PARALDEHYDE

. Waste code: U188
. Waste name: PHENOL

. Waste code: U249
. Waste name: ZINC PHOSPHIDE ZN3P2, WHEN PRESENT AT CONCENTRATIONS OF 10% OR LESS

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

. Waste code: U409
. Waste name: CARBAMIC ACID, [1,2-PHENYLENEBIS (IMINOCARBONOTHIOYL)]BIS-, DIMETHYL ESTER (OR) THIOPHANATE-METHYL

. Waste code: U411
. Waste name: PHENOL, 2-(1-METHYLETHOXY)-, METHYLCARBAMATE (OR) PROPOXUR

Violation Status: No violations found

AST:
Certified Unified Program Agencies: Not reported
Owner: Walmart Stores., Inc.
Total Gallons: Not reported
CERSID: 10046521
Facility ID: FA0007200
Business Name: Walmart
Phone: (909) 920-4021
Fax: (909)920-0361
Mailing Address: 702 Southwest 8th Street
Mailing Address City: Bentonville
Mailing Address State: AR
Mailing Address Zip Code: Not reported
Operator Name: Walmart Stores., Inc.
Operator Phone: (479) 204-3911
Owner Phone: (479) 204-3911
Owner Mail Address: 702 Southwest 8th Street
Owner State: AR
Owner Zip Code: Not reported

WALMART #1992 (Continued) **1014387195**

Owner Country: United States
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: CAR000206714

HAZNET:
envid: 1014387195
Year: 2016
GEPAID: CAR000206714
Contact: ROSE ARNOLD
Telephone: 4792778972
Mailing Name: Not reported
Mailing Address: P.O. BOX 8041
Mailing City,St,Zip: BENTONVILLE, AR 727128041
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.369
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: 1014387195
Year: 2016
GEPAID: CAR000206714
Contact: ROSE ARNOLD
Telephone: 4792778972
Mailing Name: Not reported
Mailing Address: P.O. BOX 8041
Mailing City,St,Zip: BENTONVILLE, AR 727128041
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Latex waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0495
Cat Decode: Latex waste
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: 1014387195
Year: 2016
GEPAID: CAR000206714
Contact: ROSE ARNOLD
Telephone: 4792778972
Mailing Name: Not reported

WALMART #1992 (Continued) **1014387195**

Mailing Address: P.O. BOX 8041
Mailing City,St,Zip: BENTONVILLE, AR 727128041
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.088
Cat Decode: Not reported
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: 1014387195
Year: 2016
GEPAID: CAR000206714
Contact: ROSE ARNOLD
Telephone: 4792778972
Mailing Name: Not reported
Mailing Address: P.O. BOX 8041
Mailing City,St,Zip: BENTONVILLE, AR 727128041
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Alkaline solution without metals pH >= 12.5
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.019
Cat Decode: Alkaline solution without metals pH >= 12.5
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: 1014387195
Year: 2016
GEPAID: CAR000206714
Contact: ROSE ARNOLD
Telephone: 4792778972
Mailing Name: Not reported
Mailing Address: P.O. BOX 8041
Mailing City,St,Zip: BENTONVILLE, AR 727128041
Gen County: San Bernardino
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0635
Cat Decode: Off-specification, aged or surplus inorganics
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

Click this hyperlink while viewing on your computer to access
98 additional CA_HAZNET: record(s) in the EDR Site Report.

V98 **AAMCO TRANSMISSION CENTER** **San Bern. Co. Permit** **S103993595**
SSW **825 N CENTRAL AVE #E** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.230 mi.
1213 ft. **Site 1 of 6 in cluster V**

Relative:
Lower

Actual:
1310 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0008436
Owner:	AUTODATA BUSINESS SYSTEMS INC
Permit Number:	PT0014723
Permit Category:	SPECIAL GENERATOR
Facility Status:	INACTIVE
Expiration Date:	05/31/2010

Region:	SAN BERNARDINO
Facility ID:	FA0008436
Owner:	AUTODATA BUSINESS SYSTEMS INC
Permit Number:	PT0014724
Permit Category:	SPECIAL HANDLER
Facility Status:	INACTIVE
Expiration Date:	05/31/2010

V99 **EXPRESS SMOG & LUBE** **San Bern. Co. Permit** **S105698392**
SSW **825 N CENTRAL AVE** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.230 mi.
1213 ft. **Site 2 of 6 in cluster V**

Relative:
Lower

Actual:
1310 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0008438
Owner:	Gene Cook
Permit Number:	PT0014727
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	05/31/2018

Region:	SAN BERNARDINO
Facility ID:	FA0008438
Owner:	Gene Cook
Permit Number:	PT0014728
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	05/31/2018

Region:	SAN BERNARDINO
Facility ID:	FA0016500
Owner:	MIKHAILIDUS, KONSTANTINE
Permit Number:	PT0035607
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	11/30/2017

Region:	SAN BERNARDINO
Facility ID:	FA0016500
Owner:	MIKHAILIDUS, KONSTANTINE
Permit Number:	PT0037520
Permit Category:	HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status:	ACTIVE

EXPRESS SMOG & LUBE (Continued) **S105698392**

Expiration Date: 11/30/2017

Region: SAN BERNARDINO
Facility ID: FA0002751
Owner: ZARAGOZA, CARLOS
Permit Number: PT0020624
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 07/31/2009

Region: SAN BERNARDINO
Facility ID: FA0002751
Owner: ZARAGOZA, CARLOS
Permit Number: PT0020625
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 07/31/2009

Region: SAN BERNARDINO
Facility ID: FA0002751
Owner: ZARAGOZA, CARLOS
Permit Number: PT0005801
Permit Category: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 07/31/2008

V100 **PAT'S AUTO REPAIR** **San Bern. Co. Permit** **S109849207**
SSW **825 N CENTRAL AVE UNIT C** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.230 mi.
1213 ft. **Site 3 of 6 in cluster V**

Relative: San Bern. Co. Permit:
Lower
Region: SAN BERNARDINO
Actual: Facility ID: FA0005244
1310 ft. Owner: ROJANAVANIJ, JASON
Permit Number: PT0005778
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: INACTIVE
Expiration Date: 11/30/2017

Region: SAN BERNARDINO
Facility ID: FA0005244
Owner: ROJANAVANIJ, JASON
Permit Number: PT0005777
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: INACTIVE
Expiration Date: 11/30/2017

V101 **AAMCO UPLAND** **San Bern. Co. Permit** **S121309859**
SSW **825 N CENTRAL UNIT A** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.230 mi.
1213 ft. **Site 4 of 6 in cluster V**

Relative:
Lower

Actual:
1310 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0013313
Owner:	Nick Barakat
Permit Number:	PT0023480
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	ACTIVE
Expiration Date:	09/30/2018

Region:	SAN BERNARDINO
Facility ID:	FA0013313
Owner:	Nick Barakat
Permit Number:	PT0023479
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status:	ACTIVE
Expiration Date:	09/30/2018

V102 **CUSTOM GARAGE AUTO FIX** **San Bern. Co. Permit** **S117566075**
SSW **825 N CENTRAL AVE B** **N/A**
1/8-1/4 **UPLAND, CA 91785**
0.230 mi.
1213 ft. **Site 5 of 6 in cluster V**

Relative:
Lower

Actual:
1310 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0015814
Owner:	SILVA, ANDRES
Permit Number:	PT0034453
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	INACTIVE
Expiration Date:	03/31/2016

V103 **SUPER AUTOMOTIVE** **San Bern. Co. Permit** **S108742684**
SSW **825 N CENTRAL UNIT E** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.230 mi.
1213 ft. **Site 6 of 6 in cluster V**

Relative:
Lower

Actual:
1310 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0014873
Owner:	FERRERAS, JOHANNA
Permit Number:	PT0025903
Permit Category:	SMALL QUANTITY GENERATOR
Facility Status:	INACTIVE
Expiration Date:	01/31/2015

Region:	SAN BERNARDINO
Facility ID:	FA0014873
Owner:	FERRERAS, JOHANNA
Permit Number:	PT0025902
Permit Category:	HAZARDOUS MATERIALS 4-10 CHEMICALS

SUPER AUTOMOTIVE (Continued) **S108742684**

Facility Status: INACTIVE
Expiration Date: 01/31/2015

Region: SAN BERNARDINO
Facility ID: FA0014133
Owner: QAYAMI, MAURICE
Permit Number: PT0024876
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 12/31/2012

Region: SAN BERNARDINO
Facility ID: FA0014133
Owner: QAYAMI, MAURICE
Permit Number: PT0024875
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 12/31/2012

Region: SAN BERNARDINO
Facility ID: FA0006956
Owner: SUPOCH SUJARIT
Permit Number: PT0005798
Permit Category: SPECIAL GENERATOR
Facility Status: INACTIVE
Expiration Date: 07/31/2004

Region: SAN BERNARDINO
Facility ID: FA0006956
Owner: SUPOCH SUJARIT
Permit Number: PT0005797
Permit Category: SPECIAL HANDLER
Facility Status: INACTIVE
Expiration Date: 07/31/2004

W104 **HOLLIDAY ROCK COINC** **HIST UST** **U001570677**
WSW **2193 W FOOTHILL BLVD** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.235 mi.
1241 ft. **Site 1 of 4 in cluster W**

Relative: HIST UST:
Lower
File Number: 00029FC7
Actual: URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029FC7.pdf
1346 ft. Region: STATE
Facility ID: 00000019790
Facility Type: Other
Other Type: READY MIX, ROCK & SA
Contact Name: FREDRICK N. HOLLIDAY
Telephone: 7149821553
Owner Name: HOLLIDAY ROCK CO.,INC.
Owner Address: 2193 W. FOOTHILL BLVD.
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0003

Tank Num: 001
Container Num: 1F
Year Installed: Not reported

HOLLIDAY ROCK COINC (Continued) **U001570677**

Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2F
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 3F
Year Installed: Not reported
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

W105 **HOLLIDAY ROCK** **AST** **A100345829**
WSW **2193 W. FOOTHILL BLVD** **N/A**
1/8-1/4 **UPLAND, CA**
0.235 mi.
1241 ft. **Site 2 of 4 in cluster W**

Relative: AST:
Lower
Certified Unified Program Agencies: San Bernardino
Actual: Owner: HOLLIDAY ROCK CO INC
1346 ft. Total Gallons: 20,500
CERSID: Not reported
Facility ID: Not reported
Business Name: Not reported
Phone: Not reported
Fax: Not reported
Mailing Address: Not reported
Mailing Address City: Not reported
Mailing Address State: Not reported
Mailing Address Zip Code: Not reported
Operator Name: Not reported
Operator Phone: Not reported
Owner Phone: Not reported
Owner Mail Address: Not reported
Owner State: Not reported
Owner Zip Code: Not reported
Owner Country: Not reported
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported

HOLLIDAY ROCK (Continued) **A100345829**

Property Owner Country: Not reported
EPAID: Not reported

W106
WSW
1/8-1/4
0.235 mi.
1241 ft.

Relative:
Lower

Actual:
1346 ft.

HOLLIDAY ROCK CO INC
2193 W FOOTHILL BLVD
UPLAND, CA 91786

Site 3 of 4 in cluster W

AST **S101619069**
SWEEPS UST **N/A**
CA FID UST
EMI
NPDES
San Bern. Co. Permit
WDS

AST:
Certified Unified Program Agencies: Not reported
Owner: John Holliday
Total Gallons: Not reported
CERSID: 10040401
Facility ID: FA0003836
Business Name: Holliday Rock Co., Inc.
Phone: 909-982-1553
Fax: 909-949-6315
Mailing Address: 1401 N. Benson Ave.
Mailing Address City: Upland
Mailing Address State: CA
Mailing Address Zip Code: 91786
Operator Name: Holliday Rock Co., Inc.
Operator Phone: 909-982-1553
Owner Phone: 909-982-1553
Owner Mail Address: 1401 N. Benson Ave.
Owner State: CA
Owner Zip Code: 91786
Owner Country: United States
Property Owner Name: John Holliday
Property Owner Phone: 909-982-1553
Property Owner Mailing Address: 1401 N. Benson Ave
Property Owner City: Upland
Property Owner Stat : CA
Property Owner Zip Code: 91786
Property Owner Country: United States
EPAID: CAL922854083

SWEEPS UST:
Status: Active
Comp Number: 19790
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-06-88
Action Date: 07-06-88
Created Date: 02-29-88
Owner Tank Id: 1F
SWRCB Tank Id: 36-000-019790-000001
Tank Status: A
Capacity: 10000
Active Date: 07-06-88
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 3

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Status: Active
Comp Number: 19790
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-06-88
Action Date: 07-06-88
Created Date: 02-29-88
Owner Tank Id: 2F
SWRCB Tank Id: 36-000-019790-000002
Tank Status: A
Capacity: 10000
Active Date: 07-06-88
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Status: Active
Comp Number: 19790
Number: 9
Board Of Equalization: Not reported
Referral Date: 07-06-88
Action Date: 07-06-88
Created Date: 02-29-88
Owner Tank Id: 3F
SWRCB Tank Id: 36-000-019790-000003
Tank Status: A
Capacity: 2000
Active Date: 07-06-88
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 36001259
Regulated By: UTNKA
Regulated ID: 00019790
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 2193 W FOOTHILL BLVD
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

EMI:
Year: 1987
County Code: 36

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 3295
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 4
Reactive Organic Gases Tons/Yr: 3
Carbon Monoxide Emissions Tons/Yr: 40
NOX - Oxides of Nitrogen Tons/Yr: 3
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 9
Part. Matter 10 Micrometers and Smlr Tons/Yr: 8

Year: 1990
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 3295
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 11
Reactive Organic Gases Tons/Yr: 10
Carbon Monoxide Emissions Tons/Yr: 56
NOX - Oxides of Nitrogen Tons/Yr: 6
SOX - Oxides of Sulphur Tons/Yr: 6
Particulate Matter Tons/Yr: 22
Part. Matter 10 Micrometers and Smlr Tons/Yr: 8

Year: 1993
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 3
Reactive Organic Gases Tons/Yr: 2
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 4
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 3
Part. Matter 10 Micrometers and Smlr Tons/Yr: 2

Year: 1995
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Consolidated Emission Reporting Rules: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 3
Reactive Organic Gases Tons/Yr: 2
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 4
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 3
Part. Matter 10 Micrometers and Smll: 2 Tons/Yr:

Year: 1996
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rules: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 2
NOX - Oxides of Nitrogen Tons/Yr: 7
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 8
Part. Matter 10 Micrometers and Smll: 6 Tons/Yr:

Year: 1997
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rules: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 3
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 6
Part. Matter 10 Micrometers and Smll: 5 Tons/Yr:

Year: 1998
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rules: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 3
SOX - Oxides of Sulphur Tons/Yr: 0

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Particulate Matter Tons/Yr: 6
Part. Matter 10 Micrometers and Smlr Tons/Yr: 5

Year: 1999
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 3
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 6
Part. Matter 10 Micrometers and Smlr Tons/Yr: 5

Year: 2000
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 3
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 6
Part. Matter 10 Micrometers and Smlr Tons/Yr: 5

Year: 2002
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 2
NOX - Oxides of Nitrogen Tons/Yr: 5
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 14
Part. Matter 10 Micrometers and Smlr Tons/Yr: 7

Year: 2003
County Code: 36
Air Basin: SC

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 2
NOX - Oxides of Nitrogen Tons/Yr: 5
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 14
Part. Matter 10 Micrometers and Smlr Tons/Yr: 7

Year: 2004
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1.4784456
Reactive Organic Gases Tons/Yr: 1.07
Carbon Monoxide Emissions Tons/Yr: 1.5694
NOX - Oxides of Nitrogen Tons/Yr: 4.8765
SOX - Oxides of Sulphur Tons/Yr: 0.03219
Particulate Matter Tons/Yr: 14.10873
Part. Matter 10 Micrometers and Smlr Tons/Yr: 6.6

Year: 2005
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1.098333
Reactive Organic Gases Tons/Yr: .849063374
Carbon Monoxide Emissions Tons/Yr: 1.9535
NOX - Oxides of Nitrogen Tons/Yr: 3.7957
SOX - Oxides of Sulphur Tons/Yr: .01873
Particulate Matter Tons/Yr: 19.0345
Part. Matter 10 Micrometers and Smlr Tons/Yr: 9.7359864

Year: 2006
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Total Organic Hydrocarbon Gases Tons/Yr: 7.1123204589071506E7
Reactive Organic Gases Tons/Yr: .345
Carbon Monoxide Emissions Tons/Yr: 15.351
NOX - Oxides of Nitrogen Tons/Yr: 4.25
SOX - Oxides of Sulphur Tons/Yr: .021
Particulate Matter Tons/Yr: 49.264
Part. Matter 10 Micrometers and Smlr Tons/Yr: 27.469339

Year: 2007
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 6.9840042920097562E7
Reactive Organic Gases Tons/Yr: .345
Carbon Monoxide Emissions Tons/Yr: 15.351
NOX - Oxides of Nitrogen Tons/Yr: 4.25
SOX - Oxides of Sulphur Tons/Yr: .021
Particulate Matter Tons/Yr: 49.264
Part. Matter 10 Micrometers and Smlr Tons/Yr: 27.469339

Year: 2008
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 5032
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 7.451740280294998E7
Reactive Organic Gases Tons/Yr: .3549931
Carbon Monoxide Emissions Tons/Yr: 10.76
NOX - Oxides of Nitrogen Tons/Yr: 3.30864709744721192
SOX - Oxides of Sulphur Tons/Yr: .0137975
Particulate Matter Tons/Yr: 37.3471965
Part. Matter 10 Micrometers and Smlr Tons/Yr: 20.9111915316

Year: 2009
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 5032
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.6325653912369096
Reactive Organic Gases Tons/Yr: 0.30541000000000001
Carbon Monoxide Emissions Tons/Yr: 11.960000000000001
NOX - Oxides of Nitrogen Tons/Yr: 3.64452
SOX - Oxides of Sulphur Tons/Yr: 1.3310000000000001E-2
Particulate Matter Tons/Yr: 40.112423999999997

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Part. Matter 10 Micrometers and Smll: 22.41956095999999

Year: 2010
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 5032
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.5709956917943878195
Reactive Organic Gases Tons/Yr: 0.36685000000000001
Carbon Monoxide Emissions Tons/Yr: 14.13458
NOX - Oxides of Nitrogen Tons/Yr: 4.2456100000000001
SOX - Oxides of Sulphur Tons/Yr: 0.01968
Particulate Matter Tons/Yr: 37.124033281000003
Part. Matter 10 Micrometers and Smll: 20.7662076109999998

Year: 2011
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 5032
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.5514604559 1
Reactive Organic Gases Tons/Yr: 0.32015
Carbon Monoxide Emissions Tons/Yr: 13.60525
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0.0191
Particulate Matter Tons/Yr: 37.10448
Part. Matter 10 Micrometers and Smll: 20.8655031 46

Year: 2012
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 5032
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.5719980196884
Reactive Organic Gases Tons/Yr: 0.30634
Carbon Monoxide Emissions Tons/Yr: 13.60525
NOX - Oxides of Nitrogen Tons/Yr: 3.11215
SOX - Oxides of Sulphur Tons/Yr: 0.0191
Particulate Matter Tons/Yr: 29.35325
Part. Matter 10 Micrometers and Smll: 16.1745385 09

Year: 2013
County Code: 36
Air Basin: SC
Facility ID: 2912

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.47747707651
Reactive Organic Gases Tons/Yr: 0.25309
Carbon Monoxide Emissions Tons/Yr: 9.06569
NOX - Oxides of Nitrogen Tons/Yr: 2.82918
SOX - Oxides of Sulphur Tons/Yr: 0.01309
Particulate Matter Tons/Yr: 32.40765
Part. Matter 10 Micrometers and Smlr Tons/Yr: 16.955215

Year: 2014
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.3397363636
Reactive Organic Gases Tons/Yr: 0.18235
Carbon Monoxide Emissions Tons/Yr: 1.08649
NOX - Oxides of Nitrogen Tons/Yr: 2.47989
SOX - Oxides of Sulphur Tons/Yr: 0.0106
Particulate Matter Tons/Yr: 25.29674
Part. Matter 10 Micrometers and Smlr Tons/Yr: 12.2659

Year: 2015
County Code: 36
Air Basin: SC
Facility ID: 2912
Air District Name: SC
SIC Code: 1442
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.4914141414273
Reactive Organic Gases Tons/Yr: 0.25672687
Carbon Monoxide Emissions Tons/Yr: 1.546583
NOX - Oxides of Nitrogen Tons/Yr: 3.46145162
SOX - Oxides of Sulphur Tons/Yr: 0.015132
Particulate Matter Tons/Yr: 31.680785435
Part. Matter 10 Micrometers and Smlr Tons/Yr: 13.3098383538

NPDES:
Npdes Number: CAS000001
Facility Status: Active
Agency Id: 0
Region: 8
Regulatory Measure Id: 213755
Order No: 97-03-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 8 36I018782

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Program Type: Industrial
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 05/10/2004
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Holliday Rock Co Inc
Discharge Address: 1401 N Benson Ave
Discharge City: Upland
Discharge State: California
Discharge Zip: 91786
RECEIVED DATE: Not reported
PROCESSED DATE: Not reported
STATUS CODE NAME: Not reported
STATUS DATE: Not reported
PLACE SIZE: Not reported
PLACE SIZE UNIT: Not reported
FACILITY CONTACT NAME: Not reported
FACILITY CONTACT TITLE: Not reported
FACILITY CONTACT PHONE: Not reported
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: Not reported
OPERATOR NAME: Not reported
OPERATOR ADDRESS: Not reported
OPERATOR CITY: Not reported
OPERATOR STATE: Not reported
OPERATOR ZIP: Not reported
OPERATOR CONTACT NAME: Not reported
OPERATOR CONTACT TITLE: Not reported
OPERATOR CONTACT PHONE: Not reported
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: Not reported
OPERATOR TYPE: Not reported
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: Not reported
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: Not reported
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND: Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION: Not reported
CONSTYPE UTILITY IND: Not reported

HOLLIDAY ROCK CO INC (Continued) **S101619069**

CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: Not reported
RECEIVING WATER NAME: Not reported
CERTIFIER NAME: Not reported
CERTIFIER TITLE: Not reported
CERTIFICATION DATE: Not reported
PRIMARY SIC: Not reported
SECONDARY SIC: Not reported
TERTIARY SIC: Not reported

Npdes Number: Not reported
Facility Status: Not reported
Agency Id: Not reported
Region: 8
Regulatory Measure Id: 213755
Order No: Not reported
Regulatory Measure Type: Industrial
Place Id: Not reported
WDID: 8 36I018782
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Not reported
Discharge Address: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
RECEIVED DATE: 05/09/2008
PROCESSED DATE: 05/10/2004
STATUS CODE NAME: Active
STATUS DATE: 05/10/2004
PLACE SIZE: 150
PLACE SIZE UNIT: Acres
FACILITY CONTACT NAME: Gabriel Shenk
FACILITY CONTACT TITLE: Area Manager
FACILITY CONTACT PHONE: 909-981-1795
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: gsmith@hollidayrock.com
OPERATOR NAME: Holliday Rock Co Inc
OPERATOR ADDRESS: 1401 N Benson Ave
OPERATOR CITY: Upland
OPERATOR STATE: California
OPERATOR ZIP: 91786
OPERATOR CONTACT NAME: George Smith
OPERATOR CONTACT TITLE: Environmental Coordinator
OPERATOR CONTACT PHONE: 909-982-1553
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: gsmith@hollidayrock.com
OPERATOR TYPE: Private Business
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: California
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported

HOLLIDAY ROCK CO INC (Continued) **S101619069**

DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: Not reported
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION Not reported
CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: N
RECEIVING WATER NAME: Santa Ana River
CERTIFIER NAME: George Smith
CERTIFIER TITLE: Environmental Coordinator
CERTIFICATION DATE: 27-MAY-15
PRIMARY SIC: 3273-Ready-Mixed Concrete
SECONDARY SIC: 1442-Construction Sand and Gravel
TERTIARY SIC: Not reported

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0003836
Owner: John Holliday
Permit Number: PT0002503
Permit Category: LARGE QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0003836
Owner: John Holliday
Permit Number: PT0002502
Permit Category: HAZARDOUS MATERIALS 11-30 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 08/31/2018

Region: SAN BERNARDINO
Facility ID: FA0003836
Owner: John Holliday
Permit Number: PT0002505
Permit Category: APSA 10,001-100,000 GAL FAC CAPACITY
Facility Status: ACTIVE
Expiration Date: 08/31/2018

WDS:
Facility ID: Santa Ana River 36I018782

HOLLIDAY ROCK CO INC (Continued) **S101619069**

Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	8
Facility Telephone:	9099821553
Facility Contact:	Wes Ginier
Agency Name:	HOLLIDAY ROCK CO INC
Agency Address:	2193 W Foothill Blvd
Agency City,St,Zip:	Upland 917868402
Agency Contact:	HOLLIDAY JOHN
Agency Telephone:	9099821553
Agency Type:	?
SIC Code:	3273
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

W107 **HOLLIDAY ROCK CO., INC. - FOOTHILL PLANT** **RCRA-LQG** **1014387034**
WSW **2193 WEST FOOTHILL BLVD.** **CAL922854083**
1/8-1/4 **UPLAND, CA 91786**
0.235 mi.
1241 ft. **Site 4 of 4 in cluster W**

Relative: RCRA-LQG:
Lower

Date form received by agency:	01/12/2010
Facility name:	HOLLIDAY ROCK CO., INC. - FOOTHILL PLANT
Facility address:	2193 WEST FOOTHILL BLVD.
	UPLAND, CA 91786
EPA ID:	CAL922854083
Mailing address:	N. BENSON AVE.

Actual:
1346 ft.

HOLLIDAY ROCK CO., INC. - FOOTHILL PLANT (Continued) **1014387034**

UPLAND, CA 91786
Contact: GEORGE B SMITH
Contact address: N. BENSON AVE.
UPLAND, CA 91786
Contact country: US
Contact telephone: 909-982-1553
Telephone ext.: 335
Contact email: GSMITH@HOLLIDAYROCK.COM
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: JOHN HOLLIDAY
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/2000
Owner/Op end date: Not reported

Owner/operator name: HOLLIDAY ROCK CO., INC.
Owner/operator address: 1401 N. BENSON AVE
UPLAND, CA 91786
Owner/operator country: US
Owner/operator telephone: 909-982-1553
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1937
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No

HOLLIDAY ROCK CO., INC. - FOOTHILL PLANT (Continued) **1014387034**

Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: D001
. Waste name: IGNITABLE WASTE

Violation Status: No violations found

X108 **FLEET MAINTENANCE DIVISION** **HAZNET** **S113017374**
NE **1360 N BENSON AVE** **San Bern. Co. Permit** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.236 mi.
1245 ft. **Site 1 of 5 in cluster X**

Relative: **Higher**

Actual: **1433 ft.**

HAZNET:
envid: S113017374
Year: 2016
GEPAID: CAD982526048
Contact: JIM LIGTENBERG
Telephone: 9099314253
Mailing Name: Not reported
Mailing Address: PO BOX 460
Mailing City,St,Zip: UPLAND, CA 917850460
Gen County: San Bernardino
TSD EPA ID: AZR000515924
TSD County: 99
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 1.32
Cat Decode: Off-specification, aged or surplus organics
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: S113017374
Year: 2016
GEPAID: CAD982526048
Contact: JIM LIGTENBERG
Telephone: 9099314253
Mailing Name: Not reported
Mailing Address: PO BOX 460
Mailing City,St,Zip: UPLAND, CA 917850460
Gen County: San Bernardino
TSD EPA ID: AZR000515924
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery

FLEET MAINTENANCE DIVISION (Continued) **S113017374**

(H010-H129) Or (H131-H135)
Tons: 0.0575
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

envid: S113017374
Year: 2011
GEPAID: CAD982526048
Contact: MARK MC CULLOUGH
Telephone: 9099314254
Mailing Name: Not reported
Mailing Address: PO BOX 460
Mailing City,St,Zip: UPLAND, CA 917852163
Gen County: Not reported
TSD EPA ID: TXD077603371
TSD County: Not reported
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.1
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: S113017374
Year: 2011
GEPAID: CAD982526048
Contact: MARK MC CULLOUGH
Telephone: 9099314254
Mailing Name: Not reported
Mailing Address: PO BOX 460
Mailing City,St,Zip: UPLAND, CA 917852163
Gen County: Not reported
TSD EPA ID: TXD077603371
TSD County: Not reported
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.1
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

envid: S113017374
Year: 2006
GEPAID: CAD982526048
Contact: FRANK DOMIJAN EQUIP MAINT SUPT
Telephone: 9099314254
Mailing Name: Not reported
Mailing Address: PO BOX 460
Mailing City,St,Zip: UPLAND, CA 917852163
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

FLEET MAINTENANCE DIVISION (Continued) **S113017374**

Tons: 0.06
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Bernardino

Click this hyperlink while viewing on your computer to access
115 additional CA_HAZNET: record(s) in the EDR Site Report.

San Bern. Co. Permit:

Region: SAN BERNARDINO
Facility ID: FA0002097
Owner: City of Upland
Permit Number: PT0011094
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 10/31/2018

Region: SAN BERNARDINO
Facility ID: FA0002097
Owner: City of Upland
Permit Number: PT0011095
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 10/31/2018

Region: SAN BERNARDINO
Facility ID: FA0002097
Owner: City of Upland
Permit Number: PT0011096
Permit Category: UST OWNERSHIP/OPERATING PERMIT (PER UST)
Facility Status: ACTIVE
Expiration Date: 10/31/2018

Region: SAN BERNARDINO
Facility ID: FA0002097
Owner: City of Upland
Permit Number: PT0003478
Permit Category: HAZARDOUS MATERIALS 11-30 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 10/31/2018

Region: SAN BERNARDINO
Facility ID: FA0002097
Owner: City of Upland
Permit Number: PT0003477
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 10/31/2018

Region: SAN BERNARDINO
Facility ID: FA0002097
Owner: City of Upland
Permit Number: PT0024390
Permit Category: EPCRA FACILITY
Facility Status: INACTIVE
Expiration Date: 10/31/2013

X109 **UPLAND CITY OF** **RCRA-SQG** **1000151933**
NE **1360 N BENSON AVE** **FINDS** **CAD982526048**
1/8-1/4 **UPLAND, CA 91786** **ECHO**
0.236 mi.
1245 ft. **Site 2 of 5 in cluster X**

Relative:
Higher

Actual:
1433 ft.

RCRA-SQG:
Date form received by agency: 06/09/1989
Facility name: UPLAND CITY OF
Facility address: 1360 N BENSON AVE
UPLAND, CA 91786
EPA ID: CAD982526048
Contact: ENVIRONMENTAL MANAGER
Contact address: 1360 N BENSON AVE
UPLAND, CA 91786
Contact country: US
Contact telephone: 714-985-1107
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: UPLAND CITY OF
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: County
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: County
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No

UPLAND CITY OF (Continued) **1000151933**

Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002842880

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000151933
Registry ID:	110002842880
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002842880

X110 **FLEET MAINTENANCE DIVISION** **UST** **U004263625**
NE **1360 N BENSON AVE** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.236 mi.
1245 ft. **Site 3 of 5 in cluster X**

Relative: UST:
Higher

Actual: Facility ID:	FA0002097	
1433 ft. Permitting Agency:		San Bernardino County Fire Department
Latitude:	34.11274	
Longitude:	-117.68085	

Y111
SSW
1/8-1/4
0.241 mi.
1274 ft.

WALTON FABRICATION
1933 W 11TH ST UNIT H
UPLAND, CA 91786

San Bern. Co. Permit

S105298576
N/A

Site 1 of 6 in cluster Y

Relative:
Lower

Actual:
1308 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0006699
Owner:	WALTON, TODD
Permit Number:	PT0001154
Permit Category:	HAZMAT HANDLER 0-10 EMPLOYEES
Facility Status:	INACTIVE
Expiration Date:	02/28/2014

Y112
SSW
1/8-1/4
0.241 mi.
1274 ft.

CJ MEDIA
1933 W 11TH ST UNIT K
UPLAND, CA 91786

San Bern. Co. Permit

S110496958
N/A

Site 2 of 6 in cluster Y

Relative:
Lower

Actual:
1308 ft.

San Bern. Co. Permit:

Region:	SAN BERNARDINO
Facility ID:	FA0013395
Owner:	JACOBS, CHRIS
Permit Number:	PT0023609
Permit Category:	CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status:	INACTIVE
Expiration Date:	09/30/2013

Y113
SSW
1/8-1/4
0.243 mi.
1282 ft.

CATTRAC CONSTRUCTION
1953 WEST 11TH STREET
UPLAND, CA 91786

HIST UST

S118408477
N/A

Site 3 of 6 in cluster Y

Relative:
Lower

Actual:
1308 ft.

HIST UST:

File Number:	00029A02
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029A02.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

CATTRAC CONSTRUCTION (Continued) **S118408477**

Click here for Geo Tracker PDF:

Y114 **CATTRAC CONSTRUCTION** **HIST UST** **U001570659**
SSW **1953 W 11TH ST** **San Bern. Co. Permit** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.243 mi.
1282 ft. **Site 4 of 6 in cluster Y**

Relative: **Lower**
Actual: **1308 ft.**

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000042420
Facility Type: Other
Other Type: CONTRACTOR
Contact Name: LARRY BURDICK
Telephone: 7149818908
Owner Name: BERRY CONSTRUCTION, INC.
Owner Address: 1921 WEST 11TH STREET
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0002

Tank Num: 001
Container Num: 1
Year Installed: 1974
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: 1974
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0013167
Owner: JOEL'S AUTOMOTIVE INC
Permit Number: PT0023173
Permit Category: SMALL QUANTITY GENERATOR
Facility Status: ACTIVE
Expiration Date: 04/30/2018

Region: SAN BERNARDINO
Facility ID: FA0013167
Owner: JOEL'S AUTOMOTIVE INC
Permit Number: PT0023172
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: ACTIVE
Expiration Date: 04/30/2018

CATTRAC CONSTRUCTION (Continued) **U001570659**

Region: SAN BERNARDINO
Facility ID: FA0004005
Owner: LARRY BURKE ENTERPRISES
Permit Number: PT0008594
Permit Category: HAZMAT HANDLER 0-10 EMPLOYEES
Facility Status: INACTIVE
Expiration Date: 04/30/2011

Y115 **KENGRAPHICS PRINTING** **San Bern. Co. Permit** **S104767548**
SSW **1935 W 11TH ST A** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.245 mi.
1292 ft. **Site 5 of 6 in cluster Y**

Relative: **Lower**
Actual: **1307 ft.**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0004243
Owner: LEMMON, ROBERT K.
Permit Number: PT0008159
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: INACTIVE
Expiration Date: 11/30/2015

Region: SAN BERNARDINO
Facility ID: FA0004243
Owner: LEMMON, ROBERT K.
Permit Number: PT0019663
Permit Category: HAZMAT HANDLER 0-10 EMPLOYEES (W/GEN PRMT)
Facility Status: INACTIVE
Expiration Date: 11/30/2007

Y116 **CALAWAY & BROOKS INC** **HAZNET** **S108087230**
SSW **1937 W 11TH ST STE F** **San Bern. Co. Permit** **N/A**
1/8-1/4 **UPLAND, CA 91786**
0.245 mi.
1294 ft. **Site 6 of 6 in cluster Y**

Relative: **Lower**
Actual: **1307 ft.**

HAZNET:
envid: S108087230
Year: 2016
GEPAID: CAL000308752
Contact: WARD CALAWAY
Telephone: 9099810131
Mailing Name: Not reported
Mailing Address: 1937 W 11TH ST STE F
Mailing City,St,Zip: UPLAND, CA 917863556
Gen County: San Bernardino
TSD EPA ID: NED981723513
TSD County: 99
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method: Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.175
Cat Decode: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Method Decode: Incineration--Thermal Destruction Other Than Use As A Fuel
Facility County: San Bernardino

CALAWAY & BROOKS INC (Continued) **S108087230**

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0010633
Owner: VITELA, ANTONIO
Permit Number: PT0018105
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR SPECIAL
Facility Status: ACTIVE
Expiration Date: 09/30/2018

Region: SAN BERNARDINO
Facility ID: FA0010633
Owner: VITELA, ANTONIO
Permit Number: PT0021490
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS
Facility Status: INACTIVE
Expiration Date: 09/30/2016

X117 **UPLAND CITY YARD** **LUST** **S103629324**
NE **1370 N BENSON AVE** **San Bern. Co. Permit** **N/A**
1/4-1/2 **UPLAND, CA 91786**
0.251 mi.
1324 ft. **Site 4 of 5 in cluster X**

Relative:
Higher

Actual:
1437 ft.

LUST:
Lead Agency: SAN BERNARDINO COUNTY
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100633
Global Id: T0607100633
Latitude: 34.1105238
Longitude: -117.6808666
Status: Completed - Case Closed
Status Date: 08/23/2002
Case Worker: Not reported
RB Case Number: 083603644T
Local Agency: Not reported
File Location: Local Agency
Local Case Number: 99108
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0607100633
Contact Type: Regional Board Caseworker
Contact Name: ROSE SCOTT
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: rose.scott@waterboards.ca.gov
Phone Number: 9513206375

LUST:
Global Id: T0607100633
Action Type: ENFORCEMENT
Date: 09/01/1999
Action: Notice of Responsibility

UPLAND CITY YARD (Continued) **S103629324**

Global Id: T0607100633
Action Type: ENFORCEMENT
Date: 08/23/2002
Action: Closure/No Further Action Letter

Global Id: T0607100633
Action Type: Other
Date: 08/10/1999
Action: Leak Reported

Global Id: T0607100633
Action Type: Other
Date: 09/28/1998
Action: Leak Discovery

Global Id: T0607100633
Action Type: Other
Date: 09/28/1998
Action: Leak Stopped

Global Id: T0607100633
Action Type: REMEDIATION
Date: 09/22/1998
Action: Excavation

Global Id: T0607100633
Action Type: REMEDIATION
Date: 05/18/2000
Action: Soil Vapor Extraction (SVE)

LUST:
Global Id: T0607100633
Status: Open - Case Begin Date
Status Date: 09/28/1998

Global Id: T0607100633
Status: Open - Site Assessment
Status Date: 08/10/1999

Global Id: T0607100633
Status: Open - Remediation
Status Date: 05/18/2000

Global Id: T0607100633
Status: Open - Site Assessment
Status Date: 05/18/2000

Global Id: T0607100633
Status: Completed - Case Closed
Status Date: 08/23/2002

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0002309
Owner: HOUSEHOLD HAZARDOUS WASTE

UPLAND CITY YARD (Continued) **S103629324**

Permit Number: PT0008345
Permit Category: HAZARDOUS MATERIALS 4-10 CHEMICALS
Facility Status: FEE EXEMPT
Expiration Date: 12/31/2004

Region: SAN BERNARDINO
Facility ID: FA0002309
Owner: HOUSEHOLD HAZARDOUS WASTE
Permit Number: PT0008346
Permit Category: LARGE QUANTITY GENERATOR
Facility Status: FEE EXEMPT
Expiration Date: 12/31/2004

Region: SAN BERNARDINO
Facility ID: FA0002309
Owner: HOUSEHOLD HAZARDOUS WASTE
Permit Number: PT0008352
Permit Category: PBR - HHW ANNUAL FEE
Facility Status: FEE EXEMPT
Expiration Date: 12/31/2004

Region: SAN BERNARDINO
Facility ID: FA0002309
Owner: HOUSEHOLD HAZARDOUS WASTE
Permit Number: PT0030518
Permit Category: PBR ANNUAL FEE
Facility Status: INACTIVE
Expiration Date: 12/31/2014

Region: SAN BERNARDINO
Facility ID: FA0002309
Owner: HOUSEHOLD HAZARDOUS WASTE
Permit Number: PT0030520
Permit Category: PBR ANNUAL FEE
Facility Status: INACTIVE
Expiration Date: 12/31/2014

Region: SAN BERNARDINO
Facility ID: FA0002309
Owner: HOUSEHOLD HAZARDOUS WASTE
Permit Number: PT0016790
Permit Category: UW HANDLER W/ ANOTHER HAZ WASTE GENERATOR FEE
Facility Status: INACTIVE
Expiration Date: 12/31/2005

X118 **UPLAND CITY YARD** **LUST** **S104751605**
NE **1370 BENSON AVE** **HIST CORTESE** **N/A**
1/4-1/2 **UPLAND, CA 91786**
0.251 mi.
1324 ft. **Site 5 of 5 in cluster X**

Relative: LUST REG 8:
Higher
Region: 8
Actual: County: San Bernardino
1437 ft. Regional Board: Santa Ana Region
Facility Status: Case Closed
Case Number: 083603644T
Local Case Num: 99108

UPLAND CITY YARD (Continued) **S104751605**

Case Type: Soil only
Substance: Gasoline
Qty Leaked: Not reported
Abate Method: Not reported
Cross Street: 13TH STREET
Enf Type: NOR
Funding: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Leak Cause: UNK
Leak Source: Tank
Global ID: T0607100633
How Stopped Date: 9/28/1998
Enter Date: 3/9/2000
Date Confirmation of Leak Began: Not reported
Date Preliminary Assessment Began: Not reported
Discover Date: 9/28/1998
Enforcement Date: Not reported
Close Date: 8/23/2002
Date Prelim Assessment Workplan Submitted: 8/10/1999
Date Pollution Characterization Began: 5/18/2000
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: 5/18/2000
Date Post Remedial Action Monitoring: Not reported
Enter Date: 3/9/2000
GW Qualifies: Not reported
Soil Qualifies: =
Operator: Not reported
Facility Contact: Not reported
Interim: Not reported
Oversite Program: LUST
Latitude: 34.1105257
Longitude: -117.6320603
MTBE Date: Not reported
Max MTBE GW: Not reported
MTBE Concentration: 1
Max MTBE Soil: .05
MTBE Fuel: 1
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class: *
Staff: RS
Staff Initials: LH6
Lead Agency: Local Agency
Local Agency: 36000L
Hydr Basin #: UPPER SANTA ANA VALL
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: No
Summary: UNDER INVESTIGATION

HIST CORTESE:
Region: CORTESE
Facility County Code: 36
Reg By: LTNKA
Reg Id: 083603644T

Z119 **11TH STREET YARD** **LUST** **U001570646**
SW **2085 W 11TH ST** **HIST UST** **N/A**
1/4-1/2 **UPLAND, CA 91786**
0.314 mi.
1657 ft. **Site 1 of 2 in cluster Z**

Relative:
Lower

Actual:
1301 ft.

LUST:
Lead Agency: SAN BERNARDINO COUNTY
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100397
Global Id: T0607100397
Latitude: 34.1032976
Longitude: -117.6908148
Status: Completed - Case Closed
Status Date: 01/08/1996
Case Worker: JC
RB Case Number: 083602753T
Local Agency: SAN BERNARDINO COUNTY
File Location: Local Agency
Local Case Number: 95058
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0607100397
Contact Type: Local Agency Caseworker
Contact Name: JACKSON CRUTSINGER
Organization Name: SAN BERNARDINO COUNTY
Address: 620 SOUTH E STREET
City: SAN BERNARDINO
Email: jcrutsinger@sbcfire.org
Phone Number: Not reported

LUST:
Global Id: T0607100397
Action Type: Other
Date: 09/28/1995
Action: Leak Discovery

Global Id: T0607100397
Action Type: Other
Date: 10/25/1995
Action: Leak Reported

LUST:
Global Id: T0607100397
Status: Open - Case Begin Date
Status Date: 09/28/1995

Global Id: T0607100397
Status: Completed - Case Closed
Status Date: 01/08/1996

HIST UST:
File Number: 0002AA60
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002AA60.pdf

11TH STREET YARD (Continued) **U001570646**

Region: STATE
Facility ID: 00000038926
Facility Type: Gas Station
Other Type: Not reported
Contact Name: MONTY MONTGOMERY
Telephone: 7146268614
Owner Name: WESTON E. MONTGOMERY
Owner Address: 3232 PADAU AVE.
Owner City,St,Zip: CLAREMONT, CA 91711
Total Tanks: 0003

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00008000
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: 1983
Tank Capacity: 00020000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: 5/16
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 3
Year Installed: 1983
Tank Capacity: 00020000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: 5/16
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

Z120 **WESTON E. MONTGOMERY FUEL** **LUST S102441224**
SW **2085 11TH ST** **HIST CORTESE N/A**
1/4-1/2 **UPLAND, CA 91786**
0.314 mi.
1657 ft. **Site 2 of 2 in cluster Z**

Relative: LUST REG 8:
Lower
Actual: Region: 8
1301 ft. County: San Bernardino
Regional Board: Santa Ana Region
Facility Status: Case Closed
Case Number: 083602753T
Local Case Num: 95058
Case Type: Soil only
Substance: Diesel
Qty Leaked: Not reported
Abate Method: Not reported
Cross Street: Not reported

WESTON E. MONTGOMERY FUEL (Continued) **S102441224**

Enf Type: Not reported
Funding: Not reported
How Discovered: Not reported
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global ID: T0607100397
How Stopped Date: Not reported
Enter Date: 12/19/1995
Date Confirmation of Leak Began: Not reported
Date Preliminary Assessment Began: Not reported
Discover Date: 9/28/1995
Enforcement Date: Not reported
Close Date: 1/8/1996
Date Prelim Assessment Workplan Submitted: Not reported
Date Pollution Characterization Began: Not reported
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring: Not reported
Enter Date: 12/19/1995
GW Qualifies: Not reported
Soil Qualifies: Not reported
Operator: Not reported
Facility Contact: Not reported
Interim: Not reported
Oversite Program: LUST
Latitude: 34.1032976
Longitude: -117.6908148
MTBE Date: Not reported
Max MTBE GW: Not reported
MTBE Concentration: 0
Max MTBE Soil: Not reported
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
MTBE Class: *
Staff: WDM
Staff Initials: JC3
Lead Agency: Local Agency
Local Agency: 36000L
Hydr Basin #: UPPER SANTA ANA VALL
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Summary: Not reported

HIST CORTESE:
Region: CORTESE
Facility County Code: 36
Reg By: LTNKA
Reg Id: 083602753T

121
South
1/4-1/2
0.437 mi.
2308 ft.

LANDCARE, INC
8475 LOMA PL
UPLAND, CA 91786

LUST
HIST CORTESE
San Bern. Co. Permit

S104752290
N/A

Relative:
Lower

Actual:
1278 ft.

LUST:

Lead Agency:	SAN BERNARDINO COUNTY
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100625
Global Id:	T0607100625
Latitude:	34.0999874
Longitude:	-117.6857081
Status:	Completed - Case Closed
Status Date:	04/21/2000
Case Worker:	Not reported
RB Case Number:	083603600T
Local Agency:	Not reported
File Location:	Local Agency
Local Case Number:	99140
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0607100625
Contact Type:	Regional Board Caseworker
Contact Name:	ROSE SCOTT
Organization Name:	SANTA ANA RWQCB (REGION 8)
Address:	3737 MAIN STREET, SUITE 500
City:	RIVERSIDE
Email:	rose.scott@waterboards.ca.gov
Phone Number:	9513206375

LUST:

Global Id:	T0607100625
Action Type:	REMEDIATION
Date:	11/22/1999
Action:	Excavation

Global Id:	T0607100625
Action Type:	Other
Date:	11/29/1999
Action:	Leak Reported

Global Id:	T0607100625
Action Type:	Other
Date:	11/22/1999
Action:	Leak Discovery

Global Id:	T0607100625
Action Type:	ENFORCEMENT
Date:	04/21/2000
Action:	Closure/No Further Action Letter

Global Id:	T0607100625
Action Type:	Other
Date:	11/22/1999
Action:	Leak Stopped

LANDCARE, INC (Continued) **S104752290**

LUST:
Global Id: T0607100625
Status: Open - Case Begin Date
Status Date: 11/22/1999

Global Id: T0607100625
Status: Open - Site Assessment
Status Date: 12/09/1999

Global Id: T0607100625
Status: Completed - Case Closed
Status Date: 04/21/2000

LUST REG 8:
Region: 8
County: San Bernardino
Regional Board: Santa Ana Region
Facility Status: Case Closed
Case Number: 083603600T
Local Case Num: 99140
Case Type: Soil only
Substance: Gasoline
Qty Leaked: Not reported
Abate Method: Not reported
Cross Street: ARROW ROUTE
Enf Type: CLOS
Funding: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Leak Cause: UNK
Leak Source: UNK
Global ID: T0607100625
How Stopped Date: 11/22/1999
Enter Date: 1/26/2000
Date Confirmation of Leak Began: Not reported
Date Preliminary Assessment Began: Not reported
Discover Date: 11/22/1999
Enforcement Date: Not reported
Close Date: 4/21/2000
Date Prelim Assessment Workplan Submitted: 12/9/1999
Date Pollution Characterization Began: Not reported
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring: Not reported
Enter Date: 1/26/2000
GW Qualifies: Not reported
Soil Qualifies: Not reported
Operator: Not reported
Facility Contact: Not reported
Interim: Not reported
Oversite Program: LUST
Latitude: 34.100893
Longitude: -117.685865
MTBE Date: Not reported
Max MTBE GW: Not reported

LANDCARE, INC (Continued) **S104752290**

MTBE Concentration: 2
Max MTBE Soil: Not reported
MTBE Fuel: 1
MTBE Tested: MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class: *
Staff: RS
Staff Initials: LH6
Lead Agency: Local Agency
Local Agency: 36000L
Hydr Basin #: UPPER SANTA ANA VALL
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: No
Summary: Not reported

HIST CORTESE:
Region: CORTESE
Facility County Code: 36
Reg By: LTNKA
Reg Id: 083603600T

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0004377
Owner: WALTON, JAMIE
Permit Number: PT0008855
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status: ACTIVE
Expiration Date: 04/30/2018

Region: SAN BERNARDINO
Facility ID: FA0004377
Owner: WALTON, JAMIE
Permit Number: PT0008856
Permit Category: CONDITIONALLY EXEMPT SM QTY GENERATOR
Facility Status: INACTIVE
Expiration Date: 04/30/2016

122
WNW
1/4-1/2
0.477 mi.
2520 ft.

CITY OF CLAREMONT/CORP YARD **SWF/LF** **S108211581**
1616 MONTE VISTA AVE **NPDES** **N/A**
CLAREMONT, CA 91711 **San Bern. Co. Permit**

Relative:
Higher

Actual:
1432 ft.

LOS ANGELES CO. LF:
Site ID: 222
Alt. Address: Not reported
Site Contact: Not reported
Site Contact Phone: (909) 399-5431
Site Email: Not reported
Site Website: Not reported
Site Type: Waste Hauler
Site SWIS Number: 19-AS-0063
Beginning Operation Date: Not reported
Ending Operation Date: Not reported
Local Enforcement Agency: Not reported

CITY OF CLAREMONT/CORP YARD (Continued) **S108211581**

Maximun Depth Fill(Ft): Not reported
Permitted Capacity: Not reported
Present Use: Not reported
Remaining Capacity(Million): Not reported
Status: Active
Waste Accepted: Not reported
Hours of Operation: Not reported
Disposal Area (Acre): Not reported

Detail As Of 01/2014:
Operator Name: Claremont Department of Community Services
Operator Address: 1616 Monte Vista AVE.
Operator City/State/Zip: Claremont, CA 91711
Operator Contact: stacey Neimeyer
Operator Telephone: (909) 399-5431
Operator Email: mharmon@ci.claremont.ca.us
Owner Name: Unknown
Owner Address: Not reported
Owner City/State/Zip: Not reported
Owner Contact: Not reported
Owner Telephone: Not reported
Owner Email: Not reported

NPDES:
Npdes Number: Not reported
Facility Status: Not reported
Agency Id: Not reported
Region: 4
Regulatory Measure Id: 459539
Order No: Not reported
Regulatory Measure Type: Industrial
Place Id: Not reported
WDID: 4 19I026253
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Not reported
Discharge Address: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
RECEIVED DATE: 10/29/2015
PROCESSED DATE: 10/29/2015
STATUS CODE NAME: Active
STATUS DATE: 10/29/2015
PLACE SIZE: 4.8
PLACE SIZE UNIT: Acres
FACILITY CONTACT NAME: Colin Tudor
FACILITY CONTACT TITLE: Assistant City Manager
FACILITY CONTACT PHONE: 909-399-5466
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: ctudor@ci.claremont.ca.us
OPERATOR NAME: City of Claremont Community Services Yard
OPERATOR ADDRESS: 1616 Monte Vista Ave
OPERATOR CITY: Claremont

CITY OF CLAREMONT/CORP YARD (Continued) **S108211581**

OPERATOR STATE: California
OPERATOR ZIP: 91711
OPERATOR CONTACT NAME: Colin Tudor
OPERATOR CONTACT TITLE: Assistant City Manager
OPERATOR CONTACT PHONE: 909-399-5466
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: ctudor@ci.claremont.ca.us
OPERATOR TYPE: City/Town Agency
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: California
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: 909-399-5460
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION: Not reported
CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: N
RECEIVING WATER NAME: Chino Creek
CERTIFIER NAME: Colin Tudor
CERTIFIER TITLE: Community Services Manager
CERTIFICATION DATE: 20-APR-16
PRIMARY SIC: 4212-Local Trucking Without Storage
SECONDARY SIC: 4953-Refuse Systems
TERTIARY SIC: Not reported

Npdes Number: CAS000001
Facility Status: Active
Agency Id: 0
Region: 4
Regulatory Measure Id: 459539
Order No: 97-03-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 4 19I026253
Program Type: Industrial
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 10/29/2015
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported

CITY OF CLAREMONT/CORP YARD (Continued) **S108211581**

Discharge Name: City of Claremont Community Services Yard
Discharge Address: 1616 Monte Vista Ave
Discharge City: Claremont
Discharge State: California
Discharge Zip: 91711
RECEIVED DATE: Not reported
PROCESSED DATE: Not reported
STATUS CODE NAME: Not reported
STATUS DATE: Not reported
PLACE SIZE: Not reported
PLACE SIZE UNIT: Not reported
FACILITY CONTACT NAME: Not reported
FACILITY CONTACT TITLE: Not reported
FACILITY CONTACT PHONE: Not reported
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: Not reported
OPERATOR NAME: Not reported
OPERATOR ADDRESS: Not reported
OPERATOR CITY: Not reported
OPERATOR STATE: Not reported
OPERATOR ZIP: Not reported
OPERATOR CONTACT NAME: Not reported
OPERATOR CONTACT TITLE: Not reported
OPERATOR CONTACT PHONE: Not reported
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: Not reported
OPERATOR TYPE: Not reported
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: Not reported
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: Not reported
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported
CONSTYPE ELECTRICAL LINE IND: Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION: Not reported
CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: Not reported
RECEIVING WATER NAME: Not reported
CERTIFIER NAME: Not reported
CERTIFIER TITLE: Not reported

CITY OF CLAREMONT/CORP YARD (Continued) **S108211581**

CERTIFICATION DATE: Not reported
PRIMARY SIC: Not reported
SECONDARY SIC: Not reported
TERTIARY SIC: Not reported

San Bern. Co. Permit:
Region: SAN BERNARDINO
Facility ID: FA0010228
Owner: CITY OF CLAREMONT
Permit Number: PT0017399
Permit Category: HAZARDOUS MATERIALS 1-3 CHEMICALS SPECIAL
Facility Status: INACTIVE
Expiration Date: 02/28/2015

Region: SAN BERNARDINO
Facility ID: FA0010228
Owner: CITY OF CLAREMONT
Permit Number: PT0017400
Permit Category: APSA 10,001-100,000 GAL FAC CAPACITY
Facility Status: INACTIVE
Expiration Date: 02/28/2015

AA123 **DOSH PROPERTY** **LUST** **S101619072**
South **1853 W ARROW RTE** **SWEEPS UST** **N/A**
1/4-1/2 **UPLAND, CA 91786** **CA FID UST**
0.484 mi.
2556 ft. **Site 1 of 2 in cluster AA**

Relative:
Lower

Actual:
1268 ft.

LUST:
Lead Agency: SAN BERNARDINO COUNTY
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100338
Global Id: T0607100338
Latitude: 34.0993
Longitude: -117.6869
Status: Completed - Case Closed
Status Date: 09/02/1994
Case Worker: CB
RB Case Number: 083602506T
Local Agency: SAN BERNARDINO COUNTY
File Location: Local Agency
Local Case Number: 94036
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0607100338
Contact Type: Local Agency Caseworker
Contact Name: CURTIS BRUNDAGE
Organization Name: SAN BERNARDINO COUNTY
Address: 620 S. E STREET
City: SAN BERNARDINO
Email: cbrundage@sbcfire.org
Phone Number: Not reported

Global Id: T0607100338
Contact Type: Regional Board Caseworker

DOSH PROPERTY (Continued) **S101619072**

Contact Name: ROSE SCOTT
Organization Name: SANTA ANA RWQCB (REGION 8)
Address: 3737 MAIN STREET, SUITE 500
City: RIVERSIDE
Email: rose.scott@waterboards.ca.gov
Phone Number: 9513206375

LUST:
Global Id: T0607100338
Action Type: Other
Date: 04/14/1994
Action: Leak Discovery

Global Id: T0607100338
Action Type: Other
Date: 06/22/1994
Action: Leak Reported

Global Id: T0607100338
Action Type: Other
Date: 04/14/1994
Action: Leak Stopped

Global Id: T0607100338
Action Type: ENFORCEMENT
Date: 09/02/1994
Action: Closure/No Further Action Letter

LUST:
Global Id: T0607100338
Status: Open - Case Begin Date
Status Date: 04/14/1994

Global Id: T0607100338
Status: Open - Site Assessment
Status Date: 05/23/1994

Global Id: T0607100338
Status: Completed - Case Closed
Status Date: 09/02/1994

SWEEPS UST:
Status: Not reported
Comp Number: 44208
Number: Not reported
Board Of Equalization: 44-021047
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-044208-000001
Tank Status: Not reported
Capacity: 5000
Active Date: Not reported
Tank Use: M.V. FUEL

DOSH PROPERTY (Continued) **S101619072**

STG: PRODUCT
Content: REG UNLEADED
Number Of Tanks: 3

Status: Not reported
Comp Number: 44208
Number: Not reported
Board Of Equalization: 44-021047
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-044208-000002
Tank Status: Not reported
Capacity: 2000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: LEADED
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 44208
Number: Not reported
Board Of Equalization: 44-021047
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-044208-000003
Tank Status: Not reported
Capacity: 2000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: LEADED
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 36001514
Regulated By: UTNKA
Regulated ID: 00044208
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7149467256
Mail To: Not reported
Mailing Address: 1853 W ARROW HWY
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

AA124 **DOSH PROPERTY** **LUST** **S102428911**
South **1853 ARROW RTE** **HIST CORTESE** **N/A**
1/4-1/2 **UPLAND, CA 91678**
0.484 mi.
2556 ft. **Site 2 of 2 in cluster AA**

Relative:
Lower

Actual:
1268 ft.

LUST REG 8:

Region:	8
County:	San Bernardino
Regional Board:	Santa Ana Region
Facility Status:	Case Closed
Case Number:	083602506T
Local Case Num:	94036
Case Type:	Soil only
Substance:	Diesel
Qty Leaked:	Not reported
Abate Method:	Not reported
Cross Street:	Not reported
Enf Type:	CLOS
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	UNK
Global ID:	T0607100338
How Stopped Date:	4/14/1994
Enter Date:	8/29/1994
Date Confirmation of Leak Began:	5/23/1994
Date Preliminary Assessment Began:	Not reported
Discover Date:	4/14/1994
Enforcement Date:	Not reported
Close Date:	9/2/1994
Date Prelim Assessment Workplan Submitted:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring:	Not reported
Enter Date:	8/29/1994
GW Qualifies:	Not reported
Soil Qualifies:	Not reported
Operator:	Not reported
Facility Contact:	Not reported
Interim:	Not reported
Oversite Program:	LUST
Latitude:	34.1728408
Longitude:	-118.3878861
MTBE Date:	Not reported
Max MTBE GW:	Not reported
MTBE Concentration:	1
Max MTBE Soil:	Not reported
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE & MTBE detected
MTBE Class:	*
Staff:	RS
Staff Initials:	CB5
Lead Agency:	Local Agency
Local Agency:	36000L
Hydr Basin #:	SAN FERNANDO VALLEY
Beneficial:	Not reported

DOSH PROPERTY (Continued) **S102428911**

Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Summary: TWO 3,000 GALLON DIESEL AND GASOLINE TANK REMOVED 4/14/94. ENCLOSED CASE CLOSURE SUMMARY ON 8/9/94. MINOR SOIL CONTAMINATION

HIST CORTESE:
Region: CORTESE
Facility County Code: 36
Reg By: LTNKA
Reg Id: 083602506T

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125 West 1/4-1/2 0.490 mi. 2587 ft.

CITY OF CLAREMONT COMMUNITY SERVICES DEP **SWF/LF** **S106800137**
1616 NORTH MONTE VISTA AVE **N/A**
UPLAND, CA

Relative: Lower

Actual: 1375 ft.

SWF/LF (SWIS):
Region: STATE
Facility ID: 36-AA-0425
Lat/Long: 34.11372 / -117.69682
Owner Name: City of Claremont
Owner Telephone: 9093995431
Owner Address: Mark Harmon, Director -Community Service
Owner Address2: P.O. Box 880 / 215 Cornell Ave.
Owner City,St,Zip: Claremont, CA 91711-4604
Operational Status: Active
Operator: City of Claremont
Operator Phone: 9093995431
Operator Address: Mark Harmon, Director -Community Service
Operator Address2: P.O. Box 880 / 215 Cornell Ave.
Operator City,St,Zip: Claremont, CA 91711-4604
Permit Date: 08/02/2013
Permit Status: Permitted
Permitted Acreage: $4.80
Activity: Medium Volume Transfer/Proc Fac
Regulation Status: Permitted
Landuse Name: Not reported
GIS Source: GPS
Category: Transfer/Processing
Unit Number: 01
Inspection Frequency: Monthly
Accepted Waste: Construction/demolition,Green Materials,Mixed municipal
Closure Date: Not reported
Closure Type: Not reported
Disposal Acreage: Not reported
SWIS Num: 36-AA-0425
Waste Discharge Requirement Num: Not reported
Program Type: Not reported
Permitted Throughput with Units: 99
Actual Throughput with Units: Tons/day
Permitted Capacity with Units: 26000
Remaining Capacity: Not reported
Remaining Capacity with Units: Tons/year
Lat/Long: 34.11372 / -117.69682

126
SSE
1/2-1
0.903 mi.
4770 ft.

Relative:
Lower

Actual:
1239 ft.

LAIDLAW ENVIRONMENTAL SERVICES CA INC
1369 W 9TH ST
UPLAND, CA 91786

ENVIROSTOR
SWEEPS UST
HIST UST
CA FID UST
EMI
HAZNET
HWP

1000348979
N/A

ENVIROSTOR:

Facility ID:	80001858
Status:	Inactive - Needs Evaluation
Status Date:	11/27/2012
Site Code:	Not reported
Site Type:	Corrective Action
Site Type Detailed:	Corrective Action
Acres:	2
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Katherine Gould
Supervisor:	* Unknown
Division Branch:	Cleanup Cypress
Assembly:	41
Senate:	25
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.09554
Longitude:	-117.6752
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CAT080034184
Alias Type:	EPA Identification Number
Alias Name:	80001858
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

SWEEPS UST:

Status:	Active

LAIDLAW ENVIRONMENTAL SERVICES CA INC (Continued) **1000348979**

Comp Number: 4280
Number: 1
Board Of Equalization: 44-035889
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88
Owner Tank Id: 1
SWRCB Tank Id: 36-000-004280-000001
Tank Status: A
Capacity: 1000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 6

Status: Active
Comp Number: 4280
Number: 1
Board Of Equalization: 44-035889
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88
Owner Tank Id: 2
SWRCB Tank Id: 36-000-004280-000002
Tank Status: A
Capacity: 1000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Status: Active
Comp Number: 4280
Number: 1
Board Of Equalization: 44-035889
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88
Owner Tank Id: 3
SWRCB Tank Id: 36-000-004280-000003
Tank Status: A
Capacity: 550
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Status: Active
Comp Number: 4280
Number: 1
Board Of Equalization: 44-035889
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88

LAIDLAW ENVIRONMENTAL SERVICES CA INC (Continued) **1000348979**

Owner Tank Id: 4
SWRCB Tank Id: 36-000-004280-000004
Tank Status: A
Capacity: 280
Active Date: 07-01-85
Tank Use: UNKNOWN
STG: P
Content: Not reported
Number Of Tanks: Not reported

Status: Active
Comp Number: 4280
Number: 1
Board Of Equalization: 44-035889
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-004280-000005
Tank Status: A
Capacity: 2500
Active Date: 06-29-94
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 4280
Number: 1
Board Of Equalization: 44-035889
Referral Date: 06-30-88
Action Date: 06-30-88
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 36-000-004280-000006
Tank Status: A
Capacity: 10000
Active Date: 06-29-94
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

HIST UST:
File Number: 00029CE2
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029CE2.pdf
Region: STATE
Facility ID: 00000004280
Facility Type: Other
Other Type: TRUCKING COMPANY
Contact Name: FRANCIS PASSARELLI
Telephone: 7149830342
Owner Name: CONQUIP, INC.-DON WILDER
Owner Address: 1367 W. 9TH ST.
Owner City,St,Zip: UPLAND, CA 91786
Total Tanks: 0004

LAIDLAW ENVIRONMENTAL SERVICES CA INC (Continued) **1000348979**

Tank Num: 001
Container Num: 001
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 002
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 003
Year Installed: Not reported
Tank Capacity: 00000550
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: 004
Year Installed: Not reported
Tank Capacity: 00000280
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: None

Click here for Geo Tracker PDF:

CA FID UST:
Facility ID: 36008340
Regulated By: UTNKA
Regulated ID: 00004280
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 1369 W 009TH ST
Mailing Address 2: Not reported
Mailing City,St,Zip: UPLAND 91786
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

LAIDLAW ENVIRONMENTAL SERVICES CA INC (Continued) **1000348979**

EMI:

Year:	1987	
County Code:	36	
Air Basin:	SC	
Facility ID:	55235	
Air District Name:		SC
SIC Code:	3714	
Air District Name:		SOUTH COAST AQMD
Community Health Air Pollution Info System:		Not reported
Consolidated Emission Reporting Rule:		Not reported
Total Organic Hydrocarbon Gases Tons/Yr:		2
Reactive Organic Gases Tons/Yr:		2
Carbon Monoxide Emissions Tons/Yr:		0
NOX - Oxides of Nitrogen Tons/Yr:		0
SOX - Oxides of Sulphur Tons/Yr:		0
Particulate Matter Tons/Yr:		0
Part. Matter 10 Micrometers and Smlr Tons/Yr:		0

Year:	1990	
County Code:	36	
Air Basin:	SC	
Facility ID:	55235	
Air District Name:		SC
SIC Code:	3714	
Air District Name:		SOUTH COAST AQMD
Community Health Air Pollution Info System:		Not reported
Consolidated Emission Reporting Rule:		Not reported
Total Organic Hydrocarbon Gases Tons/Yr:		0
Reactive Organic Gases Tons/Yr:		0
Carbon Monoxide Emissions Tons/Yr:		0
NOX - Oxides of Nitrogen Tons/Yr:		0
SOX - Oxides of Sulphur Tons/Yr:		0
Particulate Matter Tons/Yr:		0
Part. Matter 10 Micrometers and Smlr Tons/Yr:		0

Year:	1993	
County Code:	36	
Air Basin:	SC	
Facility ID:	55235	
Air District Name:		SC
SIC Code:	3714	
Air District Name:		SOUTH COAST AQMD
Community Health Air Pollution Info System:		Not reported
Consolidated Emission Reporting Rule:		Not reported
Total Organic Hydrocarbon Gases Tons/Yr:		0
Reactive Organic Gases Tons/Yr:		0
Carbon Monoxide Emissions Tons/Yr:		4
NOX - Oxides of Nitrogen Tons/Yr:		0
SOX - Oxides of Sulphur Tons/Yr:		0
Particulate Matter Tons/Yr:		0
Part. Matter 10 Micrometers and Smlr Tons/Yr:		0

Year:	1995	
County Code:	36	
Air Basin:	SC	
Facility ID:	55235	
Air District Name:		SC

LAIDLAW ENVIRONMENTAL SERVICES CA INC (Continued) **1000348979**

SIC Code: 3714
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 4
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smlr: 0 Tons/Yr:

HAZNET:
envid: 1000348979
Year: 2016
GEPAID: CAL000393923
Contact: JOEL BORBOA
Telephone: 9099496060
Mailing Name: Not reported
Mailing Address: 1369 W 9TH ST
Mailing City,St,Zip: UPLAND, CA 91786
Gen County: San Bernardino
TSD EPA ID: AZR000501510
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.025
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Bernardino

HWP:
EPA Id: CAT080034184
Cleanup Status: CLOSED
Latitude: 34.09554
Longitude: -117.6752
Facility Type: Historical - Non-Operating
Facility Size: Not reported
Team: Not reported
Supervisor: Not reported
Site Code: Not reported
Assembly District: 41
Senate District: 25
Public Information Officer: Not reported
Public Information Officer: Not reported

Closure:
EPA Id: CAT080034184
Facility Type: Historical - Non-Operating
Unit Names: Unit1
Event Description: Closure Administrative - ISSUE CLOSURE VERIFICATION
Actual Date: 07/26/2017

127
SSE
1/2-1
0.917 mi.
4842 ft.

PROPERTY AT 1333 WEST 9TH STREET (FMR PRPSD UPLAND
1333 WEST 9TH STREET
UPLAND, CA 91786

ENVIROSTOR
SCH
DEED
NPDES

S106895164
N/A

Relative:
Lower

Actual:
1243 ft.

ENVIROSTOR:

Facility ID:	36350023
Status:	Certified O&M - Land Use Restrictions Only
Status Date:	12/12/2014
Site Code:	404620
Site Type:	School Cleanup
Site Type Detailed:	School
Acres:	4.83
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Aslam Shareef
Supervisor:	Shahir Haddad
Division Branch:	Southern California Schools & Brownfields Outreach
Assembly:	41
Senate:	25
Special Program:	Not reported
Restricted Use:	YES
Site Mgmt Req:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	34.09691
Longitude:	-117.6737
APN:	100750105
Past Use:	EQUIPMENT/INSTRUMENT REPAIR, VEHICLE MAINTENANCE
Potential COC:	Benzene Tetrachloroethylene (PCE Trichloroethylene (TCE
Confirmed COC:	30022-NO 30027-NO
Potential Description:	SV
Alias Name:	SAN BERNARDINO COUNTY OFFICE OF EDUCATIO
Alias Type:	Alternate Name
Alias Name:	SBER CO SOS PROPOSD UPLAND COMMUNITY DAY
Alias Type:	Alternate Name
Alias Name:	Upland Community Day School
Alias Type:	Alternate Name
Alias Name:	100750105
Alias Type:	APN
Alias Name:	404620
Alias Type:	Project Code (Site Code)
Alias Name:	36350023
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	04/28/2005
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Annual Oversight Cost Estimate
Completed Date:	08/31/2017
Comments:	Annual cost estimate letter sent 8/31/17.

Completed Area Name: PROJECT WIDE

PROPERTY AT 1333 WEST 9TH STREET (FMR PRPSD UPLAND COMMUNITY (Continued) **S106895164**

Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 05/01/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Tech Memo
Completed Date: 03/14/2014
Comments: DTSC approved the TM subject to comments

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 09/12/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 02/26/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 06/07/2017
Comments: DTSC processed approval for the Annual LUC inspection

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 10/24/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 09/17/2008
Comments: DTSC prepared project close out Cost Recovery Unit Memorandum.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 08/26/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 12/12/2014
Comments: Recorded Land Use Restrictions

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/23/2015

PROPERTY AT 1333 WEST 9TH STREET (FMR PRPSD UPLAND COMMUNITY (Continued) **S106895164**

Comments: Annual Cost Estimate emailed and mailed to BP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/16/2016
Comments: Annual Cost Estimate Letter sent to RP on 9/16/16.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 04/20/2005
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 36350023
Site Type: School Cleanup
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 4.83
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Aslam Shareef
Supervisor: Shahir Haddad
Division Branch: Southern California Schools & Brownfields Outreach
Site Code: 404620
Assembly: 41
Senate: 25
Special Program Status: Not reported
Status: Certified O&M - Land Use Restrictions Only
Status Date: 12/12/2014
Restricted Use: YES
Funding: Responsible Party
Latitude: 34.09691
Longitude: -117.6737
APN: 100750105
Past Use: EQUIPMENT/INSTRUMENT REPAIR, VEHICLE MAINTENANCE
Potential COC: Benzene, Tetrachloroethylene (PCE, Trichloroethylene (TCE
Confirmed COC: 30022-NO, 30027-NO
Potential Description: SV
Alias Name: SAN BERNARDINO COUNTY OFFICE OF EDUCATIO
Alias Type: Alternate Name
Alias Name: SBER CO SOS PROPOSD UPLAND COMMUNITY DAY
Alias Type: Alternate Name

PROPERTY AT 1333 WEST 9TH STREET (FMR PRPSD UPLAND COMMUNITY (Continued) **S106895164**

Alias Name: Upland Community Day School
Alias Type: Alternate Name
Alias Name: 100750105
Alias Type: APN
Alias Name: 404620
Alias Type: Project Code (Site Code)
Alias Name: 36350023
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 04/28/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 08/31/2017
Comments: Annual cost estimate letter sent 8/31/17.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 05/01/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Tech Memo
Completed Date: 03/14/2014
Comments: DTSC approved the TM subject to comments

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 09/12/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 02/26/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 06/07/2017
Comments: DTSC processed approval for the Annual LUC inspection

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 10/24/2013
Comments: Not reported

PROPERTY AT 1333 WEST 9TH STREET (FMR PRPSD UPLAND COMMUNITY (Continued) **S106895164**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 09/17/2008
Comments: DTSC prepared project close out Cost Recovery Unit Memorandum.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 08/26/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 12/12/2014
Comments: Recorded Land Use Restrictions

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/23/2015
Comments: Annual Cost Estimate emailed and mailed to BP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/16/2016
Comments: Annual Cost Estimate Letter sent to RP on 9/16/16.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 04/20/2005
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

DEED:
Envirostor ID: 36350023
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: SCHOOL CLEANUP
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): 12/12/2014
File Name: Envirostor Land Use Restrictions

PROPERTY AT 1333 WEST 9TH STREET (FMR PRPSD UPLAND COMMUNITY (Continued) **S106895164**

NPDES:
Npdes Number: Not reported
Facility Status: Not reported
Agency Id: Not reported
Region: 8
Regulatory Measure Id: 438773
Order No: Not reported
Regulatory Measure Type: Industrial
Place Id: Not reported
WDID: 8 36I024317
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: 04/01/2014
Discharge Name: Not reported
Discharge Address: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
RECEIVED DATE: 06/19/2013
PROCESSED DATE: 06/19/2013
STATUS CODE NAME: Terminated
STATUS DATE: 08/14/2014
PLACE SIZE: 4.2
PLACE SIZE UNIT: Acres
FACILITY CONTACT NAME: Mario Romero
FACILITY CONTACT TITLE: Not reported
FACILITY CONTACT PHONE: 909-946-1640
FACILITY CONTACT PHONE EXT: Not reported
FACILITY CONTACT EMAIL: Not reported
OPERATOR NAME: Boart Longyear Company
OPERATOR ADDRESS: 10808 South Riverfront Pkwy
OPERATOR CITY: South Jordan
OPERATOR STATE: Utah
OPERATOR ZIP: 94905
OPERATOR CONTACT NAME: Jamey Smith
OPERATOR CONTACT TITLE: Not reported
OPERATOR CONTACT PHONE: 503-539-9504
OPERATOR CONTACT PHONE EXT: Not reported
OPERATOR CONTACT EMAIL: Not reported
OPERATOR TYPE: Private Business
DEVELOPER NAME: Not reported
DEVELOPER ADDRESS: Not reported
DEVELOPER CITY: Not reported
DEVELOPER STATE: Utah
DEVELOPER ZIP: Not reported
DEVELOPER CONTACT NAME: Not reported
DEVELOPER CONTACT TITLE: Not reported
CONSTYPE LINEAR UTILITY IND: Not reported
EMERGENCY PHONE NO: Not reported
EMERGENCY PHONE EXT: Not reported
CONSTYPE ABOVE GROUND IND: Not reported
CONSTYPE BELOW GROUND IND: Not reported
CONSTYPE CABLE LINE IND: Not reported
CONSTYPE COMM LINE IND: Not reported
CONSTYPE COMMERTIAL IND: Not reported

PROPERTY AT 1333 WEST 9TH STREET (FMR PRPSD UPLAND COMMUNITY (Continued) **S106895164**

CONSTYPE ELECTRICAL LINE IND Not reported
CONSTYPE GAS LINE IND: Not reported
CONSTYPE INDUSTRIAL IND: Not reported
CONSTYPE OTHER DESRIPTION: Not reported
CONSTYPE OTHER IND: Not reported
CONSTYPE RECONS IND: Not reported
CONSTYPE RESIDENTIAL IND: Not reported
CONSTYPE TRANSPORT IND: Not reported
CONSTYPE UTILITY DESCRIPTION Not reported
CONSTYPE UTILITY IND: Not reported
CONSTYPE WATER SEWER IND: Not reported
DIR DISCHARGE USWATER IND: N
RECEIVING WATER NAME: San Antonio Wash, Chino Creek, Santa Ana River
CERTIFIER NAME: Not reported
CERTIFIER TITLE: Not reported
CERTIFICATION DATE: Not reported
PRIMARY SIC: 1081-Metal Mining Services
SECONDARY SIC: 1781-Water Well Drilling
TERTIARY SIC: Not reported

Count: 7 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CLAREMONT	S107537805		BEHIND 1025 FOOTHILL BLVD	91711	CDL
MONTCLAIR	1018148649	DEMPSEY PROPERTY	10777-10787 MONTE VISTA AVE.	91763	SEMS
UPLAND	1007443891	CITY OF UPLAND SANITARY LANDFILL S	BETWEEN 14TH AND 15TH STREETS		ODI
UPLAND	S104748811	TERRY'S SHELL	183 FOOTHILL BLVD	91786	LUST, HIST CORTESE
UPLAND	S103464093	THRIFTY OIL # / ARCO # 9691	775 FOOTHILL BLVD	91786	LUST
UPLAND	S107536164		745 W FOOTHILL BLVD, IN VEHICL	91786	CDL
UPLAND	S107536163		745 W FOOTHILL BLVD	91786	CDL

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/05/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/22/2017
Date Data Arrived at EDR: 06/13/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 94

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 23

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 31
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69
Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 134
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/22/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 36
Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 21
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 05/31/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 76
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176
Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/02/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 19

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 05/09/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 57

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63
Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/16/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/05/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/26/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2017
Date Data Arrived at EDR: 10/05/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 8
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 63

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 10/29/2017
Date Data Arrived at EDR: 11/28/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 45

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/25/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 24

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 9

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/13/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/27/2017
Date Data Arrived at EDR: 11/21/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 53
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/02/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 147
Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 34

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 52

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/08/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/08/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/29/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 23
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/05/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 35
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 32
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/13/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 02/22/2018
Number of Days to Update: 42

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 12/08/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 15

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/31/2017
Date Data Arrived at EDR: 09/05/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 64

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 51

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 10/31/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 11/14/2017
Number of Days to Update: 13

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/06/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 21

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/03/2017
Date Data Arrived at EDR: 10/06/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 40

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 10/25/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 19

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/03/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 22

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 56

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/20/2017
Number of Days to Update: 43

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 28

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 11/09/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 5

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 07/24/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 82

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206
Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 12/13/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 5
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 01/16/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 29
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 10/09/2017
Number of Days to Update: 171
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 01/17/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 28
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/17/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 10/26/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/06/2017
Number of Days to Update: 10

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 12

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/12/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 27

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 11/21/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 30

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 20

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 11/22/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 8

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/09/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 28

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/09/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/07/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/08/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 50

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 12

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 28

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/15/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/15/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/05/2018
Number of Days to Update: 33

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 42

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/17/2017
Number of Days to Update: 14

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 46

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 37

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/05/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 02/01/2018
Number of Days to Update: 42

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/13/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 28
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/06/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 29
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28
Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/16/2017
Date Made Active in Reports: 01/04/2018
Number of Days to Update: 49
Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 34

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 28

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 34

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 41

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 12/01/2017
Date Data Arrived at EDR: 12/04/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 15

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List

Cupa facilities

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 09/28/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 18

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/24/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 22

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 43

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/26/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 43

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 12/13/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 37
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/11/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 10
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/08/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/11/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 34
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107
Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/05/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/01/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 11/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/11/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.
Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.
Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

NOT REPORTED
NOT REPORTED
UPLAND, CA 91786

TARGET PROPERTY COORDINATES

Latitude (North):	34.110438 - 34° 6' 37.58''
Longitude (West):	117.684805 - 117° 41' 5.30''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	436839.7
UTM Y (Meters):	3774418.0
Elevation:	1396 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5619074 ONTARIO, CA
Version Date:	2012
North Map:	5630625 MOUNT BALDY, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

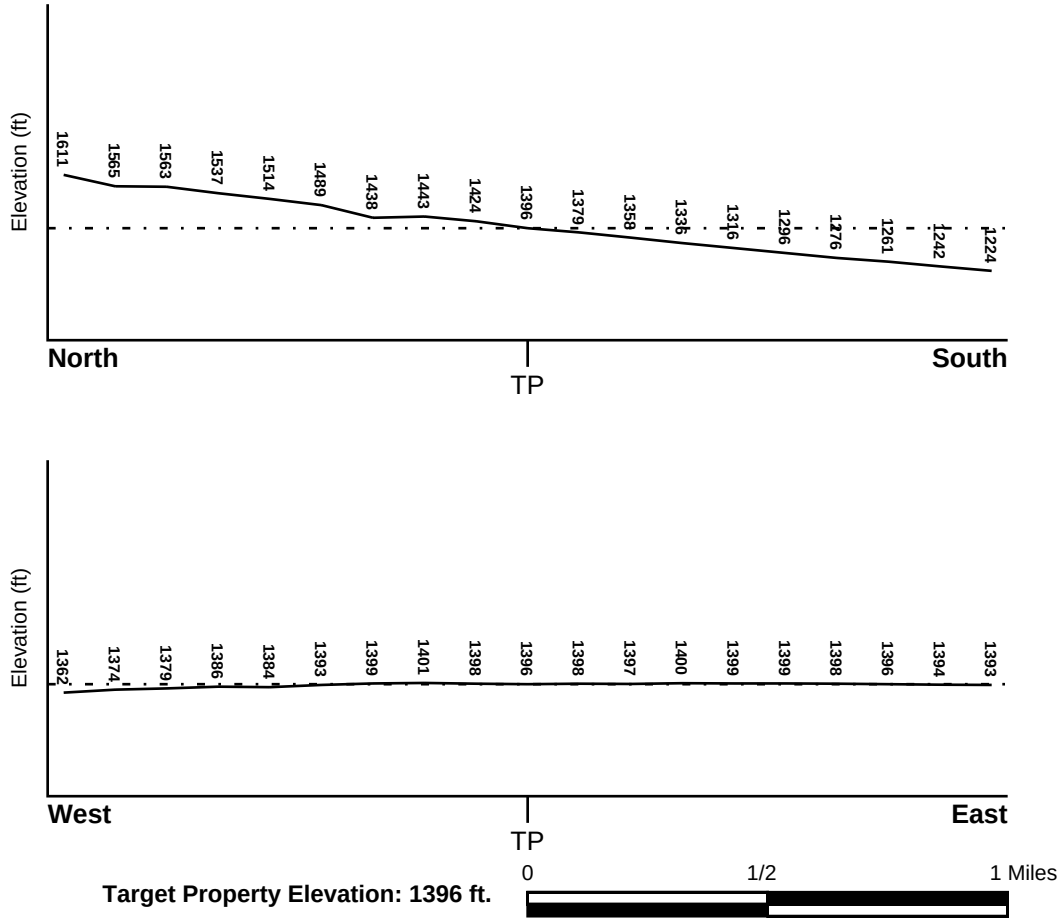
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06037C1750F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06071C8605H	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ONTARIO	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

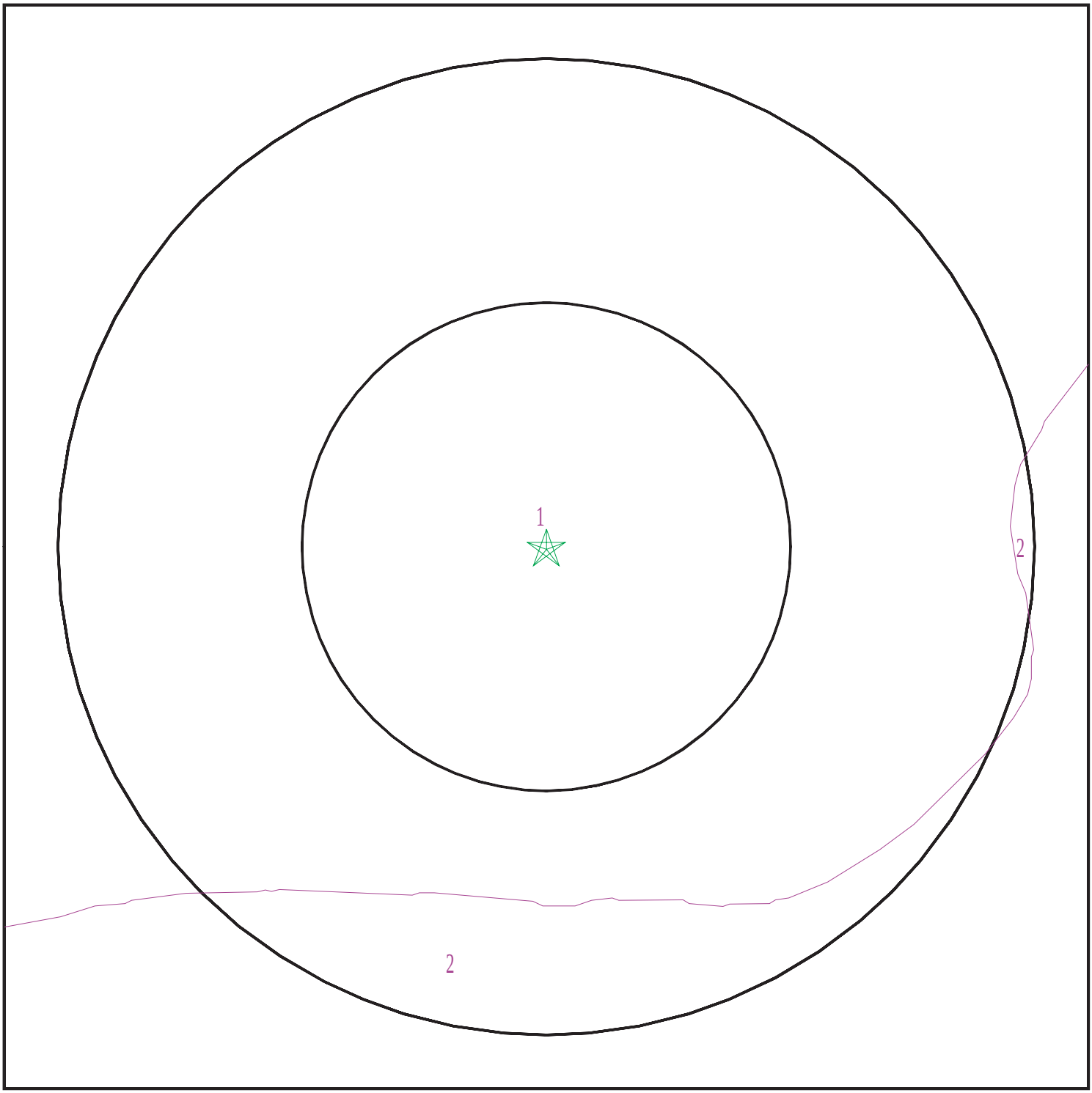
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5210223.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Not Reported	CLIENT:	Ardent Environmental Group
ADDRESS:	Not Reported Upland CA 91786	CONTACT:	Taylor Nesby
LAT/LONG:	34.110438 / 117.684805	INQUIRY #:	5210223.2s
		DATE:	March 06, 2018 1:45 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Soboba

Soil Surface Texture: very stony loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	very stony loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.1 Min: 5.6
2	9 inches	59 inches	very stony sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 141 Min: 141	Max: 7.8 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: SOBOBA

Soil Surface Texture: gravelly loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.5 Min: 6.1
2	11 inches	35 inches	very gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 141 Min: 42	Max: 6.5 Min: 6.1
3	35 inches	59 inches	very stony sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 141 Min: 141	Max: 7.3 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
5	USGS40000141000	1/2 - 1 Mile SSE
6	USGS40000141003	1/2 - 1 Mile SSE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

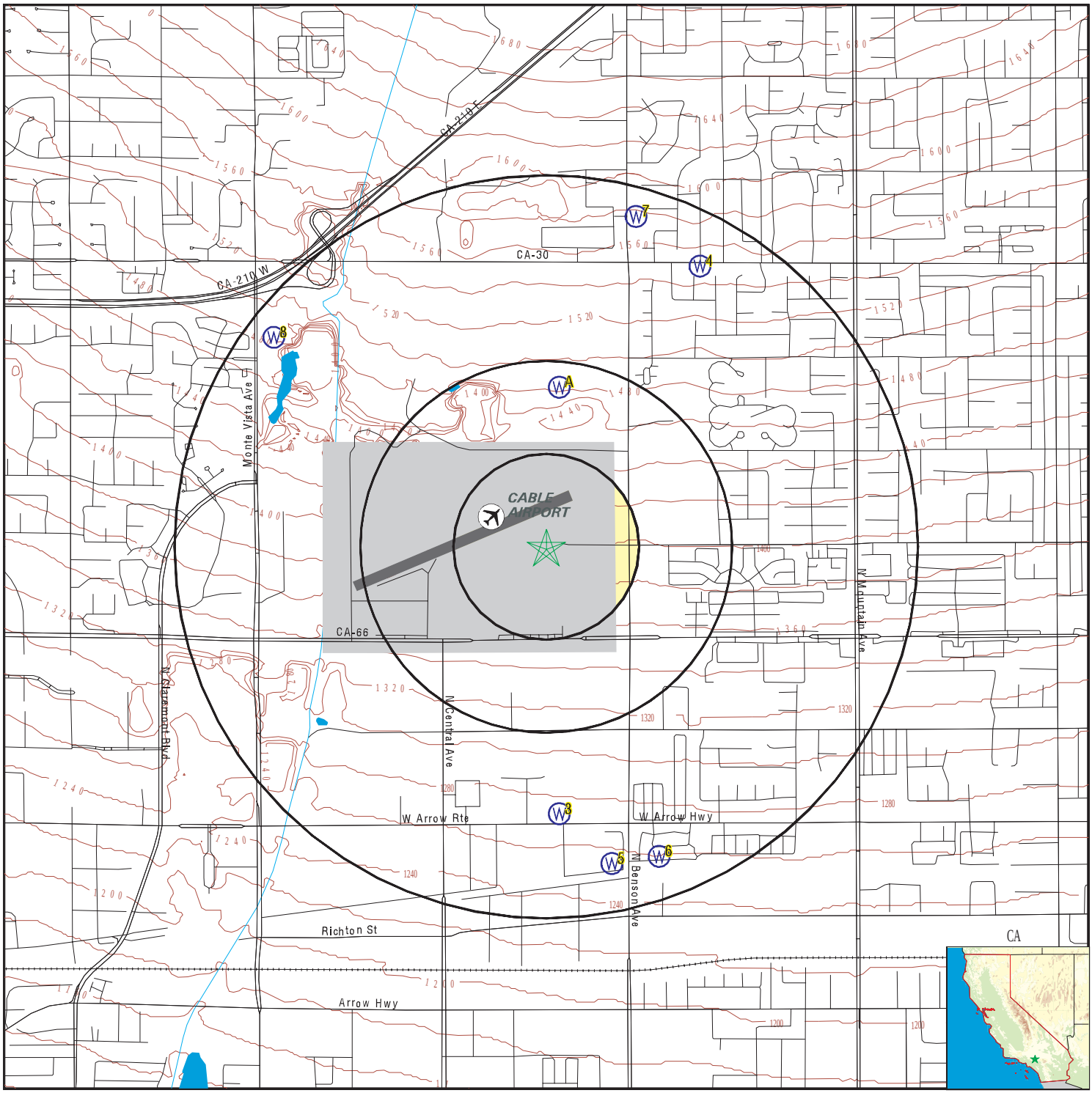
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	1102	1/4 - 1/2 Mile North
A2	1103	1/4 - 1/2 Mile North
3	1150	1/2 - 1 Mile South
4	18892	1/2 - 1 Mile NNE
7	357	1/2 - 1 Mile NNE
8	14204	1/2 - 1 Mile NW

PHYSICAL SETTING SOURCE MAP - 5210223.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: Not Reported	CLIENT: Ardent Environmental Group
ADDRESS: Not Reported Upland CA 91786	CONTACT: Taylor Nesby
LAT/LONG: 34.110438 / 117.684805	INQUIRY #: 5210223.2s DATE: March 06, 2018 1:45 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
North
1/4 - 1/2 Mile
Higher | **CA WELLS** | **1102**

Water System Information:

Prime Station Code:	01S/08W-02B01 S	User ID:	TAN
FRDS Number:	3610086005	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340700.0 1174100.0	Precision:	Undefined
Source Name:	WEST END WELL 03		
System Number:	3610086		
System Name:	WEST END CONSOLIDATED WATER COMPANY		
Organization That Operates System:			
	139 N EUCLID AVE		
	UPLAND, CA 91786		
Pop Served:	100	Connections:	1001
Area Served:	Not Reported		
Sample Collected:	14-JAN-14	Findings:	350. UG/L
Chemical:	COPPER		
Sample Collected:	26-AUG-14	Findings:	4.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-14	Findings:	400. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	25-SEP-14	Findings:	7.7
Chemical:	PH, LABORATORY		
Sample Collected:	25-SEP-14	Findings:	160. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	25-SEP-14	Findings:	200. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	25-SEP-14	Findings:	200. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	25-SEP-14	Findings:	59. MG/L
Chemical:	CALCIUM		
Sample Collected:	25-SEP-14	Findings:	12. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	25-SEP-14	Findings:	8.6 MG/L
Chemical:	SODIUM		
Sample Collected:	25-SEP-14	Findings:	2.1 MG/L
Chemical:	POTASSIUM		
Sample Collected:	25-SEP-14	Findings:	7.6 MG/L
Chemical:	CHLORIDE		
Sample Collected:	25-SEP-14	Findings:	26. MG/L
Chemical:	SULFATE		

Sample Collected:	25-SEP-14	Findings:	0.32 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	25-SEP-14	Findings:	74. UG/L
Chemical:	ALUMINUM		
Sample Collected:	25-SEP-14	Findings:	0.72
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	25-SEP-14	Findings:	5.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-14	Findings:	6500. UG/L
Chemical:	CARBON DIOXIDE		
Sample Collected:	25-SEP-14	Findings:	1.1 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	25-SEP-14	Findings:	0.71 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	25-SEP-14	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	25-SEP-14	Findings:	1200. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	30-JUN-15	Findings:	4.7 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	30-JUN-15	Findings:	3.3 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	30-JUN-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	19-AUG-15	Findings:	220. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	19-AUG-15	Findings:	5.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-AUG-16	Findings:	1.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	17-AUG-16	Findings:	220. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

A2
North
1/4 - 1/2 Mile
Higher

CA WELLS **1103**

Water System Information:

Prime Station Code:	01S/08W-02B02 S	User ID:	TAN
FRDS Number:	3610086006	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340700.0 1174100.0	Precision:	Undefined
Source Name:	WEST END WELL 04		
System Number:	3610086		
System Name:	WEST END CONSOLIDATED WATER COMPANY		
Organization That Operates System:			
	139 N EUCLID AVE		
	UPLAND, CA 91786		
Pop Served:	100	Connections:	1001
Area Served:	Not Reported		

Sample Collected:	12-JUL-06	Findings:	1.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		

3
South **CA WELLS** **1150**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/08W-11B02 S	User ID:	TAN
FRDS Number:	3610050031	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Destroyed
Source Lat/Long:	340600.0 1174100.0	Precision:	1 Mile (One Minute)
Source Name:	WELL 14 - DESTROYED		
System Number:	3610050		
System Name:	CITY OF UPLAND		
Organization That Operates System:			
	PO BOX 460		
	UPLAND, CA 91786		
Pop Served:	66383	Connections:	16736
Area Served:	UPLAND VIC		

4
NNE **CA WELLS** **18892**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	3610086-002	User ID:	TAN
FRDS Number:	3610086002	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340717.0 1174036.8	Precision:	10 Feet (1/10 Second)
Source Name:	LEMON HEIGHTS WELL 04		
System Number:	3610086		
System Name:	WEST END CONSOLIDATED WATER COMPANY		
Organization That Operates System:			
	139 N EUCLID AVE		
	UPLAND, CA 91786		
Pop Served:	100	Connections:	1001
Area Served:	Not Reported		
Sample Collected:	11-JAN-12	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JAN-12	Findings:	3400. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	04-APR-12	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-APR-12	Findings:	3300. MG/L
Chemical:	NITRATE + NITRITE (AS N)		

Sample Collected:	11-JUL-12	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-OCT-12	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-OCT-12	Findings:	2800. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	16-JAN-13	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUL-13	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JAN-14	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JAN-14	Findings:	3000. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	30-APR-14	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	30-APR-14	Findings:	2900. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	25-SEP-14	Findings:	520. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	25-SEP-14	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	25-SEP-14	Findings:	200. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	25-SEP-14	Findings:	250. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	25-SEP-14	Findings:	260. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	25-SEP-14	Findings:	80. MG/L
Chemical:	CALCIUM		
Sample Collected:	25-SEP-14	Findings:	16. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	25-SEP-14	Findings:	10. MG/L
Chemical:	SODIUM		
Sample Collected:	25-SEP-14	Findings:	2.4 MG/L
Chemical:	POTASSIUM		
Sample Collected:	25-SEP-14	Findings:	14. MG/L
Chemical:	CHLORIDE		
Sample Collected:	25-SEP-14	Findings:	31. MG/L
Chemical:	SULFATE		
Sample Collected:	25-SEP-14	Findings:	0.28 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	25-SEP-14	Findings:	290. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

Sample Collected:	25-SEP-14	Findings:	1.
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	25-SEP-14	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-14	Findings:	6500. UG/L
Chemical:	CARBON DIOXIDE		
Sample Collected:	25-SEP-14	Findings:	0.23 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	25-SEP-14	Findings:	0.52 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	25-SEP-14	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	25-SEP-14	Findings:	2800. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	08-OCT-14	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-OCT-14	Findings:	3000. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	13-JAN-15	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-JAN-15	Findings:	2800. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	30-JUN-15	Findings:	2.9 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	30-JUN-15	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	27-JUL-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-JUL-15	Findings:	3200. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	19-AUG-15	Findings:	310. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	19-AUG-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-OCT-15	Findings:	3. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-OCT-15	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-OCT-15	Findings:	3000. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	27-JAN-16	Findings:	3.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	27-JAN-16	Findings:	3.2 MG/L
Chemical:	NITRATE + NITRITE (AS N)		

Sample Collected:	27-APR-16	Findings:	3.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	27-APR-16	Findings:	3.3 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	20-JUL-16	Findings:	3.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-JUL-16	Findings:	3.3 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	17-AUG-16	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	17-AUG-16	Findings:	310. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	18-OCT-16	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	18-OCT-16	Findings:	3.4 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	26-JAN-17	Findings:	3.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	26-JAN-17	Findings:	3.5 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	27-APR-17	Findings:	3.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	27-APR-17	Findings:	3.2 MG/L
Chemical:	NITRATE + NITRITE (AS N)		

5
SSE **FED USGS** **USGS40000141000**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340553117405101		
Monloc name:	001S008W11J001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0980654
Longitude:	-117.6817219	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	928
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

6
SSE **FED USGS** **USGS40000141003**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340554117404301		
Monloc name:	001S008W12M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070203	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0983431
Longitude:	-117.6794996	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	904
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

7
NNE **CA WELLS** **357**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	01N/08W-36N01 S	User ID:	TAN
FRDS Number:	3610050038	County:	San Beernardino
District Number:	13	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340724.0 1174047.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 17		
System Number:	3610050		
System Name:	CITY OF UPLAND		
Organization That Operates System:			
	PO BOX 460		
	UPLAND, CA 91786		
Pop Served:	66383	Connections:	16736
Area Served:	UPLAND VIC		

Sample Collected:	11-JAN-12	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JAN-12	Findings:	3800. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	04-APR-12	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-APR-12	Findings:	3500. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	11-JUL-12	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUL-13	Findings:	2.8 UG/L
Chemical:	ARSENIC		
Sample Collected:	02-JUL-13	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	21-AUG-13	Findings:	4.3 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	21-AUG-13	Findings:	3.2 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	21-AUG-13	Findings:	1.3 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	21-AUG-13	Findings:	240. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	21-AUG-13	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	21-AUG-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	14-JAN-14	Findings:	3.9 UG/L
Chemical:	ARSENIC		
Sample Collected:	14-JAN-14	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JAN-14	Findings:	3300. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	30-APR-14	Findings:	3.6 UG/L
Chemical:	ARSENIC		
Sample Collected:	30-APR-14	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	30-APR-14	Findings:	3200. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	16-JUL-14	Findings:	2.7 UG/L
Chemical:	ARSENIC		
Sample Collected:	16-JUL-14	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-JUL-14	Findings:	3500. MG/L
Chemical:	NITRATE + NITRITE (AS N)		

Sample Collected:	26-AUG-14	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-14	Findings:	430. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	25-SEP-14	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	25-SEP-14	Findings:	150. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	25-SEP-14	Findings:	190. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	25-SEP-14	Findings:	170. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	25-SEP-14	Findings:	57. MG/L
Chemical:	CALCIUM		
Sample Collected:	25-SEP-14	Findings:	5.9 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	25-SEP-14	Findings:	26. MG/L
Chemical:	SODIUM		
Sample Collected:	25-SEP-14	Findings:	1.5 MG/L
Chemical:	POTASSIUM		
Sample Collected:	25-SEP-14	Findings:	10. MG/L
Chemical:	CHLORIDE		
Sample Collected:	25-SEP-14	Findings:	30. MG/L
Chemical:	SULFATE		
Sample Collected:	25-SEP-14	Findings:	0.18 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	25-SEP-14	Findings:	2.4 UG/L
Chemical:	ARSENIC		
Sample Collected:	25-SEP-14	Findings:	0.81
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	25-SEP-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-14	Findings:	0.55 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	25-SEP-14	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	25-SEP-14	Findings:	3700. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	08-OCT-14	Findings:	3.2 UG/L
Chemical:	ARSENIC		
Sample Collected:	08-OCT-14	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-OCT-14	Findings:	3400. MG/L
Chemical:	NITRATE + NITRITE (AS N)		

Sample Collected:	14-OCT-14	Findings:	1.7 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	13-JAN-15	Findings:	3.6 UG/L
Chemical:	ARSENIC		
Sample Collected:	13-JAN-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-JAN-15	Findings:	3400. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	27-JUL-15	Findings:	3.9 UG/L
Chemical:	ARSENIC		
Sample Collected:	27-JUL-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-JUL-15	Findings:	3400. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	19-AUG-15	Findings:	240. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	19-AUG-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-OCT-15	Findings:	3.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-OCT-15	Findings:	3.2 UG/L
Chemical:	ARSENIC		
Sample Collected:	20-OCT-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-OCT-15	Findings:	3500. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	27-JAN-16	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	27-JAN-16	Findings:	4.3 UG/L
Chemical:	ARSENIC		
Sample Collected:	27-JAN-16	Findings:	3.4 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	27-APR-16	Findings:	3.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	27-APR-16	Findings:	4.1 UG/L
Chemical:	ARSENIC		
Sample Collected:	27-APR-16	Findings:	3.3 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	20-JUL-16	Findings:	3.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-JUL-16	Findings:	4.3 UG/L
Chemical:	ARSENIC		
Sample Collected:	20-JUL-16	Findings:	3.2 MG/L
Chemical:	NITRATE + NITRITE (AS N)		

Sample Collected:	17-AUG-16	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	17-AUG-16	Findings:	2.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	17-AUG-16	Findings:	1.7 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	17-AUG-16	Findings:	240. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	17-AUG-16	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	17-AUG-16	Findings:	0.39 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	17-AUG-16	Findings:	0.75 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	17-AUG-16	Findings:	1.5 PCI/L
Chemical:	GROSS BETA MDA95		
Sample Collected:	18-OCT-16	Findings:	3.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	18-OCT-16	Findings:	4.7 UG/L
Chemical:	ARSENIC		
Sample Collected:	18-OCT-16	Findings:	3.1 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	27-JAN-17	Findings:	4.6 UG/L
Chemical:	ARSENIC		
Sample Collected:	27-APR-17	Findings:	3. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	27-APR-17	Findings:	4.3 UG/L
Chemical:	ARSENIC		
Sample Collected:	27-APR-17	Findings:	3. MG/L
Chemical:	NITRATE + NITRITE (AS N)		

8
NW
1/2 - 1 Mile
Higher

CA WELLS **14204**

Water System Information:

Prime Station Code:	1910024-030	User ID:	MET
FRDS Number:	1910024030	County:	Los Angeles
District Number:	15	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Treated
Source Lat/Long:	340707.0 1174148.0	Precision:	100 Feet (one Second)
Source Name:	MT. VIEW WELL - TREATED		
System Number:	1910024		
System Name:	SCWC - CLAREMONT		
Organization That Operates System:			
	P.O. BOX 9016		
	SAN DIMAS, CA 91773		
Pop Served:	34028	Connections:	10187
Area Served:	CLAREMONT		

Sample Collected:	04-NOV-14	Findings:	460. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	04-NOV-14	Findings:	8.05
Chemical:	PH, LABORATORY		
Sample Collected:	04-NOV-14	Findings:	180. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	04-NOV-14	Findings:	220. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	04-NOV-14	Findings:	220. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	04-NOV-14	Findings:	67. MG/L
Chemical:	CALCIUM		
Sample Collected:	04-NOV-14	Findings:	13. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	04-NOV-14	Findings:	8.1 MG/L
Chemical:	SODIUM		
Sample Collected:	04-NOV-14	Findings:	2.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	04-NOV-14	Findings:	18. MG/L
Chemical:	CHLORIDE		
Sample Collected:	04-NOV-14	Findings:	28. MG/L
Chemical:	SULFATE		
Sample Collected:	04-NOV-14	Findings:	0.25 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	04-NOV-14	Findings:	2.1 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	04-NOV-14	Findings:	1.1 UG/L
Chemical:	BROMODICHLOROMETHANE (THM)		
Sample Collected:	04-NOV-14	Findings:	2.9 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	04-NOV-14	Findings:	280. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-NOV-14	Findings:	0.52
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	04-NOV-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-NOV-14	Findings:	0.18 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	04-NOV-14	Findings:	4. UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	04-NOV-14	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	04-NOV-14	Findings:	2600. MG/L
Chemical:	NITRATE + NITRITE (AS N)		

Sample Collected:	04-NOV-14	Findings:	1.45 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	04-NOV-14	Findings:	1.21 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	04-NOV-14	Findings:	1.69 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	04-NOV-14	Findings:	0.4 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	04-NOV-14	Findings:	0.199 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	04-NOV-14	Findings:	0.418 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	17-AUG-15	Findings:	3.4 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	17-AUG-15	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-AUG-15	Findings:	4.1 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	23-AUG-16	Findings:	2.8 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	23-AUG-16	Findings:	10. UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	23-AUG-16	Findings:	10. UG/L
Chemical:	TOTAL TRIHALOMETHANES		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
91786	23	2

Federal EPA Radon Zone for SAN BERNARDINO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 91786

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.900 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX E

RESUMES

RESUME OF PAUL A. ROBERTS
Principal Geologist

EDUCATION

Bachelor of Science, Geology, 1987, California State University, Fullerton, California

REGISTRATION AND CERTIFICATIONS

Professional Geologist, California PG 6897
Registered Geologist, Arizona RG 42445
Ventura County Well Inspector
OSHA 40-Hour Health and Safety Training (with annual updates)
OSHA 8-Hour Health and Safety Supervisor Training

EMPLOYMENT HISTORY

1986-1996 – Applied Geosciences Inc. (environmental consulting)
1996-1998 – ATC Associates (environmental consulting)
1998-2007 – Ninyo & Moore (environmental consulting)
2007-present – Ardent Environmental Group, Inc. (environmental consulting)

PROFESSIONAL EXPERIENCE AND RESPONSIBILITIES

As a Principal Geologist for Ardent Environmental Group, Inc., Mr. Roberts conducts and coordinates high-profile hydrogeologic and geologic field evaluations. Mr. Roberts also supervises staff- and project-level geologists, engineers, and scientists to complete the installation of groundwater monitoring wells and soil and groundwater remediation systems, as well as completing pilot tests and feasibility studies for remedial system design. Mr. Roberts is very familiar with mud- and air-rotary, sonic, direct-push, and hollow stem auger drilling techniques, and interprets geophysical data and soil physical analyses to design water well construction. As part of these tasks, Mr. Roberts interacts with clients, attorneys, and agency representatives. The following presents a partial list of projects supervised and/or completed by Mr. Roberts.

- **Water Replenishment District of Southern California (District), Santa Fe Springs:** California Professional Geologist retained to log and sample deep borings in preparation to install nested groundwater monitoring wells as part of the Central Basin Groundwater Contamination Study. The work was completed to assist the United States Geological Survey (USGS) and the District to find mergence zones or pathways where known volatile organic compound (VOC)-impacted shallow groundwater could be migrating into deeper water supply aquifers. The work included drilling pilot borings using mud-rotary drilling methods to depths of approximately 518 feet below the ground surface (bgs). During drilling activities, Mr. Roberts monitored drilling conditions, logged cuttings and collected soil samples for lithological interpretation. Following drilling activities, downhole geophysical equipment, including suspension velocity measurements, resistivity, spontaneous potential and natural gamma logging, and caliper and natural gamma logging, was used to further assess lithological conditions. Based on these data, Mr. Roberts assisted representatives from the USGS and District to design and oversee installation of 10 groundwater monitoring wells. Following installation, the wells were developed and sampled.

- **Former Ashland Chemical Plant, Santa Fe Springs:** Principal Geologist retained to log and sample deep borings for the installation of groundwater monitoring, extraction, and injection wells used to characterize and remediate VOC impacted groundwater associated with a former chemical plant. Sonic, mud-rotary, and hollow stem auger drilling methods were used to drill pilot borings to depths of up to 407 feet bgs. Hydropunch sampling results and soil physical analyses were used to design deep nested groundwater monitoring and remediation wells. Well development and sampling were also completed.

- **Former Optical Lens Manufacturing Facility, Costa Mesa:** Mr. Roberts is the Project Coordinator for an on-going VOC soil and groundwater investigation/remediation effort associated with a former optical lens manufacturing facility. The investigations are being completed under the direction and oversight of the Department of Toxic Substances Control (DTSC) as part of the regional Costa Mesa Site Discovery Project. Investigations have included the installation and sampling of groundwater monitoring wells, soil investigations and characterization, indoor air monitoring, and remedial design of a soil vapor extraction system (VES).

- **Former CENCO Refinery Properties, Santa Fe Springs**: Mr. Roberts supervised and coordinated the environmental activities associated with the acquisition and redevelopment of two properties formerly occupied by the CENCO Refinery. These properties, located immediately east and southeast of the main refinery, were used by CENCO and others for product storage and oil recycling. Oil field production and oil well drilling waste disposal was also historically associated with this land. Mr. Roberts worked with the City of Santa Fe Springs Fire Department and DTSC to investigate historical environmental issues; mitigate petroleum hydrocarbon and polychlorinated biphenyl (PCB)-impacted soil through on-site management by the installation of an impermeable cap (referred to as the “PCB-Capped Area”) or by excavation; removal of underground storage tanks (USTs); methane gas assessment, mitigation design and implementation, and monitoring; groundwater well video logging and abandonment; and oil well abandonment. Currently, Mr. Roberts completes annual inspections and 5-year reviews of the PCB-Capped Area and supervises the annual monitoring of methane gas beneath the buildings.

- **Former Nissan North America Corporate Headquarters, Carson:** Project Geologist to oversee the characterization of petroleum hydrocarbon-impacted soil and groundwater associated with a release from a fuel UST. Mr. Roberts oversaw the installation of 15 groundwater monitoring wells and four vapor extraction wells. Following completion of a soil vapor extraction pilot test, Mr. Roberts designed and implemented a VES which successfully remediated the impacted soil. Groundwater remediation was completed using in-situ air stripping techniques.

- **Northwest Pipe Company Property, Jurupa Valley; Commerce Casino, Commerce; Rock-Lomita Property, Torrance; Former Ball Glass Plant, Torrance; and BMW of Riverside, Riverside:** Principal Geologist managing and coordinating environmental characterization of petroleum hydrocarbon or VOC-impacted soil associated with releases from historical manufacturing activities or USTs at a number of properties throughout Southern California. Tasks included the installation of soil remediation systems, completion of pilot studies, and the design and implementation of full-scale SVE systems. These systems were operated until effluent soil vapor concentrations and/or the results of confirmation soil samples met residential or commercial standards. During these operations,

Mr. Roberts interacted with lead regulatory agencies including the Regional Water Quality Control Board, DTSC, or local fire departments. Most of these facilities also included the installation and monitoring of groundwater monitoring wells. Some of these systems are on-going.

- **Port of Los Angeles:** Project Geologist managing several environmental projects for the Port of Los Angeles (POLA) under an on-call contract. Project Geologist interacting with POLA personnel regarding environmental issues associated with land purchases, tenant audits, and on-call remediation. Projects have involved removal of underground storage tanks at the Yang Ming Terminal and continued groundwater monitoring, and the implementation of a corrosion study at a potential automobile storage yard in the Port of Los Angeles.

- **Alameda Corridor Transportation Authority:** Project Geologist managing numerous environmental projects under an on-call remediation services contract. Projects have involved remediation of petroleum pipelines and impacted soil discovered during construction activities of the Alameda Corridor. One project involved dredging metal-impacted soil from the Port of Los Angeles, where Mr. Roberts acted as the liaison between POLA and ACTA representatives.

- **Riverside County Transportation Commission (RCTC):** Project Manager for several projects for RCTC. On one occasion, RCTC discovered impacted soil and a groundwater well during redevelopment of a property in Corona. As not to delay grading activities, Mr. Roberts successfully obtained an expedited groundwater well destruction permit with Riverside County, profiled the soil for excavation and disposal, and abandoned the well. The property was subsequently developed with a Metrolink station with minimal delays.

- **Jack in the Box and Qdoba Restaurants:** Since 1991, Mr. Roberts has acted as Project Geologist managing numerous Phase I Environmental Site Assessments and other environmental issues regarding real estate transactions for Jack in the Box Inc. Since most of the properties are corner parcels which contained historical gasoline stations, Mr. Roberts would subsequently manage and conduct Phase II Subsurface Investigations to assess whether impacted soil and/or groundwater exists at the site and, if present, characterize the extent of the contaminants. In June 2012, Jack in the Box Inc. and Qdoba Restaurants (owned by Jack in the Box Inc.) awarded Ardent Environmental Group, Inc. an on-call environmental management contract for all Jack in the Box and Qdoba properties throughout the United States. Mr. Roberts is the Project Manager for this contract which includes completing Preliminary Environmental Reviews of possible property acquisitions, completing and managing Phase I and Phase II Environmental Site Assessments and asbestos surveys, and on-call consultation regarding environmental issues and concerns.

ASSOCIATIONS

The Geological Society of America

RESUME OF TAYLOR NESBY
Staff Geologist

EDUCATION

Bachelor of Arts, Environmental Earth Science, 2017, University of California, Berkeley

EMPLOYMENT HISTORY

2017-present – Ardent Environmental Group, Inc. (environmental consulting)

PROFESSIONAL EXPERIENCE AND RESPONSIBILITIES

Mr. Nesby has a strong background in geology, geography, chemistry and physics which provides support in completing a variety of field and office tasks during environmental assessments, site characterization, and remediation projects. Tasks include development of work plans, collection of field data, drilling and sampling soil borings, vapor well installation and sampling, research and review of regulatory records and historical land use records, data evaluation, and technical report preparation. Mr. Nesby's project experience includes:

- **Phase I Environmental Site Assessment:** Staff Geologist for Phase I Environmental Site Assessment reports throughout Southern California. Report preparation includes site reconnaissance activities involving visual site inspection, research and review of regulatory records and historical land use records, and identification of potential environmental concerns and/or impacts to the site.

- **Phase II Site Characterization:** Staff Geologist for projects involving the advancement of soil borings by direct-push, MIP, and hollow stem auger methods to assess the nature, magnitude, and extent of soil contamination. These duties also include conducting soil gas surveys to assess vapor concentrations of volatile organic compounds (VOCs) for human health risks.

- **Excavation Monitoring:** Conducting soil gas surveys to assess concentrations of volatile organic compounds (VOCs) for human health risks.

- **Groundwater Monitoring:** Perform groundwater monitoring activities at facilities throughout Southern California. Depth to groundwater is measured with electric sounders before sampling. Wells are purged of static groundwater using submersible pumps and hand bailers. Groundwater is collected from monitoring wells and sent to a laboratory for analyses to determine the effectiveness of remedial actions at the properties.

APPENDIX E

Hydrology Calculations

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

BRIDGE UPLAND
NORTHEAST CORNER OF FOOTHILL BLVD.
AND CENTRAL AVENUE
UPLAND, CALIFORNIA

PREPARED FOR

BRIDGE DEVELOPMENT PARTNERS
1334 PARKWAY AVENUE, SUITE 310
MANHATTAN BEACH, CALIFORNIA 90266
P. (213) 805-6350
FAX (310) 853-8423

MAY 7, 2018
REVISED APRIL 3, 2019
REVISED JULY 22, 2019
REVISED SEPTEMBER 27, 2019
REVISED NOVEMBER 13, 2019
REVISED NOVEMBER 22, 2019

JOB NO. 3651

PREPARED BY

THIENES ENGINEERING
14349 FIRESTONE BLVD.
LA MIRADA, CALIFORNIA 90638
P. (714) 521-4811
FAX (714) 521-4173

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

BRIDGE UPLAND

PREPARED UNDER
THE SUPERVISION OF



11 / 22 / 19

REINHARD STENZEL DATE:
R.C.E. 56155
EXP. 12/31/20

INTRODUCTION

A: PROJECT LOCATION

The project site is located north of Foothill Boulevard between the prolongation of Central Avenue at the west and Benson Avenue to the east in the City of Upland. Cable Airport is adjacent to the site to the north. See following page for vicinity map.

B: STUDY PURPOSE

The purpose of this study is to determine the existing and proposed condition 100-year peak flow rate from the site that ultimately drains to an existing storm drain system in Foothill Boulevard.

C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Reinhard Stenzel, PE
James Wickenhaeuser



Last Update: 11/21/19
O:\3600-3699\3651\3651VicMap.dwg

Thienes Engineering, inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

VICINITY MAP
FOR
BRIDGE UPLAND

DISCUSSION

The proposed commercial site encompasses approximately 50.0 acres. Improvements to the site include one warehouse type building. The building is approximately 200,300 square feet. The building has two truck yard areas as well as vehicle parking. Landscaping is located throughout the project site.

County/City Hydrology

San Bernardino County Flood Control District's Comprehensive Storm Drain Plan Project No. 1-7, dated July 1966, appears to have tabled the easterly half of the project site (Area B9) to a storm drain system in Benson Avenue. The westerly half of the project site (southerly portion of Area 7A) appears to be tabled to a future storm drain system in Central Avenue. This study also shows a portion of the airport to the north (northerly portion of Area 7A) draining to the project site. The provided drainage maps to not indicate peak flow rates.

The West Upland Master Storm Drain Plan appears to have updated the older Comprehensive Storm Drain Plan. Exhibit "A" – Hydrology Map, dated June 2001, provided by the City shows the majority of the project site (Areas B6, B7, B10, B11 and B12) tabled westerly in Foothill Boulevard to detention areas located south of Foothill Boulevard and east of San Antonio Channel. This exhibit does not indicate peak flow rates.

See Appendix "A" for reference County and City hydrology plans.

Existing Storm Drain Facilities

There is an existing storm drain system in Benson Avenue. The upstream portion of this storm drain is at the intersection of Benson Avenue and 13th Street (east) and Cable Airport Drive (west). The drain continues southerly in Benson Avenue to Arrow Highway. Here, the drain continues westerly in Arrow Highway ultimately to existing detention basins. Hydrology for this storm drain system was not available from the City. It does not appear that a significant portion of the project site is tabled to the Benson Avenue storm drain system.

There is a 42" lateral to the Benson Avenue storm drain at the northerly side of Foothill Boulevard. However, this drain appears to serve the existing Lowe's site and other commercial sites located to the east of the project site.

There is an existing storm drain in 11th Street located south of Foothill Boulevard. This drain intercepts runoff from the upstream portion of the Benson Avenue storm drain, thus providing relief to downstream portions. The storm drain continues westerly to Dewey Way. While this storm drain shows an increase in peak flow rate at Central Avenue, it

does not appear that this drain was intended for flows tabled to Central Avenue from Comprehensive Storm Drain Plan Project No. 1-7.

There is an existing storm drain system in Dewey Way. This storm drain traverses southerly from Foothill Boulevard to an existing detention basin located south of Arrow Highway. Dewey Way is approximately 1250' west of the project site. The plans show a 72" lateral in Foothill Boulevard that extends about 400' easterly. The hydrology study or drainage maps to this storm drain were not available from the City. However, based on the Master Plan and peak flow rates shown on the plan it appears that the project site is tabled to the 72" Foothill lateral.

Finally, the Cable Airport to the north appears to have an onsite drainage system. The majority of runoff from the airport is conveyed westerly to a storm drain system that continues southerly and connected to the previously mentioned Dewey Way storm drain system. It does not appear that the Airport drains directly to the project site.

See Appendix "A" for reference storm drain facilities.

Existing Condition Hydrology

The project site is currently an undeveloped dirt lot with native vegetation. There are several stockpiles of dirt/rocks on the westerly portion of the project site. There are several existing commercial developments and open areas south of the project site.

Foothill Boulevard has a high point roughly midway between the east and west boundaries of the site. Runoff from approximately half of the site ultimately drains easterly towards Benson Avenue with the other half draining westerly towards Central Avenue.

Runoff from the site generally drains from north to south towards Foothill Boulevard. While there are several large stockpiles of dirt on the site. It is assumed that runoff generally goes around these stockpiles and therefore elevations in the rational method model assume the stockpiles are just part of the overall area that is considered as barren.

The easterly portion of the site (nodes 100-102 and 200-202 on the existing condition hydrology map) ultimately drains to Foothill Boulevard through the adjacent properties and open spaces to the south. These areas then appear to drain easterly in Foothill Boulevard. The 100-year peak flow rate for these area is approximately 21.2 cfs and 22.8 cfs, respectively.

The stockpiles and areas adjacent (nodes 300-303 and 400-402) drain from north to south ultimately to Foothill Boulevard. It appears these flows continue westerly in the street. The respective 100-year peak flow rates are approximately 53.6 cfs and 47.5 cfs. Adding up the individual existing condition peak flow rates yields a total 100-year peak flow rate of 145.1 cfs.

See Appendix "B" for existing condition hydrology calculations.

Proposed Condition

Runoff from the easterly parking lot (nodes 100-104 on proposed condition hydrology map) will generally drain from north to south to catch basins located in the parking areas. A proposed storm drain, Line "B", will convey runoff southerly through the drive aisle. This flow will combine with the runoff from the southeasterly parking area (nodes 110-112) at node 113. These flows continue westerly in Line "A" through the southerly parking lot.

Flow from the southerly half of the proposed building and the southerly truck yard area (nodes 120-121) will be intercepted in catch basin located in the truck yard area. A storm drain conveys runoff southerly to confluence with Line "A" (at node 122). Continuing westerly, a portion of the southerly parking area is then added to the Line "A" storm drain system (at node 123). Line "A" continues westerly, ultimately connecting to Line "C" (at node 303).

Runoff from the northerly parking area, the northerly half of the proposed building and the northerly truck yard area (nodes 200-202) drain to catch basins located in the truck yard area. A proposed storm drain, Line "C", conveys runoff westerly around the proposed building. Parking areas immediately west of the building (nodes 203-204) are also tributary to Line "C". Line "C" continues westerly then southerly at the westerly drive aisle. The northwesterly parking area (nodes 300-301) is conveyed to Line "C" at this location (at node 302).

Line "C" continues southerly and confluences with Line "A" in the westerly drive aisle. The westerly drive aisle, the southwesterly parking area and a portion of the southerly landscaped area is added to this storm drain system (at nodes 304 and 305). The total 100-year peak flow rate for this portion of the project site is approximately 172.3 cfs.

The private storm drain system will connect to the proposed extension of the Foothill storm drain system at the Central Avenue cul-de-sac. This storm drain continues westerly in Foothill Boulevard, ultimately connecting to the existing 72" existing storm drain approximately 250' west of the project site.

The existing downstream storm drain plan indicates a 100-year peak flow rate of 288.4 cfs. The existing commercial development at the northeast corner of Dewey Way and Foothill Boulevard does not use this drain. It appears that the 72" storm drain has the capacity of the proposed development along with remaining areas on Foothill Boulevard.

Flow from the proposed easterly driveways (nodes 400-401 and 500-501) will sheet flow to Foothill Boulevard. The 100-year peak flow rates for these areas are 1.5 cfs and 4.2 cfs, respectively.

The remaining landscaped areas at the southerly portion of the project site will continue to flow southerly to the existing commercial developments as under existing conditions.

See Appendix "B" for proposed condition hydrology calculations.

Methodology

San Bernardino County Rational Method program (by AES Software) was used for the hydrology calculations. The 1-hour rainfall value is 1.55 per the San Bernardino County Hydrology Manual. The soil type is "A". See Appendix "A" for reference material from the Hydrology Manual.

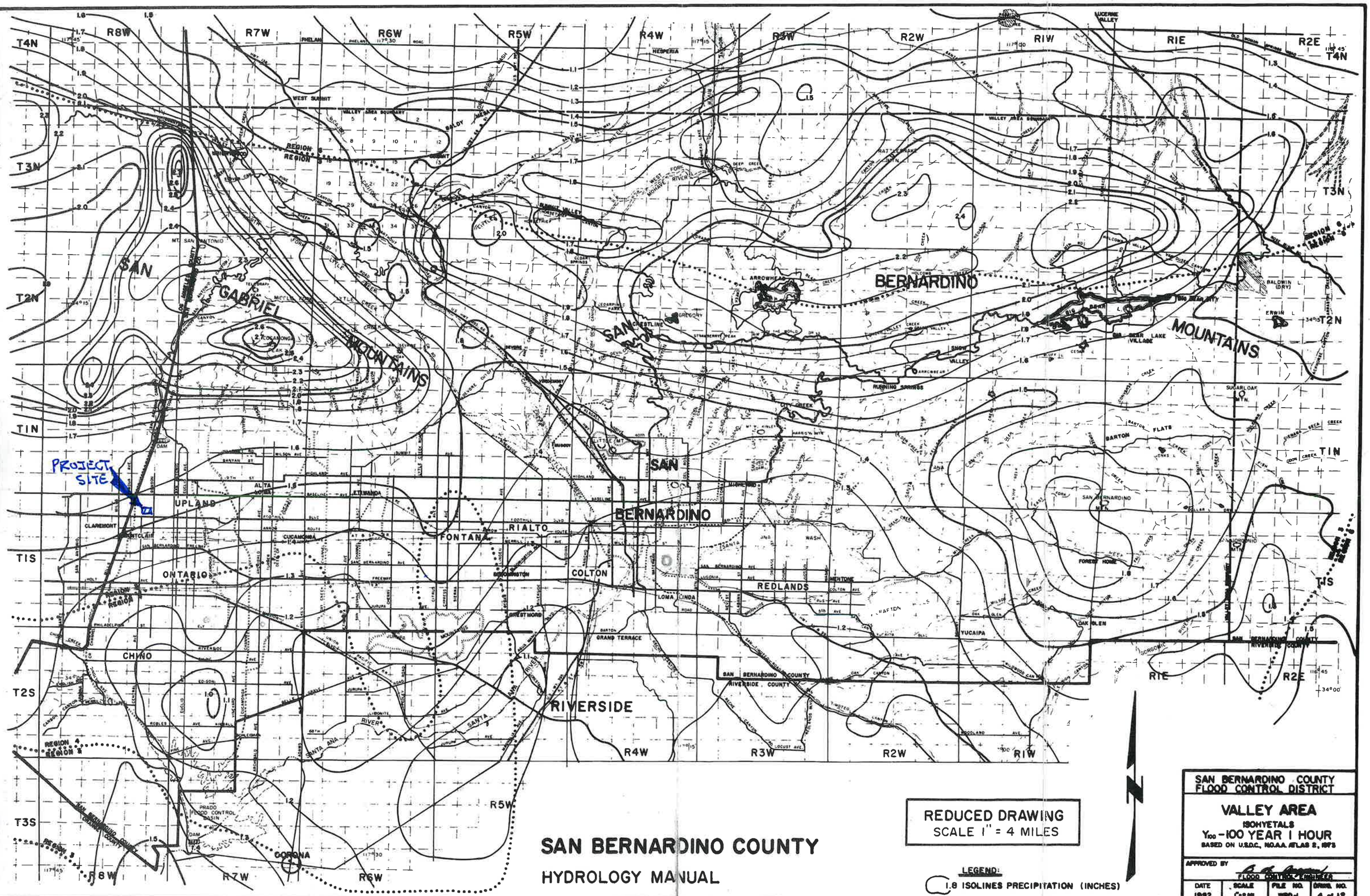
Summary

The total proposed 100-year peak flow from the project site is approximately 178.0 cfs (172.3 cfs at the westerly storm drain system + 5.7 cfs at the easterly driveways). The existing public storm drain in Foothill Boulevard is designed for a 100-year storm event and indicates a peak flow rate of 288.4 cfs. This leaves approximately 100 cfs for the smaller remaining developments at Foothill Boulevard. Therefore, the proposed project site does not have an adverse effect on existing downstream facilities.

APPENDIX	DESCRIPTION
A	REFERENCE MATERIALS
B	HYDROLOGY CALCULATIONS
C	HYDROLOGY MAP

APPENDIX A

REFERENCE MATERIALS



REDUCED DRAWING
SCALE 1" = 4 MILES

LEGEND:
1.8 ISOLINES PRECIPITATION (INCHES)

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

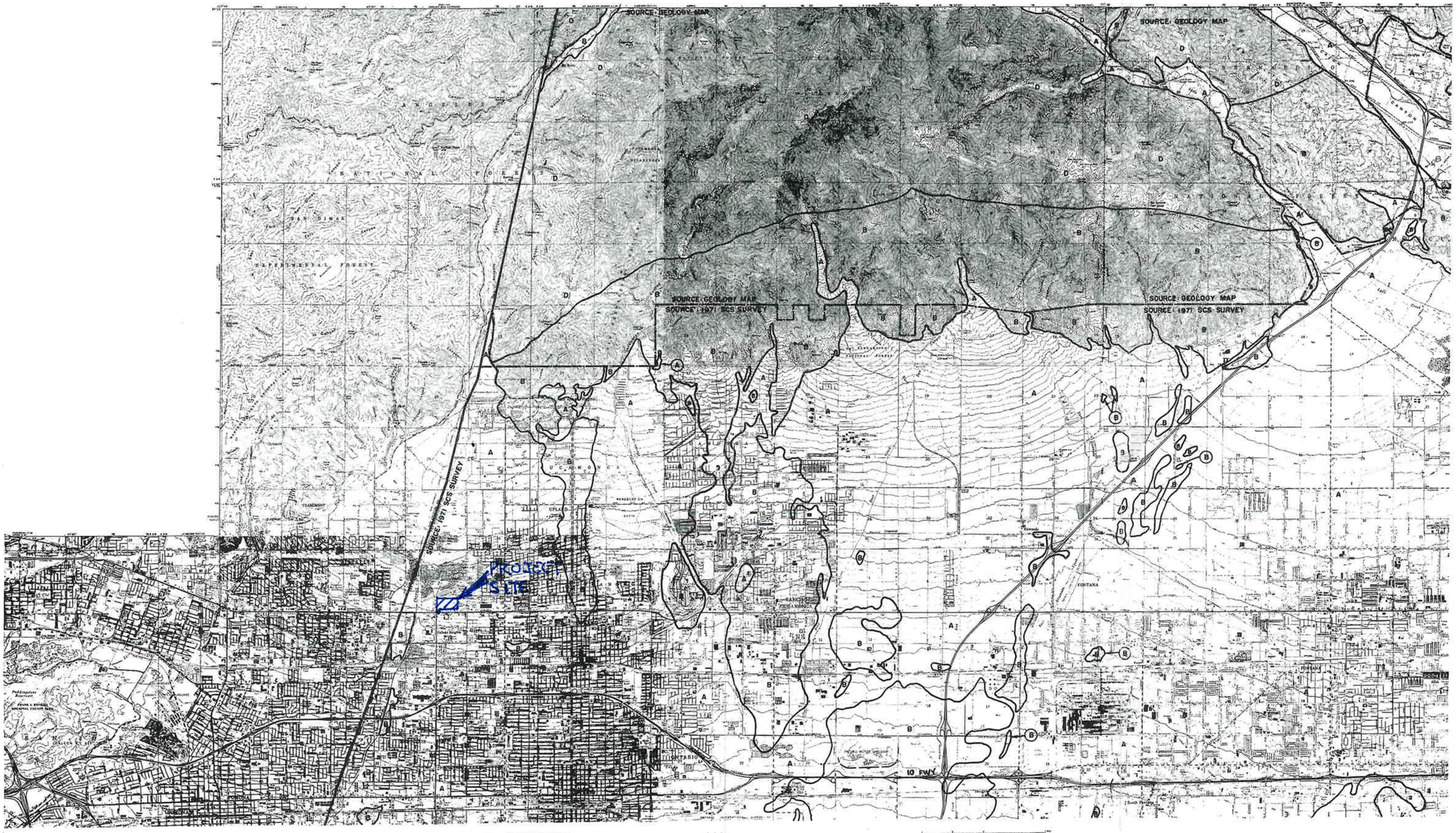
SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

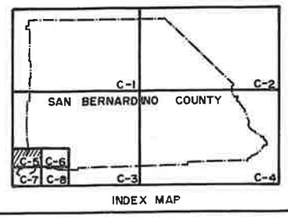
VALLEY AREA
ISOHYETALS
Y_{100} - 100 YEAR 1 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973

APPROVED BY _____ FLOOD CONTROL ENGINEER

DATE	SCALE	FILE NO.	DRWG. NO.
1982	1"=2 MI.	WRD-1	4 of 12

FIGURE B-4





INDEX MAP

LEGEND
- SOIL GROUP BOUNDARY
- A — SOIL GROUP DESIGNATION
- BOUNDARY OF INDICATED SOURCE

SCALE 1: 48,000

SCALE REDUCED BY 1/2

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

HYDROLOGIC SOILS GROUP MAP
FOR
SOUTHWEST-A AREA

FIGURE C-13

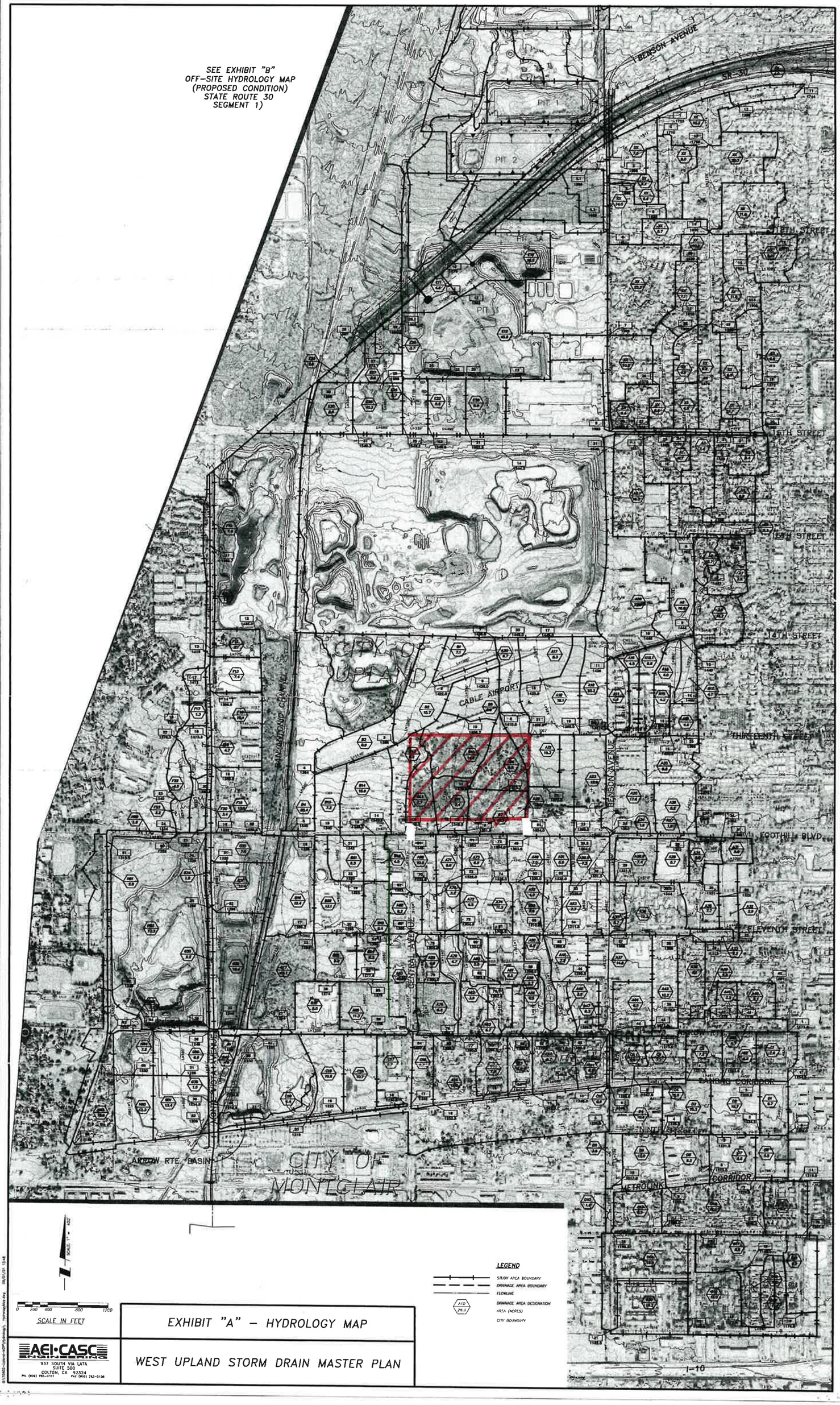
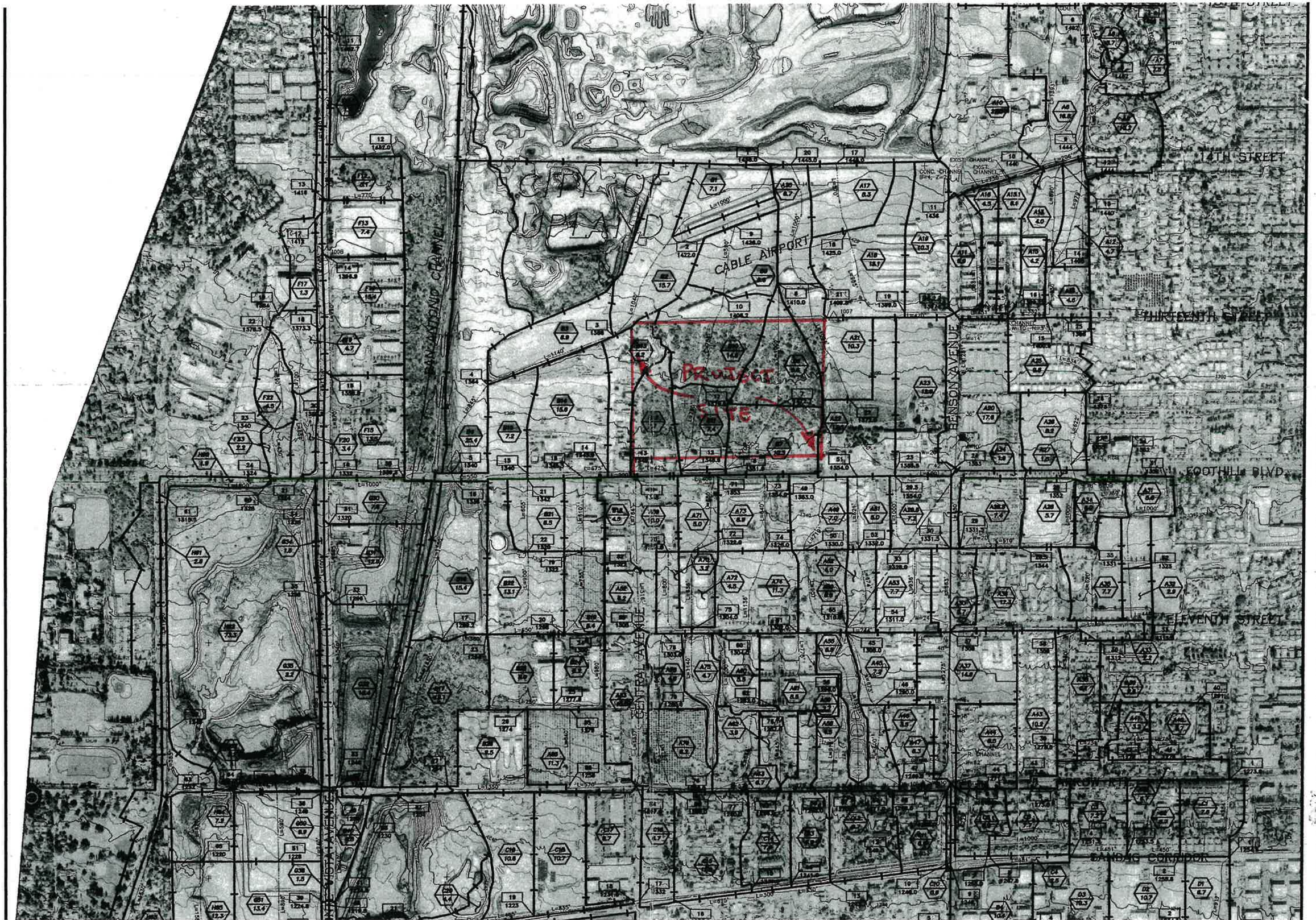


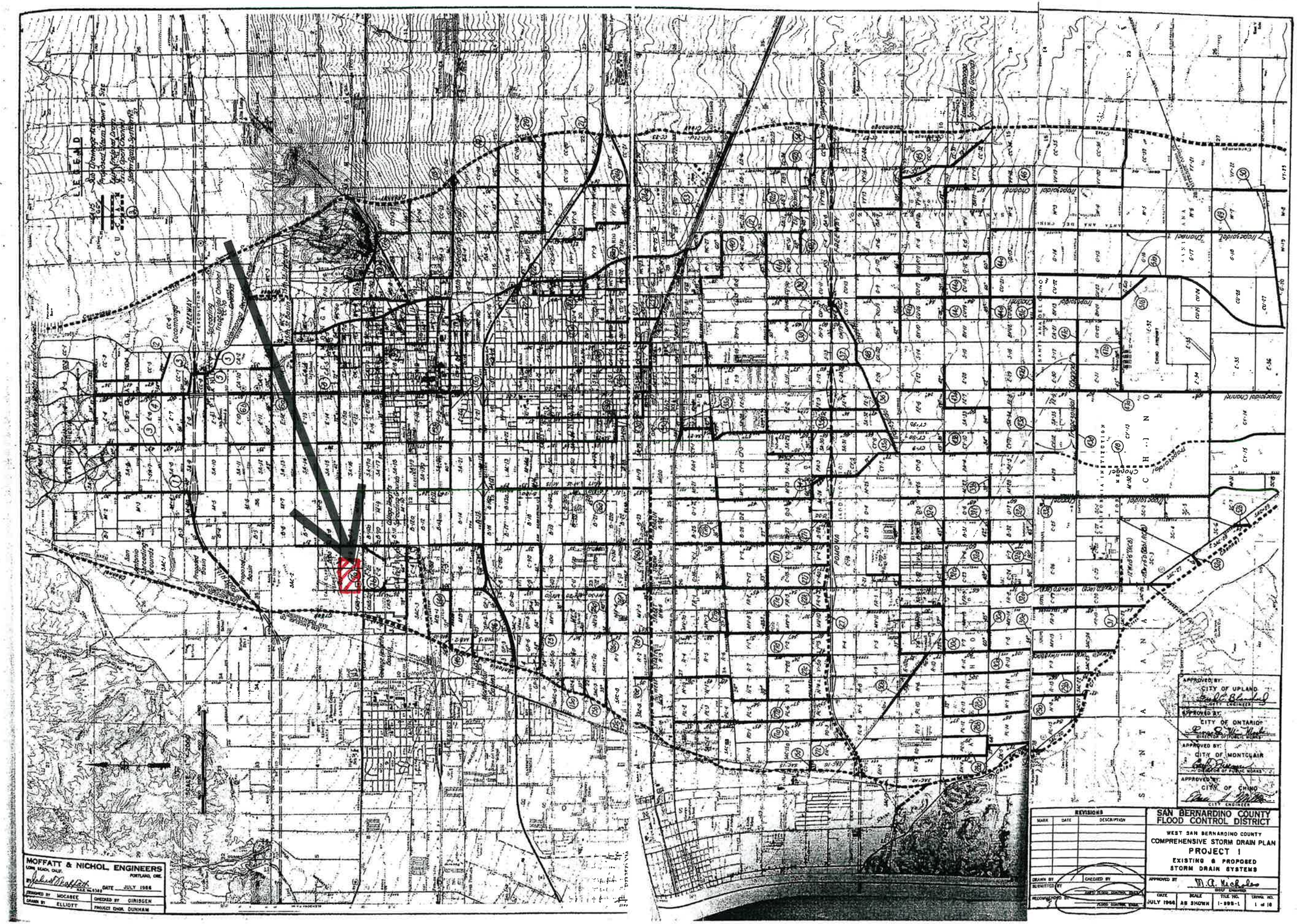
EXHIBIT "A" – HYDROLOGY MAP

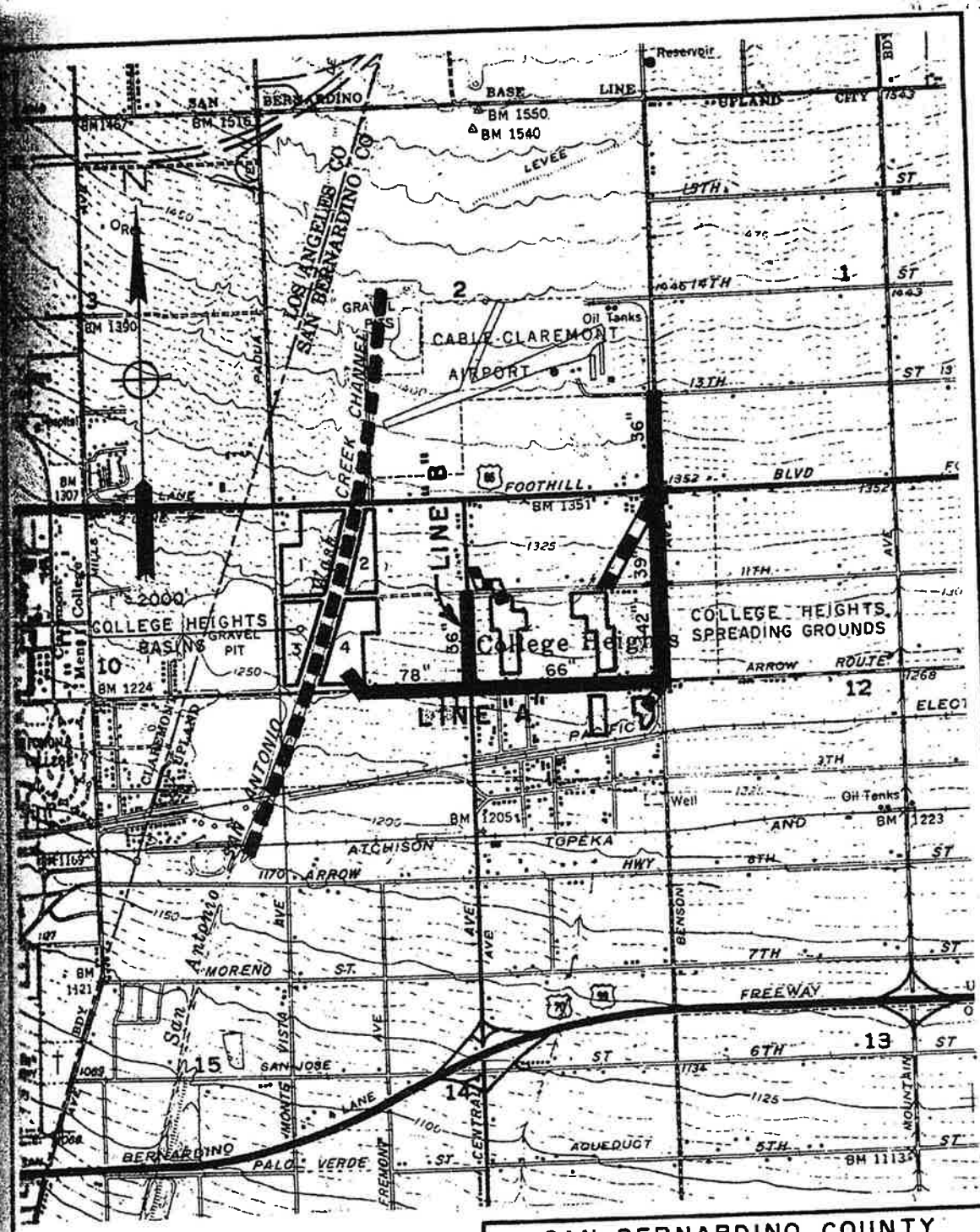
WEST UPLAND STORM DRAIN MASTER PLAN

AEI•CASC ENGINEERING
937 SOUTH VIA LATA
SUITE 500
COLTON, CA 92324
PH. (909) 783-0101
FAX (909) 783-0108


CITY OF UPLAND
CABLE AIRPORT
ANDREWS CHANNEL
BENSON AVENUE
CENTRAL AVENUE
14TH STREET
THIRTEENTH STREET
FOOTHILL BLVD
ELEVENTH STREET
SANDAG CORRIDOR
Project Site

#2731


LEGEND
San Bernardino Basin Area
Project Drainage Area
Area Tributary to Project Drainage System
Project Drainage System
Santa Ana River
Chino
Ontario
Upland
Montclair
Cucamonga
Etiwanda
Rancho Cucamonga
Mountain View
Alta Loma
Victoria
Day Creek
Deer Creek
Cucamonga Creek
Deer Creek Channel
Day Creek Channel
Cucamonga Channel
Etiwanda Creek
Etiwanda Debris Basin
Deer Creek Debris Basin
Cucamonga Debris Basin
Day Creek Debris Basin
Proposed Basin
Proposed Channel
Existing Channel
Proposed Storm Drain
Existing Storm Drain
Freeway
Railroad
Sewage Treatment Plant
San Antonio Spreading Grounds
Chaffey College
Chino Airport
Prado Dam
Prado Basin
Santa Ana River
Mill Creek
Mill Creek Zanja
Mill Creek Zanja Channel
Mill Creek Zanja Debris Basin
Mill Creek Zanja Storm Drain
Mill Creek Zanja Proposed Channel
Mill Creek Zanja Proposed Storm Drain
Mill Creek Zanja Existing Channel
Mill Creek Zanja Existing Storm Drain
Mill Creek Zanja Proposed Basin
Mill Creek Zanja Debris Basin
Mill Creek Zanja Storm Drain
Mill Creek Zanja Channel
Mill Creek Zanja Proposed Channel
Mill Creek Zanja Existing Channel
Mill Creek Zanja Proposed Storm Drain



LEGEND

- STORM DRAINS TO BE CONSTRUCTED
- EXISTING OPEN CHANNEL
- EXISTING ENCLOSED DRAIN

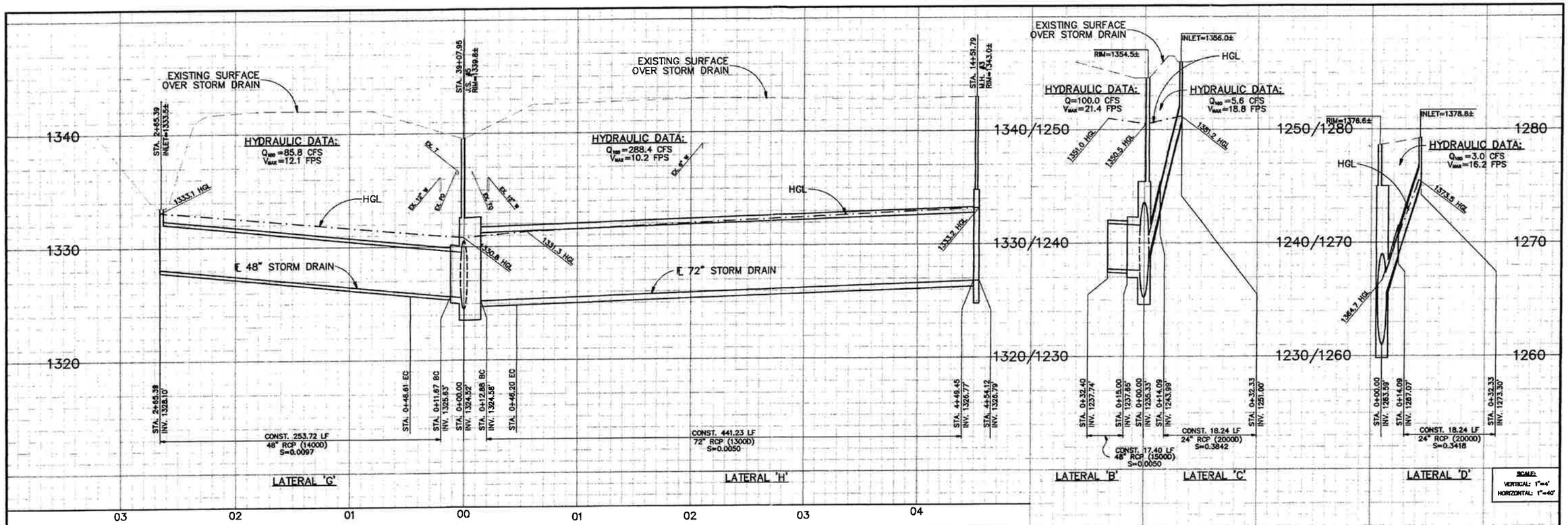
SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

COMPREHENSIVE STORM DRAIN PLAN
PROJECT NO. 1-7

PREPARED BY
MOFFATT & NICHOL, ENGINEERS
122 W. FIFTH ST. – LONG BEACH, CALIFORNIA

JULY 1966

DRAWING 1 OF 4


EXISTING SURFACE OVER STORM DRAIN
STA. 2+65.39 INLET=1333.5±
HYDRAULIC DATA:
Q100 =85.8 CFS
VMAX =12.1 FPS
1333.1 HGL
HGL
1330.8 HGL
1331.3 HGL
℄ 48" STORM DRAIN
STA. 38+07.95 J.S. #5 RIM=1339.8±
EXISTING SURFACE OVER STORM DRAIN
HYDRAULIC DATA:
Q100 =288.4 CFS
VMAX =10.2 FPS
HGL
1333.2 HGL
STA. 14+51.79 M.H. #3 RIM=1343.0±
℄ 72" STORM DRAIN
1340
1330
1320
STA. 2+65.39 INV. 1328.10
STA. 0+46.61 EC
STA. 0+11.67 BC INV. 1328.83
STA. 0+00.00 INV. 1324.92
STA. 0+12.88 BC INV. 1324.58
STA. 0+46.20 EC
STA. 4+46.45 INV. 1326.77
STA. 4+54.12 INV. 1326.79
CONST. 253.72 LF 48" RCP (1400D) S=0.0097
CONST. 441.23 LF 72" RCP (1300D) S=0.0050
LATERAL 'G'
LATERAL 'H'
EXISTING SURFACE OVER STORM DRAIN
INLET=1356.0±
RIM=1354.5±
HGL
HYDRAULIC DATA:
Q=100.0 CFS
VMAX=21.4 FPS
HYDRAULIC DATA:
Q100 =5.6 CFS
VMAX=18.8 FPS
1350.0 HGL
1350.5 HGL
1350.2 HGL
1340/1250
1330/1240
1320/1230
1250/1280
1240/1270
1230/1260
1280
1270
1260
STA. 0+32.40 INV. 1237.74
STA. 0+15.00 INV. 1237.85
STA. 0+00.00 INV. 1235.33
STA. 0+14.09 INV. 1243.99
STA. 0+32.33 INV. 1251.00
CONST. 18.24 LF 24" RCP (2000D) S=0.3842
CONST. 17.40 LF 48" RCP (1500D) S=0.0050
LATERAL 'B'
LATERAL 'C'
RIM=1376.6±
INLET=1378.8±
HYDRAULIC DATA:
Q100 =3.0 CFS
VMAX=16.2 FPS
HGL
1373.5 HGL
1364.7 HGL
STA. 0+00.00 INV. 1263.59
STA. 0+14.09 INV. 1287.07
STA. 0+32.33 INV. 1273.30
CONST. 18.24 LF 24" RCP (2000D) S=0.3418
LATERAL 'D'
SCALE: VERTICAL: 1"=4' HORIZONTAL: 1"=40'
03
02
01
00
01
02
03
04
DEWEY WAY
STARTING AT 36' CONTOUR GRADE TO DRAIN
STA. 2+65.39
STA. 0+46.61 EC
STA. 0+45.20 EC
LATERAL 'G', SEE PROFILE, HEREON. N89°20'45"W
LATERAL 'H', SEE PROFILE, HEREON. N89°20'45"W
TRIPLE BOX STORM DRAIN
FOOTHILL
BOULEVARD
STA. 0+11.67 BC
STA. 0+00.00
STA. 0+12.88 BC
STA. 0+51.79
STA. 4+00
STA. 5+00
44'
60'
50'
24'
R/W
℄ OF PIPE
26'
SECTION
STA. 4+00
PROPOSED STORM DRAIN
SCALE: 1"=40'
CURVE/LINE TABLE
| DELTA/BEARING | RADIUS | LENGTH | TANGENT
19 | N89°20'45"W | — | 218.78' | —
20 | 44°28'27" | 45.00' | 34.94' | 18.41'
21 | 44°24'55" | 45.00' | 33.31' | 17.46'
22 | N89°20'45"W | — | 405.59' | —
CONSTRUCTION NOTES:
(5) CONSTRUCT 72" RCP (SEE PROFILE FOR D-LOAD).
(6) CONSTRUCT 48" RCP (SEE PROFILE FOR D-LOAD).
(9) CONSTRUCT JUNCTION STRUCTURE PER AMERICAN PUBLIC WORKS ASSOCIATION STANDARD DETAIL NO. 322-1.
(10) CONSTRUCT MANHOLE PER AMERICAN PUBLIC WORKS ASSOCIATION STANDARD DETAIL NO. 320-1 WITH 5" RADIUS OF ASPHALT CONCRETE PAVEMENT AROUND INLET.
(11) CONSTRUCT DROP INLET PER CALTRANS STANDARD DETAIL NO. D75A TYPE OMP. GRADE TO DRAIN TO STRUCTURE.
CONSTRUCTION NOTES CONT.:
(13) CONSTRUCT BULKHEAD PER RIVERSIDE COUNTY FLOOD CONTROL STANDARD DET. NOS. M804 & M816.
(14) REMOVE AND RECONSTRUCT OR CONSTRUCT CHAINLINK FENCE AS REQUIRED.
(17) CONSTRUCT 12" ASPHALT CONCRETE PAVEMENT.
(20) CONSTRUCT PCC SIDEWALK PER STANDARD DRAWING CU-P-3.
(21) CONSTRUCT ASPHALT CONCRETE CURB.
(22) REMOVE AND REPLACE FIRE HYDRANT AS REQUIRED.
1300
1290
1280
EXISTING SURFACE OVER STORM DRAIN
INLET=1394.0±
RIM=1394.2±
HYDRAULIC DATA:
Q100 =49.8 CFS
VMAX=18.3 FPS
HGL
HYDRAULIC DATA:
Q100 =783.3 CFS
VMAX=20.7 FPS
1391.0 HGL
1386.9 HGL
1384.9 HGL
STA. 0+32.33 INV. 1288.00
STA. 0+14.09 INV. 1286.11
STA. 0+00.00 INV. 1277.50
STA. 0+21.34 INV. 1278.11
STA. 0+29.34 INV. 1278.19
CONST. 15.24 LF 24" RCP (1500D) S=0.2552
CONST. 8.00 LF 90° RCP (1350D) S=0.0050
LATERAL 'F'
LATERAL 'E'
Underground Service Alert
Call: TOLL FREE 1-800 227-2800
TWO WORKING DAYS BEFORE YOU DIG
BENCH MARK NO. 14C-86
LOCATION
FOUND 2" CITY OF UPLAND BRASS DISK MKD. "14C-86" IN NW HEADWALL FOR WASH BRIDGE, 28' N. OF C/L ARROW HWY & 1653' W. OF CENTRAL PER CITY OF UPLAND RECORDS
ELEV. 1256.198'
REVISIONS
MARK | DATE | INITIAL | DESCRIPTION | DATE | APP'VD
REGISTERED PROFESSIONAL ENGINEER MICHAEL PATRICK THORNTON No. 44226 Exp. 6-30-05 CIVIL STATE OF CALIFORNIA
TKE ENGINEERING
TKE ENGINEERING, INC. 4446 CENTRAL AVENUE RIVERSIDE, CA 92506 (909) 680-0440 FAX: (909) 680-0400
MICHAEL PATRICK THORNTON R.C.E. No. 44226 EXPIRES: 6-30-05
8/18/03
DRAWN BY: MLS
DESIGNED BY: TMR
CHECKED BY: MPT
RECOMMENDED BY: RH
REVIEWED BY CITY STAFF
DEPARTMENT | INITIAL | DATE
PUBLIC WORKS (OPER.) | PJA | 8/4/03
PUBLIC WORKS (ENV.) | [illegible] | 8/4/03
PUBLIC WORKS (WATER) | [illegible] | 8/21/03
PUBLIC WORKS (TRAF.) | AD | 8/21/03
FIRE DEPT. | NJG | 8/19/03
APPROVED BY:
PUBLIC WORKS DIRECTOR / CITY ENGINEER R.C.E. 54786 EXP. DATE 12/31/05
DATE 8/4/03
RECOMMENDED BY: DEPUTY CITY ENGINEER
RECOMMENDED BY: DEVELOPMENT SERVICES
CITY OF UPLAND
FOOTHILL BOULEVARD STORM DRAIN
LATERAL PLAN/PROFILE SHEET
WATER DRAWING NO.
SHEET 5 OF 8 SHEETS
DRAWING NO. SD6689

EXIST. SEWER LINE & MH

PROPOSED SURFACING OVER FILE PLAN NO. GP 88-04

STORM DRAIN

EXIST. GROUND

EXIST. AVENUE GRADE & FLOW

EXIST. GROUND GRADE & PIPE

FUTURE 42" R.C.P. STORM DRAIN

PROPOSED STORM DRAIN

EXIST. GRADE (& FLOW) (TYP.)

Looks like Q10 = 75 cfs.

PROFILE SCALES
HORIZ. 1" = 20'
VERT. 1" = 4'

1350

1340

1330

BENSON AVENUE

PROPOSED IMPROVEMENTS PER PLAN NO. GP 88-04

PROPOSED BLDG. FINISHED PAD=1355.7

FUTURE 1" WATER LATERAL

FUTURE 6" V.C.P. SEWER LATERAL

(E) EXIST. DRIVE APPROACH

FUTURE 2½" WATER LATERAL

FUTURE IMPROVEMENTS

EXISTING 8" S.D.R.C.P.

PROPOSED SERVICE ROAD

EXIST. 8" V.C.P. SEWER PER DWG. NO. 454-28E

EXIST. 8" R.C.P. STORM DRAIN

EXIST. CURB & PAVEMENT

EXISTING FIRE HYDRANT

EXIST. 10" WATER LINE

LIMITS OF STATE HIGHWAY

PROPOSED 1½" GAS MAIN PER DWG. NO. GAS 628

EXISTING 8'/9' R.C.P. STORMDRAIN

FOOTHILL BOULEVARD (STATE HIGHWAY 66)

N. 88° 34' 20" E. 301.53'

CONSTRUCTION NOTES

1. CONSTRUCT 24" R.C.P. (.060-B)
2. CONSTRUCT 24" R.C.P. (.060-B)
3. CONSTRUCT M.H. NO. 2 PER L.A.C.F.C.D. STD. DWG. F-0184
4. CONSTRUCT PRECAST PIPE TRANSITION - TYPE "A" PER SIERRACTO STD. PLAT 116 OR 1176
5. CONSTRUCT BRICK & MORTAR PLUG PER SIERRACTO STD. PLAT NO. OR 1176-A
6. CONSTRUCT M.H. NO. 4 PER L.A.C.F.C.D. STD. DWG. F-0115

& PIPE CURVE DATA

4. RADIUS = 45.00'
   Δ = 35° 41' 31"
   LENGTH = 28.03'
   TANGENT = 14.59'

No. 27328 — CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

BENCH MARK NO. 264-80
LOCATION: NW CURB RETURN AT A 6" SQ. CONC. MON.
IN CITY OF UPLAND BRASS DISC IN PCC BASE FOR TRAFFIC SIGNAL CENTERLINE, 30 FT. WEST & BEHIND AVENUE J ST. FT. NORTH OF FOOTHILL BLVD. C.L. MARKED AT CURB.
ELEV. 1352.19

MARK	DATE	INITIAL	REVISIONS DESCRIPTION	APPROVED
			FOR RECORD DRAWING SEE S.D. 3913 SHEET 2	

PLANS PREPARED BY
DERBIN CUTLER & ASSOCIATES, Inc.
CIVIL ENGINEERS
8151 VICKA AVE., SUITE 101
RANCHO CUCAMONGA, CA 91730
(714) 980-6450
Date 11/14/88
Daniel E. Derbin R.C.E. 27328 Exp. Date 3/31/91

DRAWN BY: L. CAVELLO
DESIGN BY: [illegible]
CHECKED BY: [illegible]

REVIEW BY CITY STAFF		
DEPARTMENT	INITIAL	DATE
WATER DEP'T.		
FIRE DEP'T.		
TRAFFIC		
SEWER		
DRAINAGE		

APPROVED BY:
CITY ENGINEER R.C.E. 15033 DATE
SAN DATE 3/31/89

CITY OF UPLAND

FOOTHILL BOULEVARD STORM DRAIN
FROM BENSON AVENUE TO 380'± WEST.
SCHEDULE 4

SHEET 1 OF 2 SHEETS
DRAWING NO. SD-3913

PROJECT NO. 9113 PLAN NO. SD-3913

CONTRACT NO. 1 SHEET 11 OF 11 ST. 9813

GENERAL NOTES

1. ALL WORK CALLED FOR ON THE PLANS SHALL BE IN COMPLIANCE WITH CURRENT CITY OF UPLAND STANDARD SPECIFICATIONS, ADOPTED BY CITY COUNCIL UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS FOR THIS PROJECT.
2. THE CONTRACTOR, BEFORE UNDERTAKING ANY GRADING OR CONSTRUCTION WORK OF ANY TYPE WITHIN THE PUBLIC RIGHT OF WAY, MUST FIRST OBTAIN A CONSTRUCTION PERMIT FROM THE PUBLIC WORKS DEPARTMENT.
3. A TEMPORARY STREET CLOSURE PERMIT IS REQUIRED IN ALL CASES WHERE WORK WILL IN ANY WAY INTERFERE WITH VEHICULAR OR PEDESTRIAN TRAFFIC. THE CONTRACTOR IS ADVISED THAT CITY COUNCIL RESOLUTION NO. 1656, DEALING WITH PROMPT RESTORATION OF CITY STREETS TORN UP DURING CONSTRUCTION, WILL BE ENFORCED IN ALL CASES WHERE THE PROVISIONS THEREOF ARE APPLICABLE.
4. INSPECTION BY THE CITY OF THE WORK CALLED FOR ON THE PLANS SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR AND/OR DEVELOPER OF THEIR OBLIGATION TO PERFORM WORK IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS.
5. ANY ALTERATIONS OR VARIANCES FROM THE PLANS, EXCEPT MINOR ADJUSTMENTS IN THE FIELD TO MEET EXISTING CONDITIONS, SHALL BE REQUESTED IN WRITING AND MAY NOT BE INSTITUTED UNTIL APPROVED BY THE PUBLIC WORKS DIRECTOR OR HIS REPRESENTATIVES ACTING SPECIFICALLY UPON HIS INSTRUCTIONS.
6. ALL ELEVATIONS SHOWN ON THE PLANS ARE ESTABLISHED FROM CITY OF UPLAND DATUM PLANE.
7. QUANTITIES, AS SHOWN ON THE PLANS, ARE ESTIMATED, AND THE CONTRACTOR IS ADVISED THAT FINAL QUANTITIES OF MATERIAL AND WORK IN PLACE MAY BE SOMEWHAT GREATER OR LESS THAN THOSE INDICATED ON THE PLANS.
8. CONCRETE ITEMS WHICH WILL BE SUBJECT TO VEHICULAR TRAFFIC SHALL BE BARRICADED, AND NO VEHICULAR TRAFFIC SHALL BE SOONER THAN SEVEN DAYS AFTER PLACING, OR WHEN THE CONTRACTOR FOR CONVENIENCE OF OPERATION SO DESIRES, CONCRETE CONTAINING EIGHT SACKS OF CEMENT PER CUBIC YARD MAY, AND SHALL IF SO DIRECTED BY THE ENGINEER, BE USED, AND TRAFFIC WILL BE PERMITTED THEREON SEVENTY-TWO HOURS AFTER PLACING OF SAID EIGHT SACK CONCRETE.
9. THE CONTRACTOR SHALL OPERATE IN A MANNER COMPLIANT WITH ALL APPLICABLE SECTIONS OF THE MUNICIPAL CODE AND COMPLIANT WITH ALL APPLICABLE CITY COUNCIL RESOLUTIONS.
10. ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED. CATCH BASIN STATIONING IS BASED ON STREET CENTERLINE STATIONING.
11. STATIONING FOR LATERALS AND CONNECTOR PIPES REFERS TO THE CENTERLINE CENTERLINE INTERSECTION AND IS BASED ON STORM DRAIN STATIONING. STREET CENTERLINE STATIONING AND STORM DRAIN STATIONING ARE SEPARATE AND DIFFERENT FROM EACH OTHER.
12. PROTECT ALL UTILITIES, POLES, SIGNS, AND EXISTING IMPROVEMENTS IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR NOTED ON THE PLANS. WHERE RELOCATION OF THESE UTILITIES ARE REQUIRED, THE CONTRACTOR SHALL COORDINATE CONSTRUCTION AS NECESSARY AND AS APPROVED BY THE ENGINEER.
13. OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS PIPES, OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6"OF CLASS "B" CONCRETE.
14. "V" IS THE DEPTH OF INLET OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF THE OUTLET CONNECTOR PIPE.
15. CATCH BASINS SHALL BE LOCATED SO THAT THE LOCAL DEPRESSION SHALL BEGIN AT CURB RETURN JOINTS, UNLESS OTHERWISE NOTED ON PLANS.
16. IRRIGATION LINES WITHIN ANY CITY RIGHT-OF-WAY SHALL HAVE A TWENTY-FOUR INCH MINIMUM COVER FROM FINISH SURFACE, UNLESS SAID IRRIGATION LINE IS ENCASED IN CONCRETE OR BEDDED IN A SPECIAL CONCRETE CRADLE.
17. THE LOCATION OF UNDERGROUND UTILITY OR IRRIGATION LINES AS SHOWN ON THE PLANS, IS APPROXIMATE, AND SINCE THE ACTUAL LOCATION MAY BE SOMEWHAT DIFFERENT FROM THAT SHOWN, THE CONTRACTOR IS REQUIRED TO CONTACT THE INTERESTED UTILITY OR WATER COMPANY BEFORE EXCAVATING IN THE VICINITY OF ANY SUCH LINES.
18. THE FOLLOWING CITY OF UPLAND STD. DWGS. APPLY TO THIS PROJECT AND SHALL BE CONSIDERED AS PART OF THESE PLANS: CU-G-1, CU-D-2, CU-P-3, CU-P-4, CU-P-8, CU-R-2, CU-R-3, CU-S-1, CU-S-6 AND W6-23
19. INSTALL PLYWOOD FALSE BOTTOMS IN ALL SEWER MANHOLES WITHIN THE CONSTRUCTION AREA. CHECK DAILY BY INSPECTOR
20. THE CONTRACTOR, BEFORE UNDERTAKING ANY GRADING OR CONSTRUCTION WORK OF ANY TYPE WITHIN THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY, MUST FIRST OBTAIN A CONSTRUCTION PERMIT FROM THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT.
21. THE DEVELOPER SHALL BE RESPONSIBLE FOR SUBMITTING TO THE CITY, PROOF THAT A NOTICE OF INTENT (NOI) FOR THE GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY HAS BEEN FILED WITH AND APPROVED BY THE STATE WATER RESOURCES CONTROL BOARD. CONSTRUCTION SHALL NOT COMMENCE WITHOUT THIS APPROVAL. THE DEVELOPER SHALL BE RESPONSIBLE TO COMPLY WITH THE GENERAL CONSTRUCTION ACTIVITY STORM WATER PERMIT BY IMPLEMENTING THEIR STORM WATER POLLUTION PREVENTION PLAN FOR THE DURATION OF THE PROJECT.
22. ALL CATCH BASINS AND STORM DRAIN INLET FACILITIES SHALL BE STENCILED WITH THE APPROPRIATE "NO DUMPING" MESSAGE AS SUPPLIED BY THE PUBLIC WORKS DEPARTMENT, ENVIRONMENTAL DIVISION.

SURVEY MONUMENT NOTE:

SURVEY MONUMENTS THAT EXIST AS SHOWN ON RECORDED MAPS, HIGHWAY MAPS OR POINTS THAT PROVIDE SURVEY CONTROL WITHIN THE CONSTRUCTION AREA, SHALL BE LOCATED AND REFERENCED OUT BY A LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER (AUTHORIZED TO PRACTICE LAND SURVEYING), AND CORNER RECORDS SHALL BE FILED WITH THE COUNTY SURVEYOR PRIOR TO THE START OF CONSTRUCTION. THESE CORNER RECORDS SHALL DESCRIBE THE MONUMENTS FOUND WITH TIE DISTANCES TO REFERENCE POINTS FOR RESETTING OF THE SURVEY MONUMENT. WHEN CONSTRUCTION IS COMPLETED, MONUMENTS SHALL BE SET AND CORNER RECORDS SHALL BE FILED WITH THE COUNTY SURVEYOR SHOWING THE NEW MONUMENTS.

ENGINEERS NOTICE TO CONTRACTOR

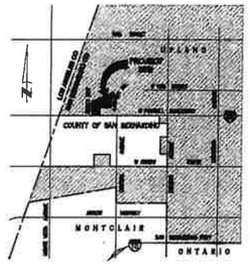
THE EXISTENCE AND APPROXIMATE LOCATION OF ANY UNDERGROUND UTILITIES PIPES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES OR STRUCTURES EXCEPT AS SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO LIABILITY AS TO THE EXACT LOCATION NEITHER OF SAID LINES NOR FOR UTILITIES OR IRRIGATION LINES WHOSE LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK ON EXCAVATION TO DETERMINE EXACT LOCATION OF ALL LINE AFFECTING THIS WORK, WHETHER OR NOT SHOWN HEREON, AND FOR ANY DAMAGE OR PROTECTION OF THESE LINES.

THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (U.S.A.) PHONE 1-800-227-2600 TWO WORKING DAYS PRIOR TO DIGGING. NO CONSTRUCTION PERMIT ISSUED BY PUBLIC WORKS DEPARTMENT SHALL BE VALID INVOLVING UNDERGROUND FACILITIES UNLESS THE APPLICANT HAS AN INQUIRY IDENTIFICATION NUMBER ISSUED BY U.S.A.

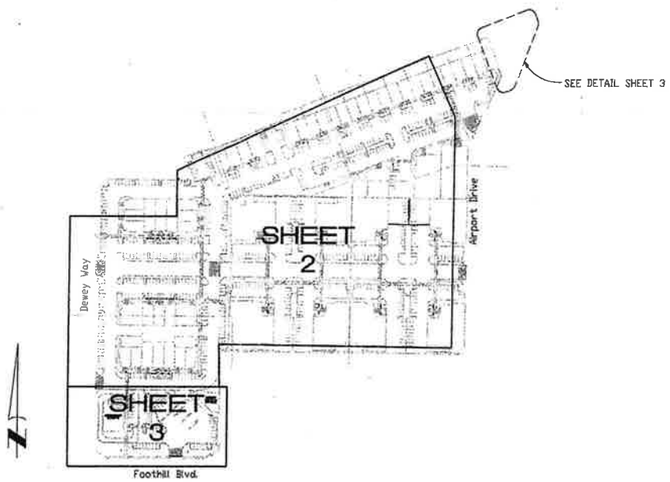
REGISTERED PROFESSIONAL ENGINEER — C. CURT INGRAHAM — No. 44780 — Exp. 03-31-04 — CIVIL — STATE OF CALIFORNIA

Underground Service Alert — Call: TOLL FREE 1-800 227-2600 — TWO WORKING DAYS BEFORE YOU DIG

SITE IMPROVEMENT PLANS
FOR
CABLE BUSINESS PARK



LOCATION MAP
NTS



INDEX MAP
N.T.S.

OWNER / DEVELOPER

CABLE DEVELOPMENT, L.L.C.
428 EAST 25TH STREET
UPLAND, CA 91784-1106

PH: (909) 931-1020
FAX (909) 982-4410

CONTACT: MR. GEORGE D VOIGT

SOILS ENGINEER

RMA GROUP
10851 EDISON CT.
RANCHO CUCAMONGA, CA 91730

PH: (909) 989-1751
FAX (909) 989-4287

CONTACT: MR. ED LYON

CONTRACTOR'S RESPONSIBILITY FOR SAFETY

IN SUBMITTING A BID FOR THIS WORK THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT; INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, THE ENGINEER AND THE CITY OF UPLAND HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE ENGINEER, OR THE CITY OF UPLAND.

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR AND WITH "CONSTRUCTION SAFETY ORDERS". THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTOR OR SUBCONTRACTORS COMPLIANCE WITH SAID REGULATIONS AND ORDERS.

CONSTRUCTION NOTES

1. NOT USED
2. NOT USED
3. INSTALL 30" INLINE DRAIN WITH CAST IRON GRATE (H-20 RATED), N-12 DOWN DRAIN (Part No. 2730AG12) and 12" N-12 FABRICATED 90° BEND (Part No. 1299-AN) PER ADVANCED DRAINAGE SYSTEMS, Inc. — 3 EA
4. CONSTRUCT 30"ø N-12 PROLINK ULTRA HDPE DRAIN PIPE BY ADVANCED DRAINAGE SYSTEMS, Inc. — 388 LF
5. CONSTRUCT 24"ø N-12 PROLINK ULTRA HDPE DRAIN PIPE BY ADVANCED DRAINAGE SYSTEMS, Inc. — 352 LF
6. CONSTRUCT 18"ø N-12 PROLINK ULTRA HDPE DRAIN PIPE BY ADVANCED DRAINAGE SYSTEMS, Inc. — 1170 LF
7. CONSTRUCT 15"ø N-12 PROLINK ULTRA HDPE DRAIN PIPE BY ADVANCED DRAINAGE SYSTEMS, Inc. — 408 LF
8. CONSTRUCT 12"ø N-12 PROLINK ULTRA HDPE DRAIN PIPE BY ADVANCED DRAINAGE SYSTEMS, Inc. — 273 LF
9. INSTALL 24"x24" N-12 FABRICATED TEE PER ADVANCED DRAINAGE SYSTEMS, Inc. - Part No. 2467-AN — 2 EA
10. INSTALL 24"x12" N-12 FABRICATED REDUCING WYE PER ADVANCED DRAINAGE SYSTEMS, Inc. - Part No. 2484-AN — 1 EA
11. NOT USED
12. INSTALL 30" INLINE DRAIN WITH CAST IRON GRATE (H-20 RATED), N-12 DOWN DRAIN (Part No. 2730AG24) PER ADVANCED DRAINAGE SYSTEMS, Inc. — 2 EA
13. INSTALL 24"x18" N-12 FABRICATED REDUCER PER ADVANCED DRAINAGE SYSTEMS, Inc. - PART No. 2476-AN85 — 2 EA
14. CONSTRUCT CURB INLET TYPE B-1 PER CITY OF UPLAND STD. DWG CU-S-2 — 1 EA
15. CONSTRUCT TRANSVERSE CATCH BASIN PER APWA STD. PLAN No. 305-2, 2 GRATES — 7 EA
16. NOT USED
17. CONSTRUCT GRATING CATCH BASIN, LONGITUDINAL, 3 GRATES, PER APWA STD. PLAN No. 304-2 — 1 EA
18. CONSTRUCT 36" RCP STORM DRAIN PIPE (D-2500) — 180 LF
19. CONSTRUCT CURB INLET TYPE B-2 PER CITY OF UPLAND STD. DWG CU-S-2 — 1 EA
20. INSTALL 15" INLINE DRAIN WITH LOCKING H-20 RATED GRATE, N-12 DOWN DRAIN (PART 2715AGN) PER ADVANCED DRAINAGE SYSTEMS INC. — 1 EA
21. INSTALL 6"ø N-12 HDPE DRAIN PIPE BY ADVANCED DRAINAGE SYSTEMS — 145 LF
22. INSTALL 15" INLINE DRAIN WITH PEDESTRIAN GRATE (H-10 RATED), N-12 DOWN DRAIN (PART No. 2715AGN) PER ADVANCED DRAINAGE SYSTEMS, Inc. — 5 EA
23. INSTALL 6"øN-12 FABRICATED 90° BEND (PART NO. 0699AN) ADVANCED DRAINAGE SYSTEMS, Inc — 2 EA
24. INSTALL 6"ø N-12 FABRICATED TEE (PART No. 0661AN) ADVANCED DRAINAGE SYSTEMS, Inc. — 3 LF
25. CONSTRUCT GRATING CATCH BASIN, LONGITUDINAL, 1 GRATE, PER APWA STD. PLAN No. 304-2 — 2 EA
26. CONSTRUCT GRATING CATCH BASIN, LONGITUDINAL, 2 GRATES, PER APWA STD. PLAN No. 304-2 — 7 EA
27. CONSTRUCT INLET TYPE "V" PER ORANGE COUNTY EMA STANDARD PLAN 1305 — 1 EA
28. CONSTRUCT JUNCTION STRUCTURE PER APWA STD. PLAN No. 332-0 — 1 EA
29. CONSTRUCT PARKWAY DRAIN PER APWA STD. PLAN No. 151-1, TYPE 1 INLET. — 2 EA

(#) ITEM NOT USED ON THIS SHEET

ABBREVIATIONS

APWA	AMERICAN PUBLIC WORKS ASSOCIATION
BF	BOTTOM OF FOOTING
BOP	BOTTOM OF PIPE
FL	FLOW LINE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
RCP	REINFORCED CONCRETE PIPE
SD	STORM DRAIN
TC	TOP OF CURB
TG	TOP OF GRATE
TOP	TOP OF PIPE
USA	UNDEGROUND SERVICE ALERT

AGENCY/UTILITY CONTACT LIST

SOUTHERN CALIFORNIA EDISON
216 NORTH EUCLID AVENUE
ONTARIO, CALIFORNIA 91761
(800) 684-8123

SAN ANTONIO WATER CO.
139 NORTH EUCLID AVENUE
UPLAND, CALIFORNIA 91786
(909) 982-4107

CITY OF UPLAND
WATER DIVISION
1370 NORTH BENSON AVENUE
UPLAND, CALIFORNIA 91786
(909) 931-4230

VERIZON
1400 EAST PHILLIPS BOULEVARD
POMONA, CALIFORNIA 91766-5432
(909) 469-6336

THE GAS CO.
P.O. BOX 3003
REDLANDS, CALIFORNIA 92373
(800) 427-2200

CITY OF UPLAND
DEVELOPMENT SERVICES
460 NORTH EUCLID AVENUE
UPLANDS, CALIFORNIA 91786
(909) 931-4133 OR (909) 931-4145

BENCH MARK No. 29A-86
LOCATION FOOTHILL BOULEVARD AND BENSON AVENUE

2" CITY OF UPLAND BRASS CAP IN P.C.C. BASE OF TRAFFIC SIGNAL 34 FEET EAST OF ℄ BENSON AVENUE; 38 FEET NORTH OF SOUTH DRIVEWAY FOR UPLAND FIRE.

ELEV 1425.07'

REVISIONS

MARK	DATE	BY	DESCRIPTION	DATE	APP'VD

Associated Engineers, Inc
3311 E. SHELBY STREET · ONTARIO, CA 91764
TEL: (909) 980-1962 · FAX: (909) 941-0893
C. CURT INGRAHAM R.C.E. 44780 — DATE

DRAWN BY: VAD AUGUST 2001
DESIGNED BY: VAD AUGUST 2001
CHECKED BY: BWL AUGUST 2001
RECOMMENDED BY:

REVIEWED BY CITY STAFF

DEPARTMENT	INITIAL	DATE
PUBLIC WORKS (OPER.)		11/07
PUBLIC WORKS (ENV.)		11/07
PUBLIC WORKS (WATER)		11/07
PUBLIC WORKS (TRAF.)		11/07
FIRE DEPT.		

APPROVED BY:
PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE 54786 Exp. DATE 12-31-03 — DATE 12/18/02
RECOMMENDED BY: DEPUTY CITY ENGINEER — DATE 12/17/02
RECOMMENDED BY: DEVELOPMENT SERVICES — DATE 11/11/02

CITY OF UPLAND
CABLE BUSINESS PARK
ON-SITE PRIVATE STORM DRAIN IMPROVEMENTS

WATER DRAWING NO. 1 OF 3 SHEETS
DRAWING No. SD 01-07

PROJECT NO. SP 00-04 PLAN NO. SD 01-07

M:\2000\000331\DWG\DRAINAGE\Sht-cover.DWG

LINE TABLE		
LINE	LENGTH	BEARING
L1	54.27'	N44°32'38"W

SCALE: 1"=40'
0 20 40 80
SCALE FEET

PROPERTY LINE N69°11'07"E 1261.91'

C/L DEWEY WAY

P/L N00°00'33"W 769.54'

DEWEY WAY

SEE SHEET 3 OF 3

CONSTRUCTION NOTES

1. NOT USED
2. NOT USED
3. INSTALL 30" INLINE DRAIN WITH CAST IRON GRATE (H-20 RATED), N-12 DOWN DRAIN (Part No. 2730AG12) and 12" N-12 FABRICATED 90° BEND (Part No. 1299-AN) PER ADVANCED DRAINAGE SYSTEMS, Inc.
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14. CONSTRUCT CURB INLET TYPE B-1 PER CITY OF UPLAND STD. DWG CU-S-2
15. CONSTRUCT TRANSVERSE CATCH BASIN PER APWA STD. PLAN No. 305-2, 2 GRATES
16. NOT USED
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- ITEM NOT USED ON THIS SHEET

PLAN NO. SD 01-07
PROJECT NO. SP 00-04

Underground Service Alert
Call: TOLL FREE 1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK No. 29A-86
LOCATION FOOTHILL BOULEVARD AND BENSON AVENUE

2" CITY OF UPLAND BRASS CAP IN P.C.C. BASE OF TRAFFIC SIGNAL 34 FEET EAST OF ℄ BENSON AVENUE; 38 FEET NORTH OF SOUTH DRIVEWAY FOR UPLAND FIRE.

ELEV 1425.07'

REVISIONS					
MARK	DATE	BY	DESCRIPTION	DATE	APP'VD

Associated Engineers
3311 EAST SHELBY STREET • ONTARIO, CA 91764
TEL: (909) 987-1982 • FAX: (909) 941-0891

DRAWN BY:	VAD AUGUST 2001
DESIGNED BY:	VAD AUGUST 2001
CHECKED BY:	CCI AUGUST 2001
RECOMMENDED BY:	

REVIEWED BY CITY STAFF

DEPARTMENT	INITIAL	DATE
PUBLIC WORKS (OPER.)		11/27/02
PUBLIC WORKS (ENV.)		11/27/02
PUBLIC WORKS (WATER)		11/26/02
PUBLIC WORKS (TRAF.)		11/27/02
FIRE DEPT.		

APPROVED BY:
PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE 54786 Exp. DATE 12-31-03 — DATE 12/10/02

RECOMMENDED BY: DEPUTY CITY ENGINEER — DATE 11/26/02
RECOMMENDED BY: DEVELOPMENT SERVICES — DATE 11/26/02

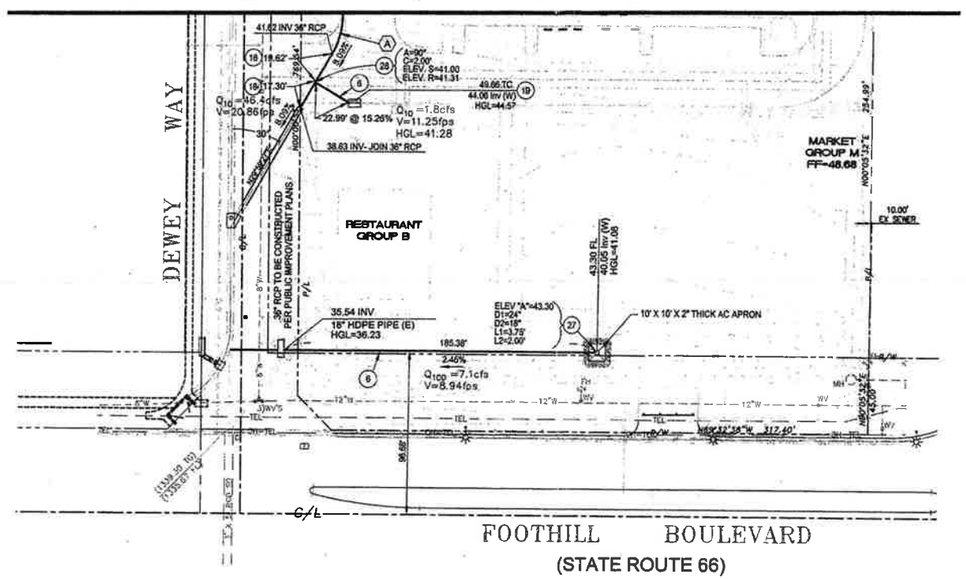
CITY OF UPLAND
CABLE BUSINESS PARK
ON-SITE PRIVATE STORM DRAIN IMPROVEMENTS

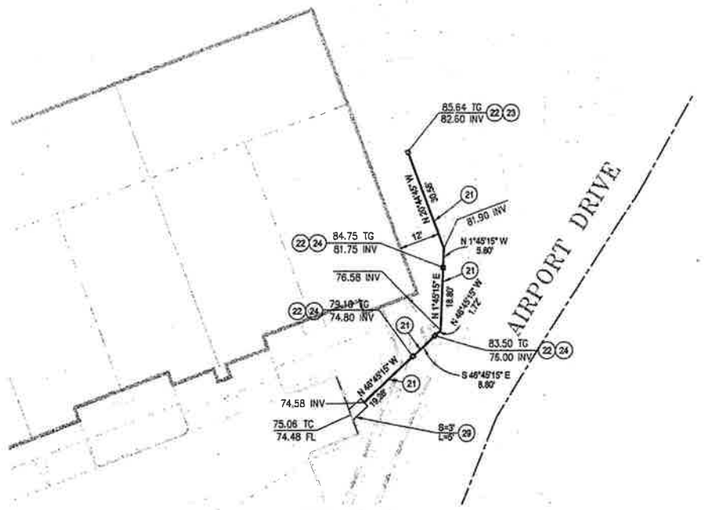
WATER DRAWING NO.
2 OF 3 SHEETS
DRAWING No. SD 01-07

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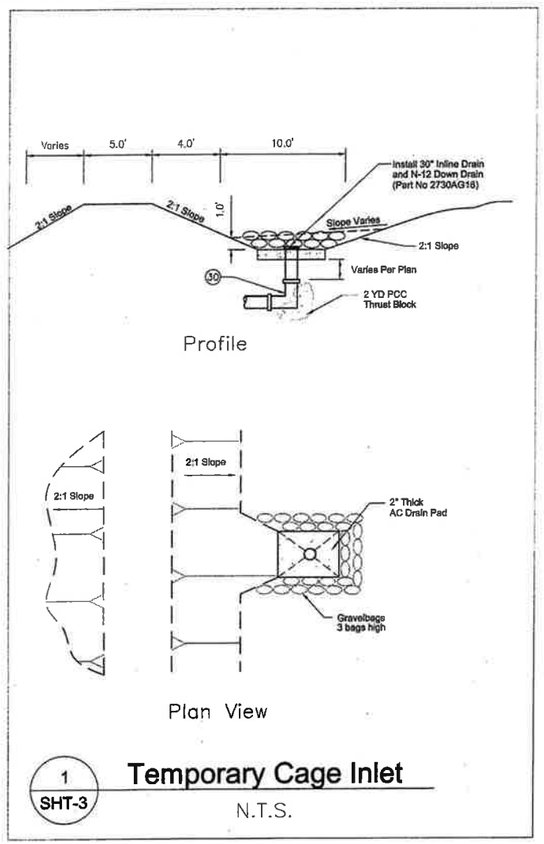
SEE SHEET 2 OF 3

SCALE: 1"=40'
0 20 40 80
SCALE FEET





SCALE: 1"=20'



1 SHT-3 **Temporary Cage Inlet**

N.T.S.

CURVE TABLE				
	△	R	L	T
A	33°56'48"	45.00'	26.66'	13.73'

CONSTRUCTION NOTES

1. NOT USED
2. NOT USED
3. INSTALL 30" INLINE DRAIN WITH CAST IRON GRATE (H-20 RATED), N-12 DOWN DRAIN (Part No. 2730AG12) and 12" N-12 FABRICATED 90° BEND (Part No. 1299-AN) PER ADVANCED DRAINAGE SYSTEMS, Inc.
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13. INSTALL 24"x18" N-12 FABRICATED REDUCER PER ADVANCED DRAINAGE SYSTEMS, Inc - PART No. 2476-AN85
14. CONSTRUCT CURB INLET TYPE B-1 PER CITY OF UPLAND STD. DWG CU-S-2
15. CONSTRUCT TRANSVERSE CATCH BASIN PER APWA STD. PLAN No. 305-2, 2 GRATES
16. NOT USED
17. CONSTRUCT GRATING CATCH BASIN, LONGITUDINAL, 3 GRATES, PER APWA STD. PLAN No. 304-2
18. CONSTRUCT 36" RCP STORM DRAIN PIPE (D-2500)
19. CONSTRUCT CURB INLET TYPE B-2 PER CITY OF UPLAND STD. DWG CU-S-2
20. INSTALL 15" INLINE DRAIN WITH LOCKING H-20 RATED GRATE, N-12 DOWN DRAIN(PART 2715AGN) PER ADVANCED DRAINAGE SYSTEMS INC.
21. INSTALL 6"ø N-12 HDPE DRAIN PIPE BY ADVANCED DRAINAGE SYSTEMS
22. INSTALL 15" INLINE DRAIN WITH PEDESTRIAN GRATE (H-10 RATED), N-12 DOWN DRAIN (PART No. 2715AGN) PER ADVANCED DRAINAGE SYSTEMS, Inc.
23. INSTALL 6"øN-12 FABRICATED 90° BEND (PART NO. 0699AN) ADVANCED DRAINAGE SYSTEMS, Inc.
24. INSTALL 6"ø N-12 FABRICATED TEE (PART No. 0661AN) ADVANCED DRAINAGE SYSTEMS, Inc.
26. CONSTRUCT GRATING CATCH BASIN, LONGITUDINAL, 1 GRATE, PER APWA STD. PLAN No. 304-2
28. CONSTRUCT GRATING CATCH BASIN, LONGITUDINAL, 2 GRATES, PER APWA STD. PLAN No. 304-2
27. CONSTRUCT INLET TYPE "V" PER ORANGE COUNTY EMA STANDARD PLAN 1305
28. CONSTRUCT JUNCTION STRUCTURE PER APWA STD. PLAN No. 332-0
29. CONSTRUCT PARKWAY DRAIN PER APWA STD. PLAN No. 151-1, TYPE 1 INLET
30. ITEM NOT USED ON THIS SHEET

Underground Service Alert
Call: TOLL FREE 1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK No. 29A-86
LOCATION FOOTHILL BOULEVARD AND BENSON AVENUE

2" CITY OF UPLAND BRASS CAP IN P.C.C. BASE OF TRAFFIC SIGNAL 34 FEET EAST OF & BENSON AVENUE; 38 FEET NORTH OF SOUTH DRIVEWAY FOR UPLAND FIRE.

ELEV 1425.07'

REVISIONS

MARK	DATE	BY	DESCRIPTION	DATE	APP'VD

REGISTERED PROFESSIONAL ENGINEER — C. CURT MCMASKIN — No. 44760 — Exp. 3-31-04 — CIVIL — STATE OF CALIFORNIA

Associated Engineers
5311 EAST SHELBY STREET • ONTARIO, CA. 91764
TEL: (909) 980-2982 • FAX: (909) 941-0891
11/30/02

DRAWN BY:	VAD AUGUST 2001
DESIGNED BY:	VAD AUGUST 2001
CHECKED BY:	CCI AUGUST 2001
RECOMMENDED BY:	

REVIEWED BY CITY STAFF

DEPARTMENT	INITIAL	DATE
PUBLIC WORKS (OPER.)		11/27/02
PUBLIC WORKS (ENV.)		11/27/02
PUBLIC WORKS (WATER)		11/27/02
PUBLIC WORKS (TRAF.)	AG	11/27/02
FIRE DEPT.		11/27/02

APPROVED BY:
PUBLIC WORKS DIRECTOR/CITY ENGINEER — DATE 12/16/02
RCE 54706 Exp. DATE 12-31-03

RECOMMENDED BY:
DEPUTY CITY ENGINEER

RECOMMENDED BY:
DEVELOPMENT SERVICES — 12/9/02

CITY OF UPLAND

CABLE BUSINESS PARK

ON-SITE PRIVATE STORM DRAIN IMPROVEMENTS

WATER DRAWING NO.

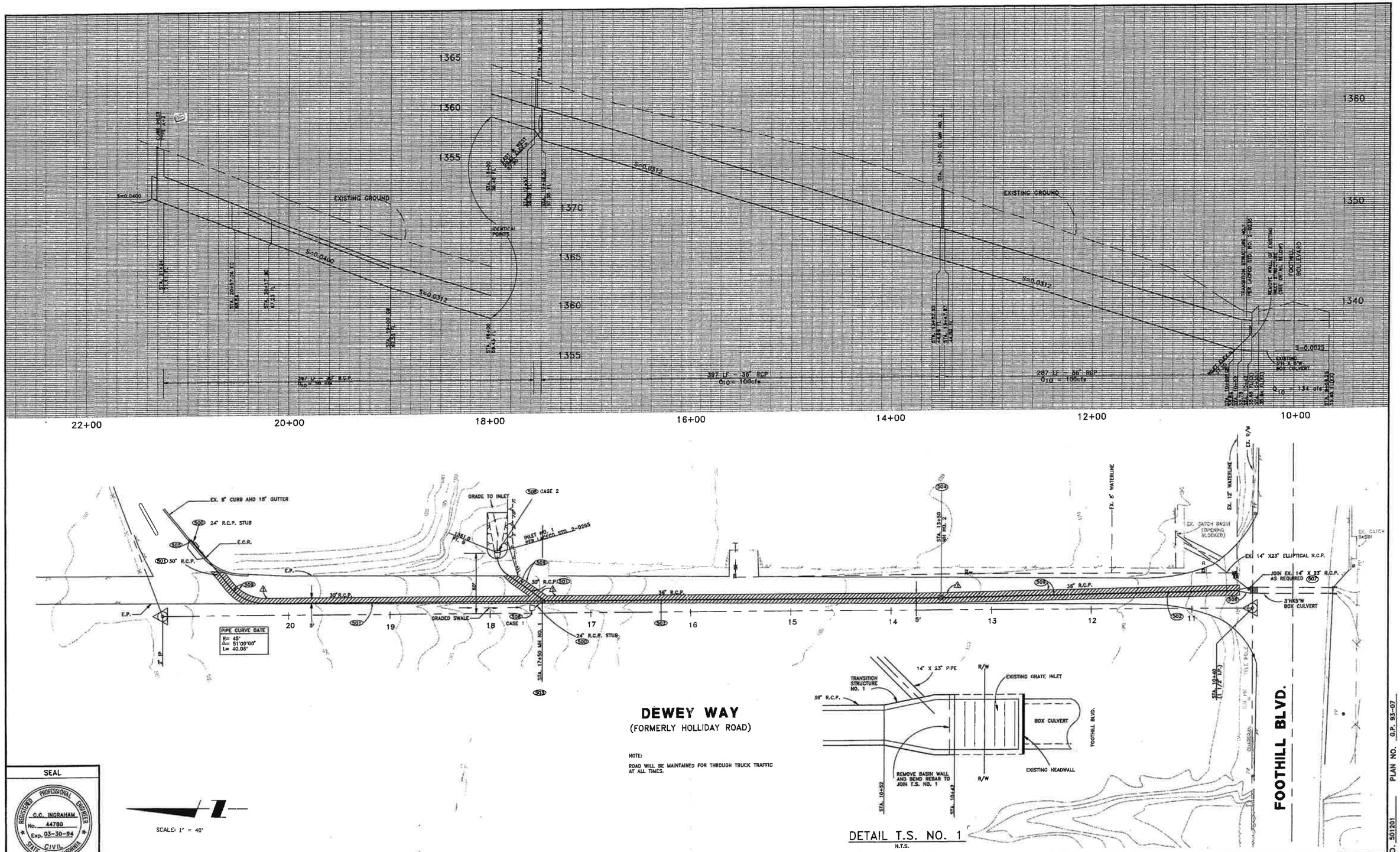
3
OF 3 SHEETS

DRAWING No.
SD 01-07

PROJECT NO

PLAN NO.

M:\2000\00033\DWG\DRAINAGE\onsite\sht3.dwg



DEWEY WAY
(FORMERLY HOLLIDAY ROAD)

NOTE:

ROAD WILL BE MAINTAINED FOR THROUGH TRUCK TRAFFIC AT ALL TIMES.

SCALE: 1" = 40'

SEAL

REGISTERED PROFESSIONAL ENGINEER
C.C. INGRAHAM
No. 44780
Exp. 03-30-94
CIVIL
STATE OF CALIFORNIA

BENCH MARK NO. 29A-86
LOCATION:

2" CITY OF UPLAND BRASS CAP IN P.C.C. BASE OF TRAFFIC SIGNAL 34' EAST OF C BENSON AVENUE 38' NORTH OF SOUTH DRIVEWAY FOR UPLAND FIRE.

ELEV. 1425.07'

REVISIONS					
MARK	DATE	INITIAL	DESCRIPTION	DATE	APP'VD.
1	10/01/93	LKH	STORM DRAIN ALIGNMENT AND TRENCH REPAIR		

PLANS PREPARED BY
ASSOCIATED ENGINEERS
3311 EAST SHELBY AVENUE
ONTARIO, CALIFORNIA 91764
TEL. (909) 980-1982
FAX: (909) 941-0891

R.C.E. NO. 44780 (EXPIRES: 03-30-94) 10/1/93 DATE

DRAWN BY: L.H.
DESIGN BY: S.B./C.C.I.
CHECKED BY: C.C.I.

REVIEW BY CITY STAFF

DEPARTMENT	INITIAL	DATE
PUBLIC WORKS (OPER)		
PUBLIC WORKS (ENV)		10/26/93
PUBLIC WORKS (WATER)		10/26/93
PUBLIC WORKS (TRAFFIC)		10/26/93
FIRE DEPT		

APPROVED BY:
PUBLIC WORKS DIRECTOR/CITY ENGINEER
R.C.E. 39880 EXP. DATE 12-31-93
10-28-93 DATE

RECOMMENDED BY:
DEPUTY CITY ENGINEER

RECOMMENDED BY:
DEVELOP. SVCS. COORD. 10/26/93

CITY OF UPLAND
CABLE AIRPORT
A.I.P. 05
STORM DRAIN PLAN DEWEY WAY

WATER DRAWING NO.

SHEET 14 OF 14 SHEETS

DRAWING NO. G.P. 93-07

PROJECT NO. 501201 PLAN NO. G.P. 93-07

FILE: 9336SH1.DWG
DATE: 08-25-93

APPENDIX B

HYDROLOGY CALCULATIONS

EXISTING CONDITION

```
**************************************************************************
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          Ver. 23.0  Release Date: 07/01/2016  License ID 1435

                        Analysis prepared by:



 ************************** DESCRIPTION OF STUDY **************************
* TEI 3651                                                                *
* EXISTING CONDITION                                                      *
* 100-YEAR EVENT (NODES 100-102)                                          *
 **************************************************************************

  FILE NAME: W:\3651\EX100.DAT
  TIME/DATE OF STUDY: 08:51 05/08/2018
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.5500

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  =====  ====  ====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE     100.00 TO NODE     101.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   563.00
  ELEVATION DATA: UPSTREAM(FEET) =   1394.60  DOWNSTREAM(FEET) =   1376.30

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   13.121
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.859
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  NATURAL POOR COVER
  "OPEN BRUSH"                 A        2.90      0.35      1.000    81   13.12
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.35
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  SUBAREA RUNOFF(CFS) =      9.15
  TOTAL AREA(ACRES) =      2.90   PEAK FLOW RATE(CFS) =      9.15

**************************************************************************
  FLOW PROCESS FROM NODE     101.00 TO NODE     102.00 IS CODE =  52
--------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1376.30  DOWNSTREAM(FEET) =   1358.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   560.00   CHANNEL SLOPE =  0.0327
  CHANNEL FLOW THRU SUBAREA(CFS) =      9.15
  FLOW VELOCITY(FEET/SEC) =   4.42 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   2.11   Tc(MIN.) =   15.23
  LONGEST FLOWPATH FROM NODE     100.00 TO NODE     102.00 =    1123.00 FEET.
```

```
**************************************************************************
 FLOW PROCESS FROM NODE    102.00 TO NODE    102.00 IS CODE =  81
--------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==========================================================================
 MAINLINE Tc(MIN.) =   15.23
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.528
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "OPEN BRUSH"                 A        4.50      0.35      1.000    81
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.35
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
 SUBAREA AREA(ACRES) =     4.50      SUBAREA RUNOFF(CFS) =   12.86
 EFFECTIVE AREA(ACRES) =      7.40   AREA-AVERAGED Fm(INCH/HR) =  0.35
 AREA-AVERAGED Fp(INCH/HR) =  0.35  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =         7.4      PEAK FLOW RATE(CFS) =      21.15
==========================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =        7.4  TC(MIN.) =     15.23
 EFFECTIVE AREA(ACRES) =      7.40  AREA-AVERAGED Fm(INCH/HR)=  0.35
 AREA-AVERAGED Fp(INCH/HR) =  0.35  AREA-AVERAGED Ap = 1.000
 PEAK FLOW RATE(CFS)    =     21.15
==========================================================================
==========================================================================
 END OF RATIONAL METHOD ANALYSIS
```

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         Ver. 23.0  Release Date: 07/01/2016  License ID 1435

                      Analysis prepared by:



 ************************** DESCRIPTION OF STUDY **************************
* TEI 3651                                                                *
* EXISTING CONDITION                                                      *
* 100-YEAR EVENT (NODES 200-202)                                          *
 **************************************************************************

  FILE NAME: W:\3651\EX200.DAT
  TIME/DATE OF STUDY: 08:51 05/08/2018
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.5500

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  =====  ====== =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE     200.00 TO NODE     201.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   803.00
  ELEVATION DATA: UPSTREAM(FEET) =   1403.00  DOWNSTREAM(FEET) =   1369.50

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   14.387
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.651
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  NATURAL POOR COVER
  "OPEN BRUSH"                 A        5.70      0.35      1.000    81   14.39
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.35
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  SUBAREA RUNOFF(CFS) =     16.92
  TOTAL AREA(ACRES) =      5.70   PEAK FLOW RATE(CFS) =     16.92

**************************************************************************
  FLOW PROCESS FROM NODE     201.00 TO NODE     202.00 IS CODE =  52
--------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1369.50  DOWNSTREAM(FEET) =   1351.90
  CHANNEL LENGTH THRU SUBAREA(FEET) =   691.00   CHANNEL SLOPE =  0.0255
  CHANNEL FLOW THRU SUBAREA(CFS) =      16.92
  FLOW VELOCITY(FEET/SEC) =   4.57 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   2.52   Tc(MIN.) =   16.91
  LONGEST FLOWPATH FROM NODE     200.00 TO NODE     202.00 =    1494.00 FEET.
```

```
****************************************************************************
 FLOW PROCESS FROM NODE     202.00 TO NODE     202.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN.) =   16.91
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.314
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "OPEN BRUSH"                A        2.85      0.35      1.000    81
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.35
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
 SUBAREA AREA(ACRES) =    2.85      SUBAREA RUNOFF(CFS) =    7.60
 EFFECTIVE AREA(ACRES) =      8.55   AREA-AVERAGED Fm(INCH/HR) =  0.35
 AREA-AVERAGED Fp(INCH/HR) =  0.35  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =       8.5       PEAK FLOW RATE(CFS) =      22.79
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =        8.5  TC(MIN.) =     16.91
 EFFECTIVE AREA(ACRES) =       8.55  AREA-AVERAGED Fm(INCH/HR)=  0.35
 AREA-AVERAGED Fp(INCH/HR) =  0.35  AREA-AVERAGED Ap = 1.000
 PEAK FLOW RATE(CFS)   =      22.79
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

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************************************************************************
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                      Analysis prepared by:



 ************************** DESCRIPTION OF STUDY **************************
* TEI 3651                                                                *
* EXISTING CONDITION                                                      *
* 100-YEAR EVENT (NODES 300-303)                                          *
 ************************************************************************

  FILE NAME: W:\3651\EX300.DAT
  TIME/DATE OF STUDY: 08:51 05/07/2018
========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.5500

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)      (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   585.00
  ELEVATION DATA: UPSTREAM(FEET) =   1399.00  DOWNSTREAM(FEET) =   1383.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =  13.792
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.745
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
        LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  NATURAL POOR COVER
  "BARREN"                    A        5.85      0.18      1.000    93   13.79
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.18
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  SUBAREA RUNOFF(CFS) =      18.77
  TOTAL AREA(ACRES) =      5.85   PEAK FLOW RATE(CFS) =     18.77

************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  52
------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1383.00  DOWNSTREAM(FEET) =   1367.90
  CHANNEL LENGTH THRU SUBAREA(FEET) =   341.00   CHANNEL SLOPE =  0.0443
  CHANNEL FLOW THRU SUBAREA(CFS) =      18.77
  FLOW VELOCITY(FEET/SEC) =   6.20 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.92   Tc(MIN.) =   14.71
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =     926.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE     302.00 TO NODE     302.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  MAINLINE Tc(MIN.) =   14.71
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.603
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  NATURAL POOR COVER
  "BARREN"                    A        5.35      0.18      1.000    93
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.18
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  SUBAREA AREA(ACRES) =     5.35      SUBAREA RUNOFF(CFS) =   16.48
  EFFECTIVE AREA(ACRES) =    11.20   AREA-AVERAGED Fm(INCH/HR) =  0.18
  AREA-AVERAGED Fp(INCH/HR) =  0.18  AREA-AVERAGED Ap =  1.00
  TOTAL AREA(ACRES) =       11.2       PEAK FLOW RATE(CFS) =      34.50

****************************************************************************
  FLOW PROCESS FROM NODE     302.00 TO NODE     303.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1367.90  DOWNSTREAM(FEET) =   1351.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   449.00   CHANNEL SLOPE =  0.0376
  CHANNEL FLOW THRU SUBAREA(CFS) =      34.50
  FLOW VELOCITY(FEET/SEC) =   6.76 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.11   Tc(MIN.) =   15.82
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    303.00 =    1375.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     303.00 TO NODE     303.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  MAINLINE Tc(MIN.) =   15.82
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.449
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  NATURAL POOR COVER
  "BARREN"                    A        7.00      0.18      1.000    93
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.18
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  SUBAREA AREA(ACRES) =     7.00      SUBAREA RUNOFF(CFS) =   20.60
  EFFECTIVE AREA(ACRES) =    18.20   AREA-AVERAGED Fm(INCH/HR) =  0.18
  AREA-AVERAGED Fp(INCH/HR) =  0.18  AREA-AVERAGED Ap =  1.00
  TOTAL AREA(ACRES) =       18.2       PEAK FLOW RATE(CFS) =      53.55
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =       18.2  TC(MIN.) =     15.82
  EFFECTIVE AREA(ACRES) =     18.20  AREA-AVERAGED Fm(INCH/HR)=  0.18
  AREA-AVERAGED Fp(INCH/HR) =  0.18  AREA-AVERAGED Ap = 1.000
  PEAK FLOW RATE(CFS)    =      53.55
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

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**************************************************************************
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                        Analysis prepared by:



 ************************** DESCRIPTION OF STUDY **************************
* TEI 3651                                                                *
* EXISTING CONDITION                                                      *
* 100-YEAR EVENT (NODES 400-402)                                          *
 **************************************************************************

  FILE NAME: W:\3651\EX400.DAT
  TIME/DATE OF STUDY: 08:53 05/07/2018
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.5500

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ====  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   598.00
  ELEVATION DATA: UPSTREAM(FEET) =   1399.70  DOWNSTREAM(FEET) =   1377.50

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =  13.089
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.864
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  NATURAL POOR COVER
  "BARREN"                   A        8.55      0.18      1.000    93   13.09
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.18
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  SUBAREA RUNOFF(CFS) =     28.35
  TOTAL AREA(ACRES) =      8.55   PEAK FLOW RATE(CFS) =     28.35

**************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    402.00 IS CODE =  52
--------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1377.50  DOWNSTREAM(FEET) =   1348.40
  CHANNEL LENGTH THRU SUBAREA(FEET) =   804.00   CHANNEL SLOPE =  0.0362
  CHANNEL FLOW THRU SUBAREA(CFS) =      28.35
  FLOW VELOCITY(FEET/SEC) =   6.27 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   2.14   Tc(MIN.) =   15.23
  LONGEST FLOWPATH FROM NODE    400.00 TO NODE    402.00 =    1402.00 FEET.
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    402.00 TO NODE    402.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN.) =   15.23
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.529
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "BARREN"                   A        7.20      0.18      1.000    93
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.18
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
 SUBAREA AREA(ACRES) =    7.20      SUBAREA RUNOFF(CFS) =   21.70
 EFFECTIVE AREA(ACRES) =    15.75   AREA-AVERAGED Fm(INCH/HR) =  0.18
 AREA-AVERAGED Fp(INCH/HR) =  0.18  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =       15.8      PEAK FLOW RATE(CFS) =      47.47
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =       15.8  TC(MIN.) =     15.23
 EFFECTIVE AREA(ACRES) =     15.75  AREA-AVERAGED Fm(INCH/HR)=  0.18
 AREA-AVERAGED Fp(INCH/HR) =  0.18  AREA-AVERAGED Ap = 1.000
 PEAK FLOW RATE(CFS)    =     47.47
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

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PROPOSED CONDITION

```
**************************************************************************
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                        Analysis prepared by:

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 ************************** DESCRIPTION OF STUDY **************************
* TEI JOB 3651                                                            *
* 100-YEAR STORM EVENT                                                    *
* PROPOSED CONDITION (NODES 100-304)                                      *
 **************************************************************************

  FILE NAME: C:\XDRIVE\3651\100P.DAT
  TIME/DATE OF STUDY: 13:47 11/13/2019
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.5500

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*


**************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   381.00
  ELEVATION DATA: UPSTREAM(FEET) =   1397.20  DOWNSTREAM(FEET) =   1386.94

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    6.748
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.750
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS   Tc
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                  A        1.25      0.80        0.10    52    6.75
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
  SUBAREA RUNOFF(CFS) =      6.38
  TOTAL AREA(ACRES) =      1.25   PEAK FLOW RATE(CFS) =      6.38

**************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  31
--------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1382.94  DOWNSTREAM(FEET) =  1376.94
  FLOW LENGTH(FEET) =   200.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.46
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      6.38
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =   7.10
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =   581.00 FEET.

**************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    102.00 IS CODE =  81
--------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==========================================================================
  MAINLINE Tc(MIN) =   7.10
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.577
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  COMMERCIAL                  A        1.40      0.80        0.10    52
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
  SUBAREA AREA(ACRES) =     1.40      SUBAREA RUNOFF(CFS) =     6.93
  EFFECTIVE AREA(ACRES) =     2.65    AREA-AVERAGED Fm(INCH/HR) =  0.08
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
  TOTAL AREA(ACRES) =     2.65       PEAK FLOW RATE(CFS) =     13.11

**************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    103.00 IS CODE =  31
--------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1376.94  DOWNSTREAM(FEET) =  1371.54
```

```
 FLOW LENGTH(FEET) =   180.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  11.70
 ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     13.11
 PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =   7.36
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    103.00 =   761.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =   7.36
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.460
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                  A        1.55      0.80       0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =     1.55      SUBAREA RUNOFF(CFS) =     7.51
 EFFECTIVE AREA(ACRES) =     4.20    AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =     4.20       PEAK FLOW RATE(CFS) =      20.34

****************************************************************************
 FLOW PROCESS FROM NODE    103.00 TO NODE    104.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1371.54  DOWNSTREAM(FEET) =  1370.76
 FLOW LENGTH(FEET) =    26.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  13.04
 ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     20.34
 PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   7.39
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    104.00 =   787.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    104.00 TO NODE    104.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =   7.39
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.445
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                  A        1.05      0.80       0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =     1.05      SUBAREA RUNOFF(CFS) =     5.07
 EFFECTIVE AREA(ACRES) =     5.25    AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =     5.25       PEAK FLOW RATE(CFS) =      25.35

****************************************************************************
 FLOW PROCESS FROM NODE    104.00 TO NODE    113.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1370.76  DOWNSTREAM(FEET) =  1363.35
 FLOW LENGTH(FEET) =   247.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  13.58
 ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     25.35
 PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =   7.69
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    113.00 =  1034.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    113.00 TO NODE    113.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =   7.69
 RAINFALL INTENSITY(INCH/HR) =   5.32
 AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80
 AREA-AVERAGED Ap =  0.10
 EFFECTIVE STREAM AREA(ACRES) =    5.25
 TOTAL STREAM AREA(ACRES) =    5.25
 PEAK FLOW RATE(CFS) AT CONFLUENCE =     25.35

****************************************************************************
 FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   495.00
 ELEVATION DATA: UPSTREAM(FEET) =   1381.19  DOWNSTREAM(FEET) =   1368.38
```

```
Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    7.553
* 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.375
SUBAREA Tc AND LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
COMMERCIAL                 A        3.00      0.80       0.10     52    7.55
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
SUBAREA RUNOFF(CFS) =     14.30
TOTAL AREA(ACRES) =      3.00   PEAK FLOW RATE(CFS) =     14.30

****************************************************************************
FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  31
----------------------------------------------------------------------------
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
ELEVATION DATA: UPSTREAM(FEET) =  1364.38  DOWNSTREAM(FEET) =  1364.12
FLOW LENGTH(FEET) =    33.00   MANNING'S N =  0.012
DEPTH OF FLOW IN  21.0 INCH PIPE IS  16.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =   7.03
ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
PIPE-FLOW(CFS) =     14.30
PIPE TRAVEL TIME(MIN.) =   0.08    Tc(MIN.) =   7.63
LONGEST FLOWPATH FROM NODE    110.00 TO NODE    112.00 =   528.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE    112.00 TO NODE    112.00 IS CODE =  81
----------------------------------------------------------------------------
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
MAINLINE Tc(MIN) =   7.63
* 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.341
SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
COMMERCIAL                 A        1.10      0.80       0.10     52
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
SUBAREA AREA(ACRES) =     1.10      SUBAREA RUNOFF(CFS) =     5.21
EFFECTIVE AREA(ACRES) =     4.10   AREA-AVERAGED Fm(INCH/HR) =  0.08
AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
TOTAL AREA(ACRES) =     4.10      PEAK FLOW RATE(CFS) =     19.42

****************************************************************************
FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  31
----------------------------------------------------------------------------
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
ELEVATION DATA: UPSTREAM(FEET) =  1364.12  DOWNSTREAM(FEET) =  1361.59
FLOW LENGTH(FEET) =   316.00   MANNING'S N =  0.012
DEPTH OF FLOW IN  24.0 INCH PIPE IS  17.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =   7.71
ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
PIPE-FLOW(CFS) =     19.42
PIPE TRAVEL TIME(MIN.) =   0.68    Tc(MIN.) =   8.31
LONGEST FLOWPATH FROM NODE    110.00 TO NODE    113.00 =   844.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE    113.00 TO NODE    113.00 IS CODE =   1
----------------------------------------------------------------------------
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
TOTAL NUMBER OF STREAMS =  2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
TIME OF CONCENTRATION(MIN.) =   8.31
RAINFALL INTENSITY(INCH/HR) =   5.07
AREA-AVERAGED Fm(INCH/HR) =  0.08
AREA-AVERAGED Fp(INCH/HR) =  0.80
AREA-AVERAGED Ap =  0.10
EFFECTIVE STREAM AREA(ACRES) =    4.10
TOTAL STREAM AREA(ACRES) =    4.10
PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.42

** CONFLUENCE DATA **
 STREAM     Q     Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
 NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)     NODE
    1     25.35   7.69    5.315  0.80( 0.08) 0.10     5.3      100.00
    2     19.42   8.31    5.074  0.80( 0.08) 0.10     4.1      110.00

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR  2 STREAMS.

** PEAK FLOW RATE TABLE **
 STREAM     Q     Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
 NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)     NODE
    1     44.19   7.69    5.315  0.80( 0.08) 0.10     9.0      100.00
    2     43.60   8.31    5.074  0.80( 0.08) 0.10     9.4      110.00

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) =     44.19    Tc(MIN.) =     7.69
EFFECTIVE AREA(ACRES) =     9.04   AREA-AVERAGED Fm(INCH/HR) =  0.08
AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
TOTAL AREA(ACRES) =      9.35
LONGEST FLOWPATH FROM NODE    100.00 TO NODE    113.00 =  1034.00 FEET.
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    113.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1361.59  DOWNSTREAM(FEET) =  1360.34
 FLOW LENGTH(FEET) =   156.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  33.0 INCH PIPE IS  24.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   9.50
 ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     44.19
 PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =   7.97
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =  1190.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =   7.97
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  5.205
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                  A        1.65      0.80        0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =    1.65      SUBAREA RUNOFF(CFS) =    7.61
 EFFECTIVE AREA(ACRES) =    10.69   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =    11.00      PEAK FLOW RATE(CFS) =      49.33

****************************************************************************
 FLOW PROCESS FROM NODE    114.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1360.34  DOWNSTREAM(FEET) =  1359.37
 FLOW LENGTH(FEET) =   324.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  42.0 INCH PIPE IS  29.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.78
 ESTIMATED PIPE DIAMETER(INCH) =  42.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     49.33
 PIPE TRAVEL TIME(MIN.) =   0.80    Tc(MIN.) =   8.76
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    115.00 =  1514.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    115.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =   8.76
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.916
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                  A        0.35      0.80        0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =    0.35      SUBAREA RUNOFF(CFS) =    1.52
 EFFECTIVE AREA(ACRES) =    11.04   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =    11.35      PEAK FLOW RATE(CFS) =      49.33
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    122.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1359.37  DOWNSTREAM(FEET) =  1359.16
 FLOW LENGTH(FEET) =    68.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  42.0 INCH PIPE IS  29.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.87
 ESTIMATED PIPE DIAMETER(INCH) =  42.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     49.33
 PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =   8.93
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    122.00 =  1582.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    122.00 TO NODE    122.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =   8.93
 RAINFALL INTENSITY(INCH/HR) =   4.86
 AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80
 AREA-AVERAGED Ap =  0.10
 EFFECTIVE STREAM AREA(ACRES) =   11.04
 TOTAL STREAM AREA(ACRES) =   11.35
 PEAK FLOW RATE(CFS) AT CONFLUENCE =     49.33

****************************************************************************
```

```
 FLOW PROCESS FROM NODE     120.00 TO NODE     121.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   556.00
 ELEVATION DATA: UPSTREAM(FEET) =   1382.69  DOWNSTREAM(FEET) =   1375.18

 Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    9.011
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.834
 SUBAREA Tc AND LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
 COMMERCIAL                 A        6.10      0.80       0.10     52    9.01
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA RUNOFF(CFS) =     26.10
 TOTAL AREA(ACRES) =      6.10   PEAK FLOW RATE(CFS) =     26.10

****************************************************************************
 FLOW PROCESS FROM NODE     121.00 TO NODE     122.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1371.18  DOWNSTREAM(FEET) =  1359.16
 FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  21.98
 ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     26.10
 PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =   9.10
 LONGEST FLOWPATH FROM NODE     120.00 TO NODE     122.00 =   673.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     122.00 TO NODE     122.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =   9.10
 RAINFALL INTENSITY(INCH/HR) =   4.81
 AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80
 AREA-AVERAGED Ap =  0.10
 EFFECTIVE STREAM AREA(ACRES) =    6.10
 TOTAL STREAM AREA(ACRES) =    6.10
 PEAK FLOW RATE(CFS) AT CONFLUENCE =     26.10

 ** CONFLUENCE DATA **
  STREAM     Q      Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)     NODE
     1     49.33   8.93    4.861  0.80( 0.08) 0.10    11.0      100.00
     1     48.47   9.55    4.668  0.80( 0.08) 0.10    11.4      110.00
     2     26.10   9.10    4.806  0.80( 0.08) 0.10     6.1      120.00

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
  STREAM     Q      Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)     NODE
     1     75.24   8.93    4.861  0.80( 0.08) 0.10    17.0      100.00
     2     73.81   9.55    4.668  0.80( 0.08) 0.10    17.5      110.00
     3     75.20   9.10    4.806  0.80( 0.08) 0.10    17.2      120.00

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     75.24    Tc(MIN.) =     8.93
 EFFECTIVE AREA(ACRES) =    17.03   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =     17.45
 LONGEST FLOWPATH FROM NODE     100.00 TO NODE     122.00 =  1582.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     122.00 TO NODE     123.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1359.16  DOWNSTREAM(FEET) =  1358.01
 FLOW LENGTH(FEET) =   454.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  48.0 INCH PIPE IS  38.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.92
 ESTIMATED PIPE DIAMETER(INCH) =  48.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     75.24
 PIPE TRAVEL TIME(MIN.) =   1.09    Tc(MIN.) =  10.02
 LONGEST FLOWPATH FROM NODE     100.00 TO NODE     123.00 =  2036.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     123.00 TO NODE     123.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  10.02
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.536
 SUBAREA LOSS RATE DATA(AMC III):
```

```
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                 A        2.50      0.80       0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =     2.50     SUBAREA RUNOFF(CFS) =   10.03
 EFFECTIVE AREA(ACRES) =    19.53   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =    19.95      PEAK FLOW RATE(CFS) =      78.32

****************************************************************************
 FLOW PROCESS FROM NODE    123.00 TO NODE    303.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1358.01  DOWNSTREAM(FEET) =  1343.50
 FLOW LENGTH(FEET) =   590.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  33.0 INCH PIPE IS  24.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  16.67
 ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     78.32
 PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =  10.61
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    303.00 =  2626.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    303.00 TO NODE    303.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   635.00
 ELEVATION DATA: UPSTREAM(FEET) =   1390.64  DOWNSTREAM(FEET) =   1378.81

 Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    8.911
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.867
 SUBAREA Tc AND LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
 COMMERCIAL                 A        7.30      0.80       0.10    52    8.91
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA RUNOFF(CFS) =     31.45
 TOTAL AREA(ACRES) =      7.30   PEAK FLOW RATE(CFS) =     31.45

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1374.81  DOWNSTREAM(FEET) =  1373.60
 FLOW LENGTH(FEET) =   242.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  33.0 INCH PIPE IS  22.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   7.38
 ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     31.45
 PIPE TRAVEL TIME(MIN.) =   0.55    Tc(MIN.) =   9.46
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =   877.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =   9.46
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.696
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                 A        2.85      0.80       0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =     2.85     SUBAREA RUNOFF(CFS) =   11.84
 EFFECTIVE AREA(ACRES) =    10.15   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =    10.15      PEAK FLOW RATE(CFS) =      42.17

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1373.60  DOWNSTREAM(FEET) =  1372.70
 FLOW LENGTH(FEET) =   180.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  36.0 INCH PIPE IS  25.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   7.90
 ESTIMATED PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     42.17
 PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =   9.84
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =  1057.00 FEET.
```

```
****************************************************************************
 FLOW PROCESS FROM NODE     203.00 TO NODE     203.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =   9.84
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.587
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                  A        1.60      0.80        0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =     1.60      SUBAREA RUNOFF(CFS) =     6.49
 EFFECTIVE AREA(ACRES) =    11.75    AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80   AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =     11.75       PEAK FLOW RATE(CFS) =      47.66

****************************************************************************
 FLOW PROCESS FROM NODE     203.00 TO NODE     204.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1372.70  DOWNSTREAM(FEET) =  1370.73
 FLOW LENGTH(FEET) =   394.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  36.0 INCH PIPE IS  28.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   8.02
 ESTIMATED PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     47.66
 PIPE TRAVEL TIME(MIN.) =   0.82    Tc(MIN.) =  10.66
 LONGEST FLOWPATH FROM NODE     200.00 TO NODE     204.00 =  1451.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     204.00 TO NODE     204.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  10.66
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.372
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                  A        1.85      0.80        0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =     1.85      SUBAREA RUNOFF(CFS) =     7.15
 EFFECTIVE AREA(ACRES) =    13.60    AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80   AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =     13.60       PEAK FLOW RATE(CFS) =      52.54

****************************************************************************
 FLOW PROCESS FROM NODE     204.00 TO NODE     302.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =  10.66
 RAINFALL INTENSITY(INCH/HR) =   4.37
 AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80
 AREA-AVERAGED Ap =  0.10
 EFFECTIVE STREAM AREA(ACRES) =   13.60
 TOTAL STREAM AREA(ACRES) =   13.60
 PEAK FLOW RATE(CFS) AT CONFLUENCE =     52.54

****************************************************************************
 FLOW PROCESS FROM NODE     300.00 TO NODE     301.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   908.00
 ELEVATION DATA: UPSTREAM(FEET) =   1368.06  DOWNSTREAM(FEET) =   1363.52

 Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =  13.376
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.814
 SUBAREA Tc AND LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS   Tc
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
 COMMERCIAL                  A        7.45      0.80        0.10    52   13.38
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA RUNOFF(CFS) =     25.04
 TOTAL AREA(ACRES) =      7.45   PEAK FLOW RATE(CFS) =     25.04

****************************************************************************
 FLOW PROCESS FROM NODE     301.00 TO NODE     302.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1359.52  DOWNSTREAM(FEET) =  1358.98
 FLOW LENGTH(FEET) =   107.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  30.0 INCH PIPE IS  20.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.98
```

```
 ESTIMATED PIPE DIAMETER(INCH) =  30.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     25.04
 PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =  13.63
 LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =  1015.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    302.00 TO NODE    302.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =  13.63
 RAINFALL INTENSITY(INCH/HR) =   3.77
 AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80
 AREA-AVERAGED Ap =  0.10
 EFFECTIVE STREAM AREA(ACRES) =    7.45
 TOTAL STREAM AREA(ACRES) =    7.45
 PEAK FLOW RATE(CFS) AT CONFLUENCE =     25.04

 ** CONFLUENCE DATA **
  STREAM     Q     Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1     52.54  10.66    4.372  0.80( 0.08) 0.10    13.6     200.00
     2     25.04  13.63    3.771  0.80( 0.08) 0.10     7.4     300.00

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
  STREAM     Q     Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1     75.30  10.66    4.372  0.80( 0.08) 0.10    19.4     200.00
     2     70.23  13.63    3.771  0.80( 0.08) 0.10    21.0     300.00

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     75.30    Tc(MIN.) =    10.66
 EFFECTIVE AREA(ACRES) =    19.42   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =     21.05
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    302.00 =  1451.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    302.00 TO NODE    303.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1358.98  DOWNSTREAM(FEET) =  1343.50
 FLOW LENGTH(FEET) =   247.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  27.0 INCH PIPE IS  20.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  23.36
 ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     75.30
 PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =  10.83
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    303.00 =  1698.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    303.00 TO NODE    303.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM     Q     Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1     75.30  10.83    4.329  0.80( 0.08) 0.10    19.4     200.00
     2     70.23  13.81    3.742  0.80( 0.08) 0.10    21.0     300.00
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    303.00 =  1698.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     Q     Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1     78.32  10.61    4.383  0.80( 0.08) 0.10    19.5     100.00
     2     78.31  10.78    4.341  0.80( 0.08) 0.10    19.7     120.00
     3     77.11  11.24    4.235  0.80( 0.08) 0.10    20.0     110.00
 LONGEST FLOWPATH FROM NODE      0.00 TO NODE    303.00 =     0.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM     Q     Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1    153.47  10.83    4.329  0.80( 0.08) 0.10    39.2     200.00
     2    138.20  13.81    3.742  0.80( 0.08) 0.10    41.0     300.00
     3    153.02  10.61    4.383  0.80( 0.08) 0.10    38.6     100.00
     4    153.47  10.78    4.341  0.80( 0.08) 0.10    39.1     120.00
     5    151.72  11.24    4.235  0.80( 0.08) 0.10    39.6     110.00
   TOTAL AREA(ACRES) =     41.00

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     153.47  Tc(MIN.) =   10.832
 EFFECTIVE AREA(ACRES) =    39.18  AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =    41.00
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    303.00 =  1698.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    303.00 TO NODE    303.00 IS CODE =  12
```

```
------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
========================================================================

************************************************************************
 FLOW PROCESS FROM NODE    303.00 TO NODE    304.00 IS CODE =  31
------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1343.50  DOWNSTREAM(FEET) =  1342.25
 FLOW LENGTH(FEET) =    98.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  48.0 INCH PIPE IS  35.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  15.42
 ESTIMATED PIPE DIAMETER(INCH) =  48.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =    153.47
 PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =  10.94
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    304.00 =  1796.00 FEET.

************************************************************************
 FLOW PROCESS FROM NODE    304.00 TO NODE    304.00 IS CODE =  81
------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
========================================================================
 MAINLINE Tc(MIN) =  10.94
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.304
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 COMMERCIAL                  A        0.70      0.80       0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
 SUBAREA AREA(ACRES) =    0.70      SUBAREA RUNOFF(CFS) =    2.66
 EFFECTIVE AREA(ACRES) =    39.88   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
 TOTAL AREA(ACRES) =    41.70      PEAK FLOW RATE(CFS) =     153.47
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

************************************************************************
 FLOW PROCESS FROM NODE    304.00 TO NODE    305.00 IS CODE =  31
------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1342.25  DOWNSTREAM(FEET) =  1341.84
 FLOW LENGTH(FEET) =    22.00   MANNING'S N =  0.012
 DEPTH OF FLOW IN  45.0 INCH PIPE IS  32.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  17.81
 ESTIMATED PIPE DIAMETER(INCH) =  45.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =    153.47
 PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =  10.96
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    305.00 =  1818.00 FEET.

************************************************************************
 FLOW PROCESS FROM NODE    305.00 TO NODE    305.00 IS CODE =  81
------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
========================================================================
 MAINLINE Tc(MIN) =  10.96
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.299
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL FAIR COVER
 "OPEN BRUSH"                A        0.55      0.61       1.00    66
 COMMERCIAL                  A        5.00      0.80       0.10    52
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.70
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.19
 SUBAREA AREA(ACRES) =    5.55      SUBAREA RUNOFF(CFS) =   20.81
 EFFECTIVE AREA(ACRES) =    45.43   AREA-AVERAGED Fm(INCH/HR) =  0.09
 AREA-AVERAGED Fp(INCH/HR) =  0.78  AREA-AVERAGED Ap =  0.11
 TOTAL AREA(ACRES) =    47.25      PEAK FLOW RATE(CFS) =     172.24

 ** PEAK FLOW RATE TABLE **
  STREAM     Q      Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER    (CFS)  (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1    172.24  10.96    4.299  0.78( 0.09) 0.11    45.4      200.00
     2    154.59  13.94    3.721  0.78( 0.09) 0.11    47.3      300.00
     3    172.02  10.74    4.352  0.78( 0.09) 0.11    44.8      100.00
     4    172.29  10.91    4.311  0.78( 0.09) 0.11    45.3      120.00
     5    170.01  11.36    4.206  0.78( 0.09) 0.11    45.8      110.00
 NEW PEAK FLOW DATA ARE:
 PEAK FLOW RATE(CFS) =    172.29  Tc(MIN.) =  10.91
 AREA-AVERAGED Fm(INCH/HR) =  0.09  AREA-AVERAGED Fp(INCH/HR) =  0.78
 AREA-AVERAGED Ap =  0.11  EFFECTIVE AREA(ACRES) =     45.31
========================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =     47.25  TC(MIN.) =     10.91
 EFFECTIVE AREA(ACRES) =     45.31  AREA-AVERAGED Fm(INCH/HR)=  0.09
 AREA-AVERAGED Fp(INCH/HR) =  0.78  AREA-AVERAGED Ap =  0.11
 PEAK FLOW RATE(CFS)    =    172.29

 ** PEAK FLOW RATE TABLE **
  STREAM     Q      Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER    (CFS)  (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1    172.02  10.74    4.352  0.78( 0.09) 0.11    44.8      100.00
     2    172.29  10.91    4.311  0.78( 0.09) 0.11    45.3      120.00
     3    172.24  10.96    4.299  0.78( 0.09) 0.11    45.4      200.00
     4    170.01  11.36    4.206  0.78( 0.09) 0.11    45.8      110.00
```

```
      5    154.59  13.94     3.721  0.78( 0.09) 0.11     47.3      300.00
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS

1
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**************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
        (c) Copyright 1983-99 Advanced Engineering Software (aes)
            Ver. 8.0  Release Date: 01/01/99  License ID 1435

                          Analysis prepared by:

                            THIENES ENGINEERING
                          16800 VALLEY VIEW AVENUE
                            LA MIRADA CA 90638
                     PH: (714) 521-4811 FAX: (714) 521-4173

 ************************** DESCRIPTION OF STUDY **************************
* TEI JOB 3651                                                            *
* 100-YEAR STORM EVENT                                                    *
* PROPOSED CONDITION (NODES 400-401)                                      *
 **************************************************************************

  FILE NAME: C:\XDRIVE\3651\400P.DAT
  TIME/DATE OF STUDY: 15:01 11/13/2019
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                     --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.5500

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*


**************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   169.00
  ELEVATION DATA: UPSTREAM(FEET) =   1372.14  DOWNSTREAM(FEET) =   1351.71

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.000
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  6.884
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp          Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 A        0.25      0.80       0.10    52    5.00
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
  SUBAREA RUNOFF(CFS) =      1.53
  TOTAL AREA(ACRES) =      0.25   PEAK FLOW RATE(CFS) =      1.53
==========================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      0.25  TC(MIN.) =      5.00
  EFFECTIVE AREA(ACRES) =      0.25  AREA-AVERAGED Fm(INCH/HR)=  0.08
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
  PEAK FLOW RATE(CFS)    =      1.53
==========================================================================
==========================================================================
  END OF RATIONAL METHOD ANALYSIS

1
```

```
**************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          (Reference: 1986 SAN BERNARDINO CO. HYDROLOGY CRITERION)
        (c) Copyright 1983-99 Advanced Engineering Software (aes)
            Ver. 8.0  Release Date: 01/01/99  License ID 1435

                          Analysis prepared by:

                            THIENES ENGINEERING
                          16800 VALLEY VIEW AVENUE
                            LA MIRADA CA 90638
                     PH: (714) 521-4811 FAX: (714) 521-4173

 ************************** DESCRIPTION OF STUDY **************************
* TEI JOB 3651                                                            *
* 100-YEAR STORM EVENT                                                    *
* PROPOSED CONDITION (NODES 500-501)                                      *
 **************************************************************************

  FILE NAME: C:\XDRIVE\3651\500P.DAT
  TIME/DATE OF STUDY: 15:03 11/13/2019
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                     --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  *USER-DEFINED LOGARITHMIC INTERPOLATION USED FOR RAINFALL*

  SLOPE OF INTENSITY DURATION CURVE(LOG(I;IN/HR) vs. LOG(Tc;MIN)) = 0.6000
  USER SPECIFIED 1-HOUR INTENSITY(INCH/HOUR) = 1.5500

  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

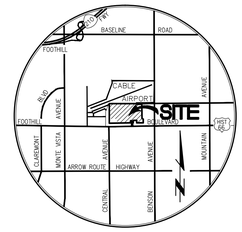

**************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   269.00
  ELEVATION DATA: UPSTREAM(FEET) =   1365.27  DOWNSTREAM(FEET) =   1352.38

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    5.232
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  6.699
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS   Tc
        LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                  A        0.70      0.80       0.10     52    5.23
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.80
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.10
  SUBAREA RUNOFF(CFS) =      4.17
  TOTAL AREA(ACRES) =      0.70   PEAK FLOW RATE(CFS) =      4.17
==========================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      0.70  TC(MIN.) =      5.23
  EFFECTIVE AREA(ACRES) =      0.70  AREA-AVERAGED Fm(INCH/HR)=  0.08
  AREA-AVERAGED Fp(INCH/HR) =  0.80  AREA-AVERAGED Ap =  0.10
  PEAK FLOW RATE(CFS)    =      4.17
==========================================================================
==========================================================================
  END OF RATIONAL METHOD ANALYSIS

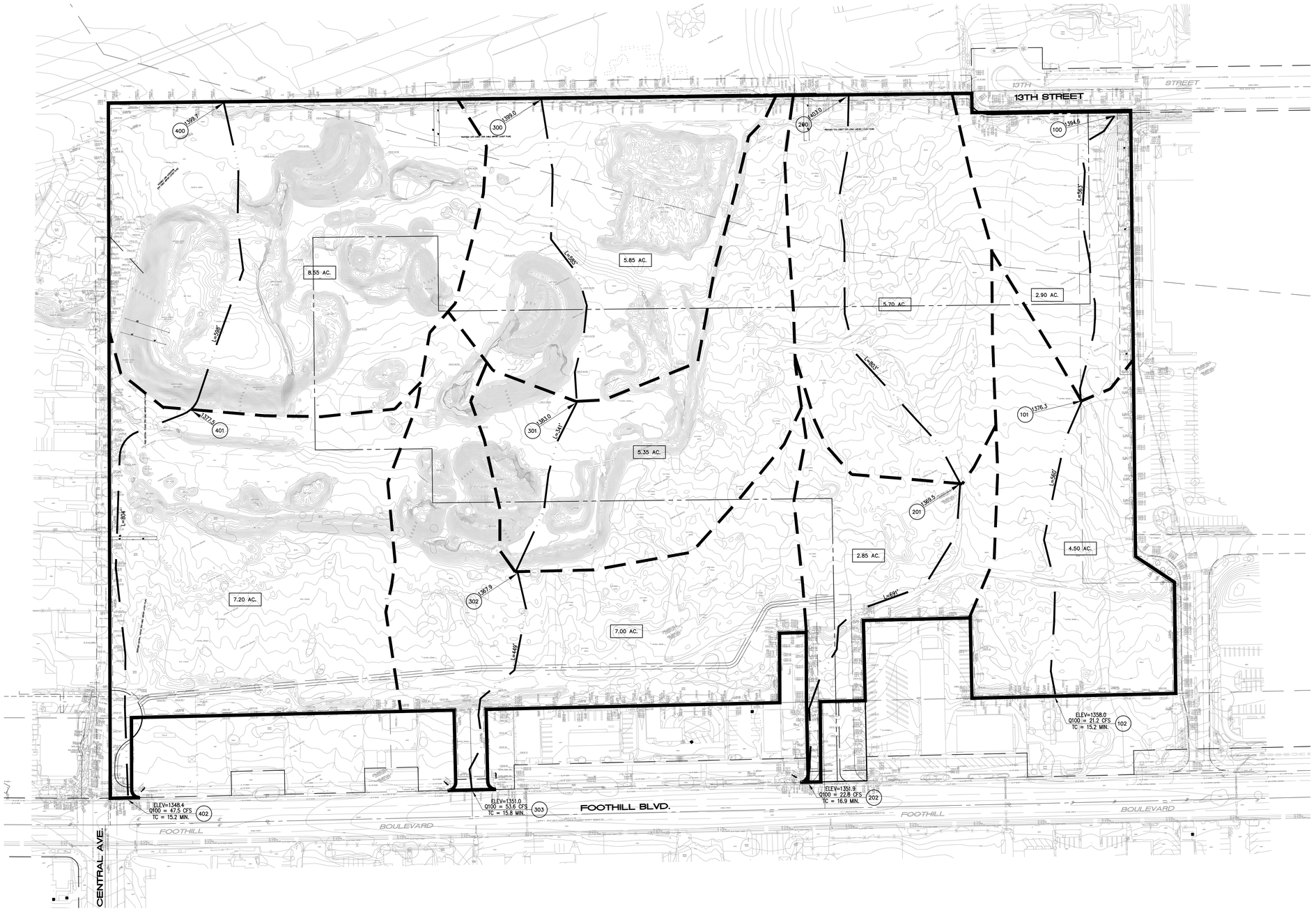
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APPENDIX C

HYDROLOGY MAPS



VICINITY MAP
N.T.S.



LEGEND	
	PROJECT BOUNDARY
	SUBAREA BOUNDARY
	FLOWLINE
1.00 AC.	SUBAREA AREA
100	NODE NUMBER

0 40 80 160 240

SCALE: 1"=80'

Last Update: 5/8/18
O:\3600-3699\3651\3651HYD-EX.dwg

CITY OF UPLAND
PUBLIC WORKS DEPARTMENT

EXISTING CONDITION HYDROLOGY MAP
BRIDGE UPLAND
NE FOOTHILL BLVD AND CENTRAL AVE

3561/1 OF 1 SHEET

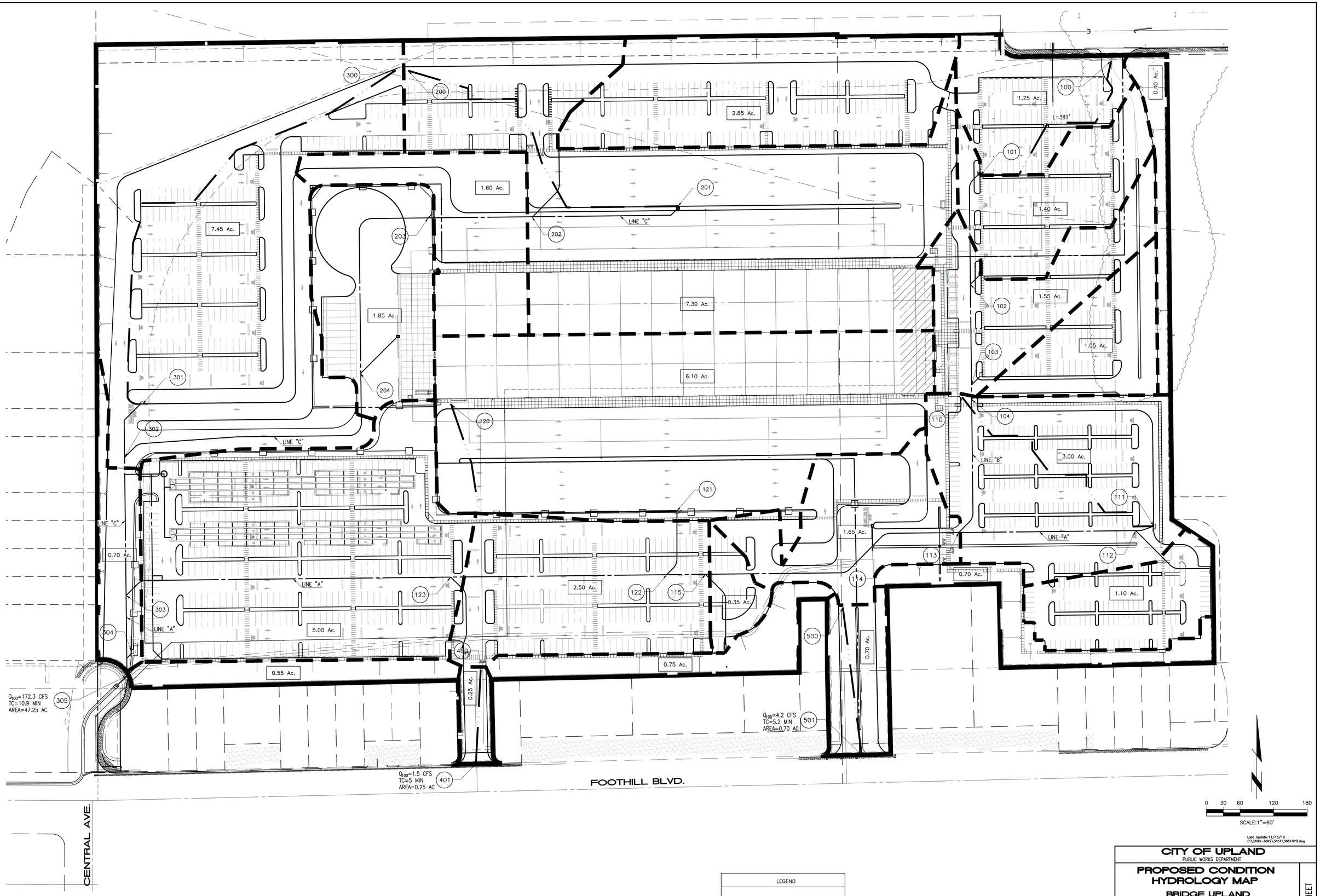
PREPARED FOR:
BRIDGE DEVELOPMENT PARTNERS
1334 PARKVIEW AVENUE, SUITE 310
MANHATTAN BEACH, CA 90266
PHONE: (213) 805-6350
FAX: (310) 853-8423

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH:(714)521-4811 FAX(714)521-4173

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____
Public Works Director _____ R.C.E. XXXXX

Sheet 1 of 1 Sheets



Last Update: 11/13/19
O:\3600-3699\3651\3651HYD.dwg

LEGEND

- PROJECT BOUNDARY
- SUBAREA BOUNDARY
- FLOWLINE
- 1.00 AC. — SUBAREA AREA
- (100) — NODE NUMBER

PREPARED FOR:

BRIDGE DEVELOPMENT PARTNERS
1334 PARKVIEW AVENUE, SUITE 310
MANHATTAN BEACH, CA 90266
PHONE: (213) 805-6350
FAX: (310) 853-8423

Thienes Engineering, Inc.
CIVIL ENGINEERING * LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

CITY OF UPLAND
PUBLIC WORKS DEPARTMENT

PROPOSED CONDITION HYDROLOGY MAP

BRIDGE UPLAND

NE FOOTHILL BLVD AND CENTRAL AVE

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____
Public Works Director _____ R.C.E. XXXXX

Sheet 1 of 1 Sheets

3561/1 OF 1 SHEET

APPENDIX F

Water Quality Management Plan

Thienes Engineering, Inc.
CIVIL ENGINEERING LAND SURVEYING

Preliminary Water Quality Management Plan (PWQMP)

For:

Bridge Upland
NE Foothill Boulevard and Central Avenue
Upland, CA 91786

APNs: 1006-551-12 &22

Prepared for:
Bridge Development Partners
1600 E. Franklin Avenue, Suite D
El Segundo, CA 90245
Phone: (213) 425-2309
Contact: Heather Crossner

Prepared by:
Thienes Engineering, Inc.
14349 Firestone Boulevard
La Mirada, CA 90638
Phone: (714) 521-4811
Contact: Luis Prado (luisp@thieneseng.com)
Job No. 3651

Acceptance Date: _____
Implementation Date: _____

1st Submittal:	April 25, 2019
2nd Submittal:	September 27, 2019
3rd Submittal:	November 13, 2019
4th Submittal:	November 21, 2019

Project Owner's Certification

This Water Quality Management Plan (WQMP) has been prepared for ***Bridge Development Partners*** by ***Thienes Engineering, Inc.*** The WQMP is intended to comply with the requirements of the ***City of Upland*** and the NPDES Areawide Stormwater Program requiring the preparation of a WQMP.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the San Bernardino County's Municipal Storm Water Management Program and the intent of the NPDES Permit for San Bernardino County and the incorporated cities of San Bernardino County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors in interest and the city/county shall be notified of the transfer. The new owner will be informed of its responsibility under this WQMP. A copy of the approved WQMP shall be available on the subject site in perpetuity.

"I certify under a penalty of law that the provisions (implementation, operation, maintenance, and fund) of the WQMP have been accepted and that the plan will be transferred to future successors."

Project Data			
Permit/Application Number(s):		**Grading Permit Number(s):**	
Tract/Parcel Map Number(s):		**Building Permit Number(s):**	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):	APN: 1006-551-12 &22, 1006-572-11, 1006-574-10		

Owner's Signature			
Owner Name: Bridge Acquisition LLC			
Title	Senior VP		
Company	Bridge Acquisition LLC		
Address	1600 E. Franklin Ave, Suite D El Segundo, CA 90245		
Email	hcrossner@bridgedev.com		
Telephone #	213-425-2309		
Signature	Heather C	**Date**	11/21/19

Preparer's Certification

Project Data			
Permit/Application Number(s):		**Grading Permit Number(s):**	
Tract/Parcel Map Number(s):		**Building Permit Number(s):**	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):		APN: 1006-551-12 &22	

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan were prepared under my oversight and meet the requirements of Regional Water Quality Control Board Order No. R8-2010-0036."

Engineer: Reinhard Stenzel		**PE Stamp Below**
Title	Director of Engineering	
Company	Thienes Engineering, Inc.	
Address	14349 Firestone Boulevard, La Mirada, CA 90638	
Email	reinhard@thieneseng.com	
Telephone #	(714) 521-4811	
Signature		

Contents

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2.2 Property Ownership/Management 2-2
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Attachments

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Attachment C: WQMP Site Map
Attachment D: WQMP and Stormwater BMP Transfer, Access and Maintenance Agreement
Attachment E: Educational Materials
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Section 1 Discretionary Permit(s)

Form 1-1 Project Information					
Project Name	Bridge Upland				
Project Owner Contact Name:	Heather Crossner				
Mailing Address:	1600 E. Franklin Avenue, Suite D, El Segundo, CA 90245	**E-mail Address:**	Hcrossner@bridgedev.com	**Telephone:**	(213) 425-2309
Permit/Application Number(s):			**Tract/Parcel Map Number(s):**	TPM No. 20078	
Additional Information/ Comments:	n/a				
Description of Project:	The project site encompasses approximately 50.00 acres. Proposed improvements to the site includes the construction of one warehouse type building of approximately 201,096 square feet. There is a truck yard located on the west side of the building. The remainder of the project consist of vehicle and van parking lots. Landscaping is provided throughout the site. An underground retention system is located on the southwest corner of the project site. One flow-based biofiltration unit is located at the downstream portion of the most westerly drive aisle leading to Foothill Boulevard. Stormwater runoff from impervious areas (majority are parking lots) to be routed to the underground retention system for treatment via infiltration. Due to the significant difference in elevation between the existing site and Foothill Avenue, all three driveway/drive aisles are too steep to support an infiltration system. An infiltration system next to the slopes is geotechnically hazardous to construct. In addition, this area sits within 20+/- feet of fill. With these technical constraints, a proprietary flow-based biofiltration unit is proposed for treatment and release of the most westerly driveway/drive aisle (DA 2). The other two driveway/drive aisles could not be treated with proprietary flow-based biofiltration units due to the units not being able to discharge treated flows back to the proposed onsite storm drain. Approximately 0.40 acres of landscape along the easterly property line will sheet flow offsite without being routed to the proposed onsite BMPs. This landscape is considered self-treating. Lastly, approximately 3.22 acres of landscape and driveway/drive aisles along the southerly property line will not be routed to a BMP for treatment. Of this 3.22 acres, approximately 2.52 acres will be considered as self-treating landscaping, while the remaining 0.70 acres of driveway/drive aisles will drain offsite without treatment due to technical infeasibility.				
Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy.	n/a				

Section 2 Project Description

2.1 Project Information

This section of the WQMP should provide the information listed below. The information provided for Conceptual/Preliminary WQMP should give sufficient detail to identify the major proposed site design and LID BMPs and other anticipated water quality features that impact site planning. Final Project WQMP must specifically identify all BMP incorporated into the final site design and provide other detailed information as described herein.

The purpose of this information is to help determine the applicable development category, pollutants of concern, watershed description, and long term maintenance responsibilities for the project, and any applicable water quality credits. This information will be used in conjunction with the information in Section 3, Site Description, to establish the performance criteria and to select the LID BMP or other BMP for the project or other alternative programs that the project will participate in, which are described in Section 4.

Form 2.1-1 Description of Proposed Project

[1] Development Category (Select all that apply):

☐ Significant re-development involving the addition or replacement of 5,000 ft² or more of impervious surface on an already developed site	☒ New development involving the creation of 10,000 ft² or more of impervious surface collectively over entire site	☐ Automotive repair shops with standard industrial classification (SIC) codes 5013, 5014, 5541, 7532-7534, 7536-7539	☐ Restaurants (with SIC code 5812) where the land area of development is 5,000 ft² or more
☐ Hillside developments of 5,000 ft² or more which are located on areas with known erosive soil conditions or where the natural slope is 25 percent or more	☐ Developments of 2,500 ft² of impervious surface or more adjacent to (within 200 ft) or discharging directly into environmentally sensitive areas or waterbodies listed on the CWA Section 303(d) list of impaired waters.	☒ Parking lots of 5,000 ft² or more exposed to storm water	☐ Retail gasoline outlets that are either 5,000 ft² or more, or have a projected average daily traffic of 100 or more vehicles per day

☐ Non-Priority / Non-Category Project

May require source control LID BMPs and other LIP requirements. Please consult with local jurisdiction on specific requirements.

[2] Project Area (ft²):	2,178,000* (50.00 acres)	**[3] Number of Dwelling Units:**	n/a	**[4] SIC Code:**	4225

[5] Is Project going to be phased? ☐Yes ☒No

If yes, ensure that the WQMP evaluates each phase as a distinct DA, requiring LID BMPs to address runoff at time of completion.

[6] Does Project include roads? ☐Yes ☒No

If yes, ensure that applicable requirements for road projects are addressed (see Appendix A of TGD for WQMP)

*This value includes 3.22 acres of landscape and driveway/drive aisles along the southerly property line that will not be routed to a BMP for treatment. Of this 3.22 acres, approximately 2.52 acres will be considered as self-treating landscaping, while the remaining 0.70 acres of driveway/drive aisles will drain offsite without treatment due to technical infeasibility. This also includes approximately 0.40 acres of self-treating landscaping along the easterly property line which will sheet flow offsite without being routed to the proposed onsite BMPs.

2.2 Property Ownership/Management

Describe the ownership/management of all portions of the project and site. State whether any infrastructure will transfer to public agencies (City, County, Caltrans, etc.) after project completion. State if a homeowners or property owners association will be formed and be responsible for the long-term maintenance of project stormwater facilities. Describe any lot-level stormwater features that will be the responsibility of individual property owners.

Form 2.2-1 Property Ownership/Management

Describe property ownership/management responsible for long-term maintenance of WQMP stormwater facilities:

Bridge Acquisition LLC
1600 E. Franklin Avenue, Suite D
El Segundo, CA 90245
Phone: (213) 425-2309
Contact: Heather Crossner

A property owner's association (POA) will not be formed for long-term maintenance of onsite stormwater facilities. The owner will maintain onsite stormwater facilities as shown in Attachment D.

2.3 Potential Stormwater Pollutants

Determine and describe expected stormwater pollutants of concern based on land uses and site activities (refer to Table 3-3 in the TGD for WQMP).

Form 2.3-1 Pollutants of Concern

Pollutant	Circle One: E=Expected, N=Not Expected		Listed for Receiving Water	Additional Information and Comments
Pathogens (Bacterial / Virus)	(E)	N	X	Including petroleum hydrocarbons. Bacterial indicators are routinely detected in pavement runoff.
Nutrients - Phosphorous	(E)	N		
Nutrients - Nitrogen	(E)	N		Expected pollutant if landscaping exists on-site.
Noxious Aquatic Plants	(E)	N		Expected pollutant if landscaping exists on-site.
Sediment	(E)	N		Expected pollutant if landscaping exists on-site.
Metals	(E)	N	X	
Oil and Grease	(E)	N		
Trash / Debris	(E)	N		
Pesticides / Herbicides	(E)	N		
Organic Compounds	(E)	N	X	Expected pollutant if landscaping exists on-site. Including petroleum hydrocarbons and solvents.
Other:				

The expected POCs for the project site are ***Pathogens, Organic Compounds, and Metals***.

2.4 Water Quality Credits

A water quality credit program is applicable for certain types of development projects if it is not feasible to meet the requirements for on-site LID. Proponents for eligible projects, as described below, can apply for water quality credits that would reduce project obligations for selecting and sizing other treatment BMP or participating in other alternative compliance programs. Refer to Section 6.2 in the TGD for WQMP to determine if water quality credits are applicable for the project.

Form 2.4-1 Water Quality Credits

[1] Project Types that Qualify for Water Quality Credits: *Select all that apply*			
☐ Redevelopment projects that reduce the overall impervious footprint of the project site. [Credit = % impervious reduced]	Higher density development projects ☐ Vertical density [20%] ☐ 7 units/ acre [5%]	☐ Mixed use development, (combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that demonstrate environmental benefits not realized through single use projects) [20%]	☐ Brownfield redevelopment (redevelop real property complicated by presence or potential of hazardous contaminants) [25%]
☐ Redevelopment projects in established historic district, historic preservation area, or similar significant core city center areas [10%]	☐ Transit-oriented developments (mixed use residential or commercial area designed to maximize access to public transportation) [20%]	☐ In-fill projects (conversion of empty lots & other underused spaces < 5 acres, substantially surrounded by urban land uses, into more beneficially used spaces, such as residential or commercial areas) [10%]	☐ Live-Work developments (variety of developments designed to support residential and vocational needs) [20%]
[2] Total Credit %: n/a *(Total all credit percentages up to a maximum allowable credit of 50 percent)*			
Description of Water Quality Credit Eligibility (if applicable)	n/a		

The proposed project will ***not*** utilize any water quality credits.

Section 3 Site and Watershed Description

Describe the project site conditions that will facilitate the selection of BMP through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and sub-watershed DMAs) is conveyed to the site outlet(s). Refer to Section 3.2 in the TGD for WQMP. Complete form 3.2 for each DA on the project site.

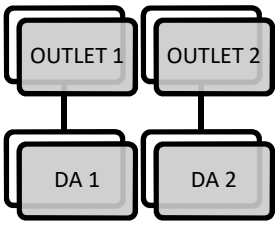
Form 3-1 Site Location and Hydrologic Features

Site coordinates *Take GPS measurement at approximate center of site*	**Latitude:** 34.109008	**Longitude:** -117.68643	**Thomas Bros Map page:** Page 601

[1] San Bernardino County climatic region: ☒Valley ☐Mountain ☐Desert

[2] Does the site have more than one drainage area (DA): ☒Yes ☐No

If no, proceed to Form 3-2. If yes, then use this form to show a conceptual schematic describing DMAs and hydrologic feature connecting DMAs to the site outlet(s). An example is provided below that can be modified for proposed project or a drawing clearly showing DMA and flow routing may be attached.



DA 1 to Outlet 1	Stormwater runoff from impervious areas (majority are parking lots) to be routed to the underground retention system for treatment via infiltration.
DA 2 to Outlet 2	Due to the significant difference in elevation between the existing site and Foothill Avenue, the driveway/drive aisle is too steep to support an infiltration system. An infiltration system next to the slopes is geotechnically hazardous to construct. In addition, this area sits within 20+/- feet of fill. With these technical constraints, a proprietary flow-based biofiltration unit is proposed for treatment and release of treated flows.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area (DA)

For each drainage area's sub-watershed DMA, provide the following characteristics	**Hyd Nodes 100-102**	**Hyd Nodes 200-202**	**Hyd Nodes 300-203**	**Hyd Nodes 400-402**	**n/a**
[1] DMA drainage area (ft^2)	322,344 (7.35 ac)	372,438 (8.55 ac)	797,148 (18.30 ac)	688,248 (15.80 ac)	n/a
[2] Existing site impervious area (ft^2)	0	0	0	0	n/a
[3] Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	AMC II	AMC II	AMC II	AMC II	n/a
[4] Hydrologic soil group *Refer to Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP*	HSG A	HSG A	HSG A	HSG A	n/a
[5] Longest flowpath length (ft)	1,123	1,494	1,375	1,402	n/a
[6] Longest flowpath slope (ft/ft)	0.033	0.034	0.035	0.037	n/a
[7] Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Barren	Barren	Barren	Barren	n/a
[8] Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% See Attachment A for photos of site to support rating*	Poor	Poor	Poor	Poor	n/a

Form 3-3 Watershed Description

Receiving Waters *Refer to Watershed Mapping Tool - http://sbcounty.permitrack.com/WAP See 'Drainage Facilities" link at this website*	San Antonio Creek Chino Creek Reach 2 Chino Creek Reach 1B Chino Creek Reach 1A Santa Ana River, Reach 3 Prado Dam Santa Ana River, Reach 2 Santa Ana River, Reach 1 Pacific Ocean
Applicable TMDLs *Refer to Local Implementation Plan*	San Antonio Creek: none Chino Creek Reach 2: none Chino Creek Reach 1B: none Chino Creek Reach 1A: none Santa Ana River, Reach 3: Pathogens, Nitrate Prado Dam: Pathogens Santa Ana River, Reach 2: None Santa Ana River, Reach 1: None Pacific Ocean: None
303(d) listed impairments *Refer to Local Implementation Plan and Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP and State Water Resources Control Board website – http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/index.shtml*	San Antonio Creek: pH Chino Creek Reach 2: Indicator Bacteria, pH Chino Creek Reach 1B: Chemical Oxygen Demand (COD), Indicator Bacteria, Nutrients Chino Creek Reach 1A: Indicator Bacteria, Nutrients Santa Ana River, Reach 3: Copper, Indicator Bacteria, Lead Prado Dam: pH Santa Ana River, Reach 2: None Santa Ana River, Reach 1: None Pacific Ocean: None
Environmentally Sensitive Areas (ESA) *Refer to Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP*	n/a
Unlined Downstream Water Bodies *Refer to Watershed Mapping Tool – http://sbcounty.permitrack.com/WAP*	Santa Ana River
Hydrologic Conditions of Concern	☐ Yes *Complete Hydrologic Conditions of Concern (HCOC) Assessment. Include Forms 4.2-2 through Form 4.2-5 and Hydromodification BMP Form 4.3-10 in submittal* ☒ No
Watershed–based BMP included in a RWQCB approved WAP	☐ Yes *Attach verification of regional BMP evaluation criteria in WAP* • *More Effective than On-site LID* • *Remaining Capacity for Project DCV* • *Upstream of any Water of the US* • *Operational at Project Completion* • *Long-Term Maintenance Plan* ☒ No

Section 4 Best Management Practices (BMP)

4.1 Source Control BMP

4.1.1 Pollution Prevention

Non-structural and structural source control BMP are required to be incorporated into all new development and significant redevelopment projects. Form 4.1-1 and 4.1-2 are used to describe specific source control BMPs used in the WQMP or to explain why a certain BMP is not applicable. Table 7-3 of the TGD for WQMP provides a list of applicable source control BMP for projects with specific types of potential pollutant sources or activities. The source control BMP in this table must be implemented for projects with these specific types of potential pollutant sources or activities.

The preparers of this WQMP have reviewed the source control BMP requirements for new development and significant redevelopment projects. The preparers have also reviewed the specific BMP required for project as specified in Forms 4.1-1 and 4.1-2. All applicable non-structural and structural source control BMP shall be implemented in the project.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N1	Education of Property Owners, Tenants and Occupants on Stormwater BMPs	X		Property owner will familiarize him/herself with the educational materials in Attachment "E" and the contents of the WQMP.
N2	Activity Restrictions	X		No outdoor work areas, processing, storage or wash area.
N3	Landscape Management BMPs	X		Irrigation must be consistent with the local agency's Water Conservation Ordinance. Fertilizer and pesticide usage will be consistent with local agency's Management Guidelines for Use of Fertilizers and Pesticides.
N4	BMP Maintenance	X		BMP maintenance, implementation schedules, and responsible parties are included with each specific BMP narrative.
N5	Title 22 CCR Compliance (How development will comply)		X	No hazardous wastes onsite.
N6	Local Water Quality Ordinances		X	Local agency does not have additional water quality ordinances.
N7	Spill Contingency Plan	X		Owner/tenant will have a spill contingency plan based on individual site needs.
N8	Underground Storage Tank Compliance		X	No USTs onsite.
N9	Hazardous Materials Disclosure Compliance		X	No hazardous materials onsite.
N10	Uniform Fire Code Implementation	X		Owner will comply with Article 80 of the Uniform Fire Code enforced by the fire protection agency.
N11	Litter/Debris Control Program	X		Contract with their landscape maintenance firm to provide this service during regularly schedule maintenance.
N12	Employee Training	X		The owner will ensure that tenants are also familiar with onsite BMPs and necessary maintenance required of the tenants. Owner will check with City and County at least once a year to obtain new or updated educational materials and provide these materials to tenants. Employees shall be trained to clean up spills and participate in ongoing maintenance. The WQMP requires annual employee training and new hires within 2 months.
N13	Housekeeping of Loading Docks	X		Keep all fluids indoors. Clean up spills immediately and keep spills from entering storm drain system. No direct discharges into the storm drain system. Area shall be inspected weekly for proper containment and practices with spills cleaned up immediately and disposed of properly.
N14	Catch Basin Inspection Program	X		Monthly inspection by property owner's designee. Vacuum basins when sediment or trash becomes 2-inches deep and dispose of properly.
N15	Vacuum Sweeping of Private Streets and Parking Lots	X		All landscape maintenance contractors will be required to sweep up all landscape cuttings, mowings and fertilizer materials off paved areas weekly and dispose of properly. Parking areas and drive ways will be swept monthly by sweeping contractor.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N16	Other Non-structural Measures for Public Agency Projects		X	Not a public agency project.
N17	Comply with all other applicable NDPES permits	X		Will comply with Construction General Permit and Industrial General Permit (may apply for No Exposure Certification/NEC).

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
S1	Provide storm drain system stenciling and signage (CASQA New Development BMP Handbook SD-13)	X		"No Dumping – Drains to River" stencils will be applied. Legibility of stencil will be maintained on a yearly basis.
S2	Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)		X	No outdoor material storage areas onsite.
S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32)	X		Paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements diverted around the area, screened or walled to prevent off-site transport of trash. Provide solid roof or awning to prevent direct contact with rainfall.
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12)	X		Irrigation systems shall include shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines. Timers will be used to avoid over watering and watering cycles and duration shall be adjusted seasonally by the landscape maintenance contractor. The landscaping areas will be grouped with plants that have similar water requirements. Native or drought tolerant species shall also be used where appropriate to reduce excess irrigation runoff and promote surface filtration.
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	X		Landscaped areas will be depressed in order to increase retention of stormwater/irrigation water and promote infiltration.
S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)	X		All slopes will be vegetated and maintained to prevent erosion and transport of sediment.
S7	Covered dock areas (CASQA New Development BMP Handbook SD-31)		X	Finished goods being loaded and unloaded at the docks do not have the potential to contribute to stormwater pollution. No direct connections will be made to a MS4.
S8	Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31)		X	No maintenance bays onsite.
S9	Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)		X	No vehicle wash areas onsite.
S10	Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36)		X	No outdoor processing areas onsite.

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
S11	Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)		X	No equipment wash areas onsite.
S12	Fueling areas (CASQA New Development BMP Handbook SD-30)		X	No fueling areas onsite.
S13	Hillside landscaping (CASQA New Development BMP Handbook SD-10)		X	No hillsides onsite.
S14	Wash water control for food preparation areas		X	No food preparation onsite.
S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)		X	No community cars wash racks onsite.

4.1.2 Preventive LID Site Design Practices

Site design practices associated with new LID requirements in the MS4 Permit should be considered in the earliest phases of a project. Preventative site design practices can result in smaller DCV for LID BMP and hydromodification control BMP by reducing runoff generation. Describe site design and drainage plan including:

- A narrative of site design practices utilized or rationale for not using practices
- A narrative of how site plan incorporates preventive site design practices
- Include an attached Site Plan layout which shows how preventative site design practices are included in WQMP

Refer to Section 5.2 of the TGD for WQMP for more details.

Form 4.1-3 Preventive LID Site Design Practices Checklist

Site Design Practices *If yes, explain how preventative site design practice is addressed in project site plan. If no, other LID BMPs must be selected to meet targets.*	
Minimize impervious areas: ☐Yes ☒No	The project will utilize an underground retention system to collect runoff from impervious areas.
Maximize natural infiltration capacity: ☒Yes ☐No	The underground retention system will maximize natural infiltration.
Preserve existing drainage patterns and time of concentration: ☒Yes ☐No	Post-development drainage patterns will mimic pre-development conditions. Stormwater will be retained in an underground retention system to assist in maintaining the time of concentration compared to existing condition.
Disconnect impervious areas: ☒Yes ☐No	The underground retention system will disconnect impervious areas before discharging offsite.
Protect existing vegetation and sensitive areas: ☐Yes ☒No	There are no existing vegetation onsite (see Attachment A for recent site photos).
Re-vegetate disturbed areas: ☐Yes ☒No	Not applicable, development consists of a light industrial facility. Most of the disturbed areas will be paved; however, all disturbed areas will be collected by the underground retention system for treatment.
Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: ☒Yes ☐No	Heavy construction vehicles will be prohibited from unnecessary soil compaction at the underground retention systems' location.
Utilize vegetated drainage swales in place of underground piping or imperviously lined swales: ☐Yes ☒No	Underground piping and imperviously lined swales are located in traffic areas and could not be substituted with a vegetated swale.
Stake off areas that will be used for landscaping to minimize compaction during construction : ☒Yes ☐No	Landscaped areas will be staked to minimize unnecessary compaction during construction.

4.2 Project Performance Criteria

The purpose of this section of the Project WQMP is to establish targets for post development hydrology based on performance criteria specified in the MS4 Permit. These targets include runoff volume for water quality control (referred to as LID design capture volume), and runoff volume, time of concentration, and peak runoff for protection of any downstream waterbody segments with a HCOC. ***If the project has more than one outlet for stormwater runoff, then complete additional versions of these forms for each DA / outlet.***

Methods applied in the following forms include:

- For LID BMP Design Capture Volume (DCV), the San Bernardino County Stormwater Program requires use of the P6 method (MS4 Permit Section XI.D.6a.ii) – Form 4.2-1
- For HCOC pre- and post-development hydrologic calculation, the San Bernardino County Stormwater Program requires the use of the Rational Method (San Bernardino County Hydrology Manual Section D). Forms 4.2-2 through Form 4.2-5 calculate hydrologic variables including runoff volume, time of concentration, and peak runoff from the project site pre- and post-development using the Hydrology Manual Rational Method approach. For projects greater than 640 acres (1.0 mi2), the Rational Method and these forms should not be used. For such projects, the Unit Hydrograph Method (San Bernardino County Hydrology Manual Section E) shall be applied for hydrologic calculations for HCOC performance criteria.

Refer to Section 4 in the TGD for WQMP for detailed guidance and instructions.

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume

[1] **Project area (ft²):** 2,003,760 DA 1 (46.00 ac)*	[2] **Imperviousness after applying preventative site design practices (Imp%):** 95%	[3] **Runoff Coefficient (R_c):** 0.807 $R_C = 0.858(Imp\%)^3 - 0.78(Imp\%)^2 + 0.774(Imp\%) + 0.04$
[4] **Determine 1-hour rainfall depth for a 2-year return period $P_{2yr-1hr}$ (in):** 0.626 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html		
[5] **Compute P6, Mean 6-hr Precipitation (inches):** 0.927 *P6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1* *(Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*		
[6] **Drawdown Rate** *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*		24-hrs ☐ 48-hrs ☒
[7] **Compute design capture volume, DCV (ft³):** 245,182 *DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)* *Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*		
[1] **Project area (ft²):** 16,553 DA 2 (0.38 ac)*	[2] **Imperviousness after applying preventative site design practices (Imp%):** 95%	[3] **Runoff Coefficient (R_c):** 0.807 $R_C = 0.858(Imp\%)^3 - 0.78(Imp\%)^2 + 0.774(Imp\%) + 0.04$
[4] **Determine 1-hour rainfall depth for a 2-year return period $P_{2yr-1hr}$ (in):** 0.626 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html		

[5] Compute P6, Mean 6-hr Precipitation (inches): 0.927 *P6 = Item 4 *C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1* *(Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*	
[6] Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*	24-hrs ☐ 48-hrs ☒
[7] Compute design capture volume, DCV (ft^3): 2,025 *DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)* *Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*	

[1] See Attachment B for detailed calculations. These values do not include 3.22 acres of landscape and driveway/drive aisles along the southerly property line. Of this 3.22 acres, approximately 2.52 acres will be considered as self-treating landscaping, while the remaining 0.70 acres of driveway/drive aisles will drain offsite without treatment due to technical infeasibility. This also includes approximately 0.40 acres of self-treating landscaping along the easterly property line which will sheet flow offsite without being routed to the proposed onsite BMPs.

Form 4.2-2 Summary of HCOC Assessment

Does project have the potential to cause or contribute to an HCOC in a downstream channel: ☐Yes ☒No

Go to: http://sbcounty.permitrack.com/WAP/

If "Yes", then complete HCOC assessment of site hydrology for 2yr storm event using Forms 4.2-3 through 4.2-5 and insert results below (Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual)

If "No," then proceed to Section 4.3 Project Conformance Analysis

Condition	Runoff Volume (ft^3)	Time of Concentration (min)	Peak Runoff (cfs)
Pre-developed	[1] n/a *Form 4.2-3 Item 12*	[2] n/a *Form 4.2-4 Item 13*	[3] n/a *Form 4.2-5 Item 10*
Post-developed	[4] n/a *Form 4.2-3 Item 13*	[5] n/a *Form 4.2-4 Item 14*	[6] n/a *Form 4.2-5 Item 14*
Difference	[7] n/a *Item 4 – Item 1*	[8] n/a *Item 5 – Item 2*	[9] n/a *Item 6 – Item 3*
Difference (as % of pre-developed)	[10] n/a *Item 7 / Item 1*	[11] n/a *Item 8 / Item 2*	[12] n/a *Item 9 / Item 3*

Form 4.2-3 HCOC Assessment for Runoff Volume

Compute weighted curve number for pre and post developed conditions	**Pre-developed DA** *Add more columns if more than 4 DMA*				**Post-developed DA** *Add more columns if more than 4 DMA*			
	DMA A	DMA B	DMA C	DMA D	DMA A	DMA B	DMA C	DMA D
[1] **Land Cover type**								
[2] **Hydrologic Soil Group (HSG)**								
[3] **DMA Area, ft²** *sum of areas of DMA should equal area of DA*								
[4] **Curve Number (CN)** *Use Items 1 and 2 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*								
	[5] **Pre-Developed area-weighted CN:**				[6] **Post-Developed area-weighted CN:**			
	[7] **Pre-developed soil storage capacity, S (in):** *S = (1000 / Item 5) - 10*				[8] **Post-developed soil storage capacity, S (in):** *S = (1000 / Item 6) - 10*			
	[9] **Initial abstraction, I_a (in):** *I_a = 0.2 * Item 7*				[10] **Initial abstraction, I_a (in):** *I_a = 0.2 * Item 8*			
[11] **Precipitation for 2 yr, 24 hr storm (in):** *Go to: http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html*								
[12] **Pre-developed Volume (ft³):** *V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 9)^2 / ((Item 11 – Item 9 + Item 7)*								
[13] **Post-developed Volume (ft³):** *V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 10)^2 / ((Item 11 – Item 10 + Item 8)*								
[14] **Volume Reduction needed to meet HCOC Requirement, (ft³):** *V_{HCOC} = (Item 13 * 0.95) – Item 12*								

Form 4.2-4 HCOC Assessment for Time of Concentration

Compute time of concentration for pre and post developed conditions for each DA *(For projects using the Hydrology Manual complete the form below)*

Variables	Pre-developed DA *Add more columns if more than 4 DMA*				Post-developed DA *Add more columns if more than 4 DMA*			
	DMA A	DMA B	DMA C	DMA D	DMA A	DMA B	DMA C	DMA D
[1] Length of flowpath (ft) *Use Form 3-2 Item 5 for pre-developed condition*								
[2] Change in elevation (ft)								
[3] Slope (ft/ft), So = Item 2 / Item 1								
[4] Land cover								
[5] Initial DMA Time of Concentration (min) *Appendix C-1 of the TGD for WQMP*								
[6] Length of conveyance from DMA outlet to project site outlet (ft) *May be zero if DMA outlet is at project site outlet*								
[7] Cross-sectional area of channel (ft2)								
[8] Wetted perimeter of channel (ft)								
[9] Manning's roughness of channel (n)								
[10] Channel flow velocity (ft/sec) $V_{fps} = (1.49 / \text{Item } 9) * (\text{Item } 7/\text{Item } 8)^{0.67} * (\text{Item } 3)^{0.5}$								
[11] Travel time to outlet (min) $T_t = \text{Item } 6 / (\text{Item } 10 * 60)$								
[12] Total time of concentration (min) $T_c = \text{Item } 5 + \text{Item } 11$								
[13] Pre-developed time of concentration (min): *Minimum of Item 12 pre-developed DMA*								
[14] Post-developed time of concentration (min): *Minimum of Item 12 post-developed DMA*								
[15] Additional time of concentration needed to meet HCOC requirement (min): $T_{C\text{-}HCOC} = (\text{Item } 14 * 0.95) - \text{Item } 13$								

Form 4.2-5 HCOC Assessment for Peak Runoff

Compute peak runoff for pre and post developed conditions

Variables		Pre-developed DA *Add more columns if more than 3 DMA*			Post-developed DA *Add more columns if more than 3 DMA*		
		DMA A	DMA B	DMA C	DMA A	DMA B	DMA C
[1] **Rainfall Intensity for storm duration equal to time of concentration** *I_{peak} = 10^(LOG Form 4.2-1 Item 4 - 0.6 LOG Form 4.2-4 Item 5 /60)*							
[2] **Drainage Area of each DMA (ft2)** *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
[3] **Ratio of pervious area to total area** *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
[4] **Pervious area infiltration rate (in/hr)** *Use pervious area CN and antecedent moisture condition with Appendix C-3 of the TGD for WQMP*							
[5] **Maximum loss rate (in/hr)** *F_m = Item 3 * Item 4* *Use area-weighted Fm from DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
[6] **Peak Flow from DMA (cfs)** *Q_p =Item 2 * 0.9 * (Item 1 - Item 5)*							
[7] **Time of concentration adjustment factor for other DMA to site discharge point** *Form 4.2-4 Item 12 DMA / Other DMA upstream of site discharge point (If ratio is greater than 1.0, then use maximum value of 1.0)*	**DMA A**	*n/a*			*n/a*		
	DMA B		*n/a*			*n/a*	
	DMA C			*n/a*			*n/a*

[8] **Pre-developed Q_p at T_c for DMA A:**	[9] **Pre-developed Q_p at T_c for DMA B:**	[10] **Pre-developed Q_p at T_c for DMA C:**
*Q_p = Item 6_{DMAA} + [Item 6_{DMAB} * (Item 1_{DMAA} – Item 5_{DMAB}) / (Item 1_{DMAB} - Item 5_{DMAB}) * Item $7_{DMAA/2}$] + [Item 6_{DMAC} * (Item 1_{DMAA} - Item 5_{DMAC}) / (Item 1_{DMAC} - Item 5_{DMAC}) * Item $7_{DMAA/3}$]*	*Q_p = Item 6_{DMAB} + [Item 6_{DMAA} * (Item 1_{DMAB} – Item 5_{DMAA}) / (Item 1_{DMAA} - Item 5_{DMAA}) * Item $7_{DMAB/1}$] + [Item 6_{DMAC} * (Item 1_{DMAB} - Item 5_{DMAC}) / (Item 1_{DMAC} - Item 5_{DMAC}) * Item $7_{DMAB/3}$]*	*Q_p = Item 6_{DMAC} + [Item 6_{DMAA} * (Item 1_{DMAC} – Item 5_{DMAA}) / (Item 1_{DMAA} - Item 5_{DMAA}) * Item $7_{DMAC/1}$] + [Item 6_{DMAB} * (Item 1_{DMAC} - Item 5_{DMAB}) / (Item 1_{DMAB} - Item 5_{DMAB}) * Item $7_{DMAC/2}$]*

11 Peak runoff from pre-developed condition confluence analysis (cfs):
Maximum of Item 8, 9, and 10

12 Post-developed Q_p at T_c for DMA A:	***13 Post-developed Q_p at T_c for DMA B:***	***14 Post-developed Q_p at T_c for DMA C:***
Same as Item 8 for post-developed values	*Same as Item 9 for post-developed values*	*Same as Item 10 for post-developed values*

15 Peak runoff from post-developed condition confluence analysis (cfs):
Maximum of Item 12, 13, and 14

16 Peak runoff reduction needed to meet HCOC Requirement (cfs):
*$Q_{p\text{-}HCOC}$ = (Item 14 * 0.95) – Item 11*

4.3 Project Conformance Analysis

Complete the following forms for each project site DA to document that the proposed LID BMPs conform to the project DCV developed to meet performance criteria specified in the MS4 Permit (WQMP Template Section 4.2). For the LID DCV, the forms are ordered according to hierarchy of BMP selection as required by the MS4 Permit (see Section 5.3.1 in the TGD for WQMP). The forms compute the following for on-site LID BMP:

- Site Design and Hydrologic Source Controls (Form 4.3-2)
- Retention and Infiltration (Form 4.3-3)
- Harvested and Use (Form 4.3-4) or
- Biotreatment (Form 4.3-5).

At the end of each form, additional fields facilitate the determination of the extent of mitigation provided by the specific BMP category, allowing for use of the next category of BMP in the hierarchy, if necessary.

The first step in the analysis, using Section 5.3.2.1 of the TGD for WQMP, is to complete Forms 4.3-1 and 4.3-3) to determine if retention and infiltration BMPs are infeasible for the project. For each feasibility criterion in Form 4.3-1, if the answer is "Yes," provide all study findings that includes relevant calculations, maps, data sources, etc. used to make the determination of infeasibility.

Next, complete Forms 4.3-2 and 4.3-4 to determine the feasibility of applicable HSC and harvest and use BMPs, and, if their implementation is feasible, the extent of mitigation of the DCV.

If no site constraints exist that would limit the type of BMP to be implemented in a DA, evaluate the use of combinations of LID BMPs, including all applicable HSC BMPs to maximize on-site retention of the DCV. If no combination of BMP can mitigate the entire DCV, implement the single BMP type, or combination of BMP types, that maximizes on-site retention of the DCV within the minimum effective area.

If the combination of LID HSC, retention and infiltration, and harvest and use BMPs are unable to mitigate the entire DCV, then biotreatment BMPs may be implemented by the project proponent. If biotreatment BMPs are used, then they must be sized to provide sufficient capacity for effective treatment of the remainder of the volume-based performance criteria that cannot be achieved with LID BMPs (TGD for WQMP Section 5.4.4.2). Under no circumstances shall any portion of the DCV be released from the site without effective mitigation and/or treatment.

Form 4.3-1 Infiltration BMP Feasibility (DA 1)

Feasibility Criterion – Complete evaluation for each DA on the Project Site
[1] **Would infiltration BMP pose significant risk for groundwater related concerns?** ☐Yes ☒No *Refer to Section 5.3.2.1 of the TGD for WQMP*
If Yes, Provide basis: (attach)
[2] **Would installation of infiltration BMP significantly increase the risk of geotechnical hazards?** ☐Yes ☒No *(Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert):* • *The location is less than 50 feet away from slopes steeper than 15 percent* • *The location is less than eight feet from building foundations or an alternative setback.* • *A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.*
If Yes, Provide basis: (attach)
[3] **Would infiltration of runoff on a Project site violate downstream water rights?** ☐Yes ☒No
If Yes, Provide basis: (attach)
[4] **Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils?** ☐Yes ☒No
If Yes, Provide basis: (attach)
[5] **Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)?** ☐Yes ☒No
If Yes, Provide basis: (attach)
[6] **Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses?** ☐Yes ☒No *See Section 3.5 of the TGD for WQMP and WAP*
If Yes, Provide basis: (attach)
[7] **Any answer from Item 1 through Item 3 is "Yes":** ☐Yes ☒No *If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Harvest and Use BMP. If no, then proceed to Item 9 below.*
[8] **Any answer from Item 4 through Item 6 is "Yes":** ☐Yes ☒No *If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Hydrologic Source Control BMP.* *If no, then proceed to Item 9, below.*
[9] **All answers to Item 1 through Item 6 are "No":** ☒Yes ☐No *Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP.* *Proceed to Form 4.3-2, Hydrologic Source Control BMP.*

Form 4.3-1 Infiltration BMP Feasibility (DA 2)

Feasibility Criterion – Complete evaluation for each DA on the Project Site

[1] **Would infiltration BMP pose significant risk for groundwater related concerns?** ☐Yes ☒No
Refer to Section 5.3.2.1 of the TGD for WQMP

If Yes, Provide basis: (attach)

[2] **Would installation of infiltration BMP significantly increase the risk of geotechnical hazards?** ☒Yes ☐No
(Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert):

- *The location is less than 50 feet away from slopes steeper than 15 percent*
- *The location is less than eight feet from building foundations or an alternative setback.*
- *A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.*

If Yes, Provide basis: Locations are less than 50 feet away from slopes steeper than 15 percent.

[3] **Would infiltration of runoff on a Project site violate downstream water rights?** ☐Yes ☒No

If Yes, Provide basis: (attach)

[4] **Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils?** ☒Yes ☐No

If Yes, Provide basis: The areas where these BMPs are located are sitting on 20+/- feet of fill due to the high elevation of the land.

[5] **Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)?** ☒Yes ☐No

If Yes, Provide basis: Rates are 0.0 in/hr at fill locations.

[6] **Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses?** ☐Yes ☒No
See Section 3.5 of the TGD for WQMP and WAP

If Yes, Provide basis: (attach)

[7] **Any answer from Item 1 through Item 3 is "Yes":** ☒Yes ☐No
If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Harvest and Use BMP. If no, then proceed to Item 9 below.

[8] **Any answer from Item 4 through Item 6 is "Yes":** ☒Yes ☐No
If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Hydrologic Source Control BMP.
If no, then proceed to Item 9, below.

[9] **All answers to Item 1 through Item 6 are "No":** ☐Yes ☒No
Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP.
Proceed to Form 4.3-2, Hydrologic Source Control BMP.

4.3.1 Site Design Hydrologic Source Control BMP

Section XI.E. of the Permit emphasizes the use of LID preventative measures; and the use of LID HSC BMPs reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable HSC shall be provided except where they are mutually exclusive with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of HSC, if a project cannot feasibly meet BMP sizing requirements or cannot fully address HCOCs, feasibility of all applicable HSC must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design HSC BMP. Refer to Section 5.4.1 in the TGD for more detailed guidance.

Form 4.3-2 Site Design Hydrologic Source Control BMPs

[1] **Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP):** ☐Yes ☒No *If yes, complete Items 2-5; If no, proceed to Item 6*			
Variables *Aggregate impervious area dispersion with equal ratios of pervious to impervious;*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[2] **Total impervious area draining to pervious area**			
[3] **Ratio of pervious area receiving runoff to impervious area**			
[4] **Retention volume achieved from impervious area dispersion (ft^3)** *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff*			
[5] **Sum of retention volume achieved from impervious area dispersion (ft^3): 0** *$V_{retention}$ = Sum of Item 4 for all BMPs*			
[6] **Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens):** ☐Yes ☒No *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA; If no, proceed to Item 14*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[7] **Ponding surface area (ft^2)**			
[8] **Ponding depth (ft)**			
[9] **Surface area of amended soil/gravel (ft^2)**			
[10] **Average depth of amended soil/gravel (ft)**			
[11] **Average porosity of amended soil/gravel**			
[12] **Retention volume achieved from on-lot infiltration (ft^3)** *$V_{retention}$ = (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)*			
[13] **Runoff volume retention from on-lot infiltration (ft^3): 0** *$V_{retention}$ = Sum of Item 12 for all BMPs*			
[14] **Implementation of evapotranspiration BMP (green, brown, or blue roofs):** ☐Yes ☒No *If yes, complete Items 15-20. If no, proceed to Item 21*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[15] **Rooftop area planned for ET BMP (ft^2)**			
[16] **Average wet season ET demand (in/day)** *Use local values, typical ~ 0.1*			
[17] **Daily ET demand (ft^3/day)** *Item 15 * (Item 16 / 12)*			
[18] **Drawdown time (hrs)** *Copy Item 6 in Form 4.2-1*			
[19] **Retention Volume (ft^3)** *$V_{retention}$ = Item 17 * (Item 18 / 24)*			
[20] **Runoff volume retention from evapotranspiration BMPs (ft^3): 0** *V = Sum of Item 19 for all BMPs*			
[21] **Implementation of Street Trees:** ☐Yes ☒No *If yes, complete Items 20-2. If no, proceed to Item 26*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[22] **Number of Street Trees**			
[23] **Average canopy cover over impervious area (ft^2)**			
[24] **Runoff volume retention from street trees (ft^3)** *$V_{retention}$ = Item 22 * Item 23 * (0.05/12) assume runoff retention of 0.05 inches*			
[25] **Runoff volume retention from street tree BMPs (ft^3): 0** *$V_{retention}$ = Sum of Item 24 for all BMPs*			
[26] **Implementation of residential rain barrels/cisterns:** ☐Yes ☒No *If yes, complete Items 27-28; If no, proceed to Item 30*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[27] **Number of rain barrels/cisterns**			
[28] **Runoff volume retention from rain barrels/cisterns (ft^3)** *$V_{retention}$ = Item 27 * 3*			
[29] **Runoff volume retention from residential rain barrels/Cisterns (ft^3): 0** *$V_{retention}$ =Sum of Item 28 for all BMPs*			
[30] **Total Retention Volume from Site Design Hydrologic Source Control BMPs: 0** *Sum of Items 5, 13, 20, 25 and 29*			

4.3.2 Infiltration BMPs

Use Form 4.3-3 to compute on-site retention of runoff from proposed retention and infiltration BMPs. Volume retention estimates are sensitive to the percolation rate used, which determines the amount of runoff that can be infiltrated within the specified drawdown time. The infiltration safety factor reduces field measured percolation to account for potential inaccuracy associated with field measurements, declining BMP performance over time, and compaction during construction. Appendix D of the TGD for WQMP provides guidance on estimating an appropriate safety factor to use in Form 4.3-3.

If site constraints limit the use of BMPs to a single type and implementation of retention and infiltration BMPs mitigate no more than 40% of the DCV, then they are considered infeasible and the Project Proponent may evaluate the effectiveness of BMPs lower in the LID hierarchy of use (Section 5.5.1 of the TGD for WQMP)

If implementation of infiltrations BMPs is feasible as determined using Form 4.3-1, then LID infiltration BMPs shall be implemented to the MEP (section 4.1 of the TGD for WQMP).

Form 4.3-3 Infiltration LID BMP (including underground BMPs) (DA 1)

[1] Remaining LID DCV not met by site design HSC BMP (ft^3): 245,182
V = Form 4.2-1 Item 7 - Form 4.3-2 Item 30

BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP)*	**DA 1**	**n/a**	**n/a**	**n/a**
[2] Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix D of the TGD for WQMP for minimum requirements for assessment methods*	18.6	n/a	n/a	n/a
[3] Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.50	n/a	n/a	n/a
[4] Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	7.44	n/a	n/a	n/a
[5] Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48	n/a	n/a	n/a
[6] Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	8.4	n/a	n/a	n/a
[7] Ponding Depth (ft) *d_{BMP} = Minimum of (1/12 * Item 4 * Item 5) or Item 6*	8.4	n/a	n/a	n/a
[8] Infiltrating surface area, SA (ft^2) *The lesser of the area needed for BMP infiltration of full DCV or minimum space requirements from Table 5-7 of the TGD for WQMP*	36,816	n/a	n/a	n/a
[9] Amended soil depth, d_{media} (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details*	n/a	n/a	n/a	n/a
[10] Amended soil porosity	n/a	n/a	n/a	n/a
[11] Gravel depth, d_{media} (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details*	n/a	n/a	n/a	n/a
[12] Gravel porosity	n/a	n/a	n/a	n/a
[13] Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3	n/a	n/a	n/a
[14] Above Ground Retention Volume (ft^3) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 retention * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*	n/a	n/a	n/a	n/a
[15] Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	246,066	n/a	n/a	n/a

[16] Total Retention Volume from LID Infiltration BMPs (ft^3): 246,066
(Sum of Items 14 and 15 for all infiltration BMP included in plan)

[17] Fraction of DCV achieved with infiltration BMP: 100%
Retention% = Item 16 / Form 4.2-1 Item 7

[18] Is full LID DCV retained on-site with combination of hydrologic source control and LID retention and infiltration BMPs? ☒Yes ☐No
If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.

4.3.3 Harvest and Use BMP

Harvest and use BMP may be considered if the full LID DCV cannot be met by maximizing infiltration BMPs. Use Form 4.3-4 to compute on-site retention of runoff from proposed harvest and use BMPs.

Volume retention estimates for harvest and use BMPs are sensitive to the on-site demand for captured stormwater. Since irrigation water demand is low in the wet season, when most rainfall events occur in San Bernardino County, the volume of water that can be used within a specified drawdown period is relatively low. The bottom portion of Form 4.3-4 facilitates the necessary computations to show infeasibility if a minimum incremental benefit of 40 percent of the LID DCV would not be achievable with MEP implementation of on-site harvest and use of stormwater (Section 5.5.4 of the TGD for WQMP).

Form 4.3-4 Harvest and Use BMPs

[1] **Remaining LID DCV not met by site design HSC or infiltration BMP (ft^3):** V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16			
BMP Type(s) *Compute runoff volume retention from proposed harvest and use BMP (Select BMPs from Table 5-4 of the TGD for WQMP)*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[2] **Describe cistern or runoff detention facility**			
[3] **Storage volume for proposed detention type (ft^3)** *Volume of cistern*			
[4] **Landscaped area planned for use of harvested stormwater (ft^2)**			
[5] **Average wet season daily irrigation demand (in/day)** *Use local values, typical ~ 0.1 in/day*			
[6] **Daily water demand (ft^3/day)** *Item 4 * (Item 5 / 12)*			
[7] **Drawdown time (hrs)** *Copy Item 6 from Form 4.2-1*			
[8] **Retention Volume (ft^3)** *$V_{retention}$ = Minimum of (Item 3) or (Item 6 * (Item 7 / 24))*			
[9] **Total Retention Volume (ft^3) from Harvest and Use BMP:** *Sum of Item 8 for all harvest and use BMP included in plan*			
[10] **Is the full DCV retained with a combination of LID HSC, retention and infiltration, and harvest and use BMPs?** ☐Yes ☐No *If yes, demonstrate conformance using Form 4.3-10. If no, then re-evaluate combinations of all LID BMP and optimize their implementation such that the maximum portion of the DCV is retained on-site (using a single BMP type or combination of BMP types). If the full DCV cannot be mitigated after this optimization process, proceed to Section 4.3.4.*			

4.3.4 Biotreatment BMP

Biotreatment BMPs may be considered if the full LID DCV cannot be met by maximizing retention and infiltration, and harvest and use BMPs. A key consideration when using biotreatment BMP is the effectiveness of the proposed BMP in addressing the pollutants of concern for the project (see Table 5-5 of the TGD for WQMP).

Use Form 4.3-5 to summarize the potential for volume based and/or flow based biotreatment options to biotreat the remaining unmet LID DCV. Biotreatment computations are included as follows:

- Use Form 4.3-6 to compute biotreatment in small volume based biotreatment BMP (e.g. bioretention w/underdrains);
- Use Form 4.3-7 to compute biotreatment in large volume based biotreatment BMP (e.g. constructed wetlands);
- Use Form 4.3-8 to compute sizing criteria for flow-based biotreatment BMP (e.g. bioswales)

Form 4.3-5 Selection and Evaluation of Biotreatment BMP (DA 2)

<table>
<tr><td colspan="2">[1] Remaining LID DCV not met by site design HSC, infiltration, or harvest and use BMP for potential biotreatment (ft³): 2,025
Form 4.2-1 Item 7 – Form 4.3-2 Item 30 – Form 4.3-3 Item 16- Form 4.3-4 Item 9</td><td>List pollutants of concern: Pathogens, Organic Compounds, and Metals
Copy from Form 2.3-1</td></tr>
<tr><td rowspan="2">[2] Biotreatment BMP Selected
(Select biotreatment BMP(s) necessary to ensure all pollutants of concern are addressed through Unit Operations and Processes, described in Table 5-5 of the TGD for WQMP)</td><td>Volume-based biotreatment
Use Forms 4.3-6 and 4.3-7 to compute treated volume</td><td>Flow-based biotreatment
Use Form 4.3-8 to compute treated volume</td></tr>
<tr><td>☐ Bioretention with underdrain
☐ Planter box with underdrain
☐ Constructed wetlands
☐ Wet extended detention
☐ Dry extended detention</td><td>☐ Vegetated swale
☐ Vegetated filter strip
☒ Proprietary biotreatment</td></tr>
<tr><td>[3] Volume biotreated in volume based biotreatment BMP (ft³): 0
Form 4.3-6 Item 15 + Form 4.3-7 Item 13</td><td>[4] Compute remaining LID DCV with implementation of volume based biotreatment BMP (ft³): 2,025
Item 1 – Item 3</td><td>[5] Remaining fraction of LID DCV for sizing flow based biotreatment BMP: 100%
Item 4 / Item 1</td></tr>
<tr><td colspan="3">[6] Flow-based biotreatment BMP capacity provided (cfs): 0.11
Use Figure 5-2 of the TGD for WQMP to determine flow capacity required to provide biotreatment of remaining percentage of unmet LID DCV (Item 5), for the project's precipitation zone (Form 3-1 Item 1)</td></tr>
<tr><td colspan="3">[7] Metrics for MEP determination:
☐ Provided a WQMP with the portion of site area used for suite of LID BMP equal to minimum thresholds in Table 5-7 of the TGD for WQMP for the proposed category of development:
If maximized on-site retention BMPs is feasible for partial capture, then LID BMP implementation must be optimized to retain and infiltrate the maximum portion of the DCV possible within the prescribed minimum effective area. The remaining portion of the DCV shall then be mitigated using biotreatment BMP.</td></tr>
</table>

Form 4.3-6 Volume Based Biotreatment – Bioretention and Planter Boxes with Underdrains

BMP Type(s) *Compute runoff volume retention from proposed harvest and use BMP (Select BMPs from Table 5-4 of the TGD for WQMP)*	**BMP Type and DA**	**BMP Type and DA**	**BMP Type and DA**
[1] **Pollutants addressed with BMP** *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*			
[2] **Amended soil infiltration rate** *Typical ~ 5.0 in/hr*			
[3] **Amended soil infiltration safety factor** *Typical ~ 2.0*			
[4] **Amended soil design percolation rate (in/hr)** P_{design} *= Item 2 / Item 3*			
[5] **Ponded water drawdown time (hr)** *Copy Item 6 from Form 4.2-1*			
[6] **Maximum ponding depth (ft)** *See Table 5-6 of the TGD for WQMP for reference to BMP design details*			
[7] **Ponding Depth (ft)** d_{BMP} *= Minimum of (1/12 * Item 4 * Item 5) or Item 6*			
[8] **Amended soil surface area (ft^2)**			
[9] **Amended soil depth (ft)** *See Table 5-6 of the TGD for WQMP for reference to BMP design details*			
[10] **Amended soil porosity, *n***			
[11] **Gravel depth (ft)** *See Table 5-6 of the TGD for WQMP for reference to BMP design details*			
[12] **Gravel porosity, *n***			
[13] **Duration of storm as basin is filling (hrs)** *Typical ~ 3hrs*			
[14] **Biotreated Volume (ft^3)** $V_{biotreated}$ *= Item 8 * [(Item 7/2) + (Item 9 * Item 10) +(Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*			
[15] **Total biotreated volume from bioretention and/or planter box with underdrains BMP:** *Sum of Item 14 for all volume-based BMPs included in this form*			

Form 4.3-7 Volume Based Biotreatment – Constructed Wetlands and Extended Detention

Biotreatment BMP Type *Constructed wetlands, extended wet detention, extended dry detention, or other comparable proprietary BMP. If BMP includes multiple modules (e.g. forebay and main basin), provide separate estimates for storage and pollutants treated in each module.*	**BMP Type and DA**		**BMP Type and DA**		**BMP Type and DA**	
	Forebay	**Basin**	**Forebay**	**Basin**	**Forebay**	**Basin**
[1] **Pollutants addressed with BMP forebay and basin** *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*						
[2] **Bottom width (ft)**						
[3] **Bottom length (ft)**						
[4] **Bottom area (ft^2)** A_{bottom} *= Item 2 * Item 3*						
[5] **Side slope (ft/ft)**						
[6] **Depth of storage (ft)**						
[7] **Water surface area (ft2)** $A_{surface}$ *= (Item 2 + (2 * Item 5 * Item 6)) * (Item 3 + (2 * Item 5 * Item 6))*						
[8] **Storage volume (ft3)** *For BMP with a forebay, ensure fraction of total storage is within ranges specified in BMP specific fact sheets, see Table 5-6 of the TGD for WQMP for reference to BMP design details V =Item 6 / 3 * [Item 4 + Item 7 + (Item 4 * Item 7)$^{0.5}$]*						
[9] **Drawdown Time (hrs)** *Copy Item 6 from Form 2.1*						
[10] **Outflow rate (cfs)** Q_{BMP} *= (Item 8$_{forebay}$ + Item 8$_{basin}$) / (Item 9 * 3600)*						
[11] **Duration of design storm event (hrs)**						
[12] **Biotreated Volume (ft^3)** $V_{biotreated}$ *= (Item 8$_{forebay}$ + Item 8$_{basin}$) +(Item 10 * Item 11 * 3600)*						
[13] **Total biotreated volume from constructed wetlands, extended dry detention, or extended wet detention:** *(Sum of Item 12 for all BMP included in plan)*						

Form 4.3-8 Flow Based Biotreatment (DA 2)			
Biotreatment BMP Type *Vegetated swale, vegetated filter strip, or other comparable proprietary BMP*	**DA 2**	**BMP Type and DA**	**BMP Type and DA**
[1] **Pollutants addressed with BMP** *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in TGD Table 5-5*	*		
[2] **Flow depth for water quality treatment (ft)** *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	*		
[3] **Bed slope (ft/ft)** *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	*		
[4] **Manning's roughness coefficient**	*		
[5] **Bottom width (ft)** *b_w = (Form 4.3-5 Item 6 * Item 4) / (1.49 * Item $2^{1.67}$ * Item $3^{0.5}$)*	*		
[6] **Side Slope (ft/ft)** *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	*		
[7] **Cross sectional area (ft^2)** *A = (Item 5 * Item 2) + (Item 6 * Item 2^2)*	*		
[8] **Water quality flow velocity (ft/sec)** *V = Form 4.3-5 Item 6 / Item 7*	*		
[9] **Hydraulic residence time (min)** *Pollutant specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*	*		
[10] **Length of flow based BMP (ft)** *L = Item 8 * Item 9 * 60*	*		
[11] **Water surface area at water quality flow depth (ft2)** *SA_{top} = (Item 5 + (2 * Item 2 * Item 6)) * Item 10*	*		

*Refer to Attachment B for manufacturer's calculations.

4.3.5 Conformance Summary

Complete Form 4.3-9 to demonstrate how on-site LID DCV is met with proposed site design hydrologic source control, infiltration, harvest and use, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate (DA 1)

[1] **Total LID DCV for the Project (ft^3):** 245,182
Copy Item 7 in Form 4.2-1

[2] **On-site retention with site design hydrologic source control LID BMP (ft^3):** 0
Copy Item 30 in Form 4.3-2

[3] **On-site retention with LID infiltration BMP (ft^3):** 246,066
Copy Item 16 in Form 4.3-3

[4] **On-site retention with LID harvest and use BMP (ft^3):** 0
Copy Item 9 in Form 4.3-4

[5] **On-site biotreatment with volume based biotreatment BMP (ft^3):** 0
Copy Item 3 in Form 4.3-5

[6] **Flow capacity provided by flow based biotreatment BMP (cfs):** 0
Copy Item 6 in Form 4.3-5

[7] **LID BMP performance criteria are achieved if answer to any of the following is "Yes":**

- **Full retention of LID DCV with site design HSC, infiltration, or harvest and use BMP:** ☒Yes ☐No
  If yes, sum of Items 2, 3, and 4 is greater than Item 1
- **Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV:** ☐Yes ☒No
  If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized
- **On-site retention and infiltration is determined to be infeasible and biotreatment BMP provide biotreatment for all pollutants of concern for full LID DCV:** ☐Yes ☒No
  If yes, Form 4.3-1 Items 7 and 8 were both checked yes

[8] **If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:**

☐ **Combination of HSC, retention and infiltration, harvest and use, and biotreatment BMPs provide less than full LID DCV capture.**
Checked yes for Form 4.3-5 Item 7, Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, V_{alt} *= (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*

☐ **An approved Watershed Action Plan (WAP) demonstrates that water quality and hydrologic impacts of urbanization are more effective when managed in at an off-site facility.**
Attach appropriate WAP section, including technical documentation, showing effectiveness comparisons for the project site and regional watershed

Form 4.3-10 Conformance Summary and Alternative Compliance Volume Estimate (DA 2)

[1] Total LID DCV for the Project (ft³): 2,025
Copy Item 7 in Form 4.2-1

[2] On-site retention with site design hydrologic source control LID BMP (ft³): 0
Copy Item 30 in Form 4.3-2

[3] On-site retention with LID infiltration BMP (ft³): 0
Copy Item 16 in Form 4.3-3

[4] On-site retention with LID harvest and use BMP (ft³): 0
Copy Item 9 in Form 4.3-4

[5] On-site biotreatment with volume based biotreatment BMP (ft³): 0
Copy Item 3 in Form 4.3-5

[6] Flow capacity provided by flow based biotreatment BMP (cfs): 0.11
Copy Item 6 in Form 4.3-5

[7] LID BMP performance criteria are achieved if answer to any of the following is "Yes":

- **Full retention of LID DCV with site design HSC, infiltration, or harvest and use BMP:** ☐Yes ☒No
  If yes, sum of Items 2, 3, and 4 is greater than Item 1
- **Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV:** ☐Yes ☒No
  If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized
- **On-site retention and infiltration is determined to be infeasible and biotreatment BMP provide biotreatment for all pollutants of concern for full LID DCV:** ☒Yes ☐No
  If yes, Form 4.3-1 Items 7 and 8 were both checked yes

[8] If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:

☐ **Combination of HSC, retention and infiltration, harvest and use, and biotreatment BMPs provide less than full LID DCV capture.**
Checked yes for Form 4.3-5 Item 7, Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, V_{alt} *= (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*

☐ **An approved Watershed Action Plan (WAP) demonstrates that water quality and hydrologic impacts of urbanization are more effective when managed in at an off-site facility.**
Attach appropriate WAP section, including technical documentation, showing effectiveness comparisons for the project site and regional watershed

4.3.6 Hydromodification Control BMP

Use Form 4.3-10 to compute the remaining runoff volume retention, after LID BMP are implemented, needed to address HCOC, and the increase in time of concentration and decrease in peak runoff necessary to meet targets for protection of waterbodies with a potential HCOC. Describe hydromodification control BMP that address HCOC, which may include off-site BMP and/or in-stream controls. Section 5.6 of the TGD for WQMP provides additional details on selection and evaluation of hydromodification control BMP.

Form 4.3-11 Hydromodification Control BMPs

[1] **Volume reduction needed for HCOC performance criteria (ft^3):** *(Form 4.2-2 Item 4 * 0.95) – Form 4.2-2 Item 1*	[2] **On-site retention with site design hydrologic source control, infiltration, and harvest and use LID BMP (ft^3):** *Sum of Form 4.3-9 Items 2, 3, and 4. Evaluate option to increase implementation of on-site retention in Forms 4.3-2, 4.3-3, and 4.3-4 in excess of LID DCV toward achieving HCOC volume reduction*
[3] **Remaining volume for HCOC volume capture (ft^3):** *Item 1 – Item 2*	[4] **Volume capture provided by incorporating additional on-site or off-site retention BMPs (ft^3):** *Existing downstream BMP may be used to demonstrate additional volume capture (if so, attach to this WQMP a hydrologic analysis showing how the additional volume would be retained during a 2-yr storm event for the regional watershed)*
[5] **If Item 4 is less than Item 3, incorporate in-stream controls on downstream waterbody segment to prevent impacts due to hydromodification** ☐ *Attach in-stream control BMP selection and evaluation to this WQMP*	
[6] **Is Form 4.2-2 Item 11 less than or equal to 5%:** ☐Yes ☐No *If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:* ☐ **Demonstrate increase in time of concentration achieved by proposed LID site design, LID BMP, and additional on-site or off-site retention BMP.** *BMP upstream of a waterbody segment with a potential HCOC may be used to demonstrate increased time of concentration through hydrograph attenuation (if so, show that the hydraulic residence time provided in BMP for a 2-year storm event is equal or greater than the addition time of concentration requirement in Form 4.2-4 Item 15)* ☐ **Increase time of concentration by preserving pre-developed flow path and/or increase travel time by reducing slope and increasing cross-sectional area and roughness for proposed on-site conveyance facilities.** ☐ **Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California.**	
[7] **Form 4.2-2 Item 12 less than or equal to 5%:** ☐Yes ☐No *If yes, HCOC performance criteria are achieved. If no, select one or more mitigation options below:* ☐ **Demonstrate reduction in peak runoff achieved by proposed LID site design, LID BMPs, and additional on-site or off-site retention BMPs.** *BMPs upstream of a waterbody segment with a potential HCOC may be used to demonstrate additional peak runoff reduction through hydrograph attenuation (if so, attach to this WQMP, a hydrograph analysis showing how the peak runoff would be reduced during a 2-yr storm event)* ☐ **Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California.**	

4.4 Alternative Compliance Plan (if applicable)

Describe an alternative compliance plan (if applicable) for projects not fully able to infiltrate, harvest and use, or biotreat the DCV via on-site LID practices. A project proponent must develop an alternative compliance plan to address the remainder of the LID DCV. Depending on project type some projects may qualify for water quality credits that can be applied to reduce the DCV that must be treated prior to development of an alternative compliance plan (see Form 2.4-1, Water Quality Credits). Form 4.3-9 Item 8 includes instructions on how to apply water quality credits when computing the DCV that must be met through alternative compliance. Alternative compliance plans may include one or more of the following elements:

- On-site structural treatment control BMP - All treatment control BMP should be located as close to possible to the pollutant sources and should not be located within receiving waters;
- Off-site structural treatment control BMP - Pollutant removal should occur prior to discharge of runoff to receiving waters;
- Urban runoff fund or In-lieu program, if available

Depending upon the proposed alternative compliance plan, approval by the executive officer may or may not be required (see Section 6 of the TGD for WQMP).

Section 5 Inspection and Maintenance Responsibility for Post Construction BMP

All BMP included as part of the project WQMP are required to be maintained through regular scheduled inspection and maintenance (refer to Section 8, Post Construction BMP Requirements, in the TGD for WQMP). Fully complete Form 5-1 summarizing all BMP included in the WQMP. Attach additional forms as needed. The WQMP shall also include a detailed Operation and Maintenance Plan for all BMP and may require a Maintenance Agreement (consult the jurisdiction's LIP). If a Maintenance Agreement is required, it must also be attached to the WQMP.

Form 5-1 BMP Inspection and Maintenance

BMP	Responsible Party(ies)	Inspection/Maintenance Activities Required	Minimum Frequency of Activities
Hydrodynamic Separator	Owner	Open access hatches or manholes. Remove gross solids from screening basket upon reaching 25% capacity. Hinges open the bottom screen panels to access sedimentation chambers. Vacuum out sedimentation chambers when any chamber reaches 25% capacity.	Inspect semi-annually (by October 1st and February 1st) and maintain, upon reaching 25% capacity, through maintenance service contract with the vendor or equally qualified contractor.
Underground Retention System	Owner	The manholes shall be inspected semi-annually (October 1st and February 1st) and maintained upon sediment reaching 3-inches in depth. The rows shall be inspected and maintained by a qualified technician and he/she will properly dispose of all wastes. Manholes are installed in order to inspect and maintain the system. It is installed per OSHA codes to ensure operator and inspector safety.	Semi-annually (October 1st and February 1st) through maintenance service contract with the vendor or equally qualified contractor.
Proprietary Biofiltration Unit	Owner	All work to be done by the supplier or by a supplier approved contractor. Inspection of unit and surrounding area. Removal of tree grate and erosion control stones. Silt (if any) and mulch to be dug out. Trash, debris and foreign items will be removed. Replace mulch evenly across the entire unit to a depth of 3". Ensure correct repositioning of the erosion control stones by the Filterra inlet to allow for entry of trash during a storm event. Examine the plant's health and replace if dead. Prune as necessary to encourage growth in the correct directions. Clean area around unit and remove all refuse to be disposed of appropriately.	Semi-annually (October 1st and February 1st) through maintenance service contract with the vendor or equally qualified contractor.
N14: Catch Basin Inspection Program	Owner	Monthly inspection by property owner's designee. Vacuum basin when sediment or trash becomes 2-inches deep and dispose of properly.	Monthly inspection and maintain as necessary.
N15: Vacuum Sweeping of Private Streets and Parking Lots	Owner	All landscape maintenance contractors will be required to sweep up all landscape cuttings, mowings and fertilizer materials off paved areas weekly and dispose of properly. Parking areas and drive ways will be swept monthly by sweeping contractor.	Monthly

Form 5-1 BMP Inspection and Maintenance			
S6: Protect slopes and channels and provide energy dissipation	Owner	All slopes will be vegetated and maintained to prevent erosion and transport of sediment. Energy dissipaters are installed at all inlets into the basin.	Ongoing
N13: Housekeeping of Loading Docks	Owner	Keep all fluids indoors. Clean up spills immediately and keep spills from entering storm drain system. No direct discharges into the storm drain system. Area shall be inspected weekly for proper containment and practices with spills cleaned up immediately and disposed of properly.	Ongoing
N11: Litter/Debris Control Program	Owner	Contract with their landscape maintenance firm to provide this service during regularly schedule maintenance.	Weekly

Section 6 WQMP Attachments

6.1 Site Plan and Drainage Plan

Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural Source Control BMP locations
- Site Design Hydrologic Source Control BMP locations
- LID BMP details
- Drainage delineations and flow information
- Drainage connections

See Attachment C for WQMP Site Map.

6.2 Electronic Data Submittal

Minimum requirements include submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open. If the local jurisdiction requires specialized electronic document formats (consult the LIP), this section will describe the contents (e.g., layering, nomenclature, geo-referencing, etc.) of these documents so that they may be interpreted efficiently and accurately.

6.3 Post Construction

Attach all O&M Plans and Maintenance Agreements for BMP to the WQMP (Attachment D).

6.4 Other Supporting Documentation

- WQMP Certification (Section 6.5)
- BMP Design Calculations & Supporting Documentation (Attachment B)
- Memorandum of Agreement for Water Quality Management Plan and Storm Water BMP Transfer, Access and Maintenance (Attachment D)
- BMP Educational Materials (Attachment E)
- Infiltration Report (Attachment F)

Attachment A
Existing Condition Site Photos









Attachment B
BMP Design Calculations & Supporting Documentation

www.nws.noaa.gov

NOAA's National Weather Service
Hydrometeorological Design Studies Center
Precipitation Frequency Data Server (PFDS)

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- Documents
- Performance

Probable Maximum Precipitation
- Documents

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- Storm Analysis
- Record Precipitation

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USA.gov

NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA

Data description

Data type: Precipitation depth | Units: English | Time series type: Partial duration

Select location

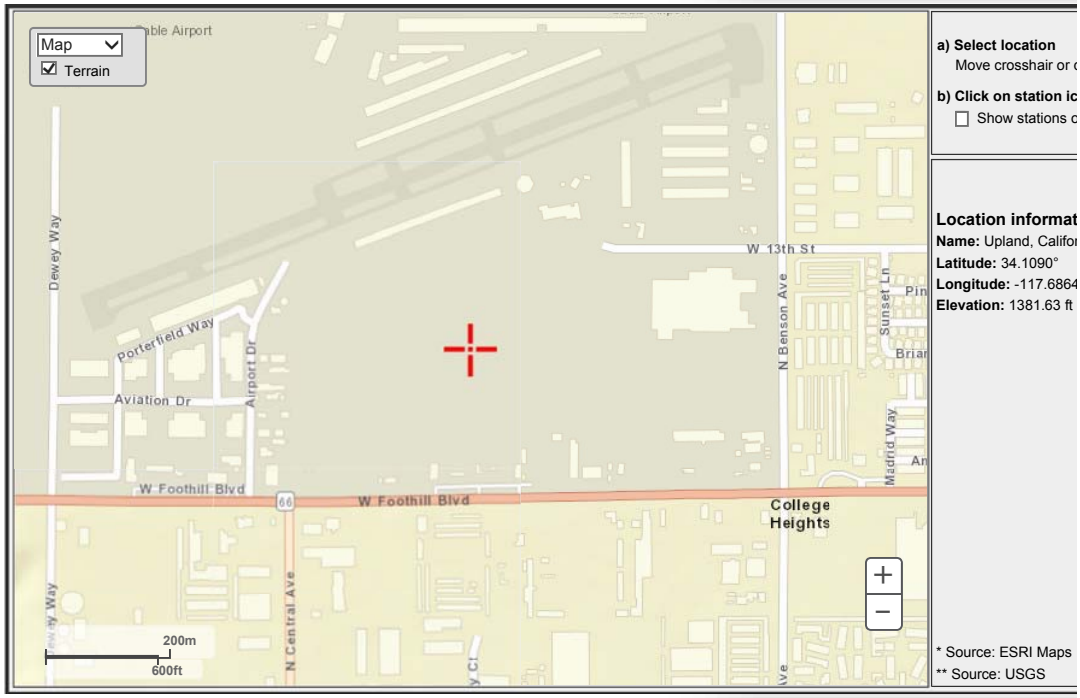
1) Manually:

a) By location (decimal degrees, use "-" for S and W): Latitude: 34.109008 Longitude: -117.68643 Submit

b) By station (list of CA stations): Select station

c) By address: Search

2) Use map (if ESRI interactive map is not loading, try adding the host: **https://js.arcgis.com/** to the firewall, or contact us at hdsc.questions@noaa.gov):



POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 6, Version 2

PF tabular | PF graphical | Supplementary information | Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years) 1	2	5	10	25	50	100	200	500
5-min	0.124 (0.104–0.150)	0.163 (0.136–0.198)	0.215 (0.178–0.261)	0.257 (0.212–0.316)	0.316 (0.252–0.402)	0.363 (0.282–0.471)	0.411 (0.311–0.547)	0.461 (0.340–0.632)	0.531 (0.375–0.760)
10-min	0.178 (0.148–0.216)	0.234 (0.195–0.283)	0.308 (0.255–0.374)	0.369 (0.304–0.453)	0.454 (0.361–0.576)	0.520 (0.404–0.675)	0.589 (0.446–0.784)	0.661 (0.487–0.906)	0.761 (0.537–1.09)
15-min	0.215 (0.179–0.261)	0.283 (0.235–0.343)	0.372 (0.309–0.453)	0.446 (0.367–0.547)	0.548 (0.436–0.697)	0.629 (0.489–0.816)	0.712 (0.540–0.948)	0.799 (0.589–1.10)	0.920 (0.649–1.32)
30-min	0.316 (0.263–0.382)	0.415 (0.345–0.503)	0.546 (0.453–0.664)	0.654 (0.539–0.803)	0.805 (0.640–1.02)	0.922 (0.718–1.20)	1.04 (0.792–1.39)	1.17 (0.864–1.61)	1.35 (0.953–1.93)
60-min	0.477 (0.397–0.577)	0.626 (0.521–0.759)	0.824 (0.684–1.00)	0.988 (0.813–1.21)	1.21 (0.966–1.54)	1.39 (1.08–1.81)	1.58 (1.20–2.10)	1.77 (1.30–2.43)	2.04 (1.44–2.92)
2-hr	0.724 (0.604–0.877)	0.940 (0.783–1.14)	1.23 (1.02–1.49)	1.46 (1.20–1.79)	1.79 (1.42–2.27)	2.04 (1.59–2.65)	2.30 (1.74–3.06)	2.57 (1.90–3.53)	2.95 (2.08–4.22)
3-hr									

	0.919 (0.766–1.11)	**1.19** (0.989–1.44)	**1.54** (1.28–1.88)	**1.83** (1.51–2.25)	**2.23** (1.78–2.84)	**2.55** (1.98–3.31)	**2.87** (2.17–3.82)	**3.20** (2.36–4.39)	**3.67** (2.59–5.25)
6-hr	**1.33** (1.11–1.61)	**1.71** (1.42–2.07)	**2.21** (1.84–2.69)	**2.63** (2.16–3.22)	**3.20** (2.54–4.06)	**3.64** (2.83–4.72)	**4.09** (3.11–5.45)	**4.57** (3.37–6.27)	**5.22** (3.69–7.48)
12-hr	**1.76** (1.47–2.13)	**2.28** (1.90–2.77)	**2.97** (2.47–3.61)	**3.54** (2.91–4.34)	**4.32** (3.44–5.49)	**4.93** (3.84–6.40)	**5.56** (4.22–7.40)	**6.21** (4.58–8.52)	**7.11** (5.02–10.2)
24-hr	**2.46** (2.18–2.84)	**3.24** (2.87–3.74)	**4.28** (3.77–4.95)	**5.13** (4.49–5.99)	**6.32** (5.35–7.61)	**7.25** (6.01–8.91)	**8.20** (6.64–10.3)	**9.20** (7.25–11.9)	**10.6** (8.01–14.3)
2-day	**3.09** (2.73–3.56)	**4.14** (3.66–4.78)	**5.56** (4.90–6.43)	**6.74** (5.89–7.86)	**8.39** (7.10–10.1)	**9.69** (8.04–11.9)	**11.0** (8.94–13.9)	**12.5** (9.83–16.2)	**14.5** (10.9–19.5)
3-day	**3.38** (2.99–3.90)	**4.59** (4.06–5.30)	**6.23** (5.50–7.21)	**7.61** (6.65–8.87)	**9.53** (8.07–11.5)	**11.1** (9.18–13.6)	**12.7** (10.3–16.0)	**14.4** (11.3–18.6)	**16.7** (12.7–22.6)
4-day	**3.66** (3.24–4.21)	**5.01** (4.43–5.78)	**6.85** (6.04–7.92)	**8.39** (7.34–9.79)	**10.6** (8.94–12.7)	**12.3** (10.2–15.1)	**14.1** (11.4–17.8)	**16.0** (12.6–20.7)	**18.7** (14.1–25.2)
7-day	**4.15** (3.68–4.78)	**5.77** (5.10–6.66)	**7.97** (7.03–9.22)	**9.82** (8.59–11.5)	**12.4** (10.5–15.0)	**14.5** (12.0–17.8)	**16.6** (13.5–21.0)	**18.9** (14.9–24.5)	**22.2** (16.8–29.9)
10-day	**4.48** (3.97–5.17)	**6.28** (5.55–7.25)	**8.72** (7.69–10.1)	**10.8** (9.42–12.6)	**13.6** (11.6–16.4)	**15.9** (13.2–19.6)	**18.4** (14.9–23.1)	**20.9** (16.5–27.1)	**24.5** (18.5–33.1)
20-day	**5.37** (4.75–6.19)	**7.57** (6.70–8.74)	**10.6** (9.33–12.2)	**13.1** (11.5–15.3)	**16.7** (14.2–20.1)	**19.6** (16.3–24.1)	**22.6** (18.3–28.5)	**25.9** (20.4–33.5)	**30.4** (23.0–41.1)
30-day	**6.30** (5.58–7.26)	**8.84** (7.82–10.2)	**12.3** (10.9–14.3)	**15.3** (13.4–17.9)	**19.5** (16.5–23.5)	**22.9** (19.0–28.2)	**26.5** (21.5–33.4)	**30.4** (23.9–39.4)	**35.9** (27.1–48.4)
45-day	**7.53** (6.66–8.68)	**10.4** (9.23–12.0)	**14.5** (12.7–16.7)	**17.9** (15.6–20.9)	**22.8** (19.3–27.5)	**26.8** (22.2–33.0)	**31.1** (25.2–39.1)	**35.6** (28.1–46.2)	**42.2** (31.9–56.9)
60-day	**8.77** (7.77–10.1)	**12.0** (10.6–13.8)	**16.4** (14.5–19.0)	**20.2** (17.7–23.6)	**25.7** (21.8–31.0)	**30.2** (25.1–37.2)	**35.1** (28.4–44.2)	**40.3** (31.7–52.1)	**47.7** (36.1–64.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration a recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitatic estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in CSV format: Precipitation frequency estimates Submit

Main Link Categories:
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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Water Prediction (OWP)
1325 East West Highway
Silver Spring, MD 20910
Page Author: HDSC webmaster
Page last modified: April 21, 2017

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Worksheet H: Factor of Safety and Design Infiltration Rate Worksheet (DA 1)

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	1	0.25
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			1.00
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/expected sediment loads	0.25	3	0.75
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, $S_B = \Sigma p$			2.50
Combined Safety Factor, $S_{TOT} = S_A \times S_B$					2.50
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					18.6
Design Infiltration Rate, in/hr, $K_{DESIGN} = K_M / S_{TOT}$					7.44

Supporting Data

Briefly describe infiltration test and provide reference to test forms:

Site specific infiltration tests were conducted at the location of the infiltration BMPs to support a measured rate of 18.6 in/hr. The design rate is 7.44 in/hr after applying the appropriate safety factor. This design rate is suitable for infiltration facilities.

Soil Assessment Methods: Eleven infiltration tests were conducted and twenty-one trench logs are available for the entire project site. Tests I-1 through I-6 are the nearest infiltration tests to this BMP location and five trench logs nearby. The infiltration report recommends a rate of 18.6, 19.4, and 21.0 in/hr around this BMP location. With this rationale, we will utilize a “low concern” for the consideration of the soil assessment method factor.

Predominant Soil Texture: “Sandy gravel with extensive cobbles” per Infiltration Report 18G122-2 dated June 18, 2019, see Attachment F of this WQMP report.

Compaction during construction: BMP locations will be staked off during construction to prevent unnecessary compaction.

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

FLOW-BASED BMP DESIGN (primary treatment for driveway area)

$C_{BMP} = 0.858(imp)^3 - 0.78(imp)^2 + 0.774(imp) + 0.04$
$I_{BMP} = (0.626)(0.2787)(2) = 0.349$ in/hr
$Q = C_{BMP} * 0.349 * Area$

DA 2 – FLOW-BASED BIOFILTRATION SYSTEM – FILTERRA SYSTEM

Region		Valley	
Drainage Area (acres)		0.38	acres
Drainage Area (sq-ft)		**16,553**	sq-ft
Impervious Coeff	i =	0.95	< 1.0
Runoff Coeff	C =	**0.81**	
1-hr 2-yr from NOAA		0.626	
Itensity Coeff		**0.2787**	
Intensity BMP (in/hr)		**0.349**	
Flow (cfs)	Q =	**0.11**	

Use One (1) FT0806
Treats 0.1111 cfs each

Filterra Sizing Spreadsheet
Uniform Intensity Approach
Storm Intensity = 0.20 in/hr

Filterra Infiltration Rate = 100 (in/hr)
Filterra Flow per Square Foot = 0.0023 (ft3/sec/ft2)

Filterra Flow Rate, Q = 0.0023 ft3/sec x Filterra Surface Area
Rational Method, Q = C x I x A

Site Flowrate, Q = (C x DI x DA x 43560) / (12 x3600)
OR DA = (12 x 3600 x Q) / (C x 43560 x DI)

where
Q = Flow (ft3/sec)
DA = Drainage Area (acres)
DI = Design Intensity (in/hr)
C = Runoff coefficient (dimensionless)

			DI **0.349**	C 1.00	C 0.85	C **0.81**	
Available Filterra Box Sizes			Filterra Flow Rate, Q (ft3/sec)	100% Imperv. DA (acres)	Commercial max DA (acres)	Custom max DA (acres)	
L (ft)	W (ft)	Filterra Surface Area (ft2)					
4	4	16	0.0370	0.105	0.124	0.130	
6	4	24	0.0556	0.158	0.186	0.195	
6.5	4	26	0.0602	0.171	0.201	0.211	
8	4	32	0.0741	0.210	0.248	0.260	
10	4	40	0.0926	0.263	0.310	0.325	
12	4	48	0.1111	0.316	0.371	0.390	
6	6	36	0.0833	0.237	0.279	0.292	
8	**6**	**48**	**0.1111**	**0.316**	**0.371**	**0.390**	QTY: 1
10	6	60	0.1389	0.395	0.464	0.487	
12	6	72	0.1667	0.474	0.557	0.585	
13	7	91	0.2106	0.599	0.704	0.739	
12	8	96	0.2222	0.631	0.743	0.780	
14	8	112	0.2593	0.737	0.867	0.910	
16	8	128	0.2963	0.842	0.991	1.039	
18	8	144	0.3333	0.947	1.114	1.169	
20	8	160	0.3704	1.052	1.238	1.299	
22	8	176	0.4074	1.158	1.362	1.429	

FLOW-BASED BMP DESIGN (pretreatment)

DA 1 – CDS UNIT

Region		Valley	
Drainage Area (acres)		46.00	acres
Drainage Area (sq-ft)		2,003,760	sq-ft
Impervious Coeff	i =	0.95	< 1.0
Runoff Coeff	**C =**	**0.81**	
1-hr 2-yr from NOAA		0.626	
Itensity Coeff		**0.2787**	
Intensity BMP (in/hr)		**0.349**	
Flow (cfs)	Q =	**12.95**	

CONTECH CDS Unit CDS5653-10
Q-required = 12.95 cfs
Q-provided = 14.00 cfs

VOLUME-BASED BMP DESIGN

$C_{BMP} = 0.858(imp)^3 - 0.78(imp)^2 + 0.774(imp) + 0.04$
P6 = (0.626)(1.4807) = 0.927 inches
P0 = (1.963)(C_{BMP})(0.927)
DCV = (P0 * Area) / 12

DA 1 – CMP

Region		Valley	
Drainage Area (acres)		46.00	acres
Drainage Area (sq-ft)		**2,003,760**	sq-ft
Impervious Coeff	i =	0.95	< 1.0
Runoff Coeff	**C =**	**0.807**	
1-hr 2-yr from NOAA		0.626	
P6 Coeff		**1.4807**	
Mean 6-hr (P6)		**0.927**	
Drawdown Rate (a)		1.963	
DCV		**245,182**	cu-ft
DCV		**5.629**	acre-ft

d_{max} = Design infiltration rate x 48 hours = 7.44 in/hr x 48 hrs = 357 inches
d_{BMP} = Effective depth = 96” + ((12” + 12”) x 0.4) = 105.6 inches = 8.8 ft
$d_{max} > d_{BMP}$

DYODS™
Design Your Own Detention System

CONTECH CMP DETENTION SYSTEMS

CONTECH CONSTRUCTION PRODUCTS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com



Project Summary

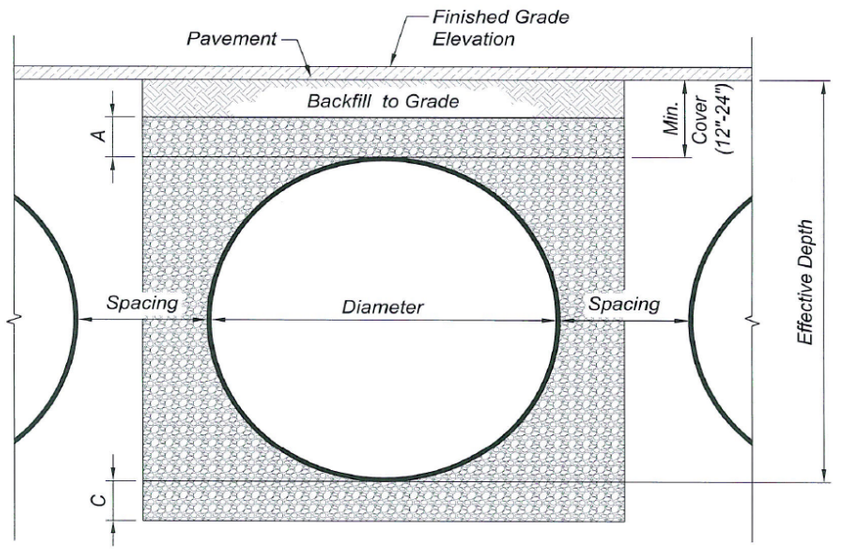
Date:	11/13/2019
Project Name:	Bridge Upland
City / County:	Upland
State:	California
Designed By:	Luis Prado
Company:	Thienes Engineering
Telephone:	(714) 521-4811

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	245,182
Limiting Width (ft):	80.00
Invert Depth Below Asphalt (ft):	10.00
Solid or Perforated Pipe:	Perforated
Shape Or Diameter (in):	96
Number Of Headers:	0
Spacing between Barrels (ft):	3.00
Stone Width Around Perimeter of System (ft):	2
Depth A: Porous Stone Above Pipe (in):	12
Depth C: Porous Stone Below Pipe (in):	12
Stone Porosity (0 to 40%):	40

50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	164,670	cf	
Porous Stone Storage:	81,396	cf	
Total Storage Provided:	246,066	cf	100.4% Of Required Storage
Number of Barrels:	7	barrels	
Length per Barrel:	468.0	ft	
Length Per Header:	0.0	ft	
Rectangular Footprint (W x L):	78. ft x 472. ft		

CONTECH Materials

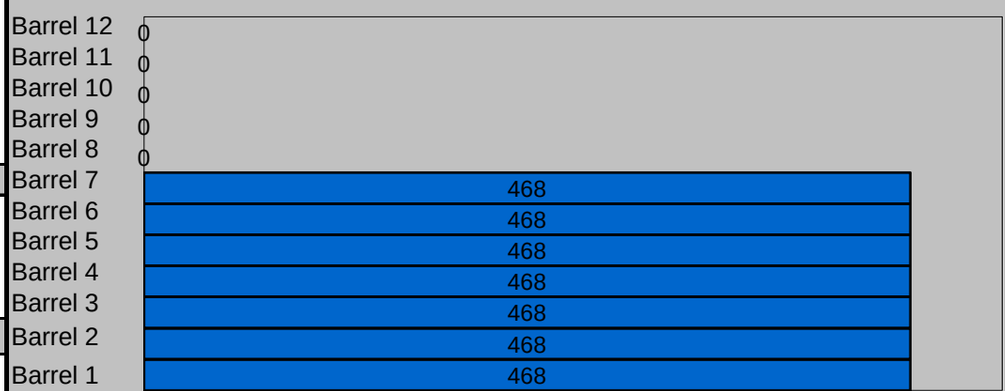
Total CMP Footage:	3,276	ft
Approximate Total Pieces:	140	pcs
Approximate Coupling Bands:	133	bands
Approximate Truckloads:	70	trucks

Construction Quantities**

Total Excavation:	13636	cy
Porous Stone Backfill For Storage:	7537	cy stone
Backfill to Grade Excluding Stone:	0	cy fill

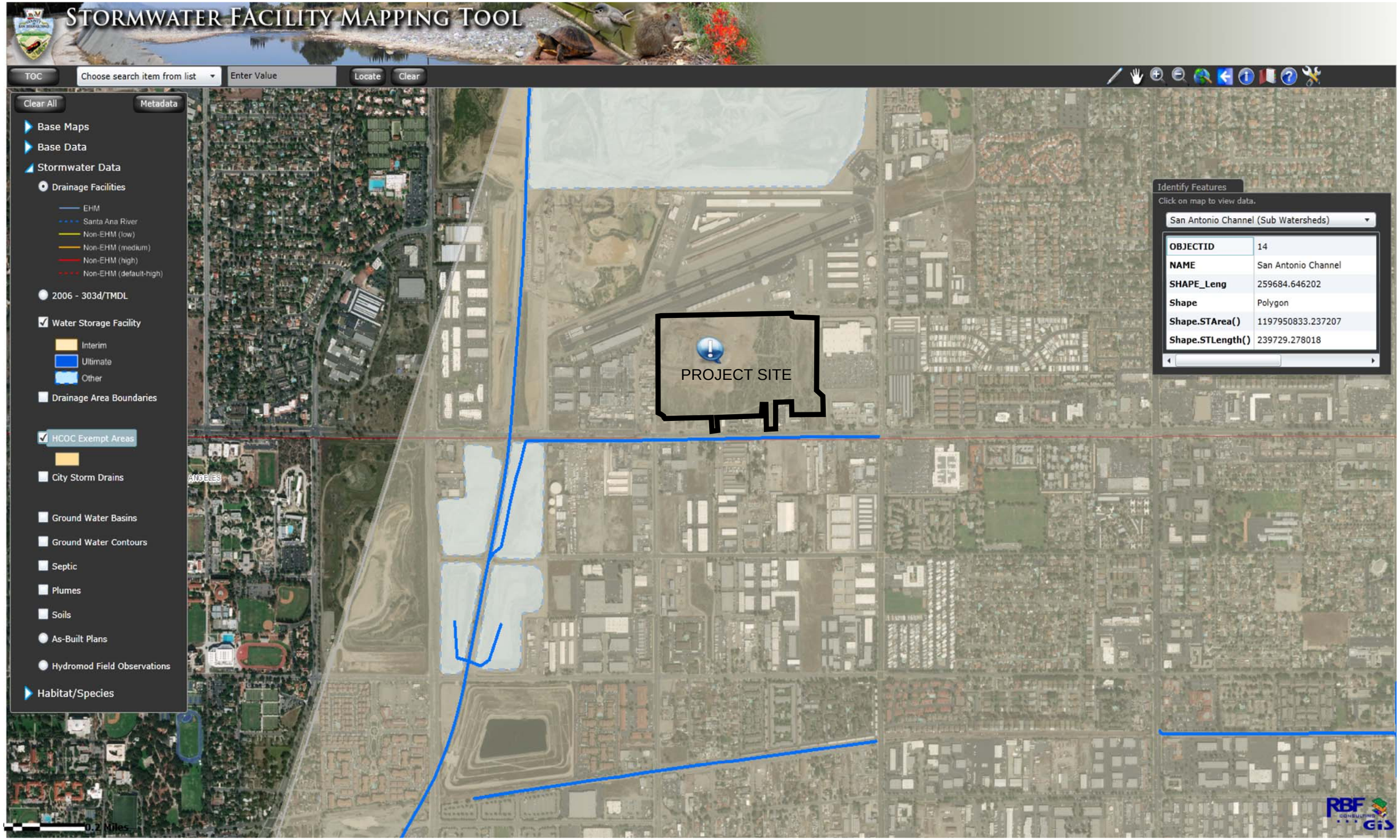
***Construction quantities are approximate and should be verified upon final design*

System Layout



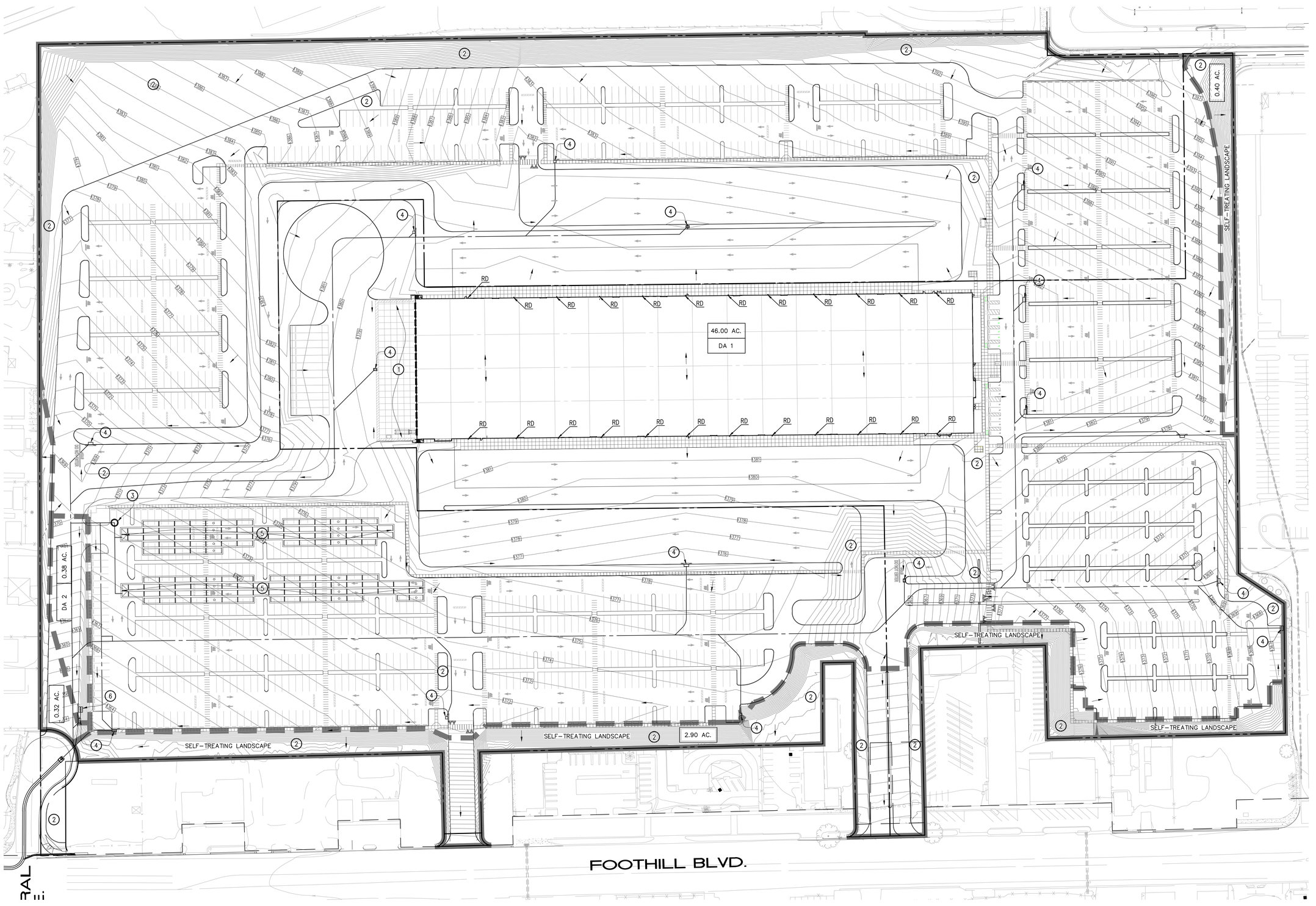
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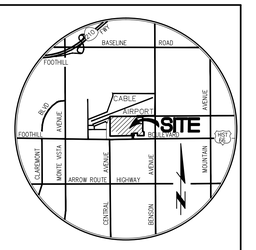
Attachment C
WQMP Site Map



HCOC EXEMPT AREAS MAP


I-210 FOOTHILL FREEWAY
16TH STREET
MOUNTAIN AVENUE
PROJECT SITE
FOOTHILL BOULEVARD
CLAREMONT BOULEVARD
CENTRAL AVENUE
BENSON AVENUE
ARROW ROUTE
Base Line Rd
E Baseline Rd
W 16th St
Lander Cir
Radcliffe Dr
Scottsbluff Dr
Black Hills Dr
Aurora Dr
Rockford Dr
Lee Ave
Blaisdell Dr
E Foothill Blvd
Platt Blvd
E 9th St
E 8th St
E 6th St
E 4th St
Harwood Pl
Blanchard Pl
E 1st St
Richton St
Aviation Dr
Dewey Pl
W 11th St
Drake Ave
Huntington Dr
W Arrow Route
Corte Santa Fe
Randy St
Norwood Ct
W Aster St
W Coronado St
W Westridge Ct
W Notre Dame St
Diana Ct
Nancy Ct
W Sandra Ct
Purdue St
W 13th St
W Pine St
Golden Rain St
Orchid Ct
Cedar Ct
Linden Ct
W Winn Dr
W Arrow Hwy
Alpine St
Pacific Electric Bike Trail
Coverdale Ave
Glenwood Way
Fairwood Way
Coolcrest Ave
N Albright Ave
N Vallejo Way
N Erin Ave
N Kelly Ave
Spruce Ave
N Magnolia Ave
Silverwood Ave
N Mountain Ave
N Benson Ave
S Loma Pl
S Sierra Pl
Monte Vista Ave
Claremont Blvd
Corporate Center Dr
Amherst St
N Amherst Ave
Grand Ave
Kenoga Ave
Trinity
Lancaster
Andover Dr
Cll Del S
Carmel Cir
N Mayflower Ave
Sunset Ln
Cathedral Dr
Marjorie Ave
Andrew Dr
Berry Ct
Loma Pl
Central Ave
Harvard Dr
Aviation Dr
Fairwood Way
Glenwood Way
Coverdale Ave
Carmel Cir
N Mayflower Ave
Sunset Ln
Cathedral Dr
Marjorie Ave
Andrew Dr
Berry Ct
Loma Pl
Drake Ave
Huntington Dr
Corte Santa Fe
Randy St
Norwood Ct
Silverwood Ave
Spruce Ave
N Magnolia Ave
N Mountain Ave
N Benson Ave
S Loma Pl
S Sierra Pl
Monte Vista Ave
Claremont Blvd
Corporate Center Dr
Amherst St
N Amherst Ave
Grand Ave
Kenoga Ave
Trinity
Lancaster
Andover Dr
Cll Del S





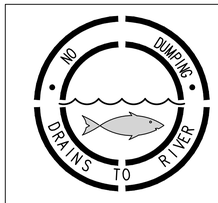
VICINITY MAP
N.T.S.

LEGEND

1. ABOVEGROUND LOADING DOCK
2. LANDSCAPE/IRRIGATION
3. HYDRODYNAMIC SEPARATOR
4. STORM DRAIN SYSTEM SIGNS "NO DUMPING-DRAINS TO RIVER"
5. 96" PERFORATED CMP RETENTION SYSTEM
6. FLOW-BASED BIOFILTRATION SYSTEM
7. TRASH ENCLOSURE
8. NOT USED

NOTES:
RD ROOF DRAIN
BOUNDARY
DRAINAGE AREAS
FLOW DIRECTION

BMP SD-13:



SAMPLE STENCIL TO BE USED NEAR GRATE AND CURB OPENING INLETS

SAMPLE CATCH BASIN STENCIL

0 40 80 160 240
SCALE: 1"=80'

DA	AREA (AC)	VOLUME REQUIRED (CF)	VOLUME PROVIDED (CF)	FLOWRATE REQUIRED (CFS)	FLOWRATE PROVIDED (CFS)
1	46.00	245,182	246,066	--	--
2	0.38	---	---	0.11	0.1111

Last Update:11/21/19
O:\3600-3699\3651\3651BMPSITEMAP.dwg

CITY OF UPLAND
PUBLIC WORKS DEPARTMENT

WQMP SITE MAP

BRIDGE UPLAND
NE FOOTHILL BLVD AND CENTRAL AVE

3651/1 OF 2 SHEET

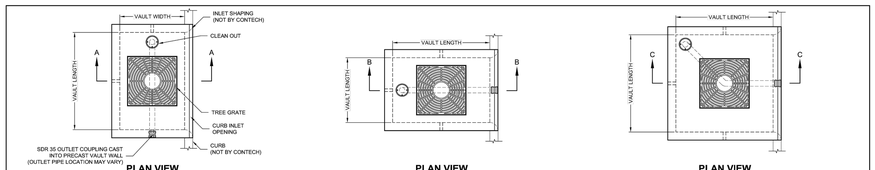
PREPARED FOR:
BRIDGE DEVELOPMENT PARTNERS
1600 E. FRANKLIN AVENUE, SUITE D
EL SEGUNDO, CA 90245
PHONE: (213) 425-2309

PREPARED BY:
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH:(714)521-4811 FAX(714)521-4173

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Checked by _____ Date _____
Designed by _____ Date _____
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Approved by _____ Date _____
Public Works Director _____ R.C.E. _____

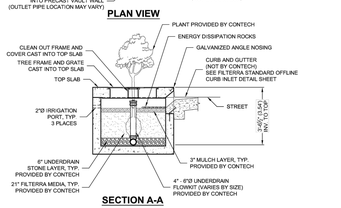
Sheet 1 of 2 Sheets



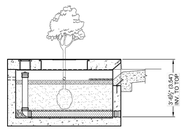
PLAN VIEW

PLAN VIEW

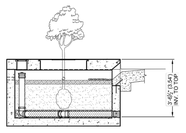
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

FT LONG SIDE INLET CONFIGURATION

DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (L x W)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0604	N/A CA	6 x 4	6 x 4	4" SDR 35	(1) 3' x 3'
FT06504	CA ONLY	6.5 x 4	6.5 x 4	4" SDR 35	(1) 3' x 3'
FT078645	MID-ATL ONLY	7.83 x 4.5	7.83 x 4.5	4" SDR 35	(1) 3' x 3'
FT0804	N/A MID-ATL	8 x 4	8 x 4	4" SDR 35	(1) 3' x 3'
FT0808	ALL	8 x 8	8 x 8	4" SDR 35	(1) 4' x 4'
FT1006	ALL	10 x 6	10 x 6	6" SDR 35	(1) 4' x 4'
FT1206	ALL	12 x 6	12 x 6	6" SDR 35	(2) 4' x 4'
FT1307	ALL	13 x 7	13 x 7	6" SDR 35	(2) 4' x 4'
FT1408	CALL CONTECH	14 x 8	14 x 8	6" SDR 35	(2) 4' x 4'
FT1608	CALL CONTECH	16 x 8	16 x 8	6" SDR 35	(2) 4' x 4'
FT1808	CALL CONTECH	18 x 8	18 x 8	6" SDR 35	(2) 4' x 4'
FT2008	CALL CONTECH	20 x 8	20 x 8	6" SDR 35	(3) 4' x 4'
FT2208	CALL CONTECH	22 x 8	22 x 8	6" SDR 35	(3) 4' x 4'

N/A = NOT AVAILABLE

INTERNAL PIPE CONFIGURATION MAY VARY DEPENDING UPON OUTLET LOCATION.

FT SHORT SIDE INLET CONFIGURATION

DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0406	N/A CA	4 x 6	4 x 6	4" SDR 35	(1) 3' x 3'
FT04065	CA ONLY	4 x 6.5	4 x 6.5	4" SDR 35	(1) 3' x 3'
FT0408	N/A MID-ATL	4 x 8	4 x 8	4" SDR 35	(1) 3' x 3'
FT040578	MID-ATL ONLY	4.5 x 7.83	4.5 x 7.83	4" SDR 35	(1) 3' x 3'
FT0808	ALL	6 x 8	6 x 8	4" SDR 35	(1) 4' x 4'
FT0610	ALL	6 x 10	6 x 10	6" SDR 35	(1) 4' x 4'
FT0812	ALL	6 x 12	6 x 12	6" SDR 35	(2) 4' x 4'
FT0713	ALL	7 x 13	7 x 13	6" SDR 35	(2) 4' x 4'

N/A = NOT AVAILABLE

FT SQUARE INLET CONFIGURATION

DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0404	ALL	4 x 4	4 x 4	4" SDR 35	(1) 2' x 2'
FT0606	ALL	6 x 6	6 x 6	4" SDR 35	(1) 3' x 3'

N/A = NOT AVAILABLE

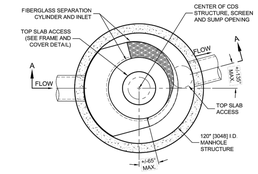
filterra

FILTERRA® IS A REGISTERED TRADEMARK OF CONTECH ENGINEERED SOLUTIONS LLC OR ITS AFFILIATES IN THE UNITED STATES AND/OR OTHER COUNTRIES.

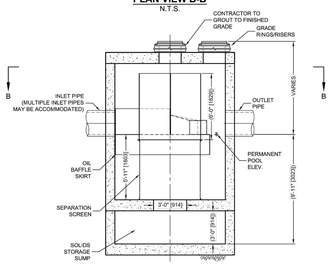
The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by Contech Engineered Solutions LLC or one of its affiliated companies ("Contech"). Neither this drawing, nor any part thereof, may be used, reproduced or modified in any manner or for any purpose without the prior written consent of Contech. Submission of this drawing for approval constitutes acceptance by the party receiving it of the terms of this boilerplate. Failure to sign and return one copy of this drawing to Contech will constitute acceptance by omission and all terms stated herein. Any unauthorized use, reuse or alteration of this drawing may be undertaken without liability to Contech. Contech accepts no liability for changes made on drawings. Information in Metric/Modified Imperial Units.

CONTECH® ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA OFFLINE (FT) CONFIGURATION DETAIL



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.

THE CDS® TECHNOLOGY IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,498,323; 5,725,760; 5,753,116; 6,027,639; 6,641,720; 6,511,595; 6,649,048; 6,924,000; 7,425,262; 7,470,365; 7,566,402; 7,686,951; 7,905,367; 8,287,728; 8,741,153; 8,802,000; 8,858,802; 9,266,040; 9,504,939; 9,861,919; 9,861,920; 9,861,921; 9,861,922; 9,861,923; 9,861,924; 9,861,925; 9,861,926; 9,861,927; 9,861,928; 9,862,620; 9,862,621; 9,862,622; 9,862,623; 9,862,624; 9,862,625; 9,862,626; 9,862,627; 9,862,628; 9,862,629; 9,862,630; 9,862,631; 9,862,632; 9,862,633; 9,862,634; 9,862,635; 9,862,636; 9,862,637; 9,862,638; 9,862,639; 9,862,640; 9,862,641; 9,862,642; 9,862,643; 9,862,644; 9,862,645; 9,862,646; 9,862,647; 9,862,648; 9,862,649; 9,862,650; 9,862,651; 9,862,652; 9,862,653; 9,862,654; 9,862,655; 9,862,656; 9,862,657; 9,862,658; 9,862,659;

Attachment D
WQMP and Stormwater BMP Transfer, Access and Maintenance Agreement

RECORDING REQUESTED BY:
City of Upland, California
Department of Public Works

AND WHEN RECORDED MAIL TO:
City of Upland
City Clerk's Office
460 N. Euclid Avenue
Upland, CA 91785

SPACE ABOVE THIS LINE FOR RECORDER'S USE

COVENANT AND AGREEMENT REGARDING WATER QUALITY MANAGEMENT PLAN AND STORMWATER BEST MANAGEMENT PRACTICES TRANSFER, ACCESS AND MAINTENANCE

THIS PAGE ADDED TO PROVIDE ADEQUATE SPACE FOR RECORDING INFORMATION (Additional Recording Fees Apply)

Covenant and Agreement Regarding Water Quality Management Plan and Storm Water Best Management Practices Transfer, Access and Maintenance

OWNER NAME: _____

PROPERTY ADDRESS: _____

_____

APN: _____

THIS AGREEMENT is made and entered into in

_____ ,California, this _____ day of

_____ , by and between

_____ , herein after referred to as

"Owner" and the CITY OF UPLAND, a municipal corporation, located in the County of San Bernardino, State of California hereinafter referred to as "City";

WHEREAS, the Owner owns real property ("Property") in the City, County of San Bernardino, State of California, more specifically described in Exhibit "A" and depicted in Exhibit "B", each of which exhibits is attached hereto and incorporated herein by this reference; and

WHEREAS, at the time of initial approval of development project known as

_____ within the Property described herein, the City required the project to employ Best Management Practices, hereinafter referred to as "BMPs," to minimize pollutants in urban runoff; and

WHEREAS, the Owner has chosen to install and/or implement BMPs as described in the Water Quality Management Plan, on file with the City, hereinafter referred to as "WQMP", to minimize pollutants in urban runoff and to minimize other adverse impacts of urban runoff; and

WHEREAS, said WQMP has been certified by the Owner, and reviewed and approved by the City; and

WHEREAS, said BMPs, with installation and/or implementation on private property and draining only private property, are part of a private facility with all maintenance or replacement, therefore, the sole responsibility of the Owner in accordance with the terms of this Agreement; and

WHEREAS, the Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of all BMPs in the WQMP and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining to confined space and waste disposal methods, in effect at the time such maintenance occurs.

NOW THEREFORE, it is mutually stipulated and agreed as follows:

1. Owner shall comply with the WQMP.

2. All maintenance or replacement of BMPs proposed as part of the WQMP are the sole responsibility of the Owner in accordance with the terms of this Agreement.

3. Owner hereby provides the City of Upland's designee complete access, of any duration, to the BMPs and their immediate vicinity at any time, upon reasonable notice, or in the event of emergency, as determined by the City's Public Works Director, no advance notice, for the purpose of inspection, sampling, testing of the Device, and in case of emergency, to undertake all necessary repairs or other preventative measures at owner's expense as provided in paragraph 5 below. City shall make every effort at all times to minimize or avoid interference with Owner's use of the Property. Denial of access to any premises or facility that contain WQMP features is a breach of this Agreement and may also be a violation of the City's storm water drainage management regulations. If there is a reasonable cause to believe that an illicit discharge or breach of this Agreement is occurring on the premises then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction in addition to other enforcement actions. Owner recognizes that the City may perform inspections of BMPs. Owner or Owner's successors or assigns shall pay the City for all costs incurred by the City for inspections, sampling, testing of BMPs within thirty (30) calendar days of the City's invoice.

4. Owner shall use its best efforts diligently to maintain all BMPs in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of any material(s) from the BMPs and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested from time to time by the City, the Owner shall provide the City with documentation identifying the material(s) removed, the quantity, and disposal destination.

5. In the event Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) days of being given written notice by the City, the City is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense to the Owner or Owner's successors or assigns, including administrative costs, attorneys' fees and interest thereon at the maximum rate authorized by the Civil Code from the date of

the notice of expense until paid in full. Owner or Owner's successors or assigns shall pay the City within thirty (30) calendar days of the City invoice.

5. (a) To compensate the City for expenses incurred by the City to perform the aforementioned maintenance in event that Owner, its successors or assigns, fails to satisfactorily perform the necessary maintenance, which causes the City to perform it instead, Owner, its successors or assigns, is required to make a minimum cash deposit of $10,000 with the City prior to issuance of permit(s) for precise or final grading. In such event that causes the City to use Owner deposit to cover for maintenance expenses, upon notice by the City, Owner, its heirs, successors, executors, administrators and assigns, shall replenish the cash deposit to meet the said minimum deposit requirement within thirty (30) calendar days of the City notice.

5. (b) Depending on the maintenance expense, including administrative costs, estimated or incurred by the City to perform the necessary maintenance contemplated by this Agreement, the City may require Owner to post additional security in form of bond(s) to make the combination of minimum cash deposit and security bonds to be at least of one hundred fifty percent (150%) of the maintenance expense. The additional bond(s) security period is for a time period determined by the City to guarantee the performance of the obligations stated herein. Should Owner fails to perform the obligations under the Agreement, the City can, in the case of a cash bond, act for Owner, using the proceeds from it, or in the case of a surety bond, require the surety(ies) to perform the obligations of this Agreement.

5. (c) The City agrees, from time to time, within ten (10) City business days after request of Owner, to execute and send to Owner, or Owner's designee, an estoppel certificate requested by Owner, stating that this Agreement is in full force and effect, and that Owner is not in default hereunder with regard to any maintenance or payment obligations (or specifying in detail the nature of Owner's default). Owner shall pay all costs and expenses incurred by the City in its investigation of whether to issue an estoppel certificate within thirty (30) calendar days after receipt of the City invoice and prior to the City's issuance of such certificate. Where the City cannot issue an estoppel certificate, Owner shall pay the City within thirty (30) calendar days of receipt of the City's invoice in association with its investigation of whether to issue an estoppel certificate.

6. The City may require the Owner to post security in form and for a time period satisfactory to the city to guarantee the performance of the obligations state herein. Should the Owner fail to perform the obligations under the Agreement, the City may, in case of a cash bond, act for the Owner using the proceeds from it, or in the case of a surety bond, require the sureties to perform the obligations of the Agreement. As additional remedies, the City may file a property lien from the County Recorder, or the Director may withdraw any previous storm water-related approval with respect to the property on which BMPs have been installed and/or implemented until such time as Owner repays to City its reasonable costs incurred in accordance with paragraph 5 above.

7. Owner shall not change any BMPs identified in the WQMP without an amendment to this Agreement approved by authorized representatives of both the City and the Owner.

8. The City and Owner shall comply with all applicable laws, ordinances, rules, regulations, court orders and government agency orders now or hereinafter in effect in carrying out the terms of this Agreement. If a provision of this Agreement is terminated or held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall remain in full effect.

9. This agreement shall be recorded in the Office of the Recorder of San Bernardino County, California, at the expense of the Owner and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth, and also a lien in such amount as will fully reimburse the City, including interest as herein above set forth, subject to foreclosure in event of default in payment.

10. In event of legal action occasioned by any default or action of the Owner, or its successors or assigns, then the Owner and its successors or assigns agree(s) to pay all costs incurred by the City in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

11. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien there against.

12. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto. The term "Owner" shall include not only the present Owner, but also its heirs, successors, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the City at the same time such notice is provided to the successor.

13. Time is of the essence in the performance of this Agreement.

14. Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two (72) hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

IF TO CITY:

Director of Public Works

City of Upland

460 N. Euclid Avenue

Upland, CA 91785

IF TO OWNER:

IN WITNESS THEREOF, the parties hereto have affixed their signatures as of the date first written above.

OWNER:

Company/Trust

Signature

Title

Print Name

Date

OWNER:

Company/Trust

Signature

Title

Print Name

Date

NOTARIES ON FOLLOWING PAGE(S)

Notary acknowledgement is required for recordation (attach appropriate acknowledgement).

ACKNOWLEDGEMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
)
COUNTY OF _____)

On _____ before me, _____,
Notary Public, personally appeared _____,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

IN WITNESS WHEREOF, the undersigned have executed this Agreement on the date first hereinabove written.

CITY:

CITY OF UPLAND

_____
Debbie Stone, Mayor

ATTEST:

_____
Keri Johnson, City Clerk

APPROVED:

_____
James L. Markman, City Attorney

EXHIBIT A
(Legal Description)

EXHIBIT B
(Map/Illustration)

Attachment E
Educational Materials

Regulatory information

The Federal Water Pollution Control Act prohibits the discharge of any pollutant to navigable waters from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The 1987 passage of the Water Quality Act established NPDES permit requirements for discharges of storm water. The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

Industrial facilities and construction sites are regulated by the Regional Water Quality Control Board and State Water Resources Control Board, through general storm water permits. Most industrial, manufacturing or transportation businesses that store materials, products or equipment outdoors, or conduct vehicle washing or process operations outdoors are required to obtain coverage under the State Water Resources Control Board's General Industrial Activities Stormwater Permit. For more information about this permit, visit www.swrcb.ca.gov/stormwtr/industrial.html or contact your local storm water coordinator.

If your business conducts construction activities, including clearing, grading, stockpiling or excavation that results in soil disturbances of at least one acre, you are subject to the State Water Resources Control Board's General Construction Activities Stormwater Permit. To find out more about this storm water permit for construction, visit: www.swrcb.ca.gov/stormwtr/construction.html.

Cities and counties are regulated through permits issued by the Regional Boards. Since 1990, operators of large storm drain systems such as San Bernardino County's have been required to:

- Develop a storm water management program designed to prevent harmful pollutants from being dumped or washed by storm water runoff, into the storm water system, then discharged into local water bodies; and
- Obtain a National Pollutant Discharge Elimination System (NPDES) permit.

The NPDES permit programs in California are administered by the State Water Resources Control Board and by nine regional boards that issue NPDES permits and enforce regulations within their respective region.

San Bernardino County lies within the jurisdiction of the Santa Ana Region. This regional board issues a permit to the San Bernardino County Permittees, which includes the County of San Bernardino, San Bernardino County Flood Control District and incorporated cities of San Bernardino County. Since the program's inception, the County of San Bernardino has served as the principal permittee.

SAN BERNARDINO COUNTY
STORMWATER POLLUTION PREVENTION

Documents & reports:

The following documents describe the regulations and programs for water quality in San Bernardino County. You can review the latest Basin Plan, National Pollutant Discharge Elimination System (NPDES) Permit and Drainage Area Management Plan (DAMP).

- **Basin Plans:** The document for each region of the State Water Quality Board's jurisdiction, including Santa Ana, is the Water Quality Control Plan, commonly referred to as the Basin Plan. It is the foundation for the regulatory programs of each regional board. The Basin Plan documents the beneficial uses of the region's ground and surface waters, existing water quality conditions, problems, and goals, and actions by the regional board and others that are necessary to achieve and maintain water quality standards.

▶Water Control Plan for the Santa Ana River Basin

- **Municipal National Pollutant Discharge Elimination System (NPDES) Permits:** The permits of each region outline additional steps for a storm water management program and specify requirements to help protect the beneficial uses of the receiving waters. They require permittees to develop and implement Best Management Practices (BMPs) to control/reduce the discharge of pollutants to waters of the United States to the maximum extent practicable (MEP).

  ▶Santa Ana Regional Water Quality Control Board Municipal NPDES Permit Order No. R8-2002-0012

- **Report of Waste Discharge:** The Report of Waste Discharge (ROWD) describes the San Bernardino Stormwater Program, implemented by the County and cities to comply with their jointly held stormwater permit. It is the principle policy and guidance document for the NPDES Stormwater Program.

  ▶Report of Waste Discharge 2000

- **San Bernardino County Storm Water Program Annual Status Report:** The Annual Status Report is a requirement of the NPDES permit for submittal to the Regional Boards and United States Environmental Protection Agency. The report presents an analysis and assessment of permit compliance activities.

▶Annual report - will be posted soon

For more information about how you can prevent stormwater pollution:

www.sbcountystormwater.org

SAN BERNARDINO COUNTY
STORMWATER POLLUTION PREVENTION

Commercial landscape maintenance:

Yard waste, sediments and toxic lawn and garden chemicals used in commercial landscape maintenance often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates local waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution, protect public health and avoid fines or legal action.

- **Recycle Yard Waste:** Recycle leaves, grass clippings and other yard waste. Do not blow, sweep, rake or hose yard waste into the street. Let your customers know about grass cycling --the natural recycling of grass by leaving clippings on the lawn when mowing instead of using a grass catcher. Grass clippings will quickly decompose, returning valuable nutrients to the soil. You can get more information at www.ciwmb.ca.gov/Organics.
- **Use Fertilizers, Herbicides & Pesticides Safely:** Fertilizers, herbicides and pesticides are often carried into the storm drain system by sprinkler runoff. Use natural, non-toxic alternatives to traditional garden chemicals. If you must use chemical fertilizers, herbicides, or pesticides spot apply rather than blanketing entire areas, avoid applying near curbs and driveways and never apply before a rain.
- **Recycle Hazardous Waste:** Pesticides, fertilizers, herbicides and motor oil contaminate landfills and should be disposed of through a Hazardous Waste Facility. For information on proper disposal, call (909) 386-8401.
- **Use Water Wisely:** Conserve water and prevent runoff by controlling the amount of water and direction of sprinklers. Sprinklers should be on long enough to allow water to soak into the ground but not so long as to cause runoff. Periodically inspect, fix leaks and realign sprinkler heads.
- **Planting:** Plant native vegetation to reduce the need of water, fertilizers, herbicides and pesticides.
- **Prevent Erosion:** Erosion washes sediments, debris and toxic runoff into the storm drain system, polluting waterways. Prevent erosion and sediment runoff by using ground cover, berms and vegetation down-slope to capture runoff. Avoid excavation or grading during wet weather.
- **Store Materials Safely:** Keep landscaping materials and debris away from the street, gutter and storm drains. On-site stockpiles of materials should be covered with plastic sheeting to protect from rain, wind and runoff.





For more information about how you can prevent stormwater pollution:

www.sbcountystormwater.org

SAN BERNARDINO COUNTY
STORMWATER POLLUTION PREVENTION

Construction & development:

Soil, cement wash, asphalt, oil and other hazardous debris from construction sites often make their way into the San Bernardino County storm drain system, and flow untreated into local waterways. Follow these best management practices to prevent pollution, protect public health and avoid fines or legal action.



- **Store Materials Safely:** Keep construction materials and debris away from the street, gutter and storm drains. Cover exposed stockpiles of soil, sand or gravel and excavated material with plastic sheeting, protected from rain, wind and runoff.
- **Preventing Erosion:** Avoid excavation or grading during wet weather. Plant temporary vegetation or add hydro mulch on slopes where construction is not immediately planned, and permanent vegetation once excavation and grading are complete. Construct diversion dikes to channel runoff to a detention basin and around the construction site. Use gravel approaches where truck traffic is frequent to reduce soil compaction and limit the tracking of sediment into the streets. For more information on erosion control, call (909) 799-7407.



- **Cleaning & Preventing Spills:** Use a drip pan and funnel when draining or pouring fluids. Sweep up dry spills, instead of hosing. Be ready for spills by preparing and using spill containment and cleanup kits that include safety equipment and dry cleanup materials such as kitty litter or sawdust. To report serious spills, call 911.
- **Maintaining Vehicles & Equipment:** Maintain and refuel vehicles and equipment at a single location on-site, away from the street, gutter and storm drains. Perform major equipment repairs and washings off-site. Inspect vehicles and equipment frequently for leaks, and prevent leaks from stored vehicles by draining gas, hydraulic oil, transmission, and brake and radiator fluids.
- **Ordering Materials & Recycling Waste:** Reduce waste by ordering only the amounts of materials needed for the job. Use recycled or recyclable materials whenever possible. You can recycle broken asphalt, concrete, wood, and cleared vegetation. Dispose of hazardous materials through a hazardous waste hauler or other means in accordance with the construction permit. Non-recyclable materials should be taken to a landfill or disposed of as hazardous waste. For recycling and disposal information, call (909) 386-8401.
- **Concrete and mortar application:** Never dispose of cement washout into driveways, streets, gutters or drainage ditches. Wash concrete mixers and equipment only in specified washout areas, where the water flows into lined containment ponds. Cement wash water can be recycled by pumping it back into cement mixers for reuse.

For more information about how you can prevent stormwater pollution:

www.sbcountystormwater.org

SAN BERNARDINO COUNTY
STORMWATER POLLUTION PREVENTION

General industrial & manufacturing businesses:

If you own, manage or help operate a business, especially an industrial or manufacturing company, you can help reduce storm water pollution. From environmentally friendly cleaning and maintenance activities, to recycling hazardous waste materials, businesses can do a lot to prevent storm water pollution.

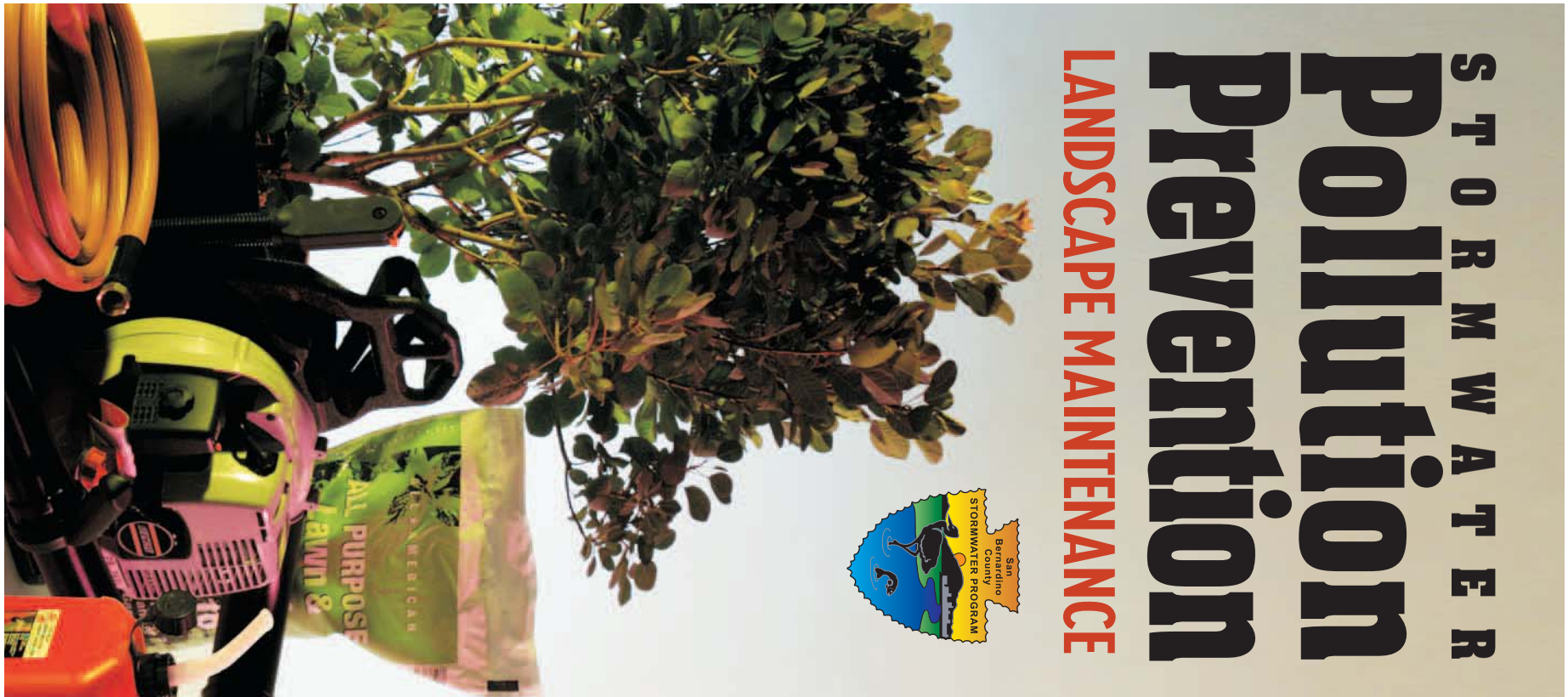
- Review your cleaning and maintenance activities to look for ways to reduce runoff into the storm drain system, especially in outdoor areas like parking lots, loading docks and maintenance yards. Keep trash enclosure swept and trash bin lids closed.
- Train employees to wash vehicles and equipment indoors in a wash rack that is connected to the sanitary sewer or off-site at a commercial wash facility. Train janitorial staff to dispose of floor cleaning water in the sewer and not into the parking lot. Make sure that cooling towers, boilers, compressors, water softeners and other process equipment are connected to the sanitary sewer and do not discharge wastewater into the parking lot.
- If you use hazardous materials in your everyday business, like ink and solvents for commercial printing, or polishes and chemicals for car detailing or manufacturing after-market accessories, do not put these hazardous materials in the trash or pour them into the gutter. Take them to be recycled safely. Store chemicals, wastes, raw materials and contaminated equipment indoors or in a covered, spill contained area, to prevent exposure of these materials to storm water. For information on proper hazardous waste disposal, call (909)386-8401.
- Take advantage of less-toxic alternatives to dangerous chemicals. From detergents to drain openers, there are a lot of ways to get the same or better result without having to rely toxic substances.
- Looking for raw materials? San Bernardino County Materials Exchange Program, or SBCoMax is a partnership between the County and the California Integrated Waste Management Board, for businesses to provide used but usable materials to those interested in obtaining them. The program helps divert used materials from landfills, saves resources and can save you money.

For more information about how you can prevent stormwater pollution:

www.sbcountystormwater.org

San Bernardino County Stormwater Program
825 East Third Street · Room 127
San Bernardino, CA 94215-0835

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STORMWATER Pollution Prevention

Stormwater Management Practices for Commercial Landscape Maintenance

Yard waste, sediments, and toxic lawn/garden chemicals used in commercial landscape maintenance often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates local waterways, making them unsafe for people and wildlife. Following these best management practices will prevent pollution, comply with regulations and protect public health.

Recycle Yard Waste

Recycle leaves, grass clippings and other yard waste. Do not blow, sweep, rake or hose yard waste into the street. Try grasscycling - the natural recycling of grass by leaving clippings on the lawn when mowing. Grass clippings will quickly decompose, returning valuable nutrients to the soil. Further information can be obtained at www.ciwmb.ca.gov/Organics.

Use Fertilizers, Herbicides and Pesticides Safely

Fertilizers, herbicides and pesticides are often carried into the storm drain system by sprinkler runoff. Use of natural, non-toxic alternatives to the traditional fertilizers, herbicides and pesticides is highly recommended. If you must use chemical fertilizers, herbicides, or pesticides:



- Spot apply pesticides and herbicides, rather than blanketing entire areas.
- Avoid applying near curbs and driveways, and never apply before a rain.
- Apply fertilizers as needed, when plants can best use it, and when the potential for it being carried away by runoff is low.

Recycle Hazardous Waste

Pesticides, fertilizers, herbicides and motor oil contaminate landfills and should be disposed of through a Hazardous Waste Facility, which accepts these types of materials. For information on proper disposal call, (909) 386-8401.

Use Water Wisely

Conserve water and prevent runoff by controlling the amount of water and direction of sprinklers. Sprinklers should be on long enough to allow water to soak into the ground but not so long as to cause runoff. Periodically inspect, fix leaks and realign sprinkler heads. Plant native vegetation to reduce the need of water, fertilizers, herbicides, and pesticides.

Prevent Erosion

Erosion washes sediments, debris and toxic runoff into the storm drain system, polluting waterways.

- Prevent erosion and sediment runoff by using ground cover, berms and vegetation down-slope to capture runoff.
- Avoid excavation or grading during wet weather.

Store Materials Safely

Keep landscaping materials and debris away from the street, gutter and storm drains. On-site stockpiles of materials must be covered with plastic sheeting to protect from rain, wind and runoff.

To report illegal dumping call

(877) WASTE18

or visit our website:

sbcountystormwater.org

San Bernardino County STORMWATER PROGRAM

STORMWATER Pollution Prevention

FRESH CONCRETE & MORTAR APPLICATION

Cement wash, sediment, vehicle fluids, dust and hazardous debris from construction sites often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution and protect public health.



Storing Materials

Keep construction materials and debris away from the street, gutter and storm drains. Secure open bags of cement and cover exposed stockpiles of soil, sand or gravel and excavated material with plastic sheeting, protected from rain, wind and runoff.



Ordering Materials & Recycling Waste

Reduce waste by ordering only the amounts of materials needed for the job. Use recycled or recyclable materials whenever possible. When breaking up paving, recycle the pieces at a crushing company. You can also recycle broken asphalt, concrete, wood, and cleared vegetation. Non-recyclable materials should be taken to a landfill or disposed of as hazardous waste. Call (909) 386-8401 for recycling and disposal information.



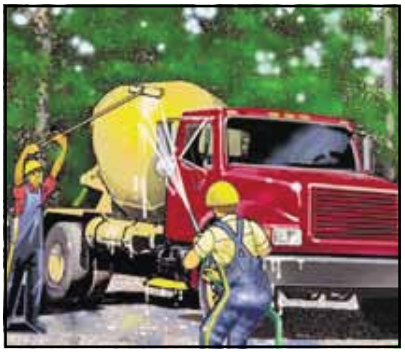
During Construction

Schedule excavation and grading during dry weather. Prevent mortar and cement from entering the street and storm drains by placing erosion controls. Setup small mixers on tarps or drop cloths, for easy cleanup of debris. Never bury waste material. Recycle or dispose of it as hazardous waste.



Cleaning Up

Wash concrete dust onto designated dirt areas, not down driveways or into the street or storm drains. Wash out concrete mixers and equipment in specified washout areas, where water can flow into a containment pond. Cement washwater can be recycled by pumping it back into cement mixers for reuse. Never dispose of cement washout into driveways, streets, gutters, storm drains or drainage ditches.



To report illegal dumping call

(877) WASTE18

sbcountystormwater.org

San Bernardino County STORMWATER PROGRAM

Prevención de Contaminación del Desagüe

APLICANDO CONCRETO FRESCO

Cemento, grava, asfalto y liquidos de auto, tierra y residuos peligrosos de lugares de concreto fresco por llegar a los drenajes del Condado de San Bernardino y terminando en el Rio de Santa Ana. Esto contamina el agua que tomamos, haciendola peligorsa para la gente y la vida salvaje. Sigue estas practicas para prevenir la contaminación y protejer la salud publica.



Almacenando Materiales
Manten materiales de construcción y residuos lejos de las calles, coladeras y desagües. Manten tapados los bultos de arena, grava y herramientas para excavar cuviertos con algun plastico para protejerlos de la lluvia, el aire y el desagüe.



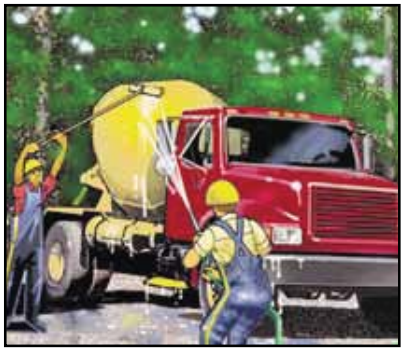
Ordenando Materiales & Reciclando
Reduce la cantidad al ordenar el material, solo ordena lo necesario. Usa materiales recicables cuando sea posible. Cuando estes rompiendo el pavimento, recicla los pedasos en la compañia demolidora. Se puede reciclar el aspfalto, concreto, madera y la vegetacion. Materiales no reciclados se deverian llevar a lugares de desechos peligrosos. llama al (909) 386-8401 para más información.



Durante Construcción
Planea las excavaciones durante clima seco. No dejes que el cemento o la cal lleguen hasta las calles o drenajes, evita esto con plantas temporales para detener el desagüe. Cubre las maquinas de mesclar con alguna garra para que se facilite la limpieza de residuos. Nunca entierres los desechos. Recicla todos los desechos peligrosos.



Limpiando
Lava la cal en un area designada, no la eches hacia la cochera o en la calle. Lava las mescladoras y las herramientas en un lugar especifico, donde el agua llegue a un contenedor. El agua de cemento se puede reciclar volviendola a usar en las mescladoras. Nunca dejes el agua de cemento que corra hacia las calles, alcantarillas o drenajes.



Para reportar actividades ilegales llamar al:

(877) WASTE18
sbcountystormwater.org

San Bernardino County
STORMWATER PROGRAM

STORMWATER Pollution Prevention

CONSTRUCTION

Cement wash, sediment, vehicle fluids, dust and hazardous debris from construction sites often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution and protect public health.



Store Materials Safely
Keep construction materials and debris away from the street, gutter and storm drains. Cover exposed stockpiles of soil, sand or gravel and excavated material with plastic sheeting, protected from rain, wind and runoff.



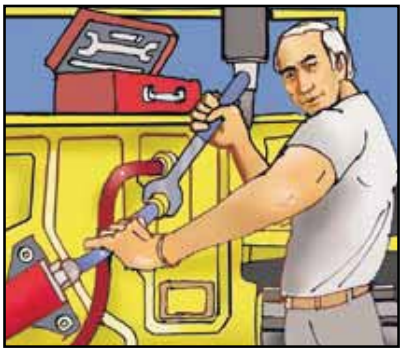
Ordering Materials & Recycling Waste
Reduce waste by ordering only the amounts of materials needed for the job. Use recycled or recyclable materials whenever possible. You can recycle broken asphalt, concrete, wood, and cleared vegetation. Non-recyclable materials should be taken to a landfill or disposed of as hazardous waste. For recycling and disposal information, call (909) 386-8401.



Cleaning & Preventing Spills
Use a drip pan and funnel when draining or pouring fluids. Sweep up dry spills, instead of hosing. Be ready for spills by preparing and using spill containment and cleanup kits that include safety equipment and dry cleanup materials such as kitty litter or sawdust. To report serious spills, call 911.



Preventing Erosion
Avoid excavation or grading during wet weather. Plant temporary vegetation or add hydromulch on slopes where construction is not immediately planned, and permanent vegetation once excavation and grading are complete. Construct diversion dikes to channel runoff to a detention basin and around the construction site. Channels can be lined with grass or roughened pavement to reduce runoff velocity.



Maintaining Vehicles & Equipment
Maintain and refuel vehicles and equipment at a single location on-site, away from the street, gutter and storm drains. Perform major equipment repairs and washings off-site. Inspect vehicles and equipment frequently for leaks, and prevent leaks from stored vehicles by draining gas, hydraulic oil, transmission, brake and radiator fluids.



To report illegal dumping call
(877) WASTE18
sbcountystormwater.org

San Bernardino County STORMWATER PROGRAM

Prevención de Contaminación del Desagüe

CONSTRUCCIÓN

Cemento, sedimentos, liquidos de auto, polvos y residuos peligrosos acaban por llegar a los drenajes del Condado de San Bernardino y terminando en el Rio de Santa Ana. Esto contamina el agua que tomamos, haciendola peligorsa para la gente y la vida salvaje. Sigue estas practicas para prevenir la contaminación y protejer la salud publica.



Almacenando Materiales Cuidadosamente

Manten materiales de construcción y residuos lejos de las calles, coladeras y desagües. Manten tapados los bultos de arena, grava y herramientas para excavar cuviertos con algun plastico para protejerlos de la lluvia, el aire y el desagüe.



Ordenando Materiales & Reciclando Desechos

Reduce la cantidad al ordenar el material, solo ordena lo necesario. Usa materiales que se puedan reciclar cuando sea posible. Se puede reciclar el aspfalto, concreto, madera y la vegetacion. Materiales no reciclados se deven llevar a lugares de desechos peligrosos. Para mas información llama al (909) 386-8401.



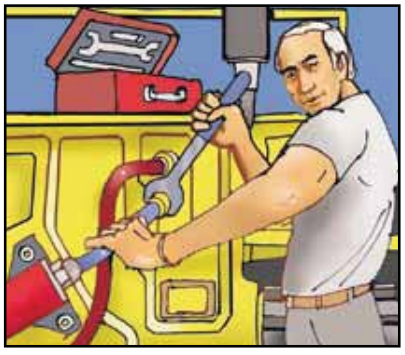
Limpiando & Previniendo Derrames

Usa siempre un enbudo al vaciar liquidos. Barre los derrames en ves de lavarlos con la manguera. Mantente siempre preparado para cualquier derrame, usa siempre las herramientas de seguridad al igual que materiales como, tierra para desechos de gato o aserrin. Para reportar derrames llama al 911.



Previniendo Erosiones

Evita las excavaciones durante lluvia. Planta vegetacion temporal en colinas donde aun no hay planes de construccion y planta vegetacion permanente al terminar las excavaciones. Construye algunos canales para el desagüe. Estos pueden ser creados con pasto y cemento para reducir la velocidad del desagüe.



Mantenimiento de Vehiculos & Herramientas

Has el mantenimiento y carga de vehiculos en el mismo lugar, lejos de la calle, las alcantarillas y los drenajes. Inspecciona los vehiculos y el equipo de cualquier goteadura y preveen goteaduras de autos que no se usan vasiandoles la gasolina, aceite de transmision, frenos y liquidos del radiador.



Para reportar actividades ilegales llamar al:

(877) WASTE18

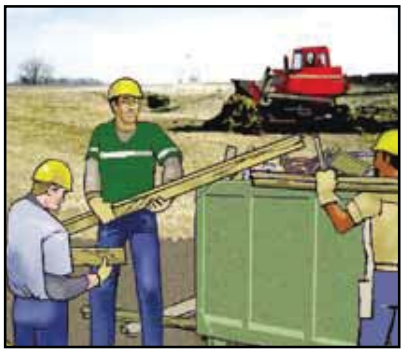
sbcountystormwater.org

San Bernardino County STORMWATER PROGRAM

STORMWATER Pollution Prevention

EXCAVATION AND GRADING

Sediment, cement wash, asphalt and vehicle fluids from soil excavation and grading often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution and protect public health.



Recycling Waste

Recycle broken asphalt, concrete, wood, and cleared vegetation whenever possible. Non-recyclable materials should be taken to a landfill or disposed of as hazardous waste. For recycling and disposal information, call (909) 386-8401.



Maintaining Vehicles & Equipment

Maintain and refuel vehicles and equipment at a single location on-site, away from the street, gutters and storm drains. Perform major equipment repairs and washings off-site. Inspect vehicles and equipment frequently for leaks. Use gravel approaches where truck traffic is heavy to reduce soil compaction and limit the tracking of sediment into the street.



Cleaning & Preventing Spills

Use a drip pan and funnel when draining or pouring fluids. Sweep up dry spills, instead of hosing. Be ready for spills by preparing and using spill containment and cleanup kits that include safety equipment and dry cleanup materials such as kitty litter or sawdust. Prevent leaks from stored vehicles by draining gas, hydraulic oil, transmission, brake and radiator fluids. To report serious spills, call 911.





Storing Materials

Keep construction materials and debris away from the street, gutter and storm drains. Cover exposed stockpiles of soil, sand or gravel and excavated material with plastic sheeting, protected from rain, wind and runoff.



Preventing Erosion

Avoid excavation or grading during wet weather. Plant temporary vegetation on slopes where construction is not immediately planned, and permanent vegetation once excavation and grading are complete. Construct diversion dikes to channel runoff. Channels can be lined with grass or roughened pavement to reduce runoff velocity.

To report illegal dumping call

(877) WASTE18

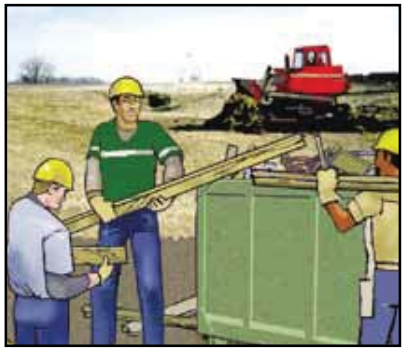
sbcountystormwater.org

San Bernardino County STORMWATER PROGRAM

Prevención de Contaminación del Desagüe

EXCAVACIONES

Sedimento, cemento, asfalto y liquidos de auto, tierra y residuos peligrosos de lugares de construcción acaban por llegar a los drenajes del Condado de San Bernardino y terminando en el Rio de Santa Ana. Esto contamina el agua que tomamos, haciendola peligorsa para la gente y la vida salvaje. Sigue estas practicas para prevenir la contaminación y protejer la salud publica.



Reciclando Desechos
Recicla el aspfalto, concreto, madera y la vegetacion cuando sea posible. Materiales no reciclados se deverian llevar a lugares de desechos peligrosos. Para màs informacion llama al (909) 386-8401.



Manteniendo Vehiculos & Herramientas
Has el mantenimiento y carga de vehiculos en el mismo lugar, lejos de la calle, las alcantarillas y los drenajes. Inspecciona los vehiculos y el equipo de cualquier goteadura. Usa grava donde mayormente se consentra el trafico de camiones para y reducir el sedimento en las calles.



Limpiando & Previniendo Derrames
Usa siempre un enbudo al vaciar liquidos. Barre los derrames en ves de lavarlos con la manguera. Mantente siempre preparado para cualquier derrame, usa siempre las herramientas de seguridad al igual que materiales como, tierra para desechos de gato o aserrin. Preveen goteaduras de autos que no se usan vasiandoles la gasolina, aceite de transmision, frenos y liquidos del radiador. Para reportar derrames llama al 911.



Almacenando Materiales
Manten materiales de construccion y residuos lejos de las calles, coladeras y desagües. Manten tapados los bultos de arena, grava y erramientas para excavar cuviertos con algun plastico para protejerlos de la lluvia, el aire y el desagüe.



Previniendo Erosiones
Evita las excavaciones durante lluvia. Planta vegetacion temporal en colinas donde aun no hay planes de construcción y planta vegetacion permanente al terminar las excavaciones. Construye algunos canales para el desagüe. Estos pueden ser creados con pasto y cemento para reducir la velocidad del desagüe.

Para reportar actividades ilegales llamar al:

(877) WASTE18
sbcountystormwater.org

San Bernardino County
STORMWATER PROGRAM

STORMWATER Pollution Prevention

ROADWORK AND PAVING

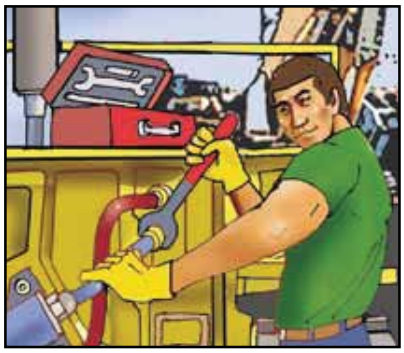
Asphalt, saw-cut slurry and excavated materials from road paving, surfacing and pavement removal often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates waterways, making them unsafe for people and wildlife. Follow these best management practices to prevent pollution and protect public health.



Preventing Erosion
Schedule excavation and grading work during dry weather. Develop and implement erosion and sediment control plans for excavated embankments. Cover exposed stockpiles of soil, sand or gravel and excavated material with plastic sheeting, protected from rain, wind and runoff.



During Construction
Cover catch basins and maintenance holes when applying seal coat, slurry seal or fog seal. Use check dams, ditches or berms around excavations, and avoid over applying water for dust control. Never wash excess materials from exposed aggregate or concrete into the street, gutter or a storm drain.



Maintaining Vehicles & Equipment
Maintain and refuel vehicles and equipment at a single location on-site, away from the street, gutter and storm drains. Perform major equipment repairs and washings off-site. Inspect vehicles and equipment frequently for leaks, and prevent leaks from stored vehicles by draining gas, hydraulic oil, transmission, brake and radiator fluids.

Asphalt & Concrete Removal
Barricade storm drain openings during saw-cutting, and recycle broken up pavement at a crushing company. For recycling information, call (909) 386-8401.



Cleaning & Preventing Spills
Be ready for spills by preparing and using spill containment and cleanup kits that include safety equipment and dry cleanup materials such as kitty litter or sawdust. Sweep up dry spills, instead of hosing. Prevent spills from paver machines by using drip pans, or by placing absorbent materials like cloths or rags under the machines when not in use. To report serious spills, call 911.



To report illegal dumping call

(877) WASTE18

sbcountystormwater.org

San Bernardino County STORMWATER PROGRAM

Prevención de Contaminación del Desagüe

TRABAJO DE CARRETERAS & PAVIMENTO

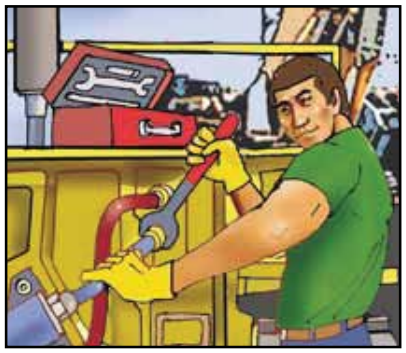
Asfalto, mezcla y materiales de excavaciones del pavimento acaban por llegar a los drenajes del Condado de San Bernardino y terminando en el Rio de Santa Ana. Esto contamina el agua que tomamos, haciendola peligorsa para la gente y la vida salvaje. Sigue estas practicas para prevenir la contaminación y protejer la salud publica.



Previniendo Erosiones
Planea las excavaciones trabajo de jardineria durante el clima seco. Desarrolla e implementa planes de embancamientos de control de sedimento y excavaciones. Cubre montones de tierra, grava y otros materiales con un plastico para protejerlos de la llvia, aire y desagüe.



Durante Construcción
Cubre los lavados y da mantenimiento a los hoyos al aplicar selladura o mezcla. Revisa las areas de excavaciones, y evita pasarte de agua para preveenir polvadura. Nunca laves los materiales llenos de concreto en la calle, drenajes o en el desagüe.



Mantenimiento de Vehiculos & Herramientas
Has el mantenimiento y carga de vehiculos en el mismo lugar, lejos de la calle, las alcantarillas y los drenajes. Inspecciona los vehiculos y el equipo de cualquier goteadura y evita goteaduras de autos que no se usan vasiandoles la gasolina, aceite de transmision, frenos y liquidos del radiador.

Removiendo Asfalto & Concreto
Bloquea alrededor de los drenajes cuando estes usando las maquinas de sierra, tambien recicla todo el pavimento roto en la compañia demolidora. Para más información llama al (909) 386-8401.



Limpiando & Previniendo Derrames
Mantente siempre preparado para cualquier derrame, usa siempre las herramientas de seguridad al igual que materiales como, tierra para desechos de gato o aserrin Barre los derrames en ves de lavarlos con la manguera. Previene los derrames de las maquinas usando enbudos o colocanto garras para absorver cualquier liquido. Para reportar derrames llama al 911.



Para reportar actividades ilegales llamar al:

(877) WASTE18

sbcountystormwater.org

San Bernardino County STORMWATER PROGRAM

STORMWATER Pollution Prevention

Important Phone Numbers

San Bernardino County Flood Control
(909) 387-8112

County of San Bernardino
(909) 387-8109

City of Big Bear Lake
(909) 866-5831

City of Chino (909) 591-9850

City of Chino Hills (909) 364-2722

City of Colton (909) 370-6128

City of Fontana (909) 350-6772

City of Grand Terrace
(909) 824-6671 x 226

City of Highland (909) 864-8732 x 230

City of Loma Linda (909) 799-4405

City of Montclair (909) 625-9470

City of Ontario (909) 395-2025

City of Rancho Cucamonga
(909) 477-2740 x 4063

City of Redlands (909) 798-7655

City of Rialto (909) 421-4921

City of San Bernardino (909) 384-5154

City of Upland (909) 931-4370

City of Yucaipa (909) 797-2489 x 243

San Bernardino County
Stormwater Program
825 East Third Street • Room 201
San Bernardino, CA 94215-0835

STORMWATER Pollution Prevention

INDUSTRIAL AND COMMERCIAL FACILITIES



STORMWATER Pollution Prevention

To reduce the amount of pollutants reaching our storm drain system, which leads to the Santa Ana River and Pacific Ocean, the San Bernardino County Stormwater Program has developed Best Management Practices (BMPs) for Industrial and Commercial Facilities. City and County ordinances require that businesses comply with these BMPs, where applicable, to protect local water quality. Local cities and the County are required to verify implementation of these BMPs by performing regular facility inspections.



Prohibited Discharges

- Discontinue all non-stormwater discharges to the storm drain system. It is prohibited to discharge any chemicals, wastes or wastewater into the gutter, street or storm drain.

Outdoor Storage

- Install covers and secondary containment areas for all hazardous materials and wastes stored outdoors in accordance with County and/or City standards.
- Keep all temporary waste containers covered, except when in direct use.
- Sweep outdoor areas instead of using a hose or pressure washer.

Outdoor Processes

- Move all process operations including vehicle and equipment maintenance inside of the building or into a covered and contained area.
- Wash equipment and vehicles in a contained and covered wash bay which is closed-loop or connected to a clarifier sized to city standards, then discharged to a sanitary sewer or take them to a commercial car wash.

Spills and Clean Ups

- Clean up spills immediately when they occur, using dry clean up methods such as absorbent materials and followed by proper disposal of materials.
- Always have a spill kit available near chemical loading dock doors, vehicle maintenance and fueling areas.
- Follow your Business Emergency Plan, as filed with the County Fire Department at (909) 386-8401.

Industrial and Commercial Facilities

- Report all prohibited discharges and non-implementation of BMPs to your local Stormwater Coordinator either at (800) CLEANUP or as listed at www.sbcounty.gov/stormwater.
- Report hazardous materials spills to (800) 33 TOXIC and your local Fire Department Hazmat Team at 911.

Training

Train employees in spill response procedures and prohibited discharges to the storm drain system, as prescribed in your local Stormwater Ordinance and in applicable Best Management Practices available at www.cabmphandbooks.com and www. sbcounty.gov/stormwater.

Permitting

Stormwater discharges associated with specific categories of commercial and industrial facilities are regulated by the State Water Resources Control Board (SWRCB) through an Industrial Storm Water General Permit. A copy of the General Permit and application forms are available at: www.waterboards.ca.gov/stormwtr/industrial.html

To report illegal dumping or for more information on stormwater pollution prevention, call:

1 (800) CLEANUP

or visit our websites at:

www.sbcounty.gov/stormwater

www.1800cleanup.org

San Bernardino County STORMWATER PROGRAM

Prevención de Contaminación
AL SISTEMA DE DRENAJE

Números de Teléfono Importantes

San Bernardino County Flood Control
(909) 387-8112

County of San Bernardino
(909) 387-8109

City of Big Bear Lake
(909) 866-5831

City of Chino (909) 591-9850

City of Chino Hills (909) 364-2722

City of Colton (909) 370-6128

City of Fontana (909) 350-6772

City of Grand Terrace
(909) 824-6671 x 226

City of Highland (909) 864-8732 x 230

City of Loma Linda (909) 799-4405

City of Montclair (909) 625-9470

City of Ontario (909) 395-2025

City of Rancho Cucamonga
(909) 477-2740 x 4063

City of Redlands (909) 798-7655

City of Rialto (909) 421-4921

City of San Bernardino (909) 384-5154

City of Upland (909) 931-4370

City of Yucaipa (909) 797-2489 x 243

San Bernardino County
Stormwater Program
825 East Third Street • Room 201
San Bernardino, CA 94215-0835

Prevención de Contaminación
AL SISTEMA DE DRENAJE

INSTALACIONES INDUSTRIALES Y COMERCIALES



Prevención de Contaminación
AL SISTEMA DE DRENAJE

Para reducir la cantidad de contaminantes que alcanzan nuestro sistema de aguas pluviales, las cuales desembocan en el Río Santa Ana y el Océano Pacífico, el Programa del Condado de San Bernandino ha desarrollado las pautas de Mejores Prácticas de Manejo (BMPs, por sus siglas en inglés) para instalaciones industriales y comerciales. Los decretos de la ciudad y del condado establecen que todas las empresas deben de cumplir con estas BMPs, cuando corresponda, para proteger la calidad del agua local. Las ciudades locales y el condado tienen la obligación de verificar la implementación de estas BMPs al llevar a cabo inspecciones regulares en sus instalaciones.



Desagües Prohibidos

- Descontinúe todo desagüe de aguas no pluviales al sistema de drenaje de aguas pluviales. Está prohibido descargar cualquier sustancia química, residuo o agua residual a los drenajes de la cuneta, de la calle o de aguas pluviales.

Almacenamiento al Aire Libre

- Instale cubiertas y áreas de retención secundarias para todos los materiales peligrosos y residuos almacenados al aire libre, estas instalaciones deberán de cumplir con los estándares establecidos por el condado y/o la ciudad.
- Mantenga todos los recipientes temporales de residuos cubiertos, con la excepción de cuando se estén utilizando directamente.
- Barra todas las áreas al aire libre en lugar de usar una manguera o un equipo de limpieza con agua a alta presión.

Procesos al Aire Libre

- Reubique todos los procesos u operaciones, incluyendo el mantenimiento de vehículos y equipo, dentro de un edificio en una área cubierta e independiente.
- Lave el equipo y los vehículos en una fosa de lavado independiente que tenga un anillo cerrado o bien, esté conectada a un clarificador del tamaño de los estándares municipales, luego elimine los residuos en un drenaje sanitario o llévelos a un lavador de carros comercial.

Derrames y Limpieza

- Limpie los derrames inmediatamente, utilice métodos de limpieza en seco como son el uso de materiales absorbentes y elimine estos materiales de la manera adecuada.
- Siempre tenga a la mano un estuche para derrames cerca de las puertas de los muelles de carga de sustancias químicas, en las áreas de mantenimiento de vehículos y en las áreas de combustible.
- Siga su Plan de Emergencia Comercial, como lo registró con el Departamento de Bomberos del Condado marcando al (909) 386-8401.
- Reporte todos los desagües prohibidos y cualquier punto no implementado de las BMPs a su coordinador local de Aguas Pluviales llamando al (800) CLEANUP o como se indica en el enlace www.sbcounty.gov/stormwater.
- Reporte cualquier derrame peligroso al (800) 33 TOXIC y al equipo Hazmat de su departamento local de bomberos marcando al 911.

Instalaciones Industriales y Comerciales

Capacitación

Capacite a los empleados sobre los procedimientos de respuesta ante un derrame y los desagües prohibidos al sistema de aguas pluviales, como lo indica el decreto local de aguas pluviales de Mejores Prácticas de Manejo (BMPs) disponibles en el sitio www.cabmphandbooks.com y www.sbcounty.gov/stormwater.

Autoridad Competente

Los desagües de aguas pluviales relacionados con categorías específicas de instalaciones comerciales e industriales están regulados por la Junta Estatal de Control de Recursos Acuáticos (State Water Resources Control Board, SWRCB) a través de un permiso industrial general de aguas pluviales. Para obtener una copia de este permiso general y una solicitud, visite el sitio: www.waterboards.ca.gov/stormwtr/industrial.html

Para reportar el desagüe de residuos ilegales o para obtener información adicional sobre la prevención de contaminación a las aguas pluviales, llame a:

1 (800) CLEANUP

o visite nuestro sitio:

www.sbcounty.gov/stormwater

www.1800cleanup.org

San Bernardino County STORMWATER PROGRAM

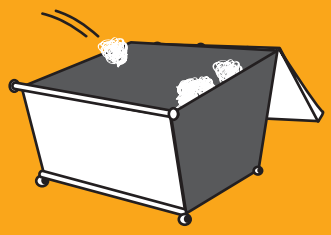
COMMERCIAL TRASH ENCLOSURES

FOLLOW THESE **REQUIREMENTS** TO **KEEP OUR WATERWAYS CLEAN**

Trash enclosures, such as those found in commercial and apartment complexes, typically contain materials that are intended to find their way to a landfill or a recycling facility. **These materials are NOT meant to go into our local lakes and rivers.**

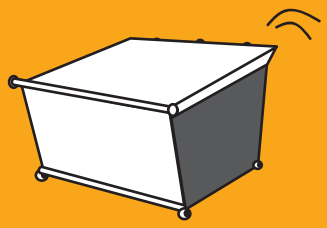
PROTECT WATER QUALITY BY FOLLOWING THESE SIMPLE STEPS

PUT TRASH INSIDE



Place trash inside the bin (preferably in sealed bags)

CLOSE THE LID



Prevent rain from entering the bin in order to avoid leakage of polluted water runoff

KEEP TOXICS OUT



- Paint
- Grease, fats and used oils
- Batteries, electronics and fluorescent lights

SOME ADDITIONAL GUIDELINES, INCLUDE

✓ SWEEP FREQUENTLY

Sweep trash enclosure areas frequently, instead of hosing them down, to prevent polluted water from flowing into the streets and storm drains.

✓ FIX LEAKS

Address trash bin leaks immediately by using dry clean up methods and report to your waste hauler to receive a replacement.

✓ CONSTRUCT ROOF

Construct a solid cover roof over the existing trash enclosure structure to prevent rainwater from coming into contact with trash and garbage. Check with your local City/County for Building Codes.

In San Bernardino County, stormwater pollution is caused by food waste, landscape waste, chemicals and other debris that are washed into storm drains and end up in our waterways - untreated! You can be part of the solution by maintaining a water-friendly trash enclosure.

THANK YOU FOR HELPING TO KEEP SAN BERNARDINO COUNTY CLEAN AND HEALTHY!

San Bernardino County STORMWATER PROGRAM

To report illegal dumping **(877-WASTE18)** or
to find a household hazardous waste facility (800-OILY CAT): **sbcountystormwater.org**
To dispose of hazardous waste call the San Bernardino County Fire Dept. - CUPA Program **(909) 386-8401**

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Redlands • Rialto • San Bernardino • San Bernardino County • San Bernardino County Flood Control District • Upland • Yucaipa

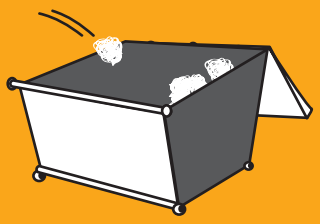
CONTENEDORES COMERCIALES PARA LA BASURA

SIGA ESTOS **PASOS** PARA MANTENER **LIMPIAS NUESTRAS VÍAS FLUVIALES**

Los contenedores de basura, tales como aquellos que se encuentran en las unidades comerciales y departamentos, generalmente contienen materiales que están destinados a los rellenos sanitarios o en algún establecimiento de reciclaje.
Estos materiales NO deben ser vertidos en nuestros lagos y ríos locales.

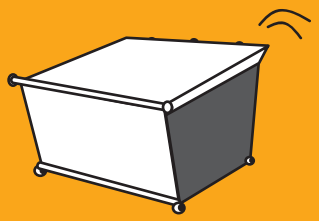
SIGA ESTOS PASOS PARA PROTEGER LA CALIDAD DEL AGUA

COLOQUE LA BASURA ADENTRO



Coloque la basura adentro del contenedor (preferentemente en bolsas selladas)

CIERRE LA TAPA



Evite que la lluvia ingrese al contenedor para evitar un escape de escorrentía contaminada

MANTENGA LOS PRODUCTOS TÓXICOS AFUERA



- Pintura
- Lubricante, grasas y aceites usados
- Baterías, componentes electrónicos y luces fluorescentes

ALGUNAS GUÍAS ADICIONALES, LAS CUALES INCLUYEN

✓ BARRER CON FRECUENCIA

Barra con frecuencia las áreas de los recintos para la basura, en lugar de lavarlas con una manguera, para evitar que el agua contaminada se vierta en las calles y los desagües de lluvia.

✓ REPARE LAS GOTERAS

Ocúpese inmediatamente de las goteras en los contenedores de basura. Use los métodos de limpieza en seco e infórmele a su recolector de basura para que reciba un reemplazo.

✓ CONSTRUYA UN TECHO

Construya un techo de cubierta sólida sobre la estructura actual del recinto para la basura a fin de evitar que el agua de lluvia entre en contacto con los desechos y la basura. Consulte con su Ciudad/Condado para conocer los Códigos de Construcción.

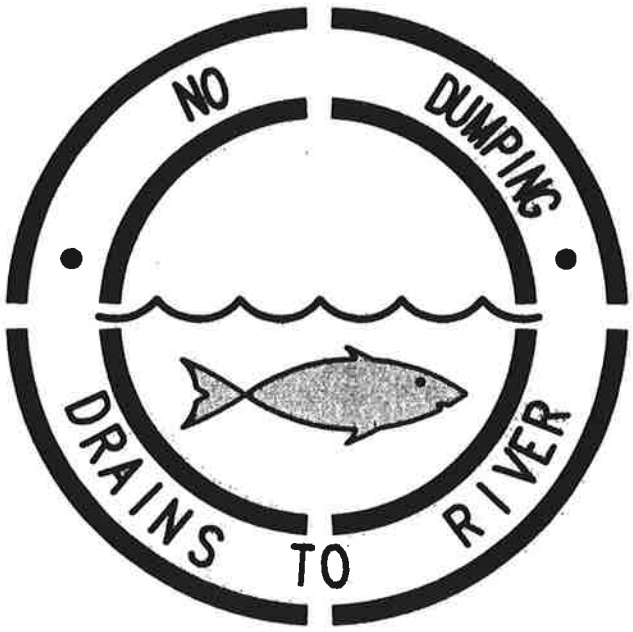
En el Condado de San Bernardino, los desechos de alimentos y jardines, los productos químicos y otros restos que se vierten en los desagües de aguas pluviales y que terminan en nuestras vías fluviales sin tratamiento alguno provocan la contaminación de estas aguas. Usted puede ser parte de la solución si mantiene un recinto para la basura que no contamine el agua.

¡MUCHAS GRACIAS POR AYUDAR A MANTENER EL CONDADO DE SB LIMPIO Y SIN CONTAMINACIÓN!

San Bernardino County STORMWATER PROGRAM

Para informar acerca del vertedero ilegal, llame a **(877-WASTE18)**, o para encontrar un establecimiento donde arrojar los residuos peligrosos del hogar, llame a **(800-OILY CAT)**: **sbcountystormwater.org**
Para deshacerse de los residuos peligrosos llame al Condado de San Bernardino Departamento de Bomberos - programa CUPA **(909) 386-8401**

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SAMPLE STENCIL TO BE USED NEAR GRATE AND CURB OPENING INLETS

SYMBOL TO BE 24" IN DIAMETER

Thienes Engineering
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

SAMPLE CATCH BASIN STENCIL
PER BMP SD-13

Vortex Separator MP-51

General Description

Vortex separators: (alternatively, swirl concentrators) are gravity separators, and in principle are essentially wet vaults. The difference from wet vaults, however, is that the vortex separator is round, rather than rectangular, and the water moves in a centrifugal fashion before exiting. By having the water move in a circular fashion, rather than a straight line as is the case with a standard wet vault, it is possible to obtain significant removal of suspended sediments and attached pollutants with less space. Vortex separators were originally developed for combined sewer overflows (CSOs), where it is used primarily to remove coarse inorganic solids. Vortex separation has been adapted to stormwater treatment by several manufacturers.

Inspection/Maintenance Considerations

As some of the systems have standing water that remains between storms, there is concern about mosquito breeding. Also, a loss of dissolved pollutants may occur as accumulated organic matter (e.g., leaves) decomposes in the units.

Inspection Activities	Suggested Frequency
■ Inspect for accumulated sediment/debris.	As needed
Maintenance Activities	**Suggested Frequency**
■ Remove of accumulated material with an eductor truck. It may be necessary to remove and dispose the floatables separately due to the presence of petroleum product.	Annual, or more frequent as needed

Maintenance Concerns, Objectives, and Goals

- ■ Sediment/Debris Removal
- ■ Vector Control

Targeted Constituents

✓	Sediment	▲
✓	Nutrients	●
✓	Trash	
✓	Metals	●
	Bacteria	
✓	Oil and Grease	
✓	Organics	

Legend ***(Removal Effectiveness)***

● Low ■ High

▲ Medium

CASQA California Stormwater Quality Association

CONTECH®
ENGINEERED SOLUTIONS

CDS® Inspection and Maintenance Guide



CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	yd3	m3
CDS2015-4	4	1.2	3.0	0.9	0.5	0.4
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities



Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, earth stabilization and wastewater treament products. For information, visit www.ContechES.com or call 800.338.1122

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The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; 7,517,450 related foreign patents or other patents pending.

CONTECH ENGINEERED SOLUTIONS
800.925.5240
www.ContechES.com

CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

CONTECH®
ENGINEERED SOLUTIONS



Contech® CMP Detention & Infiltration Maintenance Guide



CONTECH®
CMP DETENTION SYSTEMS

Maintenance

Underground storm water detention and retention systems should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size or configuration of the system.

Inspection

Inspection is the key to effective maintenance and is easily performed. CONTECH recommends ongoing quarterly inspections of the accumulated sediment. Sediment deposition and transport may vary from year to year and quarterly inspections will help insure that systems are cleaned out at the appropriate time. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment washdown areas. It is very useful to keep a record of each inspection. A sample inspection log is included for your use.

Systems should be cleaned when inspection reveals that accumulated sediment or trash is clogging the discharge orifice. CONTECH suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Cleaning

Maintaining an underground detention or retention system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities.

Inspection & Maintenance Log Sample Template

_____" Diameter System			Location: Anywhere, USA		
Date	**Depth of Sediment**	**Accumulated Trash**	**Maintenance Performed**	**Maintenance Personnel**	**Comments**
12/01/10	2"	None	Removed Sediment	B. Johnson	Installed
03/01/11	1"	Some	Removed Sediment and Trash	B. Johnson	Swept parking lot
06/01/11	0"	None	None		
09/01/11	0"	Heavy	Removed Trash	S. Riley	
12/01/11	1"	None	Removed Sediment	S. Riley	
04/01/12	0"	None	None	S. Riley	
04/15/01	2	Some	Removed Sediment and Trash	ACE Environmental Services	

SAMPLE

CONTECH®
CMP DETENTION SYSTEMS

Support

Drawings and specifications are available at www.ContechES.com.

Site-specific support is available from our engineers.

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CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than eighteen inches the system should be cleaned out. **Note: To avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

Operation & Maintenance (OM) Manual v01

filterra®

Bioretention Systems

CONTECH®

ENGINEERED SOLUTIONS

filterra®
Bioretention Systems

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- Filterra® General Description
- Filterra® Schematic
- Basic Operations
- Design

Maintenance

- Maintenance Overview
  - » Why Maintain?
  - » When to Maintain?
- Exclusion of Services
- Maintenance Visit Summary
- Maintenance Tools, Safety Equipment and Supplies
- Maintenance Visit Procedure
- Maintenance Checklist

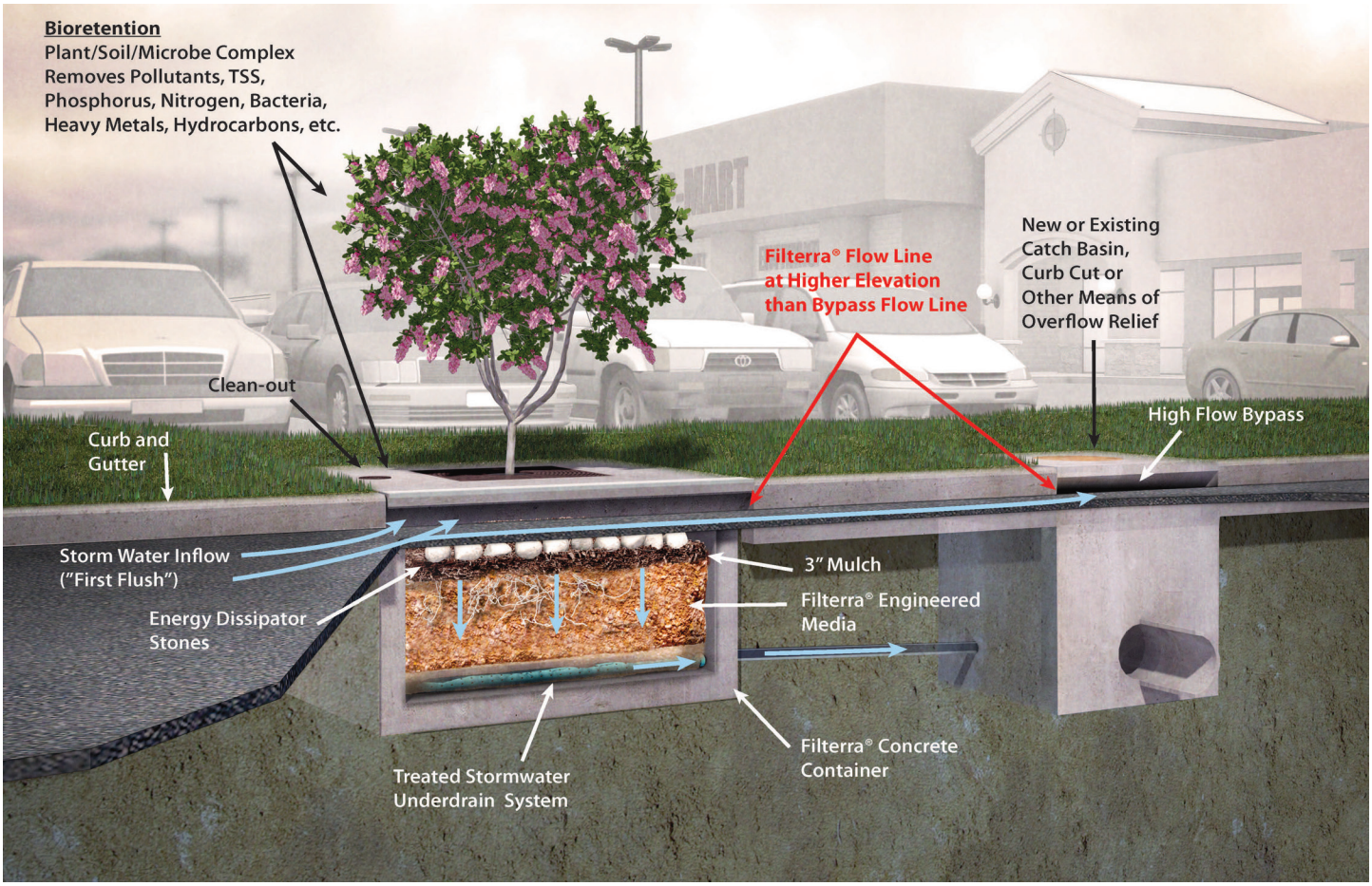
Resources

- *Example Filterra Project Maintenance Report Sheet*
- *Example Filterra Structure Maintenance Report Sheet*
- Filterra® Warranty
- *Drawing FTST-2: Filterra Standard Configuration Detail*
- *Drawing FTNL-3: Filterra Narrow Length Configuration Detail*
- *Drawing FTNW-3: Filterra Narrow Width Configuration Detail*

CONTECH®
ENGINEERED SOLUTIONS

General Description

The following general specifications describe the general operations and maintenance requirements for the Contech Engineered Solutions LLC stormwater bioretention filtration system, the Filterra®. The system utilizes physical, chemical and biological mechanisms of a soil, plant and microbe complex to remove pollutants typically found in urban stormwater runoff. The treatment system is a fully equipped, pre-constructed drop-in place unit designed for applications in the urban landscape to treat contaminated runoff.



Stormwater flows through a specially designed filter media mixture contained in a landscaped concrete container. The mixture immobilizes pollutants which are then decomposed, volatilized and incorporated into the biomass of the Filterra® system's micro/macro fauna and flora. Stormwater runoff flows through the media and into an underdrain system at the bottom of the container, where the treated water is discharged. Higher flows bypass the Filterra® to a downstream inlet or outfall. Maintenance is a simple, inexpensive and safe operation that does not require confined space access, pumping or vacuum equipment or specialized tools. Properly trained landscape personnel can effectively maintain Filterra® Stormwater systems by following instructions in this manual.

Basic Operations

Filterra® is a bioretention system in a concrete box. Contaminated stormwater runoff enters the filter box through the curb inlet spreading over the 3-inch layer of mulch on the surface of the filter media. As the water passes through the mulch layer, most of the larger sediment particles and heavy metals are removed through sedimentation and chemical reactions with the organic material in the mulch. Water passes through the soil media where the finer particles are removed and other chemical reactions take place to immobilize and capture pollutants in the soil media. The cleansed water passes into an underdrain and flows to a pipe system or other appropriate discharge point. Once the pollutants are in the soil, the bacteria begin to break down and metabolize the materials and the plants begin to uptake and metabolize the pollutants. Some pollutants such as heavy metals, which are chemically bound to organic particles in the mulch, are released over time as the organic matter decomposes to release the metals to the feeder roots of the plants and the cells of the bacteria in the soil where they remain and are recycled. Other pollutants such as phosphorus are chemically bound to the soil particles and released slowly back to the plants and bacteria and used in their metabolic processes. Nitrogen goes through a very complex variety of biochemical processes where it can ultimately end up in the plant/bacteria biomass, turned to nitrogen gas or dissolves back into the water column as nitrates depending on soil temperature, pH and the availability of oxygen. The pollutants ultimately are retained in the mulch, soil and biomass with some passing out of the system into the air or back into the water.

Design and Installation

Each project presents different scopes for the use of Filterra® systems. To ensure the safe and specified function of the stormwater BMP, Contech reviews each application before supply. Information and help may be provided to the design engineer during the planning process. Correct Filterra® box sizing (by rainfall region) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Filterra units as shown in approved plans. A comprehensive installation manual is available at www.conteches.com.

Maintenance

Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement.

- Avoid legal challenges from your jurisdiction's maintenance enforcement program.
- Prolong the expected lifespan of your Filterra media.
- Avoid more costly media replacement.
- Help reduce pollutant loads leaving your property.

Simple maintenance of the Filterra® is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The unit will recycle and accumulate pollutants within the biomass, but is also subjected to other materials entering the throat. This may include trash, silt and leaves etc. which will be contained within the void below the top grate and above the mulch layer. Too much silt may inhibit the Filterra's® flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

When to Maintain?

Contech includes a 1-year maintenance plan with each system purchase. Annual included maintenance consists of a maximum of two (2) scheduled visits. Additional maintenance may be necessary depending on sediment and trash loading (by Owner or at additional cost). The start of the maintenance plan begins when the system is activated for full operation. Full operation is defined as the unit installed, curb and gutter and transitions in place and activation (by Supplier) when mulch and plant are added and temporary throat protection removed.

Activation cannot be carried out until the site is fully stabilized (full landscaping, grass cover, final paving and street sweeping completed). Maintenance visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required; regions with less rainfall often only require (1) one visit per annum. Varying land uses can affect maintenance frequency; e.g. some fast food restaurants require more frequent trash removal. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Supplier and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the (maintenance) Supplier of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology. Owners should also advise other landscape or maintenance contractors to leave all maintenance to the Supplier (i.e. no pruning or fertilizing).

Exclusion of Services

It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Filterra® system.

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not covered under the Supplier maintenance contract. Should a major contamination event occur the Owner must block off the outlet pipe of the Filterra® (where the cleaned runoff drains to, such as drop inlet) and block off the throat of the Filterra®. The Supplier should be informed immediately.

Maintenance Visit Summary

Each maintenance visit consists of the following simple tasks (detailed instructions below).

1. Inspection of Filterra® and surrounding area
2. Removal of tree grate and erosion control stones
3. Removal of debris, trash and mulch
4. Mulch replacement
5. Plant health evaluation and pruning or replacement as necessary
6. Clean area around Filterra®
7. Complete paperwork

Maintenance Tools, Safety Equipment and Supplies

Ideal tools include: camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing and barricades when working in close proximity to traffic and also safety hats and shoes. A T-Bar or crowbar should be used for moving the tree grates (up to 170 lbs ea.). Most visits require minor trash removal and a full replacement of mulch. See below for actual number of bagged mulch that is required in each unit size. Mulch should be a double shredded, hardwood variety; do not use colored or dyed mulch. Some visits may require additional Filterra® engineered soil media available from the Supplier.

Box Length	Box Width	Filter Surface Area (ft^2)	Volume at 3″ (ft^3)	# of 2 ft^3 Mulch Bags
4	4	4	4	2
6	4	6	6	3
8	4	8	8	4
6	6	9	9	5
8	6	12	12	6
10	6	15	15	8
12	6	18	18	9
13	7	23	23	12

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.



1. Inspection of Filterra® and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:

Standing Water	yes | no
Damage to Box Structure	yes | no
Damage to Grate	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).



2. Removal of tree grate and erosion control stones

- Remove cast iron grates for access into Filterra® box.
- Dig out silt (if any) and mulch and remove trash & foreign items.

Record on Maintenance Report the following:

Silt/Clay	yes | no
Cups/ Bags	yes | no
Leaves	yes | no
# of Buckets Removed	_____



3. Removal of debris, trash and mulch

- After removal of mulch and debris, measure distance from the top of the Filterra® engineered media soil to the bottom of the top slab. If this distance is greater than 12", add Filterra® media (not top soil or other) to recharge to a 9" distance

Record on Maintenance Report the following:

Distance of Bottom of Top Slab (inches)	_____
# of Buckets of Media Added	_____



4. Mulch replacement

- Please see mulch specifications.
- Add double shredded mulch evenly across the entire unit to a depth of 3".
- Ensure correct repositioning of erosion control stones by the Filterra® inlet to allow for entry of trash during a storm event.
- Replace Filterra® grates correctly using appropriate lifting or moving tools, taking care not to damage the plant.



5. Plant health evaluation and pruning or replacement as necessary

- Examine the plant's health and replace if dead.
- Prune as necessary to encourage growth in the correct directions

Record on Maintenance Report the following:

Height above Grate	(Feet)
Width at Widest Point	(feet)
Health	alive | dead
Damage to Plant	yes | no
Plant Replaced	yes | no



6. Clean area around Filterra®

- Clean area around unit and remove all refuse to be disposed of appropriately.



7. Complete paperwork

- Deliver Maintenance Report and photographs to appropriate location (normally Contech during maintenance contract period).
- Some jurisdictions may require submission of maintenance reports in accordance with approvals. It is the responsibility of the Owner to comply with local regulations.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Filterra.	Inlet should be free of obstructions allowing free distributed flow of water into Filterra.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation	Plant growth excessive.	Plants should be appropriate to the species and location of Filterra.		Trim/prune plants in accordance with typical landscaping and safety needs.
Structure	Structure has visible cracks.	Cracks wider than 1/2 inch or evidence of soil particles entering the structure through the cracks.		Vault should be repaired.
Maintenance is ideally to be performed twice annually.				

CONTECH®
ENGINEERED SOLUTIONS

Infiltration Basin TC-11



Design Considerations

- Soil for Infiltration
- Slope
- Aesthetics

Targeted Constituents

☑	Sediment	■
☑	Nutrients	■
☑	Trash	■
☑	Metals	■
☑	Bacteria	■
☑	Oil and Grease	■
☑	Organics	■

Legend *(Removal Effectiveness)*

- ● Low ■ High
- ▲ Medium

Description

An infiltration basin is a shallow impoundment that is designed to infiltrate stormwater. Infiltration basins use the natural filtering ability of the soil to remove pollutants in stormwater runoff. Infiltration facilities store runoff until it gradually exfiltrates through the soil and eventually into the water table. This practice has high pollutant removal efficiency and can also help recharge groundwater, thus helping to maintain low flows in stream systems. Infiltration basins can be challenging to apply on many sites, however, because of soils requirements. In addition, some studies have shown relatively high failure rates compared with other management practices.

California Experience

Infiltration basins have a long history of use in California, especially in the Central Valley. Basins located in Fresno were among those initially evaluated in the National Urban Runoff Program and were found to be effective at reducing the volume of runoff, while posing little long-term threat to groundwater quality (EPA, 1983; Schroeder, 1995). Proper siting of these devices is crucial as underscored by the experience of Caltrans in siting two basins in Southern California. The basin with marginal separation from groundwater and soil permeability failed immediately and could never be rehabilitated.

Advantages

- Provides 100% reduction in the load discharged to surface waters.
- The principal benefit of infiltration basins is the approximation of pre-development hydrology during which a

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significant portion of the average annual rainfall runoff is infiltrated and evaporated rather than flushed directly to creeks.

- If the water quality volume is adequately sized, infiltration basins can be useful for providing control of channel forming (erosion) and high frequency (generally less than the 2-year) flood events.

Limitations

- May not be appropriate for industrial sites or locations where spills may occur.
- Infiltration basins require a minimum soil infiltration rate of 0.5 inches/hour, not appropriate at sites with Hydrologic Soil Types C and D.
- If infiltration rates exceed 2.4 inches/hour, then the runoff should be fully treated prior to infiltration to protect groundwater quality.
- Not suitable on fill sites or steep slopes.
- Risk of groundwater contamination in very coarse soils.
- Upstream drainage area must be completely stabilized before construction.
- Difficult to restore functioning of infiltration basins once clogged.

Design and Sizing Guidelines

- Water quality volume determined by local requirements or sized so that 85% of the annual runoff volume is captured.
- Basin sized so that the entire water quality volume is infiltrated within 48 hours.
- Vegetation establishment on the basin floor may help reduce the clogging rate.

Construction/Inspection Considerations

- Before construction begins, stabilize the entire area draining to the facility. If impossible, place a diversion berm around the perimeter of the infiltration site to prevent sediment entrance during construction or remove the top 2 inches of soil after the site is stabililized. Stabilize the entire contributing drainage area, including the side slopes, before allowing any runoff to enter once construction is complete.
- Place excavated material such that it can not be washed back into the basin if a storm occurs during construction of the facility.
- Build the basin without driving heavy equipment over the infiltration surface. Any equipment driven on the surface should have extra-wide (“low pressure”) tires. Prior to any construction, rope off the infiltration area to stop entrance by unwanted equipment.
- After final grading, till the infiltration surface deeply.
- Use appropriate erosion control seed mix for the specific project and location.

Performance

As water migrates through porous soil and rock, pollutant attenuation mechanisms include precipitation, sorption, physical filtration, and bacterial degradation. If functioning properly, this approach is presumed to have high removal efficiencies for particulate pollutants and moderate removal of soluble pollutants. Actual pollutant removal in the subsurface would be expected to vary depending upon site-specific soil types. This technology eliminates discharge to surface waters except for the very largest storms; consequently, complete removal of all stormwater constituents can be assumed.

There remain some concerns about the potential for groundwater contamination despite the findings of the NURP and Nightingale (1975; 1987a,b,c; 1989). For instance, a report by Pitt et al. (1994) highlighted the potential for groundwater contamination from intentional and unintentional stormwater infiltration. That report recommends that infiltration facilities not be sited in areas where high concentrations are present or where there is a potential for spills of toxic material. Conversely, Schroeder (1995) reported that there was no evidence of groundwater impacts from an infiltration basin serving a large industrial catchment in Fresno, CA.

Siting Criteria

The key element in siting infiltration basins is identifying sites with appropriate soil and hydrogeologic properties, which is critical for long term performance. In one study conducted in Prince George's County, Maryland (Galli, 1992), all of the infiltration basins investigated clogged within 2 years. It is believed that these failures were for the most part due to allowing infiltration at sites with rates of less than 0.5 in/hr, basing siting on soil type rather than field infiltration tests, and poor construction practices that resulted in soil compaction of the basin invert.

A study of 23 infiltration basins in the Pacific Northwest showed better long-term performance in an area with highly permeable soils (Hilding, 1996). In this study, few of the infiltration basins had failed after 10 years. Consequently, the following guidelines for identifying appropriate soil and subsurface conditions should be rigorously adhered to.

- Determine soil type (consider RCS soil type 'A, B or C' only) from mapping and consult USDA soil survey tables to review other parameters such as the amount of silt and clay, presence of a restrictive layer or seasonal high water table, and estimated permeability. The soil should not have more than 30% clay or more than 40% of clay and silt combined. Eliminate sites that are clearly unsuitable for infiltration.

- Groundwater separation should be at least 3 m from the basin invert to the measured ground water elevation. There is concern at the state and regional levels of the impact on groundwater quality from infiltrated runoff, especially when the separation between groundwater and the surface is small.

- Location away from buildings, slopes and highway pavement (greater than 6 m) and wells and bridge structures (greater than 30 m). Sites constructed of fill, having a base flow or with a slope greater than 15% should not be considered.

- Ensure that adequate head is available to operate flow splitter structures (to allow the basin to be offline) without ponding in the splitter structure or creating backwater upstream of the splitter.

- Base flow should not be present in the tributary watershed.

Secondary Screening Based on Site Geotechnical Investigation

- At least three in-hole conductivity tests shall be performed using USBR 7300-89 or Bouwer-Rice procedures (the latter if groundwater is encountered within the boring), two tests at different locations within the proposed basin and the third down gradient by no more than approximately 10 m. The tests shall measure permeability in the side slopes and the bed within a depth of 3 m of the invert.

- The minimum acceptable hydraulic conductivity as measured in any of the three required test holes is 13 mm/hr. If any test hole shows less than the minimum value, the site should be disqualified from further consideration.

- Exclude from consideration sites constructed in fill or partially in fill unless no silts or clays are present in the soil boring. Fill tends to be compacted, with clays in a dispersed rather than flocculated state, greatly reducing permeability.

- The geotechnical investigation should be such that a good understanding is gained as to how the stormwater runoff will move in the soil (horizontally or vertically) and if there are any geological conditions that could inhibit the movement of water.

Additional Design Guidelines

(1) Basin Sizing - The required water quality volume is determined by local regulations or sufficient to capture 85% of the annual runoff.

(2) Provide pretreatment if sediment loading is a maintenance concern for the basin.

(3) Include energy dissipation in the inlet design for the basins. Avoid designs that include a permanent pool to reduce opportunity for standing water and associated vector problems.

(4) Basin invert area should be determined by the equation:

$$A = \frac{WQV}{kt}$$

where A = Basin invert area (m^2)

WQV = water quality volume (m^3)

k = 0.5 times the lowest field-measured hydraulic conductivity (m/hr)

t = drawdown time (48 hr)

(5) The use of vertical piping, either for distribution or infiltration enhancement shall not be allowed to avoid device classification as a Class V injection well per 40 CFR146.5(e)(4).

Maintenance

Regular maintenance is critical to the successful operation of infiltration basins. Recommended operation and maintenance guidelines include:

- Inspections and maintenance to ensure that water infiltrates into the subsurface completely (recommended infiltration rate of 72 hours or less) and that vegetation is carefully managed to prevent creating mosquito and other vector habitats.
- Observe drain time for the design storm after completion or modification of the facility to confirm that the desired drain time has been obtained.
- Schedule semiannual inspections for beginning and end of the wet season to identify potential problems such as erosion of the basin side slopes and invert, standing water, trash and debris, and sediment accumulation.
- Remove accumulated trash and debris in the basin at the start and end of the wet season.
- Inspect for standing water at the end of the wet season.
- Trim vegetation at the beginning and end of the wet season to prevent establishment of woody vegetation and for aesthetic and vector reasons.
- Remove accumulated sediment and regrade when the accumulated sediment volume exceeds 10% of the basin.
- If erosion is occurring within the basin, revegetate immediately and stabilize with an erosion control mulch or mat until vegetation cover is established.
- To avoid reversing soil development, scarification or other disturbance should only be performed when there are actual signs of clogging, rather than on a routine basis. Always remove deposited sediments before scarification, and use a hand-guided rotary tiller, if possible, or a disc harrow pulled by a very light tractor.

Cost

Infiltration basins are relatively cost-effective practices because little infrastructure is needed when constructing them. One study estimated the total construction cost at about $2 per ft (adjusted for inflation) of storage for a 0.25-acre basin (SWRPC, 1991). As with other BMPs, these published cost estimates may deviate greatly from what might be incurred at a specific site. For instance, Caltrans spent about $18/ft^3 for the two infiltration basins constructed in southern California, each of which had a water quality volume of about 0.34 ac.-ft. Much of the higher cost can be attributed to changes in the storm drain system necessary to route the runoff to the basin locations.

Infiltration basins typically consume about 2 to 3% of the site draining to them, which is relatively small. Additional space may be required for buffer, landscaping, access road, and fencing. Maintenance costs are estimated at 5 to 10% of construction costs.

One cost concern associated with infiltration practices is the maintenance burden and longevity. If improperly maintained, infiltration basins have a high failure rate. Thus, it may be necessary to replace the basin with a different technology after a relatively short period of time.

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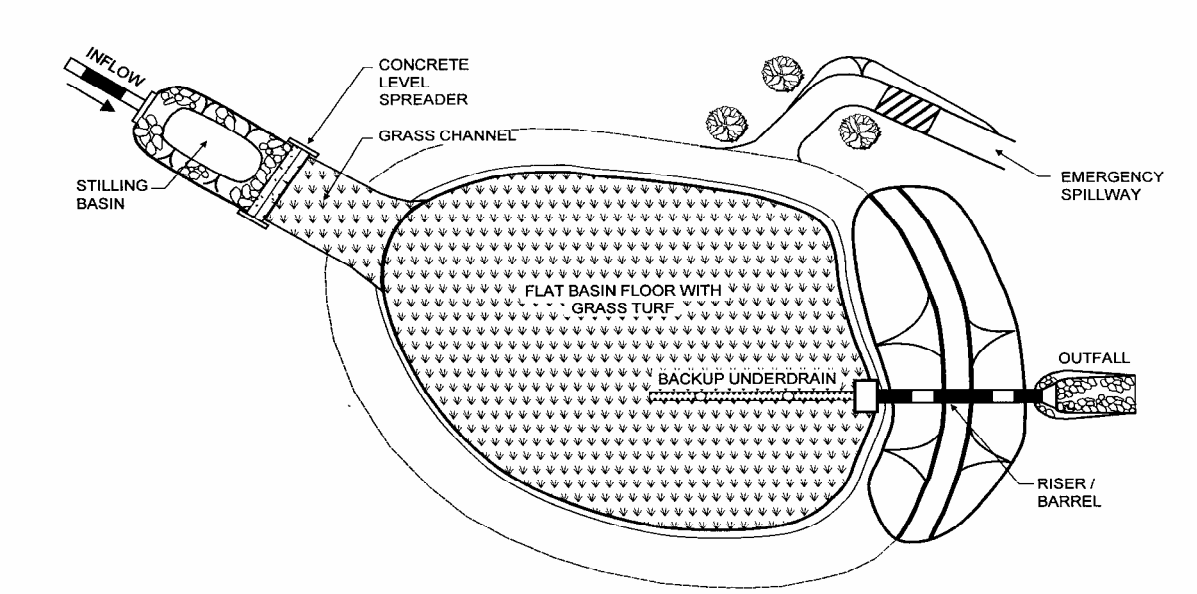
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Information Resources

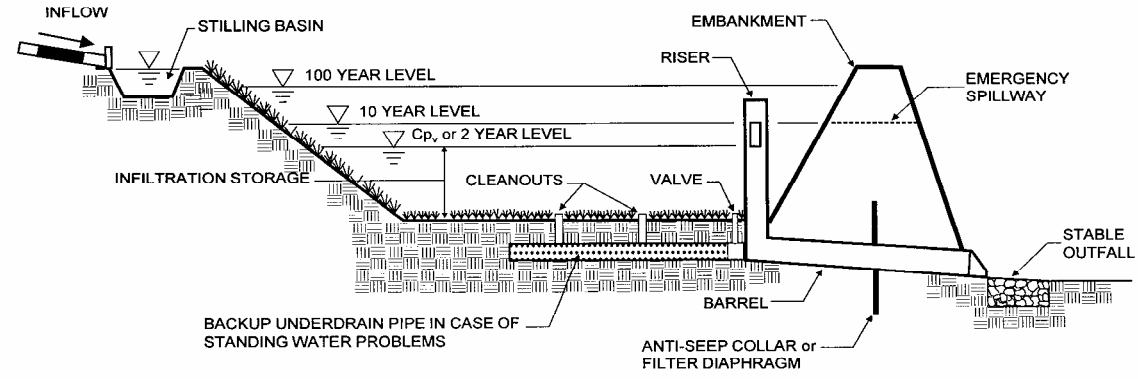
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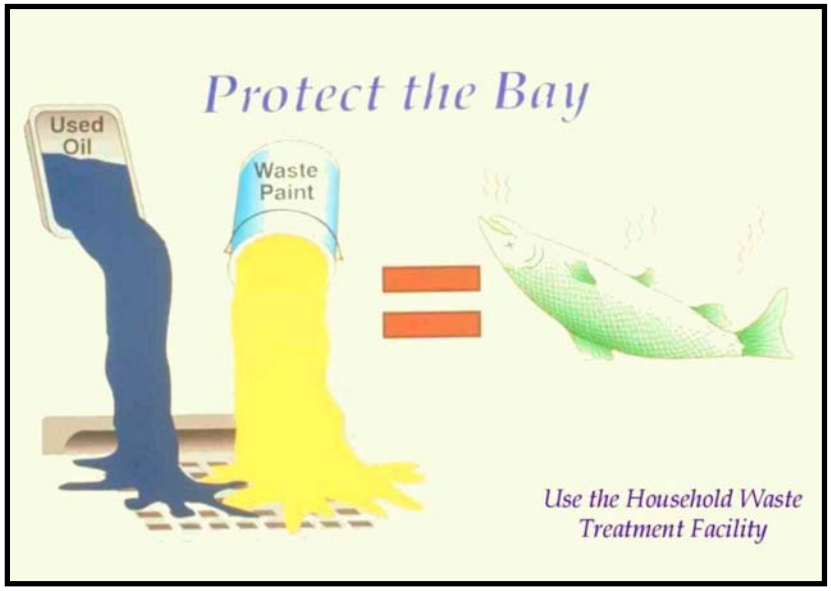


PLAN VIEW



PROFILE

Non-Stormwater Discharges SC-10



Art Credit: Margie Winter

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Description

Non-stormwater discharges are those flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include car washing, air conditioner condensate, etc. However there are certain non-stormwater discharges that pose environmental concern. These discharges may originate from illegal dumping or from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges (which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains. They can generally be detected through a combination of detection and elimination. The ultimate goal is to effectively eliminate non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of pollutants on streets and into the storm drain system and creeks.

Approach

Initially the industry must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is in the elimination of non-stormwater discharges.

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Pollution Prevention

- Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Encourage litter control.

Suggested Protocols

Recommended Complaint Investigation Equipment

- Field Screening Analysis
  - pH paper or meter
  - Commercial stormwater pollutant screening kit that can detect for reactive phosphorus, nitrate nitrogen, ammonium nitrogen, specific conductance, and turbidity
  - Sample jars
  - Sample collection pole
  - A tool to remove access hole covers
- Laboratory Analysis
  - Sample cooler
  - Ice
  - Sample jars and labels
  - Chain of custody forms
- Documentation
  - Camera
  - Notebook
  - Pens
  - Notice of Violation forms
  - Educational materials

General

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled or demarcated next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

- See SC44 Stormwater Drainage System Maintenance for additional information.

Illicit Connections

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate all discharges to the industrial storm drain system.

Visual Inspection and Inventory

- Inventory and inspect each discharge point during dry weather.
- Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system. Also, non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.
- Inspect the path of floor drains in older buildings.

Smoke Testing

- Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two systems.
- During dry weather the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet indicates that there may be a connection between the sanitary and the stormwater system.

Dye Testing

- A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the stormwater collection system for discoloration.

TV Inspection of Drainage System

- TV Cameras can be employed to visually identify illicit connections to the industrial storm drainage system.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Reporting

- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Document and report annually the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.

Training

- Training of technical staff in identifying and documenting illegal dumping incidents is required.
- Consider posting the quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.
- Conduct spill response drills annually (if no events occurred to evaluate your plan) in cooperation with other industries.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Spill Response and Prevention

- See SC11 Spill Prevention Control and Cleanup.

Other Considerations

- Many facilities do not have accurate, up-to-date schematic drawings.

Requirements

Costs (including capital and operation & maintenance)

- The primary cost is for staff time and depends on how aggressively a program is implemented.
- Cost for containment and disposal is borne by the discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Indoor floor drains may require re-plumbing if cross-connections to storm drains are detected.

Maintenance (including administrative and staffing)

- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Further Detail of the BMP

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots

- Types and quantities (in some cases) of wastes
- Patterns in time of occurrence (time of day/night, month, or year)
- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

What constitutes a "non-stormwater" discharge?

- Non-stormwater discharges to the stormwater collection system may include any water used directly in the manufacturing process (process wastewater), air conditioning condensate and coolant, non-contact cooling water, cooling equipment condensate, outdoor secondary containment water, vehicle and equipment wash water, sink and drinking fountain wastewater, sanitary wastes, or other wastewaters.

Permit Requirements

- Facilities subject to stormwater permit requirements must include a certification that the stormwater collection system has been tested or evaluated for the presence of non-stormwater discharges. The State's General Industrial Stormwater Permit requires that non-stormwater discharges be eliminated prior to implementation of the facility's SWPPP.

Performance Evaluation

- Review annually internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Spill Prevention, Control & Cleanup SC-11



Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental or illegal spills. Preparation for accidental or illegal spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify potential spill areas, specify material handling procedures, describe spill response procedures, and provide spill clean-up equipment. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills.

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Approach

Pollution Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- Develop a Spill Prevention Control and Countermeasure (SPCC) Plan. The plan should include:

- Description of the facility, owner and address, activities and chemicals present
- Facility map
- Notification and evacuation procedures
- Cleanup instructions
- Identification of responsible departments
- Identify key spill response personnel

- Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.

Suggested Protocols (including equipment needs)

Spill Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- If consistent illegal dumping is observed at the facility:
  - Post "No Dumping" signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
  - Landscaping and beautification efforts may also discourage illegal dumping.
  - Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.

- Store and contain liquid materials in such a manner that if the tank is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.

- If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.

- Routine maintenance:
  - Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
  - Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
  - Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain.*

  - Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.

- Label all containers according to their contents (e.g., solvent, gasoline).
- Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).
- Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).
- Identify key spill response personnel.

Spill Control and Cleanup Activities

- Follow the Spill Prevention Control and Countermeasure Plan.
- Clean up leaks and spills immediately.
- Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste. Physical methods for the cleanup of dry chemicals include the use of brooms, shovels, sweepers, or plows.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).
- Report spills to local agencies, such as the fire department; they can assist in cleanup.
- Establish a system for tracking incidents. The system should be designed to identify the following:

  - Types and quantities (in some cases) of wastes

  - Patterns in time of occurrence (time of day/night, month, or year)

- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)

- Responsible parties

Training

- Educate employees about spill prevention and cleanup.

- Well-trained employees can reduce human errors that lead to accidental releases or spills:

  - The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.

  - Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.

- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.

- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (Health & Safety Code Chapter 6.67).

- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.

- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.

- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- This BMP has no major administrative or staffing requirements. However, extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- The date and time the inspection was performed
- Name of the inspector
- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from

tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.

- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.
- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use adsorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.

- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:
  - Cover fueling area if possible.
  - Use a perimeter drain or slope pavement inward with drainage to a sump.
  - Pave fueling area with concrete rather than asphalt.
- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off' of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area. Remove the adsorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities. The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department)
- Develop procedures to prevent/mitigate spills to storm drain systems
- Identify responsible departments
- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures
- Address spills at municipal facilities, as well as public areas

- Provide training concerning spill prevention, response and cleanup to all appropriate personnel

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Stormwater Managers Resource Center http://www.stormwatercenter.net/

Outdoor Loading/Unloading SC-30



Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

The loading/unloading of materials usually takes place outside on docks or terminals; therefore, materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.

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Suggested Protocols

Loading and Unloading – General Guidelines

- Develop an operations plan that describes procedures for loading and/or unloading.
- Conduct loading and unloading in dry weather if possible.
- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains in the area.
- Grade and/or berm the loading/unloading area to a drain that is connected to a deadend.

Inspection

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.

Training

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all and ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Have an emergency spill cleanup plan readily available.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.

Other Considerations (Limitations and Regulations)

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
- It may not be possible to conduct transfers only during dry weather.

Requirements

Costs

Costs should be low except when covering a large loading/unloading area.

Maintenance

- Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area.

Supplemental Information

Further Detail of the BMP

Special Circumstances for Indoor Loading/Unloading of Materials

Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer, treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.

- The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.

- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:

  - Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.

  - Drip pan systems should be installed between the rails to collect spillage from tank cars.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Outdoor Equipment Operations SC-32

Description

Outside process equipment operations and maintenance can contaminate stormwater runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, landfills and waste piles, solid waste treatment and disposal, are examples of process operations that can lead to contamination of stormwater runoff. Source controls for outdoor process equipment operations and maintenance include reducing the amount of waste created, enclosing or covering all or some of the equipment, installing secondary containment, and training employees.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Approach

Pollution Prevention

- Perform the activity during dry periods.
- Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Suggested Protocols

- Consider enclosing the activity in a building and connecting the floor drains to the sanitary sewer.
- Cover the work area with a permanent roof if possible.
- Minimize contact of stormwater with outside process equipment operations through berming and drainage routing (run-on prevention). If possible, connect process equipment area to public sewer or facility wastewater treatment system. Some municipalities require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Dry clean the work area regularly.

Training

- Train employees to perform the activity during dry periods only or substituting benign materials for more toxic ones.
- Train employee and contractors in proper techniques for spill containment and cleanup. Employees should have the tools and knowledge to immediately begin cleaning up a spill should one occur.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.

- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Prevent operator errors by using engineering safe guards and thus reducing accidental releases of pollutant.
- Inspect storage areas regularly for leaks or spills. Also check for structural failure, spills and overfills due to operator error, and/or failure of piping system.

Other Considerations

- Providing cover may be expensive.
- Space limitations may preclude enclosing some equipment.
- Storage sheds often must meet building and fire code requirements.

Requirements

Costs

Costs vary depending on the complexity of the operation and the amount of control necessary for stormwater pollution control.

Maintenance

- Conduct routine preventive maintenance, including checking process equipment for leaks.
- Clean the storm drain system regularly.

Supplemental Information

Further Detail of the BMP

Hydraulic/Treatment Modifications

If stormwater becomes polluted, it should be captured and treated. If you do not have your own process wastewater treatment system, consider discharging to the public sewer system. Use of the public sewer might be allowed under the following conditions:

- If the activity area is very small (less than a few hundred square feet), the local sewer authority may be willing to allow the area to remain uncovered with the drain connected to the public sewer.
- It may be possible under unusual circumstances to connect a much larger area to the public sewer, as long as the rate of stormwater discharges does not exceed the capacity of the wastewater treatment plant. The stormwater could be stored during the storm and then transferred to the public sewer when the normal flow is low, such as at night.

Industries that generate large volumes of process wastewater typically have their own treatment system and corresponding permit. These industries have the discretion to use their wastewater treatment system to treat stormwater within the constraints of their permit requirements for process treatment. It may also be possible for the industry to discharge the stormwater directly to an effluent outfall without treatment as long as the total loading of the discharged process

water and stormwater does not exceed the loading had a stormwater treatment device been used. This could be achieved by reducing the loading from the process wastewater treatment system. Check with your Regional Water Quality Control Board or local sewering agency, as this option would be subject to permit constraints and potentially regular monitoring.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Stormwater Managers Resource Center http://www.stormwatercenter.net

Waste Handling & Disposal SC-34



Photo Credit: Geoff Brosseau

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Approach

Pollution Prevention

- Accomplish reduction in the amount of waste generated using the following source controls:
  - Production planning and sequencing
  - Process or equipment modification
  - Raw material substitution or elimination
  - Loss prevention and housekeeping
  - Waste segregation and separation
  - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- Recycle materials whenever possible.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

CASQA California Stormwater Quality Association

Suggested Protocols

General

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).

- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- Use all of the product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.

Run-on/Runoff Prevention

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropyleneor hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Inspection

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.

- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Training

- Train staff in pollution prevention measures and proper disposal methods.
- Train employees and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Train employees and subcontractors in proper hazardous waste management.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - Vehicles equipped with baffles for liquid waste
  - Trucks with sealed gates and spill guards for solid waste

Other Considerations (Limitations and Regulations)

Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Requirements

Costs

Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.

Maintenance

- None except for maintaining equipment for material tracking program.

Supplemental Information

Further Detail of the BMP

Land Treatment System

Minimize runoff of polluted stormwater from land application by:

- Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, and there is a closed drainage system

- Avoiding application of waste to the site when it is raining or when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site
- Maintaining adequate barriers between the land application site and the receiving waters (planted strips are particularly good)
- Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working

Examples

The port of Long Beach has a state-of-the-art database for identifying potential pollutant sources, documenting facility management practices, and tracking pollutants.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety. Harvard University. 2002.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Safer Alternative Products SC-35

Description

Promote the use of less harmful products and products that contain little or no TMDL pollutants. Alternatives exist for most product classes including chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, fluorescent lamps).

Approach

Pattern a new program after the many established programs around the state and country. Integrate this best management practice as much as possible with existing programs at your facility.

Develop a comprehensive program based on:

- The "Precautionary Principle," which is an alternative to the "Risk Assessment" model that says it's acceptable to use a potentially harmful product until physical evidence of its harmful effects are established and deemed too costly from an environmental or public health perspective. For instance, a risk assessment approach might say it's acceptable to use a pesticide until there is direct proof of an environmental impact. The Precautionary Principle approach is used to evaluate whether a given product is safe, whether it is really necessary, and whether alternative products would perform just as well.
- Environmentally Preferable Purchasing Program to minimize the purchase of products containing hazardous ingredients used in the facility's custodial services, fleet maintenance, and facility maintenance in favor of using alternate products that pose less risk to employees and to the environment.
- Integrated Pest Management (IPM) or Less-Toxic Pesticide Program, which uses a pest management approach that minimizes the use of toxic chemicals and gets rid of pests by methods that pose a lower risk to employees, the public, and the environment.
- Energy Efficiency Program including no-cost and low-cost energy conservation and efficiency actions that can reduce both energy consumption and electricity bills, along with long-term energy efficiency investments.

Consider the following mechanisms for developing and implementing a comprehensive program:

- Policies

Objectives

- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

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- Procedures
  - Standard operating procedures (SOPs)
  - Purchasing guidelines and procedures
  - Bid packages (services and supplies)
- Materials
  - Preferred or approved product and supplier lists
  - Product and supplier evaluation criteria
  - Training sessions and manuals
  - Fact sheets for employees

Implement this BMP in conjunction with the Vehicle and Equipment Management fact sheets (SC20 – SC22) and SC41, Building and Grounds Maintenance.

Training

- Employees who handle potentially harmful materials in the use of safer alternatives.
- Purchasing departments should be encouraged to procure less hazardous materials and products that contain little or no harmful substances or TMDL pollutants.

Regulations

This BMP has no regulatory requirements. Existing regulations already encourage facilities to reduce the use of hazardous materials through incentives such as reduced:

- Specialized equipment storage and handling requirements,
- Storm water runoff sampling requirements,
- Training and licensing requirements, and
- Record keeping and reporting requirements.

Equipment

- There are no major equipment requirements to this BMP.

Limitations

- Alternative products may not be available, suitable, or effective in every case.

Requirements

Cost Considerations

- The primary cost is for staff time to: 1) develop new policies and procedures and 2) educate purchasing departments and employees who handle potentially harmful materials about the availability, procurement, and use of safer alternatives.

- Some alternative products may be slightly more expensive than conventional products.

Supplemental Information

Employees and contractors / service providers can both be educated about safer alternatives by using information developed by a number of organizations including the references and resources listed below.

The following discussion provides some general information on safer alternatives. More specific information on particular hazardous materials and the available alternatives may be found in the references and resources listed below.

- Automotive products – Less toxic alternatives are not available for many automotive products, especially engine fluids. But there are alternatives to grease lubricants, car polishes, degreasers, and windshield washer solution. Rerefined motor oil is also available.
- Vehicle/Trailer lubrication – Fifth wheel bearings on trucks require routine lubrication. Adhesive lubricants are available to replace typical chassis grease.
- Cleaners – Vegetables-based or citrus-based soaps are available to replace petroleum-based soaps/detergents.
- Paint products – Water-based paints, wood preservatives, stains, and finishes are available.
- Pesticides – Specific alternative products or methods exist to control most insects, fungi, and weeds.
- Chemical Fertilizers – Compost and soil amendments are natural alternatives.
- Consumables – Manufacturers have either reduced or are in the process of reducing the amount of heavy metals in consumables such as batteries and fluorescent lamps. All fluorescent lamps contain mercury, however low-mercury containing lamps are now available from most hardware and lighting stores. Fluorescent lamps are also more energy efficient than the average incandescent lamp.
- Janitorial chemicals – Even biodegradable soap can harm fish and wildlife before it biodegrades. Biodegradable does not mean non-toxic. Safer products and procedures are available for floor stripping and cleaning, as well as carpet, glass, metal, and restroom cleaning and disinfecting.

Examples

There are a number of business and trade associations, and communities with effective programs. Some of the more prominent are listed below in the references and resources section.

References and Resources

Note: Many of these references provide alternative products for materials that typically are used inside and disposed to the sanitary sewer as well as alternatives to products that usually end up in the storm drain.

General Sustainable Practices and Pollution Prevention Including Pollutant-Specific Information

California Department of Toxic Substances Control (www.dtsc.ca.gov)

California Integrated Waste Management Board (www.ciwmb.ca.gov)

City of Santa Monica (www.santa-monica.org/environment)

City of Palo Alto (www.city.palo-alto.ca.us/cleanbay)

City and County of San Francisco, Department of the Environment (www.ci.sf.ca.us/sfenvironment)

Earth 911 (www.earth911.org/master.asp)

Environmental Finance Center Region IX (www.greenstart.org/efc9)

Flex Your Power (www.flexyourpower.ca.gov)

GreenBiz.com (www.greenbiz.com)

Green Business Program (www.abag.org/bayarea/enviro/gbus/gb.html)

Pacific Industrial and Business Association (www.piba.org)

Sacramento Clean Water Business Partners (www.sacstormwater.org)

USEPA BMP fact sheet – Alternative products (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll_2.cfm)

USEPA Region IX Pollution Prevention Program (www.epa.gov/region09/p2)

Western Regional Pollution Prevention Network (www.westp2net.org)

Metals (mercury, copper)

National Electrical Manufacturers Association - Environment, Health and Safety (www.nema.org)

Sustainable Conservation (www.suscon.org)

- Auto Recycling Project
- Brake Pad Partnership

Pesticides and Chemical Fertilizers

Bio-Integral Resource Center (www.birc.org)

California Department of Pesticide Regulation (www.cdpr.ca.gov)

University of California Statewide IPM Program (www.ipm.ucdavis.edu/default.html)

Dioxins

Bay Area Dioxins Project (http://dioxin.abag.ca.gov/)

Building & Grounds Maintenance SC-41



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

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- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Other Considerations

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

Maintenance

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Building Repair and Construction SC-42



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Recycle

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Modifications are common particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to stormwater from building repair, remodeling, and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

Approach

Pollution Prevention

- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical.
- Buy recycled products to the maximum extent practical.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.

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- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.

Suggested Protocols

Repair & Remodeling

- Follow BMPs identified in Construction BMP Handbook.
- Maintain good housekeeping practices while work is underway.
- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left outside, particularly during the rainy season.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store materials properly that are normally used in repair and remodeling such as paints and solvents.
- Sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout if when repairing roofs, small particles have accumulated in the gutter. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Properly store and dispose waste materials generated from construction activities. See Construction BMP Handbook.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed.

Painting

- Enclose painting operations consistent with local air quality regulations and OSHA.
- Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.

- Do not transfer or load paint near storm drain inlets.
- Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is significant risk of a spill reaching storm drains.
- Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
- Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
- Capture all cleanup-water and dispose of properly.
- Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
- Store leftover paints if they are to be kept for the next job properly, or dispose properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Training

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Limitations

- This BMP is for minor construction only. The State's General Construction Activity Stormwater Permit has more requirements for larger projects. The companion "Construction Best Management Practice Handbook" contains specific guidance and best management practices for larger-scale projects.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Be certain that actions to help stormwater quality are consistent with Cal- and Fed-OSHA and air quality regulations.

SC-42 Building Repair and Construction

Requirements

Costs

These BMPs are generally low to modest in cost.

Maintenance

N/A

Supplemental Information

Further Detail of the BMP

Soil/Erosion Control

If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.

If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. See Treatment Control Fact Sheet TC-20 Wet Pond/Basin in Section 5 of the New Development and Redevelopment Handbook regarding design criteria. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Parking/Storage Area Maintenance SC-43



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

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SC-43 Parking/Storage Area Maintenance

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

SC-43 Parking/Storage Area Maintenance

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Drainage System Maintenance SC-44



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

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- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).

- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.
- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:

  - Purchase and installation of signs.

  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.

  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.

  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:
http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Efficient Irrigation SD-12



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Maintenance Bays & Docks SD-31



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Several measures can be taken to prevent operations at maintenance bays and loading docks from contributing a variety of toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to the stormwater conveyance system.

Approach

In designs for maintenance bays and loading docks, containment is encouraged. Preventative measures include overflow containment structures and dead-end sumps. However, in the case of loading docks from grocery stores and warehouse/distribution centers, engineered infiltration systems may be considered.

Suitable Applications

Appropriate applications include commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for vehicle maintenance and repair are governed by Building and Fire Codes, and by current local agency ordinances, and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code requirements.

Designing New Installations

Designs of maintenance bays should consider the following:

- Repair/maintenance bays and vehicle parts with fluids should be indoors; or designed to preclude urban run-on and runoff.
- Repair/maintenance floor areas should be paved with Portland cement concrete (or equivalent smooth impervious surface).

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- Repair/maintenance bays should be designed to capture all wash water leaks and spills. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around repair bays to prevent spilled materials and wash-down waters form entering the storm drain system. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

- Other features may be comparable and equally effective.

The following designs of loading/unloading dock areas should be considered:

- Loading dock areas should be covered, or drainage should be designed to preclude urban run-on and runoff.

- Direct connections into storm drains from depressed loading docks (truck wells) are prohibited.

- Below-grade loading docks from grocery stores and warehouse/distribution centers of fresh food items should drain through water quality inlets, or to an engineered infiltration system, or an equally effective alternative. Pre-treatment may also be required.

- Other features may be comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Stormwater and non-stormwater will accumulate in containment areas and sumps with impervious surfaces. Contaminated accumulated water must be disposed of in accordance with applicable laws and cannot be discharged directly to the storm drain or sanitary sewer system without the appropriate permit.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

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- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Attachment F
Infiltration Report

October 8, 2019

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Bridge Development Partners
1334 Parkview Avenue, Suite 310
Manhattan Beach, California 90266

Attention: Mr. Brendan Kotler

Project No.: **18G122-3**

Subject: **Update of Geotechnical Report and Conceptual Grading Plan Review**
Proposed Warehouse
NEC Foothill Boulevard and Central Avenue
Upland, California

References: 1) Geotechnical Investigation Three Proposed Warehouses, NEC Foothill Boulevard and Central Avenue, Upland, California, prepared for Bridge Development Partners by Southern California Geotechnical, Inc. (SCG), SCG Project No. 18G122-1R, dated June 17, 2019.

2) Results of Infiltration Testing, Three Proposed Warehouses, NEC Foothill Boulevard and Central Avenue, Upland, California, prepared for Bridge Development Partners by SCG, SCG Project No. 18G122-2, dated June 18, 2019.

Gentlemen:

In accordance with your request, this letter will serve as an update to the above-referenced reports relative to the currently proposed development. In order to prepare this report, we have reviewed the conceptual grading plan prepared by Thienes Engineering, Inc., and the above-referenced geotechnical report and infiltration report.

Current Site Conditions

The subject site is located near the northeast corner of Foothill Boulevard and Central Avenue in Upland, California. The site is bounded to the north by Cable Airport and 13th Street, to the west by existing commercial/industrial buildings, to the south by existing retail/commercial/restaurant buildings and Foothill Boulevard, and to the east by a Lowe's Home Improvement Store.

The subject site consists of four (4) nearly rectangular-shaped parcels which total 49.02± acres. The northwestern portion of the site is currently developed as a material crushing and screening facility. This portion of the site contains various stockpiles of recycled concrete, asphalt, and brick as well as screened aggregate. These stockpiles vary in height with the largest stockpiles ranging from 20 to 30± feet in height. There are also some track-mounted conveying and screening equipment on site as well as some large construction vehicles. The remainder of the site is undeveloped with ground cover consisting of exposed soil with moderate to heavy vegetation and weed growth. A significant amount of garbage and makeshift structures are scattered throughout the undeveloped regions of the site.

Detailed topographic was obtained from a conceptual grading plan prepared by Thienes Engineering, Inc. With the exception of the existing stockpiles, the overall site topography slopes downward to the south and southwest at gradients ranging from 3 to 5 percent. The site topography ranges from an elevation high of 1400± feet mean sea level (msl) along the northern boundary of the site to an elevation low of 1355± feet msl in the southwestern region of the site. There are significant elevation fluctuations due to the large stockpiles within the western portion of the site.

Previous Studies

Southern California Geotechnical, Inc. (SCG) previously conducted a geotechnical investigation for the overall site (Reference 1). At the time of the previous study, the proposed development for the site consisted of three (3) warehouses, ranging from 274,955 ft^2 to 371,540± ft^2 in size. As part of this geotechnical investigation, twenty-one (21) exploratory trenches were excavated to depths of 5 to 10± feet below the existing site grades. Artificial fill soils were encountered at the ground surface or beneath the existing pavements at some of the trench locations. The fill soils extended to depths of 1 to 8± feet below existing site grades. The fill soils generally consisted of medium dense to very dense silty fine sands and gravelly fine to coarse sands with varying amounts of cobbles and boulders. The fill soils possessed a disturbed appearance and significant debris content (including fragments of brick, wire, paper, plastic, metal, wood, tree stumps, glass, concrete, and asphalt), resulting in their classification as artificial fill. Varying amounts of tree limbs, roots and rootlets were observed within the fill soils. A layer of organic material 6±-inches thick was observed at Trench No. T-14 at a depth of 2½ to 3± feet. Alluvial soils were encountered at all trenches, except for Trench Nos. T-2 and T-21 which met refusal conditions in fill. The alluvial soils generally consisted of dense to very dense gravelly fine to coarse sand with extensive cobbles and boulders extending to the maximum depth explored of 10 feet below existing site grades. Varying amounts of tree limbs, roots and rootlets were observed within the native alluvial soils. Free water was not encountered during the excavation of any of the trenches.

SCG also performed infiltration testing at the subject site. The results of the infiltration testing are presented in the Reference 2 report. As part of the infiltration testing, eleven (11) backhoe-excavated trenches were extended to depths of 4 to 16± feet below existing site grades. Artificial fill soils were encountered within most of the infiltration trenches. The fill soils extended to depths of 1½ to 8± feet below existing site grades. The fill soils generally consisted of dense to very dense silty fine sands, fine to medium sands, and gravelly fine to coarse sands with varying amounts of cobbles and boulders. The fill soils possessed a disturbed appearance and significant amounts of debris (including fragments of asphalt, brick, glass, wire, plastic, metal, rebar, and cloth), resulting in their classification as artificial fill. Native alluvial soils were encountered at all of the trench locations, extending to the maximum depth explored of 16± feet below existing site grades. The alluvial soils generally consisted of medium dense silty fine sands and dense to very dense fine to coarse sands, gravelly fine to coarse sands, and fine to coarse sandy gravel with varying amounts of cobbles and boulders. Free water was not encountered during the excavation of any of the trenches. The approximate trench locations (identified as Trench Nos. T-1 through T-21) are indicated on the Trench Location Plan, included as Plate 1 of this report.

The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Infiltration testing was performed at the base of all eleven (11) trench locations, which extended to depths of 4 to 16± feet below the existing site grades. All of the infiltration trenches were generally embedded within alluvial soils, comprised of fine to coarse sandy gravels, and gravelly fine to coarse sands with occasional cobbles. The calculated infiltration rates ranged from 13.0 to 25.9 inches per hour (in/hr). The approximately locations of the infiltration trenches (identified as I-1 through I-11) are indicated on the attached Trench Location Plan, encloses as Plate 1 of this report.

Conceptual Grading Plan Review

The conceptual grading plan for this project was prepared by Thienes Engineering, Inc. The grading plan consists of fifteen (15) sheets, titled "Conceptual Grading Plan, Bridge Upland, NE Foothill Boulevard and Central Avenue, City of Upland," dated September 26, 2019.

Based on our review of these plans, the site will be developed with one (1) warehouse, 276,825± ft^2 in size, located in the western region of the property. Loading docks will be constructed along the east side of the building. The remainder of the site will be utilized for automobile parking. New cut slopes and fill slopes will be required in order to establish the new site grades. Cuts and fills of up to 20± feet will be required in order to establish the new site grades. A new retaining wall, totaling 6½± feet in height will be constructed at the toe of the northern cut-slope. The wall will retain a maximum of 5± feet of soil. New below-grade infiltration chambers will be located in the southern region of the site.

Comments generated during our review of these plans are presented below:

- New fill slopes will be required along the southern and northeastern boundaries of the site. The new fill slopes will be up to 20± feet in height and will possess a maximum inclination of 2h:1v (horizontal to vertical). It is expected that the new fill slopes will possess adequate factors of safety for gross stability, since they will be comprised of engineered fill soils. It is recommended that these fill slopes be constructed with a keyway, at least 3 feet deep. The base of the keyway should slope at least 1 foot downward into the slope. The recommended width of the keyway is to be based on the equipment used at the time of grading. Typically, the recommended width of the keyway is based on 1.5 times the width of typical grading equipment. Following completion of the keyway cut, the subgrade soils should be evaluated by the geotechnical engineer to verify that the keyway is founded into competent native materials. The resulting subgrade soils should then be scarified to a depth of 10 to 12 inches, moisture conditioned to 0 to 4 percent above optimum moisture content and recompacted. The resulting keyway should then be backfilled with compacted structural fill. In general, the new fill slopes should be constructed in accordance with the ***Grading Guide Specifications***, included with the referenced SCG report.

- New cut slopes will also be utilized in order to establish the proposed site grades. Cuts ranging from 7 to 17± feet will be required in order to establish the new slope inclination of 2h:1v. The new slope configurations are expected to possess adequate safety factors for surficial and gross stability. However, it is recommended that the cut-slopes be evaluated at the time of grading by a representative of this company. If the proposed cuts expose loose, cohesionless sands, then a stability fill may be required at the base of the

new cut slope excavations. Furthermore, the on-site soils possess a significant amount of oversize materials, including cobbles and boulders which may cause severe disturbance at the new face-of-slope. The new slope configuration should be evaluated at the time of grading to evaluate the need for a stability fill slope at the base of the new slope excavation. Additional recommendations regarding the construction of a stability fill are included with the ***Grading Guide Specifications***, included in the referenced report.

- As noted in the referenced geotechnical investigation (Reference 1), several of the test pits encountered fill soils with significant debris content (including fragments of brick, wire, paper, plastic, metal, wood, tree stumps, glass, concrete and asphalt). All of the artificial fill soils are recommended to be removed from the proposed building area. In addition, it is recommended that the existing fill soils within the new pavement areas be evaluated at the time of grading to determine their suitability to serve as a new fill subgrade. Any artificial fill soils possessing significant amount of debris content may need to be removed prior to the placement of new compacted structural fill.

- The conceptual grading plan indicates that a new retaining wall (with a maximum retained height of 5± feet) will be constructed at the toe of the proposed cut-slope located along the northern boundary of the site. As noted in the referenced geotechnical report, the inclination for temporary slopes should not exceed 2h:1v. Specialized grading techniques, or possibly shoring, may be required in order to maintain a safe excavation during construction of the new wall. All exaction activities should be conducted in accordance with Cal-OSHA regulations. In order to eliminate the recommended overexcavation beneath the new retaining wall foundation, it is recommended that the proposed retaining wall be designed using a reduced soil bearing pressure of 2,000 lbs/ft^2.

- The conceptual grading plan indicates that the below-grade infiltration chambers have been designed utilizing an infiltration rate of 3.5 in/hr with a safety factor of 2. Based on the subsurface profile identified in the referenced reports, and the infiltration rates recommended in the Reference 2 report, the design infiltration rate noted on the conceptual grading plan is considered to be conservative. It is recommended, the civil engineer verify that the proposed base of the new chamber systems will extend below the existing artificial fill soils, which extend to depths of 1 to 8± feet at the trench locations.

Subject to the comments presented above, the referenced plans are considered to have been prepared in accordance with the referenced geotechnical reports. It should be noted that our review was limited to the geotechnical aspects of the project, and no representations as to the suitability of the civil design are intended.

The development which was proposed at the time of the referenced geotechnical reports included three (3) new warehouses, surrounded by new asphaltic concrete and/or Portland cement concrete pavements. Based on our review, the referenced geotechnical reports are considered applicable to the currently proposed development. The remedial grading and construction recommendations presented in the referenced report remain valid for the proposed development. No new subsurface exploration is considered warranted.

Report Update

This letter may serve as an update to the referenced reports. Provided that the updated recommendations contained within this letter are implemented, the previous geotechnical reports are considered valid for the currently proposed improvements.

Closure

We sincerely appreciate the opportunity to be of continued service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

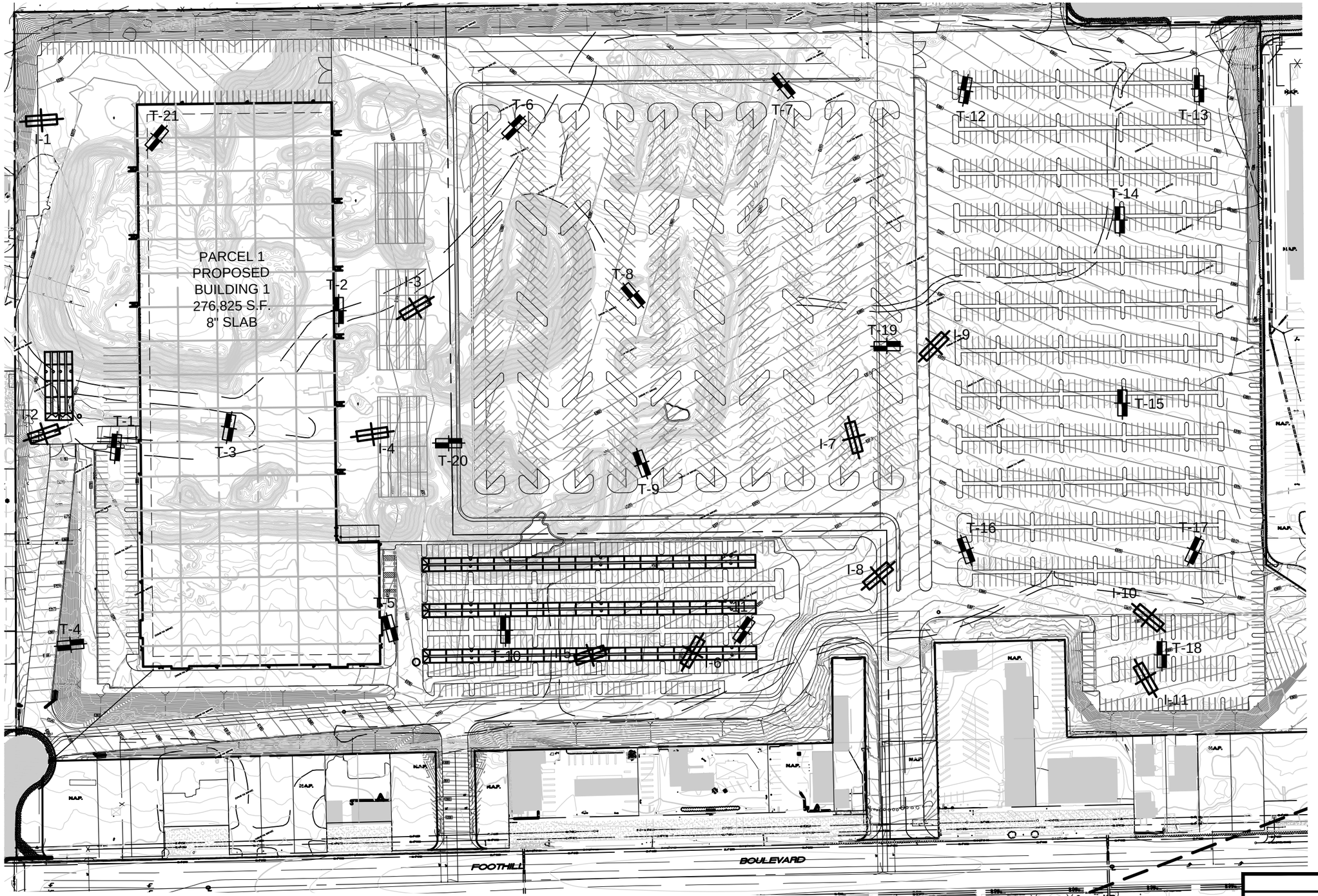
Pablo Montes Jr.
Staff Engineer



Robert G. Trazo, GE 2655
Principal Engineer

Enclosures: Plate 1 – Trench Location Plan

Distribution: (1) Addressee
(1) Thienes Engineering, Inc.



GEOTECHNICAL LEGEND

APPROXIMATE TRENCH LOCATION FROM PREVIOUS STUDY (SCG PROJECT NO. 18G122-1R)

APPROXIMATE INFILTRATION TEST LOCATION STUDY (SCG PROJECT NO. 18G122-2)

NORTH

NOTE: SITE PLAN PREPARED BY THIENES ENGINEERING, INC.

TRENCH LOCATION PLAN

PROPOSED WAREHOUSE

UPLAND, CALIFORNIA

SCALE: 1" = 150'

DRAWN: PM
CHKD: RGT

SCG PROJECT 18G122-3

PLATE 1

SOUTHERN CALIFORNIA GEOTECHNICAL

June 18, 2019

Bridge Development Partners
1334 Parkview Avenue, Suite 310
Manhattan Beach, California 90266

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Attention: Mr. Brendan Kotler

Project No.: **18G122-2**

Subject: **Results of Infiltration Testing**
Three Proposed Warehouses
NEC Foothill Boulevard and Central Avenue
Upland, California

Reference: Geotechnical Investigation, Three Proposed Warehouses, NEC Foothill Boulevard and Central Avenue, Upland, California, prepared for Bridge Development Partners, by Southern California Geotechnical, Inc. (SCG), SCG Project No. 18G122-1R, dated June 17, 2019.

Gentlemen:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Change Order 18G122-CO, dated May 10, 2019. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Site and Project Description

The subject site is located near the northeast corner of Foothill Boulevard and Central Avenue in Upland, California. The site is bounded to the north by Cable Airport and 13th Street, to the west by existing commercial/industrial buildings, to the south by existing retail/commercial/restaurant buildings and Foothill Boulevard, and to the east by a Lowe's Home Improvement Store. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 of this report.

The subject site consists of four (4) nearly rectangular-shaped parcels, which total 49.02± acres. The northwestern portion of the site is currently developed as a material crushing and screening facility. This portion of the site contains various stockpiles of recycled concrete, asphalt, and brick as well as screened aggregate. These stockpiles vary in height with the largest stockpiles ranging from 20 to 30± feet in height. There are also some track-mounted conveying and screening

equipment on site, as well as some large construction vehicles. The remainder of the site is undeveloped with ground cover consisting of exposed soil with moderate to heavy vegetation and weed growth. A significant number of garbage and makeshift structures are scattered throughout the undeveloped regions of the site.

Detailed topographic was obtained from a conceptual grading plan prepared by Thienes Engineering, Inc. With the exception of the existing stockpiles, the overall site topography slopes downward to the south and southwest at gradients ranging from 3 to 5 percent. The site topography ranges from an elevation high of 1400± feet mean sea level (msl) along the northern boundary of the site to an elevation low of 1360± feet msl in the southwestern region of the site. There are significant elevation fluctuations due to the large stockpiles within the western portion of the site.

Proposed Development

Based on the conceptual grading plan that was provided to our office, the development will consist of three (3) warehouses. The warehouses are identified as Building 1 through Building 3. Building 1 will be located in the western area of the site and will be 371,540± ft² in size, Building 2 will be located in the central area of the site and will be 330,751± ft² in size, and Building 3 will be located in the eastern area of the site and will be 274,955± ft² in size. Building 1 will include dock-high doors along the east and west sides of the building. Building 2 will include dock-high doors along the east side of the building and Building 3 will include dock-high doors along the west side of the building. The buildings will be surrounded by asphaltic concrete pavements in the parking and drive lane areas, Portland cement concrete pavements in the loading dock areas, concrete flatwork, and landscape planters throughout.

We understand that the proposed development will include on-site infiltration to dispose of storm water. Based on an infiltration test exhibit prepared by representatives of Thienes Engineering, Inc., the project civil engineer, the proposed infiltration system will consist of seven (7) below-grade chamber systems located throughout the subject site. The bottoms of the chamber systems will extend to depths ranging from 3 to 24± feet below the existing site grades.

Previous Study

Southern California Geotechnical, Inc. (SCG) previously conducted a geotechnical investigation at the subject site, referenced above. As a part of this study, a total of twenty-one (21) trenches were excavated at the site to depths of 5 to 10± feet below existing site grades. Pavements consisting of base material was encountered at six (6) of the trench locations, which measured 6± inches to 2½± feet below existing grades. Artificial fill soils were encountered at the ground surface or beneath the existing pavements at twelve (12) of the trench locations. The fill soils extend to depths of 1 to 8± feet below existing site grades. These fill soils generally consisted of medium dense to very dense silty fine sands and gravelly fine to coarse sands with varying amounts of cobbles and boulders. Alluvial soils were encountered at all but two of the trenches, which met refusal conditions within the fill. The alluvial soils generally consisted of dense to very dense gravelly fine to coarse sands with extensive cobbles and boulders, extending to a maximum depth explored of 10± feet below existing site grades. Free water was not encountered during the excavation of any of the trenches.

Subsurface Exploration

Scope of Exploration

The subsurface exploration for the infiltration testing consisted of eleven (11) backhoe-excavated trenches, extending to depths of 4 to 16± feet below existing site grades. The trenches were logged during excavation by a member of our staff. The approximate locations of the infiltration trenches (identified as I-1 through I-11) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

A 4±-foot layer of gravel was encountered at the ground surface Infiltration Trench No. I-3. Artificial fill soils were encountered beneath the layer of gravel at I-3 and at the ground surface and Infiltration Trench Nos. I-1, I-2, I-4 through I-6, I-8, I-10, and I-11. The fill soils extend to depths of 1½ to 8± feet below existing site grades. The fill soils generally consist of dense to very dense silty fine sands, fine to medium sands, and gravelly fine to coarse sands with varying amounts of cobbles and boulders. The fill soils possess a disturbed appearance and significant amounts of debris (including fragments of asphalt, brick, glass, wire, plastic, metal, rebar, and cloth), resulting in their classification as artificial fill.

Native alluvial soils were encountered beneath the fill soils at all of the trench locations and at the ground surface at Infiltration Trench Nos. I-7 and I-9. The alluvial soils generally consist of medium dense silty fine sands and dense to very dense fine to coarse sands, gravelly fine to coarse sands, and fine to coarse sandy gravel with varying amounts of cobbles and boulders, extending to the maximum depth explored of 16± feet below existing site grades. Varying amounts of tree limbs and roots were observed within the native alluvial soils. Free water was not encountered during the excavation of any of the trenches. The Trench Logs, which illustrate the conditions encountered at the infiltration test locations, are included with this report.

Infiltration Testing

We understand that the results of the testing will be used to prepare a preliminary design for the storm water infiltration systems that will be used at the subject site. As previously mentioned, the infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Two stainless steel infiltration rings were used for the infiltration testing. The outer infiltration ring is 2 feet in diameter and 20 inches in height. The inner infiltration ring is 1 foot in diameter and 20 inches in height. At the test locations, the outer ring was driven 3± inches into the soil at the base of each trench. The inner ring was centered inside the outer ring and subsequently driven 3± inches into the soil at the base of the trench. The rings were driven into the soil using a ten-pound sledge hammer. The soil surrounding the wall of the infiltration rings was only slightly disturbed during the driving process.

Infiltration Testing Procedure

Infiltration testing was performed at all eleven (11) of the trench locations. The infiltration testing consisted of filling the inner ring and the annular space (the space between the inner and outer rings) with water, approximately 3 to 4 inches above the soil. To prevent the flow of water from one ring to the other, the water level in both the inner ring and the annular space between the rings was maintained using constant-head float valves. The volume of water that was added to maintain a constant head in the inner ring and the annular space during each time interval was determined and recorded. A cap was placed over the rings to minimize the evaporation of water during the tests.

The schedule for readings was determined based on the observed soil type at the base of each backhoe-excavated trench. Based on the existing soils at each infiltration test location, the volumetric measurements were made at increments of 1 minute. The water volume measurements are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on these spreadsheets.

The infiltration rates for the infiltration tests are calculated in centimeters per hour and then converted to inches per hour. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Test Elevation (msl)	Soil Description	Infiltration Rate (inches/hour)
I-1	13	1379	Fine to coarse Sandy Gravel, extensive Cobbles	21.0
I-2	9½	1361	Fine to coarse Sandy Gravel, extensive Cobbles	19.4
I-3	16	1369	Fine to coarse Sandy Gravel, extensive Cobbles	18.6
I-4	15	1363	Fine to coarse Sandy Gravel, occasional Cobbles	22.7
I-5	13½	1349.5	Gravelly fine to coarse Sand, occasional Cobbles	24.3
I-6	13	1350.5	Gravelly fine to coarse Sand, trace Silt, occasional Cobbles	21.0
I-7	10½	1365	Fine to coarse Sandy Gravel, extensive Cobbles	13.0
I-8	16	1353	Fine to coarse Sandy Gravel, extensive Cobbles	21.0
I-9	16	1364	Gravelly fine to coarse Sand, extensive Cobbles	17.8
I-10	6½	1358	Fine to coarse Sandy Gravel, occasional Cobbles	23.5
I-11	4	1358	Gravelly fine to coarse Sand, occasional Cobbles	25.9

Laboratory Testing

Moisture Content

The moisture contents for selected soil samples within the trenches were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Trench Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the base of each infiltration test trench has been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of the grainsize analysis are presented on Plates C-1 through C-11 of this report.

Design Recommendations

Eleven (11) infiltration tests were performed at the subject site. As noted above, the calculated infiltration rates at the infiltration test locations range from 13.0 to 25.9 inches per hour.

Based on the infiltration test results, the following infiltration rates are recommended:

Infiltration Chamber	Infiltration Rate (in/hr)
A	19.4
B	18.6
C	21.0
D	13.0
E	21.0
F	17.8
G	23.5

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each chamber system. It should be confirmed that the soils at the base of the proposed infiltration systems correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

The design of the proposed storm water infiltration systems should be performed by the project civil engineer, in accordance with the City of Upland and/or County of San Bernardino guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the systems. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the**

project civil engineer apply an appropriate factor of safety. The infiltration rates recommended above are based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates. It should be noted that the recommended infiltration rates are based on infiltration testing at eleven (11) discrete locations and the overall infiltration rates of the storm water infiltration systems could vary considerably.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Therefore, the subgrade soils within proposed infiltration system areas should not be overexcavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

Infiltration versus Permeability

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. The infiltration rates presented herein were determined in accordance with the ASTM Test Method D-3385-03 standard and are considered valid for the time and place of the actual test. Changes in soil moisture content will affect these infiltration rates. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration areas could potentially be damaged due to saturation of subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration systems at least 25 feet from the building, it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

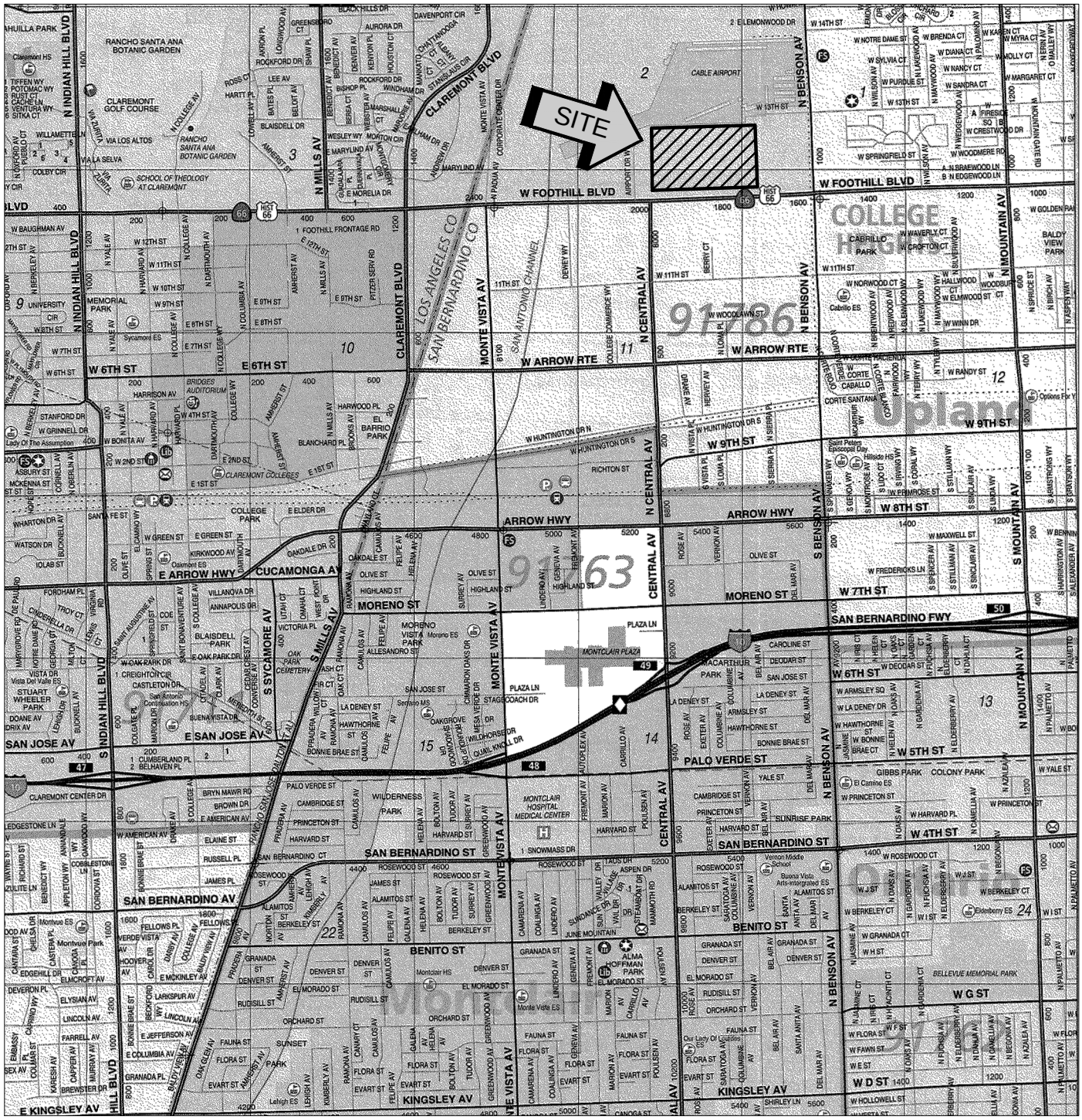
Scott McCann
Staff Scientist



Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Trench Logs (11 pages)
Infiltration Test Results Spreadsheets (11 pages)
Grain Size Distribution Graphs (11 pages)



SOURCE: SAN BERNARDINO COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP

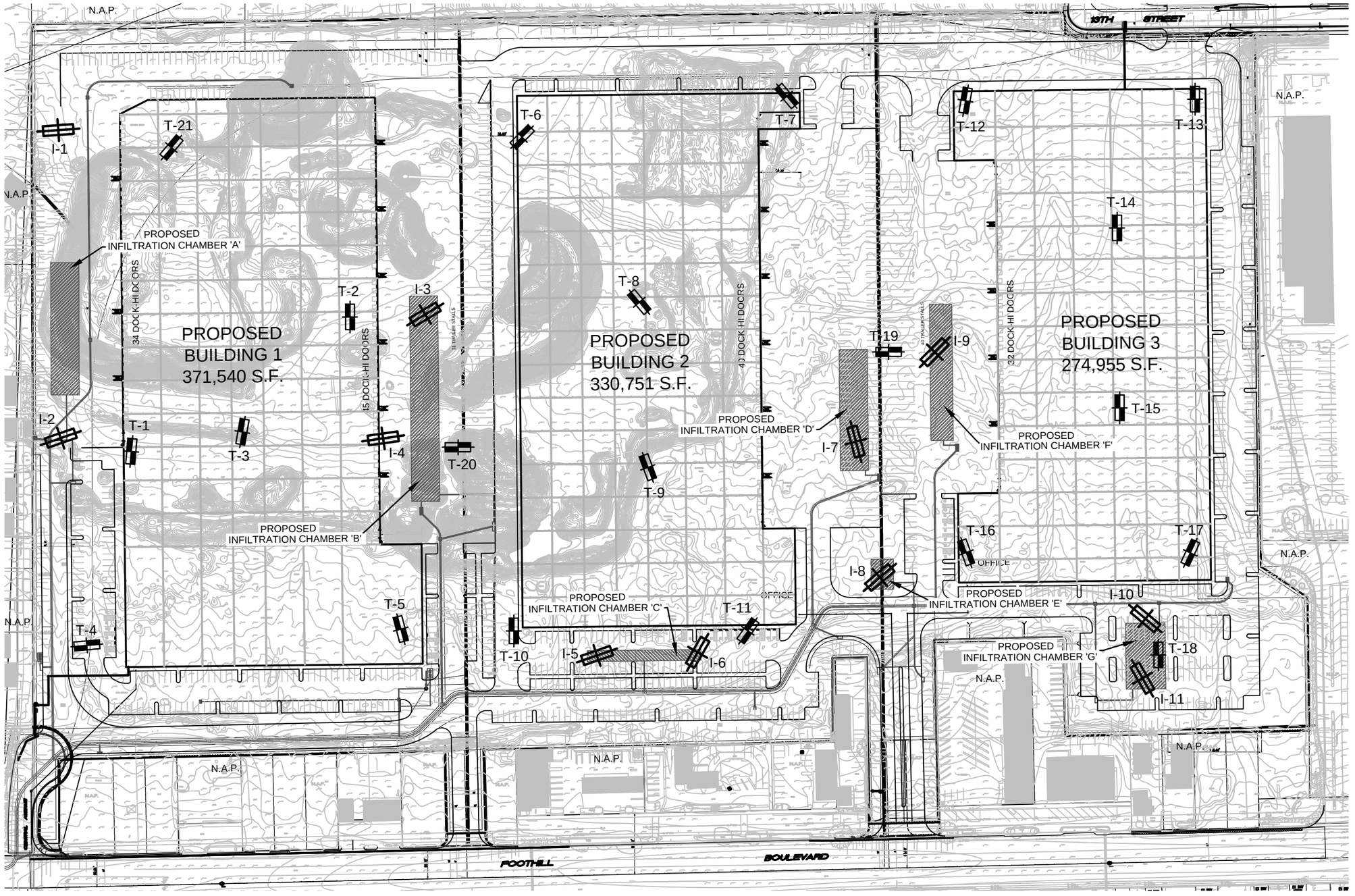
THREE PROPOSED WAREHOUSES

UPLAND, CALIFORNIA

SCALE: 1" = 2400'	
DRAWN: SM CHKD: RGT	
SCG PROJECT 18G122-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

APPROXIMATE INFILTRATION TEST LOCATION

APPROXIMATE TRENCH LOCATION FROM PREVIOUS STUDY (SCG PROJECT NO. 18G122-1)

NORTH

NOTE: SITE PLAN PREPARED BY THIENES ENGINEERING, INC.

INFILTRATION TEST LOCATION PLAN

THREE PROPOSED WAREHOUSES

UPLAND, CALIFORNIA

SCALE: 1" = 160'	
DRAWN: SAM CHKD: RGT	
SCG PROJECT 18G122-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-1

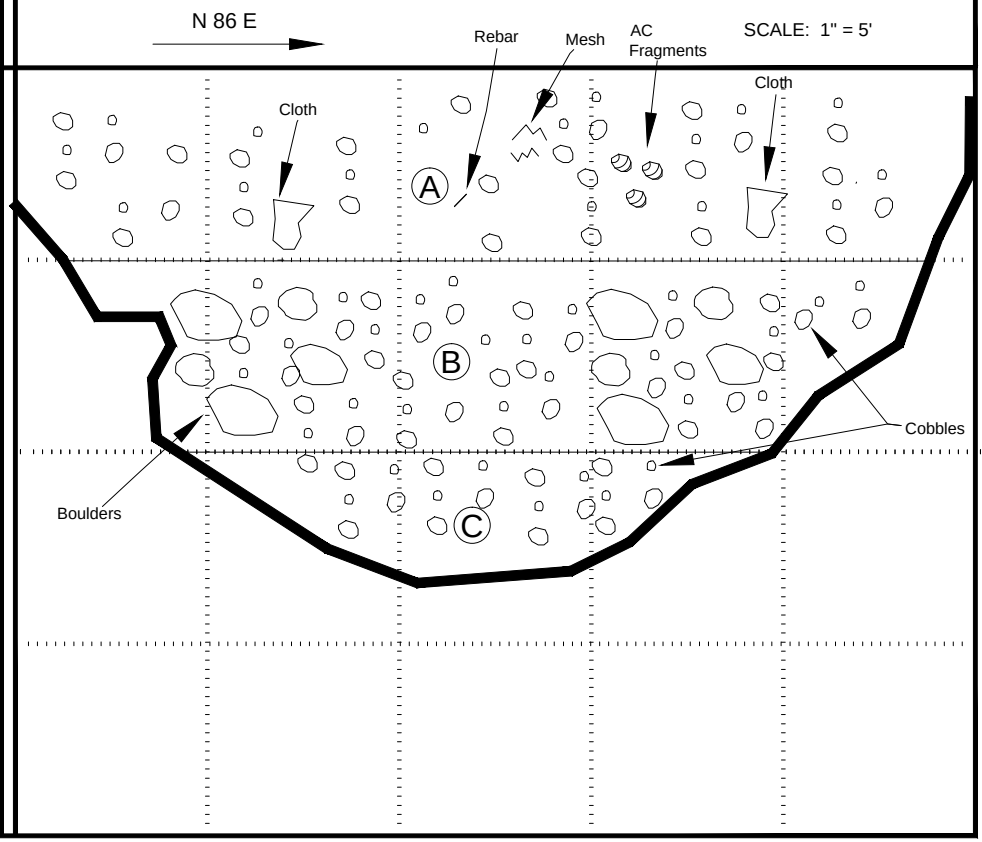
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-21-2019

EQUIPMENT USED: Excavator
LOGGED BY: Emmanuel Jiron
ORIENTATION: N 86 E
TOP OF TRENCH ELEVATION: 1392 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: FILL: Dark Gray fine to medium Sand, little Silt, little coarse Sand, little fine to coarse Gravel, occasional Cobbles, trace Asphaltic concrete fragments, trace Cloth, trace Rebar, trace Mesh Fabric, dense - dry to damp
5				B: ALLUVIUM: Light Gray Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, very dense - dry
10				C: ALLUVIUM: Gray Brown fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry to damp
	b		3	
				Trench Terminated @ 13 feet Bottom of Trench Elevation: 1379 feet msl
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-2

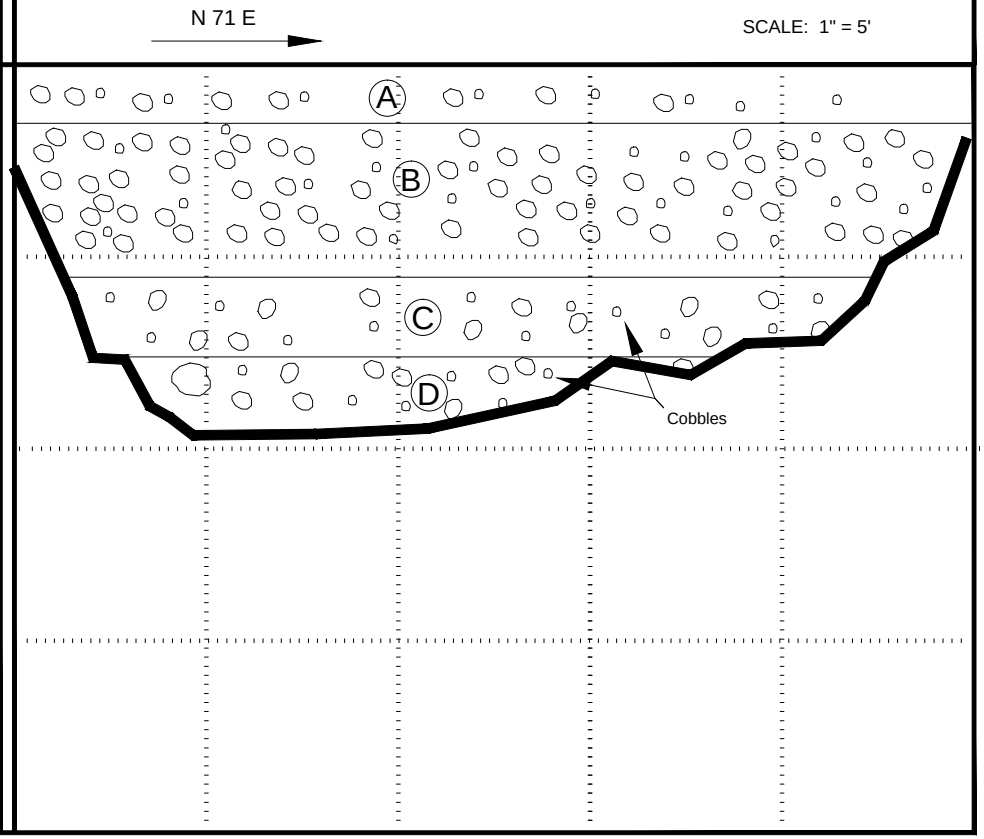
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-21-2019

EQUIPMENT USED: Backhoe
LOGGED BY: Emmanuel Jiron
ORIENTATION: N 71 E
TOP OF TRENCH ELEVATION: 1370.5 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: FILL: Dark Gray fine to medium Sand, little Silt, little coarse Sand, occasional Cobbles, dense - damp
				B: ALLUVIUM: Light Gray fine to coarse Sand, trace fine to coarse Gravel, extensive Cobbles, trace Roots, dense - damp
5				
				C: ALLUVIUM: Light Brown Silty fine Sand, little medium Sand, occasional Cobbles, trace Roots, medium dense - moist
				D: ALLUVIUM: Light Gray fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry to damp
	b		3	
10				Trench Terminated @ 9.5 feet Bottom of Trench Elevation: 1361 feet msl
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-3

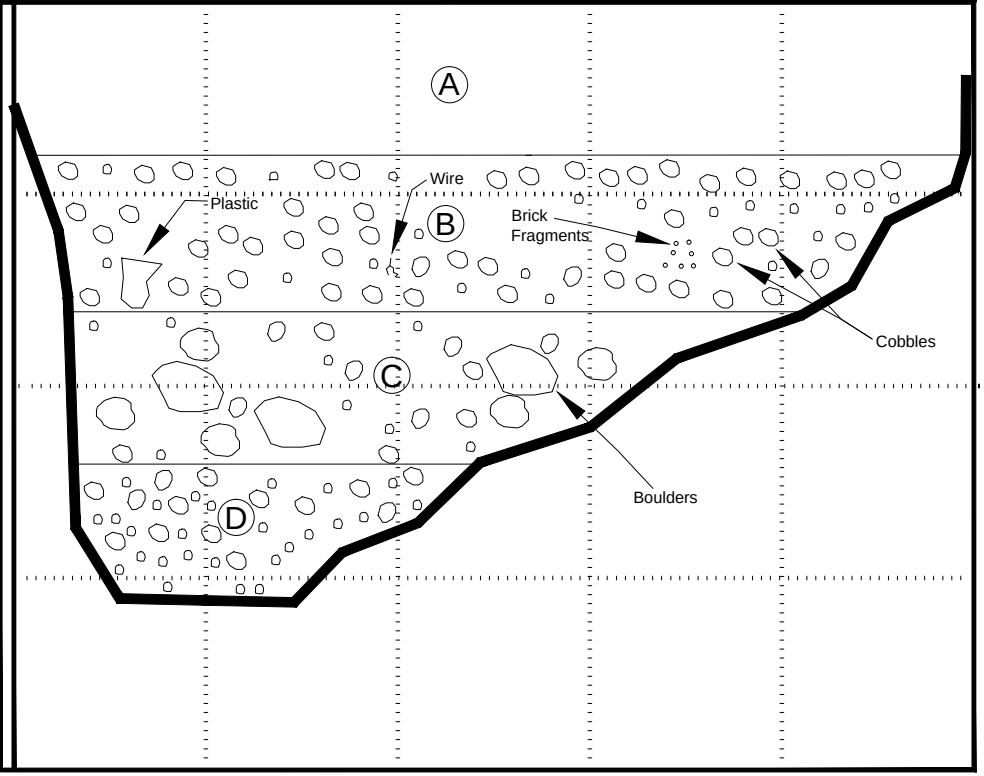
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-22-2019

EQUIPMENT USED: Excavator
LOGGED BY: Emmanuel Jiron
ORIENTATION: N 59 E
TOP OF TRENCH ELEVATION: 1385 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: GRAVEL: 4 feet thick
5				B: FILL: Dark Brown Silty fine to medium Sand, little coarse Sand, little fine to coarse Gravel, extensive Cobbles, trace Plastic, trace Wire, trace Brick fragments, dense - moist
10				C: ALLUVIUM: Light Brown fine to medium Sand, little Silt, occasional Cobbles, occasional Boulders, dense - dry to damp
				D: ALLUVIUM: Light Gray fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry to damp
15	b		3	
				Trench Terminated @ 16 feet Bottom of Trench Elevation: 1369 feet msl

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-4

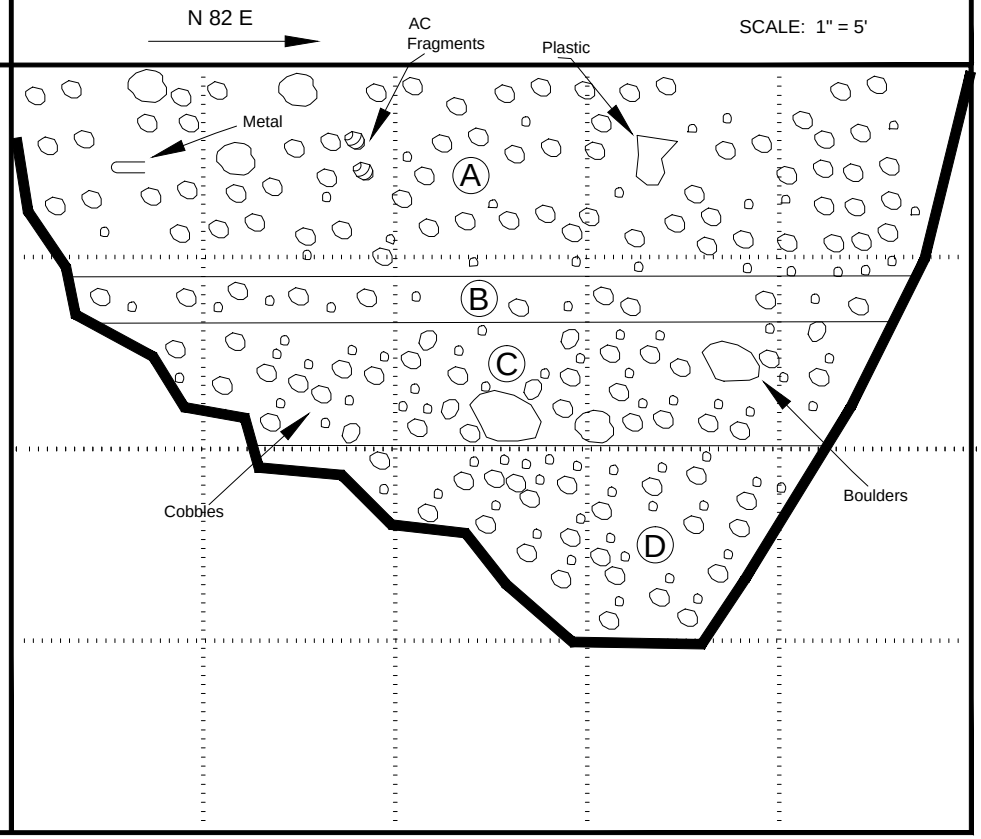
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-22-2019

EQUIPMENT USED: Excavator
LOGGED BY: Emmanuel Jiron
ORIENTATION: N 82 E
TOP OF TRENCH ELEVATION: 1378 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: FILL: Gray Brown Gravelly fine to coarse Sand, trace Silt, extensive Cobbles, little Asphaltic concrete fragments, trace Metal, trace Plastic, very dense - damp
5				B: ALLUVIUM: Gray Brown Silty fine to coarse Sand, little fine to coarse Gravel, occasional Cobbles, trace Roots, medium dense to dense - damp
				C: ALLUVIUM: Light Gray Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, very dense - dry
10				D: ALLUVIUM: Gray Brown fine to coarse Sandy Gravel, occasional Cobbles, dense to very dense - dry to damp
15	b		3	Trench Terminated @ 15 feet Bottom of Trench Elevation: 1363 feet msl

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-4

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-5

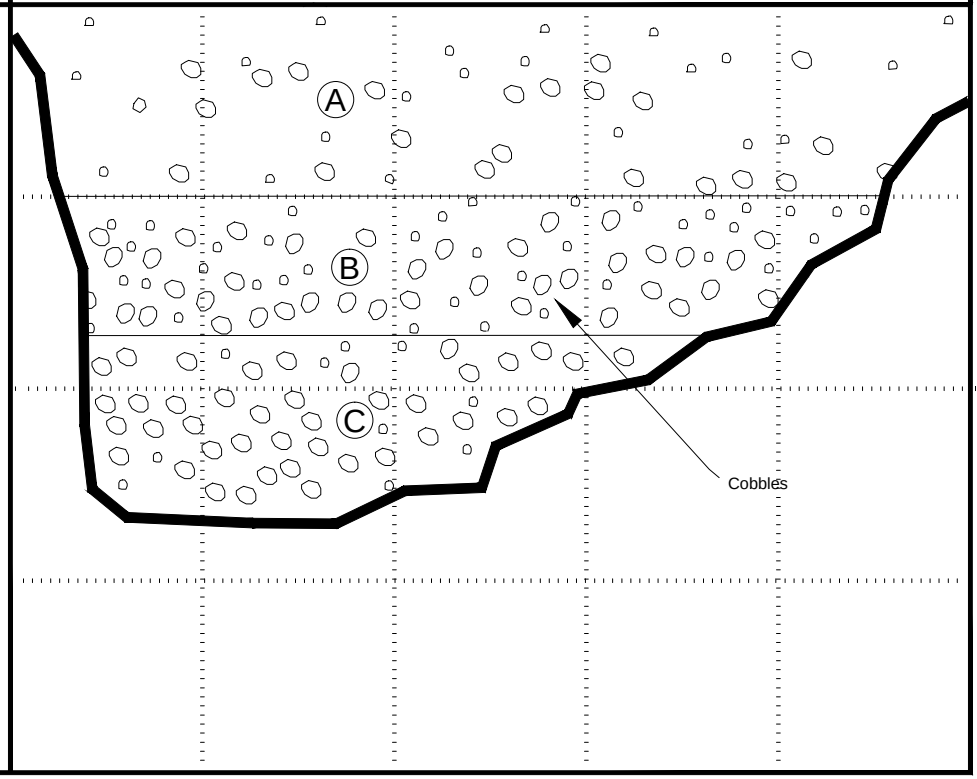
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-23-2019

EQUIPMENT USED: Excavator
LOGGED BY: Emmanuel Jiron
ORIENTATION: N 71 E
TOP OF TRENCH ELEVATION: 1363 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: FILL: Light Gray fine to coarse Sand, little fine to coarse Gravel, occasional Cobbles, dense - dry
5				B: ALLUVIUM: Light Brown fine to medium Sand, little Silt, little coarse Sand, extensive Cobbles, dense - dry
10				C: ALLUVIUM: Gray Brown Gravelly fine to coarse Sand, occasional Cobbles, dense - dry to damp
	b		3	
15				Trench Terminated @ 13.5 feet Bottom of Trench Elevation: 1349.5 feet msl

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-5

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-6

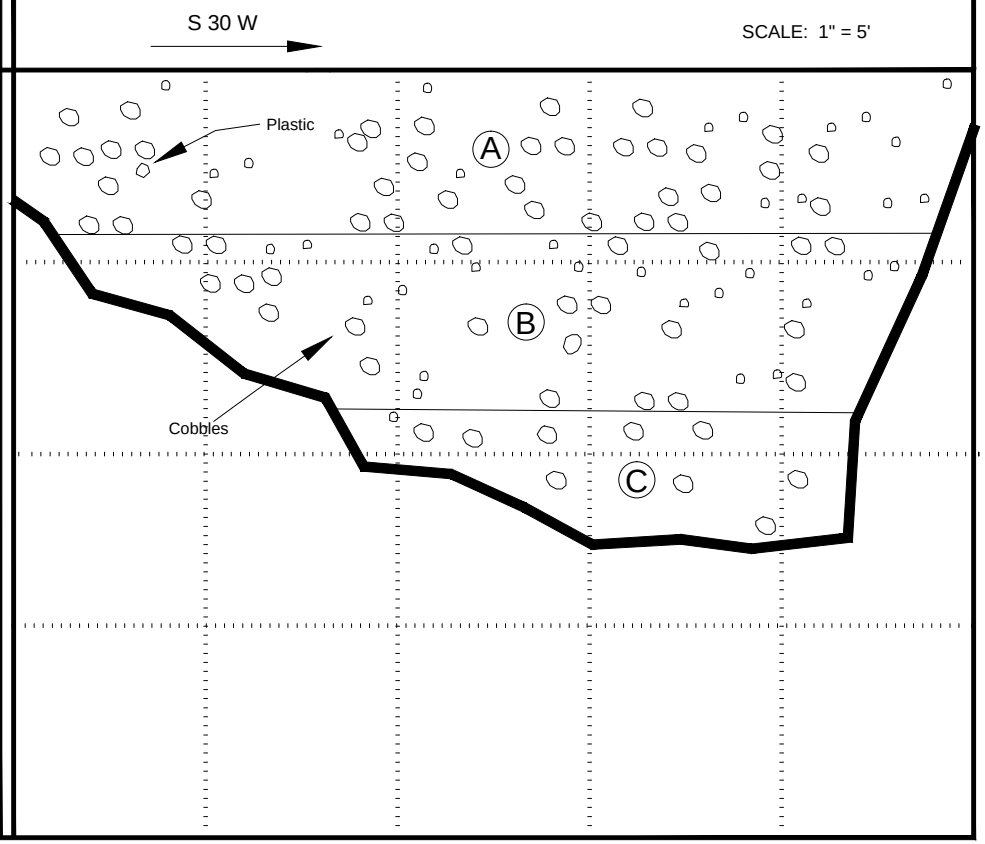
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-23-2019

EQUIPMENT USED: Excavator
LOGGED BY: Emmanuel Jiron
ORIENTATION: S 30 W
TOP OF TRENCH ELEVATION: 1363.5 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: FILL: Light Gray fine to coarse Sand, little fine to coarse Gravel, extensive Cobbles, trace Plastic, dense - dry
5				B: ALLUVIUM: Gray fine to coarse Sand, occasional Cobbles, medium dense to dense - damp
10	b		4	C: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, trace Silt, occasional Cobbles, dense - damp
15				Trench Terminated @ 13 feet Bottom of Trench Elevation: 1350.5 feet msl

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-6

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-7

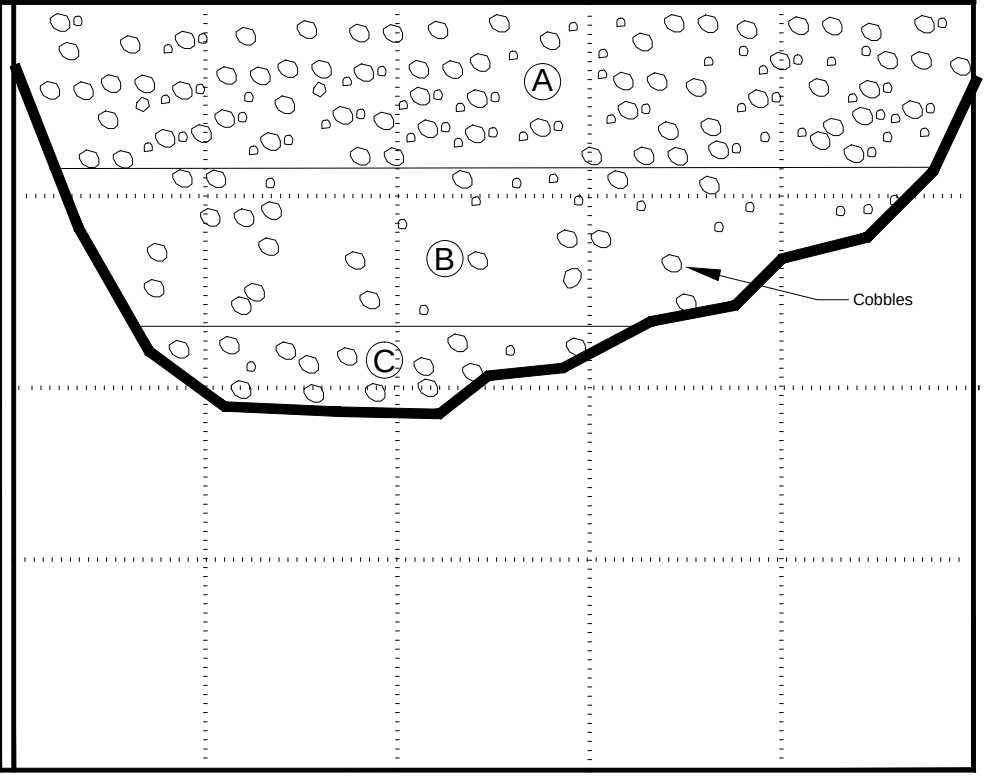
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-23-2019

EQUIPMENT USED: Backhoe
LOGGED BY: Emmanuel Jiron
ORIENTATION: S 15 E
TOP OF TRENCH ELEVATION: 1375.5 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: ALLUVIUM: Light Gray Silty fine to coarse Sand, little fine to coarse Gravel, extensive Cobbles, dense - damp
5				B: ALLUVIUM: Gray fine to coarse Sand, little fine to coarse Gravel, occasional Cobbles, medium dense to dense - damp
				C: ALLUVIUM: Light Gray fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry to damp
10	b		3	
				Trench Terminated @ 10.5 feet Bottom of Trench Elevation: 1365 feet msl
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-7

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-8

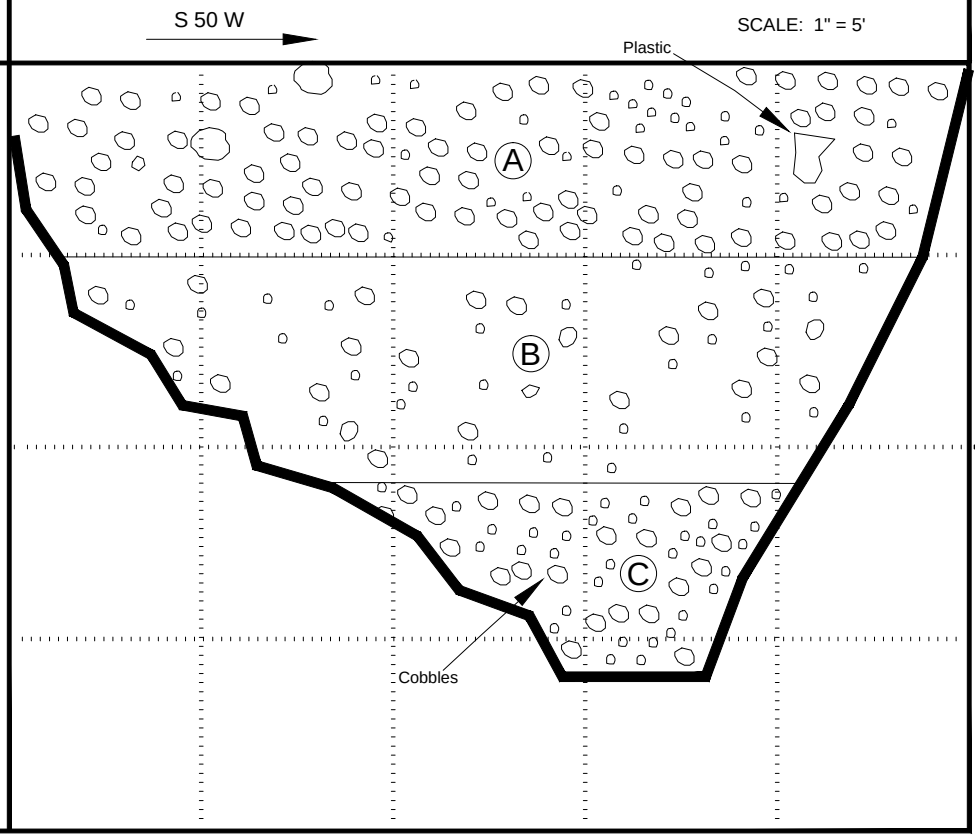
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-24-2019

EQUIPMENT USED: Excavator
LOGGED BY: Emmanuel Jiron
ORIENTATION: S 50 W
TOP OF TRENCH ELEVATION: 1369 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		2	A: FILL: Gray fine to coarse Sand, little Silt, extensive Cobbles, trace Roots, trace Plastic, dense - dry to damp
5				B: ALLUVIUM: Light Gray fine to coarse Sand, little fine to coarse Gravel, occasional Cobbles, medium dense - dry to damp
	b		2	
10				C: ALLUVIUM: Light Gray Brown fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry to damp
15	b		2	Trench Terminated @ 16 feet Bottom of Trench Elevation: 1353 feet msl

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-8

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-9

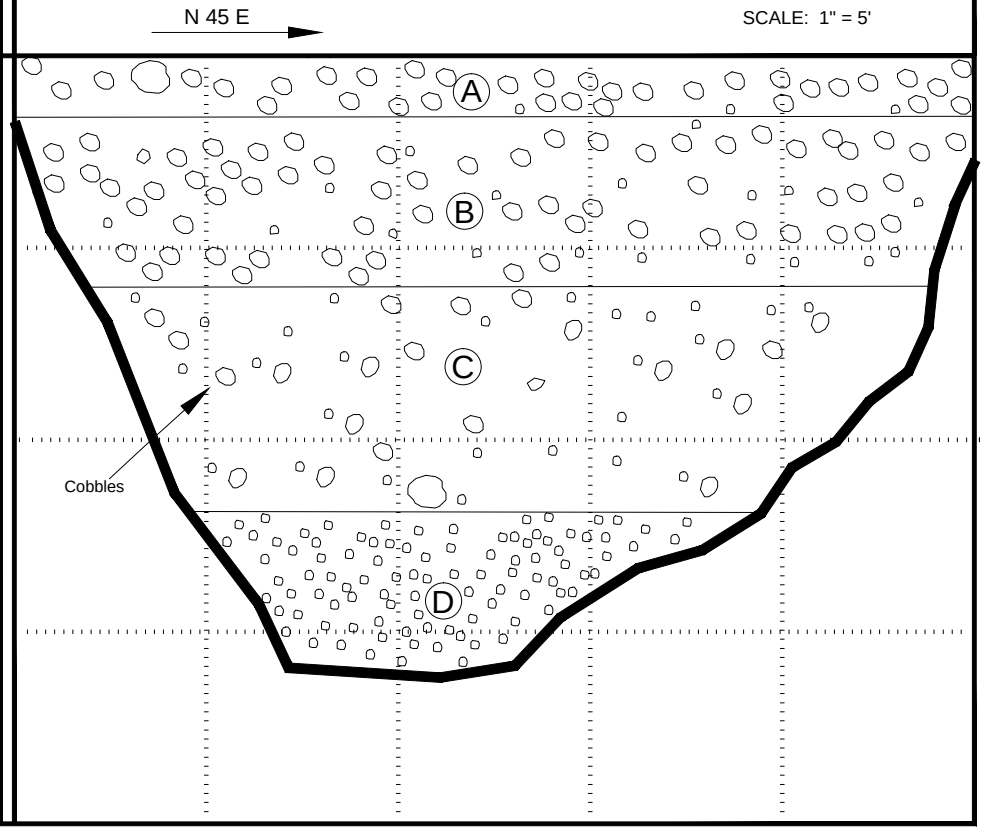
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-28-2019

EQUIPMENT USED: Excavator
LOGGED BY: Emmanuel Jiron
ORIENTATION: N 45 E
TOP OF TRENCH ELEVATION: 1380 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		3	A: ALLUVIUM: Dark Gray Silty fine to medium Sand, little coarse Sand, little fine to coarse Gravel, extensive Cobbles, trace Roots, dense - damp
	b		3	B: ALLUVIUM: Light Gray fine to coarse Sand, little fine to coarse Gravel, extensive Cobbles, trace Roots, very dense - dry to damp
5				
				C: ALLUVIUM: Gray fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, trace Silt, occasional Cobbles, medium dense to dense - dry to damp
10				
	b		2	D: Light Gray Brown Gravelly fine to coarse Sand, extensive Cobbles, very dense - dry to damp
15	b		3	
				Trench Terminated @ 16 feet Bottom of Trench Elevation: 1364 feet msl

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-9

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-10

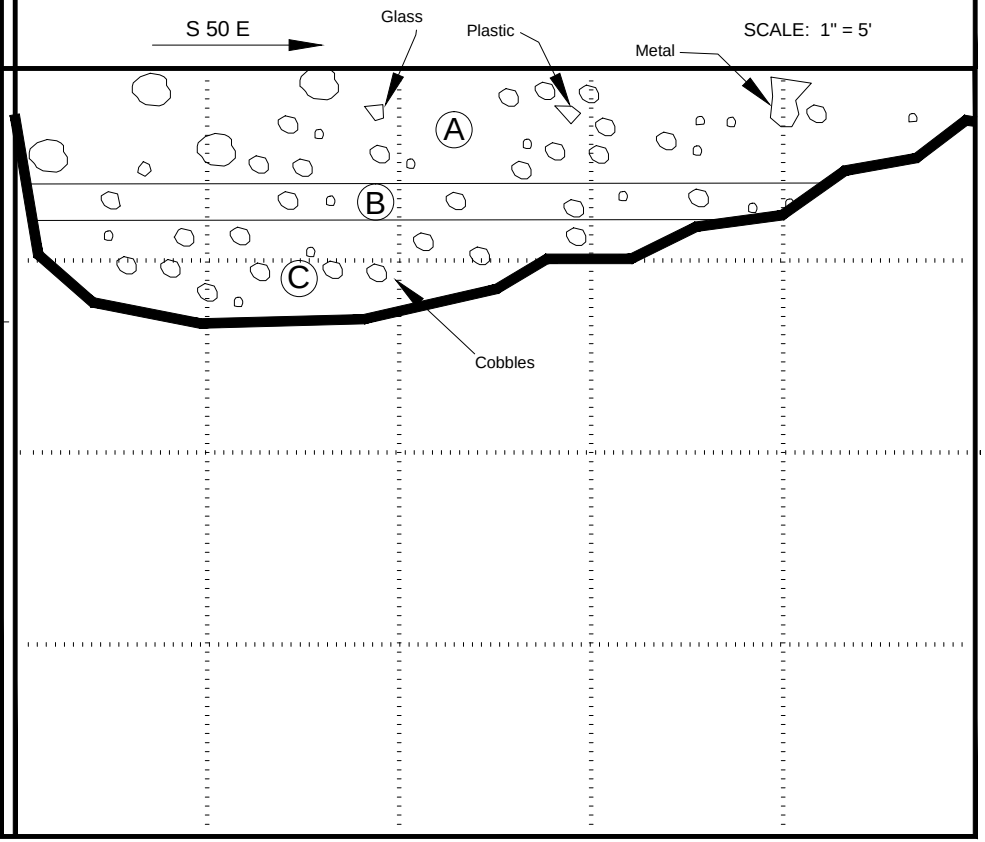
JOB NO.: 18G122-2
PROJECT: Three Proposed Warehouses
LOCATION: Upland, CA
DATE: 5-28-2019

EQUIPMENT USED: Backhoe
LOGGED BY: Emmanuel Jiron
ORIENTATION: S 50 E
TOP OF TRENCH ELEVATION: 1364.5 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		2	A: FILL: Gray Brown Silty fine to medium Sand, trace coarse Sand, occasional Cobbles, trace Glass fragments, trace Plastic, trace Metal, trace Roots, dense - dry to damp
	b		2	B: ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, occasional Cobbles, medium dense - dry to damp
5				C: ALLUVIUM: Gray fine to coarse Sandy Gravel, occasional Cobbles, dense to very dense - dry
	b		1	Trench Terminated @ 6.5 feet Bottom of Trench Elevation: 1358 feet msl
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-10

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-11

JOB NO.: 18G122-2

PROJECT: Three Proposed Warehouses

LOCATION: Upland, CA

DATE: 5-24-2019

EQUIPMENT USED: Backhoe

LOGGED BY: Emmanuel Jiron

ORIENTATION: N 30 W

TOP OF TRENCH ELEVATION: 1362 feet msl

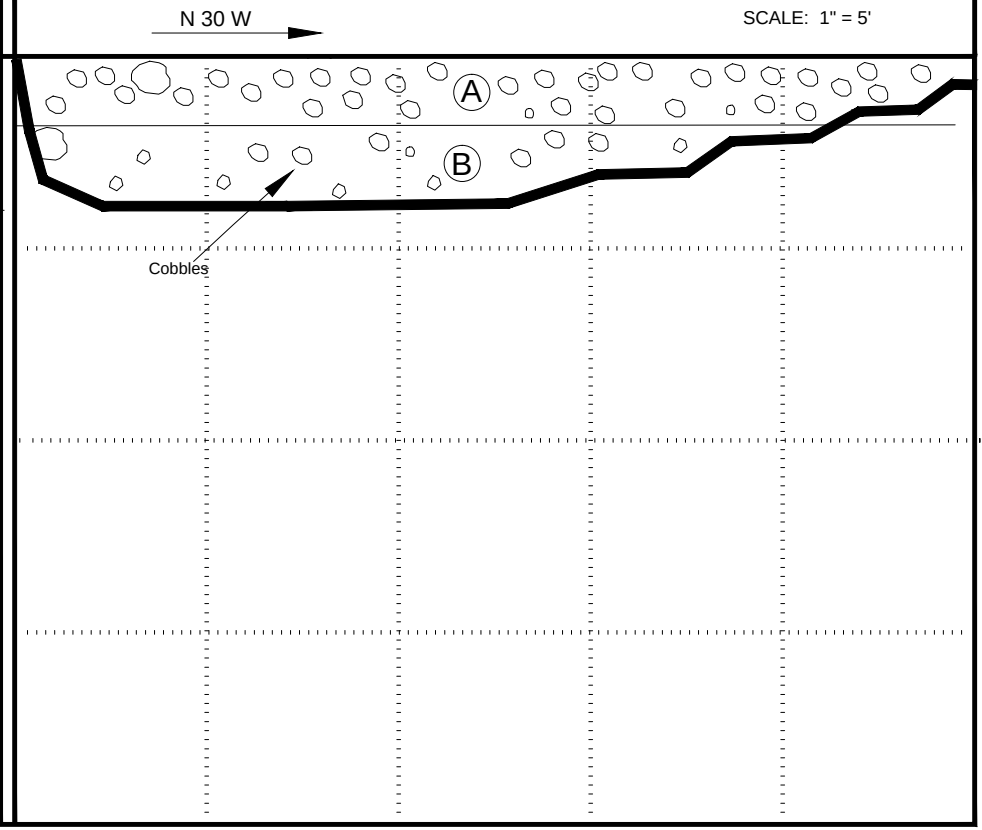
WATER DEPTH: Dry

SEEPAGE DEPTH: Dry

READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		1	A: FILL: Dark Gray fine to coarse Sand, little Silt, extensive Cobbles, trace Roots, dense to very dense - dry
	b		1	B: ALLUVIUM: Light Gray Gravelly fine to coarse Sand, occasional Cobbles, dense - dry
5				Trench Terminated @ 4 feet Bottom of Trench Elevation: 1358 feet msl
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-11

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-1

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	12:30 PM	1	1000	700	4000	3200	57.56	87.72	22.66	34.53
	Final	12:31 PM	**1**	1700		7200					
2	Initial	12:32 PM	1	450	650	2400	3000	53.45	82.23	21.04	32.38
	Final	12:33 PM	**3**	1100		5400					
3	Initial	12:34 PM	1	1200	700	8800	2700	57.56	74.01	22.66	29.14
	Final	12:35 PM	**5**	1900		11500					
4	Initial	12:36 PM	1	250	700	1100	2800	57.56	76.75	22.66	30.22
	Final	12:37 PM	**7**	950		3900					
5	Initial	12:38 PM	1	200	650	1600	2800	53.45	76.75	21.04	30.22
	Final	12:39 PM	**9**	850		4400					
6	Initial	12:40 PM	1	300	650	1600	2700	53.45	74.01	21.04	29.14
	Final	12:41 PM	**11**	950		4300					
7	Initial	12:42 PM	1	1500	650	7000	2500	53.45	68.53	21.04	26.98
	Final	12:43 PM	**13**	2150		9500					
8	Initial	12:44 PM	1	1950	650	4500	2550	53.45	69.90	21.04	27.52
	Final	12:45 PM	**15**	2600		7050					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-2

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	9:30 AM	1	200	650	600	3100	53.45	84.97	21.04	33.45
	Final	9:31 AM	**1**	850		3700					
2	Initial	9:32 AM	1	150	625	600	3000	51.40	82.23	20.23	32.38
	Final	9:33 AM	**3**	775		3600					
3	Initial	9:34 AM	1	250	600	900	3100	49.34	84.97	19.43	33.45
	Final	9:35 AM	**5**	850		4000					
4	Initial	9:36 AM	1	150	600	300	3000	49.34	82.23	19.43	32.38
	Final	9:37 AM	**7**	750		3300					
5	Initial	9:38 AM	1	150	600	600	2900	49.34	79.49	19.43	31.30
	Final	9:39 AM	**9**	750		3500					
6	Initial	9:40 AM	1	100	625	600	2900	51.40	79.49	20.23	31.30
	Final	9:41 AM	**11**	725		3500					
7	Initial	9:42 AM	1	100	600	500	2800	49.34	76.75	19.43	30.22
	Final	9:43 AM	**13**	700		3300					
8	Initial	9:44 AM	1	1200	600	4500	2700	49.34	74.01	19.43	29.14
	Final	9:45 AM	**15**	1800		7200					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-3

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	11:15 AM	1	200	650	1500	3000	53.45	82.23	21.04	32.38
	Final	11:16 AM	**1**	850		4500					
2	Initial	11:17 AM	1	950	625	6800	2900	51.40	79.49	20.23	31.30
	Final	11:18 AM	**3**	1575		9700					
3	Initial	11:19 AM	1	1650	600	500	2700	49.34	74.01	19.43	29.14
	Final	11:20 AM	**5**	2250		3200					
4	Initial	11:21 AM	1	400	700	900	2400	57.56	65.79	22.66	25.90
	Final	11:22 AM	**7**	1100		3300					
5	Initial	11:23 AM	1	100	600	1800	2600	49.34	71.27	19.43	28.06
	Final	11:24 AM	**9**	700		4400					
6	Initial	11:25 AM	1	700	575	6900	2600	47.28	71.27	18.62	28.06
	Final	11:26 AM	**11**	1275		9500					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-4

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	9:15 AM	1	200	800	800	2900	65.79	79.49	25.90	31.30
	Final	9:16 AM	**1**	1000		3700					
2	Initial	9:17 AM	1	350	700	1100	2900	57.56	79.49	22.66	31.30
	Final	9:18 AM	**3**	1050		4000					
3	Initial	9:19 AM	1	250	700	1000	2800	57.56	76.75	22.66	30.22
	Final	9:20 AM	**5**	950		3800					
4	Initial	9:21 AM	1	250	700	500	2900	57.56	79.49	22.66	31.30
	Final	9:22 AM	**7**	950		3400					
5	Initial	9:23 AM	1	200	750	900	2850	61.67	78.12	24.28	30.76
	Final	9:24 AM	**9**	950		3750					
6	Initial	9:25 AM	1	2400	700	4100	2800	57.56	76.75	22.66	30.22
	Final	9:26 AM	**11**	3100		6900					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-5

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	9:00 AM	1	550	850	1500	3400	69.90	93.20	27.52	36.69
	Final	9:01 AM	**1**	1400		4900					
2	Initial	9:02 AM	1	4000	750	9500	3300	61.67	90.46	24.28	35.61
	Final	9:03 AM	**3**	4750		12800					
3	Initial	9:04 AM	1	500	750	1200	3250	61.67	89.09	24.28	35.07
	Final	9:05 AM	**5**	1250		4450					
4	Initial	9:06 AM	1	550	750	6500	3200	61.67	87.72	24.28	34.53
	Final	9:07 AM	**7**	1300		9700					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-6

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	11:00 AM	1	250	800	1000	3300	65.79	90.46	25.90	35.61
	Final	11:01 AM	**1**	1050		4300					
2	Initial	11:02 AM	1	1100	800	2100	3200	65.79	87.72	25.90	34.53
	Final	11:03 AM	**3**	1900		5300					
3	Initial	11:04 AM	1	2450	700	5000	3100	57.56	84.97	22.66	33.45
	Final	11:05 AM	**5**	3150		8100					
4	Initial	11:06 AM	1	2000	650	5000	3200	53.45	87.72	21.04	34.53
	Final	11:07 AM	**7**	2650		8200					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-7

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	1:30 PM	1	300	450	5000	1950	37.00	53.45	14.57	21.04
	Final	1:31 PM	**1**	750		6950					
2	Initial	1:32 PM	1	1200	400	10100	1850	32.89	50.71	12.95	19.96
	Final	1:33 PM	**3**	1600		11950					
3	Initial	1:34 PM	1	50	400	3000	1850	32.89	50.71	12.95	19.96
	Final	1:35 PM	**5**	450		4850					
4	Initial	1:36 PM	1	600	450	6000	1900	37.00	52.08	14.57	20.50
	Final	1:37 PM	**7**	1050		7900					
5	Initial	1:38 PM	1	1300	450	6100	1850	37.00	50.71	14.57	19.96
	Final	1:39 PM	**9**	1750		7950					
6	Initial	1:40 PM	1	1250	400	11100	1950	32.89	53.45	12.95	21.04
	Final	1:41 PM	**11**	1650		13050					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-8

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	9:50 AM	1	750	800	3300	2650	65.79	72.64	25.90	28.60
	Final	9:51 AM	**1**	1550		5950					
2	Initial	9:52 AM	1	750	800	1900	2750	65.79	75.38	25.90	29.68
	Final	9:53 AM	**3**	1550		4650					
3	Initial	9:54 AM	1	700	750	2400	2700	61.67	74.01	24.28	29.14
	Final	9:55 AM	**5**	1450		5100					
4	Initial	9:56 AM	1	1100	750	3500	2650	61.67	72.64	24.28	28.60
	Final	9:57 AM	**7**	1850		6150					
5	Initial	9:58 AM	1	550	700	2200	2650	57.56	72.64	22.66	28.60
	Final	9:59 AM	**9**	1250		4850					
6	Initial	10:00 AM	1	550	800	2000	2650	65.79	72.64	25.90	28.60
	Final	10:01 AM	**11**	1350		4650					
7	Initial	10:02 AM	1	750	650	2900	2750	53.45	75.38	21.04	29.68
	Final	10:03 AM	**13**	1400		5650					
8	Initial	10:04 AM	1	3500	650	4700	2750	53.45	75.38	21.04	29.68
	Final	10:05 AM	**15**	4150		7450					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-9

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	11:50 AM	1	800	850	3700	2950	69.90	80.86	27.52	31.84
	Final	11:51 AM	**1**	1650		6650					
2	Initial	11:52 AM	1	250	750	1400	2900	61.67	79.49	24.28	31.30
	Final	11:53 AM	**3**	1000		4300					
3	Initial	11:54 AM	1	200	700	1200	2900	57.56	79.49	22.66	31.30
	Final	11:55 AM	**5**	900		4100					
4	Initial	11:56 AM	1	1250	550	2300	2700	45.23	74.01	17.81	29.14
	Final	11:57 AM	**7**	1800		5000					
5	Initial	11:58 AM	1	100	500	1100	2900	41.12	79.49	16.19	31.30
	Final	11:59 AM	**9**	600		4000					
6	Initial	12:00 PM	1	0	500	700	2900	41.12	79.49	16.19	31.30
	Final	12:01 PM	**11**	500		3600					
7	Initial	12:02 PM	1	700	500	4200	2850	41.12	78.12	16.19	30.76
	Final	12:03 PM	**13**	1200		7050					
8	Initial	12:04 PM	1	1500	550	9000	2800	45.23	76.75	17.81	30.22
	Final	12:05 PM	**15**	2050		11800					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-10

Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	9:50 AM	1	350	850	2000	2900	69.90	79.49	27.52	31.30
	Final	9:51 AM	**1**	1200		4900					
2	Initial	9:52 AM	1	500	850	2200	2800	69.90	76.75	27.52	30.22
	Final	9:53 AM	**3**	1350		5000					
3	Initial	9:54 AM	1	700	850	2000	2950	69.90	80.86	27.52	31.84
	Final	9:55 AM	**5**	1550		4950					
4	Initial	9:56 AM	1	850	750	1800	2900	61.67	79.49	24.28	31.30
	Final	9:57 AM	**7**	1600		4700					
5	Initial	9:58 AM	1	750	700	2200	2900	57.56	79.49	22.66	31.30
	Final	9:59 AM	**9**	1450		5100					
6	Initial	10:00 AM	1	2500	725	7100	2950	59.62	80.86	23.47	31.84
	Final	10:01 AM	**11**	3225		10050					

INFILTRATION CALCULATIONS

Project Name	Three Proposed Warehouses
Project Location	Upland, CA
Project Number	18G122-2
Engineer	Emmanuel Jiron

Infiltration Test No: I-11

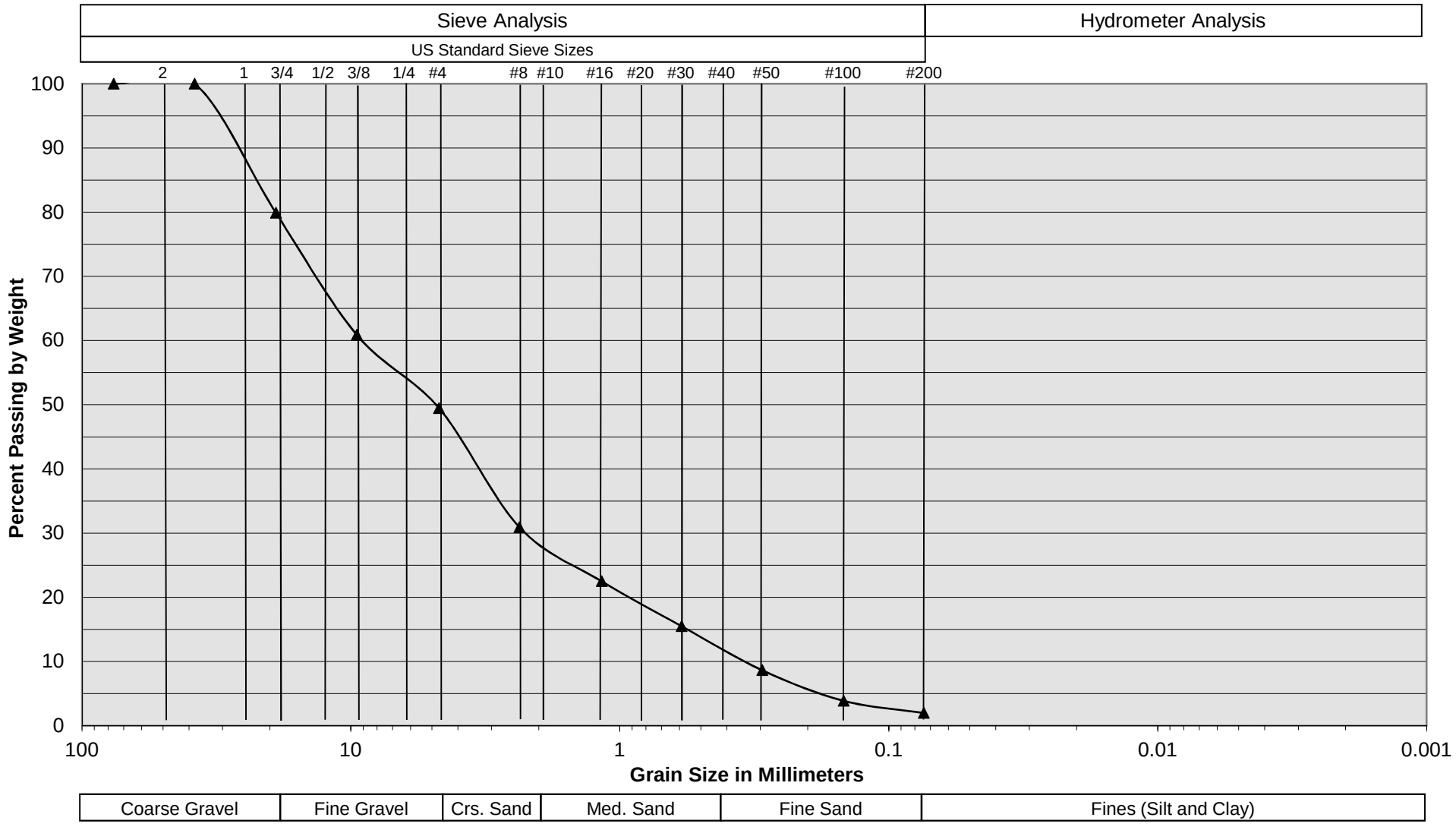
Constants

	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Flow Readings: Ring Flow (cm^3)	Flow Readings: Annular Ring (ml)	Flow Readings: Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Infiltration Rates: Annular Space* (cm/hr)	Infiltration Rates: Inner Ring* (in/hr)	Infiltration Rates: Annular Space* (in/hr)
1	Initial	9:50 AM	1	750	850	2700	3500	69.90	95.94	27.52	37.77
	Final	9:51 AM	**1**	1600		6200					
2	Initial	9:52 AM	1	1650	750	7700	3200	61.67	87.72	24.28	34.53
	Final	9:53 AM	**3**	2400		10900					
3	Initial	9:54 AM	1	2000	750	5000	3500	61.67	95.94	24.28	37.77
	Final	9:55 AM	**5**	2750		8500					
4	Initial	9:56 AM	1	1850	800	7200	3300	65.79	90.46	25.90	35.61
	Final	9:57 AM	**7**	2650		10500					

Grain Size Distribution

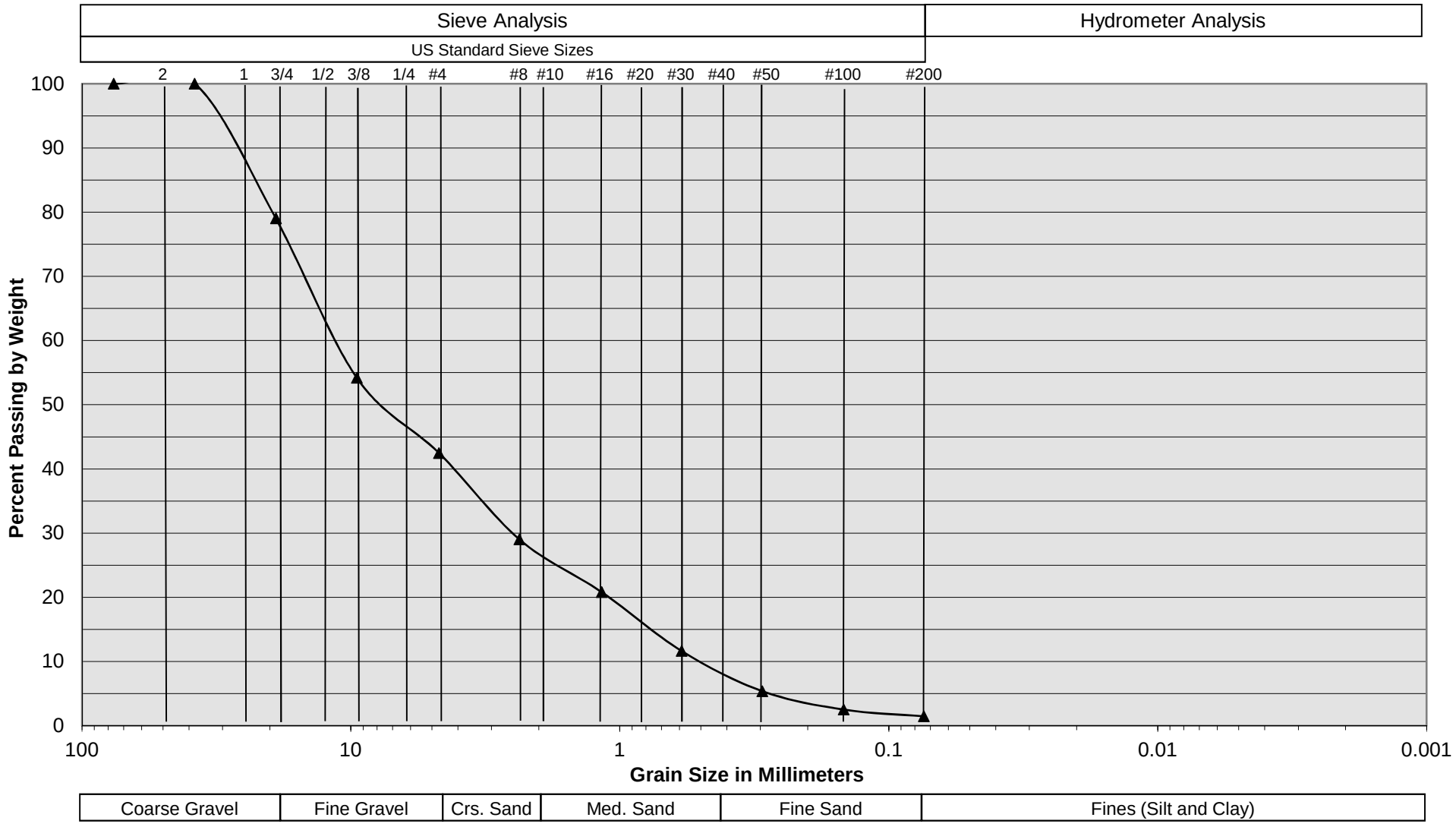


Sample Description	I-1 @ 13 feet
Soil Classification	Gray Brown fine to coarse Sandy Gravel

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

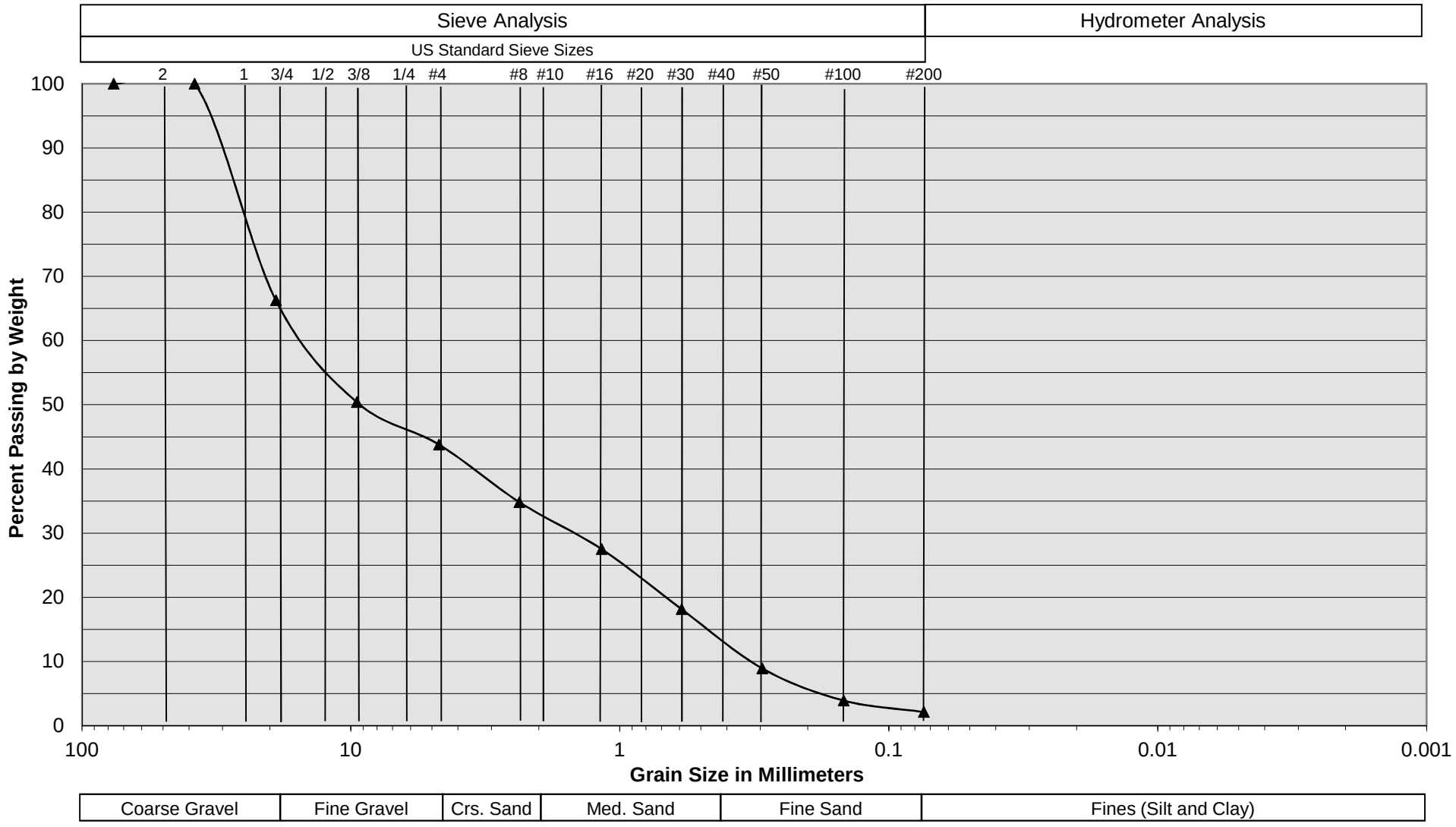


Sample Description	I-2 @ 9½ feet
Soil Classification	Light Gray fine to coarse Sandy Gravel

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

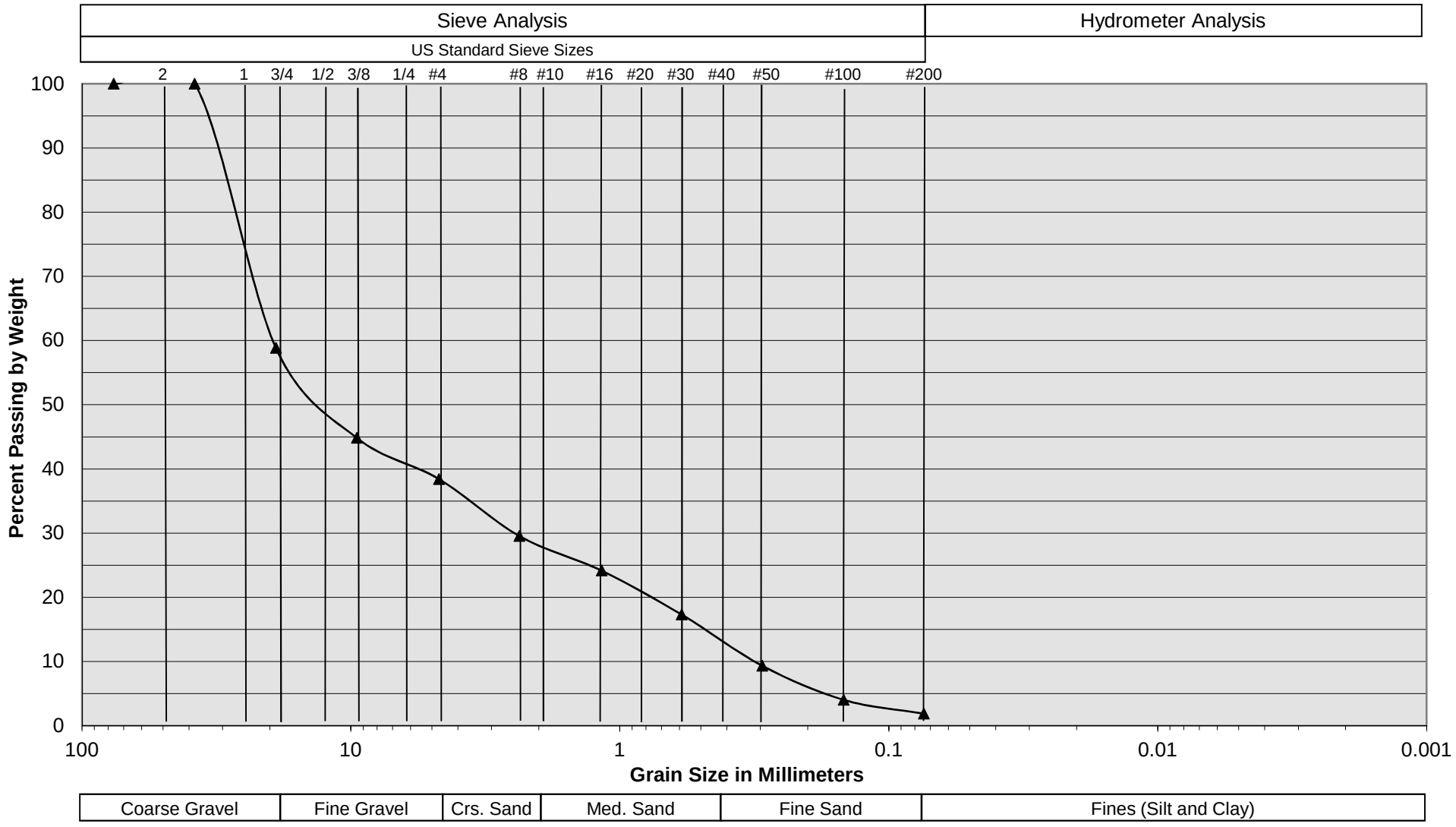


Sample Description	I-3 @ 16 feet
Soil Classification	Light Gray fine to coarse Sandy Gravel

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

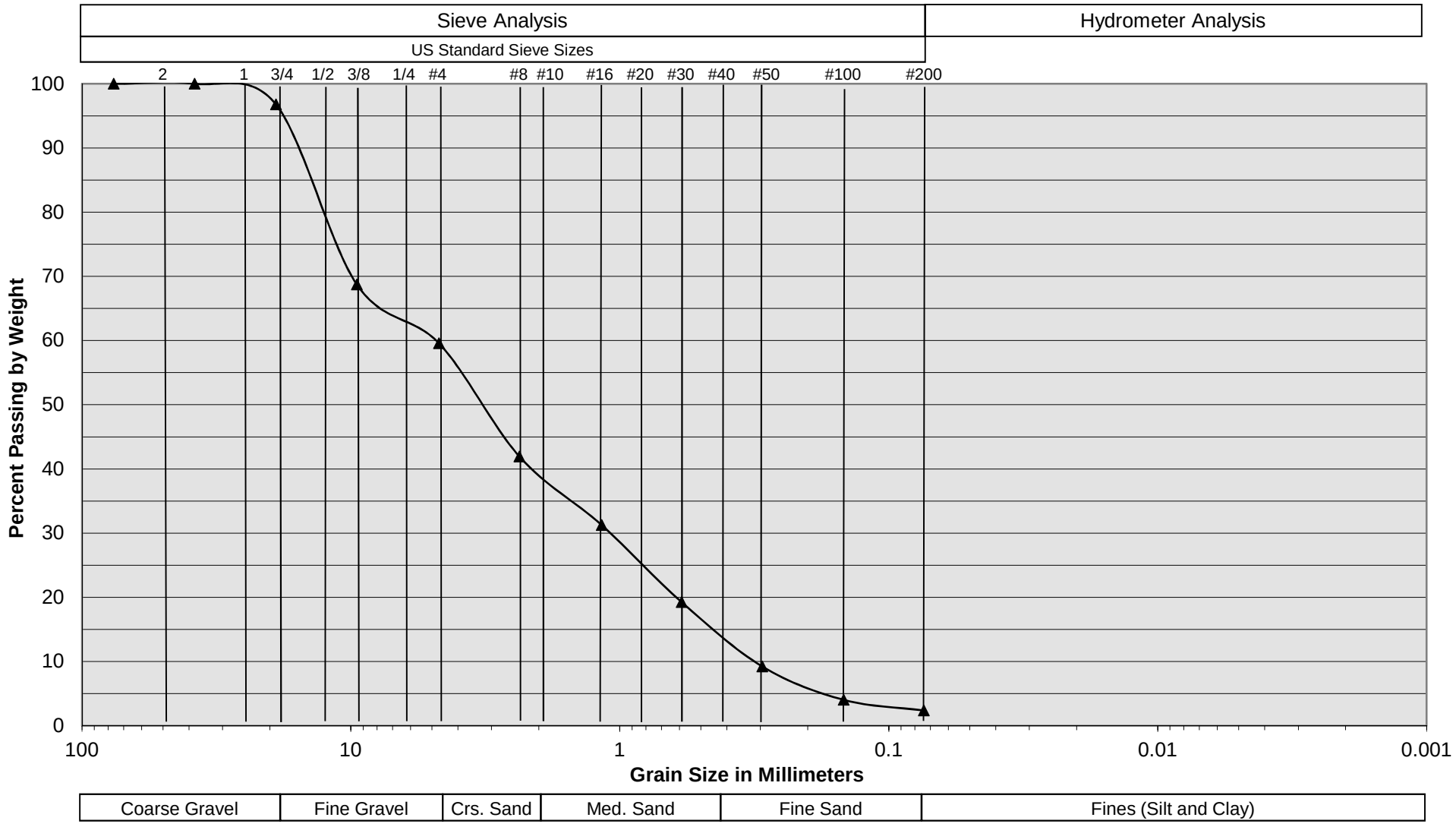


Sample Description	I-4 @ 15 feet
Soil Classification	Gray Brown fine to coarse Sandy Gravel

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-5 @ 13½ feet
Soil Classification	Gray Brown Gravelly fine to coarse Sand

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

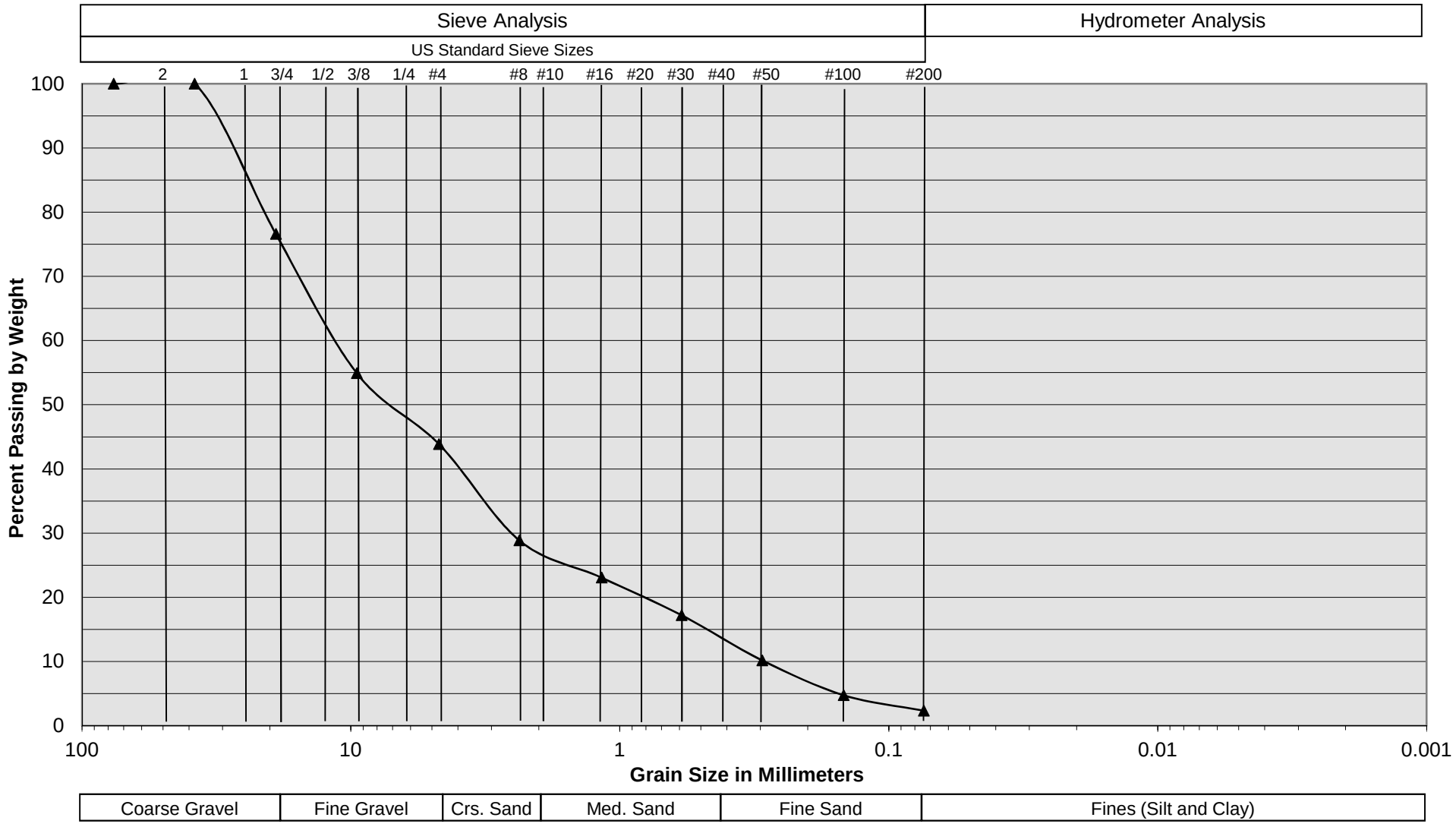


Sample Description	I-6 @ 13 feet
Soil Classification	Light Brown Gravelly fine to coarse Sand, trace Silt

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

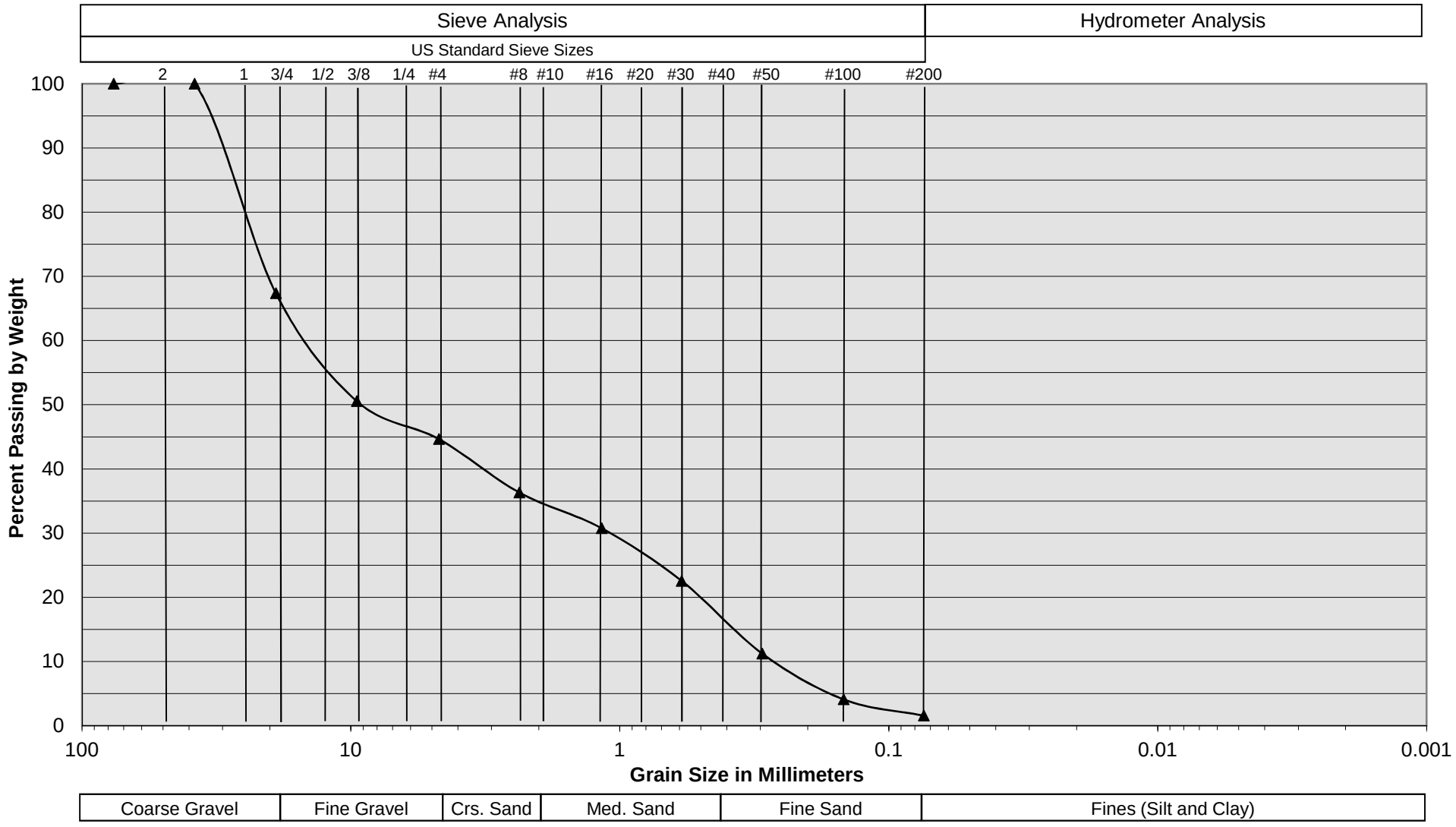


Sample Description	I-7 @ 10½ feet
Soil Classification	Light Gray fine to coarse Sandy Gravel

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-7

SoCalGeo
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A California Corporation

Grain Size Distribution

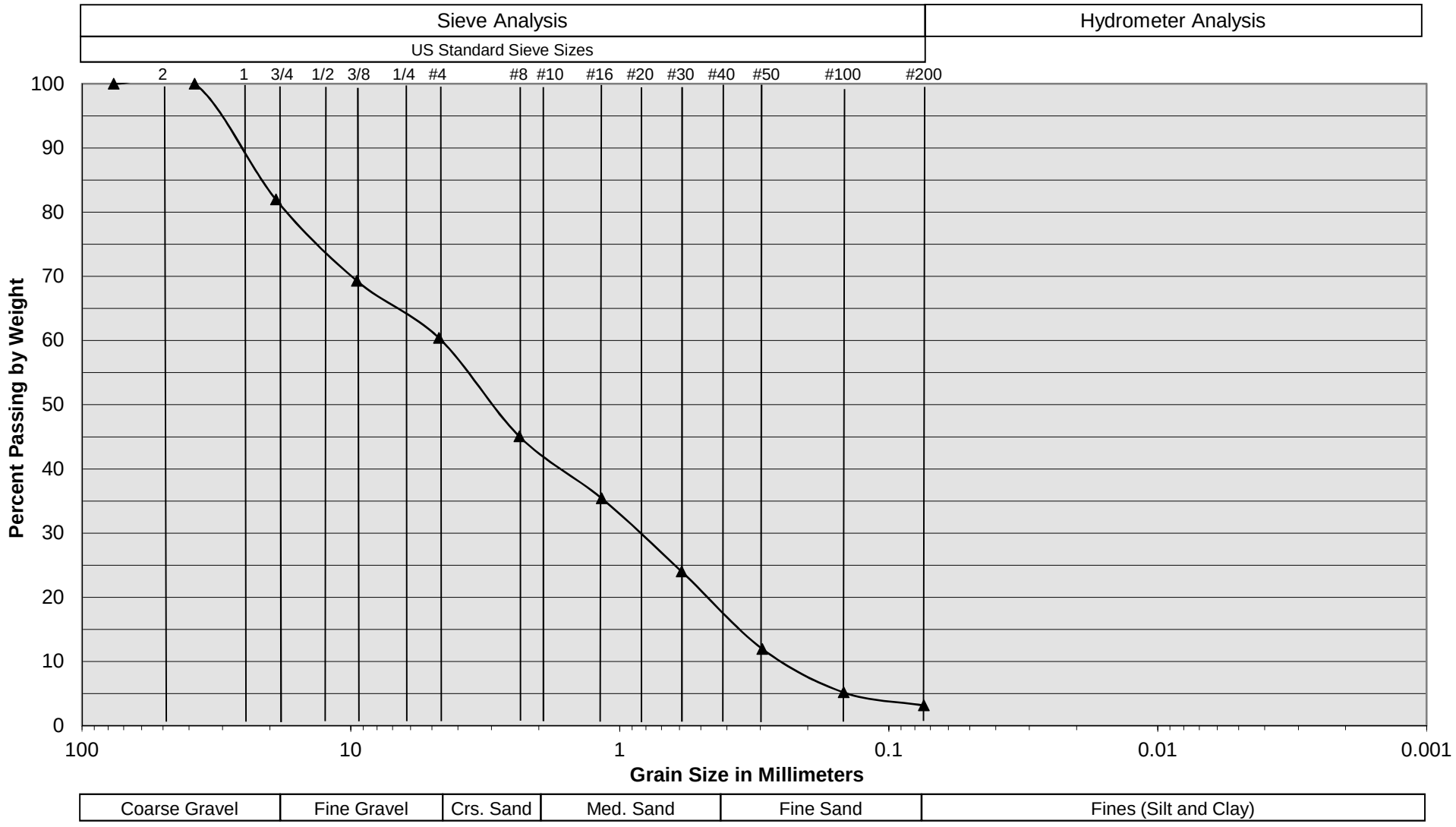


Sample Description	I-8 @ 16 feet
Soil Classification	Light Gray Brown fine to coarse Sandy Gravel

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

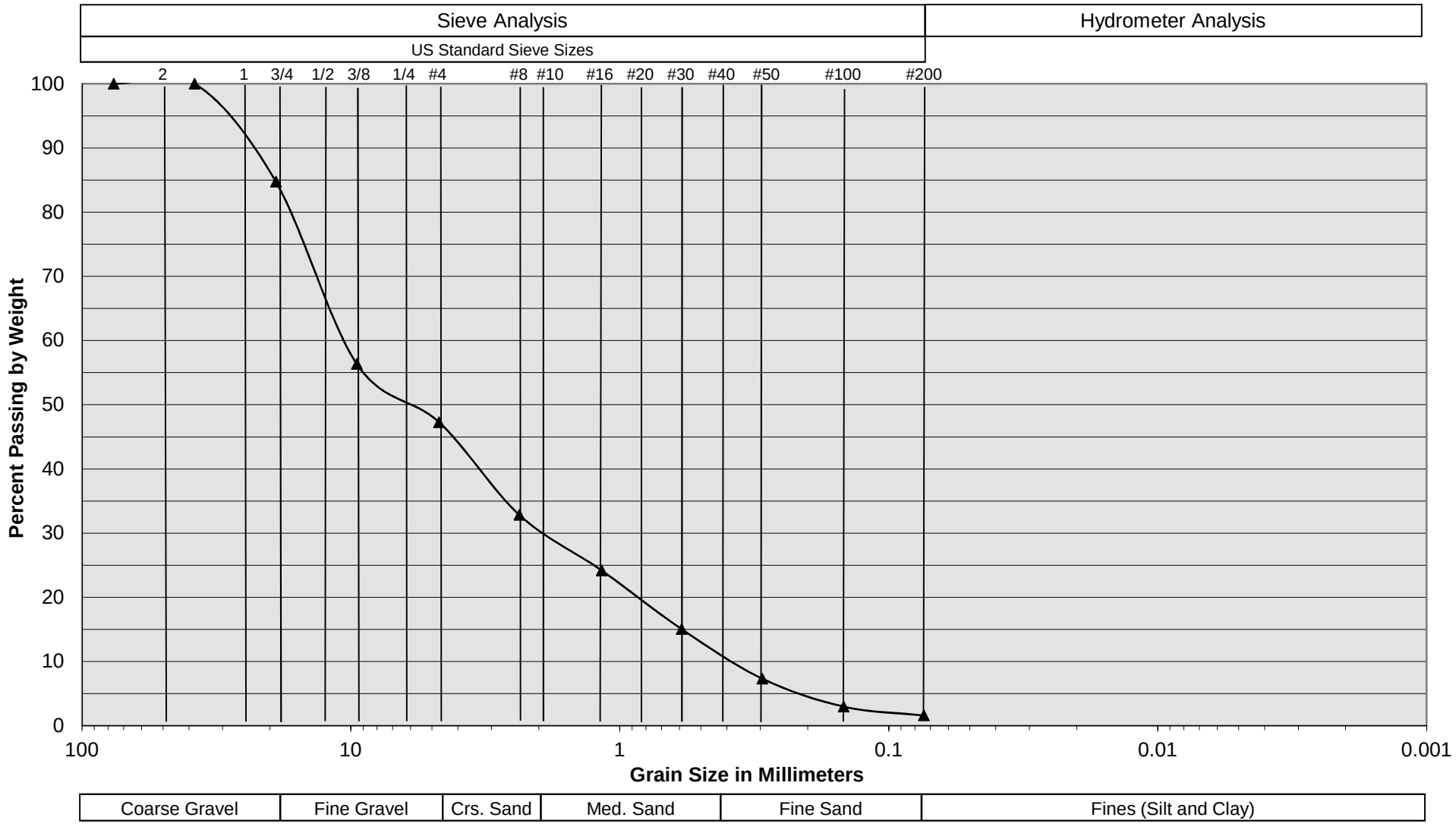


Sample Description	I-9 @ 16 feet
Soil Classification	Light Gray Brown Gravelly fine to coarse Sand

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-9

SoCalGeo
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A California Corporation

Grain Size Distribution

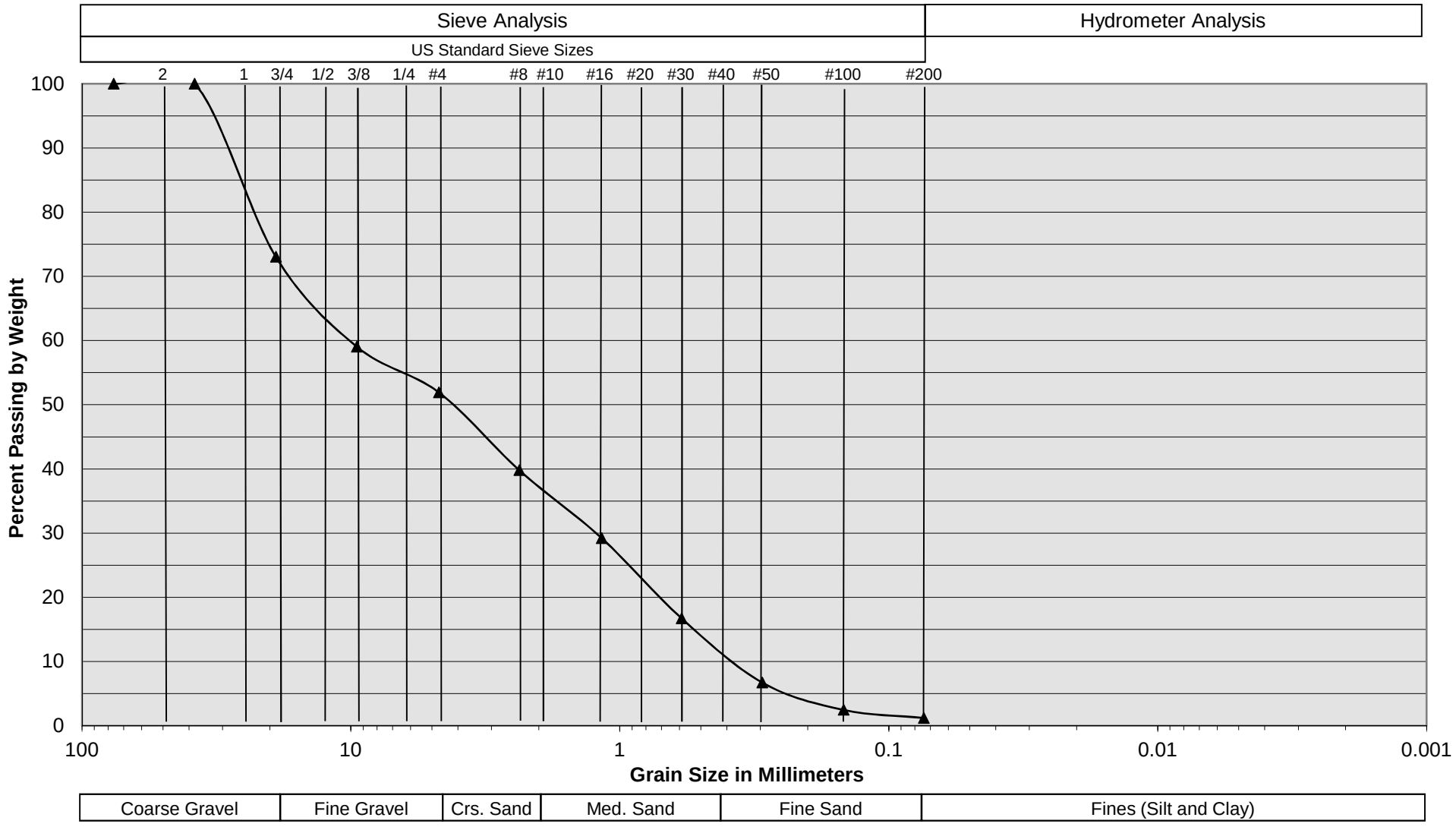


Sample Description	I-10 @ 6½ feet
Soil Classification	Gray fine to coarse Sandy Gravel

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-11 @ 4 feet
Soil Classification	Light Gray Gravelly fine to coarse Sand

Three Proposed Warehouses
Upland, CA
Project No. 18G122-2
PLATE C-11

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX G

Noise & Vibration Study

Acoustical Assessment

Bridge Point Upland Project
City of Upland, California

Prepared by:

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Orange, California 92868
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714.939.1030

November 2019

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Appendix A: Existing Ambient Noise Measurements
Appendix B: Noise Model Output Files

LIST OF ABBREVIATED TERMS

ADT	average daily traffic
BNL	basic noise level
CEQA	California Environmental Quality Act
CL	centerline
CNEL	community equivalent noise level
cy	cubic yards
dB	decibel
dB	decibel
dBA	A-weighted sound level
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
HVAC	heating ventilation and air conditioning
Hz	hertz
in/sec	inches per second
L_{dn}	day-night noise level
L_{eq}	equivalent noise level
L_{max}	maximum noise level
L_{min}	minimum noise level
mph	miles per hour
PPV	peak particle velocity
RMS	root mean square
sf	square foot
µPa	micropascals
VdB	vibration velocity level

1 INTRODUCTION

This report documents the results of an Acoustical Assessment completed for the Bridge Point Upland Project. The purpose of this Acoustical Assessment is to evaluate the potential construction and operational noise and vibration levels associated with the proposed Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The Bridge Point Upland Project (proposed Project) is located in the City of Upland north of Interstate 10 (I-10), south of State Route 210 (SR-210), west of Interstate 15 (I-15), and east of State Route 57 (SR-57) as depicted in Exhibit 1: Regional Vicinity. The overall Project site is located on approximately 50.25 acres northeast of Central Avenue and Foothill Boulevard, as depicted in Exhibit 2: Site Vicinity.

The Project site is in a predominately industrial and commercial area. The land uses surrounding the Project site consist of a mix of uses including industrial, commercial, residential, an airport, and a major transportation corridor. Properties zoned for Highway Commercial uses are located immediately south of the site. Foothill Boulevard is located farther south of the site. Foothill Boulevard is located further south of the site. Cable Airport is located directly north of the site and a portion of the airport, along with industrial uses are located west of the site. Commercial uses, including a Lowe's Home Improvement Store and a commercial shopping center, are located east of the site.

1.2 Project Description

The proposed Project is comprised of one warehouse/ parcel delivery service building with an ancillary office/retail space on approximately 50.25 acres as shown in Exhibit 3: Site Plan. The Project site is located on Assessor Parcel Nos. (APN) 1006-351-09, 1006-351-10, 1006-572-11, 1006-551-12, 1006-551-22, and 1006-574-10. Project entitlement includes a Design Review and Site Plan Review application; a Lot Line Adjustment; and a determination from the Airport Land Use Committee that the Project is compatible with the Cable Airport Land Use Compatibility Plan.

The Project building is proposed to be one level and total approximately 201,096 square feet (sf), of which approximately 191,096 sf would be warehouse/parcel delivery uses and 10,000 sf would be office/retail uses. The office/retail component would include an office area for employees, and a small area for visitors to pick up pre-ordered packages. To be conservative, this analysis evaluates a maximum development scenario that includes a 276,250 sf building.

The western building frontage would include 16 dock-hi doors for trucks, and 8 van loading doors would be located on both the northern and southern building frontages. The Project would require a minimum of 220 automobile parking spaces. Trailer parking for the warehouse building would include approximately 12 stalls and an additional 1,104 van parking stalls would be located on-site.

Building Design

The warehouse/parcel delivery service building is designed as a class A building. The building architecture features a modern aesthetic including glazing with brow projections to focus attention on the entries and street frontages. The major building material is concrete which lends itself to a modern palette with

reveals to enhance the building architecture. The building would have a maximum height of approximately 44 feet with parapets and façade, which would provide depth and shadowing and points of visual interest for the architecture. This relief in the design also provides locations for accents in the landscape design.

Access and Parking

Vehicular access to the Project would be provided via 13th Street, the north leg of Central Avenue/Foothill Boulevard, and two right-in/right-out driveways on Foothill Boulevard. The driveway on 13th Street would provide access to automobiles and vans only; trucks would access the site only via the driveway at the north leg of Central Avenue/Foothill Boulevard. Street improvements would be provided along Foothill Boulevard at the Project frontage to include improvements to curbs, gutters, sidewalks, street lights, traffic signal equipment and signing and striping as required. Street improvements would also be made to Central Avenue and 13th Street.

Landscaping

The Project would be landscaped along all four frontages of the site, including landscaped slopes along the western and southern portions of the site. Landscaping would also be installed throughout the parking areas. The conceptual landscape design would feature California drought tolerant and native species in an aesthetically pleasing and colorful palette.

The Project building would include 455,380 sf of landscaping, which would account for more than 21 percent in landscape coverage, more than four times the City's minimum requirement of 5 percent. The warehouse/parcel delivery service building would be setback more than 200 feet on the southern building frontage and would exceed minimum setback requirements of 5 feet for front and side setbacks and rear setbacks of 10 feet.

Construction

Construction of the proposed Project is expected to commence in the first quarter of 2020 with a construction duration of approximately 7 months. Project construction would be completed in one phase with buildout by the third quarter of 2020. Total excavation and fill of soils for the proposed Project is mostly balanced with approximately 431 cubic yards (cy) of exported soil.

Existing Project Site

The Project site consists of both disturbed land on the western portion of the site and undeveloped land on the eastern portion of the site. The disturbed portion of the land is used for outdoor dirt, sand, gravel and rock stockpiling, processing and crushing; the existing stockpiles are being processed and removed by the current operator as part of existing operations, and the removal of those materials is not a part of the Project. No structures are currently located on the site. There is existing utility access (water, sewer, electricity, gas) located in the immediate vicinity of the proposed Project and these services would be extended to the site to serve the proposed Project.

Exhibit 1: Regional Vicinity



Exhibit 2: Site Vicinity



Source: Google Maps, 2018.

Exhibit 3: Site Plan



Source: Herdman Architecture and Design, 2019.

Not to Scale

2 ACOUSTIC FUNDAMENTALS

2.1 Sound and Environmental Noise

Acoustics is the science of sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium (e.g., air) to human (or animal) ear. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or hertz (Hz).

Noise is defined as loud, unexpected, or annoying sound. In acoustics, the fundamental model consists of a noise source, a receptor, and the propagation path between the two. The loudness of the noise source, obstructions, or atmospheric factors affecting the propagation path, determine the perceived sound level and noise characteristics at the receptor. Acoustics deal primarily with the propagation and control of sound. A typical noise environment consists of a base of steady background noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to continuous noise from traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a large range of numbers. To avoid this, the decibel (dB) scale was devised. The dB scale uses the hearing threshold of 20 micropascals (µPa) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness. Table 1: Typical Noise Levels, provides typical noise levels.

Table 1: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	– 110 –	Rock Band
Jet fly-over at 1,000 feet		
	– 100 –	
Gas lawnmower at 3 feet		
	– 90 –	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	– 80 –	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	**– 70 –**	Vacuum cleaner at 10 feet
Commercial area		Normal Speech at 3 feet
Heavy traffic at 300 feet	**– 60 –**	
		Large business office
Quiet urban daytime	**– 50 –**	Dishwasher in next room
Quiet urban nighttime	**– 40 –**	Theater, large conference room (background)
Quiet suburban nighttime		
	– 30 –	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	– 20 –	
		Broadcast/recording studio
	– 10 –	
Lowest threshold of human hearing	**– 0 –**	Lowest threshold of human hearing

Source: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

Noise Descriptors

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The equivalent noise level (L_{eq}) is the average noise level averaged over the measurement period, while the day-night noise level (L_{dn}) and Community Equivalent Noise Level (CNEL) are measures of energy average during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. Most commonly, environmental sounds are described in terms of an average level (L_{eq}) that has the same acoustical energy as the summation of all the time-varying events. Each is applicable to this analysis and defined in Table 2: Definitions of Acoustical Terms.

Table 2: Definitions of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in µPa (or 20 micronewtons per square meter), where 1 pascals is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in dB as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 µPa). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in dB as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Maximum Noise Level (L_{max}) Minimum Noise Level (L_{min})	The maximum and minimum dBA during the measurement period.
Exceeded Noise Levels (L_{01}, L_{10}, L_{50}, L_{90})	The dBA values that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day-Night Noise Level (L_{dn})	A 24-hour average L_{eq} with a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity at nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level (CNEL)	A 24-hour average L_{eq} with a 5 dBA weighting during the hours of 7:00 a.m. to 10:00 a.m. and a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

The A-weighted decibel (dBA) sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source.

A-Weighted Decibels

The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by dBA values. There is a strong correlation between dBA and the way the human ear perceives sound. For this reason, the dBA has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of dBA, but are expressed as dB, unless otherwise noted.

Addition of Decibels

The dB scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic dB is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound and twice as loud as a 60 dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions. Under the dB scale, three sources of equal loudness together would produce an increase of 5 dBA.

Sound Propagation and Attenuation

Sound spreads (propagates uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics. No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10 dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise, but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the

percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. A noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance[1].

2.2 Groundborne Vibration

Sources of groundborne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions). Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table 3: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations, displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Table 3: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations

Peak Particle Velocity (in/sec)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006-0.019	64-74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4-0.6	98-104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: California Department of Transportation, *Transportation and Construction-Induced Vibration Guidance Manual*, 2004.

[1] Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.

Ground vibration can be a concern in instances where buildings shake and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

3 REGULATORY SETTING

To limit population exposure to physically or psychologically damaging as well as intrusive noise levels, the Federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

3.1 State of California

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of "normally acceptable", "conditionally acceptable", "normally unacceptable", and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 CNEL and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Title 24 – Building Code

The State's noise insulation standards are codified in the California Code of Regulations, Title 24: Part 1, Building Standards Administrative Code, and Part 2, California Building Code. These noise standards are applied to new construction in California for interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new multi-family residential buildings, the acceptable interior noise limit for new construction is 45 dBA CNEL.

3.2 LOCAL

City of Upland General Plan

Upland protects residents, the labor force, and visitors from the harmful effects of noise by establishing exterior and interior noise standards. Higher exterior noise standards are permitted for mixed-use and residential infill projects, as long as the interior noise standard is maintained. The City's General Plan Safety Element Policies mitigate noise by requiring the implementation of noise reduction techniques in site design and construction to ensure the compatibility of uses. Mobile sources of noise, such as vehicles and aircraft, are also regulated by the enforcement of Upland's noise standards.

Goal SAF-1: Upland is protected from interior and exterior noise levels that cause harm to safety, health and well-being.

Policy SAF-1.1: Require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table 4: Exterior Noise Compatibility Standards, to the extent feasible.

Table 4: Exterior Noise Compatibility Standards

Land Use Type	Highest Level of Noise Exposure that is Regarded as "Normally Acceptable" (L_{dn} or CNEL)
Residential – Low Density Single-Family, Duplex, Mobile Homes	60 dBA
Residential – Multi-Family	65 dBA
Mixed-Use	70 dBA
Transient Lodging – Hotels, Motels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoors Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings – Commercial, Office/Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

Source: City of Upland, *General Plan*, 2015.

Policy SAF-1.3: Require new development to include noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 dBA Ldn for residential, transient lodgings, hospitals, nursing homes, and other uses where people normally sleep; and 45 dBA Ldn (peak hour) for office buildings and similar uses.

Policy SAF-1.4: Prevent noise-sensitive land uses (schools, medical centers and hospitals, senior centers, and residences) from locating in areas with noise levels that exceed those considered normally acceptable for each land use unless measures can be implemented to reduce noise to acceptable levels.

Policy SAF-1.5: Require a noise impact study to evaluate impacts of projects that may exceed 65 Ldn as part of the design review process.

Policy SAF-1.6: Require an acoustical study for all new residential developments that lie within the 65 Ldn noise contour on the Future Noise Contour Map, to ensure indoor levels will not exceed City standards. In addition, the City shall continue to enforce the California Building Code for indoor noise levels.

Policy SAF-1.7: Require measures that attenuate exterior and/or interior noise levels to acceptable levels to be incorporated into all development projects where current and/or future outdoor noise levels may be unacceptable. Require noise reduction features, the focus of which shall be on site design techniques, so long as they do not conflict with the goals of the Community Character Element. Techniques include:

A. Designing landscaped building setbacks to serve as a buffer between the noise source and receptor.

B. Placing noise-tolerant land uses such as parking lots, maintenance facilities, and utility areas between the noise source and receptor.

C. Orienting buildings to shield noise-sensitive outdoor spaces from a noise source.

D. Locating bedrooms or balconies on the sides of buildings facing away from noise sources.

E. Utilizing noise barriers, such as landscaped berms, to reduce adverse noise levels in noise-sensitive outdoor activity areas, avoiding sound walls wherever possible.

City of Upland Municipal Code

The City's noise regulations are included in Chapter 9.40 of the Upland Municipal Code, also known as the Noise Ordinance. Within the City, the Noise Ordinance governs operational noise generated between two properties and does not regulate noise from transportation sources, such as traffic, aircraft, and railways. Upland Municipal Code Section 9.40.070 establishes the exterior noise standards for residential uses, while Upland Municipal Code Section 9.40.080 establishes the exterior noise standards for nonresidential uses. Exterior noise should be measured on the exterior of the properties, and no noise level should exceed the levels presented in Table 5: City of Upland Residential Exterior Noise Limits. Upland Municipal Code Section 9.40.080 states that for nonresidential properties, no noise level should exceed the respective base ambient noise levels of 65 dBA at any time for uses not specified, and 75 dBA at any time for industrial and commercial uses.

Table 5: City of Upland Residential Exterior Noise Limits

Maximum Time of Exposure	Noise Metric[1]	Noise Level Not to Be Exceeded[2]	
		7:00 a.m. to 10:00 p.m. (Daytime)	10:00 p.m. to 7:00 a.m. (Nighttime)
30 Minutes / Hour	L_{50}	55 dBA	45 dBA
15 Minutes / Hour	L_{25}	60 dBA	50 dBA
5 Minutes / Hour	L_{8}	65 dBA	55 dBA
1 Minute / Hour	L_{2}	70 dBA	60 dBA
Any Period of Time	L_{max}	75 dBA	65 dBA

Notes:
[1] Noise levels that are equaled or exceeded by a fluctuating sound level (in this table) 50 percent, 25 percent, 8 percent, and 2 percent of the stated time period.
[2] The noise standards apply to stationary sources only.

Source: City of Upland, *Upland Municipal Code*, October 2018.

4 EXISTING CONDITIONS

4.1 Existing Noise Levels

Upland is impacted by various noise sources. Mobile sources of noise, especially cars and trucks, are the most common and significant sources of noise in most communities. Other sources of noise are the various land uses (i.e., residential, commercial, institutional, and recreational and parks activities) throughout the City that generate stationary-source noise. The Cable Airport is located immediately adjacent to the Project site on the north and west sides of the Project.

Mobile Sources

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and existing traffic volumes from the Project traffic analysis (prepared by Translutions, 2019). The noise prediction model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (also referred to as energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data indicates that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels[2]. The average daily noise levels along roadway segments in proximity to the Project site are included in Table 6: Existing Traffic Noise Levels.

Table 6: Existing Traffic Noise Levels

Roadway Segment	ADT	dBA CNEL at 100 feet from Roadway Centerline
Baseline Road, Monte Vista Avenue to SR-210 Ramps	23,525	69.2
Baseline Road, SR-210 Ramps to Benson Avenue	26,990	69.8
Foothill Boulevard, Monte Vista Avenue to Central Avenue	18,855	68.3
Foothill Boulevard, Central Avenue to Project Driveway	10,515	65.7
Foothill Boulevard, Project Driveway to Benson Avenue	9,885	65.4
Monte Vista Avenue, Baseline Road to Foothill Boulevard	16,665	67.6
Central Avenue, Foothill Boulevard to 11th Street	10,350	64.6
Central Avenue, 11th Street to Arrow Route	11,790	65.1
Central Avenue, Arrow Route to Arrow Highway	15,970	66.4
Central Avenue, Arrow Highway to Moreno Street	21,670	67.7
Central Avenue, Moreno Street to I-10 Ramps	32,665	69.4
Benson Avenue, Baseline Road to 15th Street	16,930	67.4
Benson Avenue, 15th Street to 13th Street	16,420	67.2
Benson Avenue, 13th Street to Foothill Boulevard	17,380	67.4

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level

Source: Based on traffic data within the *Foothill Boulevard Warehouse Traffic Impact Analysis*, prepared by Translutions, October 2019. Refer to Appendix B for traffic noise modeling assumptions and results.

As depicted in Table 6, the existing traffic-generated noise level on Project-vicinity roadways ranges from 64.6 to 69.8 dBA CNEL at 100 feet from the centerline. The traffic highest noise levels occur along Baseline

[2] California Department of Transportation, *California Vehicle Noise Emission Levels*, 1987.

Road from the SR-210 ramps to Benson Avenue. As previously described, CNEL is 24-hour average noise level with a 5-dBA weighting during the hours of 7:00 p.m. to 10:00 p.m. and a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Stationary Sources

The primary sources of stationary noise in the Project vicinity are those associated with the operations of adjacent general industrial uses and Cable Airport adjacent to the Project site. The noise associated with these sources may represent a single-event noise occurrence, short-term, or long-term/continuous noise.

4.2 Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. Sensitive receptors near the Project site include multi-family residences approximately 1,040 feet southeast of the site, a church approximately 1,050 feet south of the site, and single-family housing approximately 1,190 feet east of the site. Table 7: Sensitive Receptors, lists the distances and locations of sensitive receptors within the Project vicinity. The distances depicted in Table 7 are based on the distance from the Project site to the vicinity sensitive receptors.

Table 7: Sensitive Receptors

Receptor Type/Description	Distance and Direction from the Project Site
MG Parkview Apartments	1,040 feet southeast
Middle East Gospel Outreach	1,050 feet south
Single Family Residential Neighborhood	1,190 feet east
California Optical	1,250 feet northeast
Multi-Family Residential Neighborhood	1,270 feet east
Ovation School of the Performing Arts	1,300 feet northeast
Prime Time Dance School of the Arts	1,550 feet south
Cabrillo Elementary School	1,570 feet southeast
North Upland Terrace Apartments	1,710 feet southeast
Single Family Residential Neighborhood	1,860 feet northeast
Single Family Residential Neighborhood	1,880 feet southeast
Cabrillo Park	1,920 feet southeast
Corporate Center Office Buildings	1,990 feet west
Park Central Apartments	2,030 feet south
Greenbelt Park	2,350 feet northeast

4.3 Noise Measurements

The Project site is currently vacant with no existing structures; however, stockpiles of sand and gravel remain on-site. The site is bounded by an airport to the north, a building supply store to the east, Foothill Boulevard to the south, as well as industrial and commercial uses to the west. To quantify existing ambient noise levels in the Project area, Kimley-Horn conducted four short-term noise measurements on October 18, 2018, see Appendix A: Existing Ambient Noise Measurements. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site, see Exhibit 4: Noise Measurement Locations. The 10-minute measurements were taken between 10:30 a.m.

and 12:00 p.m. Short-term L_{eq} measurements are considered representative of the noise levels throughout the day. The average noise levels and sources of noise measured at each location are listed in Table 8: Existing Noise Measurements.

Table 8: Existing Noise Measurements

Site #	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Time
1	At the southwestern corner of the Aviation Drive and Airport Drive intersection	67.5	52.8	81.6	10:30 a.m.
2	Along the south side of Foothill Boulevard, approximately 450 feet east of Central Avenue	73.5	57.9	85.4	11:02 a.m.
3	At the northwestern corner of the Foothill Boulevard and Lowe's Entrance intersection	66.4	48.5	82.8	11:18 a.m.
4	Along the south side of 13th Street, approximately 350 feet west of Benson Avenue	58.4	45.3	76.8	11:40 a.m.

Source: Noise measurements taken by Kimley-Horn and Associates, October 18, 2018. See Appendix A for noise measurement results.

Exhibit 4: Noise Measurement Locations



Source: Google Maps, 2018.

5 SIGNIFICANCE CRITERIA AND METHODOLOGY

5.1 CEQA Thresholds

Based upon the criteria derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project normally would have a significant effect on the environment if it would:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generate excessive groundborne vibration or groundborne noise levels; and
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

5.2 Methodology

This analysis of the Existing and With Project noise environments is based on noise prediction modeling and empirical observations. Construction noise levels were based on typical noise levels generated by construction equipment published by the Federal Transit Administration. The traffic noise levels on the Project vicinity roadways were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). Groundborne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical groundborne vibration levels associated with construction equipment, obtained from Federal Transit Administration published data for construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance.

6 POTENTIAL IMPACTS AND MITIGATION

6.1 Acoustical Impacts

Threshold 6.1 Would the Project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. During construction, exterior noise levels could affect the residential neighborhoods near the construction site. At the nearest, Project construction would occur at 1,040 feet from existing apartments. However, it is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the sensitive receptors.

Construction activities would include site preparation, grading, building construction, paving, and architectural coating. Such activities would require graders, scrapers, and tractors during site preparation; graders, dozers, and tractors during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, mixers, tractors, and paving equipment during paving; and air compressors during architectural coating. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical noise levels associated with individual construction equipment are listed in Table 9: Typical Construction Noise Levels.

Table 9: Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) at 50 Feet from Source	Typical Noise Level (dBA) at 100 Feet from Source[1]
Air Compressor	80	74
Backhoe	80	74
Compactor	82	76
Concrete Mixer	85	77
Concrete Pump	82	76
Concrete Vibrator	76	79
Crane, Derrick	88	76
Crane, Mobile	83	70
Dozer	85	82
Generator	82	77
Grader	85	79
Impact Wrench	85	76
Jack Hammer	88	79
Loader	80	79
Paver	85	82
Pile-driver (Impact)	101	74
Pile-driver (Sonic)	95	79

Table 9: Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) at 50 Feet from Source	Typical Noise Level (dBA) at 100 Feet from Source[1]
Pneumatic Tool	85	95
Pump	77	89
Roller	85	79
Saw	76	71
Scraper	85	84
Shovel	82	89
Truck	84	79

Note:
1) Calculated using the inverse square law formula for sound attenuation: $dBA2 = dBA1+20Log(d1/d2)$
Where: $dBA2$ = estimated noise level at receptor; $dBA1$ = reference noise level; $d1$ = reference distance; $d2$ = receptor location distance
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

As shown in Table 9, exterior noise levels could affect the nearest existing sensitive receptors in the vicinity. Sensitive uses in the Project site vicinity include residential uses approximately 1,040 feet to the southeast. Based on the discussion above, if the noisiest piece of equipment is operated at the closest point to the nearest use (i.e., the adjacent commercial and industrial uses), the exterior noise level at that use could reach 76 dBA, with the sensitive receptors in the area receiving lesser noise levels as they are further away. It should be noted that this is a maximum level and would be limited to short periods of time when equipment is closest to adjacent uses. Due to intervening structures and distance attenuation, these sensitive uses would not be exposed to elevated noise levels during Project construction. Construction noise would be acoustically dispersed throughout the Project site and not concentrated in one area near surrounding sensitive uses. Although construction noise is exempt between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday, the Project would nonetheless include project design features (PDF) (refer to PDF NOI-1) that would reduce construction noise levels. With the implementation of the project design features set forth below, Project construction would not generate a substantial temporary increase in ambient noise levels in the vicinity of the Project in excess of standards established in the City's General Plan or noise ordinance. The City's Noise Ordinance does not establish quantitative construction noise standards. Instead, the Noise Ordinance has established allowable hours of construction. Pursuant to the Upland Municipal Code Section 9.40.100, unless an exception is approved, construction hours are limited to between 7:00 a.m. and 6:00 p.m. on weekdays. Specifically, Municipal Code Section 9.40.100(M) indicates that construction is prohibited except between the hours of 7:00 a.m. and 6:00 p.m. on weekdays. These permitted hours of construction are required in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption.

Construction activities may also cause increased noise along access routes to and from the site due to movement of equipment and workers. The Project could require approximately 431 cubic yards of soil export that would require approximately 54 truck trips. Implementation of PDF NOI-1 would further minimize impacts from construction noise as it requires construction equipment to be equipped with properly operating and maintained mufflers and other state required noise attenuation devices. Thus, upon implementation of PDF NOI-1, a less than significant noise impact would result from construction activities.

Operations

Implementation of the proposed Project would create new sources of noise in the Project vicinity. The major noise sources associated with the Project that would potentially impact existing and future nearby residences include the following:

- Mechanical equipment (i.e., trash compactors, air conditioners, etc.);
- Slow moving trucks on the Project site, approaching and leaving the loading areas;
- Activities at the loading areas (i.e., maneuvering and idling trucks, equipment noise);
- Parking areas (i.e., car door slamming, car radios, engine start-up, and car pass-by); and
- Off-Site Traffic Noise

Mechanical Equipment

The Project is surrounded by industrial and residential uses. The nearest sensitive receptors to the Project site are the residences 1,040 feet southeast of the Project site. Potential stationary noise sources related to long-term operations in the Project site would include mechanical equipment. Mechanical equipment (e.g., heating ventilation and air conditioning [HVAC] equipment) typically generates noise levels of approximately 50 to 60 dBA at 50 feet. HVAC equipment is expected to be roof-mounted at a minimum distance of approximately 1,040 feet from the closest sensitive receptors to the southeast. The closest adjacent commercial/industrial uses would be approximately 200 feet away. Typical noise levels from HVAC equipment at 200 feet are approximately 48 dBA, which is less than a perceptible difference in noise level when compared to existing noise levels of 58 dBA (refer to Table 9) and would also be below the City's 75 dBA noise standard for commercial and industrial uses. Additionally, roof-mounted HVAC equipment is anticipated to be installed closer to the middle of the building and the distance to sensitive receptors will likely be farther, which will reduce noise levels. Furthermore, equipment will likely be located behind a parapet for additional noise attenuation. Operation of mechanical equipment would not increase ambient noise levels beyond the acceptable compatible land use noise levels. Therefore, the proposed Project would result in a less than significant impact related to stationary noise levels.

Truck and Loading Dock Noise

The proposed Project would include one building with 16 loading docks and 16 van loading doors. Loading and unloading activities would occur on the north, south, and west sides of the proposed building. Typically, noise levels associated with truck and van loading generate a noise level of 68 dBA at a distance of 50 feet. The closest residences would be located approximately 1,040 feet southeast of the loading areas and would experience truck and van noise levels of approximately 42 dBA, which is below the 55 dBA exterior residential noise standard designated in the Municipal Code. Noise levels at the closest industrial and commercial uses located approximately 150 feet away would be 59 dBA which is below the City's 75 dBA standard for these uses. This noise level would be further attenuated by intervening structures and topography. Noise levels associated with trucks, vans, and loading/unloading activities would be less than significant.

Parking Noise

The proposed Project would accommodate the need for parking. Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 60 to 63 dBA and may be an annoyance to adjacent noise-sensitive receptors. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 50 feet for normal speech to 50 dBA at 50 feet for very loud speech. It should be noted that parking lot noises are instantaneous noise levels compared to noise standards in the hourly L_{eq} metric, which are averaged over the entire duration of a time period.

Parking lot noise would occur within the surface parking lot on-site. It is also noted that parking lot noise occurs at the adjacent properties under existing conditions. Parking lot noise would be consistent with the existing noise in the vicinity and would be partially masked by background noise from air traffic to the north of the site and vehicle traffic along Foothill Boulevard. Actual noise levels over time resulting from parking lot activities is anticipated to be far below the City's noise guidelines. Therefore, noise impacts from parking lots would be less than significant.

Off-Site Traffic Noise

Future development generated by the proposed Project would result in additional traffic on adjacent roadways, thereby increasing vehicular noise near existing and proposed land uses. Based on the Traffic Impact Analysis, the proposed Project would generate 2,483 total daily trips (2,583 passenger car equivalent trips). The Operational Year "2020 Without Project" and "2020 Plus Project" scenarios are compared in Table 10: Operational Year 2020 Traffic Noise Levels.

As shown in Table 11, roadway noise levels would range from 66.0 dBA to 70.7 under "2020 Without Project" conditions and from 66.5 dBA to 70.7 dBA under "2020 Plus Project" conditions. The highest increase in noise levels would occur along Central Avenue. As shown in Table 10, Central Avenue is expected to experience an increase in ambient noise levels of 0.7 dBA for two roadway segments. The segment from Foothill Boulevard to 11th Street would increase to 66.7 dBA and the segment from 11th Street to Arrow Route would increase to 67.3 dBA. However, the increase of 0.7 dBA would be below the perceptible noise level change of 3.0 dBA. Additionally, these noise levels are all below the City's 75 dBA standard for industrial uses and 70 dBA standard for commercial uses along this roadway segment. The remainder of the Project -related traffic noise increases would also be below 3.0 dBA, which is not perceptible. Therefore, no significant impacts would occur.

Table 10: Opening Year 2020 Traffic Noise Levels							
Roadway Segment	**2020 Without Project**		**2020 Plus Project**		**Change**	**Applicable Noise Standard (dBA)[1]**	**Significant Impacts[2]**
	ADT	**dBA CNEL at 100 feet from Roadway Centerline**	**ADT**	**dBA CNEL at 100 feet from Roadway Centerline**			
Baseline Road							
Monte Vista Avenue to SR-210 Ramps	28,815	70.1	28,815	70.2	0.1	60	No
SR-210 Ramps to Benson Avenue	32,430	70.6	32,620	70.7	0.1	60	No
Foothill Boulevard							
Monte Vista Avenue to Central Avenue	22,730	69.1	22,940	69.2	0.1	70	No
Central Avenue to Project Driveway	12,930	66.6	13,130	66.7	0.1	70	No
Project Driveway to Benson Avenue	12,270	66.3	12,755	66.5	0.2	70	No
Monte Vista Avenue							
Baseline Road to Foothill Boulevard	21,015	68.6	21,090	68.8	0.2	60	No
Central Avenue							
Foothill Boulevard to 11th Street	14,155	66.0	14,525	66.7	0.7	70	No
11th Street to Arrow Route	16,630	66.6	17,275	67.3	0.7	60	No
Arrow Route to Arrow Highway	21,655	67.7	22,265	68.3	0.6	60	No
Arrow Highway to Moreno Street	29,340	69.0	29,910	69.4	0.4	60	No
Moreno Street to I-10 Ramps	40,890	70.4	41,390	70.6	0.2	60	No
Benson Avenue							
Baseline Road to 15th Street	21,380	68.4	21,690	68.8	0.4	60	No
15th Street to 13th Street	20,685	68.2	20,975	68.6	0.4	60	No
13th Street to Foothill Boulevard	21,650	68.4	21,650	68.7	0.3	60	No
ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level							
Notes: 1. Although some roadway segments may be adjacent to various land uses with different noise standards, the most conservative noise standards are reported. 2. With Project noise levels must exceed the applicable noise standard and result in a 3.0 dBA increase to result in a significant impact.							
Source: Based on traffic data within the *Foothill Boulevard Warehouse Traffic Impact Analysis*, prepared by Translutions, October 2019. Refer to Appendix B for traffic noise modeling assumptions and results.							

The Horizon Year "2040 Without Project" and "2040 Plus Project" scenarios were also compared. As shown in Table 11: Horizon Year 2040 Traffic Noise Levels, roadway noise levels would range from 66.5 dBA to 71.0 dBA under "2040 Without Project" conditions and from 66.9 dBA to 71.1 dBA under "2040 Plus Project" conditions. As shown in Table 11, the highest noise levels would occur along Central Avenue. As shown in Table 11, Central Avenue is expected to experience an increase in ambient noise levels of up to 0.7 dBA from Foothill Boulevard to 11th Street. This level is below the perceptible noise level change of 3.0 dBA and the resulting noise level is 67.2 dBA, which is below the City's 75 dBA standard for industrial uses and 70 dBA standard for commercial uses along this roadway segment. The remainder of the Project-related traffic noise increases would be below 3.0 dBA, which is not perceptible. Therefore, no significant impacts would occur.

Table 11: Horizon Year 2040 Traffic Noise Levels							
Roadway Segment	**2040 Without Project**		**2040 Plus Project**		**Change**	**Applicable Noise Standard (dBA)[1]**	**Significant Impacts[2]**
	ADT	**dBA CNEL at 100 feet from Roadway Centerline**	**ADT**	**dBA CNEL at 100 feet from Roadway Centerline**			
Baseline Road							
Monte Vista Avenue to SR-210 Ramps	33,710	70.8	33,710	70.8	0.0	60	No
SR-210 Ramps to Benson Avenue	35,920	71.0	36,110	71.1	0.1	60	No
Foothill Boulevard							
Monte Vista Avenue to Central Avenue	24,825	69.5	25,035	69.6	0.1	70	No
Central Avenue to Project Driveway	13,615	66.8	13,815	66.9	0.1	70	No
Project Driveway to Benson Avenue	13,340	66.7	13,825	66.9	0.2	70	No
Monte Vista Avenue							
Baseline Road to Foothill Boulevard	22,450	68.9	22,525	69.1	0.2	60	No
Central Avenue							
Foothill Boulevard to 11th Street	16,020	66.5	16,390	67.2	0.7	70	No
11th Street to Arrow Route	18,430	67.1	19,075	67.7	0.6	60	No
Arrow Route to Arrow Highway	19,020	67.2	19,630	67.7	0.5	60	No
Arrow Highway to Moreno Street	26,460	68.6	27,030	69.0	0.4	60	No
Moreno Street to I-10 Ramps	38,775	70.2	39,275	70.4	0.2	60	No
Benson Avenue							
Baseline Road to 15th Street	23,335	68.8	23,645	69.1	0.3	60	No
15th Street to 13th Street	19,925	68.0	20,215	68.5	0.5	60	No
13th Street to Foothill Boulevard	20,820	68.2	20,820	68.5	0.3	60	No
ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level							
Notes: 1. Although some roadway segments may be adjacent to various land uses with different noise standards, the most conservative noise standards are reported. 2. With Project noise levels must exceed the applicable noise standard and result in a 3.0 dBA increase to result in a significant impact.							
Source: Based on traffic data within the *Foothill Boulevard Warehouse Traffic Impact Analysis*, prepared by Translutions, October 2019. Refer to Appendix B for traffic noise modeling assumptions and results.							

Project Design Features:

PDF NOI-1 A construction management plan shall be implemented prior to Grading Permit issuance which shall contain the following elements:

- Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- Property owners and occupants located within 300 feet of the Project boundary shall be sent a notice, at least 15 days prior to commencement of construction of each phase, regarding the construction schedule of the proposed Project. A sign, legible at a distance of 50 feet shall also be posted at the Project construction site. All notices and signs shall be reviewed and approved by the City of Upland Development Services Department, prior to mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and a telephone number where residents can inquire about the construction process and register complaints.
- Prior to issuance of any Grading or Building Permit, the Project Applicant shall demonstrate to the satisfaction of the City Engineer that construction noise reduction

methods shall be used where feasible. These reduction methods include shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and electric air compressors and similar power tools.

- Construction haul routes shall be designed to avoid noise sensitive uses (e.g., residences, convalescent homes, etc.), to the extent feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.
- Construction activities shall not take place outside of the allowable hours specified by the City's *Municipal Code Chapter 9.40.100(M)* (allowable construction hours are between 7:00 a.m. and 6:00 p.m. on weekdays).

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.2 Would the Project expose persons to or generate excessive ground borne vibration or ground borne noise levels?

Increases in groundborne vibration levels attributable to the proposed Project would be primarily associated with short-term construction-related activities. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved.

The Federal Transit Administration (FTA) guidelines set forth in their 2018 Transit Noise and Vibration Assessment Manual are used to evaluate potential impacts related to construction vibration for both potential building damage and human annoyance. Vibration impacts associated with human annoyance are evaluated in vibration decibels (VdB) (the vibration velocity level in decibel scale), while vibration impacts associated with building damage is evaluated. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural.

Based on the FTA guidance, groundborne vibration could result in building damage if any of the following were to occur:

- Project construction activities cause groundborne vibration levels to exceed 0.5 in/sec PPV at the nearest offsite reinforced-concrete, steel, or timber building.
- Project construction activities cause groundborne vibration levels to exceed 0.3 in/sec PPV at the nearest offsite engineered concrete and masonry building.
- Project construction activities cause groundborne vibration levels to exceed 0.2 in/sec PPV at the nearest offsite non-engineered timber building.
- Project construction activities cause groundborne vibration levels to exceed 0.12 in/sec PPV at buildings extremely susceptible to vibration damage, such as historic buildings.

Based on FTA guidance, construction vibration could be perceived as annoying to humans if any of the following were to occur:

- Project construction activities cause groundborne vibration levels to exceed 72 VdB at off-site sensitive uses, including residential uses.

Table 12: Typical Construction Equipment Vibration Levels, lists vibration levels at 25 feet for typical construction equipment. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in Table 12, based on FTA data, vibration velocities from typical heavy construction equipment operations that would be used during Project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity.

Table 12: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 Feet (in/sec)	Peak Particle Velocity at 100 Feet (in/sec)[1]	Approximate VdB at 25 Feet	Approximate VdB at 100 Feet
Large Bulldozer	0.089	0.011	87	69
Caisson Drilling	0.089	0.011	87	69
Loaded Trucks	0.076	0.010	86	68
Jackhammer	0.035	0.004	79	61
Small Bulldozer/Tractors	0.003	0.000	58	41

Notes:
Calculated using the following formula: PPVequip = PPVref x (25/D)1.5
Where: PPVequip = the peak particle velocity in in/sec of the equipment adjusted for the distance
PPVref = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.
D = the distance from the equipment to the receiver

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

The nearest sensitive receptors are the residential uses approximately 1,040 feet to the southeast and the nearest structures (commercial buildings) are approximately 100 feet from the closest active construction zone. Using the calculation shown in Table 12, at 100 feet the vibration velocities from construction equipment would not exceed 0.011 in/sec PPV, which is well below the FTA's 0.20 PPV threshold. Construction equipment would also not exceed the human annoyance standard of 72 VdB. It can be assumed that at a greater distance this vibration velocity would be even less. Therefore, at 200 feet, vibration levels would be reduced further. It is also acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest residential structure. Therefore, vibration impacts associated with the proposed Project would be less than significant.

Once operational, the Project would not be a source of groundborne vibration. Operations of the proposed Project would include truck deliveries. Due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity. Table 12 shows that the loaded trucks would have a PPV of 0.076 in/sec and generate 86 VdB at 25 feet. As noted above, the closest adjacent uses would be more than 100 feet away and sensitive uses would be approximately 1,040 feet from the project site but could be approximately 100 feet from the potential truck routes accessed by Project trucks. At 100 feet, worst case truck vibration levels would be reduced to 0.010 in/sec PPV and 68 VdB and would not exceed FTA thresholds for building damage or annoyance. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 6.3 For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

The Cable Airport is the nearest airport in the immediate area, located directly adjacent to the Project site along the northern and western limits of the site. A review of the Cable Airport Comprehensive Airport Land Use Plan[3], shows the Project site located within noise impact zones. The Project site is currently exposed to noise levels greater than 65 dBA closest to the airstrip and noise levels between 60-65 dBA further from the airstrip. As indicated in Table 4, above, the City's General Plan designates noise levels at industrial uses to be normally acceptable up to 75 dBA. Therefore, airport noise impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Cumulative Noise Impacts

A significant impact would result only if both the combined and incremental effects criteria have been exceeded. If both the combined and incremental effects criteria are exceeded, the applicable noise and land use compatibility standards must also be exceeded. Noise is a localized phenomenon and reduces as distance from the source increases. Consequently, only the proposed Project and growth due to occur in the Project site's general vicinity would contribute to cumulative noise impacts. Table 13: Cumulative Noise Scenario, lists the traffic noise effects along roadway segments in the Project vicinity for "Existing", "2040 Without Project", and "2040 Plus Project" conditions, including incremental and net cumulative impacts. As described in the Project Traffic Impact Analysis, future year traffic volumes include cumulative projects as well as ambient growth. The highest increase in noise levels would occur along Central Avenue. As shown in Table 13, Central Avenue (from Foothill Blvd. to 11th Street and 11th Street to Arrow Route) is expected to experience an increase in ambient noise levels of up to 2.6 dBA by the year 2040 with the addition of the Project. Additionally, the combined effects for these segments would result in an increase of up to 0.7 dBA for Foothill Boulevard to 11th Street. However, the resulting noise level is 67.2 dBA, which is below the City's 75 dBA standard for industrial uses and 70 dBA standard for commercial uses along this roadway segment. The remainder of the Project-related traffic noise increases would be below the combined and incremental effects criteria. Therefore, no significant impacts would occur.

[3] Cable Airport, *Comprehensive Airport Land Use Plan*, 1981.

Table 13: Cumulative Noise Scenario

Roadway Segment	dBA@ 100 ft from Road CL			Combined Effects	Incremental Effects	Applicable Noise Standard (dBA)[1]	Cumulative Significant Impact?
	Existing	2040 Without Project	2040 With Project	Difference Existing and 2040 Plus Project	Difference 2040 Without Project and Plus Project		
Baseline Road							
Monte Vista Ave.to SR-210 Ramps	69.2	70.8	70.8	1.6	0.0	60	No
SR-210 Ramps to Benson Ave.	69.8	71.0	71.1	1.3	0.1	60	No
Foothill Boulevard							
Monte Vista Ave. to Central Ave.	68.3	69.5	69.6	1.3	0.1	70	No
Central Ave.to Project Driveway	65.7	66.8	66.9	1.2	0.1	70	No
Project Driveway to Benson Ave.	65.4	66.7	66.9	1.5	0.2	70	No
Monte Vista Avenue							
Baseline Rd. to Foothill Blvd.	67.6	68.9	69.1	1.5	0.2	60	No
Central Avenue							
Foothill Blvd. to 11th Street	64.6	66.5	67.2	2.6	0.7	70	No
11th Street to Arrow Route	65.1	67.1	67.7	2.6	0.6	60	No
Arrow Route to Arrow Highway	66.4	67.2	67.7	1.3	0.5	60	No
Arrow Highway to Moreno Street	67.7	68.6	69.0	1.3	0.4	60	No
Moreno Street to I-10 Ramps	69.4	70.2	70.4	1.0	0.2	60	No
Benson Avenue							
Baseline Road to 15th Street	67.4	68.8	69.1	1.7	0.3	60	No
15th Street to 13th Street	67.2	68.0	68.5	1.3	0.5	60	No
13th Street to Foothill Blvd.	67.4	68.2	68.5	1.1	0.3	60	No

Notes: ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level

Notes:
1. Although some roadway segments may be adjacent to various land uses with different noise standards, the most conservative noise standards are reported.
2. With Project noise levels must exceed the applicable noise standard and result in a 3.0 dBA increase to result in a significant impact.

Source: Based on traffic data within the *Foothill Boulevard Warehouse Traffic Impact Analysis*, prepared by Translutions, October 2019. Refer to Appendix B for traffic noise modeling assumptions and results.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

7 REFERENCES

1. California Department of Transportation, *California Vehicle Noise Emission Levels*, 1987.
2. California Department of Transportation, *Traffic Noise Analysis Protocol*, May 2011.
3. California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.
4. California Department of Transportation, *Transportation Related Earthborne Vibrations*, 2002.
5. California Department of Transportation, *Transportation and Construction-Induced Vibration Guidance Manual*, 2004.
6. City of Upland, *General Plan*, 2015.
7. City of Upland, *Municipal Code*, 2018.
8. Federal Highway Administration, *Roadway Construction Noise Model*, 2006.
9. Federal Highway Administration, *Roadway Construction Noise Model User's Guide Final Report*, 2006.
10. Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.
11. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, 2006.
12. Herdman Architecture and Design, *Site Plan,* 2019.
13. West Valley Planning Agency Airport Land Use Commission, *Cable Airport Comprehensive Airport Land Use Plan*, 1981.
14. Translutions, Inc., *Foothill Boulevard Warehouse Traffic Impact Analysis,* October 2019.
15. United States Environmental Protection Agency, *Protective Noise Levels (EPA 550/9-79-100)*, November 1979.

Appendix A

Existing Ambient Noise Measurements

Noise Measurement Field Data

Project:	Bridge Upland	**Job Number:**	195087002
Site No.:	1	**Date:**	10/18/2018
Analyst:	Josh Cortez	**Time:**	10:30 AM
Location:			
Noise Sources:	Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
67.5	52.8	81.6	103.7

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	82
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.01
Humidity:	41%

Photo:



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Summary

File Name on Meter	RC4.007
File Name on PC	SLM_0005586_RC4_007.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.302
User	Josh Cortez
Location	Upland
Job Description	
Note	

Measurement

Description	
Start	2018-10-18 10:30:59
Stop	2018-10-18 10:40:59
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2018-10-17 10:45:14
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	At LMax
Overload	122.1 dB

	A	**C**
Under Range Peak	78.3	75.3
Under Range Limit	**27.3**	26.0
Noise Floor	16.9	16.8

Results

LA_{eq}	67.5 dB		
LAE	95.3 dB		
EA	372.428 µPa²h		
$LZ_{peak\ (max)}$	2018-10-18	10:40:16	103.7
LAS_{max}	2018-10-18	10:40:43	81.6
LAS_{min}	2018-10-18	10:35:38	52.8
SEA	-99.9 dB		

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	67.5	67.5

LC_{eq}	78.5	dB
LA_{eq}	67.5	dB
LC_{eq} - LA_{eq}	11.0	dB
LAI_{eq}	69.4	dB
LA_{eq}	67.5	dB
LAI_{eq} - LA_{eq}	1.9	dB

	A	
	dB	**Time Stamp**
L_{eq}	67.5	
$L_{S(max)}$	81.6	2018/10/18 10:40:43
$L_{S(min)}$	52.8	2018/10/18 10:35:38
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAS5.00	75.1	dB
LAS10.00	71.6	dB
LAS33.30	62.3	dB
LAS50.00	59.2	dB
LAS66.60	56.8	dB
LAS90.00	54.7	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
PRMLxT1L	2018-10-17 10:45:14	-28.3
PRMLxT1L	2018-10-11 08:06:09	-28.2
PRMLxT1L	2018-10-05 08:10:06	-28.3
PRMLxT1L	2018-10-04 08:01:40	-28.2
PRMLxT1L	2018-09-27 16:19:28	-28.2
PRMLxT1L	2018-09-25 11:38:46	-28.2
PRMLxT1L	2018-09-19 15:56:09	-28.2
PRMLxT1L	2018-09-19 08:15:07	-28.3
PRMLxT1L	2018-09-14 08:35:45	-28.2
PRMLxT1L	2018-09-12 16:50:02	-28.3

Noise Measurement Field Data

Project:	Bridge Upland	**Job Number:**	195087002
Site No.:	2	**Date:**	10/18/2018
Analyst:	Josh Cortez	**Time:**	11:02 AM
Location:			
Noise Sources:	Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
73.5	57.9	85.4	104.3

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	82
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.01
Humidity:	41%

Photo:



Kimley»Horn

Summary

File Name on Meter	RC4.008
File Name on PC	SLM_0005586_RC4_008.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.302
User	Josh Cortez
Location	Upland
Job Description	
Note	

Measurement

Description	
Start	2018-10-18 11:02:01
Stop	2018-10-18 11:12:01
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2018-10-17 10:45:14
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	At LMax
Overload	122.1 dB

	A	**C**
Under Range Peak	78.3	75.3
Under Range Limit	**27.3**	26.0
Noise Floor	16.9	16.8

Results

LA_{eq}	73.5 dB		
LAE	101.3 dB		
EA	1.484 mPa^2h		
$LZ_{peak\ (max)}$	2018-10-18	11:07:52	104.3
LAS_{max}	2018-10-18	11:02:58	85.4
LAS_{min}	2018-10-18	11:02:30	57.9
SEA	-99.9 dB		

LAS > 85.0 dB (Exceedance Counts / Duration)	1	1.5
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	73.5	73.5

LC_{eq}	79.4	dB
LA_{eq}	73.5	dB
LC_{eq} - LA_{eq}	5.9	dB
LAI_{eq}	75.0	dB
LA_{eq}	73.5	dB
LAI_{eq} - LA_{eq}	1.5	dB

	A	
	dB	**Time Stamp**
L_{eq}	73.5	
$L_{S(max)}$	85.4	2018/10/18 11:02:58
$L_{S(min)}$	57.9	2018/10/18 11:02:30
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAS5.00	78.1	dB
LAS10.00	76.5	dB
LAS33.30	73.9	dB
LAS50.00	71.9	dB
LAS66.60	69.1	dB
LAS90.00	61.9	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
PRMLxT1L	2018-10-17 10:45:14	-28.3
PRMLxT1L	2018-10-11 08:06:09	-28.2
PRMLxT1L	2018-10-05 08:10:06	-28.3
PRMLxT1L	2018-10-04 08:01:40	-28.2
PRMLxT1L	2018-09-27 16:19:28	-28.2
PRMLxT1L	2018-09-25 11:38:46	-28.2
PRMLxT1L	2018-09-19 15:56:09	-28.2
PRMLxT1L	2018-09-19 08:15:07	-28.3
PRMLxT1L	2018-09-14 08:35:45	-28.2
PRMLxT1L	2018-09-12 16:50:02	-28.3

Noise Measurement Field Data

Project:	Bridge Upland	**Job Number:**	195087002
Site No.:	3	**Date:**	10/18/2018
Analyst:	Josh Cortez	**Time:**	11:18 AM
Location:			
Noise Sources:	Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
66.4	48.5	82.8	108.8

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	82
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.01
Humidity:	41%

Photo:



Kimley»Horn

Summary

File Name on Meter	RC4.009
File Name on PC	SLM_0005586_RC4_009.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.302
User	Josh Cortez
Location	Upland
Job Description	
Note	

Measurement

Description	
Start	2018-10-18 11:18:38
Stop	2018-10-18 11:28:38
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2018-10-17 10:45:14
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	At LMax
Overload	122.1 dB

	A	**C**
Under Range Peak	78.3	75.3
Under Range Limit	**27.3**	26.0
Noise Floor	16.9	16.8

Results

LA_{eq}	66.4 dB		
LAE	94.1 dB		
EA	287.683 µPa²h		
$LZ_{peak\ (max)}$	2018-10-18	11:26:22	108.8
LAS_{max}	2018-10-18	11:26:22	82.8
LAS_{min}	2018-10-18	11:23:29	48.5
SEA	-99.9 dB		

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	66.4	66.4

LC_{eq}	76.3	dB
LA_{eq}	66.4	dB
LC_{eq} - LA_{eq}	10.0	dB
LAI_{eq}	68.6	dB
LA_{eq}	66.4	dB
LAI_{eq} - LA_{eq}	2.2	dB

	A	
	dB	**Time Stamp**
L_{eq}	66.4	
$L_{S(max)}$	82.8	2018/10/18 11:26:22
$L_{S(min)}$	48.5	2018/10/18 11:23:29
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAS5.00	70.8	dB
LAS10.00	69.7	dB
LAS33.30	65.4	dB
LAS50.00	63.0	dB
LAS66.60	61.0	dB
LAS90.00	57.8	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
PRMLxT1L	2018-10-17 10:45:14	-28.3
PRMLxT1L	2018-10-11 08:06:09	-28.2
PRMLxT1L	2018-10-05 08:10:06	-28.3
PRMLxT1L	2018-10-04 08:01:40	-28.2
PRMLxT1L	2018-09-27 16:19:28	-28.2
PRMLxT1L	2018-09-25 11:38:46	-28.2
PRMLxT1L	2018-09-19 15:56:09	-28.2
PRMLxT1L	2018-09-19 08:15:07	-28.3
PRMLxT1L	2018-09-14 08:35:45	-28.2
PRMLxT1L	2018-09-12 16:50:02	-28.3

Noise Measurement Field Data

Project:	Bridge Upland	**Job Number:**	195087002
Site No.:	4	**Date:**	10/18/2018
Analyst:	Josh Cortez	**Time:**	11:40 AM
Location:			
Noise Sources:	Traffic		
Comments:			

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
58.4	45.3	76.8	108.8

Equipment	
Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather	
Temp. (degrees F):	82
Wind (mph):	< 5
Sky:	Clear
Bar. Pressure:	30.01
Humidity:	41%

Photo:



Kimley»Horn

Summary

File Name on Meter	RC4.010
File Name on PC	SLM_0005586_RC4_010.00.ldbin
Serial Number	0005586
Model	SoundExpert® LxT
Firmware Version	2.302
User	Josh Cortez
Location	Upland
Job Description	
Note	

Measurement

Description	
Start	2018-10-18 11:40:20
Stop	2018-10-18 11:50:20
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2018-10-17 10:45:14
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	At LMax
Overload	122.1 dB

	A	**C**
Under Range Peak	78.3	75.3
Under Range Limit	**27.3**	26.0
Noise Floor	16.9	16.8

Results

LA_{eq}	58.4 dB		
LAE	86.2 dB		
EA	46.098 µPa²h		
$LZ_{peak\ (max)}$	2018-10-18	11:42:34	108.8
LAS_{max}	2018-10-18	11:42:34	76.8
LAS_{min}	2018-10-18	11:40:37	45.3
SEA	-99.9 dB		

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0
LAS > 115.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0
LZ_{peak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0

Community Noise	**Ldn**	**LDay 07:00-22:00**
	58.4	58.4

LC_{eq}	71.2	dB
LA_{eq}	58.4	dB
LC_{eq} - LA_{eq}	12.8	dB
LAI_{eq}	65.2	dB
LA_{eq}	58.4	dB
LAI_{eq} - LA_{eq}	6.8	dB

	A	
	dB	**Time Stamp**
L_{eq}	58.4	
$L_{S(max)}$	76.8	2018/10/18 11:42:34
$L_{S(min)}$	45.3	2018/10/18 11:40:37
$L_{Peak(max)}$		

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAS5.00	62.8	dB
LAS10.00	60.4	dB
LAS33.30	55.7	dB
LAS50.00	52.8	dB
LAS66.60	49.9	dB
LAS90.00	47.6	dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
PRMLxT1L	2018-10-17 10:45:14	-28.3
PRMLxT1L	2018-10-11 08:06:09	-28.2
PRMLxT1L	2018-10-05 08:10:06	-28.3
PRMLxT1L	2018-10-04 08:01:40	-28.2
PRMLxT1L	2018-09-27 16:19:28	-28.2
PRMLxT1L	2018-09-25 11:38:46	-28.2
PRMLxT1L	2018-09-19 15:56:09	-28.2
PRMLxT1L	2018-09-19 08:15:07	-28.3
PRMLxT1L	2018-09-14 08:35:45	-28.2
PRMLxT1L	2018-09-12 16:50:02	-28.3

Appendix B

Noise Model Output Files

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Bridge Upland
Project Number: 195087002
Scenario: Existing
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Baseline Road	Monte Vista Avenue to SR-210 Ramps	4	12	23,525	45	0	1.7%	5.0%	69.2	83	263	833	2,633
2	Baseline Road	SR-210 Rapms to Benson Avenue	4	12	26,990	45	0	1.7%	5.0%	69.8	96	302	955	3,021
3	Foothill Boulevard	Monte Vista Avenue to Central Avenue	4	16	18,855	45	0	1.7%	5.0%	68.3	67	212	671	2,122
4	Foothill Boulevard	Central Avenue to Project Driveway	4	16	10,515	45	0	1.7%	5.0%	65.7	-	118	374	1,182
5	Foothill Boulevard	Project Driveway To Benson Avenue	4	16	9,885	45	0	1.7%	5.0%	65.4	-	111	351	1,111
6	Monte Vista Avenue	Baseline Road to Foothill Boulevard	4	12	16,665	45	0	1.7%	5.0%	67.6	59	186	589	1,862
7	Central Avenue	Foothill Boulevard to 11th Street	4	12	10,350	40	0	1.7%	5.0%	64.6	-	95	301	953
8	Central Avenue	11th Street to Arrow Route	4	12	11,790	40	0	1.7%	5.0%	65.1	-	108	343	1,084
9	Central Avenue	Arrow Route to Arrow Highway	4	12	15,970	40	0	1.7%	5.0%	66.4	-	147	464	1,468
10	Central Avenue	Arrow Highway to Moreno Street	4	12	21,670	40	0	1.7%	5.0%	67.7	63	199	630	1,991
11	Central Avenue	Moreno Street to I-10 Ramps	4	12	32,665	40	0	1.7%	5.0%	69.4	95	300	949	3,000
12	Benson Avenue	Baseline Road to 15th Street	4	12	16,930	45	0	1.7%	5.0%	67.4	60	189	596	1,886
13	Benson Avenue	15th Street to 13th Street	4	12	16,420	45	0	1.7%	5.0%	67.2	58	183	578	1,828
14	Benson Avenue	13th Street to Foothill Boulevard	4	12	17,380	45	0	1.7%	5.0%	67.4	61	193	612	1,934

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Bridge Upland
Project Number: 195087002
Scenario: Opening Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Baseline Road	Monte Vista Avenue to SR-210 Ramps	4	12	28,815	45	0	1.7%	5.0%	70.1	102	323	1,020	3,225
2	Baseline Road	SR-210 Rapms to Benson Avenue	4	12	32,430	45	0	1.7%	5.0%	70.6	115	363	1,148	3,630
3	Foothill Boulevard	Monte Vista Avenue to Central Avenue	4	16	22,730	45	0	1.7%	5.0%	69.1	81	256	809	2,558
4	Foothill Boulevard	Central Avenue to Project Driveway	4	16	12,930	45	0	1.7%	5.0%	66.6	-	145	460	1,454
5	Foothill Boulevard	Project Driveway To Benson Avenue	4	16	12,270	45	0	1.7%	5.0%	66.3	-	138	436	1,379
6	Monte Vista Avenue	Baseline Road to Foothill Boulevard	4	12	21,015	45	0	1.7%	5.0%	68.6	74	235	743	2,348
7	Central Avenue	Foothill Boulevard to 11th Street	4	12	14,155	40	0	1.7%	5.0%	66.0	-	130	412	1,303
8	Central Avenue	11th Street to Arrow Route	4	12	16,630	40	0	1.7%	5.0%	66.6	-	153	484	1,530
9	Central Avenue	Arrow Route to Arrow Highway	4	12	21,655	40	0	1.7%	5.0%	67.7	63	199	630	1,991
10	Central Avenue	Arrow Highway to Moreno Street	4	12	29,340	40	0	1.7%	5.0%	69.0	85	270	853	2,696
11	Central Avenue	Moreno Street to I-10 Ramps	4	12	40,890	40	0	1.7%	5.0%	70.4	119	376	1,188	3,755
12	Benson Avenue	Baseline Road to 15th Street	4	12	21,380	45	0	1.7%	5.0%	68.4	75	238	753	2,382
13	Benson Avenue	15th Street to 13th Street	4	12	20,685	45	0	1.7%	5.0%	68.2	73	230	728	2,303
14	Benson Avenue	13th Street to Foothill Boulevard	4	12	21,650	45	0	1.7%	5.0%	68.4	76	241	762	2,410

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Bridge Upland
Project Number: 195087002
Scenario: Opening Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Baseline Road	Monte Vista Avenue to SR-210 Ramps	4	12	28,815	45	0	1.8%	5.1%	70.2	104	328	1,036	3,277
2	Baseline Road	SR-210 Rapms to Benson Avenue	4	12	32,620	45	0	1.8%	5.2%	70.7	118	373	1,180	3,732
3	Foothill Boulevard	Monte Vista Avenue to Central Avenue	4	16	22,940	45	0	1.8%	5.1%	69.2	83	263	833	2,634
4	Foothill Boulevard	Central Avenue to Project Driveway	4	16	13,130	45	0	1.8%	5.1%	66.7	-	149	472	1,494
5	Foothill Boulevard	Project Driveway To Benson Avenue	4	16	12,755	45	0	1.7%	5.1%	66.5	-	145	457	1,446
6	Monte Vista Avenue	Baseline Road to Foothill Boulevard	4	12	21,090	45	0	2.0%	5.4%	68.8	79	249	787	2,488
7	Central Avenue	Foothill Boulevard to 11th Street	4	12	14,525	40	0	2.4%	6.0%	66.7	-	155	489	1,546
8	Central Avenue	11th Street to Arrow Route	4	12	17,275	40	0	2.3%	5.8%	67.3	57	180	569	1,798
9	Central Avenue	Arrow Route to Arrow Highway	4	12	22,265	40	0	2.1%	5.7%	68.3	71	226	714	2,257
10	Central Avenue	Arrow Highway to Moreno Street	4	12	29,910	40	0	2.0%	5.5%	69.4	94	296	935	2,958
11	Central Avenue	Moreno Street to I-10 Ramps	4	12	41,390	40	0	1.8%	5.2%	70.6	124	392	1,238	3,916
12	Benson Avenue	Baseline Road to 15th Street	4	12	21,690	45	0	2.0%	5.5%	68.8	82	260	822	2,601
13	Benson Avenue	15th Street to 13th Street	4	12	20,975	45	0	2.1%	5.5%	68.6	80	252	797	2,520
14	Benson Avenue	13th Street to Foothill Boulevard	4	12	21,650	45	0	2.0%	5.5%	68.7	82	259	820	2,593

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Bridge Upland
Project Number: 195087002
Scenario: Horizon Year
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Baseline Road	Monte Vista Avenue to SR-210 Ramps	4	12	33,710	45	0	1.7%	5.0%	70.8	119	377	1,193	3,773
2	Baseline Road	SR-210 Rapms to Benson Avenue	4	12	35,920	45	0	1.7%	5.0%	71.0	127	402	1,271	4,021
3	Foothill Boulevard	Monte Vista Avenue to Central Avenue	4	16	24,825	45	0	1.7%	5.0%	69.5	88	279	883	2,794
4	Foothill Boulevard	Central Avenue to Project Driveway	4	16	13,615	45	0	1.7%	5.0%	66.8	-	153	484	1,531
5	Foothill Boulevard	Project Driveway To Benson Avenue	4	16	13,340	45	0	1.7%	5.0%	66.7	-	150	474	1,499
6	Monte Vista Avenue	Baseline Road to Foothill Boulevard	4	12	22,450	45	0	1.7%	5.0%	68.9	79	251	793	2,509
7	Central Avenue	Foothill Boulevard to 11th Street	4	12	16,020	40	0	1.7%	5.0%	66.5	-	147	466	1,474
8	Central Avenue	11th Street to Arrow Route	4	12	18,430	40	0	1.7%	5.0%	67.1	54	170	536	1,695
9	Central Avenue	Arrow Route to Arrow Highway	4	12	19,020	40	0	1.7%	5.0%	67.2	55	175	553	1,749
10	Central Avenue	Arrow Highway to Moreno Street	4	12	26,460	40	0	1.7%	5.0%	68.6	77	243	769	2,431
11	Central Avenue	Moreno Street to I-10 Ramps	4	12	38,775	40	0	1.7%	5.0%	70.2	113	356	1,126	3,561
12	Benson Avenue	Baseline Road to 15th Street	4	12	23,335	45	0	1.7%	5.0%	68.8	82	260	822	2,599
13	Benson Avenue	15th Street to 13th Street	4	12	19,925	45	0	1.7%	5.0%	68.0	70	222	702	2,219
14	Benson Avenue	13th Street to Foothill Boulevard	4	12	20,820	45	0	1.7%	5.0%	68.2	73	232	733	2,317

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: Bridge Upland
Project Number: 195087002
Scenario: Horizon Year Plus Project
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

								Vehicle Mix		Distance from Centerline of Roadway			
				Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour			
#	Roadway	Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Baseline Road	Monte Vista Avenue to SR-210 Ramps	4	12	33,710	45	0	1.8%	5.1%	70.8	121	383	1,210	3,827
2	Baseline Road	SR-210 Rapms to Benson Avenue	4	12	36,110	45	0	1.8%	5.1%	71.1	130	412	1,303	4,121
3	Foothill Boulevard	Monte Vista Avenue to Central Avenue	4	16	25,035	45	0	1.8%	5.1%	69.6	91	287	908	2,870
4	Foothill Boulevard	Central Avenue to Project Driveway	4	16	13,815	45	0	1.7%	5.1%	66.9	-	157	496	1,567
5	Foothill Boulevard	Project Driveway To Benson Avenue	4	16	13,825	45	0	1.7%	5.1%	66.9	-	157	496	1,567
6	Monte Vista Avenue	Baseline Road to Foothill Boulevard	4	12	22,525	45	0	1.9%	5.4%	69.1	84	265	837	2,647
7	Central Avenue	Foothill Boulevard to 11th Street	4	12	16,390	40	0	2.3%	5.9%	67.2	54	172	543	1,717
8	Central Avenue	11th Street to Arrow Route	4	12	19,075	40	0	2.2%	5.8%	67.7	62	196	621	1,964
9	Central Avenue	Arrow Route to Arrow Highway	4	12	19,630	40	0	2.1%	5.6%	67.7	62	197	623	1,971
10	Central Avenue	Arrow Highway to Moreno Street	4	12	27,030	40	0	2.0%	5.5%	69.0	84	266	841	2,659
11	Central Avenue	Moreno Street to I-10 Ramps	4	12	39,275	40	0	1.8%	5.2%	70.4	117	371	1,173	3,709
12	Benson Avenue	Baseline Road to 15th Street	4	12	23,645	45	0	2.0%	5.5%	69.1	89	282	891	2,819
13	Benson Avenue	15th Street to 13th Street	4	12	20,215	45	0	2.1%	5.6%	68.5	77	243	770	2,435
14	Benson Avenue	13th Street to Foothill Boulevard	4	12	20,820	45	0	2.1%	5.5%	68.5	79	250	791	2,500

[1] Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

APPENDIX H-1

Traffic Impact Analysis

FOOTHILL BOULEVARD WAREHOUSE

TRAFFIC IMPACT ANALYSIS

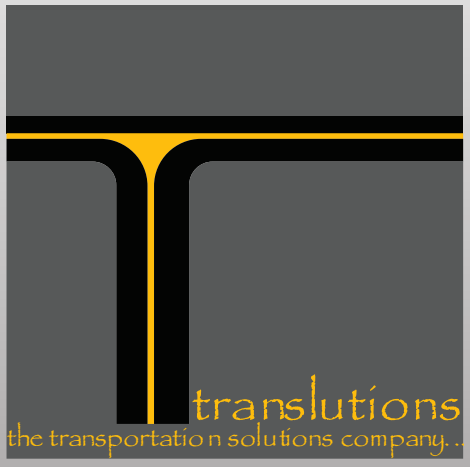
NOVEMBER 15, 2019

PREPARED FOR:

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1.0 INTRODUCTION

This report presents the methodology, findings and conclusions of the Traffic Impact Analysis (TIA) prepared for the proposed Foothill Boulevard warehouse/parcel delivery project (the project). The proposed project is located on the northeast corner of Central Avenue and Foothill Boulevard in the City of Upland in San Bernardino County. The project includes 191,096 square feet of warehouse/parcel delivery uses and 10,000 square feet of office/retail uses on a 50.25-acre lot.

1.1 Purpose of the Traffic Study and Study Objectives

This report is intended to satisfy the requirements for a TIA established by the San Bernardino County Congestion Management Program (CMP), adopted November 3, 1993, and last revised in 2016, as well as the requirements for the disclosure of potential impacts and mitigation measures per the California Environmental Quality Act (CEQA). The San Bernardino County CMP is implemented by the San Bernardino County Transportation Authority (SBCTA, previously San Bernardino Associated Governments). The Cities of Upland and Montclair follow the guidelines set forth in the CMP.

The CMP requires analysis of off-site intersections potentially affected by the project, which the CMP defines as intersections at which the project is forecast to add 50 or more peak hour trips. This report evaluates 17 intersections and project driveways under six analysis scenarios and proposes circulation improvements for intersections that operate or are forecast to operate at unsatisfactory levels of service. In addition, this report also evaluates alternative modes of travel in the vicinity of the project.

1.2 Project Location & Study Area

As stated earlier, the project is located on the northeast corner of Central Avenue and Foothill Boulevard in the City of Upland in San Bernardino County. Figure 1 shows the regional location of the project. The project includes 191,096 square feet of warehouse/parcel delivery uses and 10,000 square feet of office/retail uses.

The study area for the analysis was determined based on thresholds in the CMP TIA guidelines, which require that all intersections be included in the study area when the project trips at that intersection exceeds 50 two-way trips during the a.m. or p.m. peak hours. The study area is also based on discussion with City staff. This report analyzes the following 17 intersections for traffic operations:

1. Monte Vista Avenue/Baseline Road (City of Claremont – 50-trip threshold not met, requested by City);
2. SR-210 Ramps/Baseline Road (Caltrans – 50-trip threshold not met, requested by City);
3. Benson Avenue/Baseline Road (City of Upland – 50-trip threshold not met, requested by City);
4. Benson Avenue/15th Street (City of Upland – 50-trip threshold not met, requested by City);
5. Benson Avenue/13th Street (City of Upland – 50-trip threshold not met, requested by City);
6. Monte Vista Avenue/Foothill Boulevard (City of Upland – 50-trip threshold not met, requested by City);
7. Central Avenue/Foothill Boulevard (City of Upland – 50-trip threshold met);
8. Project Driveway/Foothill Boulevard (City of Upland – 50-trip threshold met);
9. Benson Avenue/Foothill Boulevard (City of Upland – 50-trip threshold met);
10. Central Avenue/11th Street (City of Upland – 50-trip threshold met);
11. Central Avenue/Arrow Route (City of Upland – 50-trip threshold met);
12. Central Avenue/Arrow Highway (City of Montclair – 50-trip threshold met);
13. Central Avenue/Moreno Street (City of Montclair – 50-trip threshold met);
14. Central Avenue/I-10 Westbound Ramps (Caltrans – 50-trip threshold met);
15. Central Avenue/I-10 Eastbound Ramps (Caltrans – 50-trip threshold not met, requested by City);
16. Project Driveway 2/Foothill Boulevard (City of Upland – 50-trip threshold met); and
17. Monte Vista Avenue/Claremont Boulevard (City of Claremont– 50-trip threshold not met, requested by City).

Figure 3 illustrates intersections included in the TIA.



FIGURE 1

Legend

Project Boundary

Foothill Boulevard Warehouse
Regional Project Location

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PROJECT INFORMATION			
TOTAL SITE AREA	2,189,081 SF		50.25 AC
BUILDING SITE AREA	797,306 SF		18.30 AC
COVERAGE			25.2%
BUILDING AREA			**201,096 SF**
FOOTPRINT			201,096 SF
	WAREHOUSE		191,096 SF
	OFFICE		10,000 SF
MEZZANINE	(N/A)		0 SF
PARKING REQUIRED	(9X19)		220
WAREHOUSE @ 1/1000			187
OFFICE @ 1/300			33
AUTO PARKING PROVIDED			337
	STANDARD		238
	ADA		14
	EVC VAN		2
	EVC ADA		2
	EVCS		48
	CLEAN AIR		33
VAN LOADING DOORS			16
TRUCK LOADING DOORS			16
TRAILER STALLS REQUIRED	1/2 DOCKS		10
TRAILER STALLS PROVIDED			12
LANDSCAPE PROVIDED	464,380 SF		
ADDITIONAL PARKING			
	VAN PARKING		1,104

Source: Herdman Architecture + Design (11/21/19).

FIGURE 2

Foothill Boulevard Warehouse
Site Plan

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FIGURE 3

Legend

Revised Project Boundary

Study Area Intersections

Foothill Boulevard Warehouse
Study Area Intersections

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1.3 Analysis Scenarios

Based on the CMP and discussion with City staff, this report analyzes traffic conditions for the following six scenarios:

1. Existing Conditions;
2. Existing With Project Conditions;
3. Opening Year (2020) Conditions;
4. Opening Year (2020) With Project Conditions;
5. Year 2040 Conditions;
6. Year 2040 With Project Conditions.

Consistent with CMP requirements, this report analyzes weekday a.m. and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 and 9:00 a.m. The p.m. peak hour is defined as the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m.

2.0 PROJECT DESCRIPTION

The project site is comprised of approximately 50.25-acres located on the northeast corner of Center Avenue and Foothill Boulevard in the City of Upland. Currently, the site is used for a sand and gravel operation which generates a substantial amount of employee and truck traffic. The proposed project includes 191,096 square feet of warehouse/parcel delivery uses and 10,000 square feet of office/retail uses on a 50.25-acre lot. To provide a conservative analysis, this study analyzed a 276,825 square foot building, which is 75,729 square feet more than 201,096 square foot building shown in Figure 2, likely overstating project impacts. The 10,000 square feet of office/retail uses will be primarily office, however there may be an area for visitors to pick up packages at the facility. This study also assumes that the entire 10,000 square feet consists of retail uses, which generate a higher trip rate than office uses. The western building frontage would include 16 dock-high doors for trucks. Access to the project will be provided via 13th Street (auto/van access), the north leg of Central Avenue (auto, van, and truck access) and two right-in/right-out driveways on Foothill Boulevard (auto/van access). Access to the existing businesses on Foothill Boulevard will be maintained with the completion of the project. Previously referenced Figure 2 illustrates the conceptual site plan for the proposed project.

2.1 Project Trip Generation

Parcel delivery warehouses operate similar to high-cube parcel hub warehouse facilities with several differences. Parcel delivery facilities typically use one merchant/vendor while parcel hub warehouses such as FedEx and UPS typically work with multiple merchants and vendors. Another difference is that parcel hub facilities have high truck traffic throughout the day, while parcel delivery facilities have a majority of truck trips occurring during the off-peak hours. Based on information provided by the client, a total of 25 trucks will arrive to the facility daily, of which 2 percent will occur during each of the a.m. and p.m. peak hours. The trip generation for the project is based on trip generation rates for Land Use 156 “High-Cube Parcel Hub Warehouse” and Land Use 820 “Shopping Center” from Institute of Transportation Engineers’ (ITE) *Trip Generation* (10th Edition). The rates included in the ITE *Trip Generation* for Parcel Hub Warehouses are net rates inclusive of passenger car, delivery vans, and truck traffic. However, to present a conservative analysis, the trip generation rates from the *Trip Generation* have been assumed to be passenger cars and vans, and truck traffic has been added to the trip generation estimates. As stated previously, the majority of truck traffic will occur during the off-peak hours, with one truck entering and exiting the project during each peak hour. Truck trips were converted to PCEs using 3.0 for 4-axle trucks. No trip credits have been included for the existing sand and gravel operation on site to present a conservative (worst case) analysis. Table A summarizes the project trip generation. As shown in Table A, the project is forecast to generate 202 PCE trips in the a.m. peak hour, 202 PCE trips in the p.m. peak hour, and 2,583 daily PCE trips.

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Table A - Project Trip Generation

Land Use		Units	Peak Hour						Daily
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
High-Cube Parcel Hub Warehouse[1]	266.8	Per TSF	0.350	0.350	0.700	0.435	0.205	0.640	7.750
Passenger Vehicles Inbound/Outbound Splits			50%	50%	100%	68%	32%	100%	50%/50%
Passenger Vehicles Trip Generation			93	94	187	116	55	171	2,068
Trucks			1	1	2	1	1	2	50
Truck PCEs			3	3	6	3	3	6	150
Total Trip Generation			**96**	**97**	**193**	**119**	**58**	**177**	**2,218**
Retail[2]	10	Per TSF	0.583	0.357	0.940	1.829	1.981	3.810	37.750
Inbound/Outbound Splits			62%	38%	100%	48%	52%	100%	50%/50%
Trip Generation			6	3	9	18	20	38	378
Pass-By Trips			0	0	0	(6)	(7)	(13)	(13)
Total Net Trip Generation			**6**	**3**	**9**	**12**	**13**	**25**	**365**
Total Project Net Trip Generation			**102**	**100**	**202**	**131**	**71**	**202**	**2,583**

Notes: Per TSF = Per Thousand Square Feet

[1] Rates based on Land Use 156 - "High-Cube Parcel Hub Warehouse" from Institute of Transportation Engineers (ITE) Trip Generation (10th Ed.).

[2] Rates based on Land Use 820 - "Shopping Center" from Institute of Transportation Engineers (ITE) Trip Generation (10th Ed.).

2.2 Project Trip Distribution & Assignment

Project trip distribution patterns for the proposed project were estimated based on the location of the project in relation to the surrounding land uses and the regional network. Trip distribution patterns were developed separately for autos/vans and trucks. Figure 4 illustrates the auto/van trip distribution for the project and Figure 5 illustrates the truck trip distribution Figures 6 and 7 illustrate the corresponding trip assignment for autos/vans and truck PCEs. The total project trip assignment (in PCEs) is shown in Figure 8.

3.0 LOS DEFINITIONS, PROCEDURES, AND THRESHOLDS

Level of service (LOS) is a measure of the quality of operational conditions within a traffic stream and is generally expressed in terms of such measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Levels range from A to F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion. Consistent to the guidelines, the Highway Capacity Manual (HCM) procedures have been used to evaluate levels of service. This section discusses the LOS definitions, procedures, and thresholds used in this report.

3.1 Intersection Levels of Service

The analysis of traffic operations at intersections was conducted according to the Highway Capacity Manual 6th Edition (HCM) delay methodologies, which is described in the Highway Capacity Manual (Transportation Research Board, Washington, D.C., November 2016). Under the HCM methodology, LOS for signalized intersections is based on the average delay experienced by vehicles traveling through an intersection, whereas for unsignalized intersections, the LOS is based on the worst approach where the minor leg has a shared lane and on the worst movement where the minor leg has dedicated turn lanes. Table B presents a brief description of each level of service letter grade, as well as the range of delays associated with each grade.

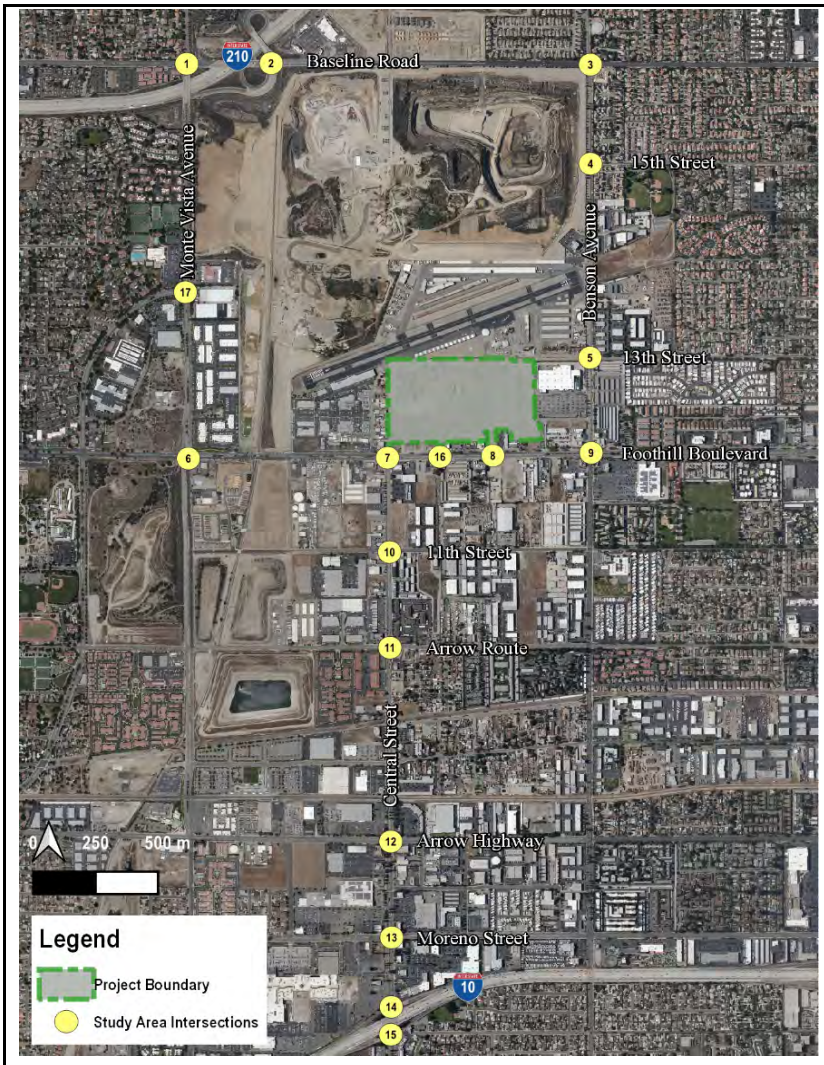
Table B: Intersection LOS Criteria

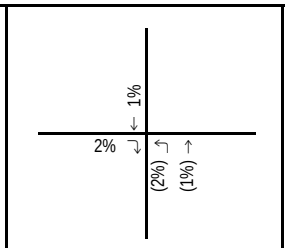
LOS	Description of Drivers' Perception and Traffic Operation	Delay in Seconds	
		Unsignalized	Signalized
A	This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable, or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10	≤ 10
B	This level is assigned when the volume-to-capacity ratio is low and either progression is highly favorable, or the cycle length is short. More vehicles stop than with LOS A.	> 10 and ≤ 15	> 10 and ≤ 20
C	This level is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 15 and ≤ 25	> 20 and ≤ 35
D	This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective, or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	> 25 and ≤ 35	> 35 and ≤ 55
E	This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	> 35 and ≤ 50	> 55 and ≤ 80
F	This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 50	> 80

Source: *Highway Capacity Manual, 6th Edition*

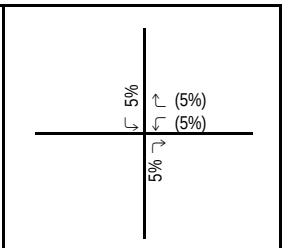
3.2 Levels of Service Thresholds

The Cities of Upland and Montclair use LOS D as the minimum level of service standard for intersection operations. Upland does not have significant impact threshold criteria while the City of Montclair applies incremental thresholds based on the with project LOS as follows:

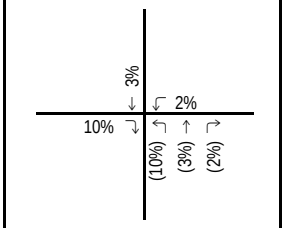




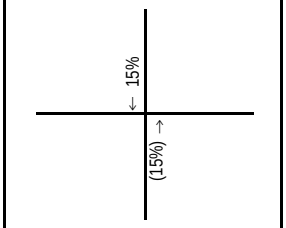
1 Monte Vista Ave/Baseline Rd



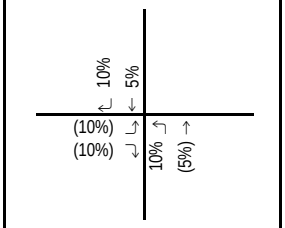
2 SR-210 Ramps/Baseline Rd



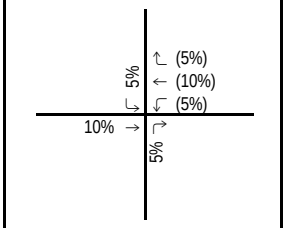
3 Benson Ave/Baseline Rd



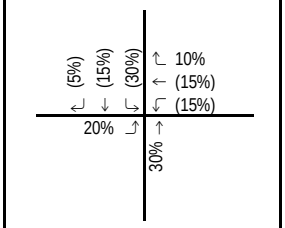
4 Benson Ave/15th St



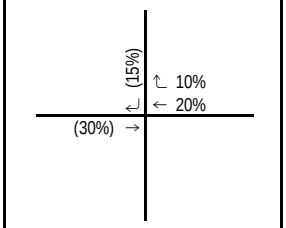
5 Benson Ave/13th St



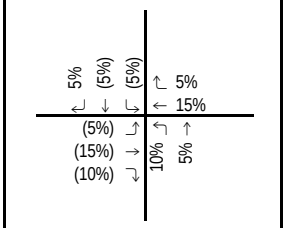
6 Monte Vista Ave/Foothill Blvd



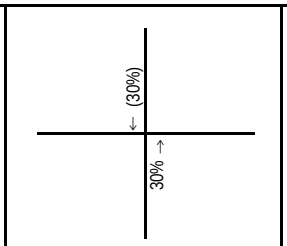
7 Central Ave/Foothill Blvd



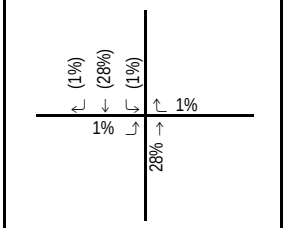
8 Project Dwy 1/Foothill Blvd



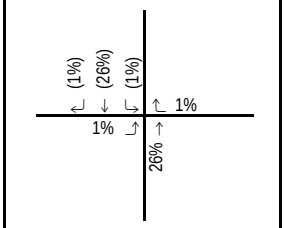
9 Benson Ave/Foothill Blvd



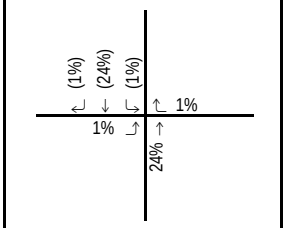
10 Central Ave/11th St



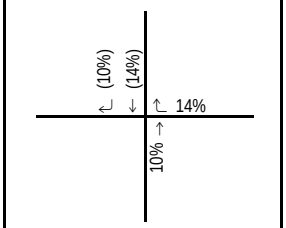
11 Central Ave/Arrow Rte



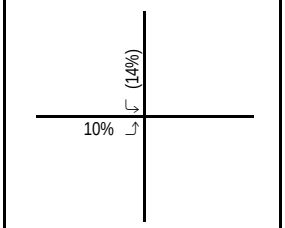
12 Central Ave/Arrow Hwy



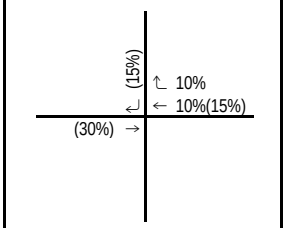
13 Central Ave/Moreno St



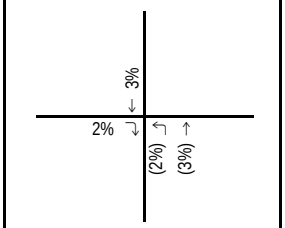
14 Central Ave/I-10 WB Ramps



15 Central Ave/I-10 EB Ramps



16 Project Dwy 2/Foothill Blvd



17 Monte Vista Ave/Claremont Blvd

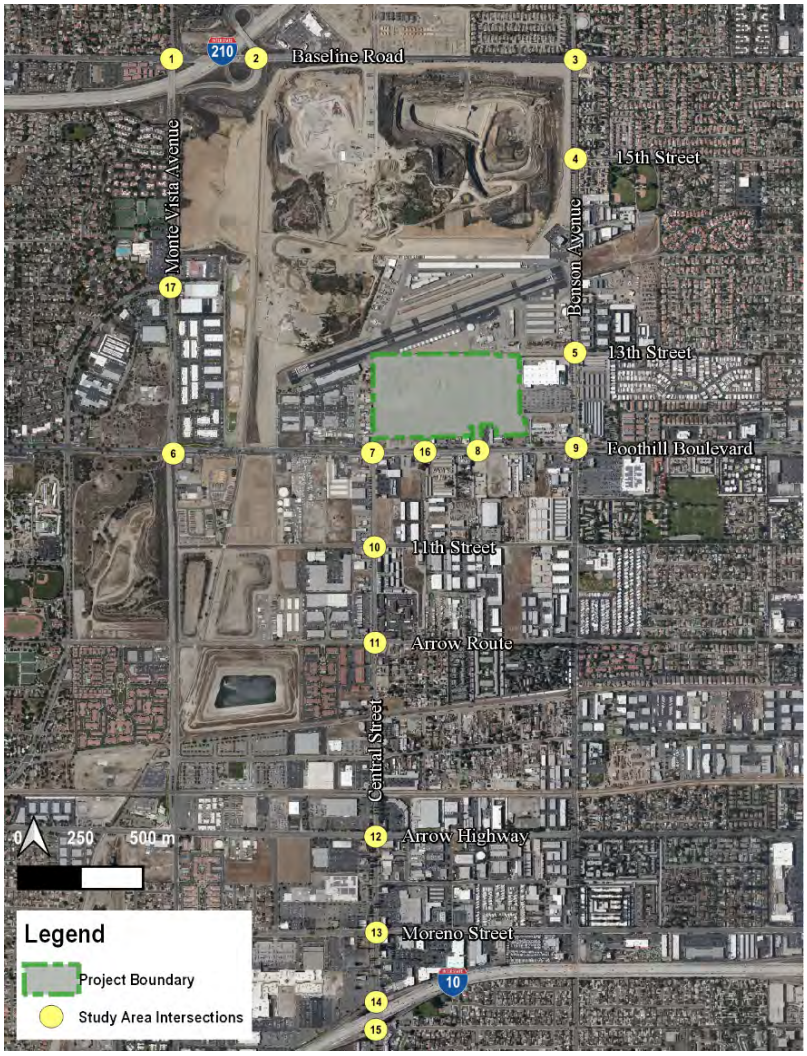
FIGURE 4

XX%(YY%) Inbound%(Outbound%) Distribution

Foothill Boulevard Warehouse
Project Trip Distribution - (Autos/Vans)

translutions
the transportation solutions company...

D:\Projects\Bridge - Upland\Fleet Ops\November 2019\Z30 Project Dist Auto (11/15/2019)



1 Monte Vista Ave/Baseline Rd

2 SR-210 Ramps/Baseline Rd

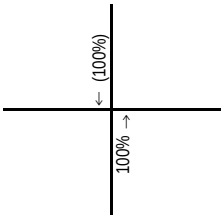
3 Benson Ave/Baseline Rd

4 Benson Ave/15th St

5 Benson Ave/13th St

6 Monte Vista Ave/Foothill Blvd

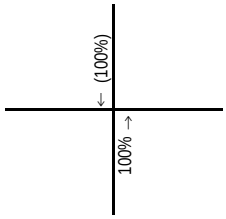
7 Central Ave/Foothill Blvd



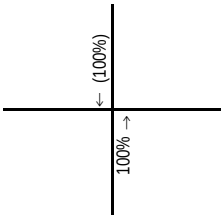
8 Project Dwy 1/Foothill Blvd

9 Benson Ave/Foothill Blvd

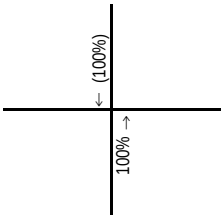
10 Central Ave/11th St



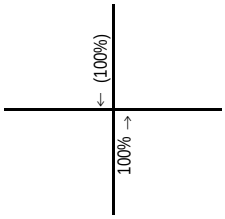
11 Central Ave/Arrow Rte



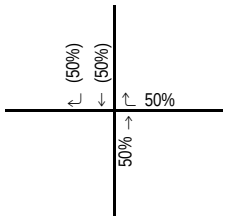
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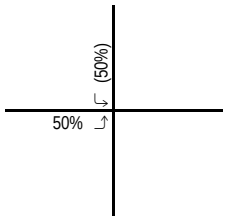
13 Central Ave/Moreno St



14 Central Ave/I-10 WB Ramps



15 Central Ave/I-10 EB Ramps



16 Project Dwy 2/Foothill Blvd

17 Monte Vista Ave/Claremont Blvd

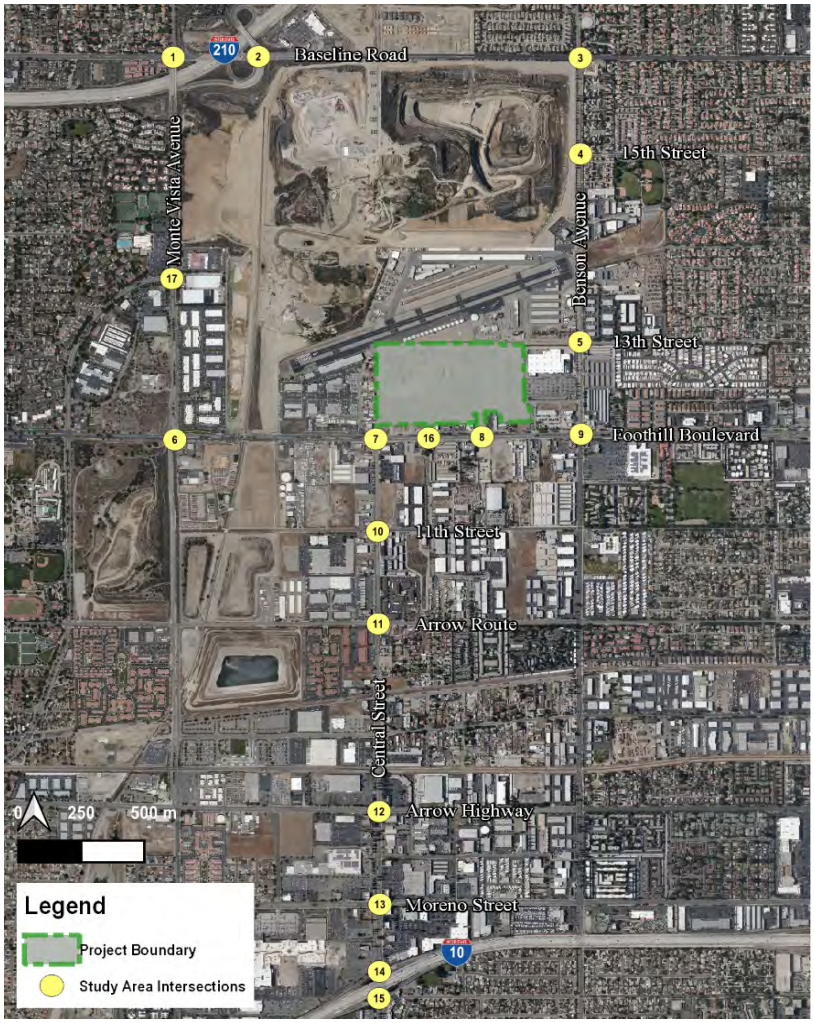
FIGURE 5

XX%(YY%) Inbound%(Outbound%) Distribution

Foothill Boulevard Warehouse
Project Trip Distribution - (Trucks)

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the transportation solutions company...

D:\Projects\Bridge - Upland\Fleet Ops\Z30 Project Dist Truck alt (9/25/2019)



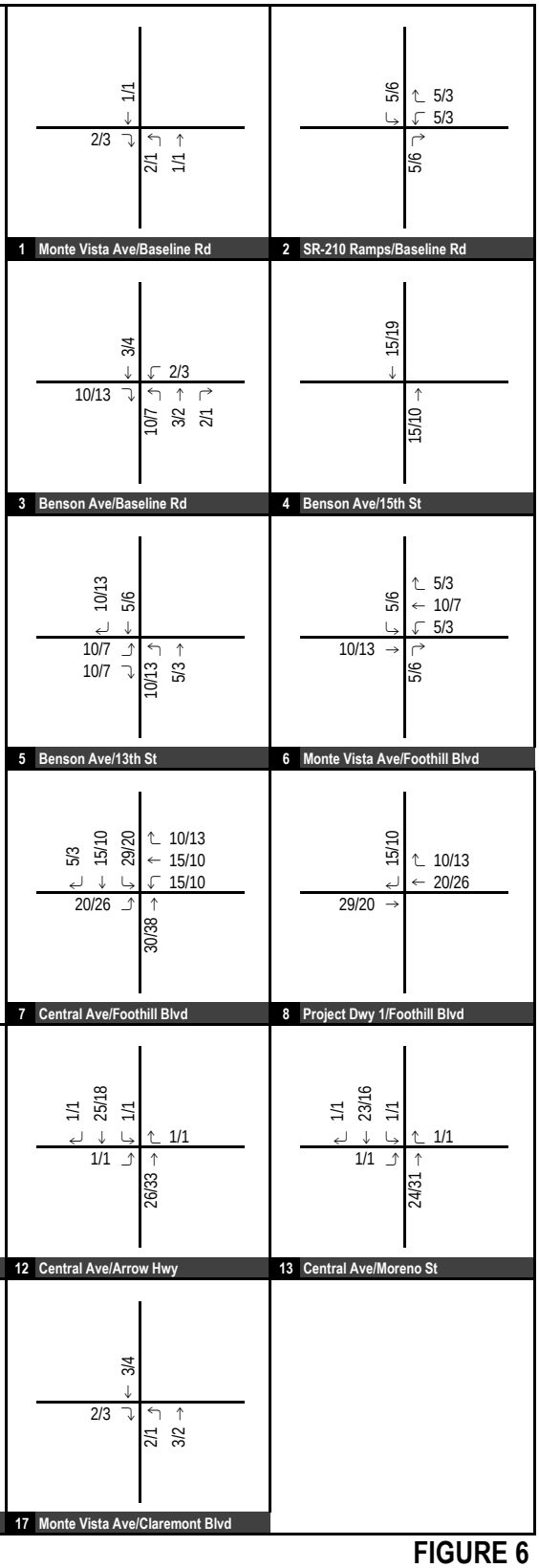


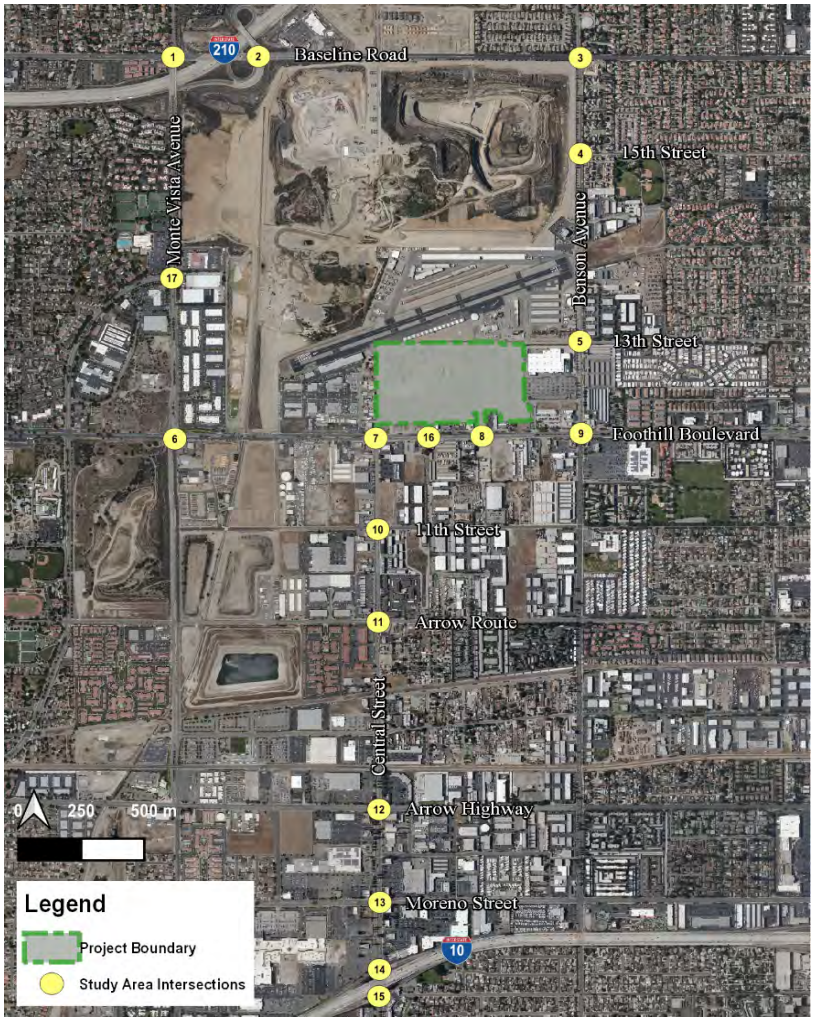
FIGURE 6

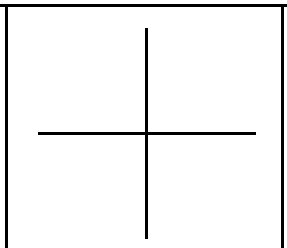
XXX/YYY AM/PM Peak Hour Project Trips

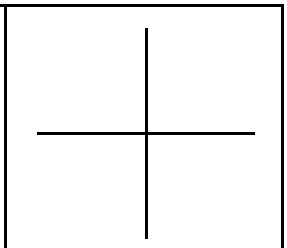
Foothill Boulevard Warehouse
Project Trip Assignment - (Autos/Vans)

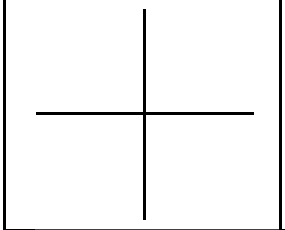
translutions
the transportation solutions company...

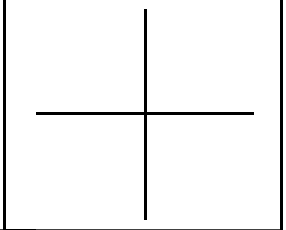
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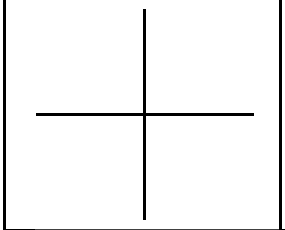


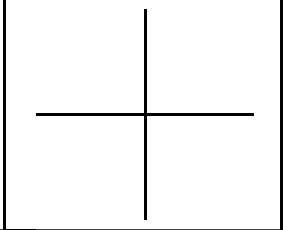

1 Monte Vista Ave/Baseline Rd

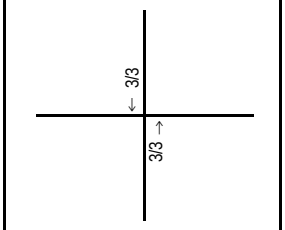

2 SR-210 Ramps/Baseline Rd


3 Benson Ave/Baseline Rd

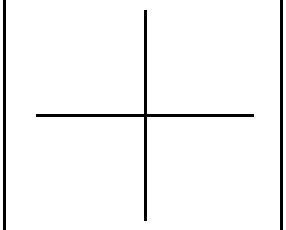

4 Benson Ave/15th St

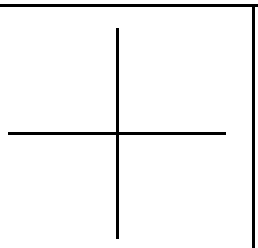

5 Benson Ave/13th St

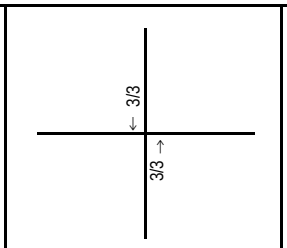

6 Monte Vista Ave/Foothill Blvd



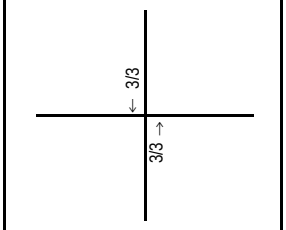
7 Central Ave/Foothill Blvd


8 Project Dwy 1/Foothill Blvd

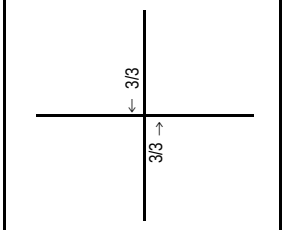

9 Benson Ave/Foothill Blvd



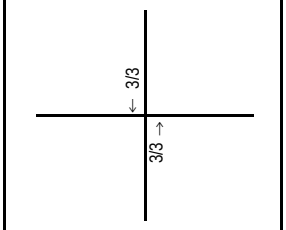
10 Central Ave/11th St



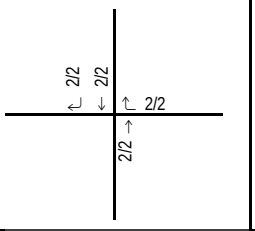
11 Central Ave/Arrow Rte



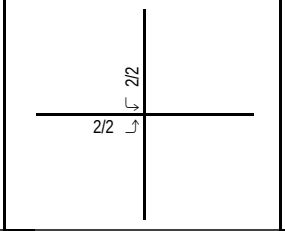
12 Central Ave/Arrow Hwy



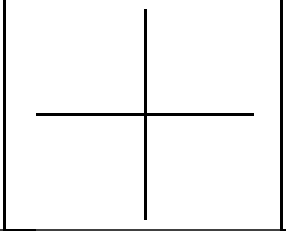
13 Central Ave/Moreno St



14 Central Ave/I-10 WB Ramps



15 Central Ave/I-10 EB Ramps


16 Project Dwy 2/Foothill Blvd

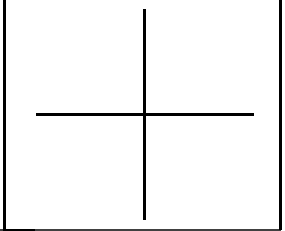

17 Monte Vista Ave/Claremont Blvd

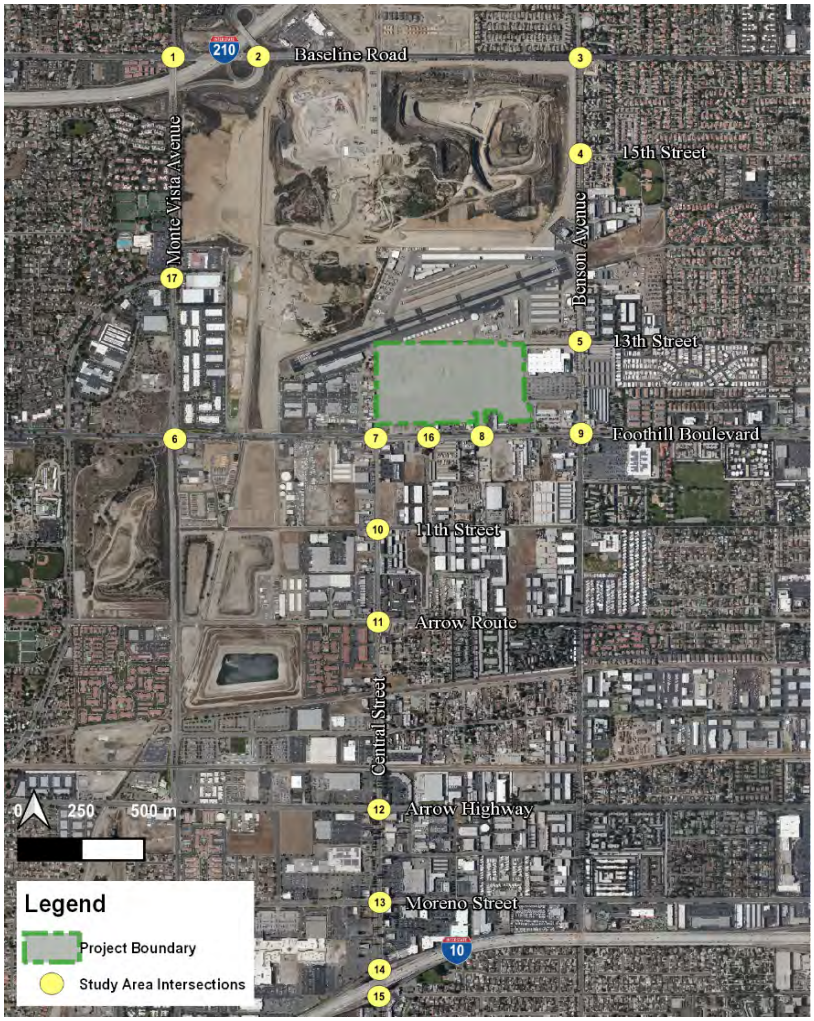
FIGURE 7

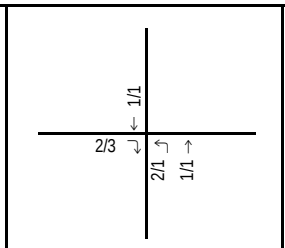
XXX/YYY AM/PM Peak Hour Project Trips

Foothill Boulevard Warehouse
Project Trip Assignment - (Trucks)

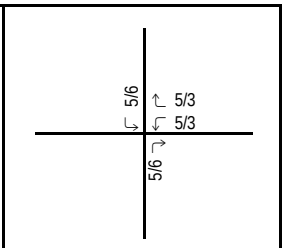
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the transportation solutions company...

D:\Projects\Bridge - Upland\Fleet Ops\Z30 Trips Truck alt (9/25/2019)

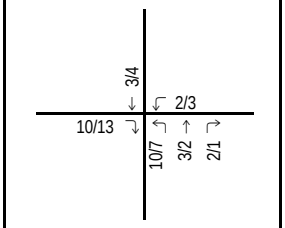




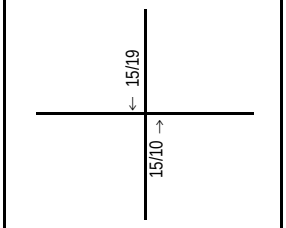
1 Monte Vista Ave/Baseline Rd



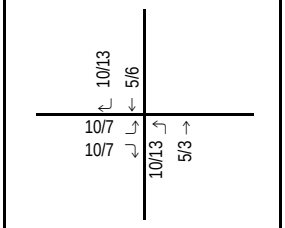
2 SR-210 Ramps/Baseline Rd



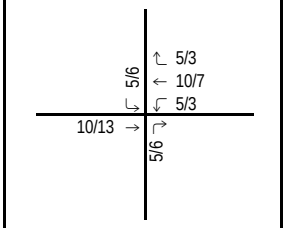
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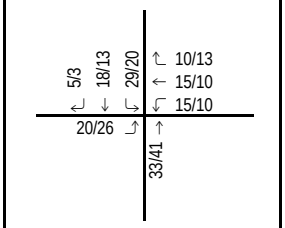
4 Benson Ave/15th St



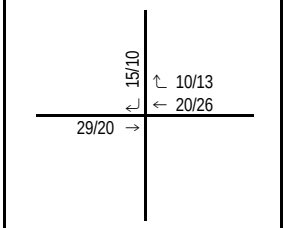
5 Benson Ave/13th St



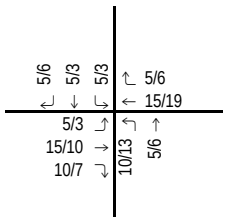
6 Monte Vista Ave/Foothill Blvd



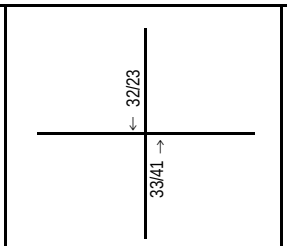
7 Central Ave/Foothill Blvd



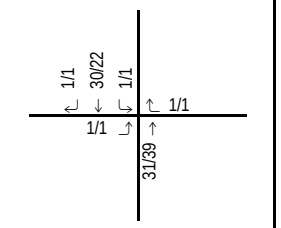
8 Project Dwy 1/Foothill Blvd



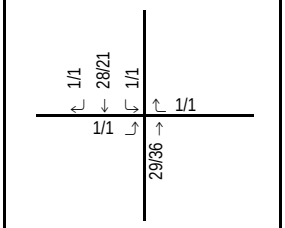
9 Benson Ave/Foothill Blvd



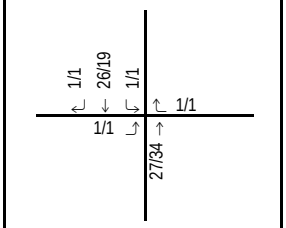
10 Central Ave/11th St



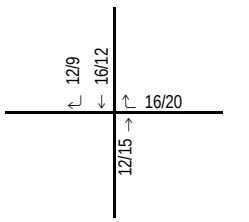
11 Central Ave/Arrow Rte



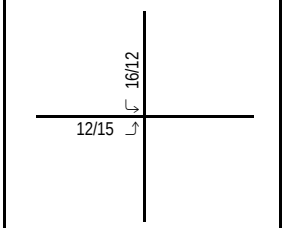
12 Central Ave/Arrow Hwy



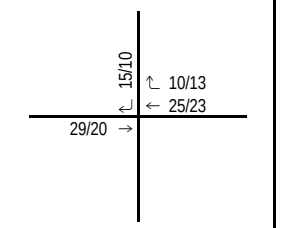
13 Central Ave/Moreno St



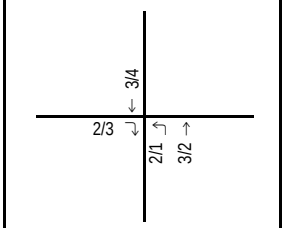
14 Central Ave/I-10 WB Ramps



15 Central Ave/I-10 EB Ramps



16 Project Dwy 2/Foothill Blvd



17 Monte Vista Ave/Claremont Blvd

FIGURE 8

XXX/YYY AM/PM Peak Hour Project Trips

Foothill Boulevard Warehouse
Total Project Trip Assignment

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D:\Projects\Bridge - Upland\Fleet Ops\November 2019\Z30 Total Trips alt (11/15/2019)

- LOS A/B – Project related increase of 10 seconds;
- LOS C – Project related increase of 8 seconds;
- LOS D – Project related increase of 5 seconds;
- LOS E – Project related increase of 2 seconds; and
- LOS F – Project related increase of 1 seconds.

The City of Claremont uses LOS D for secondary arterial and LOS E for major arterials. Based on the City of Claremont General Plan, Baseline Road is designated as a major arterial, indicating the minimum level of service is LOS E at the intersection of Monte Vista Avenue and Baseline Road. Also, Monte Vista Avenue is designated as a major arterial, indicating the minimum level of service is LOS E at the intersection of Monte Vista Avenue and Claremont Boulevard. The City of Claremont's significance criteria includes the following:

- If the intersection currently operates at a deficient level of service, the existing level of service shall be maintained.

4.0 VOLUME DEVELOPMENT METHODOLOGY

Forecast traffic volumes at study intersections were developed based on discussion with City staff and consistent with the guidelines in the CMP. This section discusses the volume development methodology used to forecast future traffic volumes.

4.1 Existing Traffic Volumes

Existing traffic volumes are based on peak hour intersection turn movement counts collected by Counts Unlimited in May 2018. Count sheets are contained in Appendix A. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), were conducted at several intersections. Consistent to the Guidelines, PCE volumes at this intersection was computed using a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. The percentage of trucks at the remaining intersections was determined from counts at nearby intersections on the same arterial. Detailed volume development worksheets are included in Appendix B.

4.2 Opening Year (2020) Traffic Volumes

Opening year (2020) peak hour traffic volumes were developed by applying an annual growth rate of 2 percent per year (2018 to 2020) to the existing volumes and adding cumulative project trips at each study intersection. The cumulative projects were determined from City staff and development activity from the Cities of Claremont and Montclair. Figure 9 illustrates the cumulative project locations. Table C lists the cumulative projects included in the analysis. The cumulative projects are anticipated to generate 4,439 net a.m. peak hour trips, 6,703 net p.m. peak hour trips, and 76,861 net daily trips. Detailed volume development worksheets are included in Appendix B.

4.3 Year 2040 Traffic Volumes

Based on discussion with City staff, traffic volumes for year 2040 conditions were developed based on the San Bernardino Transportation Analysis Model. The base year for the traffic model is 2012 and the forecast year is 2040. The difference between the modeled 2012 and 2040 peak period directional arterial traffic volumes (for each intersection approach and departure) was identified from loaded network model plots. This difference defines the growth in traffic over the 28-year period. This incremental growth in peak period approach and departure volumes was factored to develop the incremental change in peak hour volumes. The SBTAM uses a three-hour a.m. peak period and a four-hour p.m. peak period. Southern California Association of Governments (SCAG), the regional Metropolitan Transportation Organization (MPO) has established that the a.m. peak hour comprises 38 percent of the a.m. peak period and that the p.m. peak hour comprises 28 percent of the p.m. peak period. Therefore, the incremental changes in peak period volumes were multiplied by the appropriate factor to develop incremental changes in peak hour volumes. The incremental growth in approach and departure volumes between 2012 and 2040 was factored to reflect the forecast growth between the year of the ground counts (2018) and 2040. For this purpose, linear growth between 2012 and year 2040 was assumed.

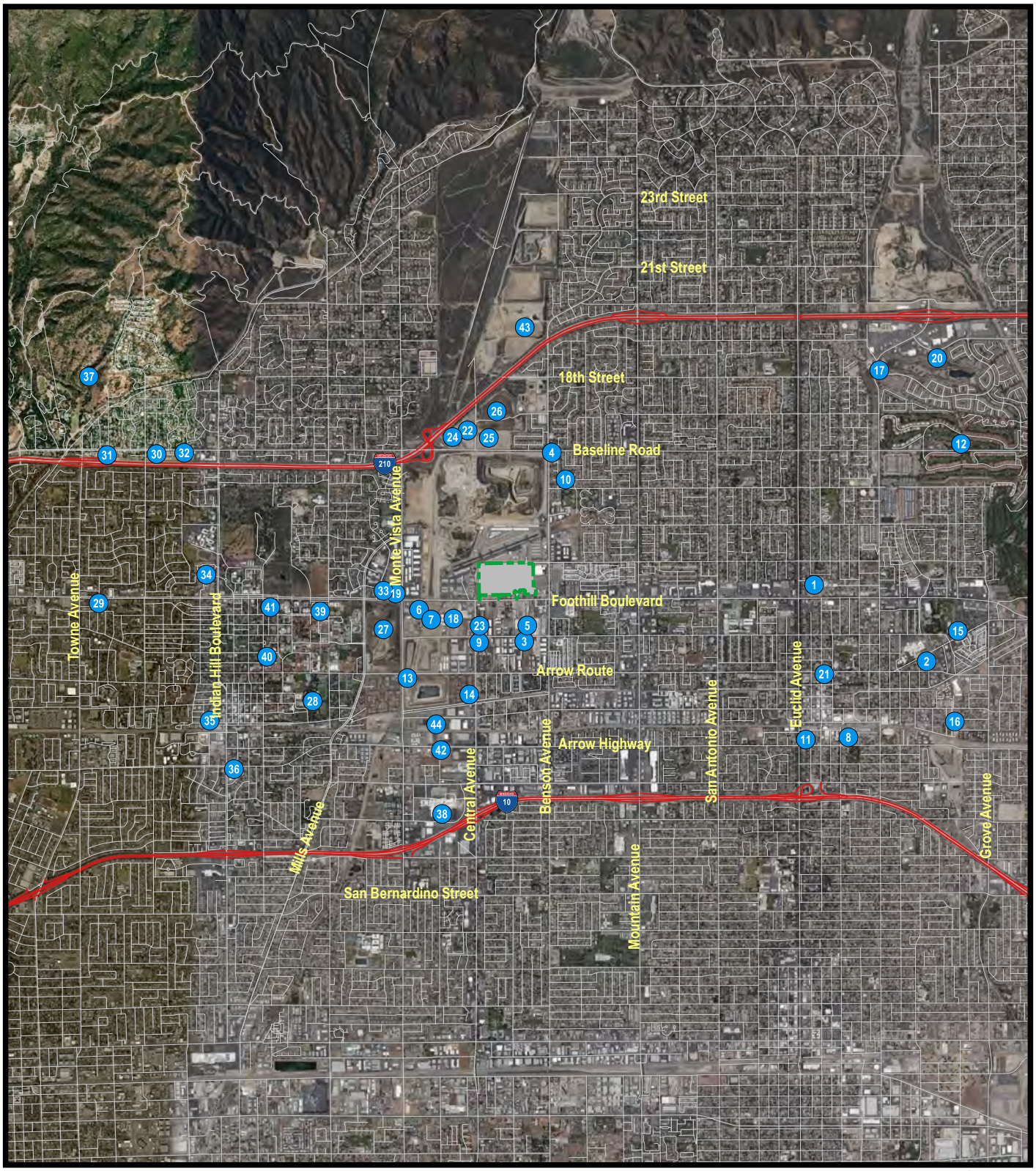


FIGURE 9

Legend

Project Boundary

Cumulative Project Locations

Foothill Boulevard Warehouse
Cumulative Project Locations

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Table C - Cumulative Projects Trip Generation

Project Number	Name	Land Use	Quantity	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Daily
1	SP 16-18	Retail									
		Trip Generation Rates [1]			0.58	0.36	0.94	1.83	1.98	3.81	37.75
		Trip Generation	40.0	TSF	23	15	38	73	80	153	1,510
		Pass-By Trips			0	0	0	(25)	(27)	(52)	(52)
		Total Net Trip Generation			23	15	38	48	53	101	1,458
2	SP 16-10	Medical Office Building									
		Trip Generation Rates [2]			2.17	0.61	2.78	0.97	2.49	3.46	34.8
		Trip Generation	60.0	TSF	130	37	167	58	150	208	2,088
3	DR 18-08	Warehouse [3]									
		Passenger Cars	41.49	TSF	4	2	6	2	5	7	58
		Truck PCEs			0	8	8	0	8	8	43
		Total PCEs			4	10	14	2	13	15	101
4	SP 16-05	Retail									
		Trip Generation Rates [1]			0.58	0.36	0.94	1.83	1.98	3.81	37.75
		Trip Generation	8.7	TSF	5	3	8	16	18	34	327
		Pass-By Trips			0	0	0	(5)	(6)	(12)	(12)
		Total Net Trip Generation			5	3	8	11	12	22	315
5	Sp 16-14	Warehouse [3]									
		Passenger Cars	76.00	TSF	8	3	11	3	9	12	106
		Truck PCEs			3	8	11	0	11	11	79
		Total PCEs			11	11	22	3	20	23	185
6	TM 18249	Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	223	DU	41	124	165	139	82	221	2,105
7	TM 18274	Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	145	DU	27	80	107	90	54	144	1,369
8	TM 18697	Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	203	DU	38	112	150	127	74	201	1,916
9	TM 18951	Single-Family Detached									
		Trip Generation Rates [5]			-	-	-	-	-	-	-
		Trip Generation	78	DU	13	29	42	29	21	50	594
10	TM 20017	Single-Family Detached									
		Trip Generation Rates [6]			-	-	-	-	-	-	-
		Trip Generation	39	DU	7	22	29	25	14	39	371
11	TTM 17481	Single-Family Detached									
		Trip Generation [7]	61	DU	6	12	18	14	10	24	402
		Retail									
		Trip Generation [7]	1.4	TSF	8	7	15	8	5	13	174
12	TT 16-02 TTM 20017	Single-Family Detached									
		Trip Generation Rates			-	-	-	-	-	-	-
		Trip Generation [8]	68	DU	13	38	51	43	25	68	647
13	SP 16-20	Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	40	DU	7	23	30	25	15	40	378
14	SP 16-26	Apartments									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	23	DU	2	9	11	8	5	13	168
15	PR 14-01	Apartments									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	50	DU	5	18	23	18	10	28	366
16	sp 16-16 TTM 20023	Townhomes									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	52	DU	6	18	24	18	12	30	381
17	TTM 20117	Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	48	DU	9	27	36	30	18	48	453

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Table C - Cumulative Projects Trip Generation

Project Number	Name	Land Use	Quantity	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Daily
18	The Enclave At Upland	Single-Family Detached									
		Trip Generation Rates [10]			-	-	-	-	-	-	-
		Trip Generation	350	DU	66	197	263	221	129	350	3,332
19	Upland Commons	Apartments									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	48	DU	5	17	22	17	10	27	351
20	TPM 19856	Apartments									
		Trip Generation Rates [9]			-	-	-	-	-	-	-
		Trip Generation	263	DU	25	70	95	71	45	116	1,431
21		Restaurant									
		Trip Generation Rates [11]			5.47	4.47	9.94	6.06	3.71	9.77	112.18
		Trip Generation	1.2	TSF	7	5	12	7	5	12	135
		Pass-By Trips			0	0	0	(3)	(2)	(5)	(5)
		Total Net Trip Generation			7	5	12	4	3	7	130
22	Sycamore Hills PA 3	Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	93	DU	17	52	69	58	35	93	878
		Townhomes									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	83	DU	9	29	38	29	18	47	608
23	1985 11th Street	Warehouse [12]									
		Passenger Cars	67.99	TSF	-	-	-	-	-	-	-
		Truck PCEs			-	-	-	-	-	-	-
		Total PCEs			56	12	68	14	56	70	556
24	Sycamore Hills Plaza	Retail									
		Trip Generation Rates [1]			0.58	0.36	0.94	1.83	1.98	3.81	37.75
		Trip Generation	35.0	TSF	20	13	33	64	70	134	1,321
		Pass-By Trips			0	0	0	(22)	(24)	(46)	(46)
		Total Net Trip Generation			20	13	33	42	46	88	1,275
		Market									
		Trip Generation Rates [13]			2.29	1.53	3.82	4.71	4.53	9.24	106.78
		Trip Generation	30.0	TSF	69	46	115	141	137	278	3,203
		Pass-By Trips			0	0	0	(51)	(49)	(100)	(100)
		Total Net Trip Generation			69	46	115	90	88	178	3,103
		Drugstore									
		Trip Generation Rates [14]			1.91	1.03	2.94	4.17	4.34	8.51	90.08
		Trip Generation	13.0	TSF	25	13	38	54	57	111	1,171
		Pass-By Trips			0	0	0	(19)	(21)	(40)	(40)
		Total Net Trip Generation			25	13	38	35	36	71	1,131
25	TM 18707	Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	144	DU	27	80	107	90	53	143	1,359
26		Condominiums									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	475	DU	50	169	219	168	98	266	3,477
27	Athletic Fields	Fields									
		Trip Generation Rates [15]			-	-	-	-	-	-	-
		Trip Generation	-		12	3	15	16	191	207	504
28	Pomona College Master Plan	College									
		Trip Generation Rates [16]			-	-	-	-	-	-	-
		Trip Generation	-		9	2	11	3	8	11	119
29	Office Building	Office Building									
		Trip Generation Rates [17]			1.00	0.16	1.16	0.18	0.97	1.15	9.74
		Trip Generation	4.7	TSF	5	0	5	1	5	6	45
30	Condominiums	Condominiums									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	93	DU	10	33	43	33	20	53	681
31	Condominiums	Condominiums									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	95	DU	10	34	44	34	20	54	695

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Table C - Cumulative Projects Trip Generation

Project Number	Name	Land Use	Quantity	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Daily
32	Condominiums	Condominiums									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	60	DU	6	22	28	21	13	34	439
33	Condominiums	Condominiums									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	78	DU	8	28	36	28	16	44	571
		Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	25	DU	5	14	19	16	9	25	236
		Retail									
		Trip Generation Rates [1]			0.58	0.36	0.94	1.83	1.98	3.81	37.75
		Trip Generation	5.6	TSF	3	2	5	10	12	22	211
		Pass-By Trips			0	0	0	(3)	(4)	(7)	(7)
		Total Net Trip Generation			3	2	5	7	8	15	204
34	Condominiums	Condominiums									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	126	DU	13	45	58	44	27	71	922
35	Village Lofts	Condominiums/Retail									
		Trip Generation [16]			40	54	94	56	36	92	1,045
36		Retail									
		Trip Generation Rates [1]			0.58	0.36	0.94	1.83	1.98	3.81	37.75
		Trip Generation	5.7	TSF	3	2	5	11	11	22	217
		Pass-By Trips			0	0	0	(4)	(4)	(7)	(7)
		Total Net Trip Generation			3	2	5	7	7	15	210
37		Single-Family Detached									
		Trip Generation Rates [4]			0.19	0.56	0.74	0.62	0.37	0.99	9.44
		Trip Generation	47	DU	9	26	35	29	18	47	444
38	Montclair Place	Multiplex Movie Theater									
		Trip Generation Rates [18]			0.00	0.00	0.00	6.42	8.18	14.60	220
		Trip Generation	12	Screens	0	0	0	77	99	176	2,640
		Concert Hall									
		Trip Generation Rates [19]			0.00	0.00	0.00	0.44	0.03	0.47	0
		Trip Generation	18	TSF	0	0	0	8	1	9	9
		Apparel Store									
		Trip Generation Rates [20]			0.80	0.20	1.00	2.10	2.02	4.12	66.4
		Trip Generation	15	TSF	12	3	15	32	30	62	996
		Indoor Playground									
		Trip Generation Rates [21]			0.00	0.00	0.00	1.83	1.75	3.58	235
		Trip Generation	11	TSF	0	0	0	20	20	40	2,585
		Fast-Food Restaurant									
		Trip Generation Rates [22]			15.06	10.04	25.10	14.17	14.17	28.34	346.23
		Trip Generation	0.6	TSF	9	6	15	8	9	17	204
		Pass-By Trips			(4)	(3)	(7)	(4)	(5)	(9)	(16)
		Total Net Trip Generation			5	3	8	4	5	9	188
		Office Space									
		Trip Generation Rates [17]			1.00	0.16	1.16	0.18	0.97	1.15	9.74
		Trip Generation	3.9	TSF	4	1	5	1	4	5	38
39	Harvey Mudd College Master Plan Amendment	University/College									
		Trip Generation Rates [23]			0.12	0.03	0.15	0.05	0.10	0.15	1.56
		Trip Generation	100	Students	12	3	15	5	10	15	156
40	Claremont McKenna College Master Plan	University/College									
		Trip Generation Rates [23]			0.12	0.03	0.15	0.05	0.10	0.15	1.56
		Trip Generation	250	Students	29	9	38	12	26	38	390
41	CGU Master Plan	University/College									
		Trip Generation Rates [16]			-	-	-	-	-	-	-
		Trip Generation	415	Students	203	0	203	33	199	232	1,067

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Table C - Cumulative Projects Trip Generation

Project Number	Name	Land Use	Quantity	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Daily
42	North Montclair Downtown Specific Plan Update	Condominiums									
		Trip Generation Rates [9]			0.11	0.35	0.46	0.35	0.21	0.56	7.32
		Trip Generation	1,340	DU	142	474	616	473	278	751	9,809
		Retail									
		Trip Generation Rates [1]			0.58	0.36	0.94	1.83	1.98	3.81	37.75
		Trip Generation	462.0	TSF	269	165	434	845	916	1,761	17,441
		Pass-By Trips			0	0	0	(287)	(311)	(599)	(599)
		Total Net Trip Generation			269	165	434	558	605	1,162	16,842
43	Soccer Complex	Soccer Complex									
		Trip Generation Rates [24]			0.60	0.39	0.99	10.84	5.59	16.43	71.33
		Trip Generation	6	Fields	4	2	6	65	34	99	428
44	Metrolink-Gold Line Station										
		Trip Generation Rates [25]			0.33	0.09	0.42	0.11	0.32	0.43	2.81
		Trip Generation	1,600	PS	531	141	672	172	516	688	4,496
Total Trip Generation					**2,075**	**2,364**	**4,439**	**3,289**	**3,414**	**6,703**	**76,861**

Notes: DU = Dwelling Units, TSF = Thousand Square Feet, PS=Parking Spaces

[1] Trip generation based on rates for Land Use 820 - "Shopping Center" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[2] Trip generation based on rates for Land Use 720 - "Medical-Dental Office Building" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[3] Rates based on Land Use 150 - "Warehousing" from Institute of Transportation Engineers (ITE) Trip Generation (10th Ed.). Recommended Truck Mix Percentages per City of Fontana Truck Trip Generation Study for Heavy Warehouse uses, August 2003. Recommended PCE Factor per City of SBCTA Guidelines.

[4] Trip generation based on rates for Land Use 210 - "Single-Family Detached Housing" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[5] Trip generation from "Central Avenue Live & Work Project Traffic Impact Analysis" from Kunzman Associates (February, 2014).

[6] Trip generation from "Traffic Impact Analysis for Tierras Altas Apartments from Albert Wilson & Associates (May, 2017).

[7] Trip generation from "Spanish Trails Specific Plan Initial Study" from LSA (April, 2016.)

[8] Trip generation from "Upland Hills Residential Project Traffic Impact Analysis from LSA (November, 2016).

[9] Trip generation based on rates for Land Use 220 - "Multifamily Housing (Low-Rise)" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[10] Trip generation from "The Enclave At Upland Traffic Impact Analysis from Translutions (June, 2015).

[11] Trip generation based on rates for Land Use 932 - "High-Turnover (Sit-Down) Restaurant" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[12] Trip generation from "1985 11th Street, Upland Traffic Study from Albert Grover & Associates (May, 2018).

[13] Trip generation based on rates for Land Use 850 - "Supermarket" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[14] Trip generation based on rates for Land Use 880 - "Pharmacy/Drugstore without Drive-Through Window" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[15] Trip generation from "Claremont Colleges East Campus Traffic Impact Analysis" from Linscott, Law, & Greenspan (January, 2015.)

[16] Trip generation from "Pomona College Master Plan Traffic Impact Analysis" from Linscott, Law, & Greenspan (August, 2014.)

[17] Trip generation based on rates for Land Use 710 - "General Office Building" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[18] Trip generation based on rates for Land Use 445 - "Multiplex Movie Theater" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[19] Trip generation based on rates for Land Use 460 - "Arena" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[20] Trip generation based on rates for Land Use 876 - "Apparel Store" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[21] Trip generation based on rates for Land Use 876 - "Multipurpose Recreational Facility" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[22] Trip generation based on rates for Land Use 933 - "Fast-Food Restaurant without Drive-Through Window" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[23] Trip generation based on rates for Land Use 550 - "University/College" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[24] Trip generation based on rates for Land Use 488 - "Soccer Complex" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

[25] Trip generation based on rates for Land Use 090 - "Park-and-Ride Lot with Bus or Light Rail Service" from Institute of Transportation Engineers' (ITE) *Trip Generation* (10th Edition).

Since the increment between 2018 and 2040 is 22 years of the 28-year time span, a factor of 0.78 (i.e., 22/28) was used. This forecast growth in approach and departure volumes were added to the 2018 ground counts, resulting in post-processed forecast year 2040 link volumes.

Year 2040 turn volumes were developed using existing turn volumes and the future approach and departure volumes, based on the methodologies contained in National Cooperative Highway Research Program Report (NCHRP) 765: Analytical Travel Forecasting Approaches for Project-Level Planning and Design (National Academies of Sciences, Engineering, and Medicine. 2014. Analytical Travel Forecasting Approaches for Project-Level Planning and Design. Washington, DC: The National Academies Press.). At some locations, forecast turning movements were forecast to be less than those under opening year 2019 conditions. This can be attributed to network improvements, planned transit, or changes in land use. Therefore, these turning movements were adjusted by applying a growth factor of five percent to opening year 2020 traffic volumes to account for an increase in traffic volumes at these locations from cumulative conditions to year 2040. Detailed volume development worksheets are included in Appendix B.

4.4 Existing, Opening Year (2020), and Year 2040 With Project Traffic Volumes

Traffic volumes for existing, opening year (2020), and year 2040 with project conditions were developed by adding the trip assignment to the corresponding (i.e. existing, opening year (2020), and year 2040 without project traffic volumes.

5.0 EXISTING CONDITIONS

This section discusses the existing transportation conditions in the study area.

5.1 Existing Roadway Conditions

Regional access to the project site is provided by Interstate 210 to the north and Interstate 10 to the south. Local access is provided by the following roadways:

- **Central Avenue** is oriented in the north-south direction and currently a four-lane roadway in the analysis area. Central Avenue is classified as a Major Arterial in the City of Upland's General Plan. Central Avenue is a truck route with unrestricted access from Arrow Highway to Richton Street and a truck route restricted to 5 tons from Richton Street to the City of Upland's southern limits. Central Avenue is a truck route with unrestricted access from the City of Montclair's northern limits to the City of Montclair's southern limits.
- **Benson Avenue** is oriented in the north-south direction currently a four-lane roadway in the analysis area. Benson Avenue is classified as a Secondary Arterial in the City's General Plan. Benson Avenue is a truck route with unrestricted access from north of Baseline Road to Foothill Boulevard and is restricted to 5 tons from Foothill Boulevard to the City of Upland's southern limits.
- **Foothill Boulevard** is oriented in the east-west direction and currently a four-lane roadway in the analysis area. Foothill Boulevard is classified as a Major Arterial in the City's General Plan. Foothill Boulevard is a truck route with unrestricted access from the City of Upland's western limits to the City of Upland's eastern limits.
- **Monte Vista Avenue** is oriented in the north-south direction and currently a four-lane roadway in the analysis area. Monte Vista Avenue is classified as a Secondary Arterial in the City's General Plan. Monte Vista Avenue is a truck route with unrestricted access from north of Baseline Road to the City of Claremont's southern limits. Monte Vista Avenue is a truck route with unrestricted access from City of Upland's northern limits to Foothill Boulevard and from Arrow Highway to the City of Upland's southern limits. It is also a truck route with unrestricted access from City of Montclair's northern limits to Palo Verde Street.
- **Baseline Road** is oriented in the east-west direction and currently a four-lane roadway in the analysis area. Baseline Road is classified as a Secondary Arterial in the City's General Plan. It is a truck route with unrestricted access from the City of Claremont's western city limits to the City's eastern city limits. It is also a truck route with unrestricted access from the City of Upland's western city limits to Benson Avenue and is restricted to 5 tons from Benson Avenue to Euclid Avenue.
- **Arrow Highway** is oriented in the east-west direction and currently a four-lane roadway in the analysis area. Arrow Highway is classified as a Secondary Arterial in the City's General Plan. Arrow Highway is a truck route with unrestricted access from the City of Montclair's western limits to the eastern limits. It is also a truck route

with unrestricted access from City of Upland's western limits to Mountain Avenue and a truck route restricted to 5 tons from Mountain Avenue to Euclid Avenue.

5.2 Existing Transit Service

Public transportation services within the City of Upland and near the proposed project include bus transit service (Omnitrans) and commuter rail transportation (Metrolink). These services are further described below.

Bus Service. Public transportation in the City of Upland is mainly provided by Omnitrans, which is the regional transit operator in San Bernardino County. The following transit routes operate near the project:

- **Route 66** serves Fontana and Montclair via Foothill Boulevard. It operates on weekdays at headways of approximately 30-40 minutes during peak hours. Near the study area, Route 66 travels along Central Avenue and Foothill Boulevard.
- **Route 85** serves between the Chino Transit Center, Montclair, Chino Civic Center, and Chino Transit Center. It operates on headways of approximately 30 minutes. Near the study area, Route 85 travels along Central Avenue and Arrow Highway.

Commuter Rail Service. Commuter rail service is provided by Metrolink, which is operated by the Southern California Regional Rail Authority (SCRRA). Metrolink train service is available between the counties of Ventura, Los Angeles, San Bernardino, Orange, Riverside, and north San Diego. The area is served by the San Bernardino Line, which runs east-west between the San Bernardino Station and the Los Angeles Union Station. The Upland Station is the nearest Metrolink station to the project site and is approximately 3.5 miles from the project site.

5.3 Existing Bicycle & Pedestrian Facilities

The City's bikeway network includes three types of facilities and are discussed below:

- **Class I Bike Path** A Class I facilities are bicycle trails or paths that are essentially off street and separated from automobiles. They are a minimum of eight feet in width for two-way travel and include bike lane signage and designated street crossings where needed.
- **Class II Bike Lane** Class II bike lanes can be either located next to a curb or parking lane. If located next to a curb, a minimum width of five feet is recommended. However, a Bike Lane adjacent to a parking lane can be four feet in width. Bike Lanes are exclusively for the use of bicycles and include bike lane signage, special lane lines, and pavement markings. ways delineate the right-of-way assigned to bicyclists along roadways. Bike lane signs and pavement markings help define these bike lanes.
- **Class III Bike Street** is a street providing for shared use by motor vehicles and bicyclists. While bicyclists have no exclusive use or priority, signage – both by the side of the street and stenciled on the roadway surface – alerts motorists to bicyclists sharing the roadway are called Bike Streets, and are enhancements of the standard Class III Bike Route, which is only indicated by small wayside signs.

Figure 10 illustrates the existing bicycle facilities near the project area. As shown in Figure 10, existing bicycle lanes are located on Baseline Road, Monte Vista Avenue, Benson Avenue, and Foothill Boulevard. Adjacent to the project there are no bicycle lanes on Foothill Boulevard from Central Avenue to Benson Avenue.

Pedestrian circulation in Upland is primarily provided via sidewalks. Figure 11 illustrates the existing pedestrian facilities adjacent to the project. As illustrated in Figure 11, there are continuous sidewalks adjacent to the project on Foothill Boulevard. The closest bus stop is located on southeast corner of Central Avenue/Foothill Boulevard.

5.4 Existing Intersections Levels of Service

An intersection level of service analysis was conducted for existing conditions to determine current circulation system performance. Figure 12 shows the lane geometrics and stop controls at the study intersections. Existing traffic volumes at study intersections are shown in Figure 13. Detailed volume development worksheets are included in Appendix B. The existing levels of service for the study area intersections are summarized in Table D. Level of service calculation



FIGURE 10

Legend

Revised Project Boundary — Existing Bicycle Facilities

Foothill Boulevard Warehouse
Existing Bicycle Network

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FIGURE 11

Legend

Project Boundary | Bus Stops | Existing Sidewalks

Foothill Boulevard Warehouse
Existing Pedestrian Facilities

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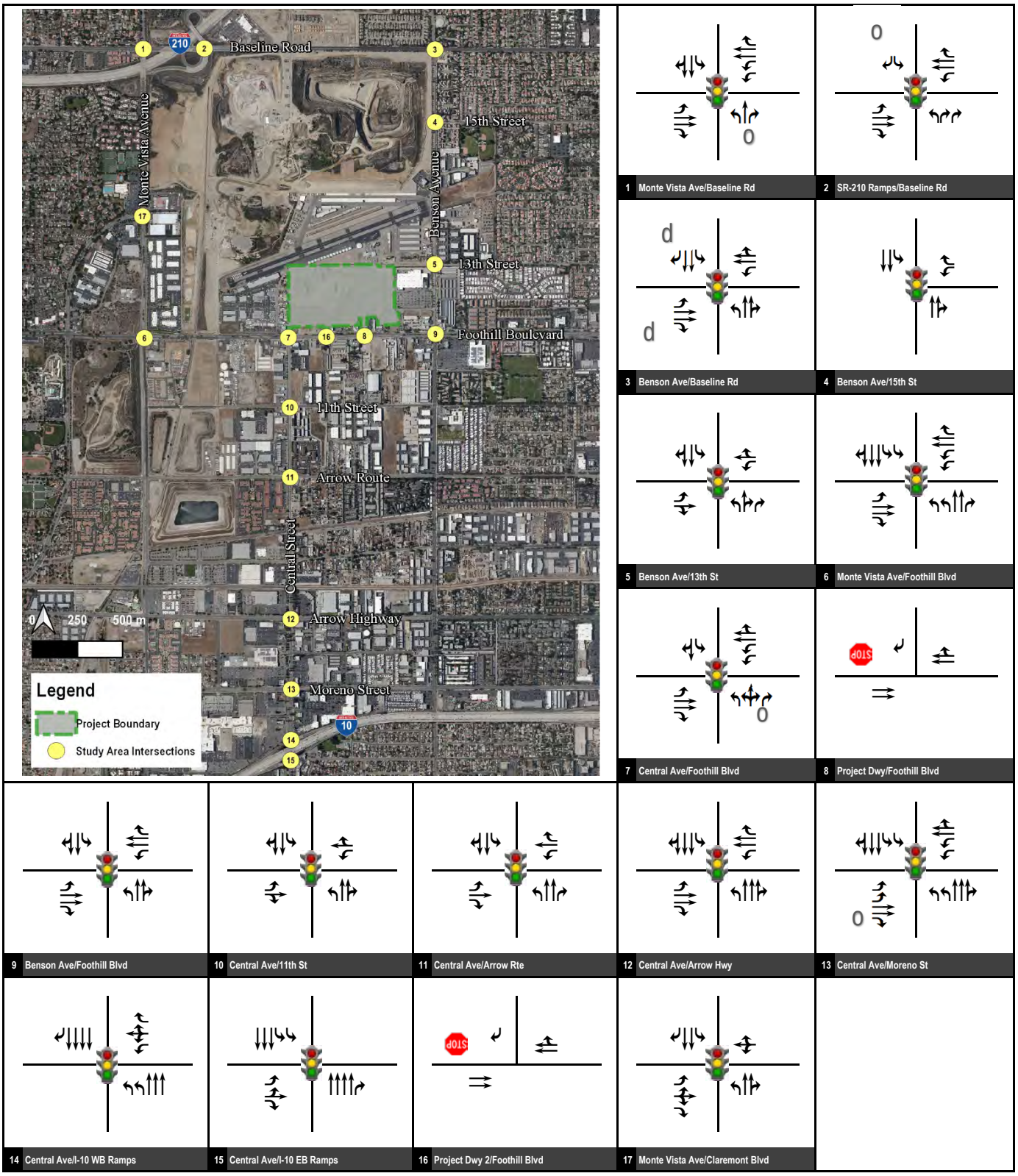


FIGURE 12

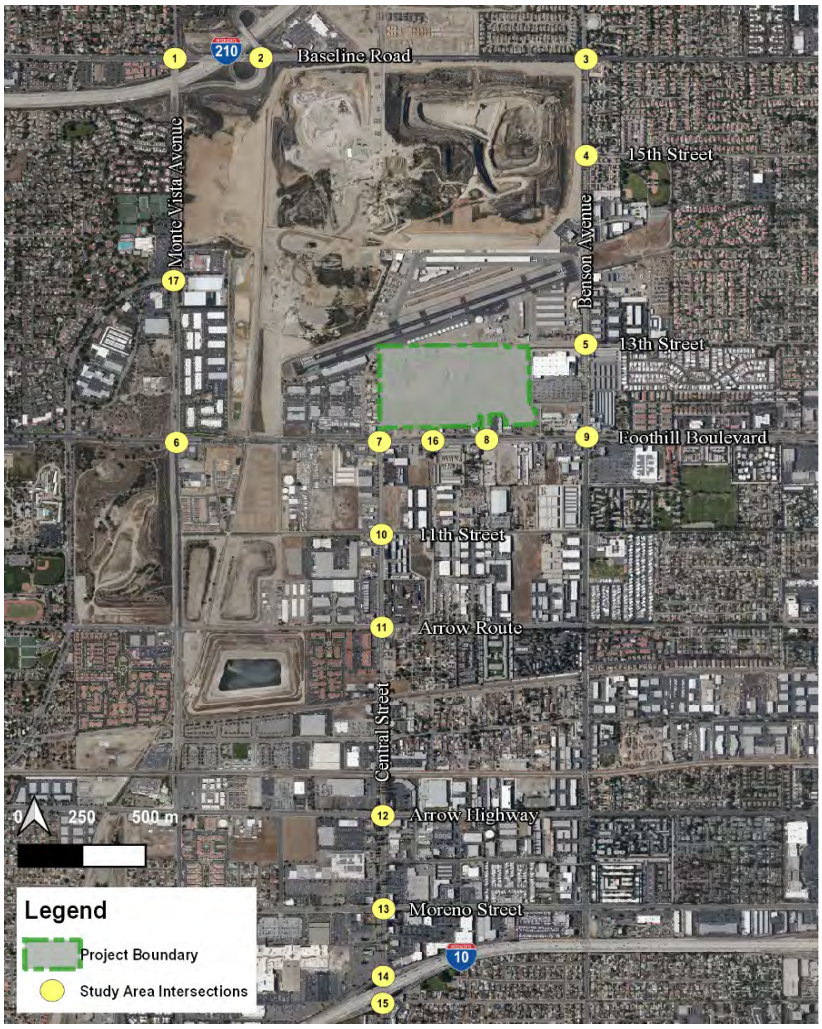
Legend

Signal
Stop Sign
d De-facto Right
0 Overlap Phase

Foothill Boulevard Warehouse
Existing Intersection Geometrics and Stop Control

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1 Monte Vista Ave/Baseline Rd

107/46	142/112	222/157
45/57	363/726	168/162
131/153	101/161	393/616
277/160	718/505	833/503

2 SR-210 Ramps/Baseline Rd

769/577	65/60	
173/176	331/825	474/498
238/181	450/837	
696/324	821/409	27/28

3 Benson Ave/Baseline Rd

270/101	288/170	17/16
68/254	386/974	391/494
392/275	131/355	71/220
19/32	882/385	235/140

4 Benson Ave/15th St

787/626	31/85	
	440/821	35/145
66/39	71/51	

5 Benson Ave/13th St

8/6	746/633	50/80
5/8	1/6	32/10
3/2	475/858	58/165
44/56	5/0	126/102

6 Monte Vista Ave/Foothill Blvd

36/64	382/501	100/165
37/46	367/816	144/207
146/181	386/698	95/129
145/152	629/525	110/138

7 Central Ave/Foothill Blvd

356/918	113/212	
195/156	149/394	
	675/560	221/231

8 Project Dwy/Foothill Blvd

Future Intersection

9 Benson Ave/Foothill Blvd

246/157	485/435	134/154
91/271	309/849	32/82
84/106	309/552	97/163
103/137	550/515	123/121

10 Central Ave/11th St

19/23	251/442	27/56
12/19	28/83	20/35
37/19	304/470	73/93
24/34	59/67	68/96

11 Central Ave/Arrow Rte

29/34	311/500	10/50
23/65	91/334	50/72
71/66	364/518	104/147
58/36	277/190	150/158

12 Central Ave/Arrow Hwy

49/62	510/820	20/44
43/120	273/747	109/219
162/92	595/644	86/119
38/43	532/281	124/165

13 Central Ave/Moreno St

25/84	676/1073	37/134
25/105	110/371	66/248
138/307	843/829	124/224
17/50	159/258	190/319

14 Central Ave/I-10 WB Ramps

312/466	616/1360	
408/335	880/1256	
294/451	3/2	328/522

15 Central Ave/I-10 EB Ramps

758/1400	175/510	
270/385	3/5	271/366
1001/1180	535/569	

Future Intersection

17 Monte Vista Ave/Claremont Blvd

314/199	563/529	3/0
187/313	5/29	
17/28	563/582	4/7
2/1	1/2	6/6

FIGURE 13

XXXX / YYYY AM / PM Peak Hour Volume (In PCEs)

Foothill Boulevard Warehouse
Existing Peak Hour Traffic Volumes

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the transportation solutions company

Table D: Existing Intersection Levels of Service

Intersection	LOS Standard	Jurisdiction	Control	Without Project				With Project				Project Impact
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1 . Monte Vista Avenue/Baseline Road	E	Claremont	Signal	17.1	B	23.4	C	17.2	B	23.4	C	NO
2 . SR-210 Ramps/Baseline Road	D	Caltrans	Signal	18.6	B	43.3	D	23.3	C	43.2	D	NO
3 . Benson Avenue/Baseline Road	D	Upland	Signal	47.4	D	40.0	D	51.2	D	40.9	D	NO
4 . Benson Avenue/15th Street	D	Upland	Signal	5.8	A	3.2	A	5.8	A	3.2	A	NO
5 . Benson Avenue/13th Street	D	Upland	Signal	22.0	C	23.6	C	22.2	C	24.3	C	NO
6 . Monte Vista Avenue/Foothill Boulevard	D	Upland	Signal	22.3	C	26.5	C	22.4	C	26.7	C	NO
7 . Central Avenue/Foothill Boulevard	D	Upland	Signal	17.1	B	31.1	C	21.0	C	31.7	C	NO
8 . Project Driveway/Foothill Boulevard	D	Upland	TWSC	*Future Intersection*				10.0	A	9.8	A	NO
9 . Benson Avenue/Foothill Boulevard	D	Upland	Signal	33.9	C	33.8	C	34.1	C	34.2	C	NO
10 . Central Avenue/11th Street	D	Upland	Signal	13.1	B	26.6	C	12.6	B	26.9	C	NO
11 . Central Avenue/Arrow Route	D	Upland	Signal	20.7	C	28.2	C	20.7	C	27.3	C	NO
12 . Central Avenue/Arrow Highway	D	Montclair	Signal	27.8	C	29.9	C	27.8	C	30.1	C	NO
13 . Central Avenue/Moreno Street	D	Montclair	Signal	21.5	C	27.7	C	21.6	C	27.8	C	NO
14 . Central Avenue/I-10 Westbound Ramps	D	Caltrans	TWSC	14.0	B	15.6	C	14.2	B	15.9	C	NO
15 . Central Avenue/I-10 Eastbound Ramps	D	Caltrans	Signal	18.3	B	26.0	C	18.4	B	26.0	C	NO
16 . Project Driveway 2/Foothill Boulevard	D	Upland	TWSC	*Future Intersection*				12.0	B	11.4	B	NO
17 . Monte Vista Avenue/Claremont Boulevard	E	Claremont	Signal	10.8	B	13.2	B	10.9	B	13.3	B	NO

Notes:

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

worksheets are contained in Appendix C. As shown in Table D, all study area intersections are currently operating at satisfactory levels of service.

5.5 Existing With Project Intersections Levels of Service

An intersection level of service analysis was conducted for existing with project conditions to determine circulation system performance. Existing with project traffic volumes at study intersections are shown in Figure 14. The existing with project levels of service for the study area intersections are summarized in Table D. Level of service calculation worksheets are contained in Appendix C. As shown in Table D, all study area intersections are forecast to operate at satisfactory levels of service.

6.0 OPENING YEAR 2020 CONDITIONS

This section discusses opening year transportation conditions in the study area. It is anticipated that the project will open in 2020.

6.1 Opening Year 2020 Roadway Conditions

Opening year roadway conditions are assumed to be the same as those under existing conditions.

6.2 Opening Year 2020 Transit Service

Transit service under opening year conditions are anticipated to remain the same as under existing conditions.

6.3 Opening Year 2020 Pedestrian & Bicycle Facilities

Pedestrian and bicycle facilities under opening year conditions are anticipated to remain the same as under existing conditions.

6.4 Opening Year 2020 Intersections Levels of Service

An intersection level of service analysis was conducted for opening year 2020 conditions to determine circulation system performance. Opening year 2020 traffic volumes at study intersections are shown in Figure 15. Detailed volume development worksheets are included in Appendix B. Opening year 2020 levels of service for the study area intersections are summarized in Table E. Level of service calculation worksheets are contained in Appendix C. As shown in Table E, all study area intersections are currently operating at satisfactory levels of service except for the following location:

- Benson Avenue/Baseline Road (a.m. peak hour).

6.5 Opening Year 2020 With Project Intersections Levels of Service

An intersection level of service analysis was conducted for opening year 2020 with project conditions to determine circulation system performance. Opening year 2020 with project traffic volumes at study intersections are shown in Figure 16. The opening year 2020 with project levels of service for the study area intersections are summarized in Table E. Level of service calculation worksheets are contained in Appendix C. As shown in Table E, all study area intersections are forecast to operate at satisfactory levels of service except for the following location:

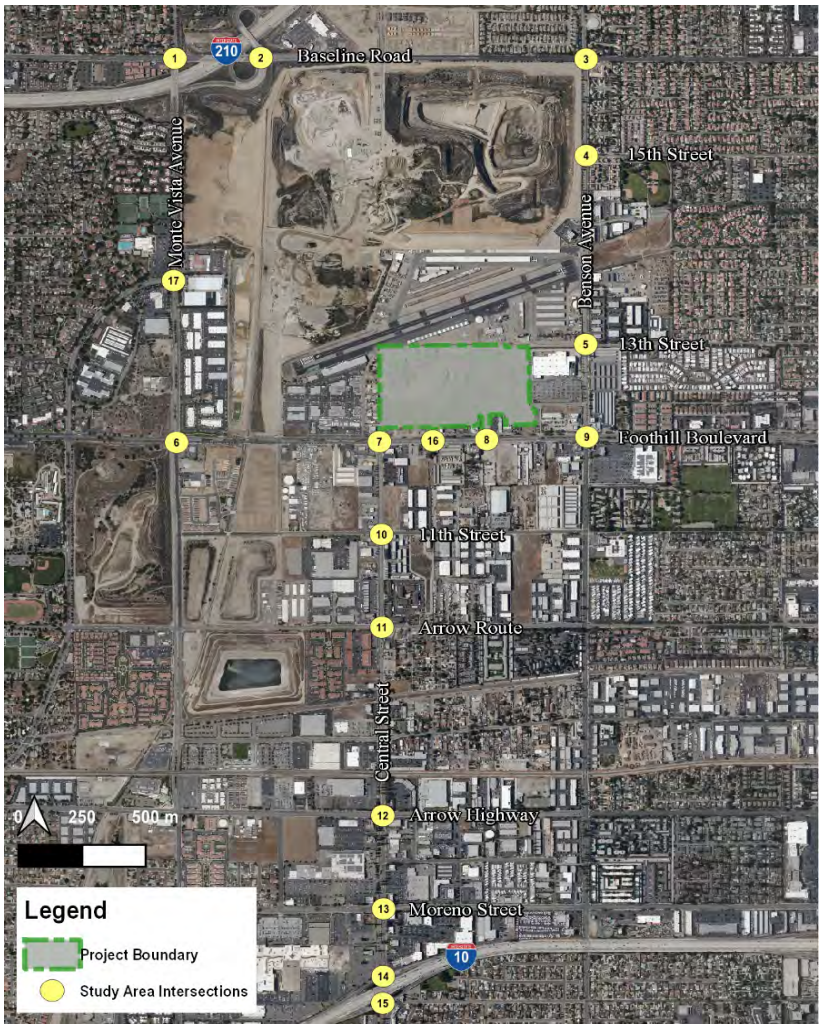
- Benson Avenue/Baseline Road (a.m. peak hour). – The CMP uses a 50-trip threshold as a screening tool to identify potential impacts. The project adds only 30 PCE trips at this location, which is substantially less than the 50-trip screening threshold. In addition, this intersection operates at unsatisfactory levels of service under without project conditions, and the project maintains the without project measure of effectiveness. However, while the project has a less than significant impact at this intersection, circulation improvements are proposed and included in the improvement's sections of this report.

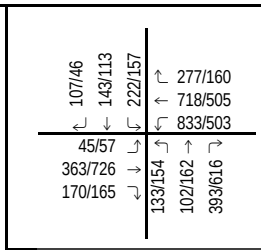
7.0 YEAR 2040 CONDITIONS

This section discusses year 2040 transportation conditions in the study area.

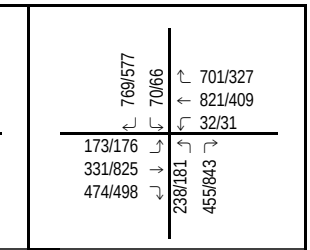
7.1 Year 2040 Roadway Conditions

Roadway conditions under the cumulative scenario are anticipated to remain the same as those under existing conditions.

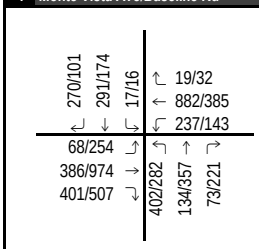




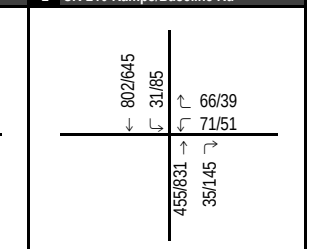
1 Monte Vista Ave/Baseline Rd



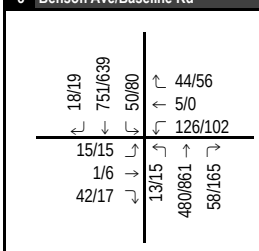
2 SR-210 Ramps/Baseline Rd



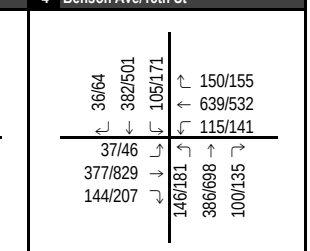
3 Benson Ave/Baseline Rd



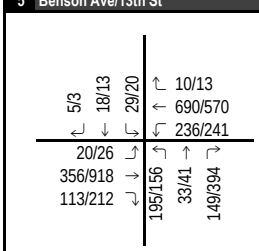
4 Benson Ave/15th St



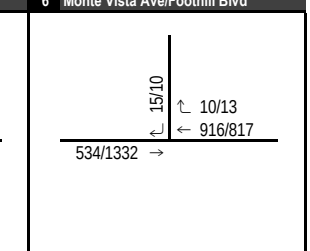
5 Benson Ave/13th St



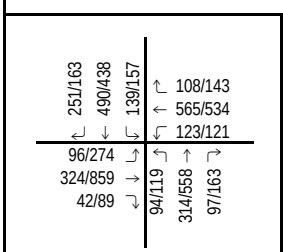
6 Monte Vista Ave/Foothill Blvd



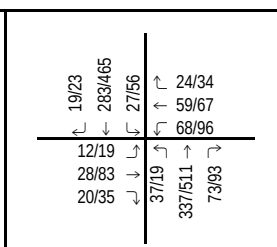
7 Central Ave/Foothill Blvd



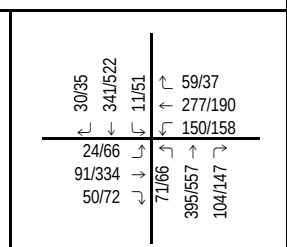
8 Project Dwy/Foothill Blvd



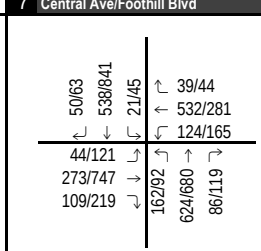
9 Benson Ave/Foothill Blvd



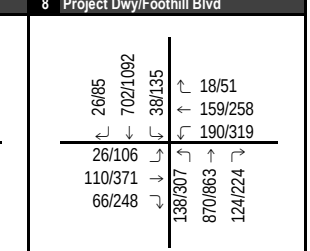
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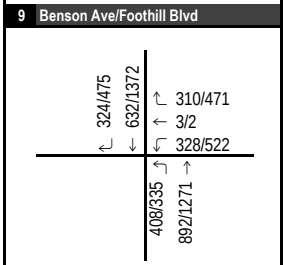
11 Central Ave/Arrow Rte



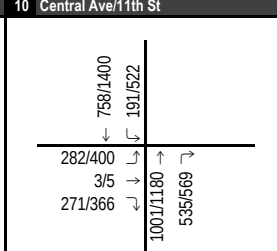
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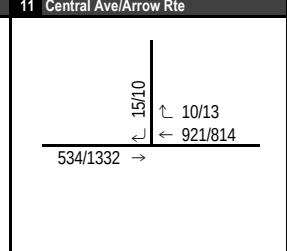
13 Central Ave/Moreno St



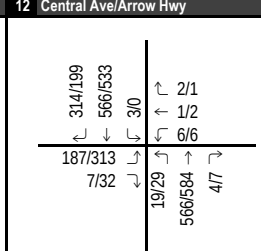
14 Central Ave/I-10 WB Ramps



15 Central Ave/I-10 EB Ramps



16 Project Dwy 2/Foothill Blvd



17 Monte Vista Ave/Claremont Blvd

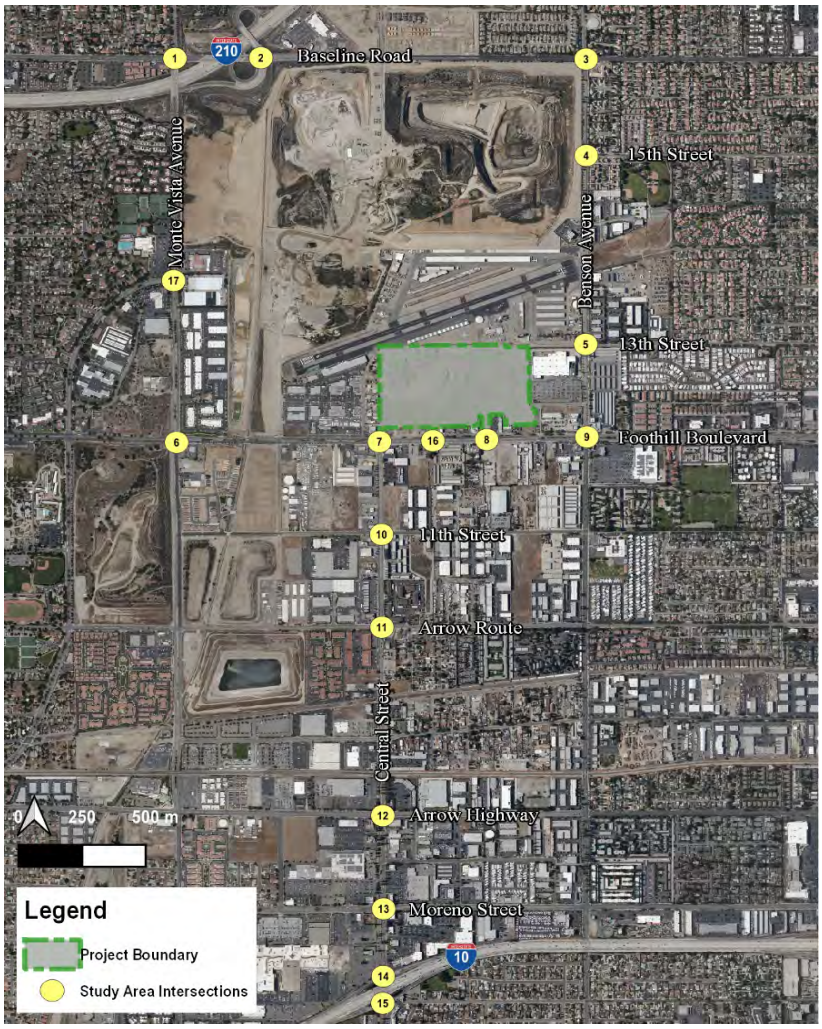
FIGURE 14

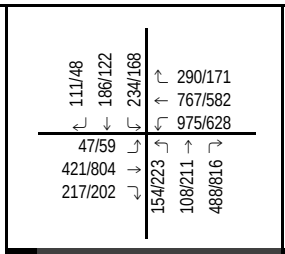
XXXX / YYYY AM / PM Peak Hour Volume (In PCEs)

Foothill Boulevard Warehouse
Existing With Project Peak Hour Traffic Volumes

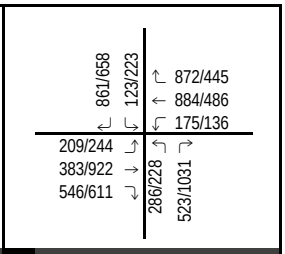
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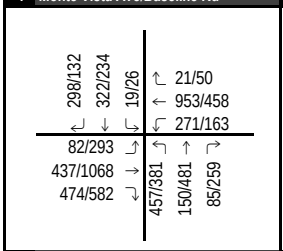




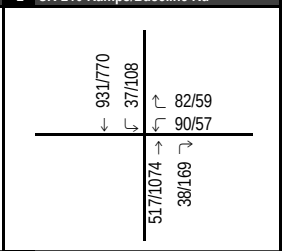
1 Monte Vista Ave/Baseline Rd



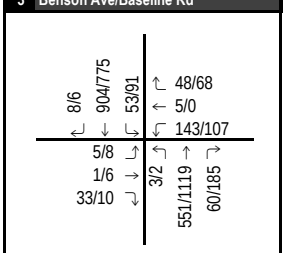
2 SR-210 Ramps/Baseline Rd



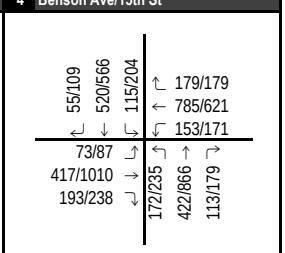
3 Benson Ave/Baseline Rd



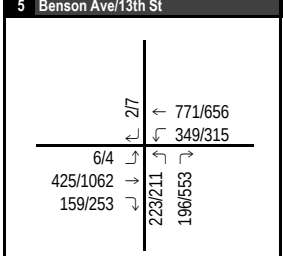
4 Benson Ave/15th St



5 Benson Ave/13th St



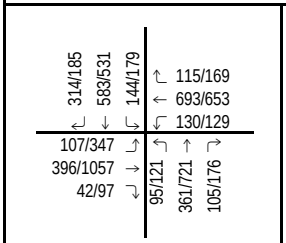
6 Monte Vista Ave/Foothill Blvd



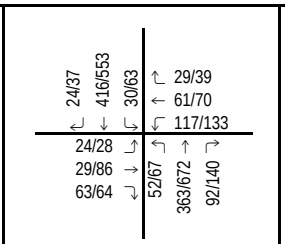
7 Central Ave/Foothill Blvd

Future Intersection

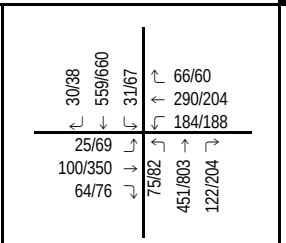
8 Project Dwy/Foothill Blvd



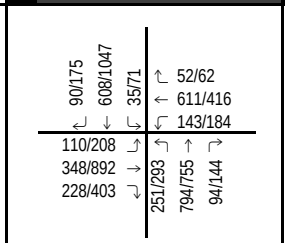
9 Benson Ave/Foothill Blvd



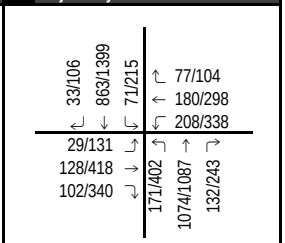
10 Central Ave/11th St



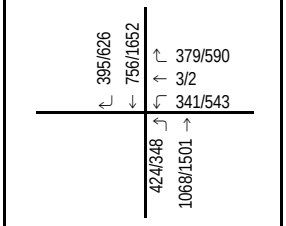
11 Central Ave/Arrow Rte



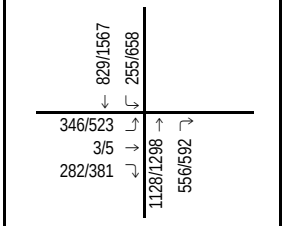
12 Central Ave/Arrow Hwy



13 Central Ave/Moreno St



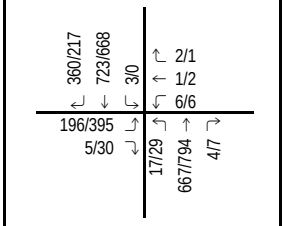
14 Central Ave/I-10 WB Ramps



15 Central Ave/I-10 EB Ramps

Future Intersection

16 Project Dwy 2/Foothill Blvd



17 Monte Vista Ave/Claremont Blvd

FIGURE 15

XXXX / YYYY AM / PM Peak Hour Volume (In PCEs)

Foothill Boulevard Warehouse
Opening Year (2020) Peak Hour Traffic Volumes

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D:\Projects\Bridge - Upland\Fleet Ops\Z30 Vol OY (9/26/2019)

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the transportation solutions company

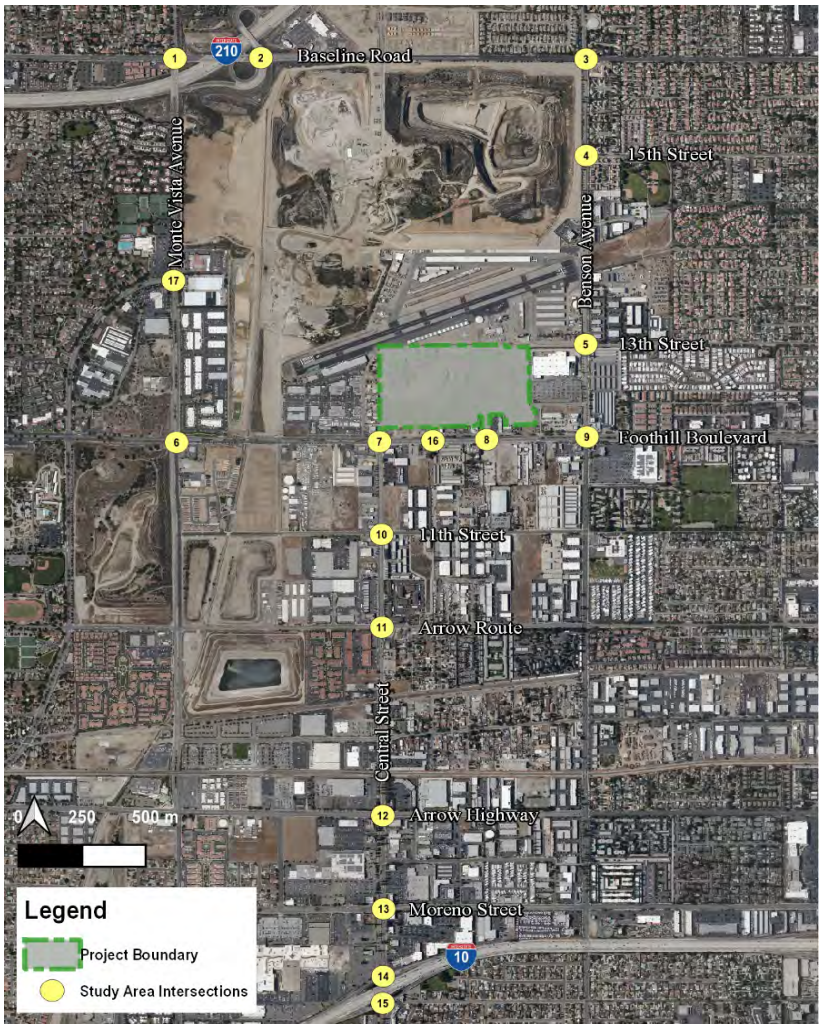
Table E: Opening Year 2020 Intersection Levels of Service

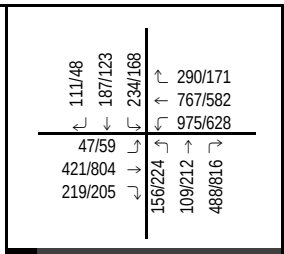
Intersection	LOS Standard	Jurisdiction	Control	Without Project				With Project				Project Impact
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1 . Monte Vista Avenue/Baseline Road	E	Claremont	Signal	18.3	B	30.4	C	18.3	B	30.5	C	NO
2 . SR-210 Ramps/Baseline Road	D	Caltrans	Signal	51.9	D	43.1	D	50.3	D	45.1	D	NO
3 . Benson Avenue/Baseline Road	D	Upland	Signal	77.0	E *	43.7	D	79.8	E *	45.6	D	NO
4 . Benson Avenue/15th Street	D	Upland	Signal	8.4	A	3.7	A	8.4	A	3.7	A	NO
5 . Benson Avenue/13th Street	D	Upland	Signal	24.5	C	26.7	C	24.9	C	27.3	C	NO
6 . Monte Vista Avenue/Foothill Boulevard	D	Upland	Signal	25.4	C	35.4	D	25.6	C	35.9	D	NO
7 . Central Avenue/Foothill Boulevard	D	Upland	Signal	21.1	C	32.9	C	24.1	C	33.4	C	NO
8 . Project Driveway/Foothill Boulevard	D	Upland	TWSC	*Future Intersection*				10.9	B	10.4	B	NO
9 . Benson Avenue/Foothill Boulevard	D	Upland	Signal	45.3	D	42.4	D	46.2	D	43.2	D	NO
10 . Central Avenue/11th Street	D	Upland	Signal	21.0	C	28.5	C	21.0	C	28.9	C	NO
11 . Central Avenue/Arrow Route	D	Upland	Signal	22.4	C	29.7	C	22.8	C	30.5	C	NO
12 . Central Avenue/Arrow Highway	D	Montclair	Signal	31.6	C	46.9	D	31.8	C	47.2	D	NO
13 . Central Avenue/Moreno Street	D	Montclair	Signal	23.5	C	32.6	C	23.6	C	32.8	C	NO
14 . Central Avenue/I-10 Westbound Ramps	D	Caltrans	TWSC	14.8	B	11.7	B	15.0	B	12.3	B	NO
15 . Central Avenue/I-10 Eastbound Ramps	D	Caltrans	Signal	19.2	B	24.4	C	19.3	B	24.5	C	NO
16 . Project Driveway 2/Foothill Boulevard	D	Upland	TWSC	*Future Intersection*				13.4	B	12.4	B	NO
17 . Monte Vista Avenue/Claremont Boulevard	E	Claremont	Signal	10.7	B	13.9	B	10.8	B	14.0	B	NO

Notes:

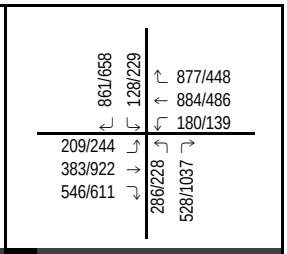
TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

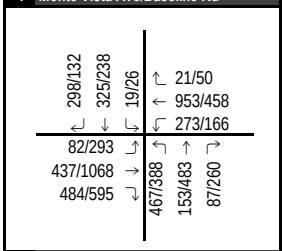




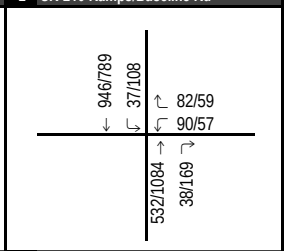
1 Monte Vista Ave/Baseline Rd



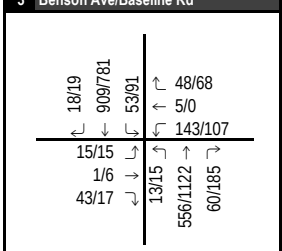
2 SR-210 Ramps/Baseline Rd



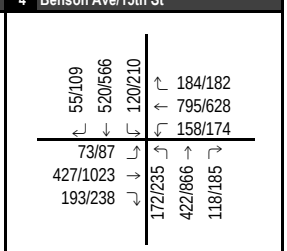
3 Benson Ave/Baseline Rd



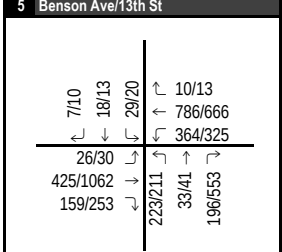
4 Benson Ave/15th St



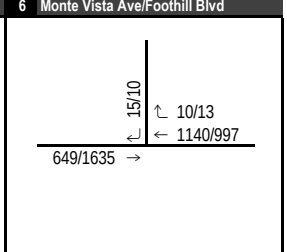
5 Benson Ave/13th St



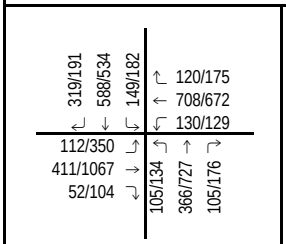
6 Monte Vista Ave/Foothill Blvd



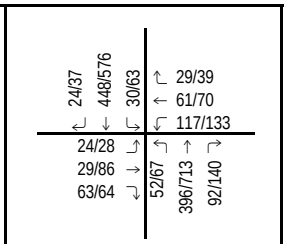
7 Central Ave/Foothill Blvd



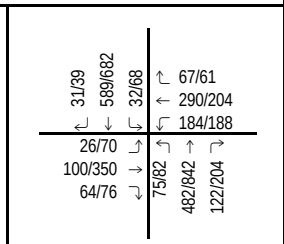
8 Project Dwy/Foothill Blvd



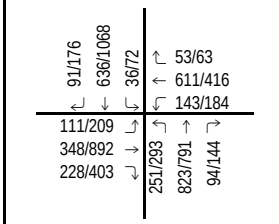
9 Benson Ave/Foothill Blvd



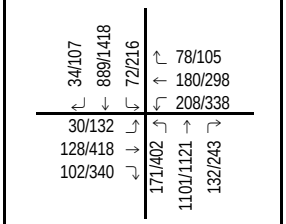
10 Central Ave/11th St



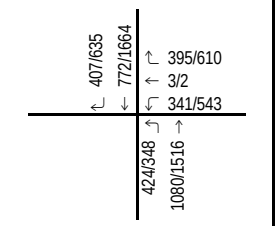
11 Central Ave/Arrow Rte



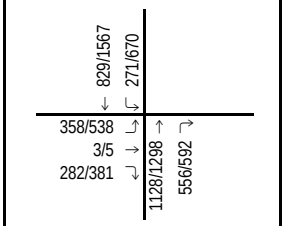
12 Central Ave/Arrow Hwy



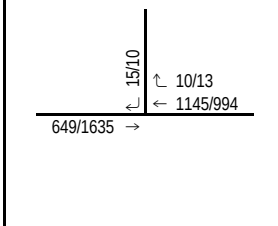
13 Central Ave/Moreno St



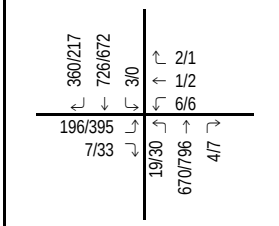
14 Central Ave/I-10 WB Ramps



15 Central Ave/I-10 EB Ramps



16 Project Dwy 2/Foothill Blvd



17 Monte Vista Ave/Claremont Blvd

FIGURE 16

XXXX / YYYY AM / PM Peak Hour Volume (In PCEs)

Foothill Boulevard Warehouse
Opening Year 2020 With Project Peak Hour Traffic Volumes

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7.2 Year 2040 Transit Service

Transit service under year 2040 conditions will include the 12.3-mile extension of the Metro Gold Line system, with six new stations, including the Montclair Station to be located at the current Montclair Metrolink Station.

7.3 Year 2040 Pedestrian & Bicycle Facilities

Pedestrian and bicycle facilities under Year 2040 conditions may include Priority Areas as described in the City's General Plan. These areas are defined as areas where pedestrians will have a variety of transportation choices including Metrolink, bike lanes, and bus stations. These areas are located on Foothill Boulevard west of Benson Avenue and east of Central Avenue, both within the project area.

7.4 Year 2040 Intersections Levels of Service

An intersection level of service analysis was conducted for Year 2040 conditions to determine circulation system performance. Year 2040 traffic volumes at study intersections are shown in Figure 17. Detailed volume development worksheets are included in Appendix B. Year 2040 levels of service for the study area intersections are summarized in Table F. Level of service calculation worksheets are contained in Appendix C. As shown in Table F, all study intersections are forecast to operate at satisfactory levels of service except for the following location:

- Benson Avenue/Baseline Road (a.m. peak hour).

7.5 Year 2040 With Project Intersections Levels of Service

An intersection level of service analysis was conducted for year 2040 with project conditions to determine circulation system performance. Year 2040 with project traffic volumes at study intersections are shown in Figure 18. Year 2040 with project levels of service for the study area intersections are summarized in Table F. Level of service calculation worksheets are contained in Appendix C. As shown in Table F, all study area intersections are forecast to operate at satisfactory levels of service except for the following location:

- Benson Avenue/Baseline Road (a.m. peak hour). – The CMP uses a 50-trip threshold as a screening tool to identify potential impacts. The project adds only 30 PCE trips at this location, which is substantially less than the 50-trip screening threshold. In addition, this intersection operates at unsatisfactory levels of service under without project conditions, and the project maintains the without project measure of effectiveness. However, while the project has a less than significant impact at this intersection, circulation improvements are proposed and included in the improvements sections of this report.

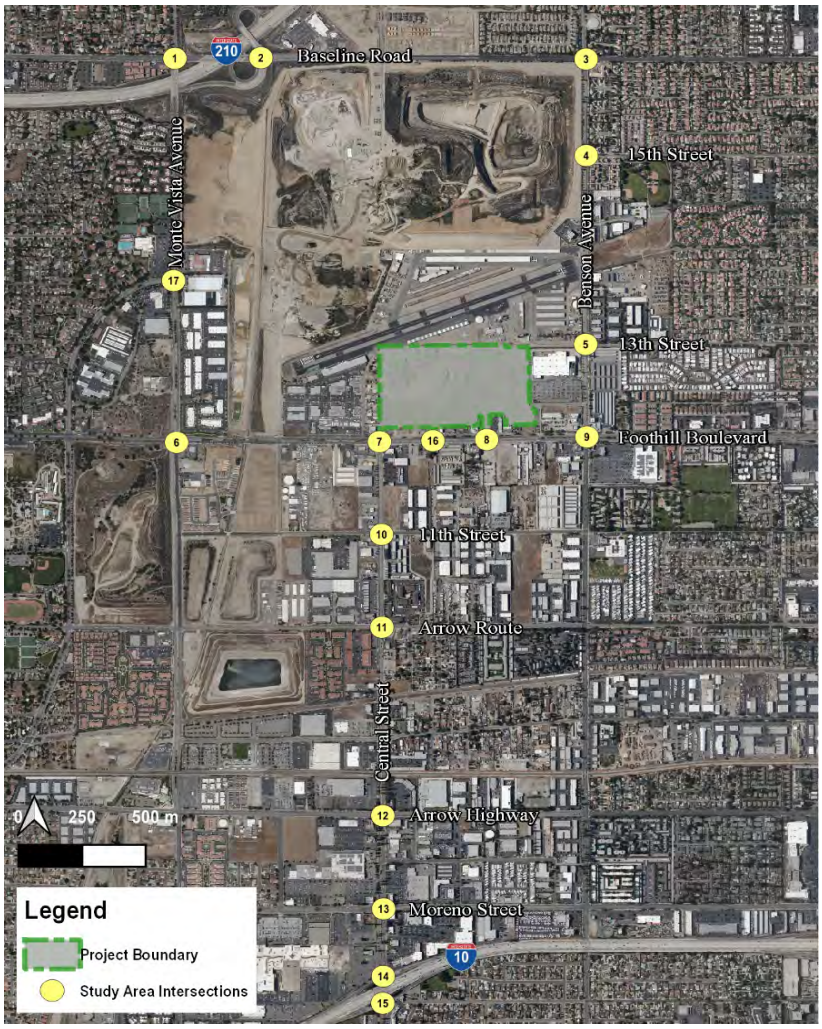
8.0 CIRCULATION IMPROVEMENTS

The CMP requires that circulation improvements be recommended at any intersection which operates at unsatisfactory level of service. For intersections that meet a jurisdiction's minimum level of service standard under existing conditions, circulation improvements must maintain conformance with that standard. For intersections that fail to meet a jurisdiction's minimum level of service standard under existing conditions, circulation improvements must maintain the existing level of service. These include conversion of stop control, signalization, changes to signal phasing, and/or addition of lanes as appropriate.

8.1 Opening Year 2020 With Project Conditions

Under opening year 2020 with project conditions, the following improvements are recommended to restore satisfactory operations:

- **Benson Avenue/Baseline Road** – Re-stripe the northbound through lane to a through-left turn lane and convert the northbound and southbound left-turn phasing from protected to split-phase. This improvement is not included in the 2016 SBCTA Development Mitigation Nexus Study. Two receiving lanes exist on the west leg of the intersection. Therefore, this improvement can be achieved by striping and signal head modifications. The total cost of these improvements is anticipated to be approximately $75,000. The project's fair share has been calculated at 3.413% based on year 2040 conditions. The project's fair share for these improvements is $2,560. Table G shows the project's fair share calculations.



1 Monte Vista Ave/Baseline Rd

115/74	195/128	246/176
54/62	549/844	230/212
179/297	113/222	505/857
305/180	791/913	1024/659

2 SR-210 Ramps/Baseline Rd

904/691	129/234	
219/256	549/968	613/642
300/239	586/1083	
916/467	1036/876	184/143

3 Benson Ave/Baseline Rd

313/150	448/309	44/35
86/308	459/1121	498/611
480/400	178/505	142/290
30/52	1001/481	321/204

4 Benson Ave/15th St

943/809	39/115	
	543/1128	40/207
140/92	121/134	

5 Benson Ave/13th St

194/13	949/987	66/188
15/154	1/72	38/79
43/2	751/1175	63/194
106/190	109/0	150/142

6 Monte Vista Ave/Foothill Blvd

58/114	546/599	133/214
77/91	592/1061	208/278
217/366	481/909	134/188
188/188	824/751	161/194

7 Central Ave/Foothill Blvd

		2/7
6/4	533/1115	170/293
234/272	216/581	
810/689		366/338

8 Project Dwy/Foothill Blvd

Future Intersection

9 Benson Ave/Foothill Blvd

361/251	627/738	193/279
192/364	465/1110	43/102
100/127	414/757	110/185
174/196	728/686	133/155

10 Central Ave/11th St

55/47	437/656	73/79
25/68	51/132	66/67
55/70	414/706	93/147
36/73	89/93	123/140

11 Central Ave/Arrow Rte

46/55	587/709	33/70
41/146	132/439	75/121
104/86	463/843	128/214
79/77	437/342	193/252

12 Central Ave/Arrow Hwy

140/187	624/1183	37/92
112/211	350/937	239/423
264/308	834/841	160/164
80/65	624/523	149/188

13 Central Ave/Moreno St

35/111	877/1469	75/226
31/138	134/439	107/357
180/422	1092/1132	144/263
81/109	212/326	314/457

14 Central Ave/I-10 WB Ramps

415/657	919/1848	
	445/365	1217/1530
398/620	3/2	343/556

15 Central Ave/I-10 EB Ramps

966/1801	281/691	
363/549	3/5	296/400
	1272/1387	598/622

16 Project Dwy 2/Foothill Blvd

Future Intersection

17 Monte Vista Ave/Claremont Blvd

424/350	746/701	3/0
306/413	22/50	
18/73	712/834	5/7
2/1	1/3	7/6

FIGURE 17

XXXX / YYYY AM / PM Peak Hour Volume (In PCEs)

Foothill Boulevard Warehouse
Year 2040 Peak Hour Traffic Volumes

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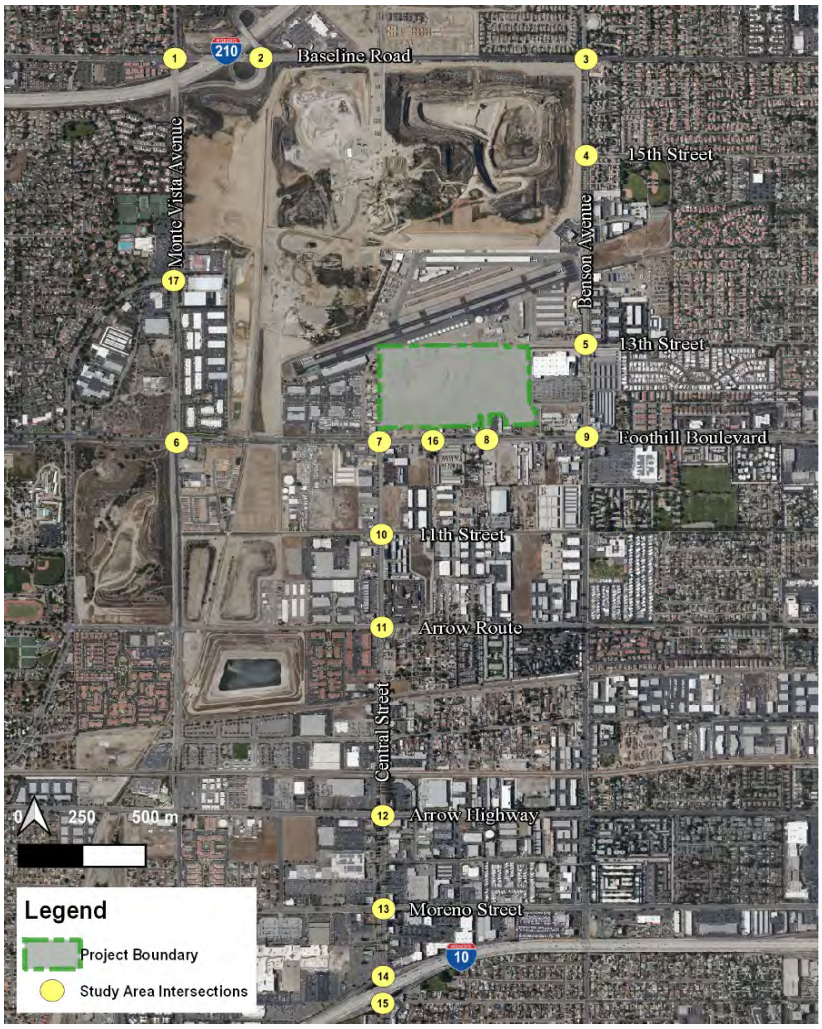
Table F: Year 2040 Intersection Levels of Service

Intersection	LOS Standard	Jurisdiction	Control	Without Project				With Project				Project Impact
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1 . Monte Vista Avenue/Baseline Road	E	Claremont	Signal	19.4	B	27.1	C	19.5	B	27.1	C	NO
2 . SR-210 Ramps/Baseline Road	D	Caltrans	Signal	51.6	D	36.7	D	51.7	D	42.4	D	NO
3 . Benson Avenue/Baseline Road	D	Upland	Signal	74.6	E *	44.6	D	79.1	E *	45.8	D	NO
4 . Benson Avenue/15th Street	D	Upland	Signal	10.0	A	6.1	A	11.8	B	5.4	A	NO
5 . Benson Avenue/13th Street	D	Upland	Signal	24.9	C	28.7	C	27.1	C	29.4	C	NO
6 . Monte Vista Avenue/Foothill Boulevard	D	Upland	Signal	25.4	C	35.7	D	25.5	C	36.9	D	NO
7 . Central Avenue/Foothill Boulevard	D	Upland	Signal	24.9	C	32.7	C	30.8	C	33.3	C	NO
8 . Project Driveway/Foothill Boulevard	D	Upland	TWSC	*Future Intersection*				11.3	B	10.6	B	NO
9 . Benson Avenue/Foothill Boulevard	D	Upland	Signal	45.3	D	50.0	D	47.9	D	50.8	D	NO
10 . Central Avenue/11th Street	D	Upland	Signal	20.8	C	28.6	C	20.8	C	29.0	C	NO
11 . Central Avenue/Arrow Route	D	Upland	Signal	23.9	C	30.2	C	24.2	C	30.9	C	NO
12 . Central Avenue/Arrow Highway	D	Montclair	Signal	31.1	C	47.1	D	32.5	C	47.1	D	NO
13 . Central Avenue/Moreno Street	D	Montclair	Signal	31.1	C	33.2	C	33.3	C	33.3	C	NO
14 . Central Avenue/I-10 Westbound Ramps	D	Caltrans	TWSC	19.4	C	11.1	B	19.5	C	12.2	B	NO
15 . Central Avenue/I-10 Eastbound Ramps	D	Caltrans	Signal	16.9	B	23.3	C	17.0	B	24.2	C	NO
16 . Project Driveway 2/Foothill Boulevard	D	Upland	TWSC	*Future Intersection*				13.8	B	12.7	B	NO
17 . Monte Vista Avenue/Claremont Boulevard	E	Claremont	Signal	12.2	B	15.2	B	12.3	B	15.2	B	NO

Notes:

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service



1 Monte Vista Ave/Baseline Rd

115/74	196/129	246/176
54/62	549/844	232/215
181/298	114/223	505/857
305/180	791/913	1024/659

2 SR-210 Ramps/Baseline Rd

904/691	134/240	
219/256	549/968	613/642
300/239	591/1089	
921/470	1036/876	189/146

3 Benson Ave/Baseline Rd

313/150	451/313	44/35
86/308	459/1121	508/624
490/407	181/507	144/291
30/52	1001/481	323/207

4 Benson Ave/15th St

958/828	39/115	
	558/1138	
	40/207	
140/92	121/134	

5 Benson Ave/13th St

204/26	954/993	66/188
25/161	1/72	48/86
53/15	756/1178	63/194
106/190	109/0	150/142

6 Monte Vista Ave/Foothill Blvd

58/114	546/599	138/220
77/91	602/1074	208/278
217/366	481/909	139/194
193/191	834/758	166/197

7 Central Ave/Foothill Blvd

7/10	18/13	29/20
26/30	533/1115	170/293
234/272	33/41	216/581
10/13	825/699	381/348

8 Project Dwy/Foothill Blvd

	15/10	
680/1716		
10/13	1196/1046	

9 Benson Ave/Foothill Blvd

366/257	632/741	198/282
197/367	480/1120	53/109
110/140	419/763	110/185
179/202	743/705	133/155

10 Central Ave/11th St

55/47	469/679	73/79
25/68	51/132	66/67
55/70	447/747	93/147
36/73	89/93	123/140

11 Central Ave/Arrow Rte

47/56	617/731	34/71
42/147	132/439	75/121
104/86	494/882	128/214
80/78	437/342	193/252

12 Central Ave/Arrow Hwy

141/188	652/1204	38/93
113/212	350/937	239/423
264/308	863/877	160/164
81/66	624/523	149/188

13 Central Ave/Moreno St

36/112	903/1488	76/227
32/139	134/439	107/357
180/422	1119/1166	144/263
82/110	212/326	314/457

14 Central Ave/I-10 WB Ramps

427/666	935/1860	
	445/365	1229/1545
414/640	3/2	343/556

15 Central Ave/I-10 EB Ramps

966/1801	297/703	
375/564	3/5	296/400
	1272/1387	598/622

16 Project Dwy 2/Foothill Blvd

	15/10	
680/1716		
10/13	1201/1043	

17 Monte Vista Ave/Claremont Blvd

424/350	749/705	3/0
306/413	24/53	
20/74	715/836	5/7
2/1	1/3	7/6

FIGURE 18

XXXX / YYYY AM / PM Peak Hour Volume (In PCEs)

Foothill Boulevard Warehouse
Year 2040 With Project Peak Hour Traffic Volumes

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Table G - Project Fair Share Calculations

Intersection	AM Peak Hour					PM Peak Hour					Project Fair Share %
	Total Volume		Total Growth	Project Trips	Project %	Total Volume		Total Growth	Project Trips	Project %	
	2018	2040 With Project				2018	2040 With Project				
3 . Benson Avenue/Baseline Roa	3,150	4,029	879	30	3.413%	3,416	4,496	1,080	30	2.777%	3.413%

The resulting levels of service for opening year 2020 with project with improvements conditions are included in Table H. Figure 19 shows the opening year 2020 with project recommended circulation improvements. With the implementation of recommended improvements, all intersections will operate at satisfactory levels of service.

8.2 Year 2040 With Project Conditions

Under year 2040 with project conditions, the following improvements are recommended to restore satisfactory operations:

- **Benson Avenue/Baseline Road** – Re-stripe the northbound through lane to a through-left turn lane and convert the northbound and southbound left-turn phasing from protected to split-phase. This improvement is not included in the 2016 SBCTA Development Mitigation Nexus Study. Two receiving lanes exist on the west leg of the intersection. Therefore, this improvement can be achieved by striping and signal head modifications. The total cost of these improvements is anticipated to be approximately $75,000. The project's fair share has been calculated at 3.413% for these improvements ($2,560). Table G shows the project's fair share calculations.

The resulting levels of service for year 2040 with project with improvements conditions are included in Table I. Figure 19 shows the opening year 2020 with project recommended circulation improvements. With the implementation of recommended improvements, all intersections will operate at satisfactory levels of service.

9.0 IMPACT ANALYSIS FOR CEQA DETERMINATION

This section evaluates the CEQA checklist for impact evaluation.

A. Will the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system?

Based on the results of the analysis, the project does not directly degrade traffic operations below those acceptable in the City's General Plan. The project is consistent with adopted plans and policies related to non-motorized travel in the area. Therefore, the project impact is considered less than significant.

B. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

The project does not conflict with the County's CMP and does not propose changes to the CMP's LOS standards. With the recommended improvements all intersections are forecast to operate at satisfactory conditions under all "with project scenarios". Therefore, the project impact is considered less than significant after mitigation.

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The project does not propose any use that would affect or conflict with air traffic patterns. The nearest airport is the Cable Airport located just north of the project. The project design does not result in any changes to air traffic patterns or flight paths. The expected increase in population and employment generated by the project will not be substantial enough to impact air traffic volumes. Further, the project does not include any uses that would change air traffic patterns. Therefore, the project impact is considered less than-significant.

D. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The intersection of Central Avenue/Foothill Boulevard will serve as the primary project access. Based on review of the site plan, the turning radii are sufficient for vehicles to enter/exit the site safely. Truck turning templates included on the site plan shows that the turning radii are sufficient for trucks to enter/exit the site safely. Further, design of driveways shall be per City Standard Plans or adopted Standard Plans. It is not anticipated that traffic hazards will increase. Therefore, the project impact is considered less than significant.

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Table H: Opening Year 2020 With Project With Improvements Intersection Levels of Service

Intersection	LOS Standard	Jurisdiction	Control	With Project				With Project With Improvements				Project Impact
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
3 . Benson Avenue/Baseline Road	D	Upland	Signal	79.8	E *	45.6	D	53.0	D	48.4	D	NO

Notes:

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

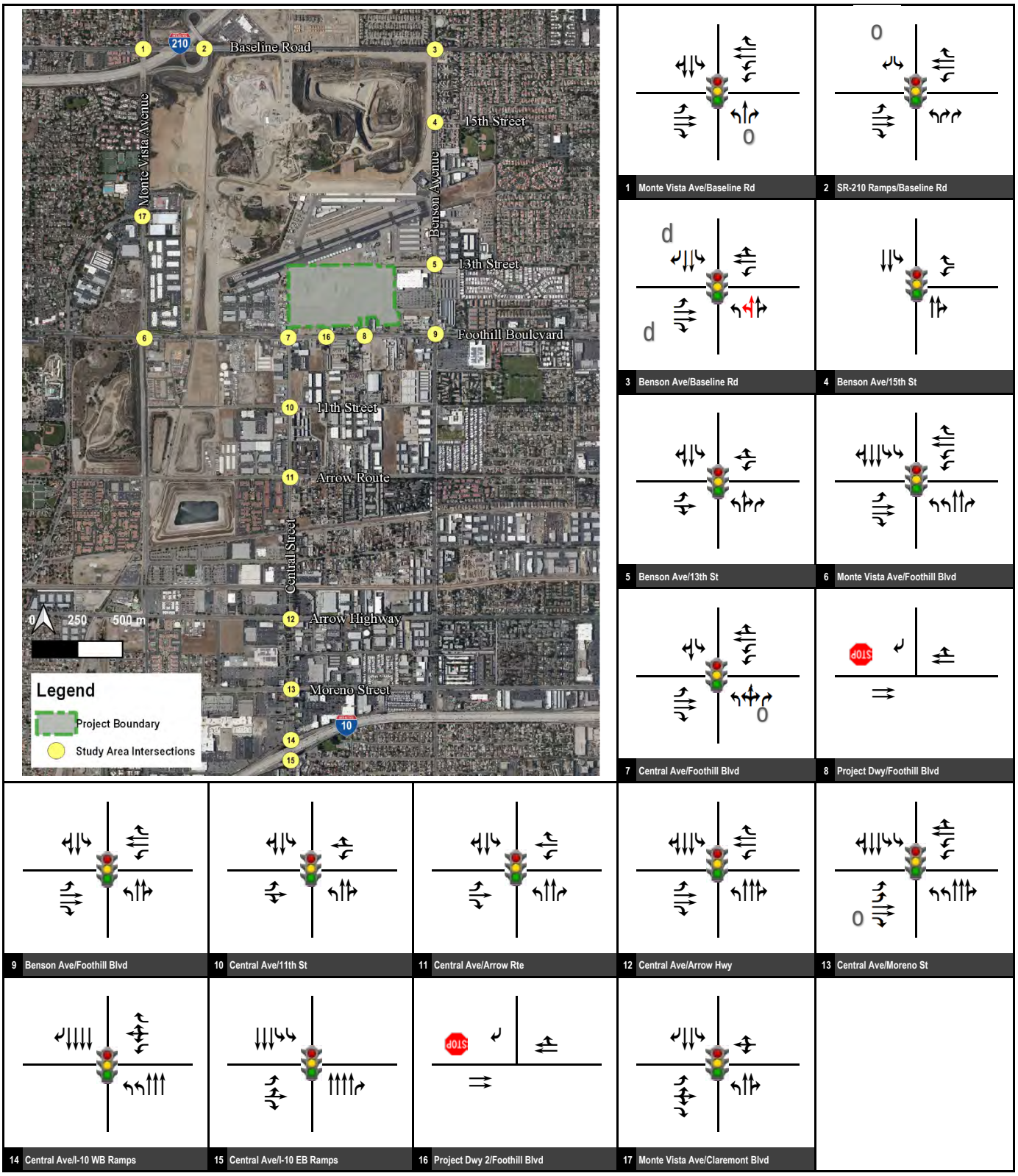


FIGURE 19

Legend

Signal
De-facto Right
Improvements
Stop Sign
Overlap Phase

Foothill Boulevard Warehouse
Opening Year 2020 and Year 2040 With Project With Improvements
Intersection Geometrics and Stop Control

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Table I: Year 2040 With Project With Improvements Intersection Levels of Service

Intersection	LOS Standard	Jurisdiction	Control	With Project				With Project With Improvements				Project Impact
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
3 . Benson Avenue/Baseline Road	D	Upland	Signal	79.1	E *	45.8	D	53.4	D	50.1	D	NO

Notes:

TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement.

LOS = Level of Service

E. Result in inadequate emergency access?

All streets and fire access lanes would be required to comply with applicable codes, ordinances, City Standard Plans or adopted Standard Plans, and would meet the City's width and turnaround requirements to provide adequate emergency access. The project will not result in inadequate emergency access. Therefore, the project impact is considered less than significant.

F. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The project will not change roadway designations from those in the City's General Plan. The project will also not result in removal of any of the facilities listed above. Therefore, the project impact is considered less than significant.

10.0 CONCLUSION

Project Description. The project site is located on the northeast corner of Center Avenue and Foothill Boulevard in the City of Upland. The project includes 191,096 square feet of warehouse/delivery uses and 10,000 square feet of retail uses on a 50.25-acre lot. Access to the project will be provided via provided via 13th Street (auto/van access), the north leg of Central Avenue (auto, van, and truck access) and two right-in/right-out driveways on Foothill Boulevard (auto/van access).

Trip Generation. the project is forecast to generate 202 PCE trips in the a.m. peak hour, 202 PCE trips in the p.m. peak hour, and 2,583 daily PCE trips.

Traffic Operations. Under existing and existing plus project conditions, all intersections operate at satisfactory levels of service. Under opening year (without and with project) and 2040 (without and with project) conditions, all intersections operate at satisfactory levels of service with the exception of the intersection of Benson Avenue/Baseline Road. The CMP uses a 50-trip threshold as a screening tool to identify potential impacts. It should be noted that the project does not add more than 50-trips to this location and it also operates at unsatisfactory levels of service under without project conditions. However, while there would be a less than significant impact at this location, circulation improvements are proposed at Benson Avenue/Baseline Road and include re-striping the northbound through lane to a through-left turn lane and convert the northbound and southbound left-turn phasing from protected to split-phase. This improvement is not included in the 2016 SBCTA Development Mitigation Nexus Study. Two receiving lanes exist on the west leg of the intersection. Therefore, this improvement can be achieved by striping and signal head modifications. The total cost of these improvements is anticipated to be approximately $75,000. The project's fair share has been calculated at 3.413% for these improvements ($2,560).

APPENDIX A:
TRAFFIC COUNTS

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

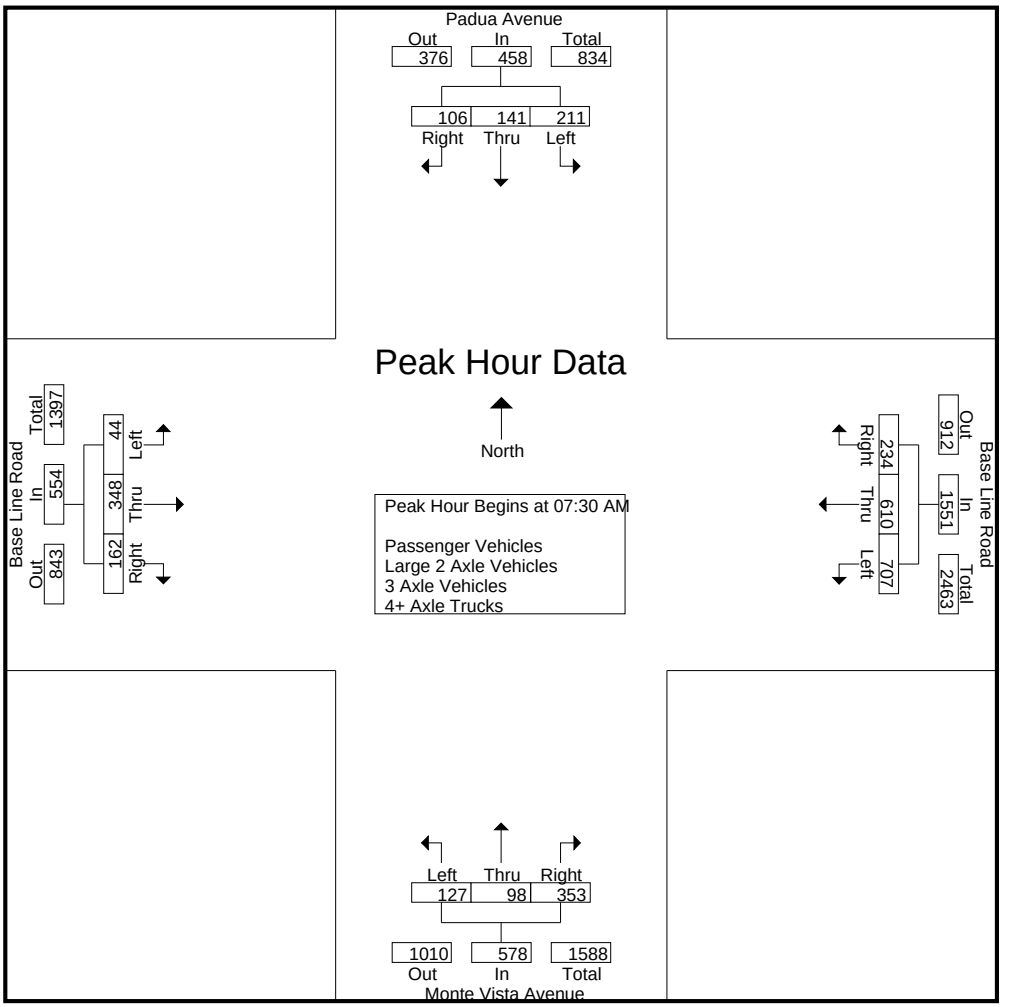
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	20	24	6	50	137	124	18	279	17	17	72	106	3	68	30	101	536
07:15 AM	40	37	23	100	148	149	51	348	21	30	94	145	17	62	30	109	702
07:30 AM	50	41	31	122	184	180	58	422	29	23	107	159	8	82	34	124	827
07:45 AM	46	33	29	108	195	162	55	412	33	25	83	141	9	77	44	130	791
Total	156	135	89	380	664	615	182	1461	100	95	356	551	37	289	138	464	2856
08:00 AM	52	33	20	105	153	122	87	362	37	31	79	147	15	115	48	178	792
08:15 AM	63	34	26	123	175	146	34	355	28	19	84	131	12	74	36	122	731
08:30 AM	41	21	16	78	152	214	33	399	27	20	69	116	4	77	45	126	719
08:45 AM	31	31	11	73	154	145	30	329	21	8	90	119	5	106	58	169	690
Total	187	119	73	379	634	627	184	1445	113	78	322	513	36	372	187	595	2932
Grand Total	343	254	162	759	1298	1242	366	2906	213	173	678	1064	73	661	325	1059	5788
Apprch %	45.2	33.5	21.3		44.7	42.7	12.6		20	16.3	63.7		6.9	62.4	30.7		
Total %	5.9	4.4	2.8	13.1	22.4	21.5	6.3	50.2	3.7	3	11.7	18.4	1.3	11.4	5.6	18.3	
Passenger Vehicles	334	251	161	746	1269	1234	363	2866	201	165	635	1001	72	654	312	1038	5651
% Passenger Vehicles	97.4	98.8	99.4	98.3	97.8	99.4	99.2	98.6	94.4	95.4	93.7	94.1	98.6	98.9	96	98	97.6
Large 2 Axle Vehicles	8	2	1	11	7	4	2	13	8	6	8	22	1	0	9	10	56
% Large 2 Axle Vehicles	2.3	0.8	0.6	1.4	0.5	0.3	0.5	0.4	3.8	3.5	1.2	2.1	1.4	0	2.8	0.9	1
3 Axle Vehicles	1	1	0	2	1	1	0	2	3	2	6	11	0	6	3	9	24
% 3 Axle Vehicles	0.3	0.4	0	0.3	0.1	0.1	0	0.1	1.4	1.2	0.9	1	0	0.9	0.9	0.8	0.4
4+ Axle Trucks	0	0	0	0	21	3	1	25	1	0	29	30	0	1	1	2	57
% 4+ Axle Trucks	0	0	0	0	1.6	0.2	0.3	0.9	0.5	0	4.3	2.8	0	0.2	0.3	0.2	1

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	50	**41**	**31**	122	184	**180**	58	**422**	29	23	**107**	**159**	8	82	34	124	**827**
07:45 AM	46	33	29	108	**195**	162	55	412	33	25	83	141	9	77	44	130	791
08:00 AM	52	33	20	105	153	122	**87**	362	**37**	**31**	79	147	**15**	**115**	**48**	**178**	792
08:15 AM	**63**	34	26	**123**	175	146	34	355	28	19	84	131	12	74	36	122	731
Total Volume	211	141	106	458	707	610	234	1551	127	98	353	578	44	348	162	554	3141
% App. Total	46.1	30.8	23.1		45.6	39.3	15.1		22	17	61.1		7.9	62.8	29.2		
PHF	.837	.860	.855	.931	.906	.847	.672	.919	.858	.790	.825	.909	.733	.757	.844	.778	.950

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:15 AM				08:00 AM			
+0 mins.	50	**41**	**31**	122	184	**180**	58	**422**	21	30	94	145	**15**	**115**	48	**178**
+15 mins.	46	33	29	108	**195**	162	55	412	29	23	**107**	**159**	12	74	36	122
+30 mins.	52	33	20	105	153	122	**87**	362	33	25	83	141	4	77	45	126
+45 mins.	**63**	34	26	**123**	175	146	34	355	**37**	**31**	79	147	5	106	**58**	169
Total Volume	211	141	106	458	707	610	234	1551	120	109	363	592	36	372	187	595
% App. Total	46.1	30.8	23.1		45.6	39.3	15.1		20.3	18.4	61.3		6.1	62.5	31.4	
PHF	.837	.860	.855	.931	.906	.847	.672	.919	.811	.879	.848	.931	.600	.809	.806	.836

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City of Upland
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File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

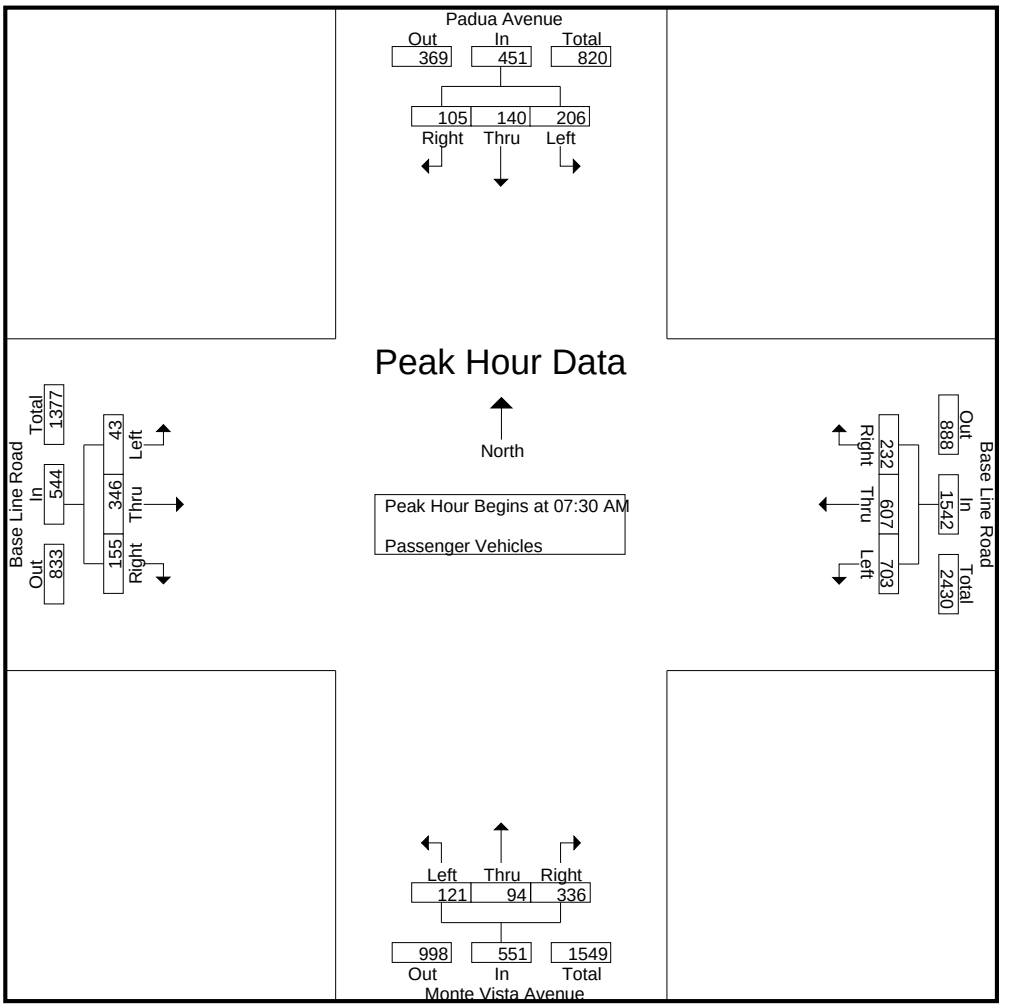
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	19	23	6	48	135	122	18	275	17	16	65	98	3	67	29	99	520
07:15 AM	40	37	23	100	144	148	50	342	20	29	83	132	17	60	29	106	680
07:30 AM	48	41	31	120	182	179	57	418	27	22	100	149	8	82	33	123	810
07:45 AM	46	32	29	107	195	161	54	410	32	23	80	135	9	76	44	129	781
Total	153	133	89	375	656	610	179	1445	96	90	328	514	37	285	135	457	2791
08:00 AM	52	33	19	104	151	122	87	360	36	30	75	141	14	114	45	173	778
08:15 AM	60	34	26	120	175	145	34	354	26	19	81	126	12	74	33	119	719
08:30 AM	41	21	16	78	142	213	33	388	25	18	67	110	4	76	42	122	698
08:45 AM	28	30	11	69	145	144	30	319	18	8	84	110	5	105	57	167	665
Total	181	118	72	371	613	624	184	1421	105	75	307	487	35	369	177	581	2860
Grand Total	334	251	161	746	1269	1234	363	2866	201	165	635	1001	72	654	312	1038	5651
Apprch %	44.8	33.6	21.6		44.3	43.1	12.7		20.1	16.5	63.4		6.9	63	30.1		
Total %	5.9	4.4	2.8	13.2	22.5	21.8	6.4	50.7	3.6	2.9	11.2	17.7	1.3	11.6	5.5	18.4	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	48	**41**	**31**	**120**	182	**179**	57	**418**	27	22	**100**	**149**	8	82	33	123	**810**
07:45 AM	46	32	29	107	**195**	161	54	410	32	23	80	135	9	76	44	129	781
08:00 AM	52	33	19	104	151	122	**87**	360	**36**	**30**	75	141	**14**	**114**	**45**	**173**	778
08:15 AM	**60**	34	26	120	175	145	34	354	26	19	81	126	12	74	33	119	719
Total Volume	206	140	105	451	703	607	232	1542	121	94	336	551	43	346	155	544	3088
% App. Total	45.7	31	23.3		45.6	39.4	15		22	17.1	61		7.9	63.6	28.5		
PHF	.858	.854	.847	.940	.901	.848	.667	.922	.840	.783	.840	.924	.768	.759	.861	.786	.953

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City of Upland
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E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	48	**41**	**31**	**120**	182	**179**	57	**418**	27	22	**100**	**149**	8	82	33	123
+15 mins.	46	32	29	107	**195**	161	54	410	32	23	80	135	9	76	44	129
+30 mins.	52	33	19	104	151	122	**87**	360	**36**	**30**	75	141	**14**	**114**	**45**	**173**
+45 mins.	**60**	34	26	120	175	145	34	354	26	19	81	126	12	74	33	119
Total Volume	206	140	105	451	703	607	232	1542	121	94	336	551	43	346	155	544
% App. Total	45.7	31	23.3		45.6	39.4	15		22	17.1	61		7.9	63.6	28.5	
PHF	.858	.854	.847	.940	.901	.848	.667	.922	.840	.783	.840	.924	.768	.759	.861	.786

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City of Upland
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E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

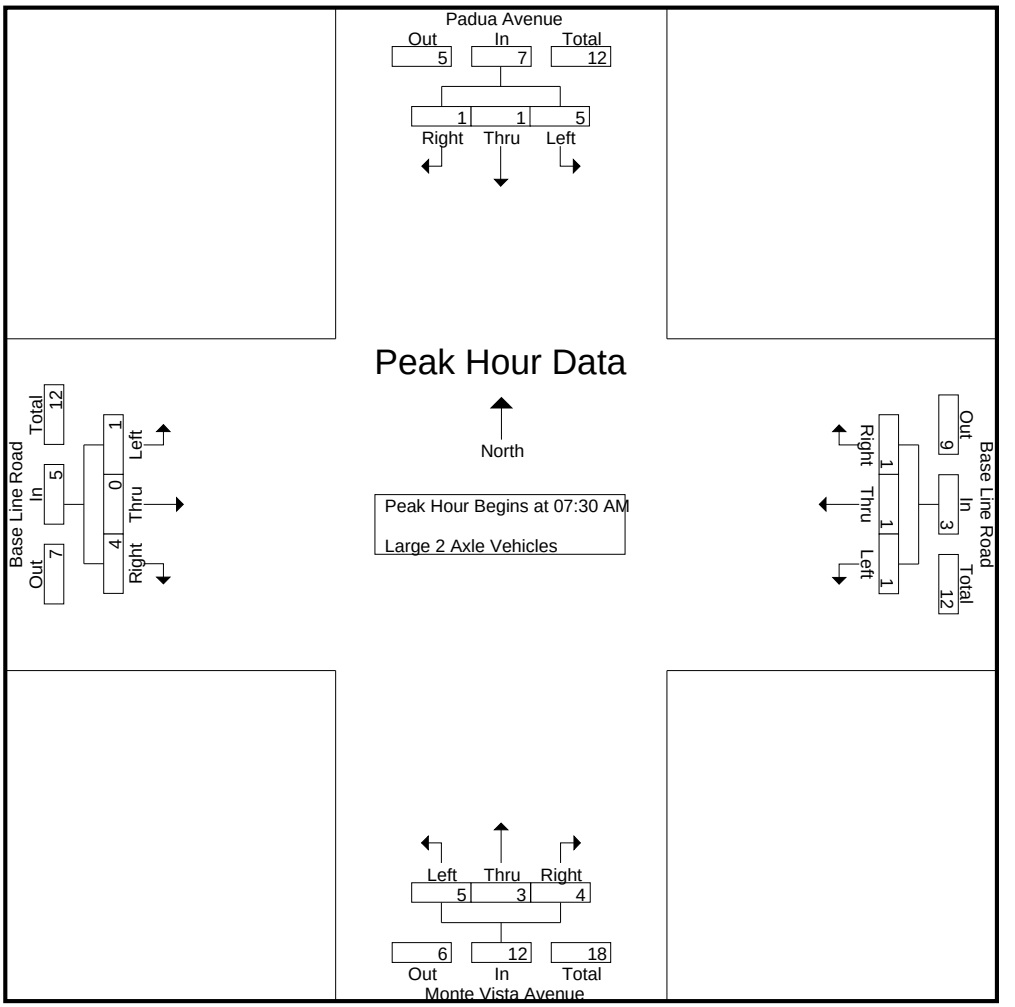
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	1	0	2	0	1	1	2	0	0	1	1	5
07:15 AM	0	0	0	0	4	1	1	6	1	1	2	4	0	0	1	1	11
07:30 AM	2	0	0	2	0	1	1	2	2	1	1	4	0	0	0	0	8
07:45 AM	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	3
Total	2	1	0	3	5	3	2	10	4	4	4	12	0	0	2	2	27
08:00 AM	0	0	1	1	1	0	0	1	1	1	2	4	1	0	2	3	9
08:15 AM	3	0	0	3	0	0	0	0	1	0	1	2	0	0	2	2	7
08:30 AM	0	0	0	0	1	1	0	2	1	1	1	3	0	0	3	3	8
08:45 AM	3	1	0	4	0	0	0	0	1	0	0	1	0	0	0	0	5
Total	6	1	1	8	2	1	0	3	4	2	4	10	1	0	7	8	29
Grand Total	8	2	1	11	7	4	2	13	8	6	8	22	1	0	9	10	56
Apprch %	72.7	18.2	9.1		53.8	30.8	15.4		36.4	27.3	36.4		10	0	90		
Total %	14.3	3.6	1.8	19.6	12.5	7.1	3.6	23.2	14.3	10.7	14.3	39.3	1.8	0	16.1	17.9	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	2	0	0	2	0	**1**	**1**	**2**	**2**	**1**	1	**4**	0	0	0	0	8
07:45 AM	0	**1**	0	1	0	0	0	0	1	1	0	2	0	0	0	0	3
08:00 AM	0	0	**1**	1	**1**	0	0	1	1	1	**2**	4	**1**	0	**2**	**3**	**9**
08:15 AM	**3**	0	0	**3**	0	0	0	0	1	0	1	2	0	0	2	2	7
Total Volume	5	1	1	7	1	1	1	3	5	3	4	12	1	0	4	5	27
% App. Total	71.4	14.3	14.3		33.3	33.3	33.3		41.7	25	33.3		20	0	80		
PHF	.417	.250	.250	.583	.250	.250	.250	.375	.625	.750	.500	.750	.250	.000	.500	.417	.750

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	2	0	0	2	0	**1**	**1**	**2**	**2**	**1**	1	**4**	0	0	0	0
+15 mins.	0	**1**	0	1	0	0	0	0	1	1	0	2	0	0	0	0
+30 mins.	0	0	**1**	1	**1**	0	0	1	1	1	**2**	4	**1**	0	**2**	**3**
+45 mins.	**3**	0	0	**3**	0	0	0	0	1	0	1	2	0	0	2	2
Total Volume	5	1	1	7	1	1	1	3	5	3	4	12	1	0	4	5
% App. Total	71.4	14.3	14.3		33.3	33.3	33.3		41.7	25	33.3		20	0	80	
PHF	.417	.250	.250	.583	.250	.250	.250	.375	.625	.750	.500	.750	.250	.000	.500	.417

Counts Unlimited
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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

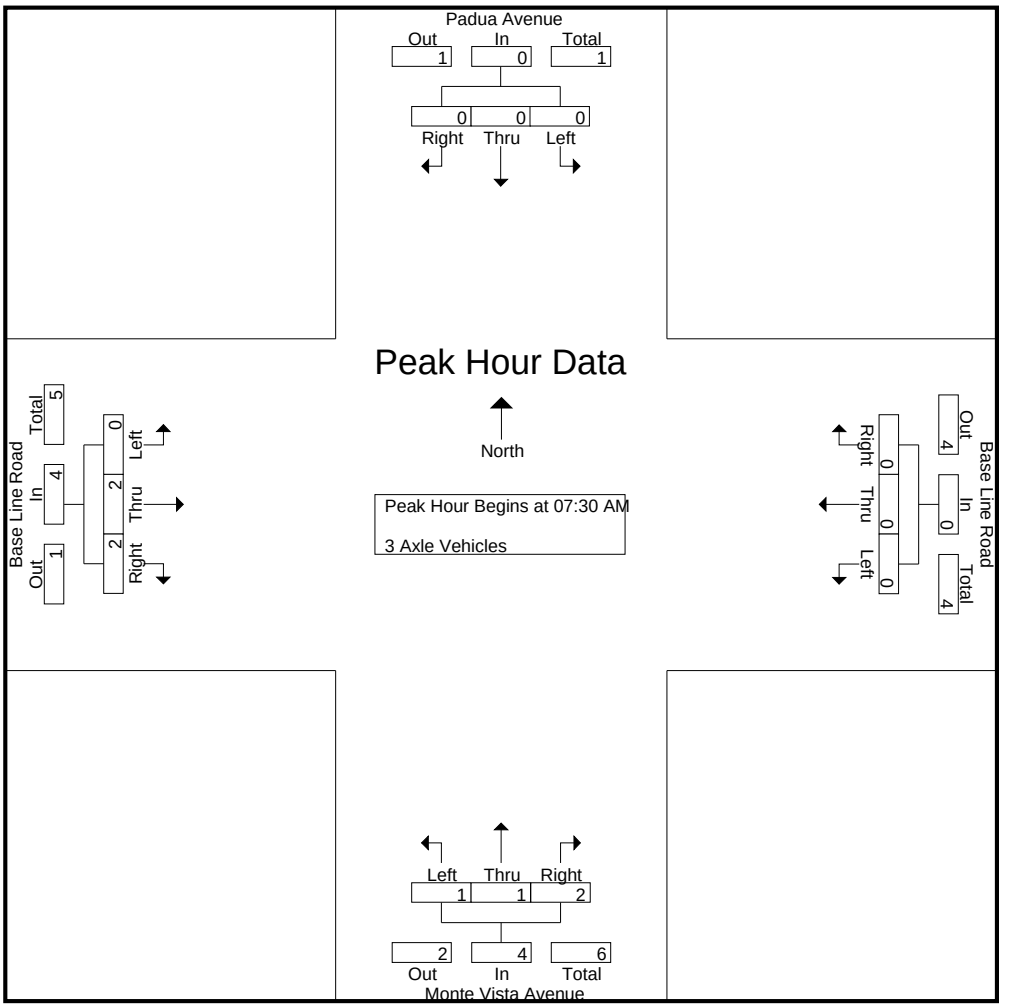
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	1	0	2	0	0	0	0	0	0	3	3	0	0	0	0	5
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
Total	1	1	0	2	0	0	0	0	0	1	4	5	0	3	0	3	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	2	3
08:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
08:30 AM	0	0	0	0	1	0	0	1	1	1	1	3	0	1	0	1	5
08:45 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	1	1	2	4
Total	0	0	0	0	1	1	0	2	3	1	2	6	0	3	3	6	14
Grand Total	1	1	0	2	1	1	0	2	3	2	6	11	0	6	3	9	24
Apprch %	50	50	0		50	50	0		27.3	18.2	54.5		0	66.7	33.3		
Total %	4.2	4.2	0	8.3	4.2	4.2	0	8.3	12.5	8.3	25	45.8	0	25	12.5	37.5	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	**1**	0	1	0	**1**	0	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	**1**	**2**	**3**
08:15 AM	0	0	0	0	0	0	0	0	**1**	0	0	1	0	0	1	1	2
Total Volume	0	0	0	0	0	0	0	0	1	1	2	4	0	2	2	4	8
% App. Total	0	0	0		0	0	0		25	25	50		0	50	50		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500	1.00	.000	.500	.500	.500	.667

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	**1**	0	1	0	**1**	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	1	**1**	**2**
+45 mins.	0	0	0	0	0	0	0	0	**1**	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	1	1	2	4	0	2	2	4
% App. Total	0	0	0		0	0	0		25	25	50		0	50	50	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500	1.000	.000	.500	.500	.500

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

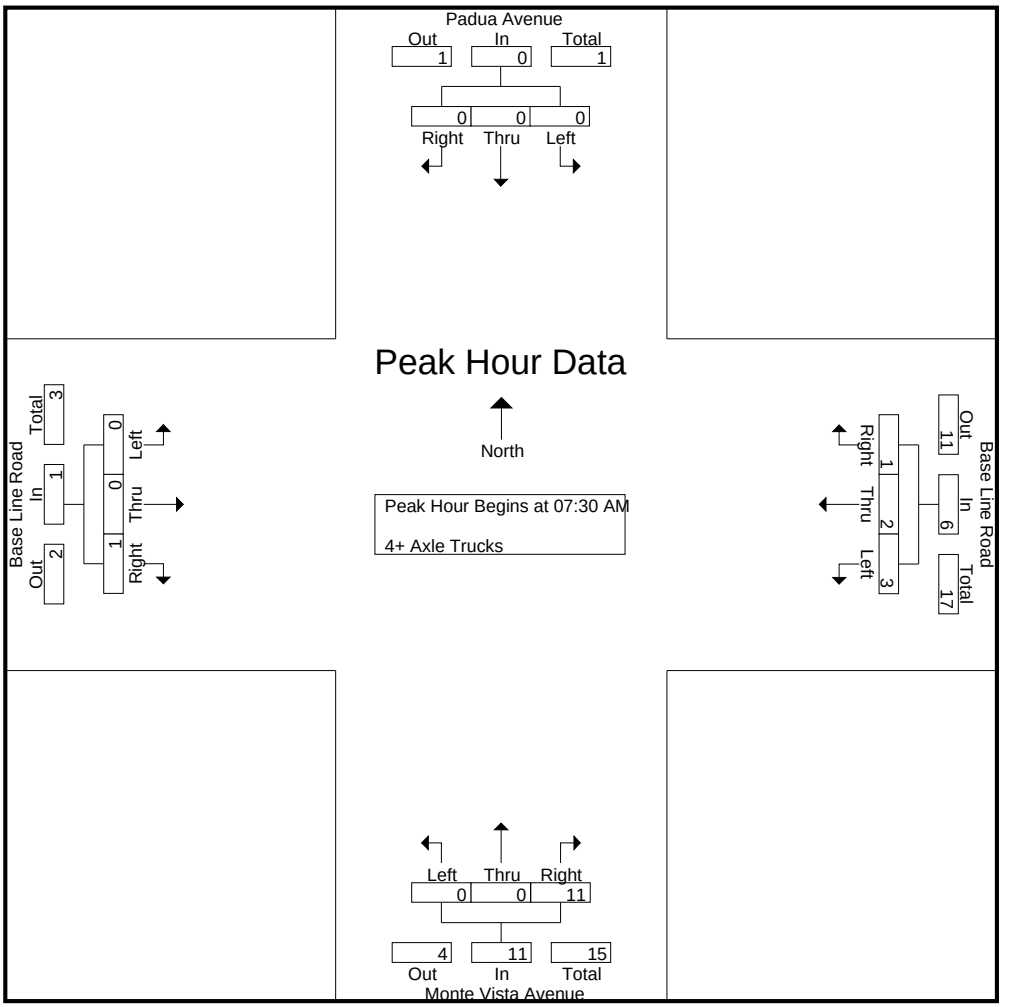
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	1	0	2	0	0	3	3	0	1	0	1	6
07:15 AM	0	0	0	0	0	0	0	0	0	0	9	9	0	0	0	0	9
07:30 AM	0	0	0	0	2	0	0	2	0	0	5	5	0	0	1	1	8
07:45 AM	0	0	0	0	0	1	1	2	0	0	3	3	0	0	0	0	5
Total	0	0	0	0	3	2	1	6	0	0	20	20	0	1	1	2	28
08:00 AM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
08:15 AM	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0	3
08:30 AM	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	8
08:45 AM	0	0	0	0	9	0	0	9	1	0	6	7	0	0	0	0	16
Total	0	0	0	0	18	1	0	19	1	0	9	10	0	0	0	0	29
Grand Total	0	0	0	0	21	3	1	25	1	0	29	30	0	1	1	2	57
Apprch %	0	0	0		84	12	4		3.3	0	96.7		0	50	50		
Total %	0	0	0	0	36.8	5.3	1.8	43.9	1.8	0	50.9	52.6	0	1.8	1.8	3.5	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	**2**	0	0	**2**	0	0	**5**	**5**	0	0	**1**	**1**	**8**
07:45 AM	0	0	0	0	0	**1**	**1**	2	0	0	3	3	0	0	0	0	5
08:00 AM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
08:15 AM	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0	3
Total Volume	0	0	0	0	3	2	1	6	0	0	11	11	0	0	1	1	18
% App. Total	0	0	0		50	33.3	16.7		0	0	100		0	0	100		
PHF	.000	.000	.000	.000	.375	.500	.250	.750	.000	.000	.550	.550	.000	.000	.250	.250	.563

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	**2**	0	0	**2**	0	0	**5**	**5**	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	**1**	**1**	2	0	0	3	3	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0
+45 mins.	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0
Total Volume	0	0	0	0	3	2	1	6	0	0	11	11	0	0	1	1
% App. Total	0	0	0		50	33.3	16.7		0	0	100		0	0	100	
PHF	.000	.000	.000	.000	.375	.500	.250	.750	.000	.000	.550	.550	.000	.000	.250	.250

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

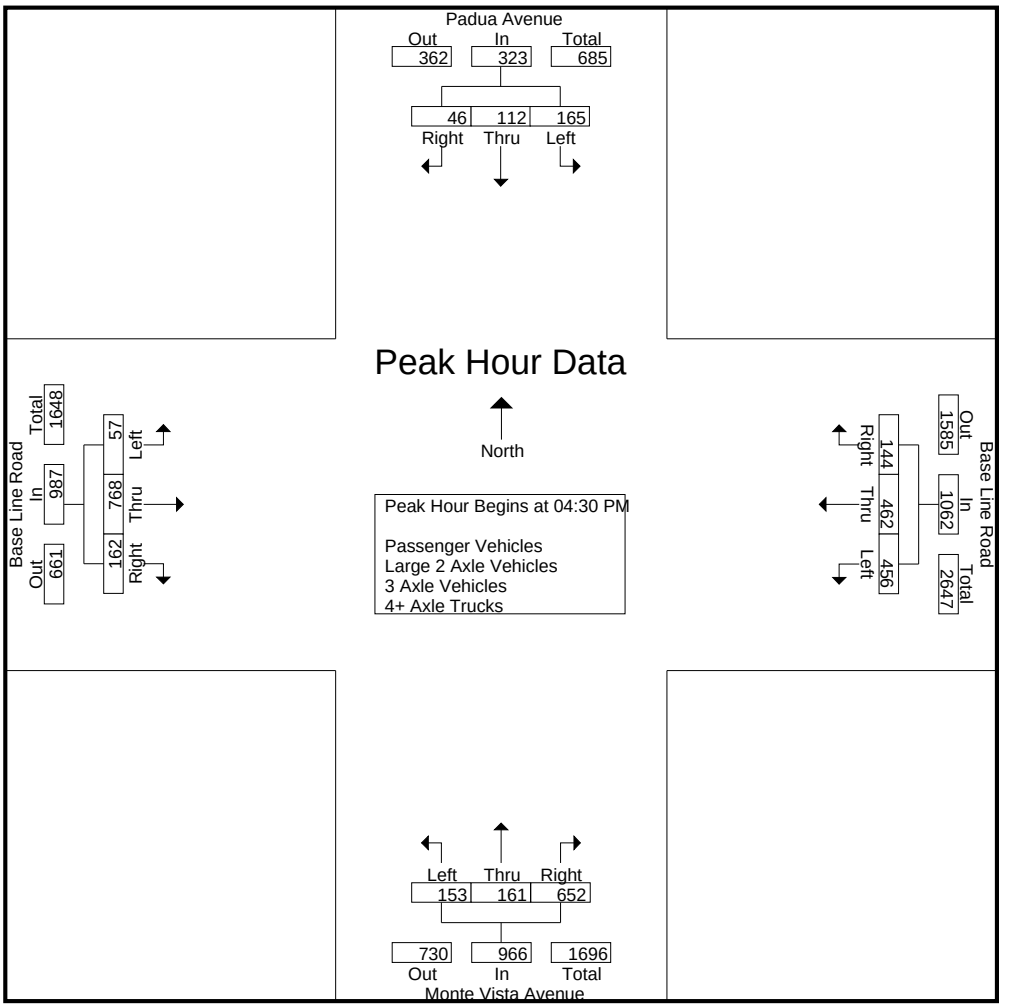
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	37	16	13	66	106	91	29	226	39	31	174	244	3	139	44	186	722
04:15 PM	28	28	19	75	119	73	51	243	27	40	150	217	23	175	31	229	764
04:30 PM	49	29	8	86	115	120	29	264	43	38	159	240	12	179	37	228	818
04:45 PM	40	30	15	85	142	131	32	305	32	43	149	224	18	164	44	226	840
Total	154	103	55	312	482	415	141	1038	141	152	632	925	56	657	156	869	3144
05:00 PM	53	26	15	94	79	101	41	221	46	35	183	264	13	214	41	268	847
05:15 PM	23	27	8	58	120	110	42	272	32	45	161	238	14	211	40	265	833
05:30 PM	28	27	9	64	104	119	33	256	51	34	175	260	11	157	35	203	783
05:45 PM	30	33	10	73	146	113	42	301	38	42	161	241	18	155	33	206	821
Total	134	113	42	289	449	443	158	1050	167	156	680	1003	56	737	149	942	3284
Grand Total	288	216	97	601	931	858	299	2088	308	308	1312	1928	112	1394	305	1811	6428
Apprch %	47.9	35.9	16.1		44.6	41.1	14.3		16	16	68		6.2	77	16.8		
Total %	4.5	3.4	1.5	9.3	14.5	13.3	4.7	32.5	4.8	4.8	20.4	30	1.7	21.7	4.7	28.2	
Passenger Vehicles	285	212	97	594	921	853	294	2068	305	308	1299	1912	112	1387	304	1803	6377
% Passenger Vehicles	99	98.1	100	98.8	98.9	99.4	98.3	99	99	100	99	99.2	100	99.5	99.7	99.6	99.2
Large 2 Axle Vehicles	3	4	0	7	4	4	3	11	3	0	7	10	0	5	1	6	34
% Large 2 Axle Vehicles	1	1.9	0	1.2	0.4	0.5	1	0.5	1	0	0.5	0.5	0	0.4	0.3	0.3	0.5
3 Axle Vehicles	0	0	0	0	2	0	0	2	0	0	1	1	0	0	0	0	3
% 3 Axle Vehicles	0	0	0	0	0.2	0	0	0.1	0	0	0.1	0.1	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	4	1	2	7	0	0	5	5	0	2	0	2	14
% 4+ Axle Trucks	0	0	0	0	0.4	0.1	0.7	0.3	0	0	0.4	0.3	0	0.1	0	0.1	0.2

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	49	29	8	86	115	120	29	264	43	38	159	240	12	179	37	228	818
04:45 PM	40	**30**	**15**	85	**142**	**131**	32	**305**	32	43	149	224	**18**	164	**44**	226	840
05:00 PM	**53**	26	15	**94**	79	101	41	221	**46**	35	**183**	**264**	13	**214**	41	**268**	**847**
05:15 PM	23	27	8	58	120	110	**42**	272	32	**45**	161	238	14	211	40	265	833
Total Volume	165	112	46	323	456	462	144	1062	153	161	652	966	57	768	162	987	3338
% App. Total	51.1	34.7	14.2		42.9	43.5	13.6		15.8	16.7	67.5		5.8	77.8	16.4		
PHF	.778	.933	.767	.859	.803	.882	.857	.870	.832	.894	.891	.915	.792	.897	.920	.921	.985

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:30 PM				05:00 PM				04:30 PM			
+0 mins.	28	28	**19**	75	115	120	29	264	46	35	**183**	**264**	12	179	37	228
+15 mins.	49	29	8	86	**142**	**131**	32	**305**	32	**45**	161	238	**18**	164	**44**	226
+30 mins.	40	**30**	15	85	79	101	41	221	**51**	34	175	260	13	**214**	41	**268**
+45 mins.	**53**	26	15	**94**	120	110	**42**	272	38	42	161	241	14	211	40	265
Total Volume	170	113	57	340	456	462	144	1062	167	156	680	1003	57	768	162	987
% App. Total	50	33.2	16.8		42.9	43.5	13.6		16.7	15.6	67.8		5.8	77.8	16.4	
PHF	.802	.942	.750	.904	.803	.882	.857	.870	.819	.867	.929	.950	.792	.897	.920	.921

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
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File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

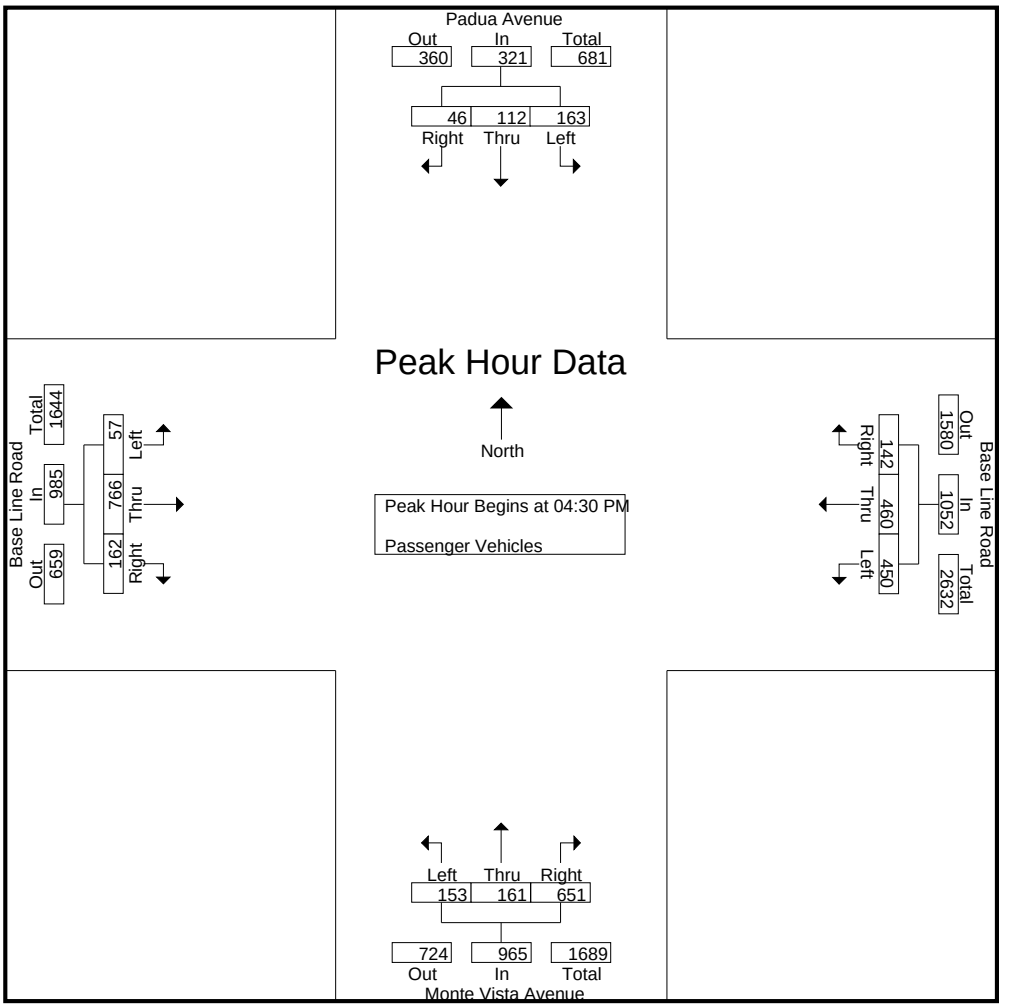
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	36	14	13	63	106	88	27	221	37	31	173	241	3	135	44	182	707
04:15 PM	28	27	19	74	117	73	50	240	26	40	149	215	23	175	30	228	757
04:30 PM	48	29	8	85	113	119	29	261	43	38	159	240	12	178	37	227	813
04:45 PM	40	30	15	85	140	131	30	301	32	43	149	224	18	164	44	226	836
Total	152	100	55	307	476	411	136	1023	138	152	630	920	56	652	155	863	3113
05:00 PM	52	26	15	93	77	100	41	218	46	35	182	263	13	214	41	268	842
05:15 PM	23	27	8	58	120	110	42	272	32	45	161	238	14	210	40	264	832
05:30 PM	28	26	9	63	102	119	33	254	51	34	167	252	11	157	35	203	772
05:45 PM	30	33	10	73	146	113	42	301	38	42	159	239	18	154	33	205	818
Total	133	112	42	287	445	442	158	1045	167	156	669	992	56	735	149	940	3264
Grand Total	285	212	97	594	921	853	294	2068	305	308	1299	1912	112	1387	304	1803	6377
Apprch %	48	35.7	16.3		44.5	41.2	14.2		16	16.1	67.9		6.2	76.9	16.9		
Total %	4.5	3.3	1.5	9.3	14.4	13.4	4.6	32.4	4.8	4.8	20.4	30	1.8	21.8	4.8	28.3	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	48	29	8	85	113	119	29	261	43	38	159	240	12	178	37	227	813
04:45 PM	40	**30**	**15**	85	**140**	**131**	30	**301**	32	43	149	224	**18**	164	**44**	226	836
05:00 PM	**52**	26	15	**93**	77	100	41	218	**46**	35	**182**	**263**	13	**214**	41	**268**	**842**
05:15 PM	23	27	8	58	120	110	**42**	272	32	**45**	161	238	14	210	40	264	832
Total Volume	163	112	46	321	450	460	142	1052	153	161	651	965	57	766	162	985	3323
% App. Total	50.8	34.9	14.3		42.8	43.7	13.5		15.9	16.7	67.5		5.8	77.8	16.4		
PHF	.784	.933	.767	.863	.804	.878	.845	.874	.832	.894	.894	.917	.792	.895	.920	.919	.987

Counts Unlimited
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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	48	29	8	85	113	119	29	261	43	38	159	240	12	178	37	227
+15 mins.	40	**30**	**15**	85	**140**	**131**	30	**301**	32	43	149	224	**18**	164	**44**	226
+30 mins.	**52**	26	15	**93**	77	100	41	218	**46**	35	**182**	**263**	13	**214**	41	**268**
+45 mins.	23	27	8	58	120	110	**42**	272	32	**45**	161	238	14	210	40	264
Total Volume	163	112	46	321	450	460	142	1052	153	161	651	965	57	766	162	985
% App. Total	50.8	34.9	14.3		42.8	43.7	13.5		15.9	16.7	67.5		5.8	77.8	16.4	
PHF	.784	.933	.767	.863	.804	.878	.845	.874	.832	.894	.894	.917	.792	.895	.920	.919

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

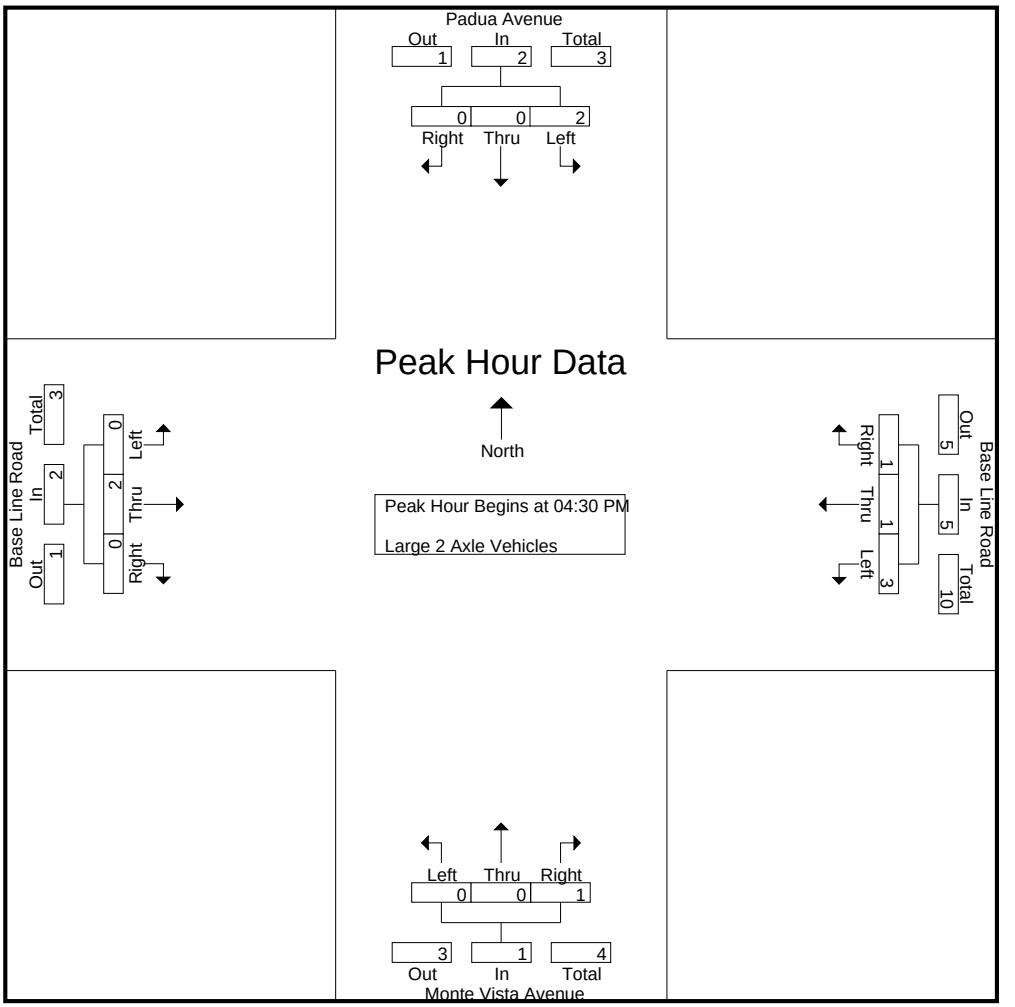
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	2	0	3	0	3	1	4	2	0	1	3	0	2	0	2	12
04:15 PM	0	1	0	1	0	0	1	1	1	0	0	1	0	0	1	1	4
04:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	2	0	1	3	0	0	0	0	0	0	0	0	3
Total	2	3	0	5	2	3	3	8	3	0	1	4	0	3	1	4	21
05:00 PM	1	0	0	1	1	1	0	2	0	0	1	1	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	1	0	1	1	0	0	1	0	0	3	3	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	1	3
Total	1	1	0	2	2	1	0	3	0	0	6	6	0	2	0	2	13
Grand Total	3	4	0	7	4	4	3	11	3	0	7	10	0	5	1	6	34
Apprch %	42.9	57.1	0		36.4	36.4	27.3		30	0	70		0	83.3	16.7		
Total %	8.8	11.8	0	20.6	11.8	11.8	8.8	32.4	8.8	0	20.6	29.4	0	14.7	2.9	17.6	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	**1**	0	**1**	2
04:45 PM	0	0	0	0	**2**	0	**1**	**3**	0	0	0	0	0	0	0	0	3
05:00 PM	1	0	0	1	1	**1**	0	2	0	0	**1**	**1**	0	0	0	0	**4**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	2	0	0	2	3	1	1	5	0	0	1	1	0	2	0	2	10
% App. Total	100	0	0		60	20	20		0	0	100		0	100	0		
PHF	.500	.000	.000	.500	.375	.250	.250	.417	.000	.000	.250	.250	.000	.500	.000	.500	.625

Counts Unlimited
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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	**2**	0	**1**	**3**	0	0	0	0	0	0	0	0
+30 mins.	1	0	0	1	1	**1**	0	2	0	0	**1**	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total Volume	2	0	0	2	3	1	1	5	0	0	1	1	0	2	0	2
% App. Total	100	0	0		60	20	20		0	0	100		0	100	0	
PHF	.500	.000	.000	.500	.375	.250	.250	.417	.000	.000	.250	.250	.000	.500	.000	.500

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

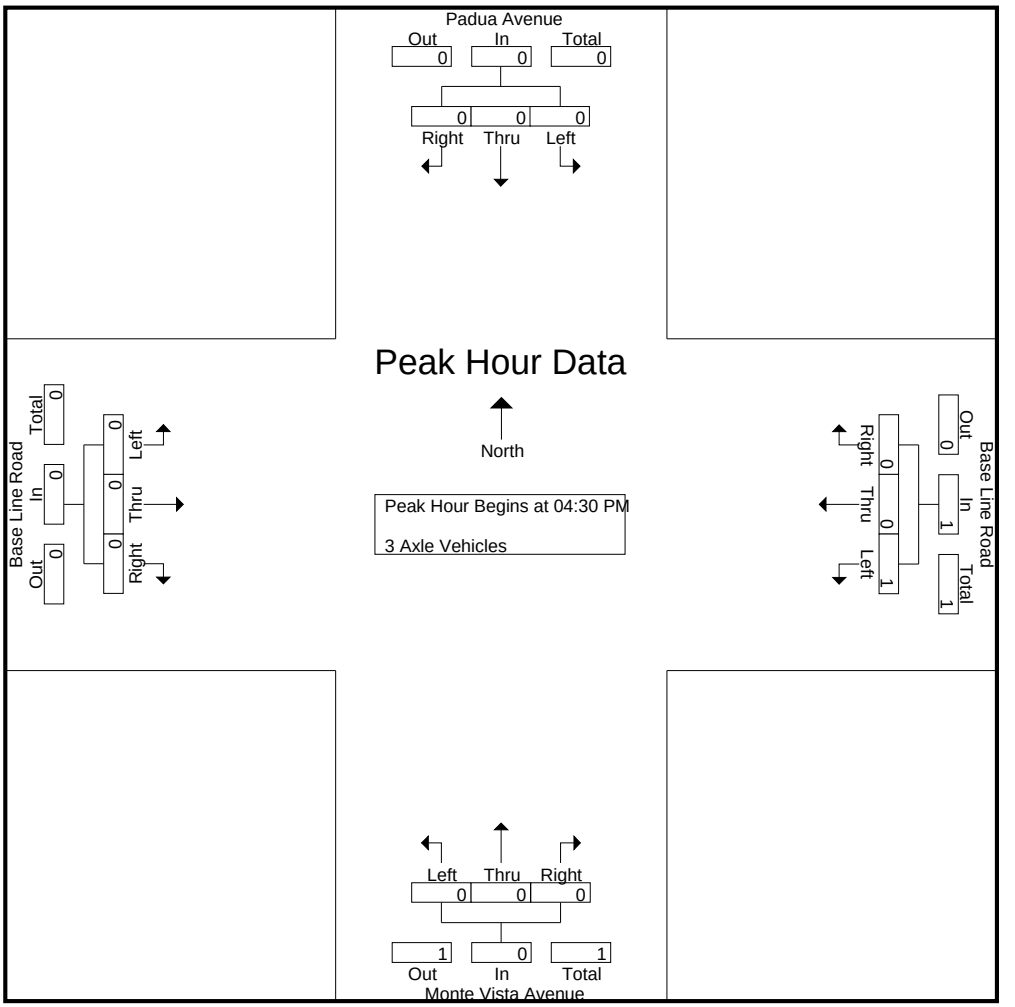
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
Grand Total	0	0	0	0	2	0	0	2	0	0	1	1	0	0	0	0	3
Apprch %	0	0	0		100	0	0		0	0	100		0	0	0		
Total %	0	0	0	0	66.7	0	0	66.7	0	0	33.3	33.3	0	0	0	0	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

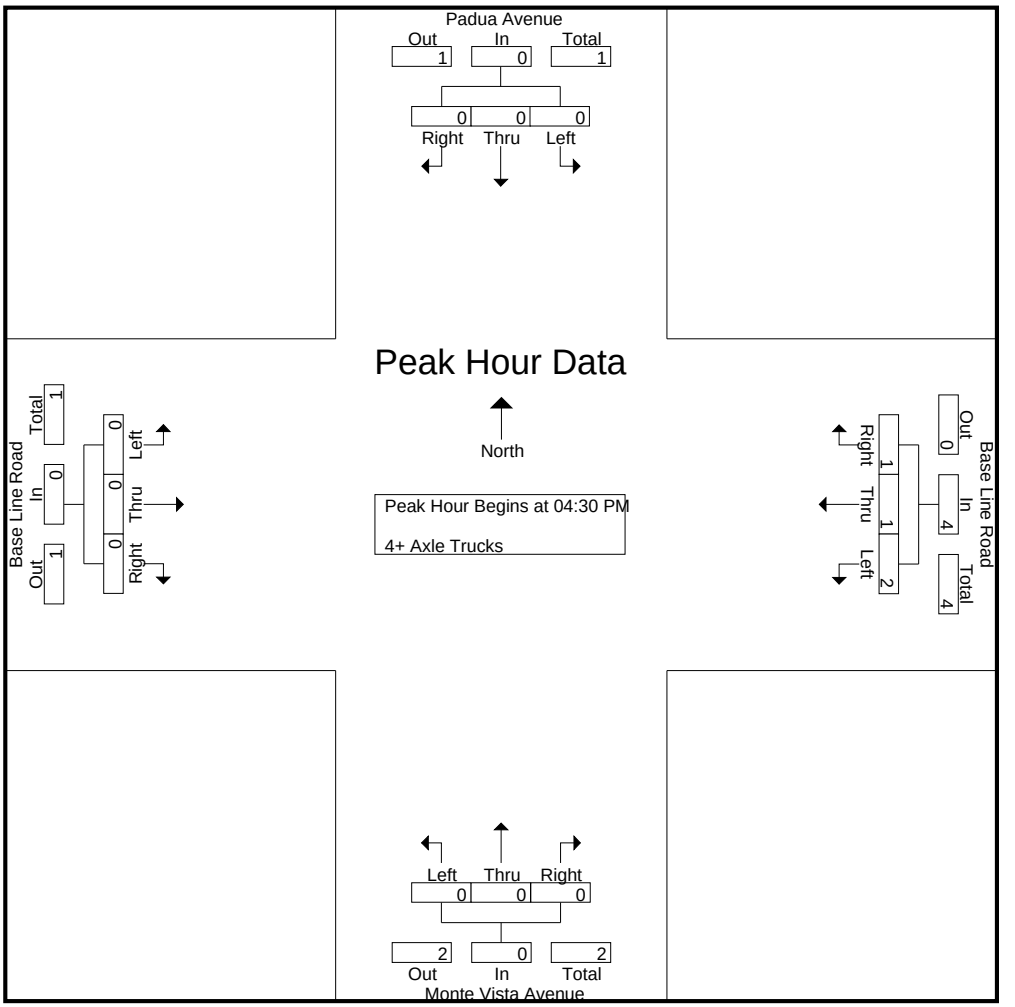
	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2	3
04:15 PM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
04:30 PM	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	3	1	2	6	0	0	1	1	0	2	0	2	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	1	0	0	1	0	0	4	4	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	4	4	0	0	0	0	5
Grand Total	0	0	0	0	4	1	2	7	0	0	5	5	0	2	0	2	14
Apprch %	0	0	0		57.1	14.3	28.6		0	0	100		0	100	0		
Total %	0	0	0	0	28.6	7.1	14.3	50	0	0	35.7	35.7	0	14.3	0	14.3	

	Padua Avenue Southbound				Base Line Road Westbound				Monte Vista Avenue Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	**2**	**1**	0	**3**	0	0	0	0	0	0	0	0	**3**
04:45 PM	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	1	1	4	0	0	0	0	0	0	0	0	4
% App. Total	0	0	0		50	25	25		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.250	.250	.333	.000	.000	.000	.000	.000	.000	.000	.000	.333

Counts Unlimited
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City of Upland
N/S: Padua Avenue/Monte Vista Avenue
E/W: Base Line Road
Weather: Clear

File Name : 01_UPL_Padua_Monte Vista_Base Line PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	**2**	**1**	0	**3**	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	1	1	4	0	0	0	0	0	0	0	0
% App. Total	0	0	0		50	25	25		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.250	.250	.333	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited
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City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

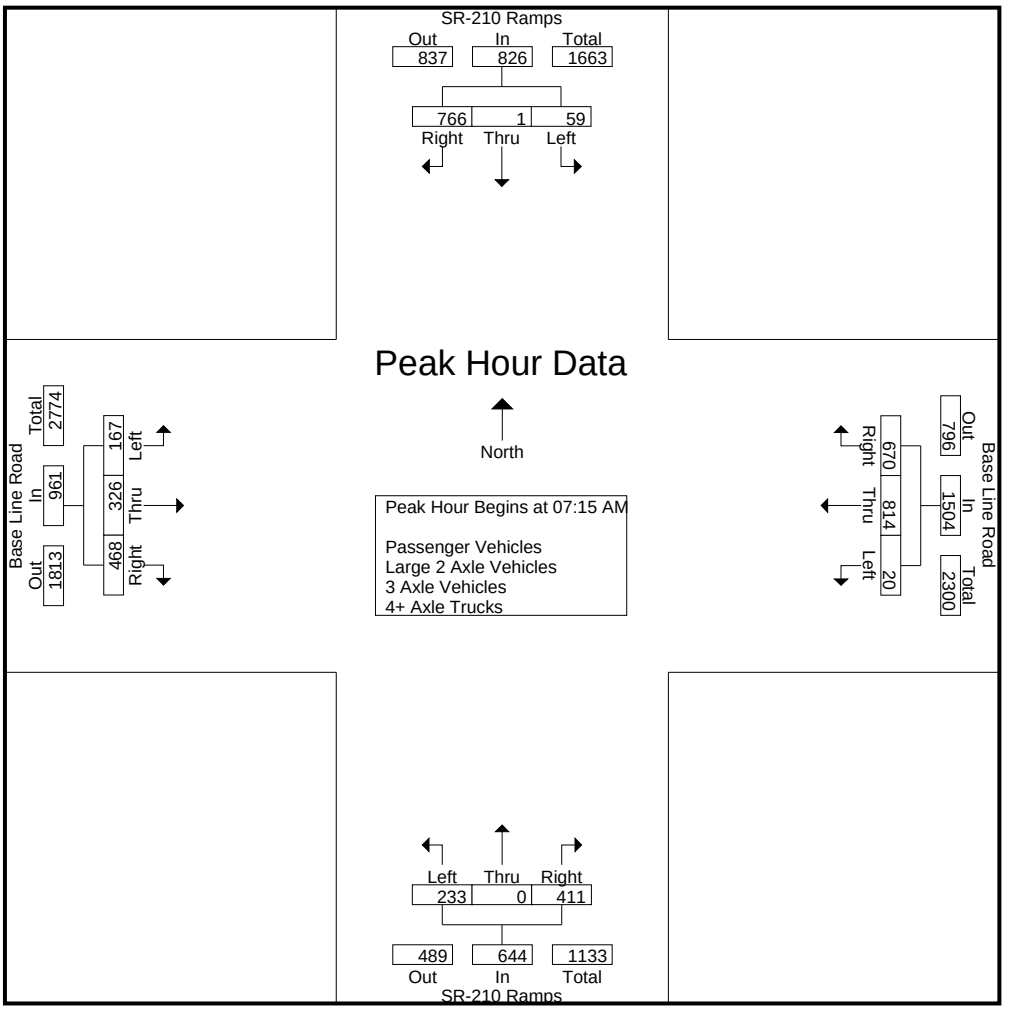
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	12	1	154	167	8	161	132	301	35	0	57	92	28	44	83	155	715
07:15 AM	13	0	180	193	4	200	202	406	50	0	79	129	35	51	100	186	914
07:30 AM	11	0	214	225	5	250	161	416	50	0	121	171	46	91	153	290	1102
07:45 AM	19	1	179	199	7	188	168	363	73	0	119	192	41	90	99	230	984
Total	55	2	727	784	24	799	663	1486	208	0	376	584	150	276	435	861	3715
08:00 AM	16	0	193	209	4	176	139	319	60	0	92	152	45	94	116	255	935
08:15 AM	6	0	134	140	7	166	131	304	70	0	99	169	38	91	92	221	834
08:30 AM	13	0	147	160	6	161	123	290	50	0	78	128	37	92	86	215	793
08:45 AM	13	0	131	144	6	132	105	243	46	0	91	137	41	68	84	193	717
Total	48	0	605	653	23	635	498	1156	226	0	360	586	161	345	378	884	3279
Grand Total	103	2	1332	1437	47	1434	1161	2642	434	0	736	1170	311	621	813	1745	6994
Apprch %	7.2	0.1	92.7		1.8	54.3	43.9		37.1	0	62.9		17.8	35.6	46.6		
Total %	1.5	0	19	20.5	0.7	20.5	16.6	37.8	6.2	0	10.5	16.7	4.4	8.9	11.6	24.9	
Passenger Vehicles	93	0	1317	1410	40	1416	1125	2581	416	0	677	1093	291	608	800	1699	6783
% Passenger Vehicles	90.3	0	98.9	98.1	85.1	98.7	96.9	97.7	95.9	0	92	93.4	93.6	97.9	98.4	97.4	97
Large 2 Axle Vehicles	4	2	10	16	3	14	16	33	16	0	25	41	13	6	8	27	117
% Large 2 Axle Vehicles	3.9	100	0.8	1.1	6.4	1	1.4	1.2	3.7	0	3.4	3.5	4.2	1	1	1.5	1.7
3 Axle Vehicles	4	0	1	5	1	3	0	4	1	0	1	2	4	7	3	14	25
% 3 Axle Vehicles	3.9	0	0.1	0.3	2.1	0.2	0	0.2	0.2	0	0.1	0.2	1.3	1.1	0.4	0.8	0.4
4+ Axle Trucks	2	0	4	6	3	1	20	24	1	0	33	34	3	0	2	5	69
% 4+ Axle Trucks	1.9	0	0.3	0.4	6.4	0.1	1.7	0.9	0.2	0	4.5	2.9	1	0	0.2	0.3	1

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	13	0	180	193	4	200	**202**	406	50	0	79	129	35	51	100	186	914
07:30 AM	11	0	**214**	**225**	5	**250**	161	**416**	50	0	**121**	171	**46**	91	**153**	**290**	**1102**
07:45 AM	**19**	**1**	179	199	**7**	188	168	363	**73**	0	119	**192**	41	90	99	230	984
08:00 AM	16	0	193	209	4	176	139	319	60	0	92	152	45	**94**	116	255	935
Total Volume	59	1	766	826	20	814	670	1504	233	0	411	644	167	326	468	961	3935
% App. Total	7.1	0.1	92.7		1.3	54.1	44.5		36.2	0	63.8		17.4	33.9	48.7		
PHF	.776	.250	.895	.918	.714	.814	.829	.904	.798	.000	.849	.839	.908	.867	.765	.828	.893

Counts Unlimited
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City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:30 AM				07:30 AM			
+0 mins.	13	0	180	193	4	200	**202**	406	50	0	**121**	171	**46**	91	**153**	**290**
+15 mins.	11	0	**214**	**225**	5	**250**	161	**416**	**73**	0	119	**192**	41	90	99	230
+30 mins.	**19**	**1**	179	199	**7**	188	168	363	60	0	92	152	45	**94**	116	255
+45 mins.	16	0	193	209	4	176	139	319	70	0	99	169	38	91	92	221
Total Volume	59	1	766	826	20	814	670	1504	253	0	431	684	170	366	460	996
% App. Total	7.1	0.1	92.7		1.3	54.1	44.5		37	0	63		17.1	36.7	46.2	
PHF	.776	.250	.895	.918	.714	.814	.829	.904	.866	.000	.890	.891	.924	.973	.752	.859

Counts Unlimited
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City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- Passenger Vehicles

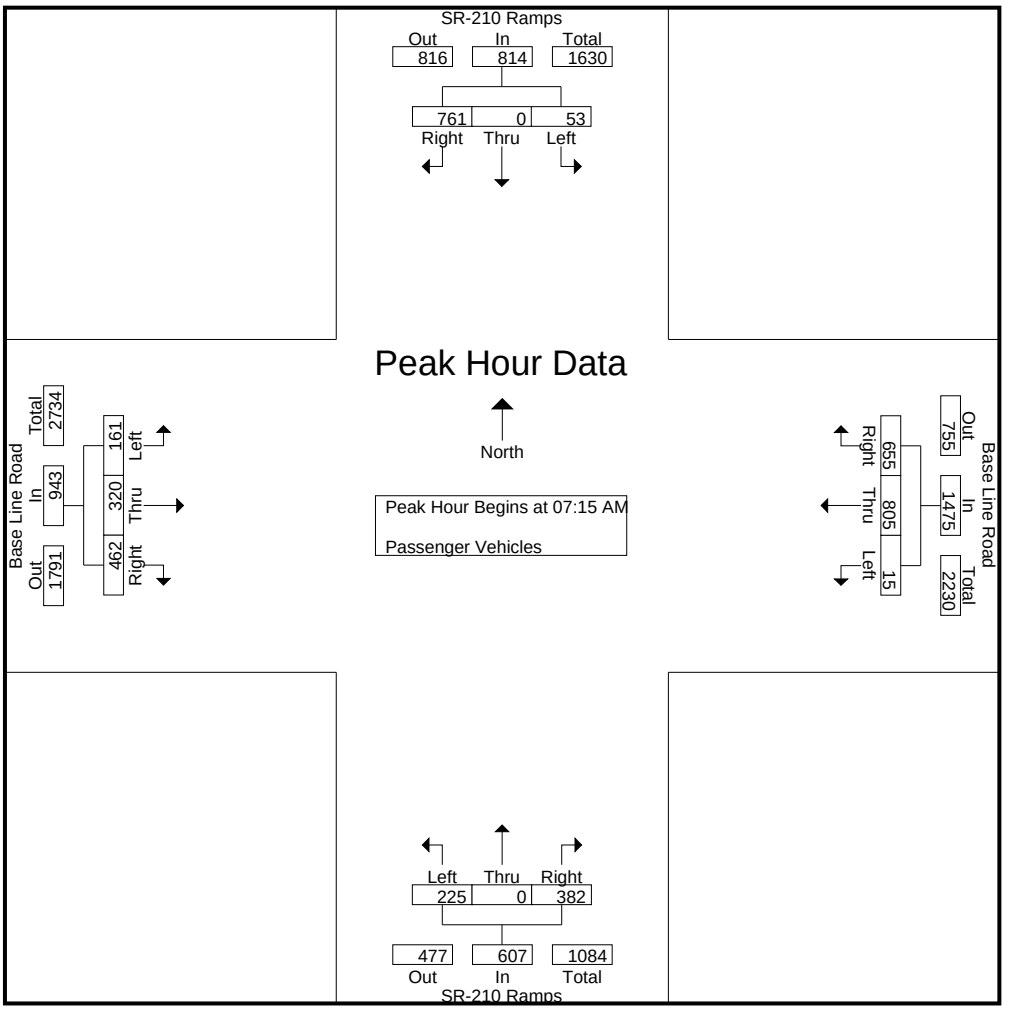
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	11	0	151	162	8	158	128	294	32	0	48	80	21	41	83	145	681
07:15 AM	13	0	179	192	3	198	199	400	48	0	75	123	33	49	98	180	895
07:30 AM	9	0	213	222	5	248	157	410	48	0	115	163	46	89	153	288	1083
07:45 AM	17	0	179	196	5	186	163	354	73	0	110	183	38	90	99	227	960
Total	50	0	722	772	21	790	647	1458	201	0	348	549	138	269	433	840	3619
08:00 AM	14	0	190	204	2	173	136	311	56	0	82	138	44	92	112	248	901
08:15 AM	6	0	130	136	6	165	123	294	66	0	94	160	35	89	89	213	803
08:30 AM	11	0	146	157	6	159	118	283	48	0	74	122	34	91	84	209	771
08:45 AM	12	0	129	141	5	129	101	235	45	0	79	124	40	67	82	189	689
Total	43	0	595	638	19	626	478	1123	215	0	329	544	153	339	367	859	3164
Grand Total	93	0	1317	1410	40	1416	1125	2581	416	0	677	1093	291	608	800	1699	6783
Apprch %	6.6	0	93.4		1.5	54.9	43.6		38.1	0	61.9		17.1	35.8	47.1		
Total %	1.4	0	19.4	20.8	0.6	20.9	16.6	38.1	6.1	0	10	16.1	4.3	9	11.8	25	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	13	0	179	192	3	198	**199**	400	48	0	75	123	33	49	98	180	895
07:30 AM	9	0	**213**	**222**	**5**	**248**	157	**410**	48	0	**115**	163	**46**	89	**153**	**288**	**1083**
07:45 AM	**17**	0	179	196	5	186	163	354	**73**	0	110	**183**	38	90	99	227	960
08:00 AM	14	0	190	204	2	173	136	311	56	0	82	138	44	**92**	112	248	901
Total Volume	53	0	761	814	15	805	655	1475	225	0	382	607	161	320	462	943	3839
% App. Total	6.5	0	93.5		1	54.6	44.4		37.1	0	62.9		17.1	33.9	49		
PHF	.779	.000	.893	.917	.750	.811	.823	.899	.771	.000	.830	.829	.875	.870	.755	.819	.886

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	13	0	179	192	3	198	**199**	400	48	0	75	123	33	49	98	180
+15 mins.	9	0	**213**	**222**	**5**	**248**	157	**410**	48	0	**115**	163	**46**	89	**153**	**288**
+30 mins.	**17**	0	179	196	5	186	163	354	**73**	0	110	**183**	38	90	99	227
+45 mins.	14	0	190	204	2	173	136	311	56	0	82	138	44	**92**	112	248
Total Volume	53	0	761	814	15	805	655	1475	225	0	382	607	161	320	462	943
% App. Total	6.5	0	93.5		1	54.6	44.4		37.1	0	62.9		17.1	33.9	49	
PHF	.779	.000	.893	.917	.750	.811	.823	.899	.771	.000	.830	.829	.875	.870	.755	.819

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

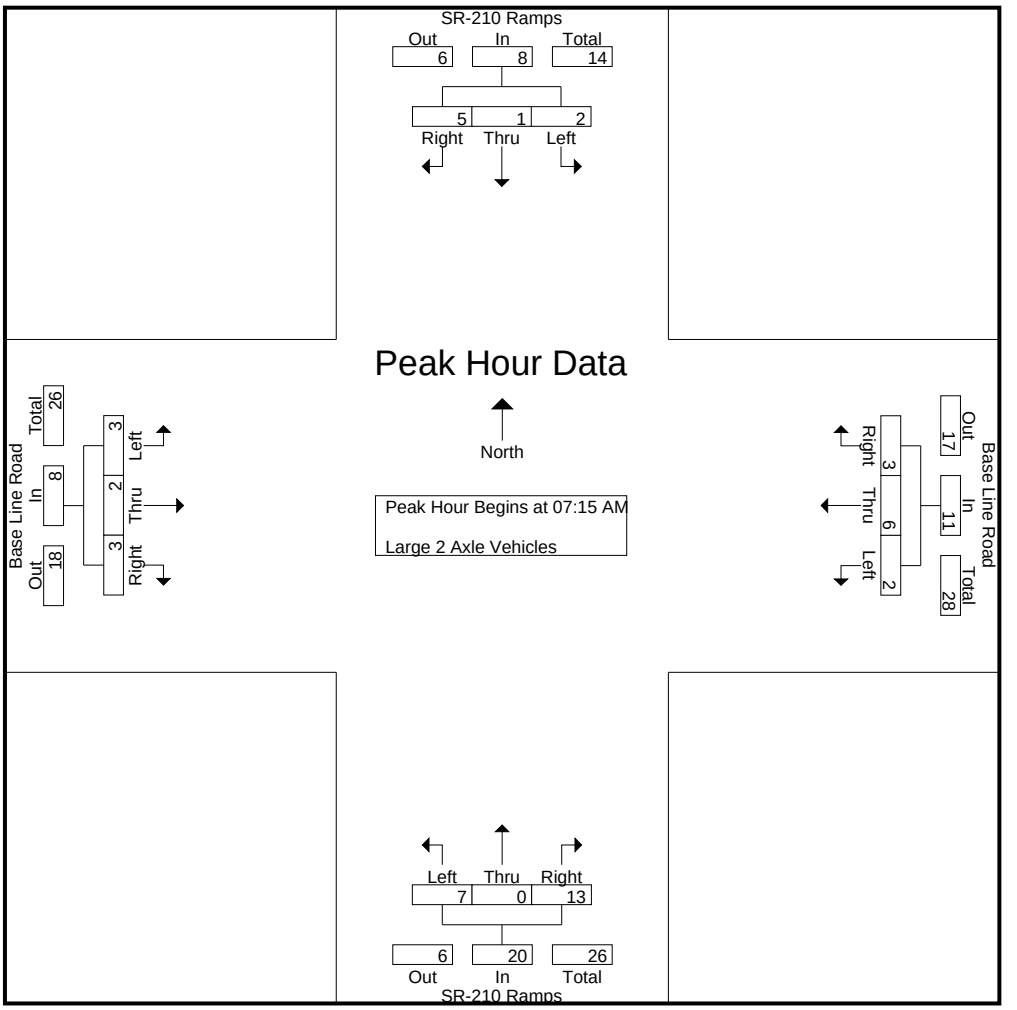
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	2	0	3	2	5	3	0	3	6	5	0	0	5	18
07:15 AM	0	0	1	1	0	0	0	0	2	0	1	3	1	0	1	2	6
07:30 AM	1	0	1	2	0	2	0	2	1	0	3	4	0	1	0	1	9
07:45 AM	1	1	0	2	1	2	2	5	0	0	5	5	1	0	0	1	13
Total	2	2	3	7	1	7	4	12	6	0	12	18	7	1	1	9	46
08:00 AM	0	0	3	3	1	2	1	4	4	0	4	8	1	1	2	4	19
08:15 AM	0	0	2	2	1	1	5	7	3	0	3	6	3	2	3	8	23
08:30 AM	1	0	1	2	0	1	5	6	2	0	0	2	2	1	2	5	15
08:45 AM	1	0	1	2	0	3	1	4	1	0	6	7	0	1	0	1	14
Total	2	0	7	9	2	7	12	21	10	0	13	23	6	5	7	18	71
Grand Total	4	2	10	16	3	14	16	33	16	0	25	41	13	6	8	27	117
Apprch %	25	12.5	62.5		9.1	42.4	48.5		39	0	61		48.1	22.2	29.6		
Total %	3.4	1.7	8.5	13.7	2.6	12	13.7	28.2	13.7	0	21.4	35	11.1	5.1	6.8	23.1	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	1	1	0	0	0	0	2	0	1	3	**1**	0	1	2	6
07:30 AM	**1**	0	1	2	0	**2**	0	2	1	0	3	4	0	**1**	0	1	9
07:45 AM	1	**1**	0	2	**1**	2	**2**	**5**	0	0	**5**	5	1	0	0	1	13
08:00 AM	0	0	**3**	**3**	1	2	1	4	**4**	0	4	**8**	1	1	**2**	**4**	**19**
Total Volume	2	1	5	8	2	6	3	11	7	0	13	20	3	2	3	8	47
% App. Total	25	12.5	62.5		18.2	54.5	27.3		35	0	65		37.5	25	37.5		
PHF	.500	.250	.417	.667	.500	.750	.375	.550	.438	.000	.650	.625	.750	.500	.375	.500	.618

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	1	1	0	0	0	0	2	0	1	3	**1**	0	1	2
+15 mins.	**1**	0	1	2	0	**2**	0	2	1	0	3	4	0	**1**	0	1
+30 mins.	1	**1**	0	2	**1**	2	**2**	**5**	0	0	**5**	5	1	0	0	1
+45 mins.	0	0	**3**	**3**	1	2	1	4	**4**	0	4	**8**	1	1	**2**	**4**
Total Volume	2	1	5	8	2	6	3	11	7	0	13	20	3	2	3	8
% App. Total	25	12.5	62.5		18.2	54.5	27.3		35	0	65		37.5	25	37.5	
PHF	.500	.250	.417	.667	.500	.750	.375	.550	.438	.000	.650	.625	.750	.500	.375	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

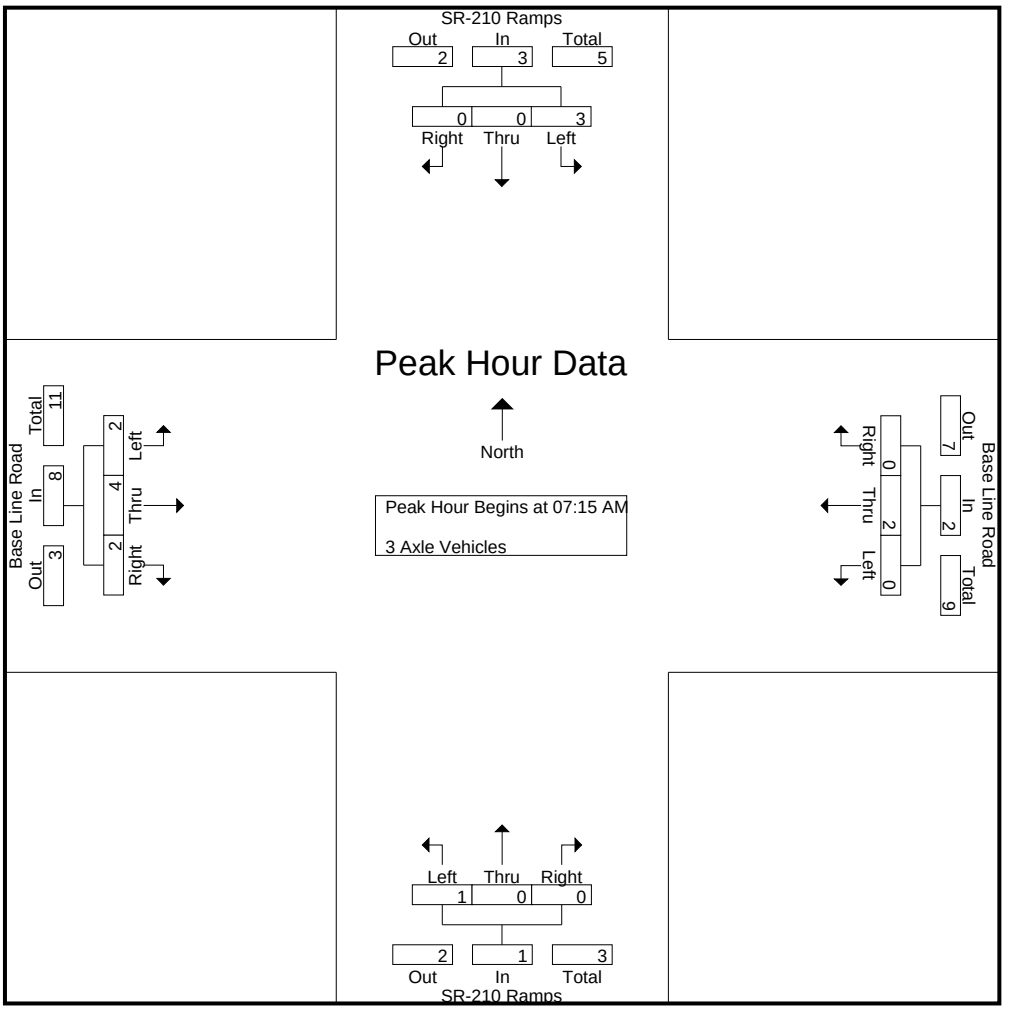
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	2	3	0	5	6
07:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	1	2	0	3	5
07:30 AM	1	0	0	1	0	0	0	0	1	0	0	1	0	1	0	1	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	1	0	1	2	0	2	0	2	1	0	0	1	4	6	0	10	15
08:00 AM	2	0	0	2	0	0	0	0	0	0	0	0	0	1	2	3	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	1	0	0	1	0	1	0	1	0	0	1	1	0	0	0	0	3
08:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	2
Total	3	0	0	3	1	1	0	2	0	0	1	1	0	1	3	4	10
Grand Total	4	0	1	5	1	3	0	4	1	0	1	2	4	7	3	14	25
Apprch %	80	0	20		25	75	0		50	0	50		28.6	50	21.4		
Total %	16	0	4	20	4	12	0	16	4	0	4	8	16	28	12	56	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**1**	**2**	0	**3**	**5**
07:30 AM	1	0	0	1	0	0	0	0	**1**	0	0	**1**	0	1	0	1	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:00 AM	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	1	**2**	3	5
Total Volume	3	0	0	3	0	2	0	2	1	0	0	1	2	4	2	8	14
% App. Total	100	0	0		0	100	0		100	0	0		25	50	25		
PHF	.375	.000	.000	.375	.000	.250	.000	.250	.250	.000	.000	.250	.500	.500	.250	.667	.700

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**1**	**2**	0	**3**
+15 mins.	1	0	0	1	0	0	0	0	**1**	0	0	**1**	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+45 mins.	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	1	**2**	3
Total Volume	3	0	0	3	0	2	0	2	1	0	0	1	2	4	2	8
% App. Total	100	0	0		0	100	0		100	0	0		25	50	25	
PHF	.375	.000	.000	.375	.000	.250	.000	.250	.250	.000	.000	.250	.500	.500	.250	.667

Counts Unlimited
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Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

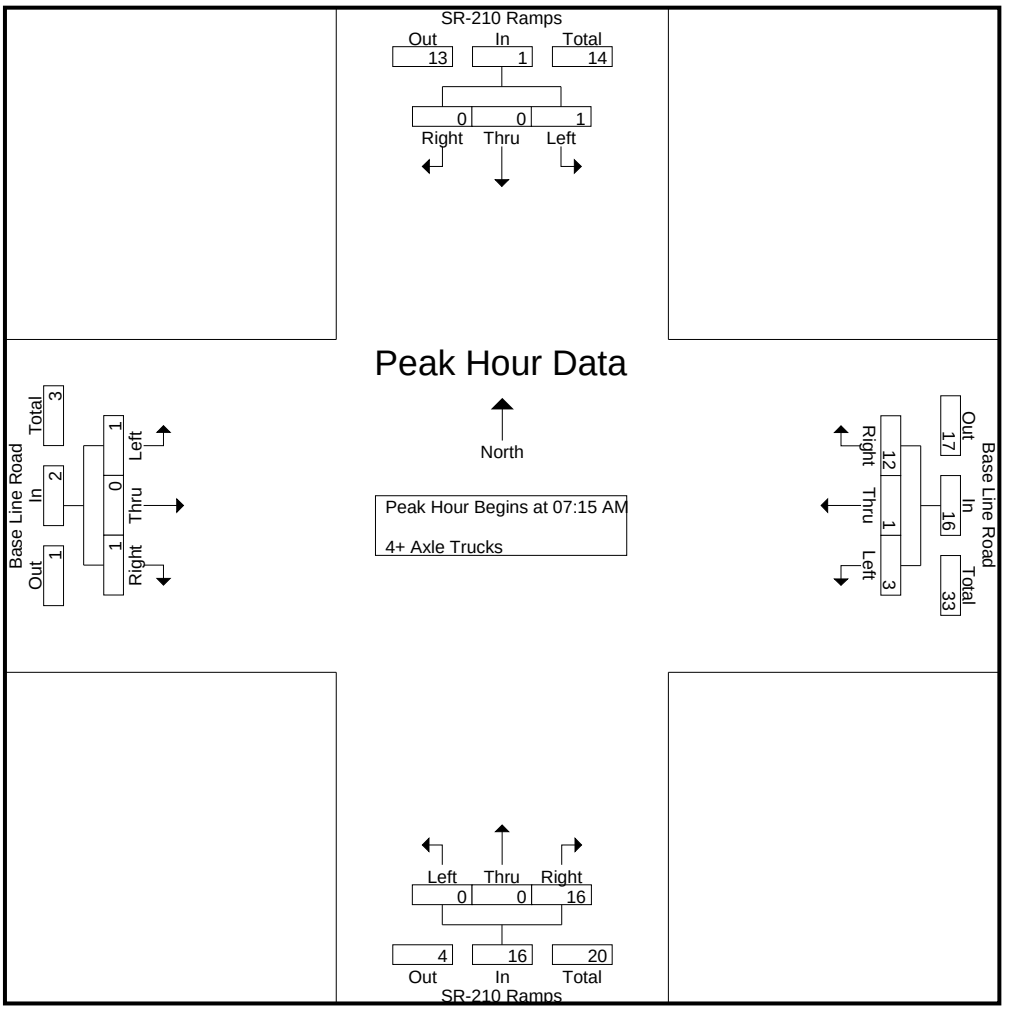
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	1	2	0	0	2	2	0	0	6	6	0	0	0	0	10
07:15 AM	0	0	0	0	1	0	3	4	0	0	3	3	0	0	1	1	8
07:30 AM	0	0	0	0	0	0	4	4	0	0	3	3	0	0	0	0	7
07:45 AM	1	0	0	1	1	0	3	4	0	0	4	4	1	0	0	1	10
Total	2	0	1	3	2	0	12	14	0	0	16	16	1	0	1	2	35
08:00 AM	0	0	0	0	1	1	2	4	0	0	6	6	0	0	0	0	10
08:15 AM	0	0	2	2	0	0	3	3	1	0	2	3	0	0	0	0	8
08:30 AM	0	0	0	0	0	0	0	0	0	0	3	3	1	0	0	1	4
08:45 AM	0	0	1	1	0	0	3	3	0	0	6	6	1	0	1	2	12
Total	0	0	3	3	1	1	8	10	1	0	17	18	2	0	1	3	34
Grand Total	2	0	4	6	3	1	20	24	1	0	33	34	3	0	2	5	69
Apprch %	33.3	0	66.7		12.5	4.2	83.3		2.9	0	97.1		60	0	40		
Total %	2.9	0	5.8	8.7	4.3	1.4	29	34.8	1.4	0	47.8	49.3	4.3	0	2.9	7.2	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	**1**	0	3	**4**	0	0	3	3	0	0	**1**	**1**	8
07:30 AM	0	0	0	0	0	0	**4**	4	0	0	3	3	0	0	0	0	7
07:45 AM	**1**	0	0	**1**	1	0	3	4	0	0	4	4	**1**	0	0	1	**10**
08:00 AM	0	0	0	0	1	**1**	2	4	0	0	**6**	**6**	0	0	0	0	10
Total Volume	1	0	0	1	3	1	12	16	0	0	16	16	1	0	1	2	35
% App. Total	100	0	0		18.8	6.2	75		0	0	100		50	0	50		
PHF	.250	.000	.000	.250	.750	.250	.750	1.00	.000	.000	.667	.667	.250	.000	.250	.500	.875

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline AM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	**1**	0	3	**4**	0	0	3	3	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	**4**	4	0	0	3	3	0	0	0	0
+30 mins.	**1**	0	0	**1**	1	0	3	4	0	0	4	4	**1**	0	0	1
+45 mins.	0	0	0	0	1	**1**	2	4	0	0	**6**	**6**	0	0	0	0
Total Volume	1	0	0	1	3	1	12	16	0	0	16	16	1	0	1	2
% App. Total	100	0	0		18.8	6.2	75		0	0	100		50	0	50	
PHF	.250	.000	.000	.250	.750	.250	.750	1.000	.000	.000	.667	.667	.250	.000	.250	.500

Counts Unlimited
PO Box 1178
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(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

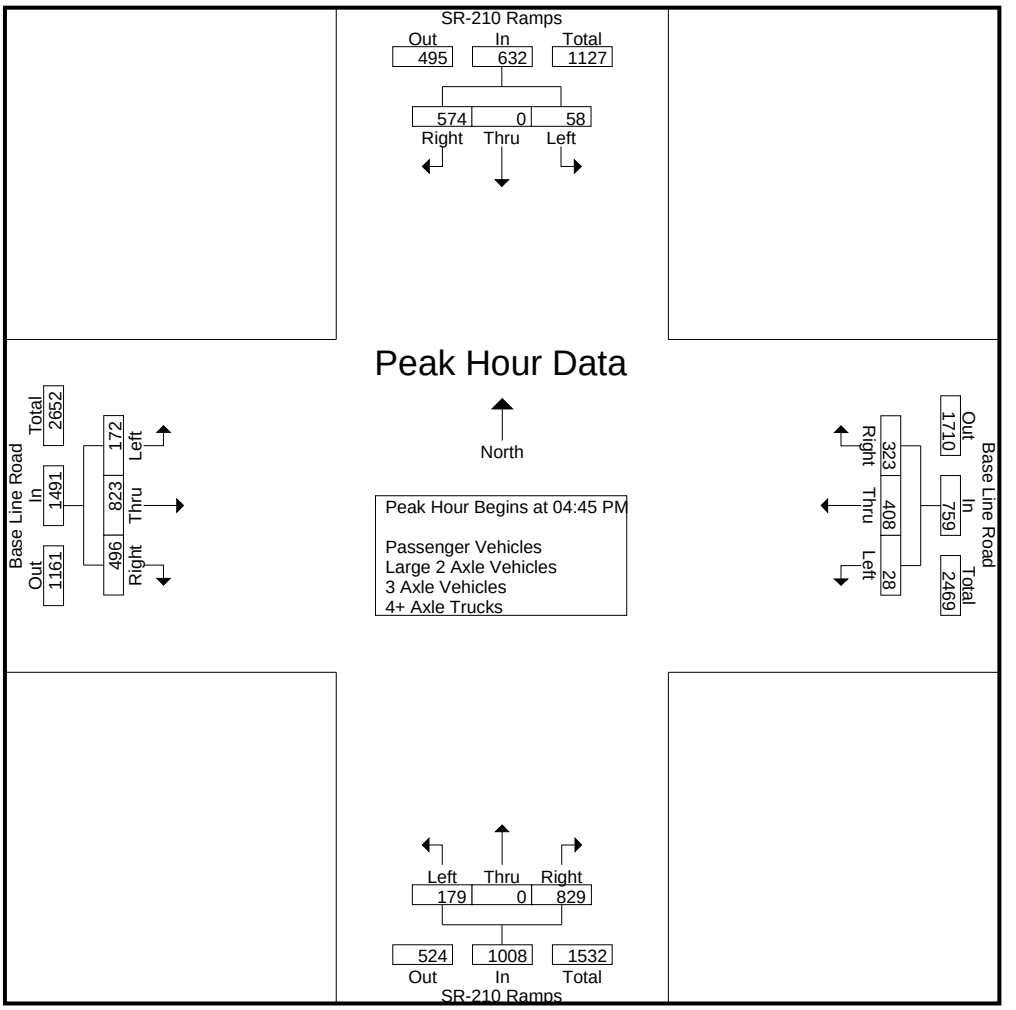
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	14	0	117	131	6	80	68	154	46	0	197	243	33	181	136	350	878
04:15 PM	17	0	115	132	10	101	80	191	27	0	138	165	45	166	123	334	822
04:30 PM	14	0	112	126	10	90	86	186	47	0	168	215	41	198	115	354	881
04:45 PM	15	0	149	164	8	107	84	199	43	0	185	228	40	197	126	363	954
Total	60	0	493	553	34	378	318	730	163	0	688	851	159	742	500	1401	3535
05:00 PM	13	0	134	147	12	94	66	172	55	0	217	272	45	201	156	402	993
05:15 PM	13	0	149	162	4	123	96	223	35	0	194	229	55	238	125	418	1032
05:30 PM	17	0	142	159	4	84	77	165	46	0	233	279	32	187	89	308	911
05:45 PM	12	0	140	152	9	100	81	190	45	0	223	268	38	212	94	344	954
Total	55	0	565	620	29	401	320	750	181	0	867	1048	170	838	464	1472	3890
Grand Total	115	0	1058	1173	63	779	638	1480	344	0	1555	1899	329	1580	964	2873	7425
Apprch %	9.8	0	90.2		4.3	52.6	43.1		18.1	0	81.9		11.5	55	33.6		
Total %	1.5	0	14.2	15.8	0.8	10.5	8.6	19.9	4.6	0	20.9	25.6	4.4	21.3	13	38.7	
Passenger Vehicles	112	0	1052	1164	59	775	634	1468	332	0	1524	1856	320	1574	958	2852	7340
% Passenger Vehicles	97.4	0	99.4	99.2	93.7	99.5	99.4	99.2	96.5	0	98	97.7	97.3	99.6	99.4	99.3	98.9
Large 2 Axle Vehicles	1	0	4	5	2	4	4	10	11	0	17	28	8	6	5	19	62
% Large 2 Axle Vehicles	0.9	0	0.4	0.4	3.2	0.5	0.6	0.7	3.2	0	1.1	1.5	2.4	0.4	0.5	0.7	0.8
3 Axle Vehicles	1	0	0	1	0	0	0	0	1	0	13	14	0	0	0	0	15
% 3 Axle Vehicles	0.9	0	0	0.1	0	0	0	0	0.3	0	0.8	0.7	0	0	0	0	0.2
4+ Axle Trucks	1	0	2	3	2	0	0	2	0	0	1	1	1	0	1	2	8
% 4+ Axle Trucks	0.9	0	0.2	0.3	3.2	0	0	0.1	0	0	0.1	0.1	0.3	0	0.1	0.1	0.1

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	15	0	**149**	**164**	8	107	84	199	43	0	185	228	40	197	126	363	954
05:00 PM	13	0	134	147	**12**	94	66	172	**55**	0	217	272	45	201	**156**	402	993
05:15 PM	13	0	149	162	4	**123**	**96**	**223**	35	0	194	229	**55**	**238**	125	**418**	**1032**
05:30 PM	**17**	0	142	159	4	84	77	165	46	0	**233**	**279**	32	187	89	308	911
Total Volume	58	0	574	632	28	408	323	759	179	0	829	1008	172	823	496	1491	3890
% App. Total	9.2	0	90.8		3.7	53.8	42.6		17.8	0	82.2		11.5	55.2	33.3		
PHF	.853	.000	.963	.963	.583	.829	.841	.851	.814	.000	.889	.903	.782	.864	.795	.892	.942

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:30 PM				05:00 PM				04:30 PM			
+0 mins.	15	0	**149**	**164**	10	90	86	186	**55**	0	217	272	41	198	115	354
+15 mins.	13	0	134	147	8	107	84	199	35	0	194	229	40	197	126	363
+30 mins.	13	0	149	162	**12**	94	66	172	46	0	**233**	**279**	45	201	**156**	402
+45 mins.	**17**	0	142	159	4	**123**	**96**	**223**	45	0	223	268	**55**	**238**	125	**418**
Total Volume	58	0	574	632	34	414	332	780	181	0	867	1048	181	834	522	1537
% App. Total	9.2	0	90.8		4.4	53.1	42.6		17.3	0	82.7		11.8	54.3	34	
PHF	.853	.000	.963	.963	.708	.841	.865	.874	.823	.000	.930	.939	.823	.876	.837	.919

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- Passenger Vehicles

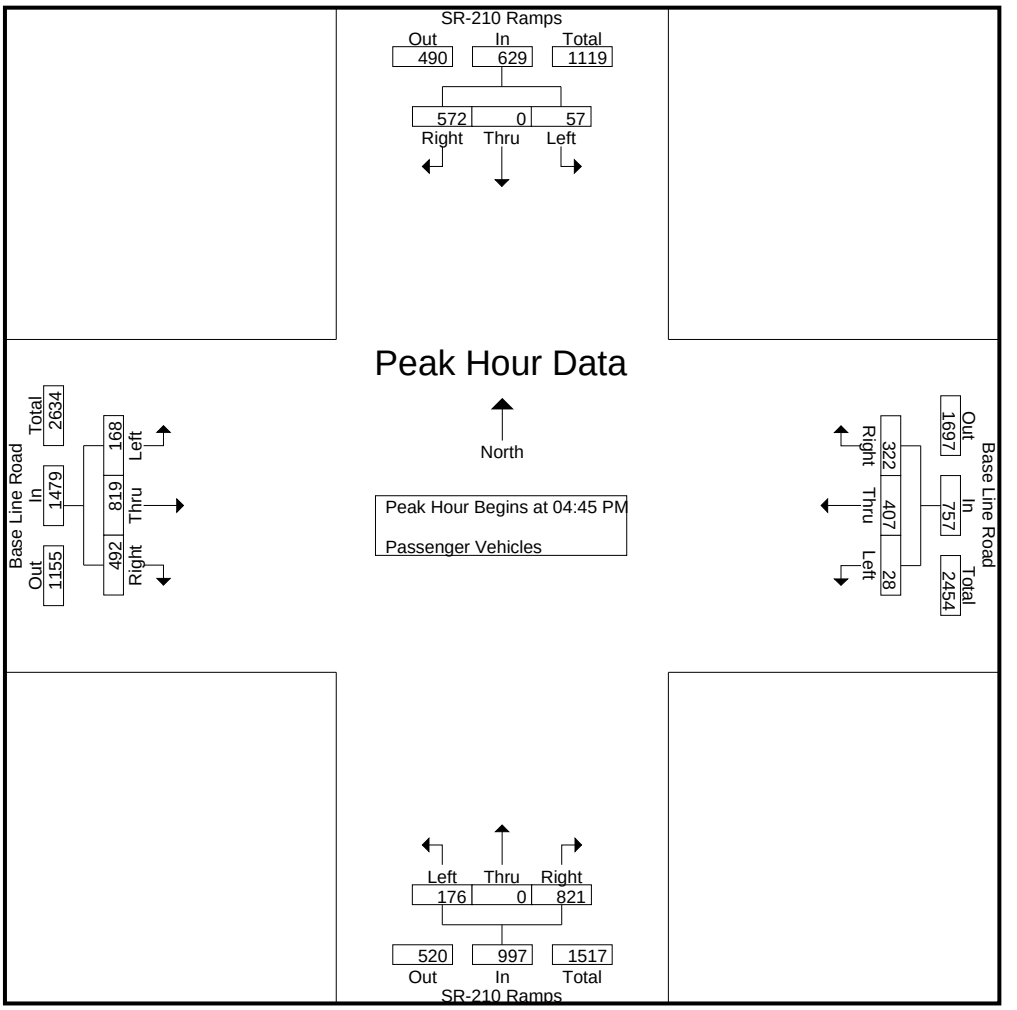
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	13	0	117	130	5	79	66	150	43	0	190	233	31	181	135	347	860
04:15 PM	17	0	113	130	9	101	79	189	27	0	129	156	45	166	122	333	808
04:30 PM	13	0	111	124	10	89	86	185	42	0	164	206	40	197	115	352	867
04:45 PM	15	0	149	164	8	107	84	199	42	0	184	226	39	195	126	360	949
Total	58	0	490	548	32	376	315	723	154	0	667	821	155	739	498	1392	3484
05:00 PM	13	0	134	147	12	93	66	171	55	0	213	268	45	200	155	400	986
05:15 PM	12	0	147	159	4	123	96	223	33	0	193	226	52	237	123	412	1020
05:30 PM	17	0	142	159	4	84	76	164	46	0	231	277	32	187	88	307	907
05:45 PM	12	0	139	151	7	99	81	187	44	0	220	264	36	211	94	341	943
Total	54	0	562	616	27	399	319	745	178	0	857	1035	165	835	460	1460	3856
Grand Total	112	0	1052	1164	59	775	634	1468	332	0	1524	1856	320	1574	958	2852	7340
Apprch %	9.6	0	90.4		4	52.8	43.2		17.9	0	82.1		11.2	55.2	33.6		
Total %	1.5	0	14.3	15.9	0.8	10.6	8.6	20	4.5	0	20.8	25.3	4.4	21.4	13.1	38.9	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	15	0	**149**	**164**	8	107	84	199	42	0	184	226	39	195	126	360	949
05:00 PM	13	0	134	147	**12**	93	66	171	**55**	0	213	268	45	200	**155**	400	986
05:15 PM	12	0	147	159	4	**123**	**96**	**223**	33	0	193	226	**52**	**237**	123	**412**	**1020**
05:30 PM	**17**	0	142	159	4	84	76	164	46	0	**231**	**277**	32	187	88	307	907
Total Volume	57	0	572	629	28	407	322	757	176	0	821	997	168	819	492	1479	3862
% App. Total	9.1	0	90.9		3.7	53.8	42.5		17.7	0	82.3		11.4	55.4	33.3		
PHF	.838	.000	.960	.959	.583	.827	.839	.849	.800	.000	.889	.900	.808	.864	.794	.897	.947

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	15	0	**149**	**164**	8	107	84	199	42	0	184	226	39	195	126	360
+15 mins.	13	0	134	147	**12**	93	66	171	**55**	0	213	268	45	200	**155**	400
+30 mins.	12	0	147	159	4	**123**	**96**	**223**	33	0	193	226	**52**	**237**	123	**412**
+45 mins.	**17**	0	142	159	4	84	76	164	46	0	**231**	**277**	32	187	88	307
Total Volume	57	0	572	629	28	407	322	757	176	0	821	997	168	819	492	1479
% App. Total	9.1	0	90.9		3.7	53.8	42.5		17.7	0	82.3		11.4	55.4	33.3	
PHF	.838	.000	.960	.959	.583	.827	.839	.849	.800	.000	.889	.900	.808	.864	.794	.897

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

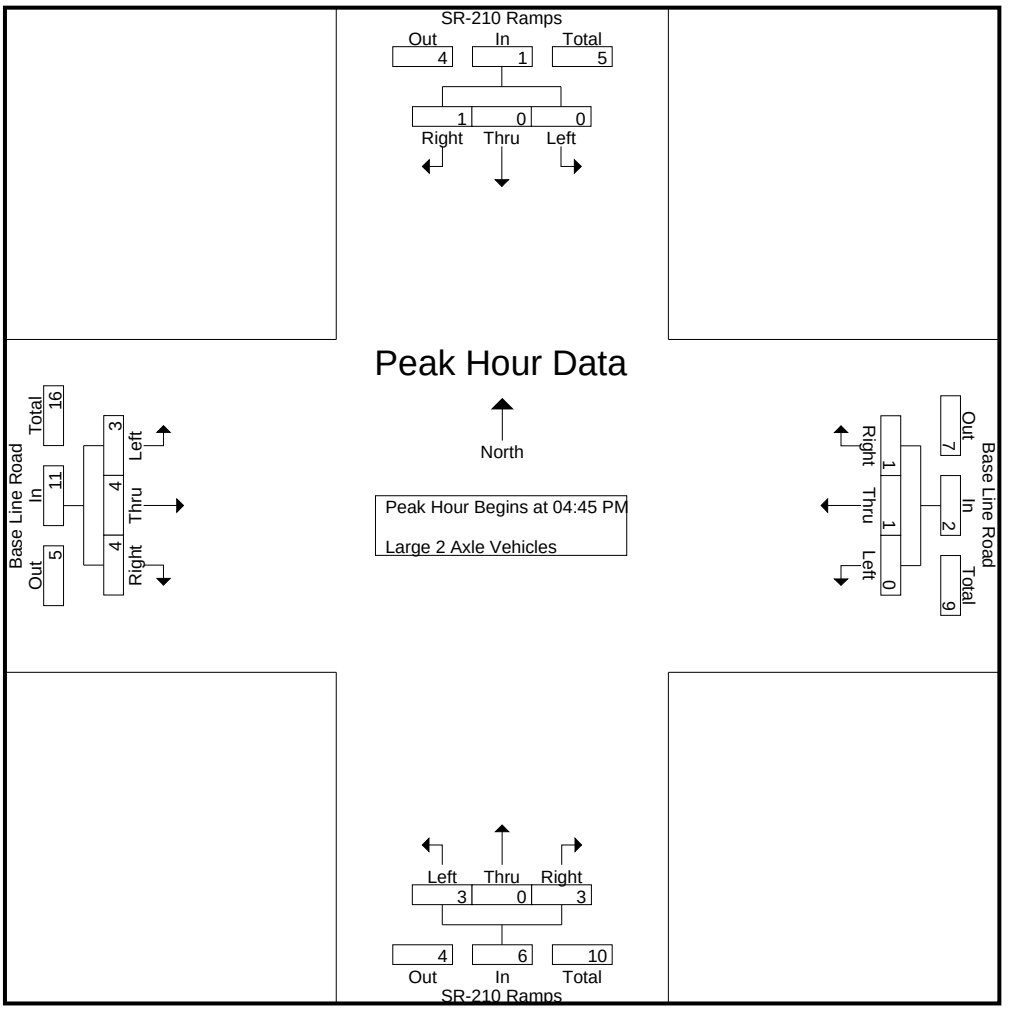
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	2	3	3	0	6	9	2	0	0	2	14
04:15 PM	0	0	1	1	0	0	1	1	0	0	4	4	0	0	1	1	7
04:30 PM	1	0	1	2	0	1	0	1	4	0	2	6	1	1	0	2	11
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1	2	0	3	4
Total	1	0	2	3	0	2	3	5	8	0	12	20	4	3	1	8	36
05:00 PM	0	0	0	0	0	1	0	1	0	0	2	2	0	1	1	2	5
05:15 PM	0	0	1	1	0	0	0	0	2	0	1	3	2	1	2	5	9
05:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2
05:45 PM	0	0	1	1	2	1	0	3	1	0	2	3	2	1	0	3	10
Total	0	0	2	2	2	2	1	5	3	0	5	8	4	3	4	11	26
Grand Total	1	0	4	5	2	4	4	10	11	0	17	28	8	6	5	19	62
Apprch %	20	0	80		20	40	40		39.3	0	60.7		42.1	31.6	26.3		
Total %	1.6	0	6.5	8.1	3.2	6.5	6.5	16.1	17.7	0	27.4	45.2	12.9	9.7	8.1	30.6	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1	**2**	0	3	4
05:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	**2**	2	0	1	1	2	5
05:15 PM	0	0	**1**	**1**	0	0	0	0	**2**	0	1	**3**	**2**	1	**2**	**5**	**9**
05:30 PM	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	1	1	2
Total Volume	0	0	1	1	0	1	1	2	3	0	3	6	3	4	4	11	20
% App. Total	0	0	100		0	50	50		50	0	50		27.3	36.4	36.4		
PHF	.000	.000	.250	.250	.000	.250	.250	.500	.375	.000	.375	.500	.375	.500	.500	.550	.556

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	1	0	0	1	1	**2**	0	3
+15 mins.	0	0	0	0	0	**1**	0	**1**	0	0	**2**	2	0	1	1	2
+30 mins.	0	0	**1**	**1**	0	0	0	0	**2**	0	1	**3**	**2**	1	**2**	**5**
+45 mins.	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	1	1
Total Volume	0	0	1	1	0	1	1	2	3	0	3	6	3	4	4	11
% App. Total	0	0	100		0	50	50		50	0	50		27.3	36.4	36.4	
PHF	.000	.000	.250	.250	.000	.250	.250	.500	.375	.000	.375	.500	.375	.500	.500	.550

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

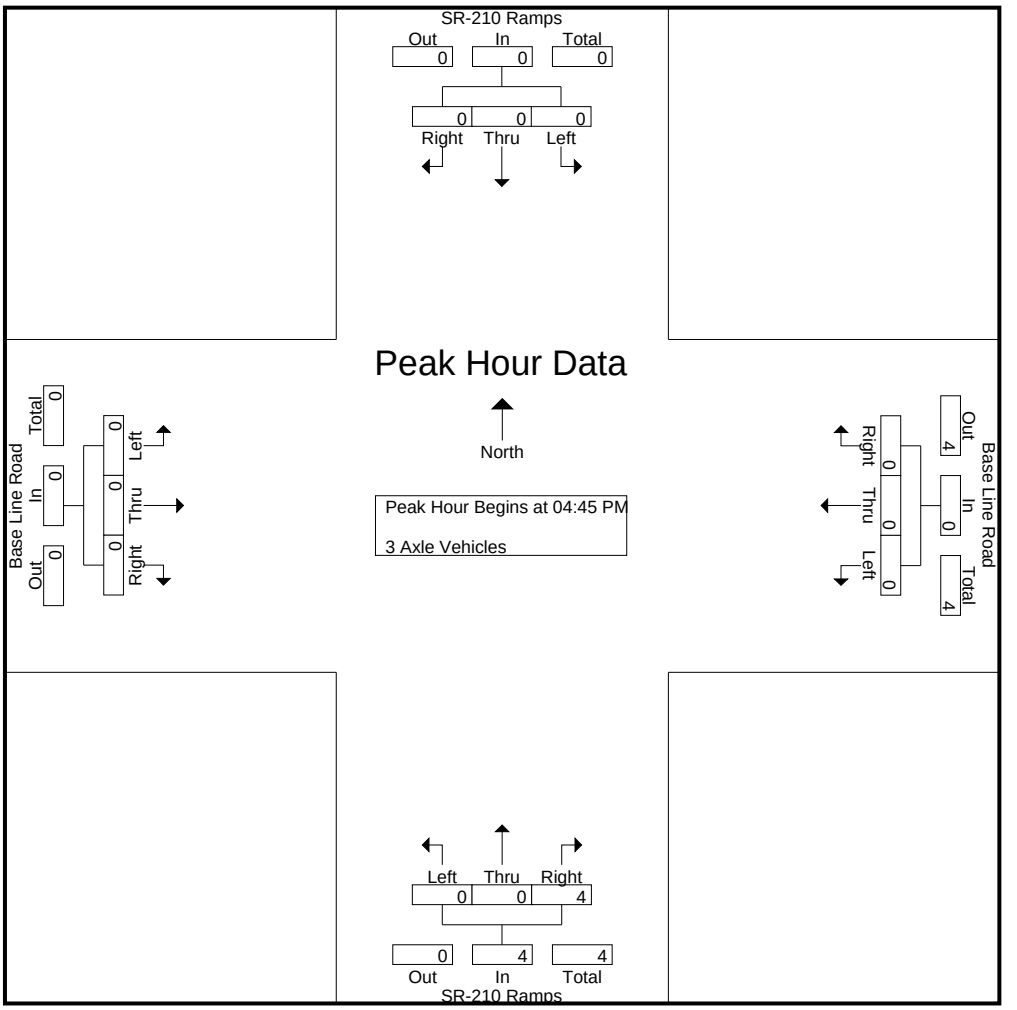
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	5
04:30 PM	0	0	0	0	0	0	0	0	1	0	2	3	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	1	0	0	1	0	0	0	0	1	0	9	10	0	0	0	0	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	4
Grand Total	1	0	0	1	0	0	0	0	1	0	13	14	0	0	0	0	15
Apprch %	100	0	0		0	0	0		7.1	0	92.9		0	0	0		
Total %	6.7	0	0	6.7	0	0	0	0	6.7	0	86.7	93.3	0	0	0	0	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	**2**	**2**	0	0	0	0	**2**
Total Volume	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	4
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500	.000	.000	.000	.000	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	**2**	**2**	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

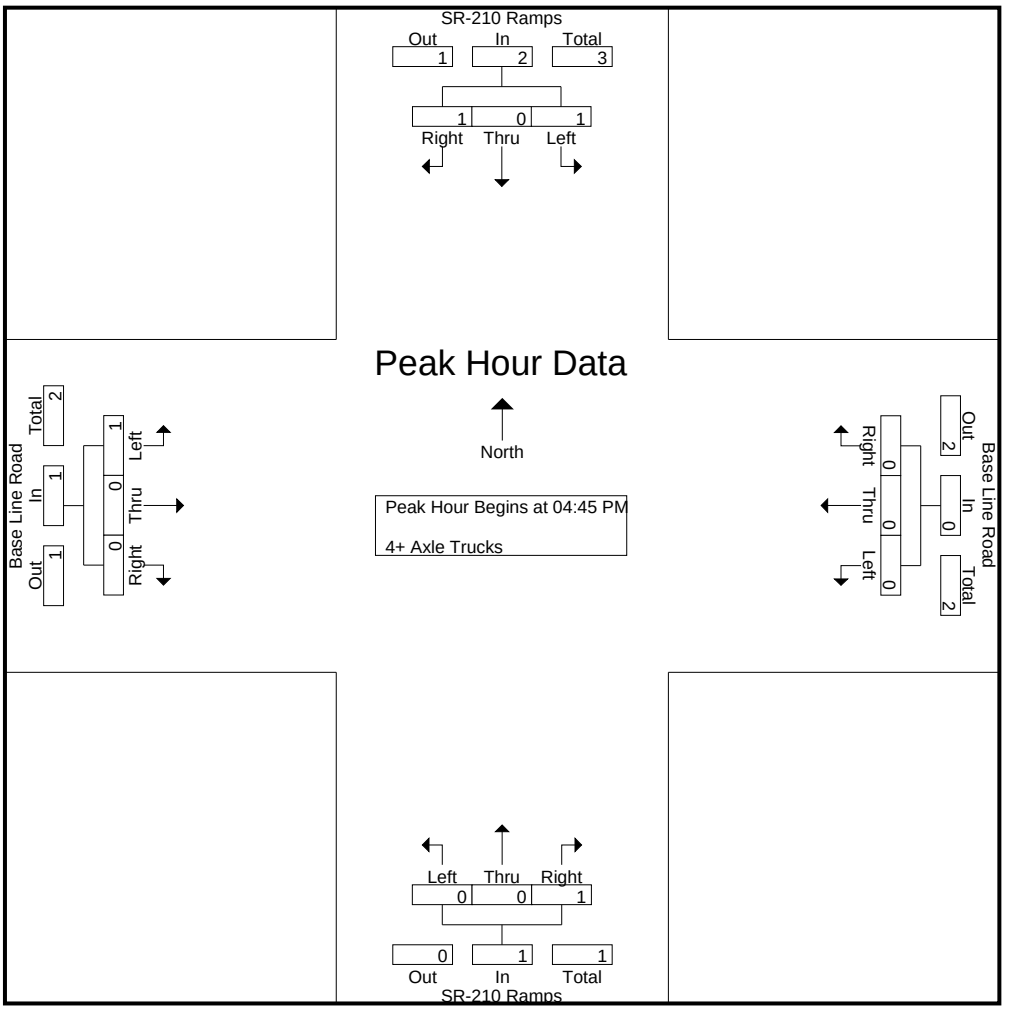
	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	2
04:15 PM	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	2	0	0	2	0	0	0	0	0	0	1	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:15 PM	1	0	1	2	0	0	0	0	0	0	0	0	1	0	0	1	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	2	0	0	0	0	0	0	1	1	1	0	0	1	4
Grand Total	1	0	2	3	2	0	0	2	0	0	1	1	1	0	1	2	8
Apprch %	33.3	0	66.7		100	0	0		0	0	100		50	0	50		
Total %	12.5	0	25	37.5	25	0	0	25	0	0	12.5	12.5	12.5	0	12.5	25	

	SR-210 Ramps Southbound				Base Line Road Westbound				SR-210 Ramps Northbound				Base Line Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
05:15 PM	**1**	0	**1**	**2**	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**3**
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	2	0	0	0	0	0	0	1	1	1	0	0	1	4
% App. Total	50	0	50		0	0	0		0	0	100		100	0	0		
PHF	.250	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.250	.333

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: SR-210 Ramps
E/W: Base Line Road
Weather: Clear

File Name : 02_UPL_210_Baseline PM
Site Code : 99918442
Start Date : 9/25/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+30 mins.	**1**	0	**1**	**2**	0	0	0	0	0	0	0	0	**1**	0	0	**1**
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	2	0	0	0	0	0	0	1	1	1	0	0	1
% App. Total	50	0	50		0	0	0		0	0	100		100	0	0	
PHF	.250	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Benson Avenue
E/W: Baseline Road/16th Street
Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

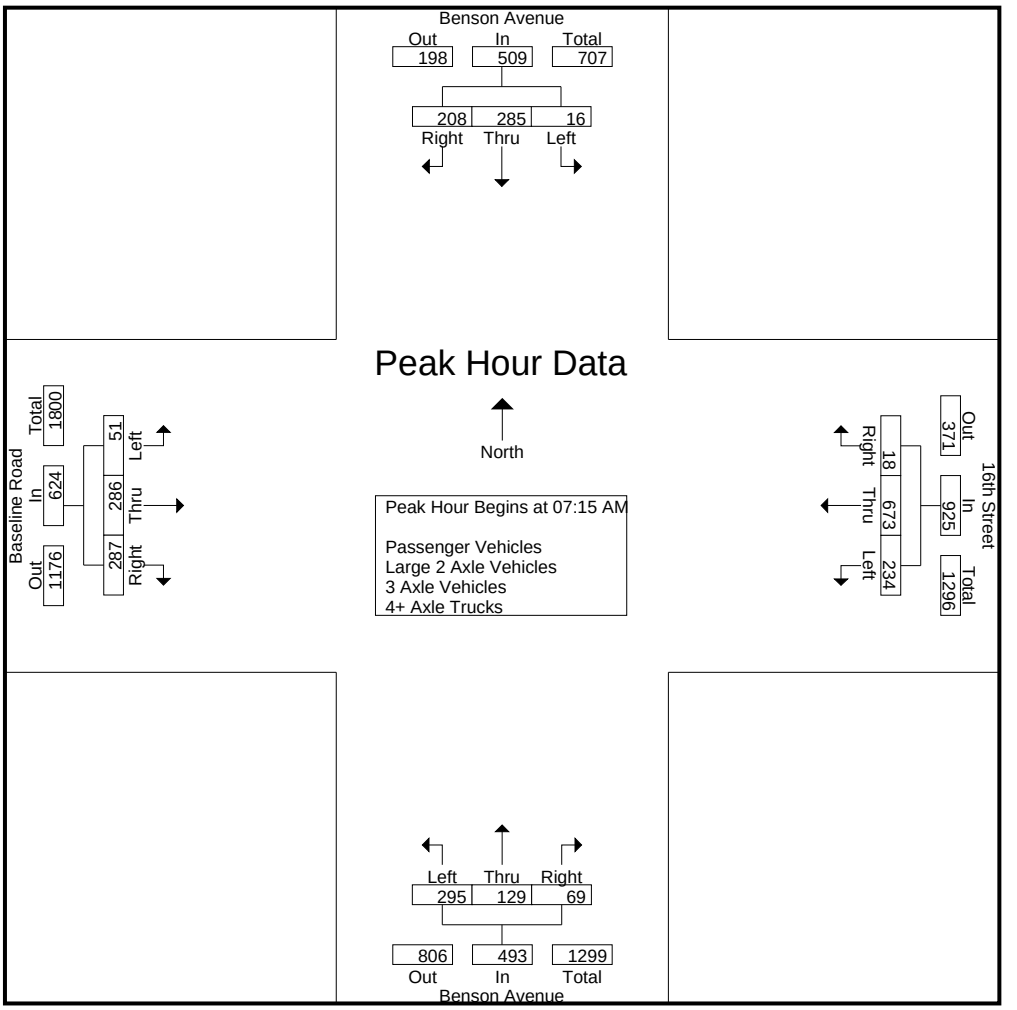
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	61	45	110	40	139	6	185	73	17	15	105	10	39	48	97	497
07:15 AM	0	82	59	141	69	196	6	271	70	25	17	112	4	47	43	94	618
07:30 AM	5	76	54	135	70	173	3	246	88	35	18	141	12	86	84	182	704
07:45 AM	6	76	47	129	55	146	6	207	72	31	18	121	21	75	97	193	650
Total	15	295	205	515	234	654	21	909	303	108	68	479	47	247	272	566	2469
08:00 AM	5	51	48	104	40	158	3	201	65	38	16	119	14	78	63	155	579
08:15 AM	4	58	32	94	48	165	4	217	52	18	18	88	11	68	58	137	536
08:30 AM	3	49	62	114	52	146	4	202	60	33	17	110	11	68	60	139	565
08:45 AM	2	51	27	80	46	101	1	148	62	32	22	116	11	74	65	150	494
Total	14	209	169	392	186	570	12	768	239	121	73	433	47	288	246	581	2174
Grand Total	29	504	374	907	420	1224	33	1677	542	229	141	912	94	535	518	1147	4643
Apprch %	3.2	55.6	41.2		25	73	2		59.4	25.1	15.5		8.2	46.6	45.2		
Total %	0.6	10.9	8.1	19.5	9	26.4	0.7	36.1	11.7	4.9	3	19.6	2	11.5	11.2	24.7	
Passenger Vehicles	27	498	374	899	414	1216	32	1662	524	222	133	879	94	530	509	1133	4573
% Passenger Vehicles	93.1	98.8	100	99.1	98.6	99.3	97	99.1	96.7	96.9	94.3	96.4	100	99.1	98.3	98.8	98.5
Large 2 Axle Vehicles	2	4	0	6	5	3	1	9	10	7	8	25	0	4	6	10	50
% Large 2 Axle Vehicles	6.9	0.8	0	0.7	1.2	0.2	3	0.5	1.8	3.1	5.7	2.7	0	0.7	1.2	0.9	1.1
3 Axle Vehicles	0	0	0	0	1	1	0	2	3	0	0	3	0	1	1	2	7
% 3 Axle Vehicles	0	0	0	0	0.2	0.1	0	0.1	0.6	0	0	0.3	0	0.2	0.2	0.2	0.2
4+ Axle Trucks	0	2	0	2	0	4	0	4	5	0	0	5	0	0	2	2	13
% 4+ Axle Trucks	0	0.4	0	0.2	0	0.3	0	0.2	0.9	0	0	0.5	0	0	0.4	0.2	0.3

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**82**	**59**	**141**	69	**196**	**6**	**271**	70	25	17	112	4	47	43	94	618
07:30 AM	5	76	54	135	**70**	173	3	246	**88**	35	**18**	**141**	12	**86**	84	182	**704**
07:45 AM	**6**	76	47	129	55	146	6	207	72	31	18	121	**21**	75	**97**	**193**	650
08:00 AM	5	51	48	104	40	158	3	201	65	**38**	16	119	14	78	63	155	579
Total Volume	16	285	208	509	234	673	18	925	295	129	69	493	51	286	287	624	2551
% App. Total	3.1	56	40.9		25.3	72.8	1.9		59.8	26.2	14		8.2	45.8	46		
PHF	.667	.869	.881	.902	.836	.858	.750	.853	.838	.849	.958	.874	.607	.831	.740	.808	.906

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City of Upland
N/S: Benson Avenue
E/W: Baseline Road/16th Street
Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:15 AM				07:30 AM			
+0 mins.	4	61	45	110	69	**196**	**6**	**271**	70	25	17	112	12	**86**	84	182
+15 mins.	0	**82**	**59**	**141**	**70**	173	3	246	**88**	35	**18**	**141**	**21**	75	**97**	**193**
+30 mins.	5	76	54	135	55	146	6	207	72	31	18	121	14	78	63	155
+45 mins.	**6**	76	47	129	40	158	3	201	65	**38**	16	119	11	68	58	137
Total Volume	15	295	205	515	234	673	18	925	295	129	69	493	58	307	302	667
% App. Total	2.9	57.3	39.8		25.3	72.8	1.9		59.8	26.2	14		8.7	46	45.3	
PHF	.625	.899	.869	.913	.836	.858	.750	.853	.838	.849	.958	.874	.690	.892	.778	.864

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Site Code : 99918442
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Groups Printed- Passenger Vehicles

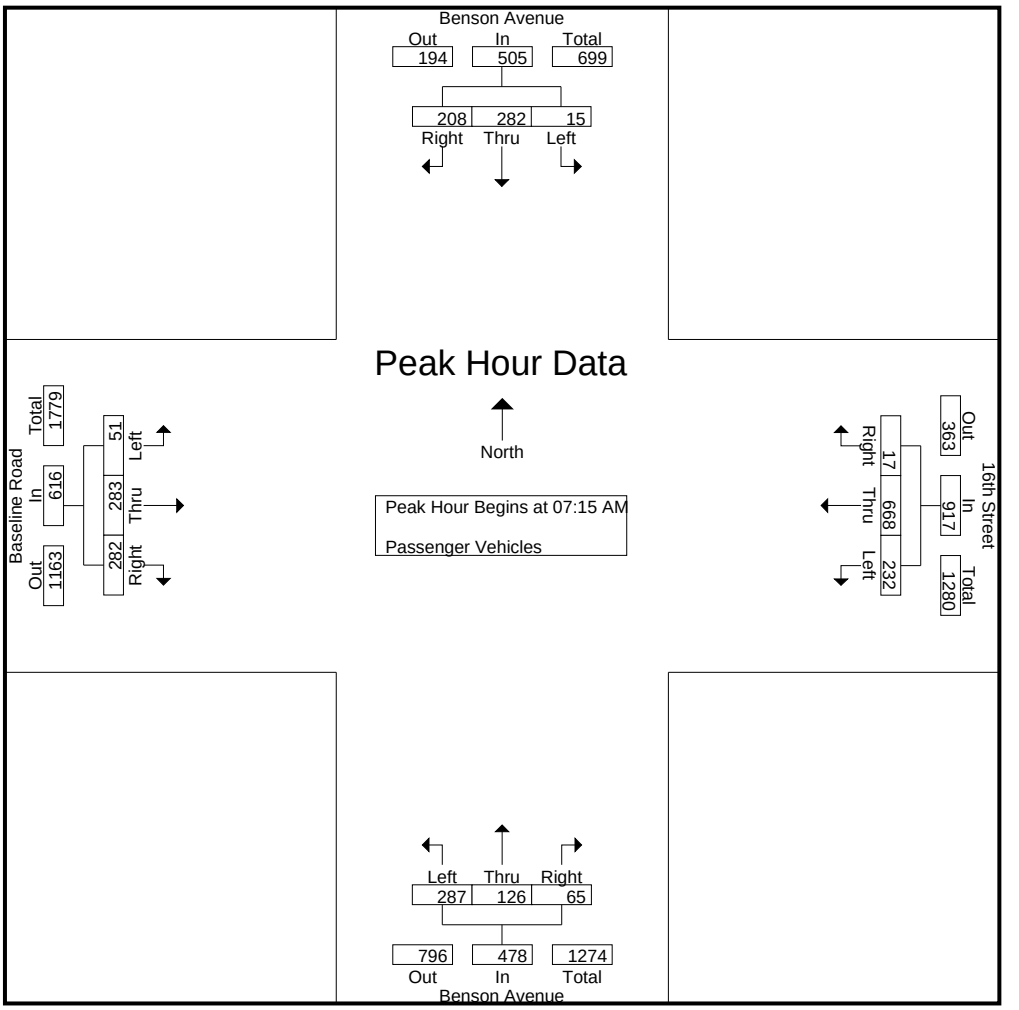
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	61	45	109	39	139	6	184	72	16	14	102	10	39	48	97	492
07:15 AM	0	81	59	140	69	195	6	270	68	25	16	109	4	46	43	93	612
07:30 AM	5	76	54	135	68	173	2	243	85	32	16	133	12	84	84	180	691
07:45 AM	6	76	47	129	55	146	6	207	69	31	18	118	21	75	94	190	644
Total	14	294	205	513	231	653	20	904	294	104	64	462	47	244	269	560	2439
08:00 AM	4	49	48	101	40	154	3	197	65	38	15	118	14	78	61	153	569
08:15 AM	4	56	32	92	48	162	4	214	49	17	17	83	11	66	55	132	521
08:30 AM	3	49	62	114	50	146	4	200	57	32	16	105	11	68	60	139	558
08:45 AM	2	50	27	79	45	101	1	147	59	31	21	111	11	74	64	149	486
Total	13	204	169	386	183	563	12	758	230	118	69	417	47	286	240	573	2134
Grand Total	27	498	374	899	414	1216	32	1662	524	222	133	879	94	530	509	1133	4573
Apprch %	3	55.4	41.6		24.9	73.2	1.9		59.6	25.3	15.1		8.3	46.8	44.9		
Total %	0.6	10.9	8.2	19.7	9.1	26.6	0.7	36.3	11.5	4.9	2.9	19.2	2.1	11.6	11.1	24.8	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**81**	**59**	**140**	**69**	**195**	**6**	**270**	68	25	16	109	4	46	43	93	612
07:30 AM	5	76	54	135	68	173	2	243	**85**	32	16	**133**	12	**84**	84	180	**691**
07:45 AM	**6**	76	47	129	55	146	6	207	69	31	**18**	118	**21**	75	**94**	**190**	644
08:00 AM	4	49	48	101	40	154	3	197	65	**38**	15	118	14	78	61	153	569
Total Volume	15	282	208	505	232	668	17	917	287	126	65	478	51	283	282	616	2516
% App. Total	3	55.8	41.2		25.3	72.8	1.9		60	26.4	13.6		8.3	45.9	45.8		
PHF	.625	.870	.881	.902	.841	.856	.708	.849	.844	.829	.903	.898	.607	.842	.750	.811	.910

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File Name : 04_UPL_Benson_Baseline_16th AM
Site Code : 99918442
Start Date : 5/23/2018
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	**81**	**59**	**140**	**69**	**195**	**6**	**270**	68	25	16	109	4	46	43	93
+15 mins.	5	76	54	135	68	173	2	243	**85**	32	16	**133**	12	**84**	84	180
+30 mins.	**6**	76	47	129	55	146	6	207	69	31	**18**	118	**21**	75	**94**	**190**
+45 mins.	4	49	48	101	40	154	3	197	65	**38**	15	118	14	78	61	153
Total Volume	15	282	208	505	232	668	17	917	287	126	65	478	51	283	282	616
% App. Total	3	55.8	41.2		25.3	72.8	1.9		60	26.4	13.6		8.3	45.9	45.8	
PHF	.625	.870	.881	.902	.841	.856	.708	.849	.844	.829	.903	.898	.607	.842	.750	.811

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City of Upland
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File Name : 04_UPL_Benson_Baseline_16th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

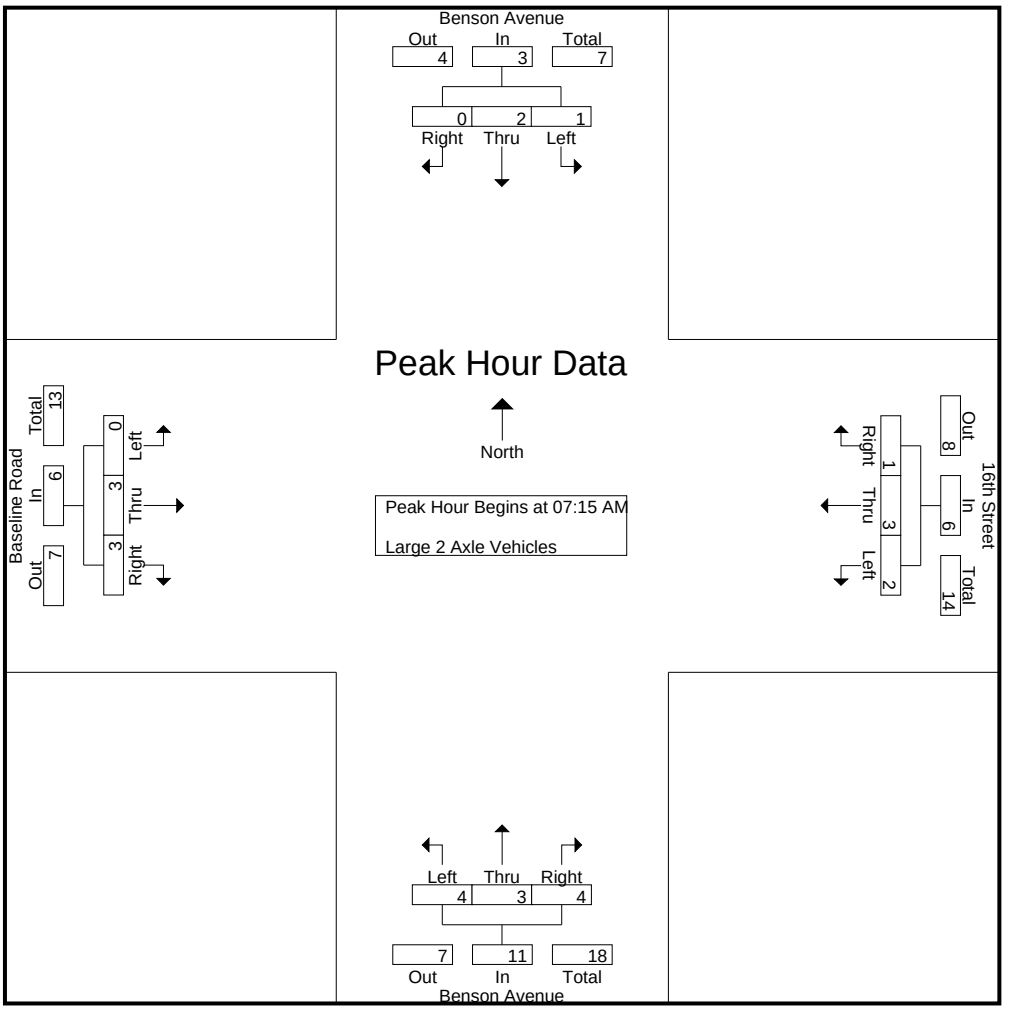
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	0	0	1	1	0	0	1	1	1	1	3	0	0	0	0	5
07:15 AM	0	0	0	0	0	1	0	1	1	0	1	2	0	1	0	1	4
07:30 AM	0	0	0	0	2	0	1	3	1	3	2	6	0	2	0	2	11
07:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	1	3
Total	1	0	0	1	3	1	1	5	5	4	4	13	0	3	1	4	23
08:00 AM	1	2	0	3	0	2	0	2	0	0	1	1	0	0	2	2	8
08:15 AM	0	1	0	1	0	0	0	0	2	1	1	4	0	1	2	3	8
08:30 AM	0	0	0	0	1	0	0	1	2	1	1	4	0	0	0	0	5
08:45 AM	0	1	0	1	1	0	0	1	1	1	1	3	0	0	1	1	6
Total	1	4	0	5	2	2	0	4	5	3	4	12	0	1	5	6	27
Grand Total	2	4	0	6	5	3	1	9	10	7	8	25	0	4	6	10	50
Apprch %	33.3	66.7	0		55.6	33.3	11.1		40	28	32		0	40	60		
Total %	4	8	0	12	10	6	2	18	20	14	16	50	0	8	12	20	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	1	0	1	1	0	1	2	0	1	0	1	4
07:30 AM	0	0	0	0	**2**	0	**1**	**3**	1	**3**	**2**	**6**	0	**2**	0	**2**	**11**
07:45 AM	0	0	0	0	0	0	0	0	**2**	0	0	2	0	0	1	1	3
08:00 AM	**1**	**2**	0	**3**	0	**2**	0	2	0	0	1	1	0	0	**2**	2	8
Total Volume	1	2	0	3	2	3	1	6	4	3	4	11	0	3	3	6	26
% App. Total	33.3	66.7	0		33.3	50	16.7		36.4	27.3	36.4		0	50	50		
PHF	.250	.250	.000	.250	.250	.375	.250	.500	.500	.250	.500	.458	.000	.375	.375	.750	.591

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File Name : 04_UPL_Benson_Baseline_16th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	1	0	1	1	0	1	2	0	1	0	1
+15 mins.	0	0	0	0	**2**	0	**1**	**3**	1	**3**	**2**	**6**	0	**2**	0	**2**
+30 mins.	0	0	0	0	0	0	0	0	**2**	0	0	2	0	0	1	1
+45 mins.	**1**	**2**	0	**3**	0	**2**	0	2	0	0	1	1	0	0	**2**	2
Total Volume	1	2	0	3	2	3	1	6	4	3	4	11	0	3	3	6
% App. Total	33.3	66.7	0		33.3	50	16.7		36.4	27.3	36.4		0	50	50	
PHF	.250	.250	.000	.250	.250	.375	.250	.500	.500	.250	.500	.458	.000	.375	.375	.750

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City of Upland
N/S: Benson Avenue
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Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

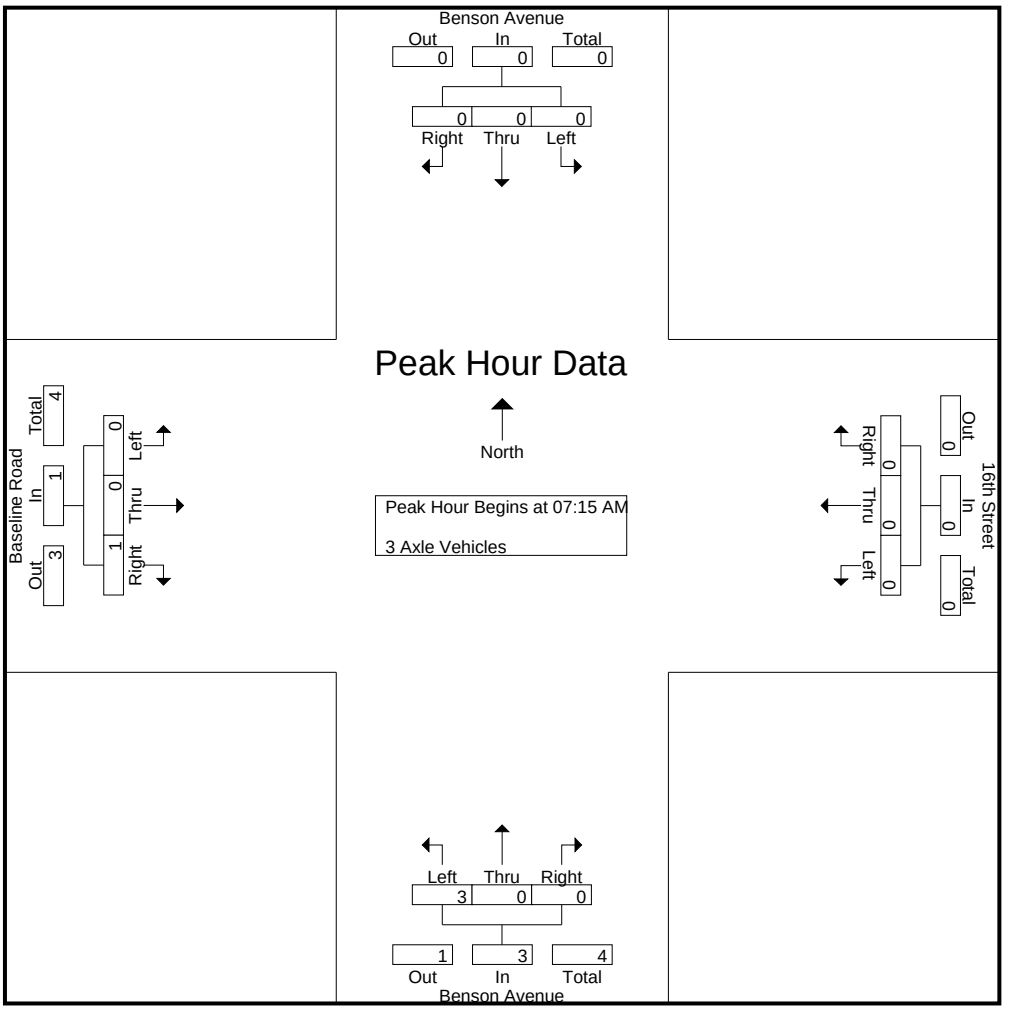
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
Total	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	1	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	2	0	0	0	0	0	1	0	1	3
Grand Total	0	0	0	0	1	1	0	2	3	0	0	3	0	1	1	2	7
Apprch %	0	0	0		50	50	0		100	0	0		0	50	50		
Total %	0	0	0	0	14.3	14.3	0	28.6	42.9	0	0	42.9	0	14.3	14.3	28.6	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	**2**	0	0	**2**	0	0	0	0	**2**
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	**1**	**1**	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	1	4
% App. Total	0	0	0		0	0	0		100	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.375	.000	.000	.375	.000	.000	.250	.250	.500

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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	**2**	0	0	**2**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	**1**	**1**
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	1
% App. Total	0	0	0		0	0	0		100	0	0		0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.375	.000	.000	.375	.000	.000	.250	.250

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Page No : 1

Groups Printed- 4+ Axle Trucks

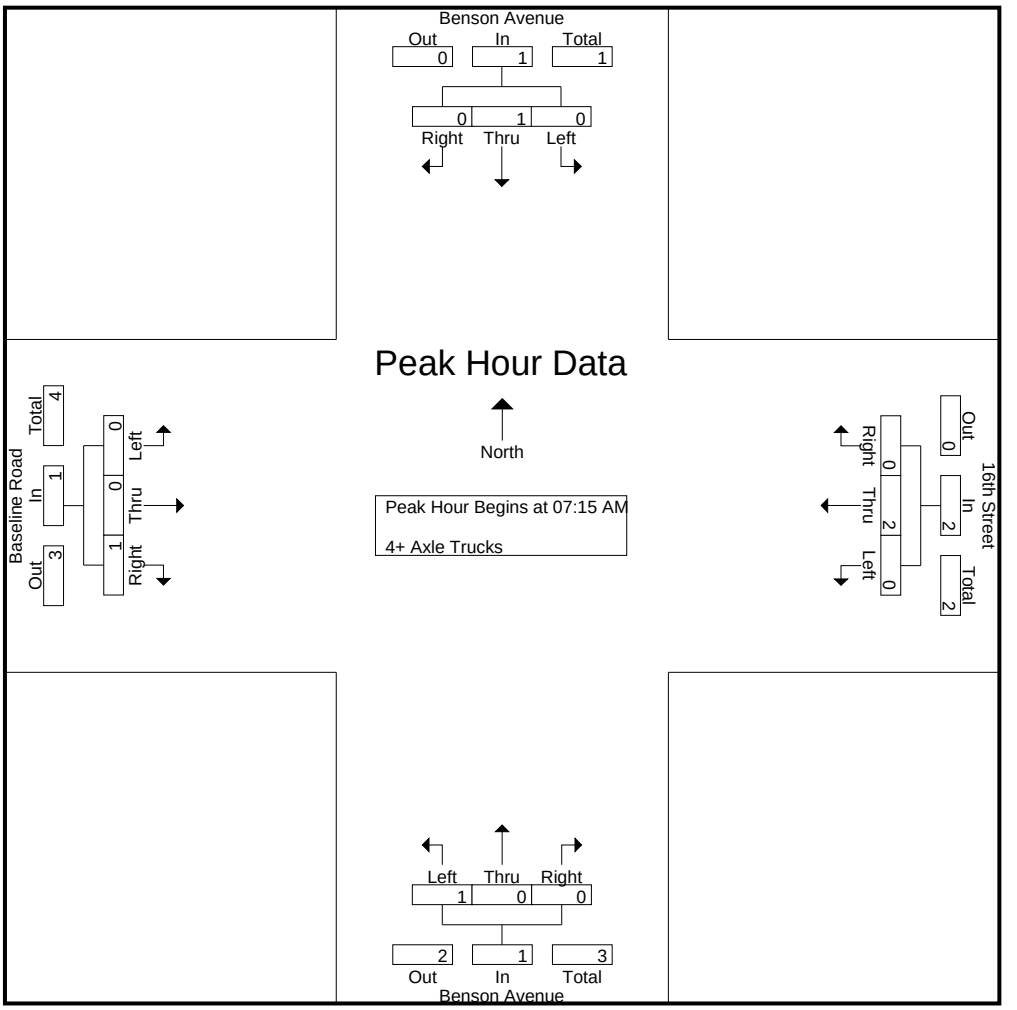
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	1	0	1	0	0	0	0	1	0	0	1	0	0	1	1	3
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
08:15 AM	0	1	0	1	0	2	0	2	1	0	0	1	0	0	1	1	5
08:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
Total	0	1	0	1	0	4	0	4	4	0	0	4	0	0	1	1	10
Grand Total	0	2	0	2	0	4	0	4	5	0	0	5	0	0	2	2	13
Apprch %	0	100	0		0	100	0		100	0	0		0	0	100		
Total %	0	15.4	0	15.4	0	30.8	0	30.8	38.5	0	0	38.5	0	0	15.4	15.4	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**1**	0	**1**	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**2**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
08:00 AM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0	2
Total Volume	0	1	0	1	0	2	0	2	1	0	0	1	0	0	1	1	5
% App. Total	0	100	0		0	100	0		100	0	0		0	0	100		
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.250	.000	.000	.250	.000	.000	.250	.250	.625

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City of Upland
N/S: Benson Avenue
E/W: Baseline Road/16th Street
Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th AM
Site Code : 99918442
Start Date : 5/23/2018
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	**1**	0	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+45 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	2	0	2	1	0	0	1	0	0	1	1
% App. Total	0	100	0		0	100	0		100	0	0		0	0	100	
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.250	.000	.000	.250	.000	.000	.250	.250

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City of Upland
N/S: Benson Avenue
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File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

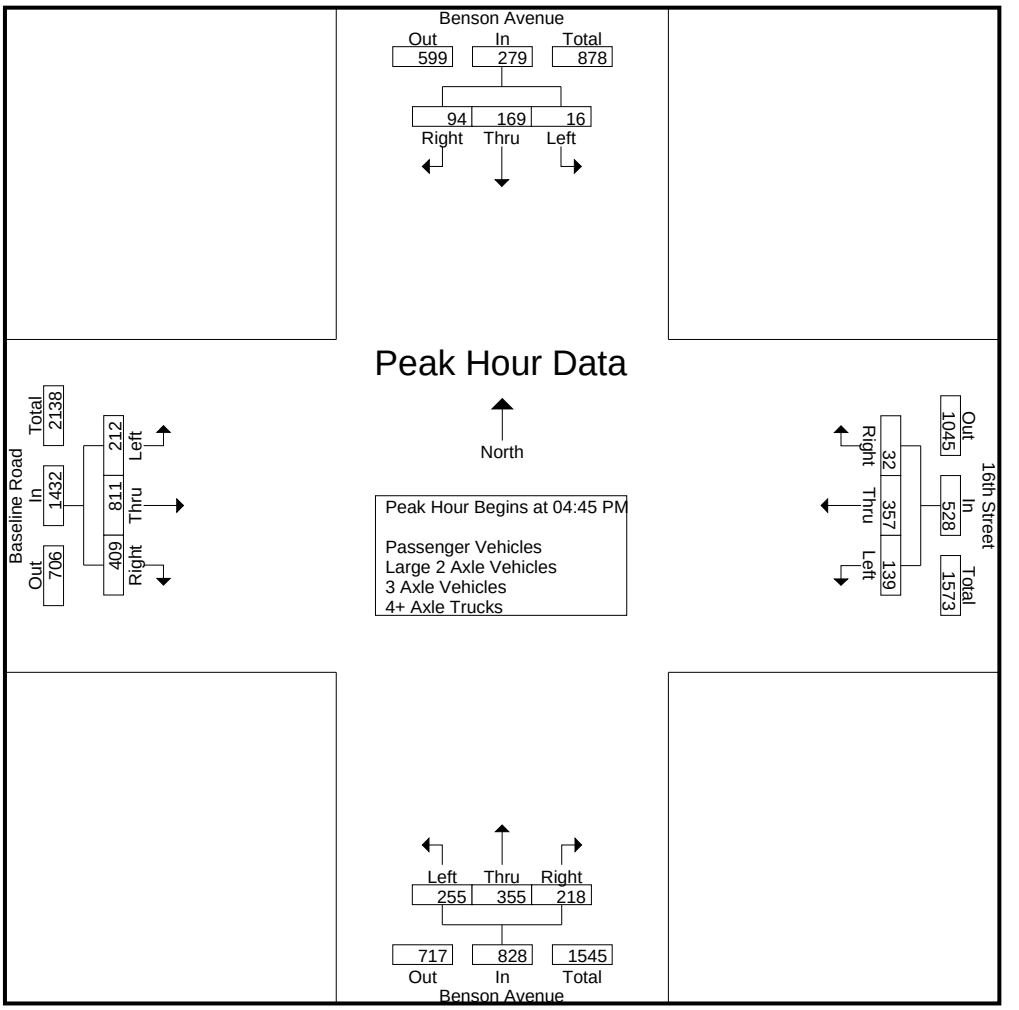
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	7	35	15	57	23	70	7	100	59	90	48	197	40	140	98	278	632
04:15 PM	5	51	21	77	30	108	7	145	56	74	48	178	39	161	76	276	676
04:30 PM	2	38	27	67	26	91	6	123	72	93	58	223	42	179	103	324	737
04:45 PM	3	52	35	90	37	110	6	153	60	89	47	196	68	169	91	328	767
Total	17	176	98	291	116	379	26	521	247	346	201	794	189	649	368	1206	2812
05:00 PM	6	40	21	67	32	80	11	123	65	74	53	192	52	207	104	363	745
05:15 PM	1	46	19	66	38	95	9	142	56	94	58	208	45	216	105	366	782
05:30 PM	6	31	19	56	32	72	6	110	74	98	60	232	47	219	109	375	773
05:45 PM	6	39	24	69	22	70	9	101	62	90	34	186	67	219	98	384	740
Total	19	156	83	258	124	317	35	476	257	356	205	818	211	861	416	1488	3040
Grand Total	36	332	181	549	240	696	61	997	504	702	406	1612	400	1510	784	2694	5852
Apprch %	6.6	60.5	33		24.1	69.8	6.1		31.3	43.5	25.2		14.8	56.1	29.1		
Total %	0.6	5.7	3.1	9.4	4.1	11.9	1	17	8.6	12	6.9	27.5	6.8	25.8	13.4	46	
Passenger Vehicles	36	328	180	544	232	689	61	982	500	699	399	1598	400	1502	775	2677	5801
% Passenger Vehicles	100	98.8	99.4	99.1	96.7	99	100	98.5	99.2	99.6	98.3	99.1	100	99.5	98.9	99.4	99.1
Large 2 Axle Vehicles	0	2	0	2	7	6	0	13	4	2	6	12	0	7	8	15	42
% Large 2 Axle Vehicles	0	0.6	0	0.4	2.9	0.9	0	1.3	0.8	0.3	1.5	0.7	0	0.5	1	0.6	0.7
3 Axle Vehicles	0	2	1	3	1	1	0	2	0	0	1	1	0	0	0	0	6
% 3 Axle Vehicles	0	0.6	0.6	0.5	0.4	0.1	0	0.2	0	0	0.2	0.1	0	0	0	0	0.1
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	2	3
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0.1	0.1	0.1	0.1

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	**52**	**35**	**90**	37	**110**	6	**153**	60	89	47	196	**68**	169	91	328	767
05:00 PM	**6**	40	21	67	32	80	**11**	123	65	74	53	192	52	207	104	363	745
05:15 PM	1	46	19	66	**38**	95	9	142	56	94	58	208	45	216	105	366	**782**
05:30 PM	6	31	19	56	32	72	6	110	**74**	**98**	**60**	**232**	47	**219**	**109**	**375**	773
Total Volume	16	169	94	279	139	357	32	528	255	355	218	828	212	811	409	1432	3067
% App. Total	5.7	60.6	33.7		26.3	67.6	6.1		30.8	42.9	26.3		14.8	56.6	28.6		
PHF	.667	.813	.671	.775	.914	.811	.727	.863	.861	.906	.908	.892	.779	.926	.938	.955	.980

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N/S: Benson Avenue
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Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:45 PM				05:00 PM			
+0 mins.	5	51	21	77	30	108	7	145	60	89	47	196	52	207	104	363
+15 mins.	2	38	27	67	26	91	6	123	65	74	53	192	45	216	105	366
+30 mins.	3	**52**	**35**	**90**	**37**	**110**	6	**153**	56	94	58	208	47	**219**	**109**	375
+45 mins.	**6**	40	21	67	32	80	**11**	123	**74**	**98**	**60**	**232**	**67**	219	98	**384**
Total Volume	16	181	104	301	125	389	30	544	255	355	218	828	211	861	416	1488
% App. Total	5.3	60.1	34.6		23	71.5	5.5		30.8	42.9	26.3		14.2	57.9	28	
PHF	.667	.870	.743	.836	.845	.884	.682	.889	.861	.906	.908	.892	.787	.983	.954	.969

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City of Upland
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File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

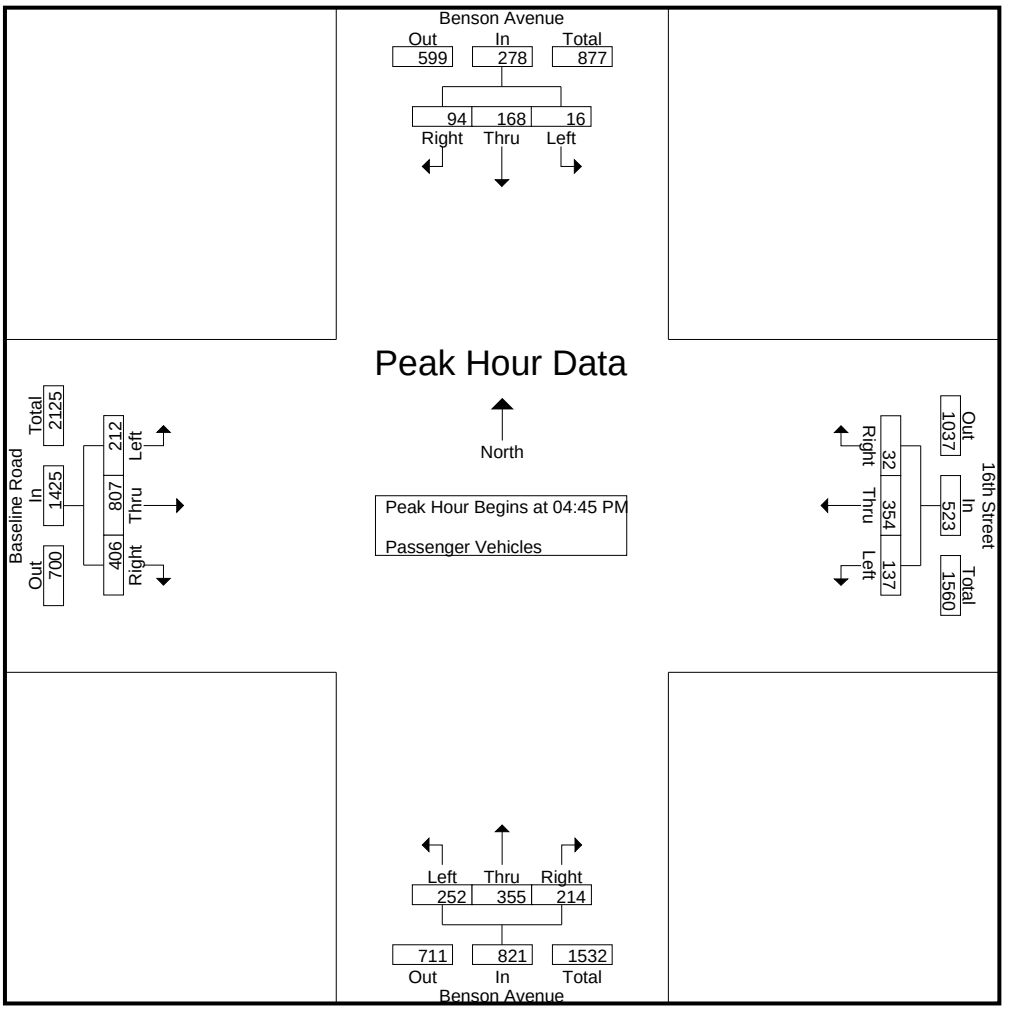
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	7	35	14	56	22	69	7	98	59	89	47	195	40	140	97	277	626
04:15 PM	5	49	21	75	28	106	7	141	55	73	48	176	39	160	73	272	664
04:30 PM	2	38	27	67	23	90	6	119	72	93	57	222	42	178	101	321	729
04:45 PM	3	52	35	90	36	108	6	150	60	89	47	196	68	166	90	324	760
Total	17	174	97	288	109	373	26	508	246	344	199	789	189	644	361	1194	2779
05:00 PM	6	39	21	66	32	80	11	123	64	74	51	189	52	207	103	362	740
05:15 PM	1	46	19	66	38	94	9	141	55	94	57	206	45	216	104	365	778
05:30 PM	6	31	19	56	31	72	6	109	73	98	59	230	47	218	109	374	769
05:45 PM	6	38	24	68	22	70	9	101	62	89	33	184	67	217	98	382	735
Total	19	154	83	256	123	316	35	474	254	355	200	809	211	858	414	1483	3022
Grand Total	36	328	180	544	232	689	61	982	500	699	399	1598	400	1502	775	2677	5801
Apprch %	6.6	60.3	33.1		23.6	70.2	6.2		31.3	43.7	25		14.9	56.1	29		
Total %	0.6	5.7	3.1	9.4	4	11.9	1.1	16.9	8.6	12	6.9	27.5	6.9	25.9	13.4	46.1	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	**52**	**35**	**90**	36	**108**	6	**150**	60	89	47	196	**68**	166	90	324	760
05:00 PM	**6**	39	21	66	32	80	**11**	123	64	74	51	189	52	207	103	362	740
05:15 PM	1	46	19	66	**38**	94	9	141	55	94	57	206	45	216	104	365	**778**
05:30 PM	6	31	19	56	31	72	6	109	**73**	**98**	**59**	**230**	47	**218**	**109**	**374**	769
Total Volume	16	168	94	278	137	354	32	523	252	355	214	821	212	807	406	1425	3047
% App. Total	5.8	60.4	33.8		26.2	67.7	6.1		30.7	43.2	26.1		14.9	56.6	28.5		
PHF	.667	.808	.671	.772	.901	.819	.727	.872	.863	.906	.907	.892	.779	.925	.931	.953	.979

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City of Upland
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Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	3	**52**	**35**	**90**	36	**108**	6	**150**	60	89	47	196	**68**	166	90	324
+15 mins.	**6**	39	21	66	32	80	**11**	123	64	74	51	189	52	207	103	362
+30 mins.	1	46	19	66	**38**	94	9	141	55	94	57	206	45	216	104	365
+45 mins.	6	31	19	56	31	72	6	109	**73**	**98**	**59**	**230**	47	**218**	**109**	**374**
Total Volume	16	168	94	278	137	354	32	523	252	355	214	821	212	807	406	1425
% App. Total	5.8	60.4	33.8		26.2	67.7	6.1		30.7	43.2	26.1		14.9	56.6	28.5	
PHF	.667	.808	.671	.772	.901	.819	.727	.872	.863	.906	.907	.892	.779	.925	.931	.953

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Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

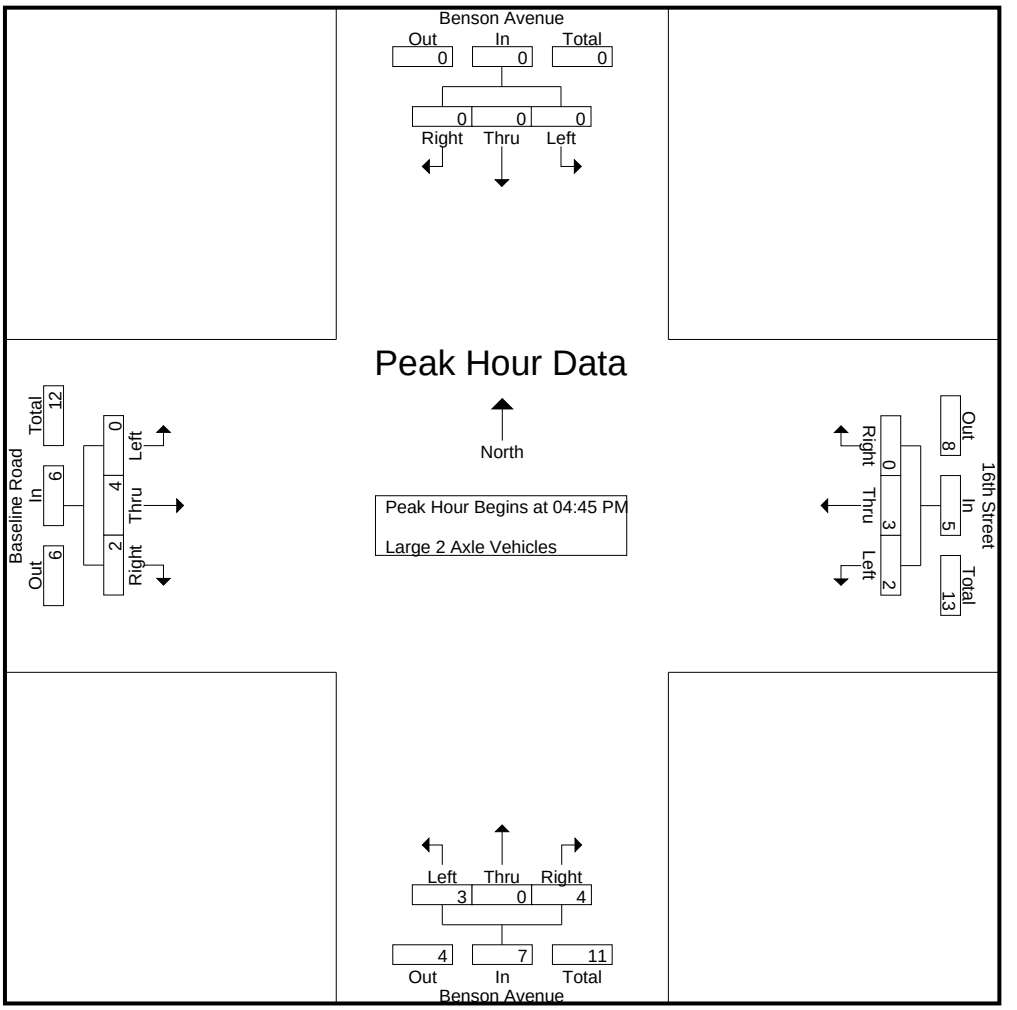
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	2
04:15 PM	0	2	0	2	2	2	0	4	1	1	0	2	0	1	3	4	12
04:30 PM	0	0	0	0	3	1	0	4	0	0	1	1	0	1	2	3	8
04:45 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	3	1	4	7
Total	0	2	0	2	6	5	0	11	1	1	2	4	0	5	7	12	29
05:00 PM	0	0	0	0	0	0	0	0	1	0	2	3	0	0	0	0	3
05:15 PM	0	0	0	0	0	1	0	1	1	0	1	2	0	0	1	1	4
05:30 PM	0	0	0	0	1	0	0	1	1	0	1	2	0	1	0	1	4
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
Total	0	0	0	0	1	1	0	2	3	1	4	8	0	2	1	3	13
Grand Total	0	2	0	2	7	6	0	13	4	2	6	12	0	7	8	15	42
Apprch %	0	100	0		53.8	46.2	0		33.3	16.7	50		0	46.7	53.3		
Total %	0	4.8	0	4.8	16.7	14.3	0	31	9.5	4.8	14.3	28.6	0	16.7	19	35.7	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	**1**	**2**	0	**3**	0	0	0	0	0	**3**	**1**	**4**	**7**
05:00 PM	0	0	0	0	0	0	0	0	**1**	0	**2**	**3**	0	0	0	0	3
05:15 PM	0	0	0	0	0	1	0	1	1	0	1	2	0	0	1	1	4
05:30 PM	0	0	0	0	1	0	0	1	1	0	1	2	0	1	0	1	4
Total Volume	0	0	0	0	2	3	0	5	3	0	4	7	0	4	2	6	18
% App. Total	0	0	0		40	60	0		42.9	0	57.1		0	66.7	33.3		
PHF	.000	.000	.000	.000	.500	.375	.000	.417	.750	.000	.500	.583	.000	.333	.500	.375	.643

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Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	**1**	**2**	0	**3**	0	0	0	0	0	**3**	**1**	**4**
+15 mins.	0	0	0	0	0	0	0	0	**1**	0	**2**	**3**	0	0	0	0
+30 mins.	0	0	0	0	0	1	0	1	1	0	1	2	0	0	1	1
+45 mins.	0	0	0	0	1	0	0	1	1	0	1	2	0	1	0	1
Total Volume	0	0	0	0	2	3	0	5	3	0	4	7	0	4	2	6
% App. Total	0	0	0		40	60	0		42.9	0	57.1		0	66.7	33.3	
PHF	.000	.000	.000	.000	.500	.375	.000	.417	.750	.000	.500	.583	.000	.333	.500	.375

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City of Upland
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E/W: Baseline Road/16th Street
Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

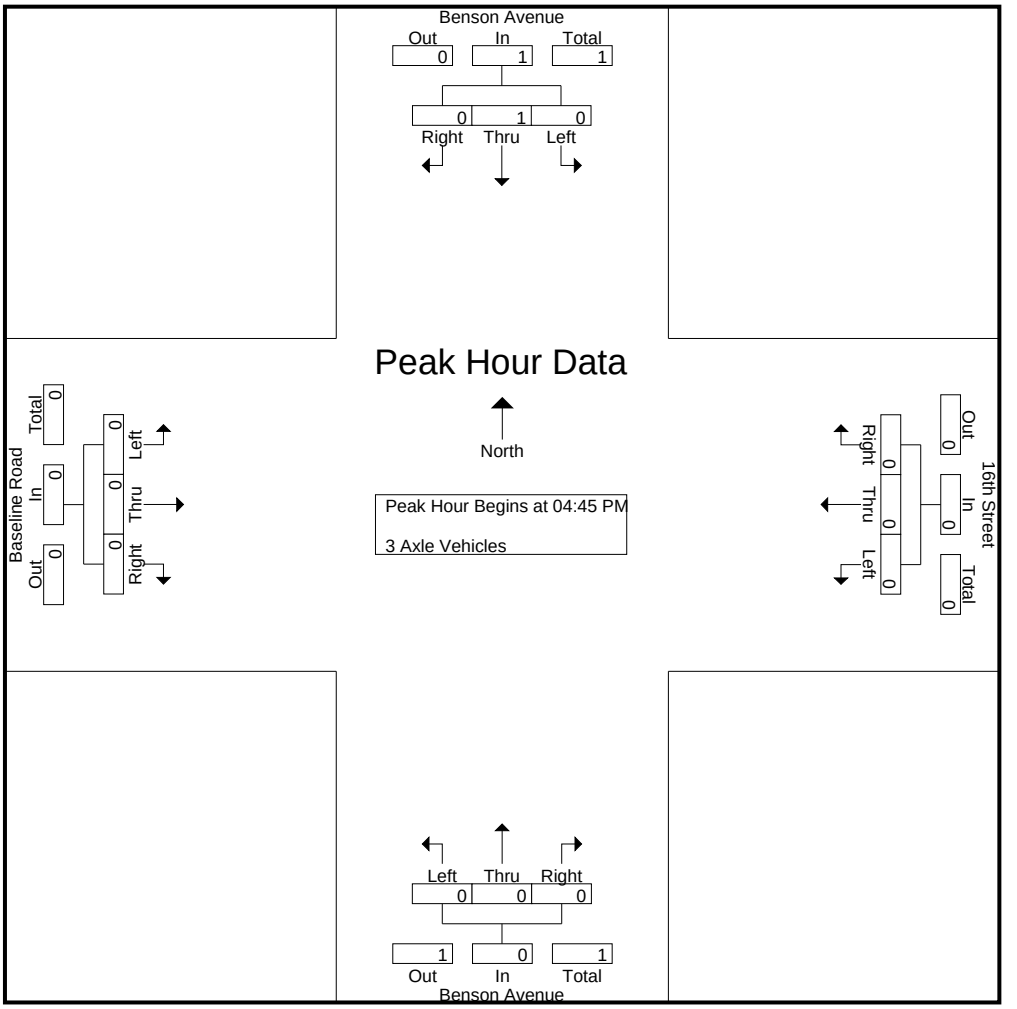
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
Total	0	2	0	2	0	0	0	0	0	0	1	1	0	0	0	0	3
Grand Total	0	2	1	3	1	1	0	2	0	0	1	1	0	0	0	0	6
Apprch %	0	66.7	33.3		50	50	0		0	0	100		0	0	0		
Total %	0	33.3	16.7	50	16.7	16.7	0	33.3	0	0	16.7	16.7	0	0	0	0	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Benson Avenue
E/W: Baseline Road/16th Street
Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited
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(951) 268-6268

City of Upland
N/S: Benson Avenue
E/W: Baseline Road/16th Street
Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

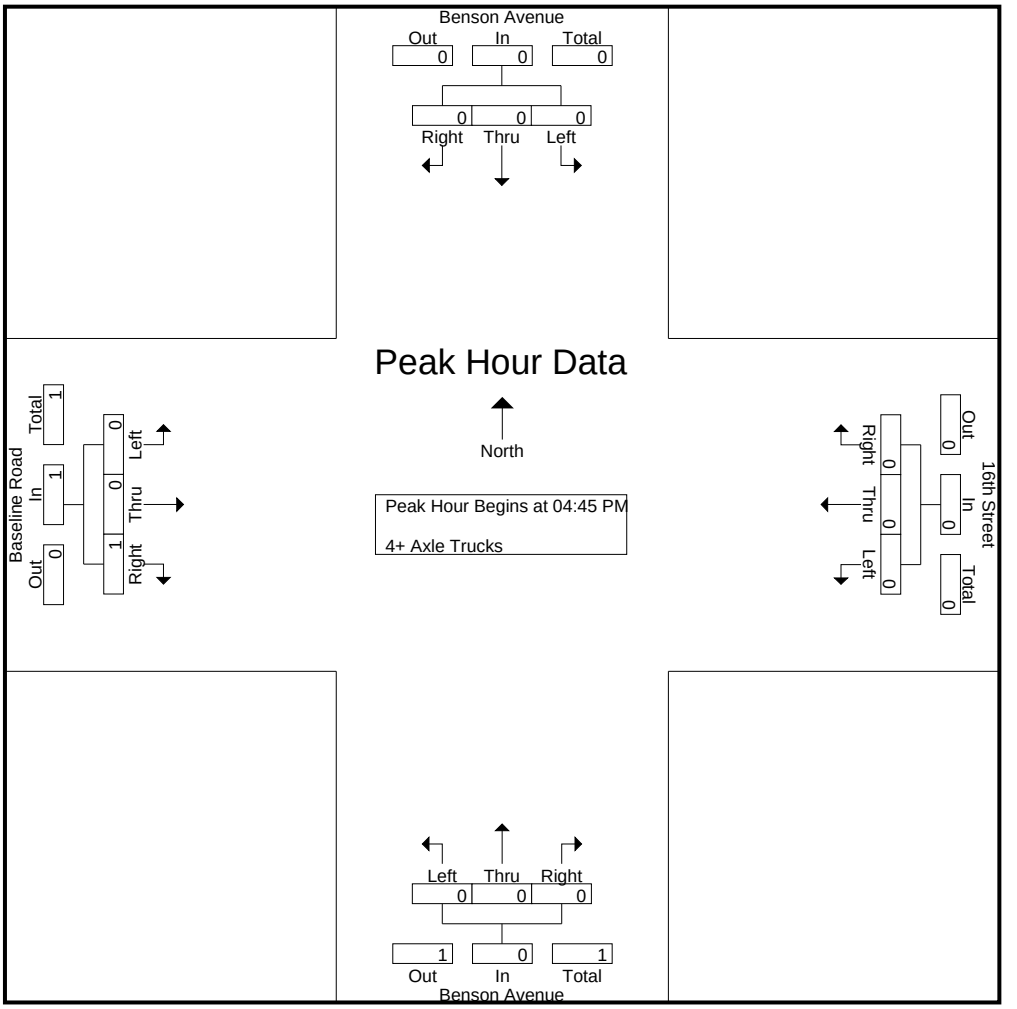
	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Grand Total	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	2	3
Apprch %	0	0	0		0	0	0		0	100	0		0	50	50		
Total %	0	0	0	0	0	0	0	0	0	33.3	0	33.3	0	33.3	33.3	66.7	

	Benson Avenue Southbound				16th Street Westbound				Benson Avenue Northbound				Baseline Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

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City of Upland
N/S: Benson Avenue
E/W: Baseline Road/16th Street
Weather: Clear

File Name : 04_UPL_Benson_Baseline_16th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

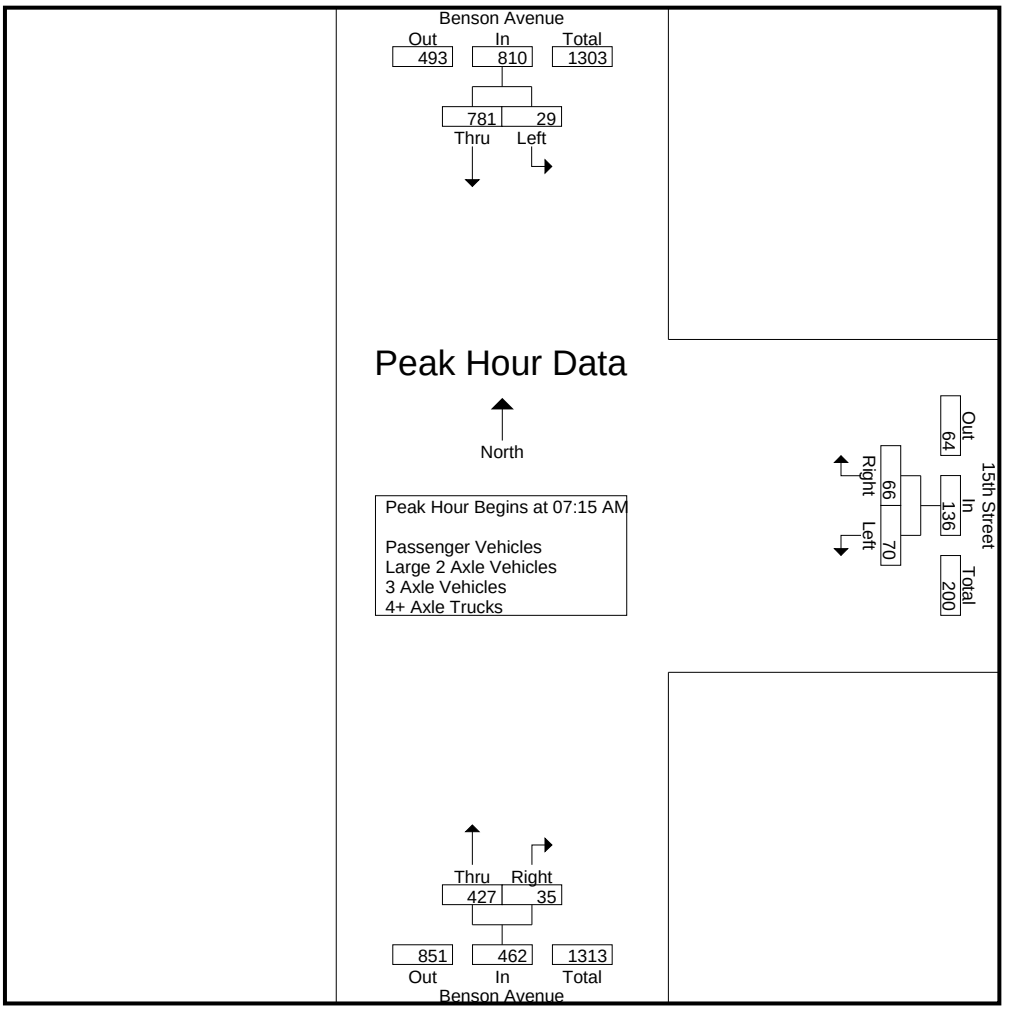
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	9	134	143	8	28	36	81	3	84	263
07:15 AM	3	186	189	17	22	39	101	7	108	336
07:30 AM	11	226	237	20	14	34	114	8	122	393
07:45 AM	7	210	217	21	12	33	116	9	125	375
Total	30	756	786	66	76	142	412	27	439	1367
08:00 AM	8	159	167	12	18	30	96	11	107	304
08:15 AM	2	156	158	14	20	34	69	5	74	266
08:30 AM	5	156	161	10	13	23	105	6	111	295
08:45 AM	9	154	163	8	13	21	95	8	103	287
Total	24	625	649	44	64	108	365	30	395	1152
Grand Total	54	1381	1435	110	140	250	777	57	834	2519
Apprch %	3.8	96.2		44	56		93.2	6.8		
Total %	2.1	54.8	57	4.4	5.6	9.9	30.8	2.3	33.1	
Passenger Vehicles	52	1362	1414	109	137	246	748	57	805	2465
% Passenger Vehicles	96.3	98.6	98.5	99.1	97.9	98.4	96.3	100	96.5	97.9
Large 2 Axle Vehicles	0	15	15	1	1	2	24	0	24	41
% Large 2 Axle Vehicles										
3 Axle Vehicles	0	3	3	0	0	0	0	0	0	3
% 3 Axle Vehicles	0	0.2	0.2	0	0	0	0	0	0	0.1
4+ Axle Trucks	2	1	3	0	2	2	5	0	5	10
% 4+ Axle Trucks	3.7	0.1	0.2	0	1.4	0.8	0.6	0	0.6	0.4

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	3	186	189	17	**22**	**39**	101	7	108	336
07:30 AM	**11**	**226**	**237**	20	14	34	114	8	122	**393**
07:45 AM	7	210	217	**21**	12	33	**116**	9	**125**	375
08:00 AM	8	159	167	12	18	30	96	**11**	107	304
Total Volume	29	781	810	70	66	136	427	35	462	1408
% App. Total	3.6	96.4		51.5	48.5		92.4	7.6		
PHF	.659	.864	.854	.833	.750	.872	.920	.795	.924	.896

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:15 AM		
+0 mins.	3	186	189	8	**28**	36	101	7	108
+15 mins.	**11**	**226**	**237**	17	22	**39**	114	8	122
+30 mins.	7	210	217	20	14	34	**116**	9	**125**
+45 mins.	8	159	167	**21**	12	33	96	**11**	107
Total Volume	29	781	810	66	76	142	427	35	462
% App. Total	3.6	96.4		46.5	53.5		92.4	7.6	
PHF	.659	.864	.854	.786	.679	.910	.920	.795	.924

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

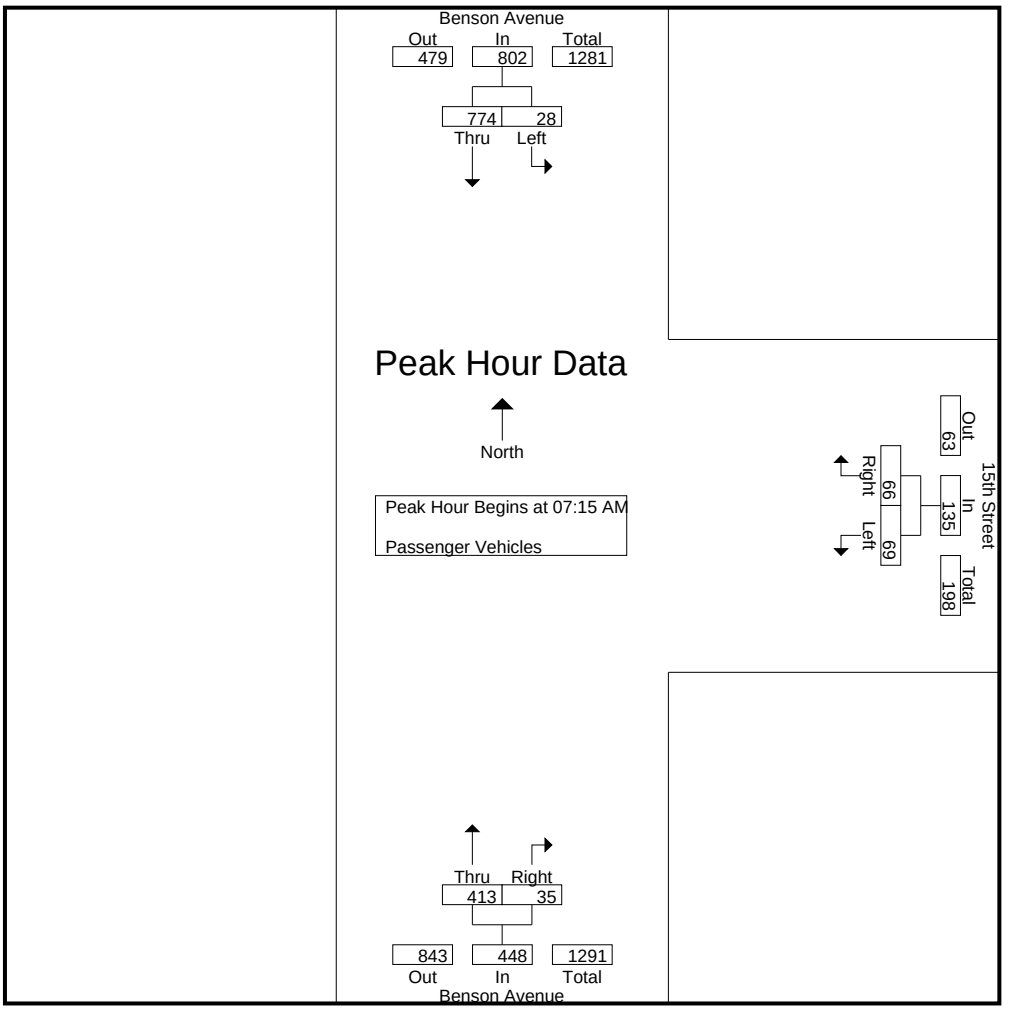
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	9	131	140	8	28	36	77	3	80	256
07:15 AM	3	186	189	17	22	39	98	7	105	333
07:30 AM	11	224	235	19	14	33	108	8	116	384
07:45 AM	6	208	214	21	12	33	112	9	121	368
Total	29	749	778	65	76	141	395	27	422	1341
08:00 AM	8	156	164	12	18	30	95	11	106	300
08:15 AM	2	151	153	14	18	32	65	5	70	255
08:30 AM	5	155	160	10	13	23	101	6	107	290
08:45 AM	8	151	159	8	12	20	92	8	100	279
Total	23	613	636	44	61	105	353	30	383	1124
Grand Total	52	1362	1414	109	137	246	748	57	805	2465
Apprch %	3.7	96.3		44.3	55.7		92.9	7.1		
Total %	2.1	55.3	57.4	4.4	5.6	10	30.3	2.3	32.7	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	3	186	189	17	**22**	**39**	98	7	105	333
07:30 AM	**11**	**224**	**235**	19	14	33	108	8	116	**384**
07:45 AM	6	208	214	**21**	12	33	**112**	9	**121**	368
08:00 AM	8	156	164	12	18	30	95	**11**	106	300
Total Volume	28	774	802	69	66	135	413	35	448	1385
% App. Total	3.5	96.5		51.1	48.9		92.2	7.8		
PHF	.636	.864	.853	.821	.750	.865	.922	.795	.926	.902

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	3	186	189	17	**22**	**39**	98	7	105
+15 mins.	**11**	**224**	**235**	19	14	33	108	8	116
+30 mins.	6	208	214	**21**	12	33	**112**	9	**121**
+45 mins.	8	156	164	12	18	30	95	**11**	106
Total Volume	28	774	802	69	66	135	413	35	448
% App. Total	3.5	96.5		51.1	48.9		92.2	7.8	
PHF	.636	.864	.853	.821	.750	.865	.922	.795	.926

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

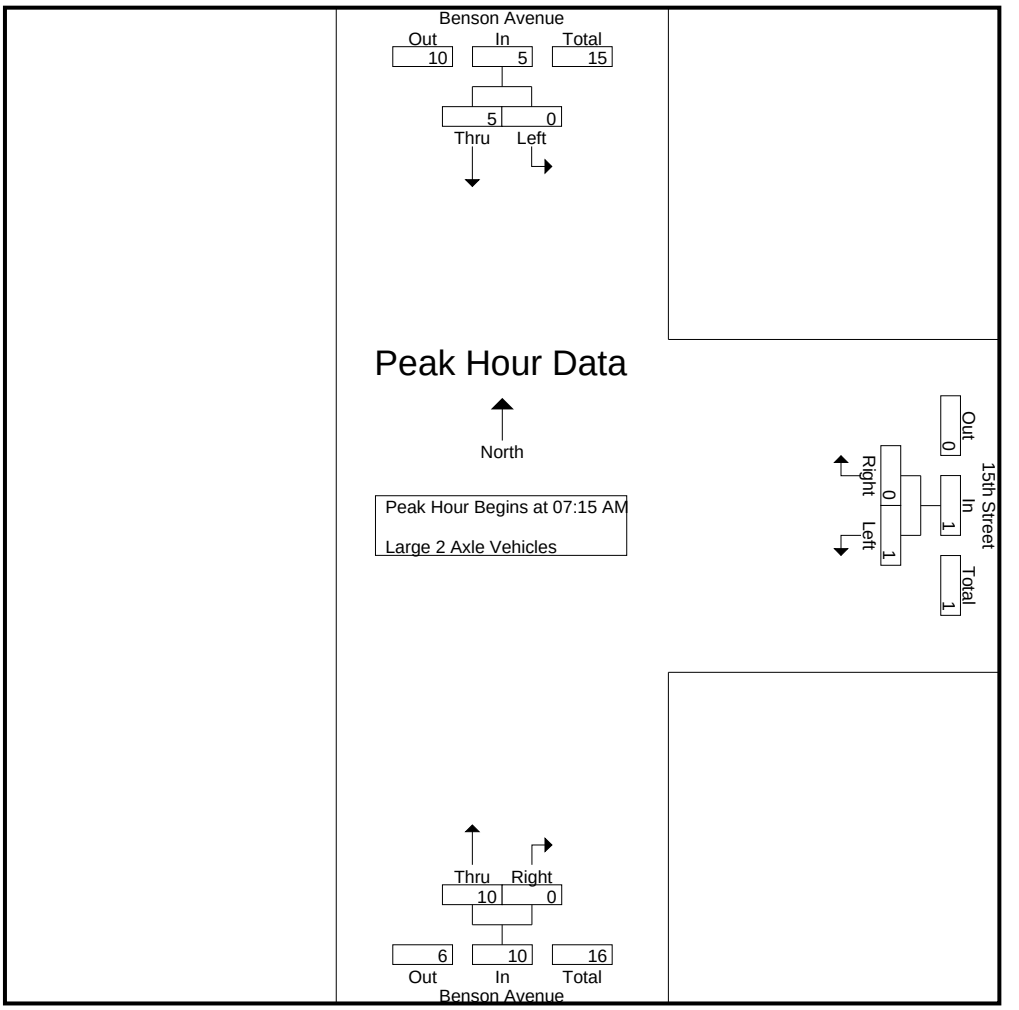
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	3	0	0	0	4	0	4	7
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	1	1	1	0	1	4	0	4	6
07:45 AM	0	1	1	0	0	0	3	0	3	4
Total	0	5	5	1	0	1	13	0	13	19
08:00 AM	0	3	3	0	0	0	1	0	1	4
08:15 AM	0	3	3	0	1	1	4	0	4	8
08:30 AM	0	1	1	0	0	0	4	0	4	5
08:45 AM	0	3	3	0	0	0	2	0	2	5
Total	0	10	10	0	1	1	11	0	11	22
Grand Total	0	15	15	1	1	2	24	0	24	41
Apprch %	0	100		50	50		100	0		
Total %	0	36.6	36.6	2.4	2.4	4.9	58.5	0	58.5	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	2	0	2	2
07:30 AM	0	1	1	**1**	0	**1**	**4**	0	**4**	**6**
07:45 AM	0	1	1	0	0	0	3	0	3	4
08:00 AM	0	**3**	**3**	0	0	0	1	0	1	4
Total Volume	0	5	5	1	0	1	10	0	10	16
% App. Total	0	100		100	0		100	0		
PHF	.000	.417	.417	.250	.000	.250	.625	.000	.625	.667

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	0	0	0	2	0	2
+15 mins.	0	1	1	**1**	0	**1**	**4**	0	**4**
+30 mins.	0	1	1	0	0	0	3	0	3
+45 mins.	0	**3**	**3**	0	0	0	1	0	1
Total Volume	0	5	5	1	0	1	10	0	10
% App. Total	0	100		100	0		100	0	
PHF	.000	.417	.417	.250	.000	.250	.625	.000	.625

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

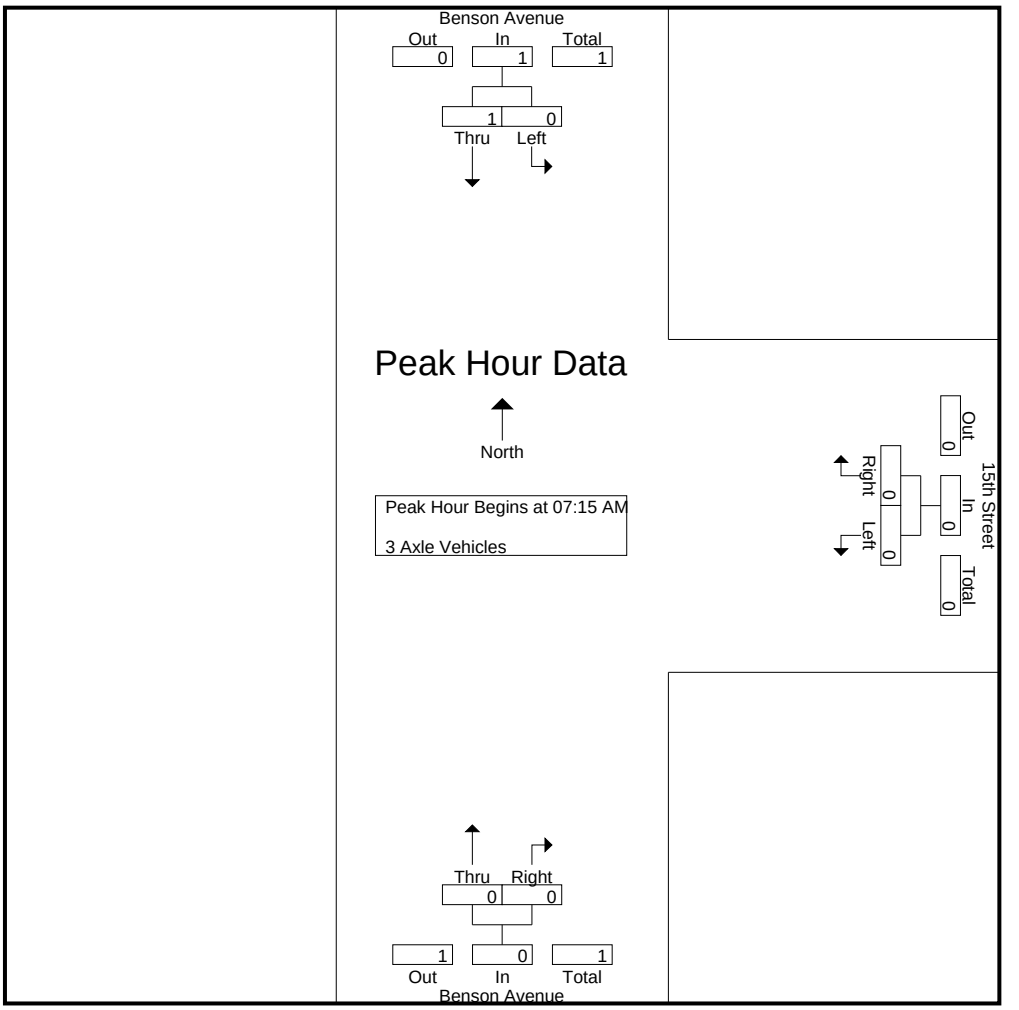
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	2	2	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	2	2	0	0	0	0	0	0	2
Grand Total	0	3	3	0	0	0	0	0	0	3
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	**1**	**1**	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	**1**	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

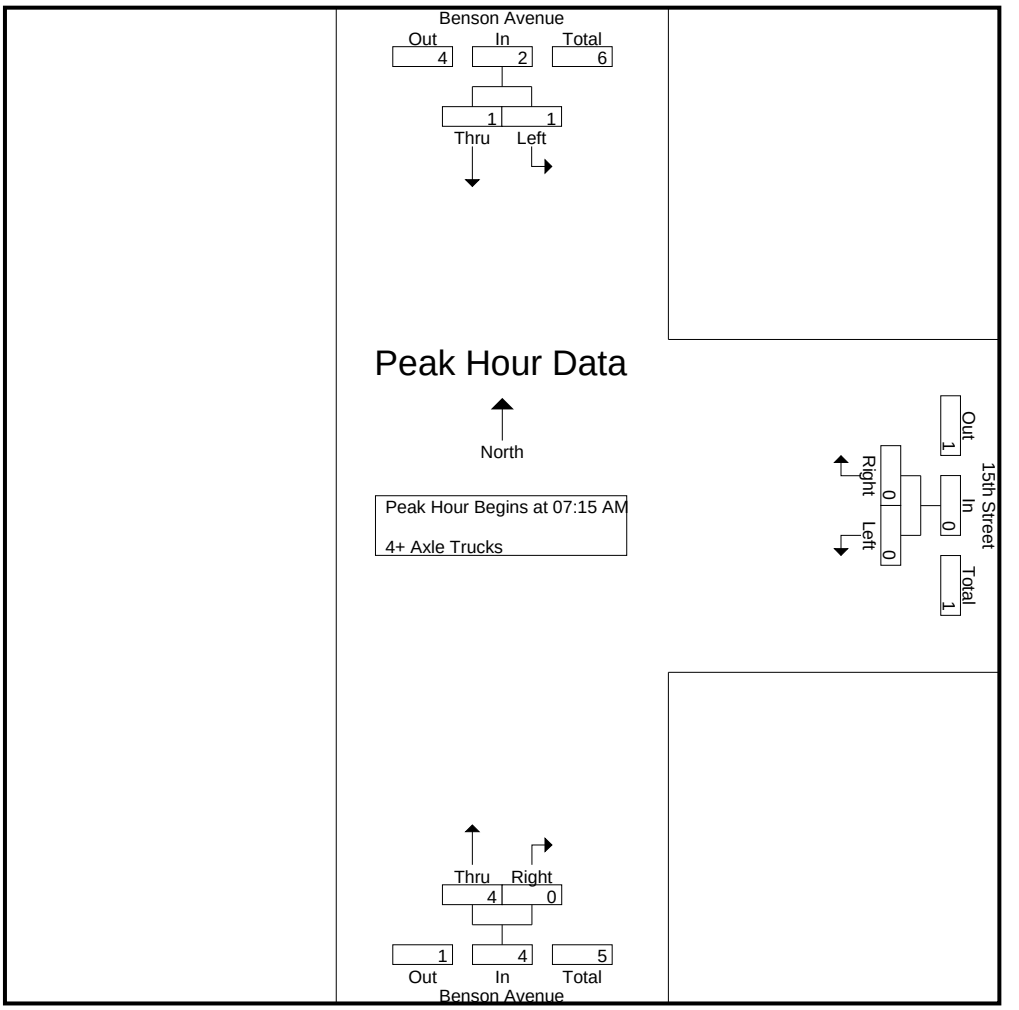
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	0	0	2	0	2	2
07:45 AM	1	1	2	0	0	0	1	0	1	3
Total	1	1	2	0	0	0	4	0	4	6
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	1	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	1	0	1	1	1	0	1	3
Total	1	0	1	0	2	2	1	0	1	4
Grand Total	2	1	3	0	2	2	5	0	5	10
Apprch %	66.7	33.3		0	100		100	0		
Total %	20	10	30	0	20	20	50	0	50	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	0	0	**2**	0	**2**	2
07:45 AM	**1**	**1**	**2**	0	0	0	1	0	1	**3**
08:00 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	1	2	0	0	0	4	0	4	6
% App. Total	50	50		0	0		100	0		
PHF	.250	.250	.250	.000	.000	.000	.500	.000	.500	.500

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	**2**	0	**2**
+30 mins.	**1**	**1**	**2**	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	1	1	2	0	0	0	4	0	4
% App. Total	50	50		0	0		100	0	
PHF	.250	.250	.250	.000	.000	.000	.500	.000	.500

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(951) 268-6268

City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

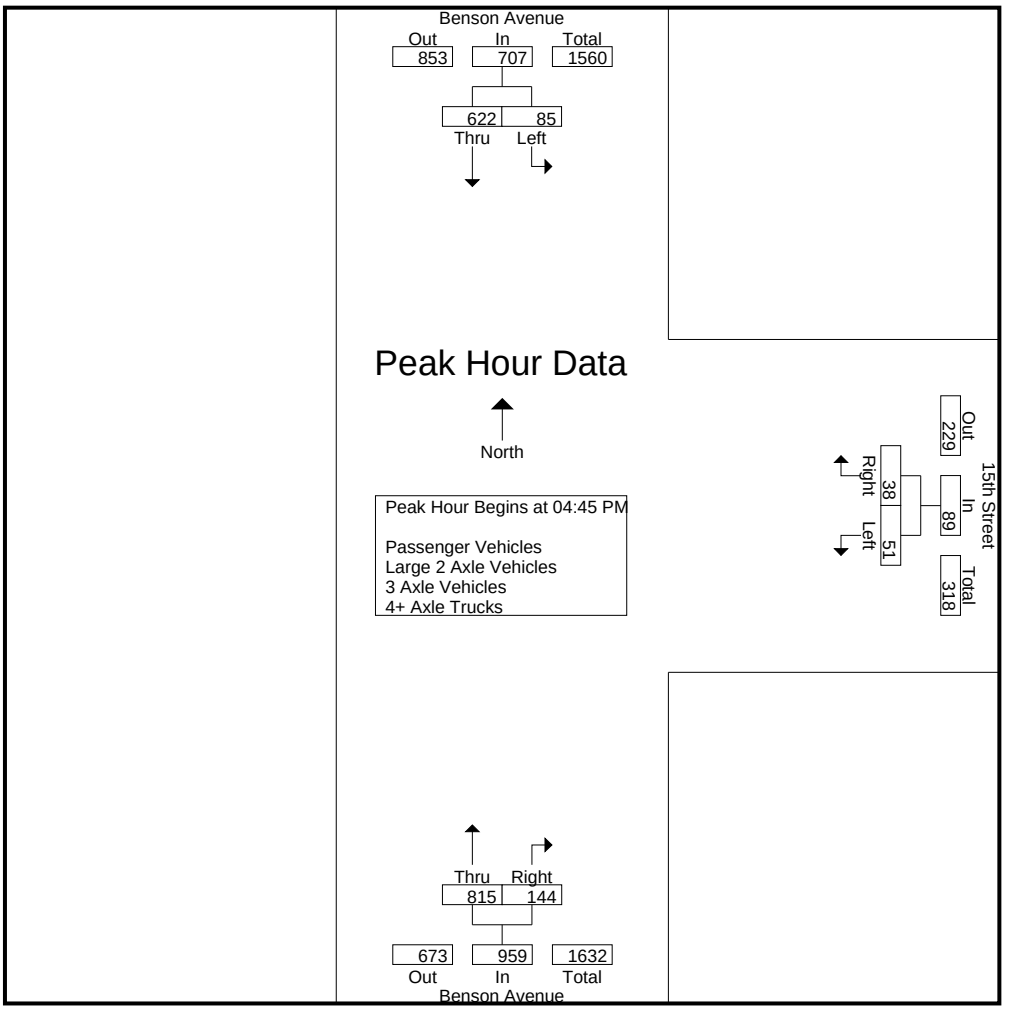
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	15	141	156	12	9	21	179	34	213	390
04:15 PM	19	137	156	10	8	18	180	26	206	380
04:30 PM	21	148	169	11	12	23	201	16	217	409
04:45 PM	21	157	178	8	9	17	204	28	232	427
Total	76	583	659	41	38	79	764	104	868	1606
05:00 PM	19	148	167	13	5	18	211	38	249	434
05:15 PM	24	166	190	13	15	28	188	39	227	445
05:30 PM	21	151	172	17	9	26	212	39	251	449
05:45 PM	25	140	165	8	8	16	169	28	197	378
Total	89	605	694	51	37	88	780	144	924	1706
Grand Total	165	1188	1353	92	75	167	1544	248	1792	3312
Apprch %	12.2	87.8		55.1	44.9		86.2	13.8		
Total %	5	35.9	40.9	2.8	2.3	5	46.6	7.5	54.1	
Passenger Vehicles	164	1169	1333	91	73	164	1533	245	1778	3275
% Passenger Vehicles	99.4	98.4	98.5	98.9	97.3	98.2	99.3	98.8	99.2	98.9
Large 2 Axle Vehicles	1	18	19	1	2	3	8	3	11	33
% Large 2 Axle Vehicles										
3 Axle Vehicles	0	1	1	0	0	0	0	0	0	1
% 3 Axle Vehicles	0	0.1	0.1	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	3	0	3	3
% 4+ Axle Trucks	0	0	0	0	0	0	0.2	0	0.2	0.1

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	21	157	178	8	9	17	204	28	232	427
05:00 PM	19	148	167	13	5	18	211	38	249	434
05:15 PM	**24**	**166**	**190**	13	**15**	**28**	188	**39**	227	445
05:30 PM	21	151	172	**17**	9	26	**212**	39	**251**	**449**
Total Volume	85	622	707	51	38	89	815	144	959	1755
% App. Total	12	88		57.3	42.7		85	15		
PHF	.885	.937	.930	.750	.633	.795	.961	.923	.955	.977

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	21	157	178	8	9	17	204	28	232
+15 mins.	19	148	167	13	5	18	211	38	249
+30 mins.	**24**	**166**	**190**	13	**15**	**28**	188	**39**	227
+45 mins.	21	151	172	**17**	9	26	**212**	39	**251**
Total Volume	85	622	707	51	38	89	815	144	959
% App. Total	12	88		57.3	42.7		85	15	
PHF	.885	.937	.930	.750	.633	.795	.961	.923	.955

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

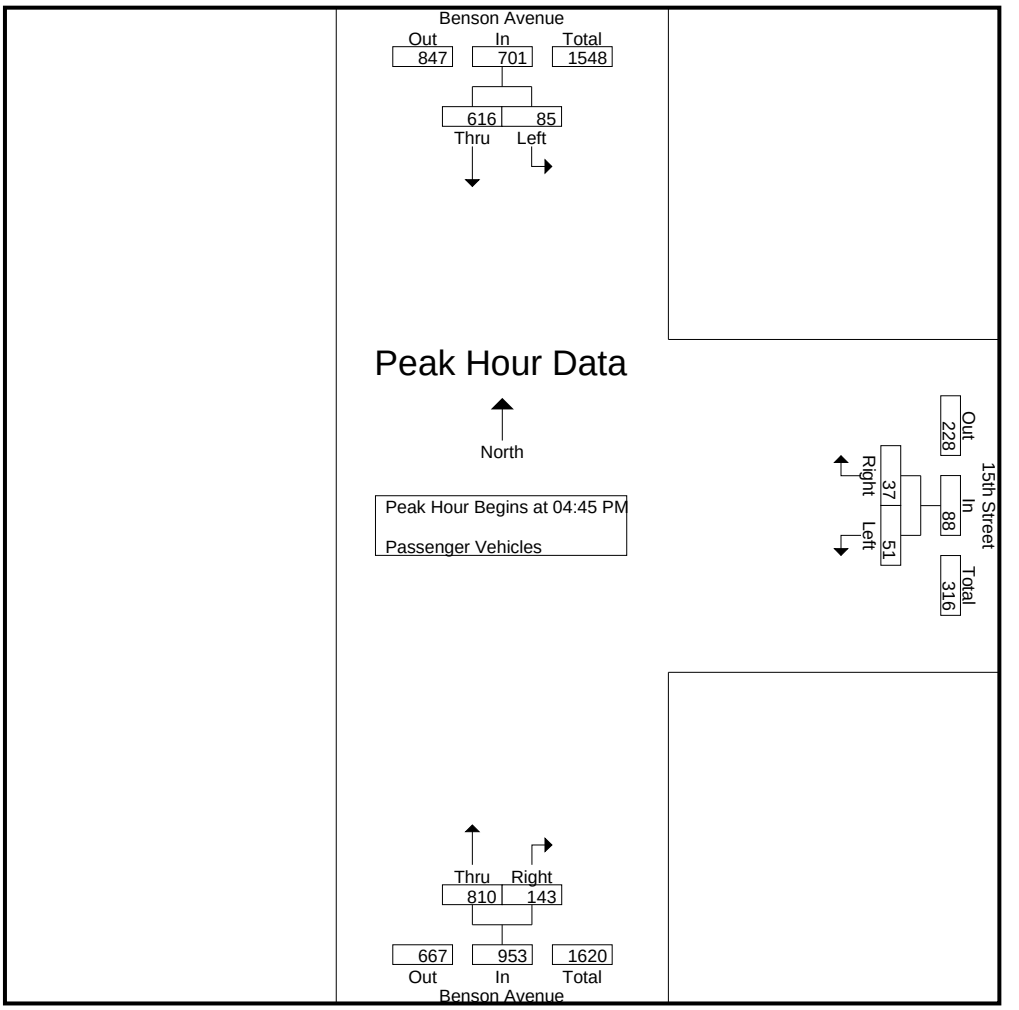
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	15	139	154	12	8	20	178	33	211	385
04:15 PM	18	131	149	10	8	18	178	25	203	370
04:30 PM	21	144	165	10	12	22	200	16	216	403
04:45 PM	21	154	175	8	9	17	204	27	231	423
Total	75	568	643	40	37	77	760	101	861	1581
05:00 PM	19	147	166	13	4	17	208	38	246	429
05:15 PM	24	165	189	13	15	28	187	39	226	443
05:30 PM	21	150	171	17	9	26	211	39	250	447
05:45 PM	25	139	164	8	8	16	167	28	195	375
Total	89	601	690	51	36	87	773	144	917	1694
Grand Total	164	1169	1333	91	73	164	1533	245	1778	3275
Apprch %	12.3	87.7		55.5	44.5		86.2	13.8		
Total %	5	35.7	40.7	2.8	2.2	5	46.8	7.5	54.3	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	21	154	175	8	9	17	204	27	231	423
05:00 PM	19	147	166	13	4	17	208	38	246	429
05:15 PM	**24**	**165**	**189**	13	**15**	**28**	187	**39**	226	443
05:30 PM	21	150	171	**17**	9	26	**211**	39	**250**	**447**
Total Volume	85	616	701	51	37	88	810	143	953	1742
% App. Total	12.1	87.9		58	42		85	15		
PHF	.885	.933	.927	.750	.617	.786	.960	.917	.953	.974

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	21	154	175	8	9	17	204	27	231
+15 mins.	19	147	166	13	4	17	208	38	246
+30 mins.	**24**	**165**	**189**	13	**15**	**28**	187	**39**	226
+45 mins.	21	150	171	**17**	9	26	**211**	39	**250**
Total Volume	85	616	701	51	37	88	810	143	953
% App. Total	12.1	87.9		58	42		85	15	
PHF	.885	.933	.927	.750	.617	.786	.960	.917	.953

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

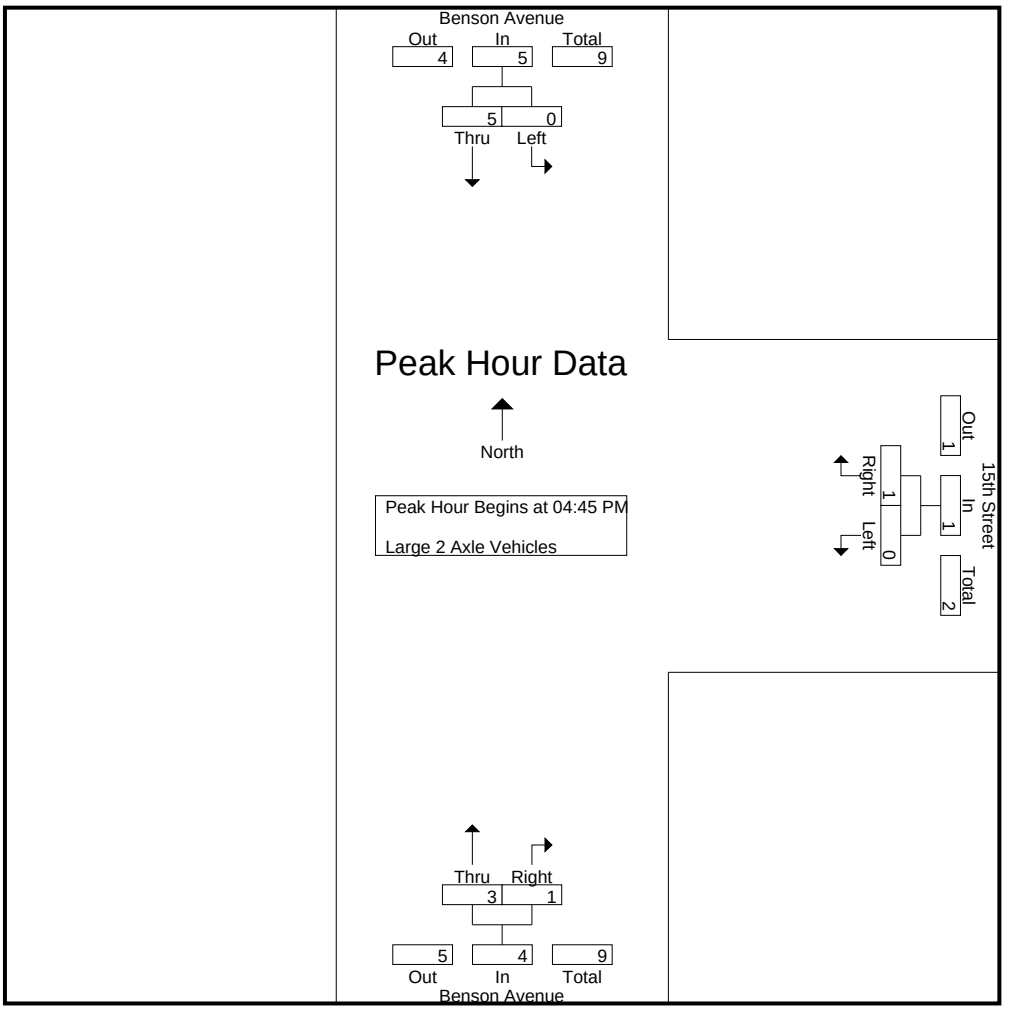
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	2	0	1	1	1	1	2	5
04:15 PM	1	6	7	0	0	0	2	1	3	10
04:30 PM	0	4	4	1	0	1	1	0	1	6
04:45 PM	0	2	2	0	0	0	0	1	1	3
Total	1	14	15	1	1	2	4	3	7	24
05:00 PM	0	1	1	0	1	1	3	0	3	5
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	1	1	0	0	0	0	0	0	1
05:45 PM	0	1	1	0	0	0	1	0	1	2
Total	0	4	4	0	1	1	4	0	4	9
Grand Total	1	18	19	1	2	3	8	3	11	33
Apprch %	5.3	94.7		33.3	66.7		72.7	27.3		
Total %	3	54.5	57.6	3	6.1	9.1	24.2	9.1	33.3	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	**2**	**2**	0	0	0	0	**1**	1	3
05:00 PM	0	1	1	0	**1**	**1**	**3**	0	**3**	**5**
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	5	5	0	1	1	3	1	4	10
% App. Total	0	100		0	100		75	25		
PHF	.000	.625	.625	.000	.250	.250	.250	.250	.333	.500

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	**2**	**2**	0	0	0	0	**1**	1
+15 mins.	0	1	1	0	**1**	**1**	**3**	0	**3**
+30 mins.	0	1	1	0	0	0	0	0	0
+45 mins.	0	1	1	0	0	0	0	0	0
Total Volume	0	5	5	0	1	1	3	1	4
% App. Total	0	100		0	100		75	25	
PHF	.000	.625	.625	.000	.250	.250	.250	.250	.333

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

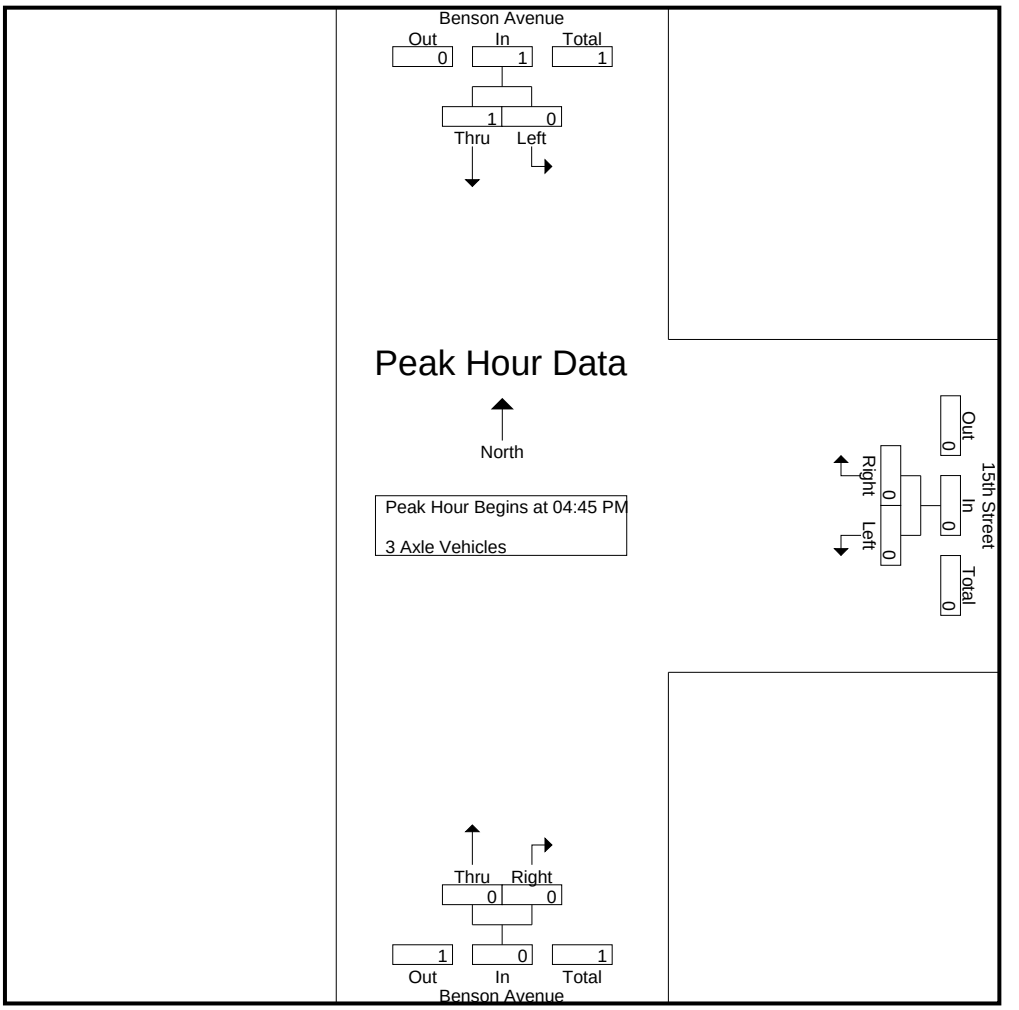
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	0	0	1
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	**1**	**1**	0	0	0	0	0	0	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	**1**	**1**	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

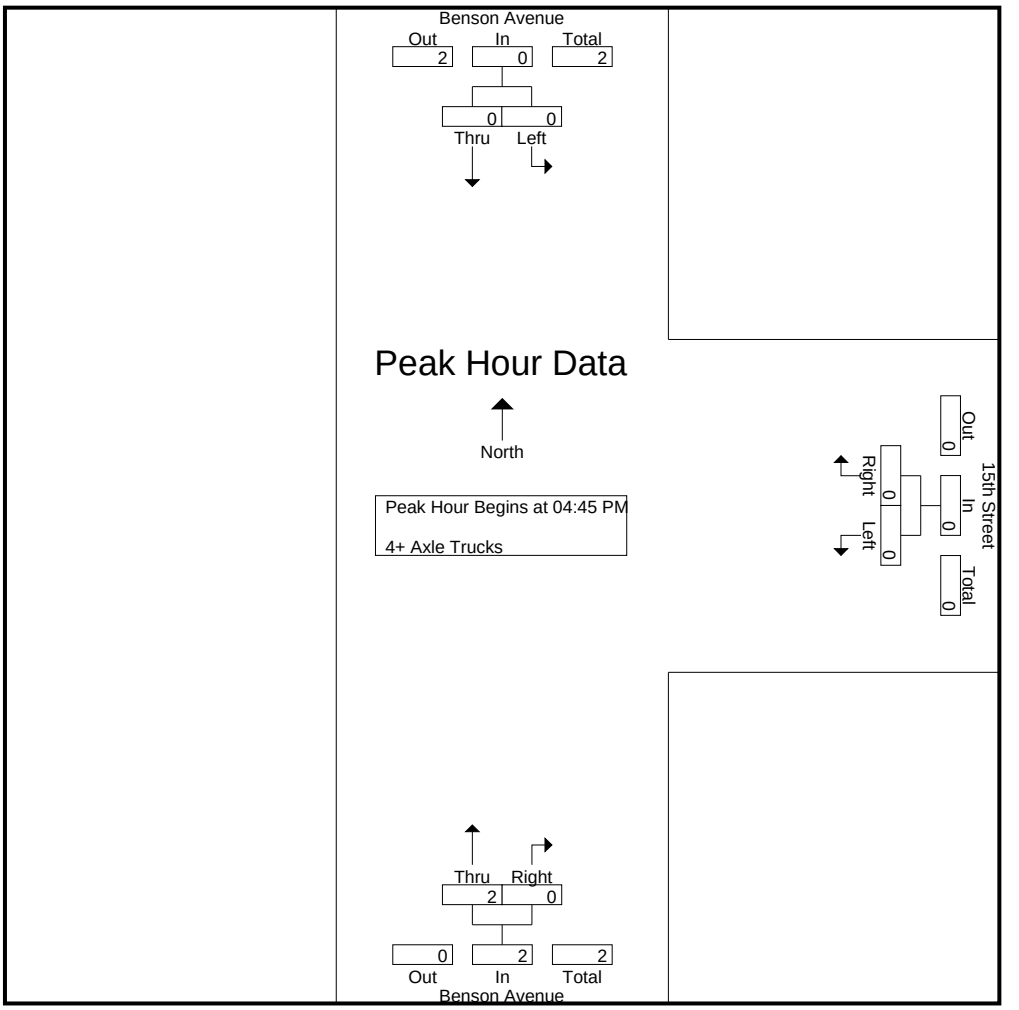
	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	3	0	3	3
Grand Total	0	0	0	0	0	0	3	0	3	3
Apprch %	0	0		0	0		100	0		
Total %	0	0	0	0	0	0	100	0	100	

	Benson Avenue Southbound			15th Street Westbound			Benson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	**1**	0	**1**	**1**
05:30 PM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500

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City of Upland
N/S: Benson Avenue
E/W: 15th Street
Weather: Clear

File Name : 05_UPL_Benson_15th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			04:45 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	**1**	0	**1**
+45 mins.	0	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	0	2	0	2
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

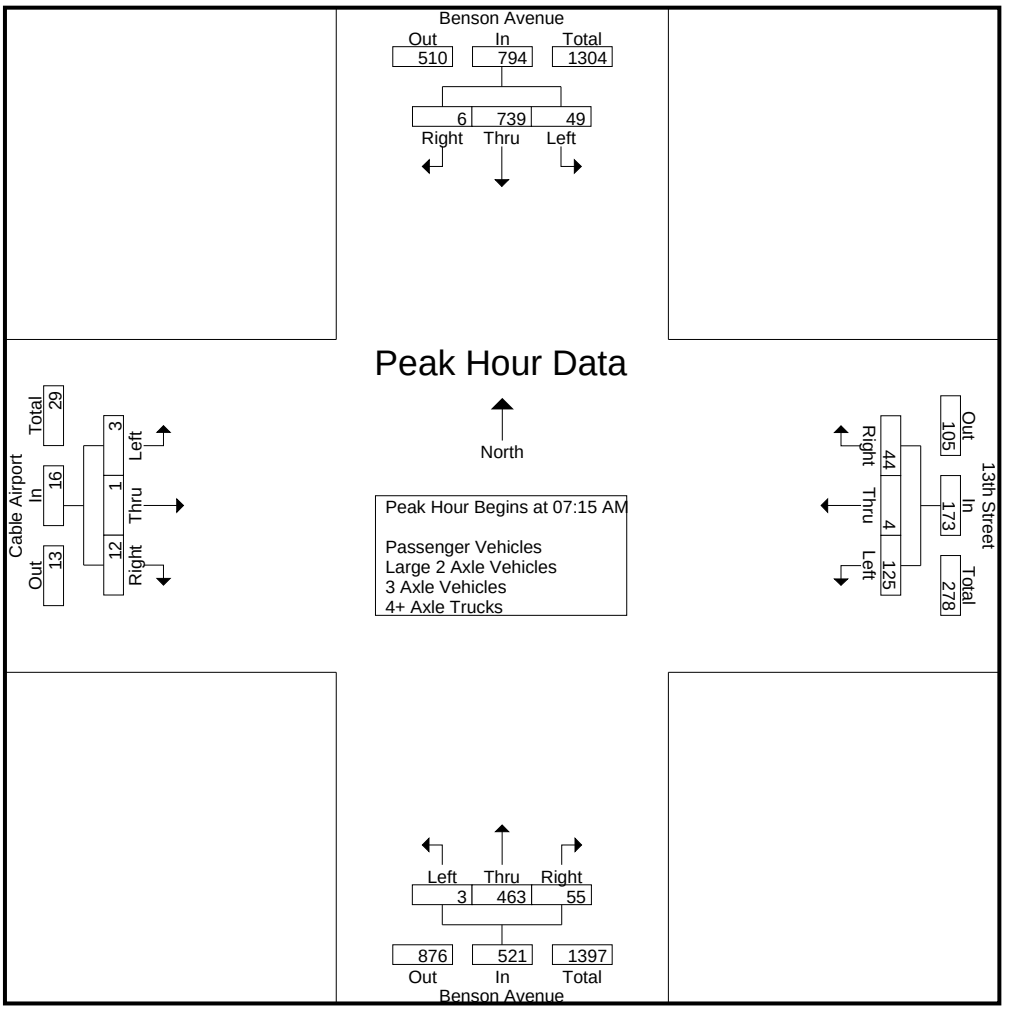
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	122	2	130	15	0	14	29	2	85	7	94	2	0	5	7	260
07:15 AM	13	177	2	192	14	0	10	24	0	109	12	121	0	0	2	2	339
07:30 AM	13	199	2	214	39	0	9	48	1	120	19	140	1	0	1	2	404
07:45 AM	15	225	1	241	49	1	16	66	1	129	10	140	2	0	2	4	451
Total	47	723	7	777	117	1	49	167	4	443	48	495	5	0	10	15	1454
08:00 AM	8	138	1	147	23	3	9	35	1	105	14	120	0	1	7	8	310
08:15 AM	11	162	2	175	22	0	8	30	0	74	16	90	0	0	1	1	296
08:30 AM	3	173	3	179	20	2	14	36	2	101	5	108	0	0	4	4	327
08:45 AM	10	145	2	157	27	0	13	40	0	96	16	112	0	1	7	8	317
Total	32	618	8	658	92	5	44	141	3	376	51	430	0	2	19	21	1250
Grand Total	79	1341	15	1435	209	6	93	308	7	819	99	925	5	2	29	36	2704
Apprch %	5.5	93.4	1		67.9	1.9	30.2		0.8	88.5	10.7		13.9	5.6	80.6		
Total %	2.9	49.6	0.6	53.1	7.7	0.2	3.4	11.4	0.3	30.3	3.7	34.2	0.2	0.1	1.1	1.3	
Passenger Vehicles	77	1318	12	1407	207	5	92	304	7	790	93	890	4	1	7	12	2613
% Passenger Vehicles	97.5	98.3	80	98	99	83.3	98.9	98.7	100	96.5	93.9	96.2	80	50	24.1	33.3	96.6
Large 2 Axle Vehicles	2	20	0	22	2	0	1	3	0	24	5	29	0	0	0	0	54
% Large 2 Axle Vehicles	2.5	1.5	0	1.5	1	0	1.1	1	0	2.9	5.1	3.1	0	0	0	0	2
3 Axle Vehicles	0	2	1	3	0	1	0	1	0	1	1	2	0	0	1	1	7
% 3 Axle Vehicles	0	0.1	6.7	0.2	0	16.7	0	0.3	0	0.1	1	0.2	0	0	3.4	2.8	0.3
4+ Axle Trucks	0	1	2	3	0	0	0	0	0	4	0	4	1	1	21	23	30
% 4+ Axle Trucks	0	0.1	13.3	0.2	0	0	0	0	0	0.5	0	0.4	20	50	72.4	63.9	1.1

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	13	177	**2**	192	14	0	10	24	0	109	12	121	0	0	2	2	339
07:30 AM	13	199	2	214	39	0	9	48	**1**	120	**19**	**140**	1	0	1	2	404
07:45 AM	**15**	**225**	1	**241**	**49**	1	**16**	**66**	1	**129**	10	140	**2**	0	2	4	**451**
08:00 AM	8	138	1	147	23	**3**	9	35	1	105	14	120	0	**1**	**7**	**8**	310
Total Volume	49	739	6	794	125	4	44	173	3	463	55	521	3	1	12	16	1504
% App. Total	6.2	93.1	0.8		72.3	2.3	25.4		0.6	88.9	10.6		18.8	6.2	75		
PHF	.817	.821	.750	.824	.638	.333	.688	.655	.750	.897	.724	.930	.375	.250	.429	.500	.834

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:15 AM				08:00 AM			
+0 mins.	13	177	**2**	192	39	0	9	48	0	109	12	121	0	**1**	**7**	**8**
+15 mins.	13	199	2	214	**49**	1	**16**	**66**	**1**	120	**19**	**140**	0	0	1	1
+30 mins.	**15**	**225**	1	**241**	23	**3**	9	35	1	**129**	10	140	0	0	4	4
+45 mins.	8	138	1	147	22	0	8	30	1	105	14	120	0	1	7	8
Total Volume	49	739	6	794	133	4	42	179	3	463	55	521	0	2	19	21
% App. Total	6.2	93.1	0.8		74.3	2.2	23.5		0.6	88.9	10.6		0	9.5	90.5	
PHF	.817	.821	.750	.824	.679	.333	.656	.678	.750	.897	.724	.930	.000	.500	.679	.656

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

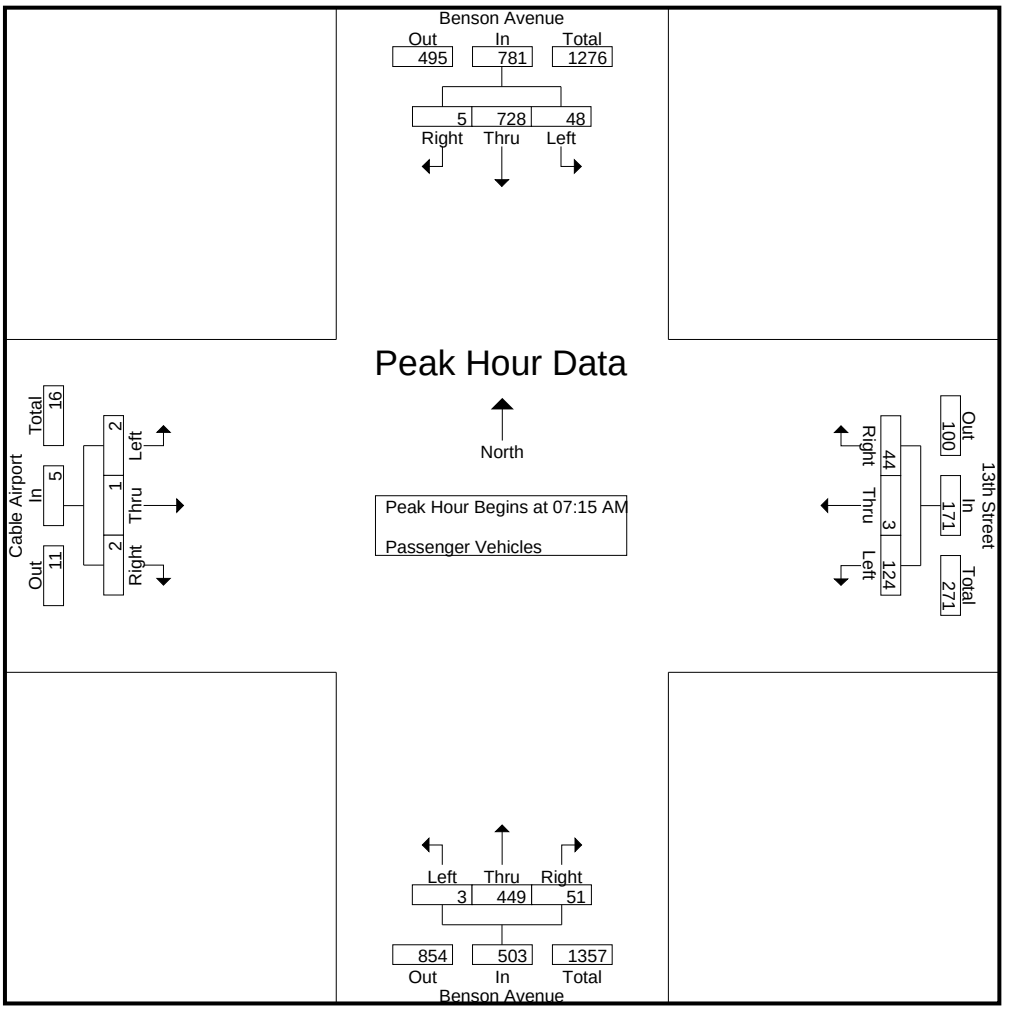
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	119	2	127	15	0	14	29	2	81	7	90	2	0	0	2	248
07:15 AM	13	173	2	188	13	0	10	23	0	106	10	116	0	0	0	0	327
07:30 AM	13	197	1	211	39	0	9	48	1	113	19	133	0	0	1	1	393
07:45 AM	15	222	1	238	49	1	16	66	1	126	9	136	2	0	0	2	442
Total	47	711	6	764	116	1	49	166	4	426	45	475	4	0	1	5	1410
08:00 AM	7	136	1	144	23	2	9	34	1	104	13	118	0	1	1	2	298
08:15 AM	11	157	1	169	22	0	7	29	0	69	15	84	0	0	0	0	282
08:30 AM	3	172	2	177	19	2	14	35	2	97	5	104	0	0	3	3	319
08:45 AM	9	142	2	153	27	0	13	40	0	94	15	109	0	0	2	2	304
Total	30	607	6	643	91	4	43	138	3	364	48	415	0	1	6	7	1203
Grand Total	77	1318	12	1407	207	5	92	304	7	790	93	890	4	1	7	12	2613
Apprch %	5.5	93.7	0.9		68.1	1.6	30.3		0.8	88.8	10.4		33.3	8.3	58.3		
Total %	2.9	50.4	0.5	53.8	7.9	0.2	3.5	11.6	0.3	30.2	3.6	34.1	0.2	0	0.3	0.5	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	13	173	**2**	188	13	0	10	23	0	106	10	116	0	0	0	0	327
07:30 AM	13	197	1	211	39	0	9	48	**1**	113	**19**	133	0	0	**1**	1	393
07:45 AM	**15**	**222**	1	**238**	**49**	1	**16**	**66**	1	**126**	9	**136**	**2**	0	0	**2**	**442**
08:00 AM	7	136	1	144	23	**2**	9	34	1	104	13	118	0	**1**	1	2	298
Total Volume	48	728	5	781	124	3	44	171	3	449	51	503	2	1	2	5	1460
% App. Total	6.1	93.2	0.6		72.5	1.8	25.7		0.6	89.3	10.1		40	20	40		
PHF	.800	.820	.625	.820	.633	.375	.688	.648	.750	.891	.671	.925	.250	.250	.500	.625	.826

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	13	173	**2**	188	13	0	10	23	0	106	10	116	0	0	0	0
+15 mins.	13	197	1	211	39	0	9	48	**1**	113	**19**	133	0	0	**1**	1
+30 mins.	**15**	**222**	1	**238**	**49**	1	**16**	**66**	1	**126**	9	**136**	**2**	0	0	**2**
+45 mins.	7	136	1	144	23	**2**	9	34	1	104	13	118	0	**1**	1	2
Total Volume	48	728	5	781	124	3	44	171	3	449	51	503	2	1	2	5
% App. Total	6.1	93.2	0.6		72.5	1.8	25.7		0.6	89.3	10.1		40	20	40	
PHF	.800	.820	.625	.820	.633	.375	.688	.648	.750	.891	.671	.925	.250	.250	.500	.625

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

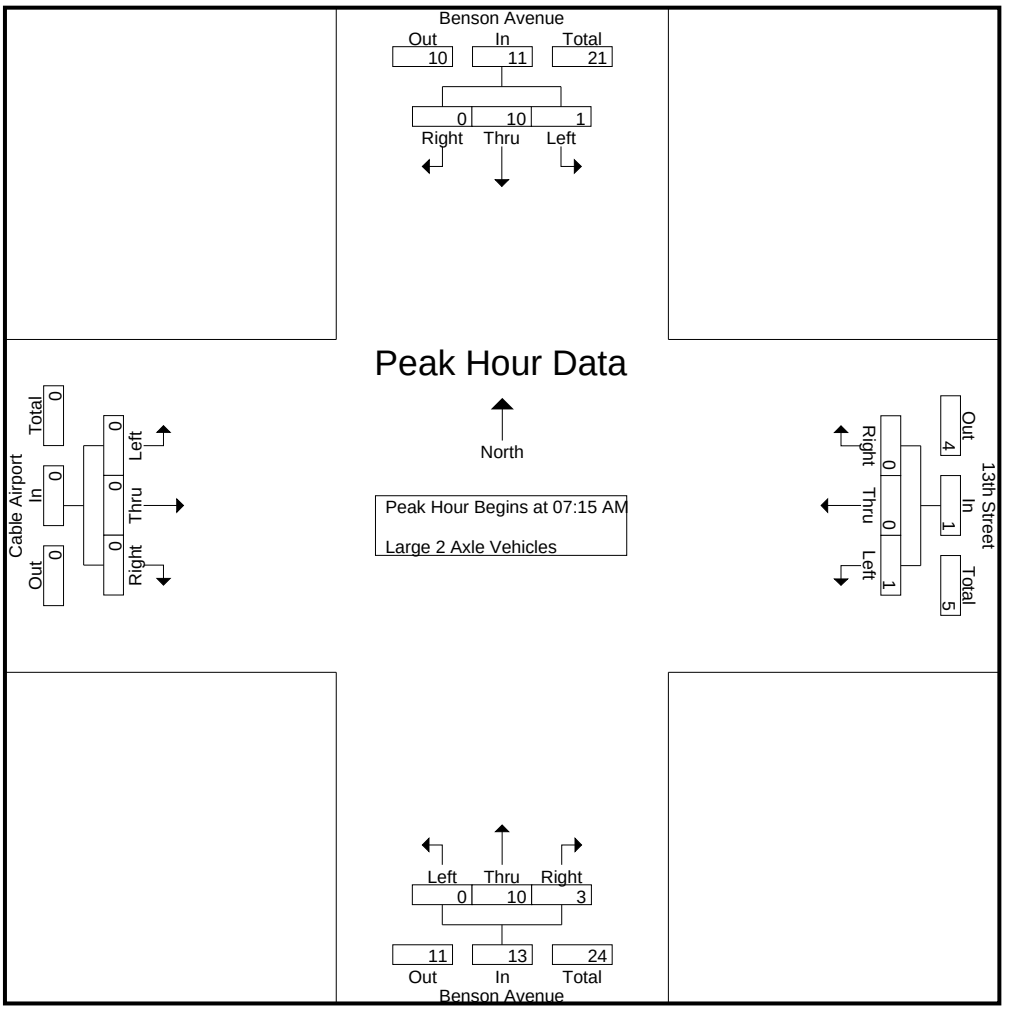
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	0	3	0	0	0	0	0	4	0	4	0	0	0	0	7
07:15 AM	0	4	0	4	1	0	0	1	0	2	2	4	0	0	0	0	9
07:30 AM	0	2	0	2	0	0	0	0	0	5	0	5	0	0	0	0	7
07:45 AM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
Total	0	11	0	11	1	0	0	1	0	14	2	16	0	0	0	0	28
08:00 AM	1	2	0	3	0	0	0	0	0	0	1	1	0	0	0	0	4
08:15 AM	0	3	0	3	0	0	1	1	0	5	1	6	0	0	0	0	10
08:30 AM	0	1	0	1	1	0	0	1	0	4	0	4	0	0	0	0	6
08:45 AM	1	3	0	4	0	0	0	0	0	1	1	2	0	0	0	0	6
Total	2	9	0	11	1	0	1	2	0	10	3	13	0	0	0	0	26
Grand Total	2	20	0	22	2	0	1	3	0	24	5	29	0	0	0	0	54
Apprch %	9.1	90.9	0		66.7	0	33.3		0	82.8	17.2		0	0	0		
Total %	3.7	37	0	40.7	3.7	0	1.9	5.6	0	44.4	9.3	53.7	0	0	0	0	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**4**	0	**4**	**1**	0	0	**1**	0	2	**2**	4	0	0	0	0	**9**
07:30 AM	0	2	0	2	0	0	0	0	0	**5**	0	**5**	0	0	0	0	7
07:45 AM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
08:00 AM	**1**	2	0	3	0	0	0	0	0	0	1	1	0	0	0	0	4
Total Volume	1	10	0	11	1	0	0	1	0	10	3	13	0	0	0	0	25
% App. Total	9.1	90.9	0		100	0	0		0	76.9	23.1		0	0	0		
PHF	.250	.625	.000	.688	.250	.000	.000	.250	.000	.500	.375	.650	.000	.000	.000	.000	.694

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	**4**	0	**4**	**1**	0	0	**1**	0	2	**2**	4	0	0	0	0
+15 mins.	0	2	0	2	0	0	0	0	0	**5**	0	**5**	0	0	0	0
+30 mins.	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0
+45 mins.	**1**	2	0	3	0	0	0	0	0	0	1	1	0	0	0	0
Total Volume	1	10	0	11	1	0	0	1	0	10	3	13	0	0	0	0
% App. Total	9.1	90.9	0		100	0	0		0	76.9	23.1		0	0	0	
PHF	.250	.625	.000	.688	.250	.000	.000	.250	.000	.500	.375	.650	.000	.000	.000	.000

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

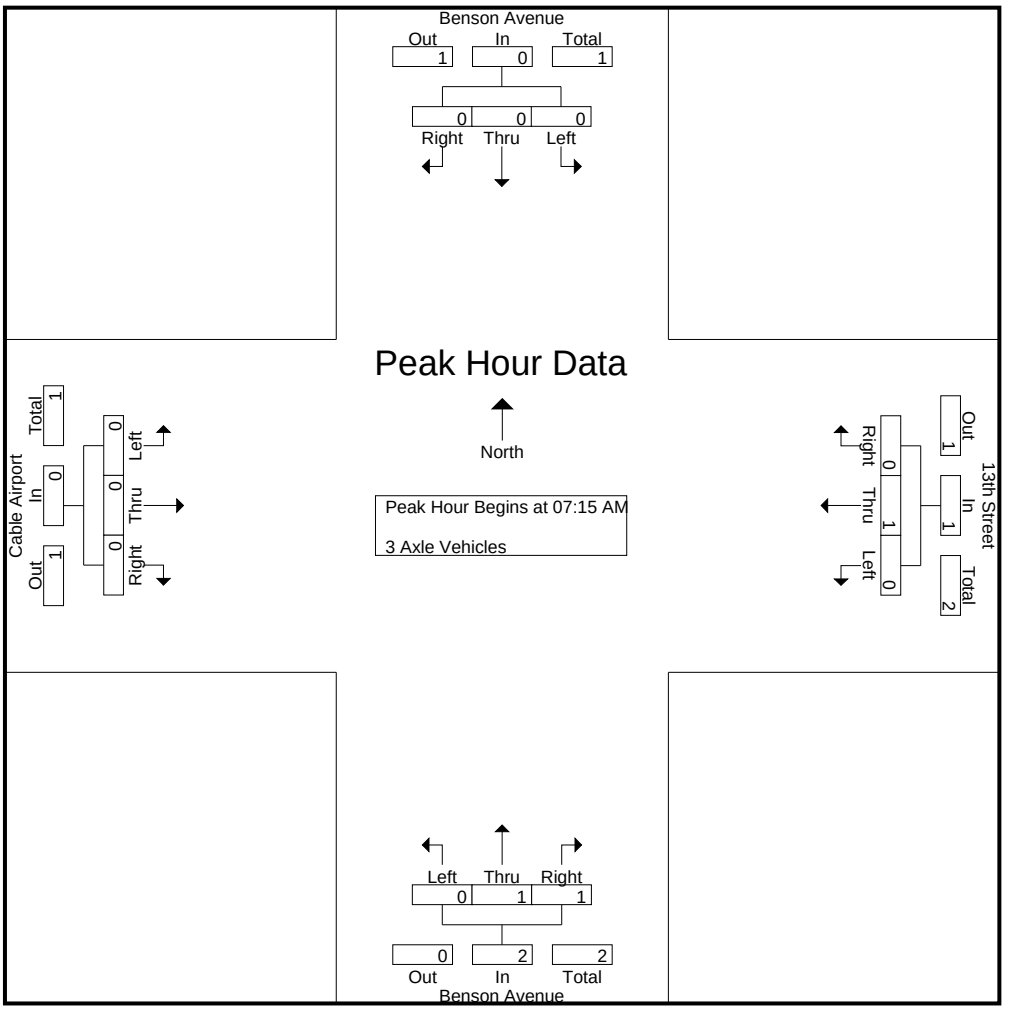
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:00 AM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
08:15 AM	0	2	1	3	0	0	0	0	0	0	0	0	0	0	1	1	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	1	3	0	1	0	1	0	1	0	1	0	0	1	1	6
Grand Total	0	2	1	3	0	1	0	1	0	1	1	2	0	0	1	1	7
Apprch %	0	66.7	33.3		0	100	0		0	50	50		0	0	100		
Total %	0	28.6	14.3	42.9	0	14.3	0	14.3	0	14.3	14.3	28.6	0	0	14.3	14.3	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
08:00 AM	0	0	0	0	0	**1**	0	**1**	0	**1**	0	1	0	0	0	0	**2**
Total Volume	0	0	0	0	0	1	0	1	0	1	1	2	0	0	0	0	3
% App. Total	0	0	0		0	100	0		0	50	50		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.250	.250	.500	.000	.000	.000	.000	.375

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	**1**	0	**1**	0	**1**	0	1	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	1	1	2	0	0	0	0
% App. Total	0	0	0		0	100	0		0	50	50		0	0	0	
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.250	.250	.500	.000	.000	.000	.000

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- 4+ Axle Trucks

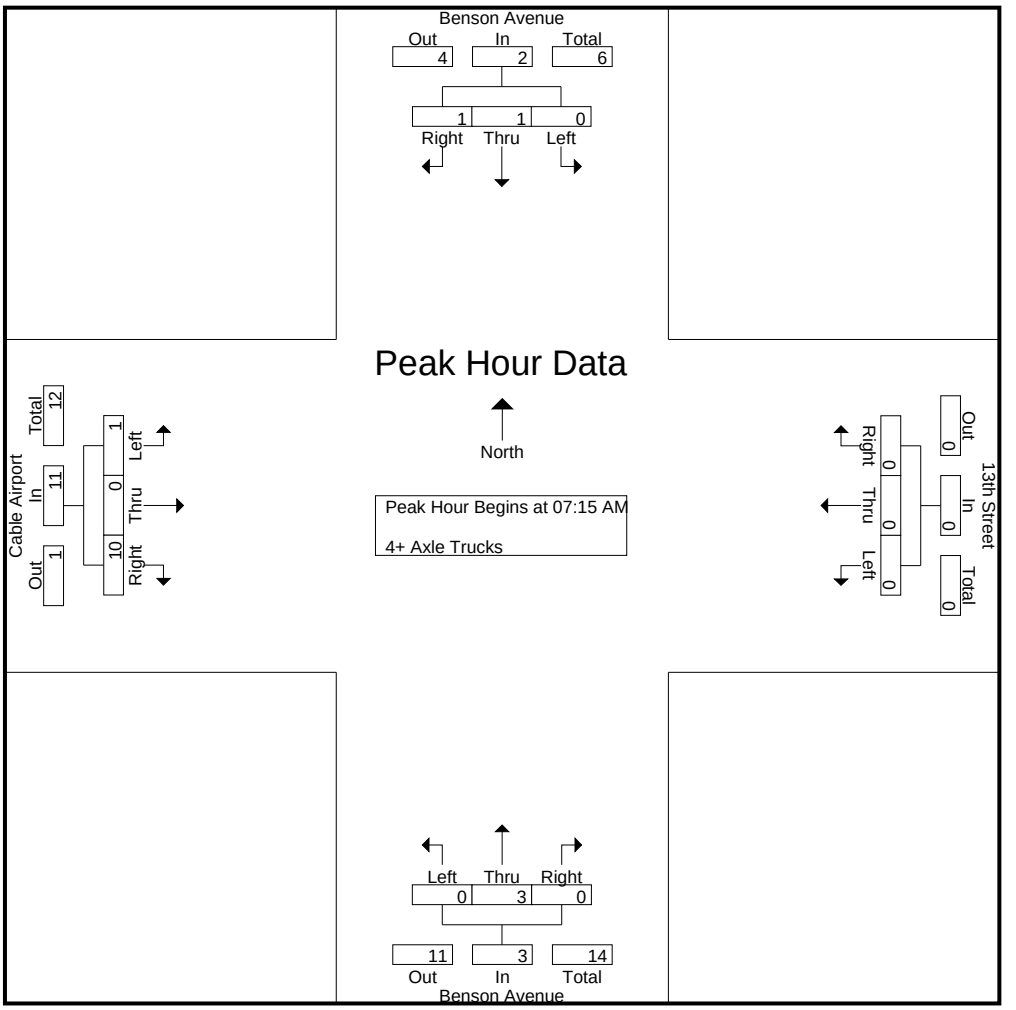
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	2	3
07:30 AM	0	0	1	1	0	0	0	0	0	2	0	2	1	0	0	1	4
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	2	3
Total	0	1	1	2	0	0	0	0	0	3	0	3	1	0	9	10	15
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	2
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	5	6	7
Total	0	0	1	1	0	0	0	0	0	1	0	1	0	1	12	13	15
Grand Total	0	1	2	3	0	0	0	0	0	4	0	4	1	1	21	23	30
Apprch %	0	33.3	66.7		0	0	0		0	100	0		4.3	4.3	91.3		
Total %	0	3.3	6.7	10	0	0	0	0	0	13.3	0	13.3	3.3	3.3	70	76.7	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	2	3
07:30 AM	0	0	**1**	**1**	0	0	0	0	0	**2**	0	**2**	**1**	0	0	1	4
07:45 AM	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	2	2	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**	**6**	**6**
Total Volume	0	1	1	2	0	0	0	0	0	3	0	3	1	0	10	11	16
% App. Total	0	50	50		0	0	0		0	100	0		9.1	0	90.9		
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.000	.375	.000	.375	.250	.000	.417	.458	.667

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th AM
Site Code : 99918442
Start Date : 5/23/2018
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	2
+15 mins.	0	0	**1**	**1**	0	0	0	0	0	**2**	0	**2**	**1**	0	0	1
+30 mins.	0	**1**	0	1	0	0	0	0	0	0	0	0	0	0	2	2
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**	**6**
Total Volume	0	1	1	2	0	0	0	0	0	3	0	3	1	0	10	11
% App. Total	0	50	50		0	0	0		0	100	0		9.1	0	90.9	
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.000	.375	.000	.375	.250	.000	.417	.458

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

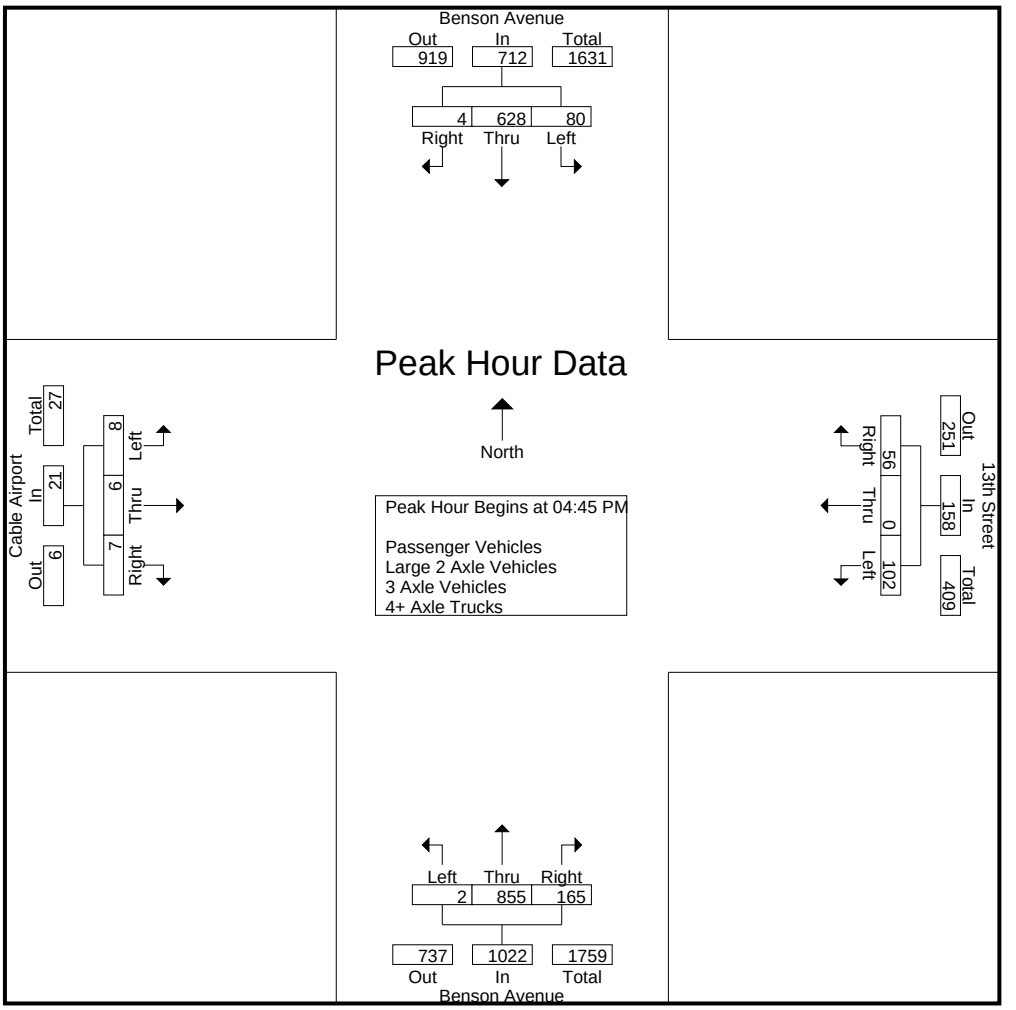
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	14	138	1	153	24	0	14	38	5	201	35	241	0	3	3	6	438
04:15 PM	14	129	0	143	11	0	17	28	1	190	23	214	1	0	3	4	389
04:30 PM	31	150	2	183	20	0	19	39	0	186	43	229	2	0	3	5	456
04:45 PM	11	153	3	167	31	0	15	46	0	202	35	237	5	3	2	10	460
Total	70	570	6	646	86	0	65	151	6	779	136	921	8	6	11	25	1743
05:00 PM	24	144	1	169	22	0	19	41	0	231	49	280	2	2	0	4	494
05:15 PM	29	166	0	195	21	0	10	31	2	209	43	254	0	1	4	5	485
05:30 PM	16	165	0	181	28	0	12	40	0	213	38	251	1	0	1	2	474
05:45 PM	16	141	0	157	26	1	6	33	2	184	30	216	0	0	0	0	406
Total	85	616	1	702	97	1	47	145	4	837	160	1001	3	3	5	11	1859
Grand Total	155	1186	7	1348	183	1	112	296	10	1616	296	1922	11	9	16	36	3602
Apprch %	11.5	88	0.5		61.8	0.3	37.8		0.5	84.1	15.4		30.6	25	44.4		
Total %	4.3	32.9	0.2	37.4	5.1	0	3.1	8.2	0.3	44.9	8.2	53.4	0.3	0.2	0.4	1	
Passenger Vehicles	155	1168	5	1328	183	1	111	295	10	1602	296	1908	11	9	14	34	3565
% Passenger Vehicles	100	98.5	71.4	98.5	100	100	99.1	99.7	100	99.1	100	99.3	100	100	87.5	94.4	99
Large 2 Axle Vehicles	0	17	0	17	0	0	1	1	0	11	0	11	0	0	0	0	29
% Large 2 Axle Vehicles	0	1.4	0	1.3	0	0	0.9	0.3	0	0.7	0	0.6	0	0	0	0	0.8
3 Axle Vehicles	0	0	1	1	0	0	0	0	0	2	0	2	0	0	1	1	4
% 3 Axle Vehicles	0	0	14.3	0.1	0	0	0	0	0	0.1	0	0.1	0	0	6.2	2.8	0.1
4+ Axle Trucks	0	1	1	2	0	0	0	0	0	1	0	1	0	0	1	1	4
% 4+ Axle Trucks	0	0.1	14.3	0.1	0	0	0	0	0	0.1	0	0.1	0	0	6.2	2.8	0.1

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	11	153	**3**	167	**31**	0	15	**46**	0	202	35	237	**5**	**3**	2	**10**	460
05:00 PM	24	144	1	169	22	0	**19**	41	0	**231**	**49**	**280**	2	2	0	4	**494**
05:15 PM	**29**	**166**	0	**195**	21	0	10	31	**2**	209	43	254	0	1	**4**	5	485
05:30 PM	16	165	0	181	28	0	12	40	0	213	38	251	1	0	1	2	474
Total Volume	80	628	4	712	102	0	56	158	2	855	165	1022	8	6	7	21	1913
% App. Total	11.2	88.2	0.6		64.6	0	35.4		0.2	83.7	16.1		38.1	28.6	33.3		
PHF	.690	.946	.333	.913	.823	.000	.737	.859	.250	.925	.842	.913	.400	.500	.438	.525	.968

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:45 PM				04:00 PM			
+0 mins.	**31**	150	2	183	**31**	0	15	**46**	0	202	35	237	0	**3**	**3**	6
+15 mins.	11	153	**3**	167	22	0	**19**	41	0	**231**	**49**	**280**	1	0	3	4
+30 mins.	24	144	1	169	21	0	10	31	**2**	209	43	254	2	0	3	5
+45 mins.	29	**166**	0	**195**	28	0	12	40	0	213	38	251	**5**	3	2	**10**
Total Volume	95	613	6	714	102	0	56	158	2	855	165	1022	8	6	11	25
% App. Total	13.3	85.9	0.8		64.6	0	35.4		0.2	83.7	16.1		32	24	44	
PHF	.766	.923	.500	.915	.823	.000	.737	.859	.250	.925	.842	.913	.400	.500	.917	.625

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City of Upland
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File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

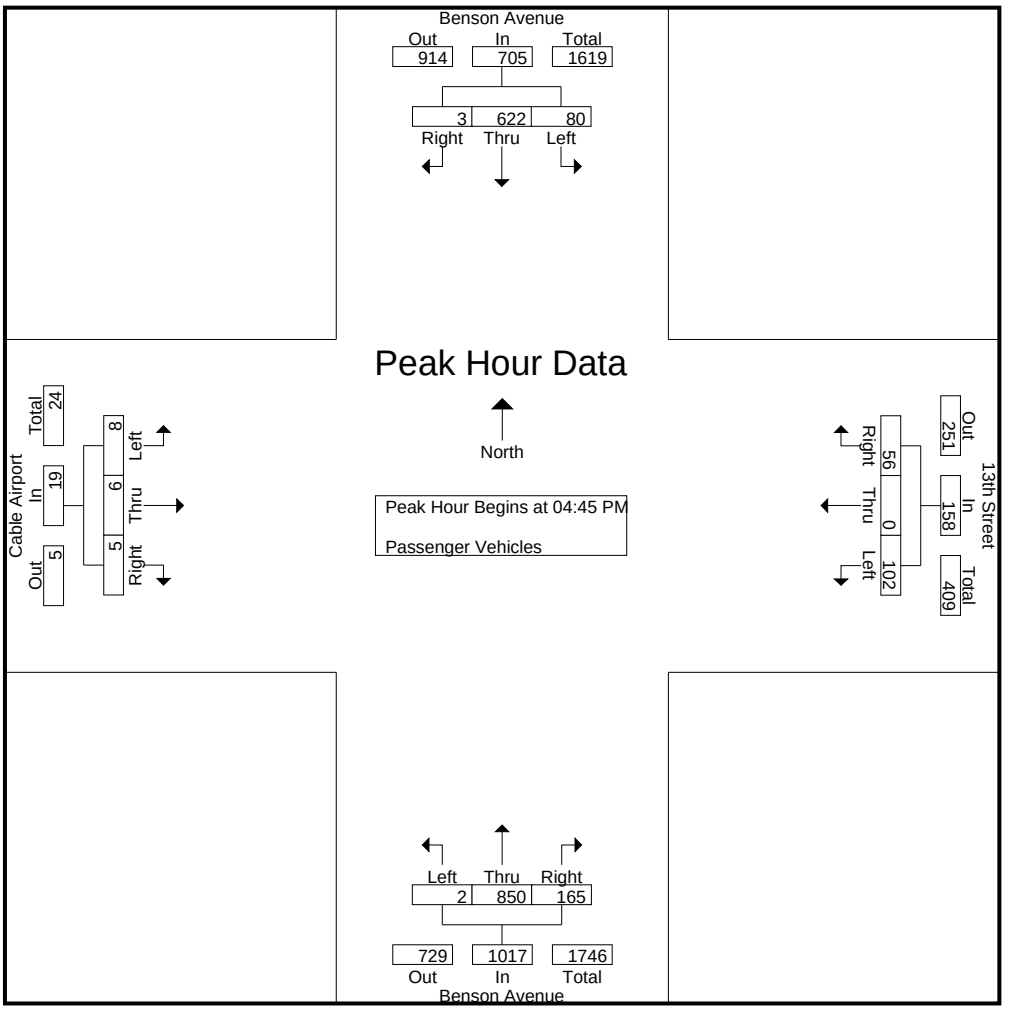
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	14	137	0	151	24	0	14	38	5	196	35	236	0	3	3	6	431
04:15 PM	14	124	0	138	11	0	16	27	1	189	23	213	1	0	3	4	382
04:30 PM	31	146	2	179	20	0	19	39	0	185	43	228	2	0	3	5	451
04:45 PM	11	149	3	163	31	0	15	46	0	201	35	236	5	3	1	9	454
Total	70	556	5	631	86	0	64	150	6	771	136	913	8	6	10	24	1718
05:00 PM	24	143	0	167	22	0	19	41	0	230	49	279	2	2	0	4	491
05:15 PM	29	165	0	194	21	0	10	31	2	208	43	253	0	1	3	4	482
05:30 PM	16	165	0	181	28	0	12	40	0	211	38	249	1	0	1	2	472
05:45 PM	16	139	0	155	26	1	6	33	2	182	30	214	0	0	0	0	402
Total	85	612	0	697	97	1	47	145	4	831	160	995	3	3	4	10	1847
Grand Total	155	1168	5	1328	183	1	111	295	10	1602	296	1908	11	9	14	34	3565
Apprch %	11.7	88	0.4		62	0.3	37.6		0.5	84	15.5		32.4	26.5	41.2		
Total %	4.3	32.8	0.1	37.3	5.1	0	3.1	8.3	0.3	44.9	8.3	53.5	0.3	0.3	0.4	1	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	11	149	**3**	163	**31**	0	15	**46**	0	201	35	236	**5**	**3**	1	**9**	454
05:00 PM	24	143	0	167	22	0	**19**	41	0	**230**	**49**	**279**	2	2	0	4	**491**
05:15 PM	**29**	**165**	0	**194**	21	0	10	31	**2**	208	43	253	0	1	**3**	4	482
05:30 PM	16	165	0	181	28	0	12	40	0	211	38	249	1	0	1	2	472
Total Volume	80	622	3	705	102	0	56	158	2	850	165	1017	8	6	5	19	1899
% App. Total	11.3	88.2	0.4		64.6	0	35.4		0.2	83.6	16.2		42.1	31.6	26.3		
PHF	.690	.942	.250	.909	.823	.000	.737	.859	.250	.924	.842	.911	.400	.500	.417	.528	.967

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	11	149	**3**	163	**31**	0	15	**46**	0	201	35	236	**5**	**3**	1	**9**
+15 mins.	24	143	0	167	22	0	**19**	41	0	**230**	**49**	**279**	2	2	0	4
+30 mins.	**29**	**165**	0	**194**	21	0	10	31	**2**	208	43	253	0	1	**3**	4
+45 mins.	16	165	0	181	28	0	12	40	0	211	38	249	1	0	1	2
Total Volume	80	622	3	705	102	0	56	158	2	850	165	1017	8	6	5	19
% App. Total	11.3	88.2	0.4		64.6	0	35.4		0.2	83.6	16.2		42.1	31.6	26.3	
PHF	.690	.942	.250	.909	.823	.000	.737	.859	.250	.924	.842	.911	.400	.500	.417	.528

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City of Upland
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Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

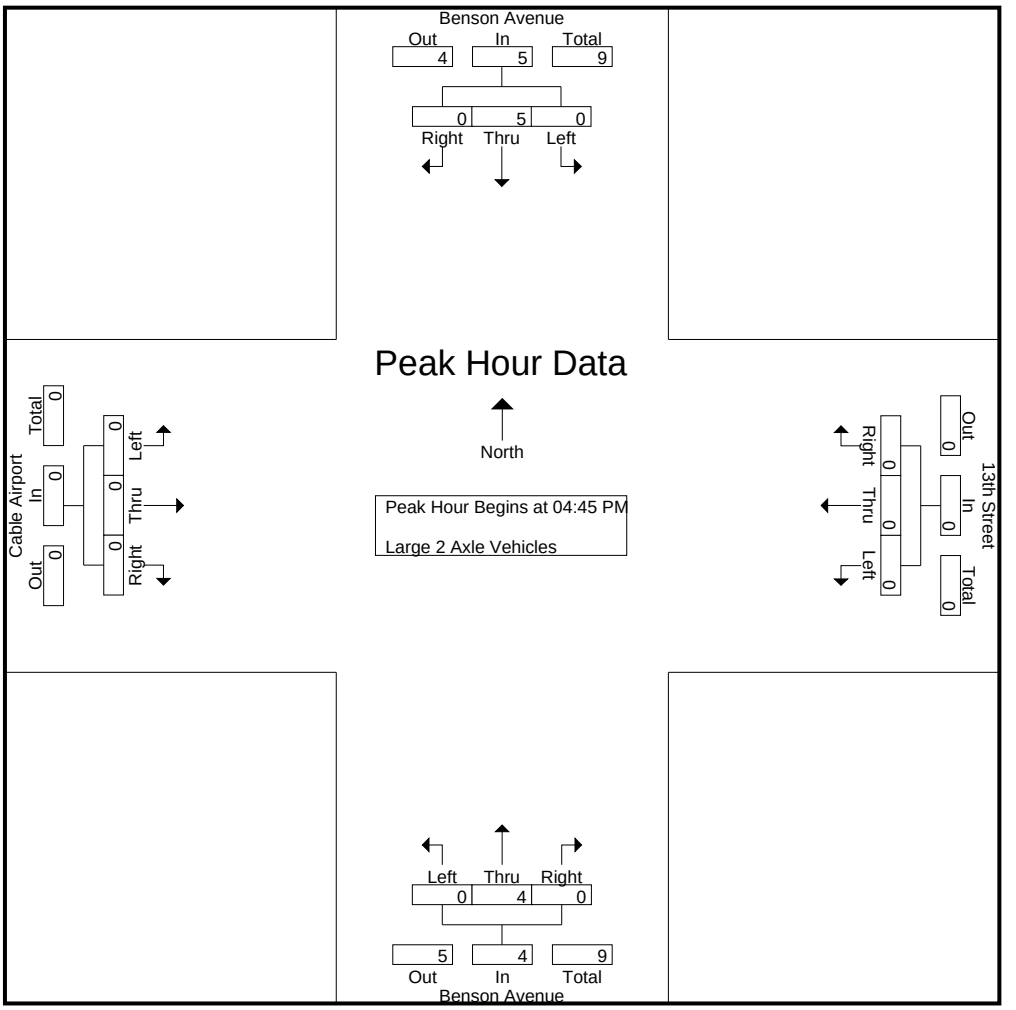
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
04:15 PM	0	5	0	5	0	0	1	1	0	1	0	1	0	0	0	0	7
04:30 PM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
04:45 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
Total	0	13	0	13	0	0	1	1	0	7	0	7	0	0	0	0	21
05:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total	0	4	0	4	0	0	0	0	0	4	0	4	0	0	0	0	8
Grand Total	0	17	0	17	0	0	1	1	0	11	0	11	0	0	0	0	29
Apprch %	0	100	0		0	0	100		0	100	0		0	0	0		
Total %	0	58.6	0	58.6	0	0	3.4	3.4	0	37.9	0	37.9	0	0	0	0	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**3**	0	**3**	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**4**
05:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	5	0	5	0	0	0	0	0	4	0	4	0	0	0	0	9
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.417	.000	.417	.000	.000	.000	.000	.000	1.00	.000	1.00	.000	.000	.000	.000	.563

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City of Upland
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File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
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Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	**3**	0	**3**	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	5	0	5	0	0	0	0	0	4	0	4	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.417	.000	.417	.000	.000	.000	.000	.000	1.000	.000	1.000	.000	.000	.000	.000

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

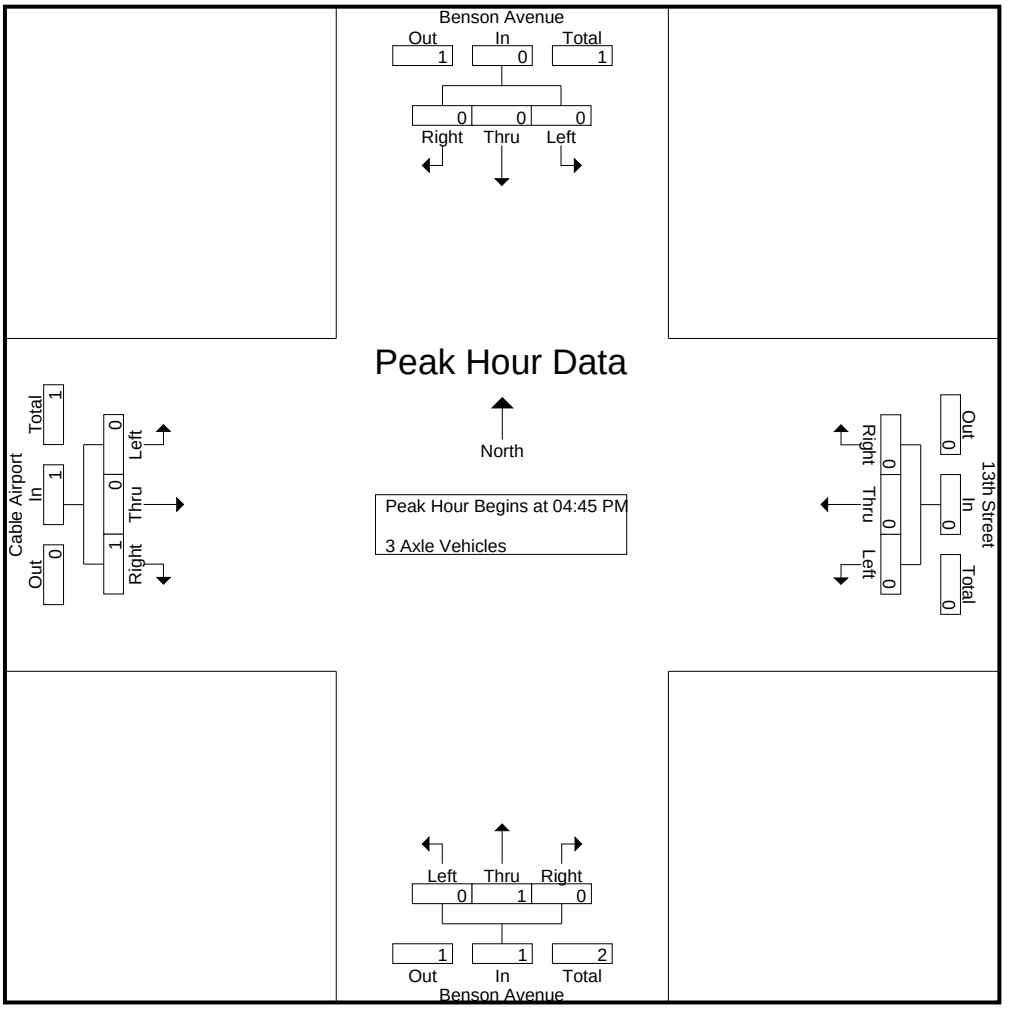
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	1	1	0	0	0	0	0	1	0	1	0	0	1	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	0	1	1	0	0	0	0	0	2	0	2	0	0	1	1	4
Apprch %	0	0	100		0	0	0		0	100	0		0	0	100		
Total %	0	0	25	25	0	0	0	0	0	50	0	50	0	0	25	25	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2
% App. Total	0	0	0		0	0	0		0	100	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.500

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Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

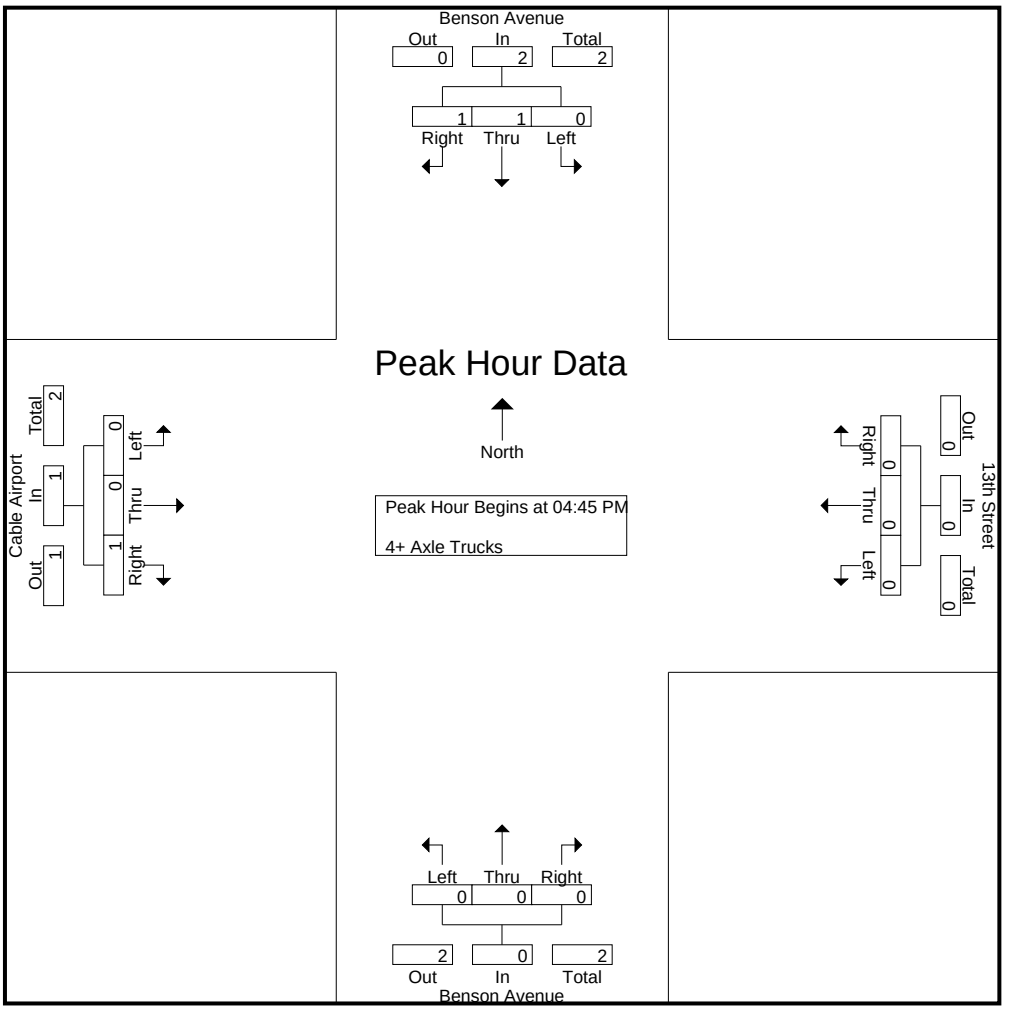
	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	1	1	0	0	0	0	0	1	0	1	0	0	1	1	3
Grand Total	0	1	1	2	0	0	0	0	0	1	0	1	0	0	1	1	4
Apprch %	0	50	50		0	0	0		0	100	0		0	0	100		
Total %	0	25	25	50	0	0	0	0	0	25	0	25	0	0	25	25	

	Benson Avenue Southbound				13th Street Westbound				Benson Avenue Northbound				Cable Airport Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:00 PM	0	0	**1**	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	2	0	0	0	0	0	0	0	0	0	0	1	1	3
% App. Total	0	50	50		0	0	0		0	0	0		0	0	100		
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.750

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City of Upland
N/S: Benson Avenue
E/W: Cable Airport/13th Street
Weather: Clear

File Name : 06_UPL_Benson_Cable Airport_13th PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	**1**	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	2	0	0	0	0	0	0	0	0	0	0	1	1
% App. Total	0	50	50		0	0	0		0	0	0		0	0	100	
PHF	.000	.250	.250	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

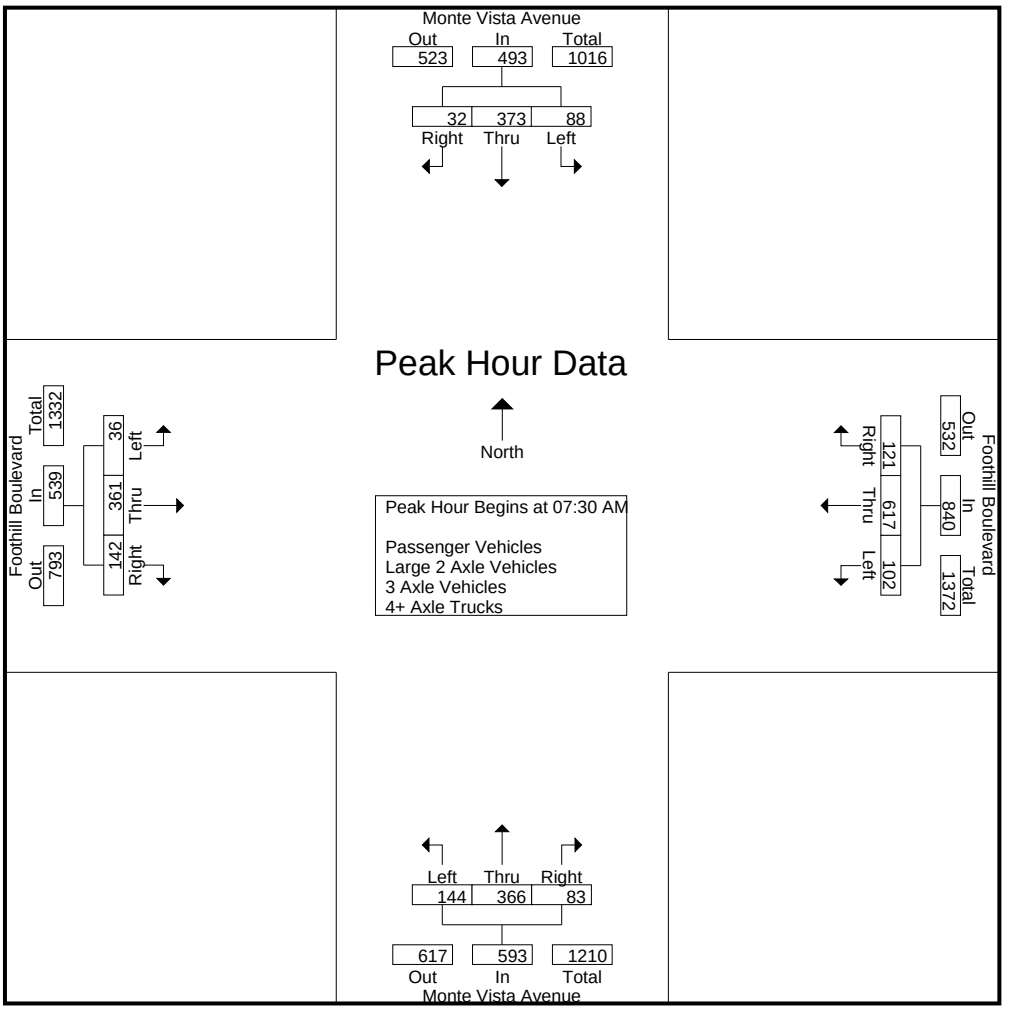
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	18	100	10	128	17	89	18	124	30	72	17	119	5	52	21	78	449
07:15 AM	15	90	8	113	22	103	21	146	23	77	13	113	4	37	22	63	435
07:30 AM	22	96	6	124	24	163	30	217	43	71	29	143	7	72	32	111	595
07:45 AM	16	117	7	140	26	192	34	252	43	95	17	155	10	80	32	122	669
Total	71	403	31	505	89	547	103	739	139	315	76	530	26	241	107	374	2148
08:00 AM	27	83	10	120	22	148	26	196	36	103	20	159	10	99	50	159	634
08:15 AM	23	77	9	109	30	114	31	175	22	97	17	136	9	110	28	147	567
08:30 AM	27	75	8	110	16	146	28	190	28	87	17	132	9	78	28	115	547
08:45 AM	26	97	12	135	15	137	28	180	40	67	15	122	11	73	24	108	545
Total	103	332	39	474	83	545	113	741	126	354	69	549	39	360	130	529	2293
Grand Total	174	735	70	979	172	1092	216	1480	265	669	145	1079	65	601	237	903	4441
Apprch %	17.8	75.1	7.2		11.6	73.8	14.6		24.6	62	13.4		7.2	66.6	26.2		
Total %	3.9	16.6	1.6	22	3.9	24.6	4.9	33.3	6	15.1	3.3	24.3	1.5	13.5	5.3	20.3	
Passenger Vehicles	154	704	63	921	148	1062	175	1385	250	618	130	998	63	583	230	876	4180
% Passenger Vehicles	88.5	95.8	90	94.1	86	97.3	81	93.6	94.3	92.4	89.7	92.5	96.9	97	97	97	94.1
Large 2 Axle Vehicles	7	25	6	38	3	25	15	43	14	43	3	60	2	16	7	25	166
% Large 2 Axle Vehicles	4	3.4	8.6	3.9	1.7	2.3	6.9	2.9	5.3	6.4	2.1	5.6	3.1	2.7	3	2.8	3.7
3 Axle Vehicles	11	3	0	14	14	1	20	35	1	0	9	10	0	0	0	0	59
% 3 Axle Vehicles	6.3	0.4	0	1.4	8.1	0.1	9.3	2.4	0.4	0	6.2	0.9	0	0	0	0	1.3
4+ Axle Trucks	2	3	1	6	7	4	6	17	0	8	3	11	0	2	0	2	36
% 4+ Axle Trucks	1.1	0.4	1.4	0.6	4.1	0.4	2.8	1.1	0	1.2	2.1	1	0	0.3	0	0.2	0.8

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	22	96	6	124	24	163	30	217	**43**	71	**29**	143	7	72	32	111	595
07:45 AM	16	**117**	7	**140**	26	**192**	**34**	**252**	43	95	17	155	**10**	80	32	122	**669**
08:00 AM	**27**	83	**10**	120	22	148	26	196	36	**103**	20	**159**	10	99	**50**	**159**	634
08:15 AM	23	77	9	109	**30**	114	31	175	22	97	17	136	9	**110**	28	147	567
Total Volume	88	373	32	493	102	617	121	840	144	366	83	593	36	361	142	539	2465
% App. Total	17.8	75.7	6.5		12.1	73.5	14.4		24.3	61.7	14		6.7	67	26.3		
PHF	.815	.797	.800	.880	.850	.803	.890	.833	.837	.888	.716	.932	.900	.820	.710	.847	.921

Counts Unlimited
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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:30 AM				07:45 AM			
+0 mins.	18	100	**10**	128	24	163	30	217	**43**	71	**29**	143	**10**	80	32	122
+15 mins.	15	90	8	113	26	**192**	**34**	**252**	43	95	17	155	10	99	**50**	**159**
+30 mins.	**22**	96	6	124	22	148	26	196	36	**103**	20	**159**	9	**110**	28	147
+45 mins.	16	**117**	7	**140**	**30**	114	31	175	22	97	17	136	9	78	28	115
Total Volume	71	403	31	505	102	617	121	840	144	366	83	593	38	367	138	543
% App. Total	14.1	79.8	6.1		12.1	73.5	14.4		24.3	61.7	14		7	67.6	25.4	
PHF	.807	.861	.775	.902	.850	.803	.890	.833	.837	.888	.716	.932	.950	.834	.690	.854

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles

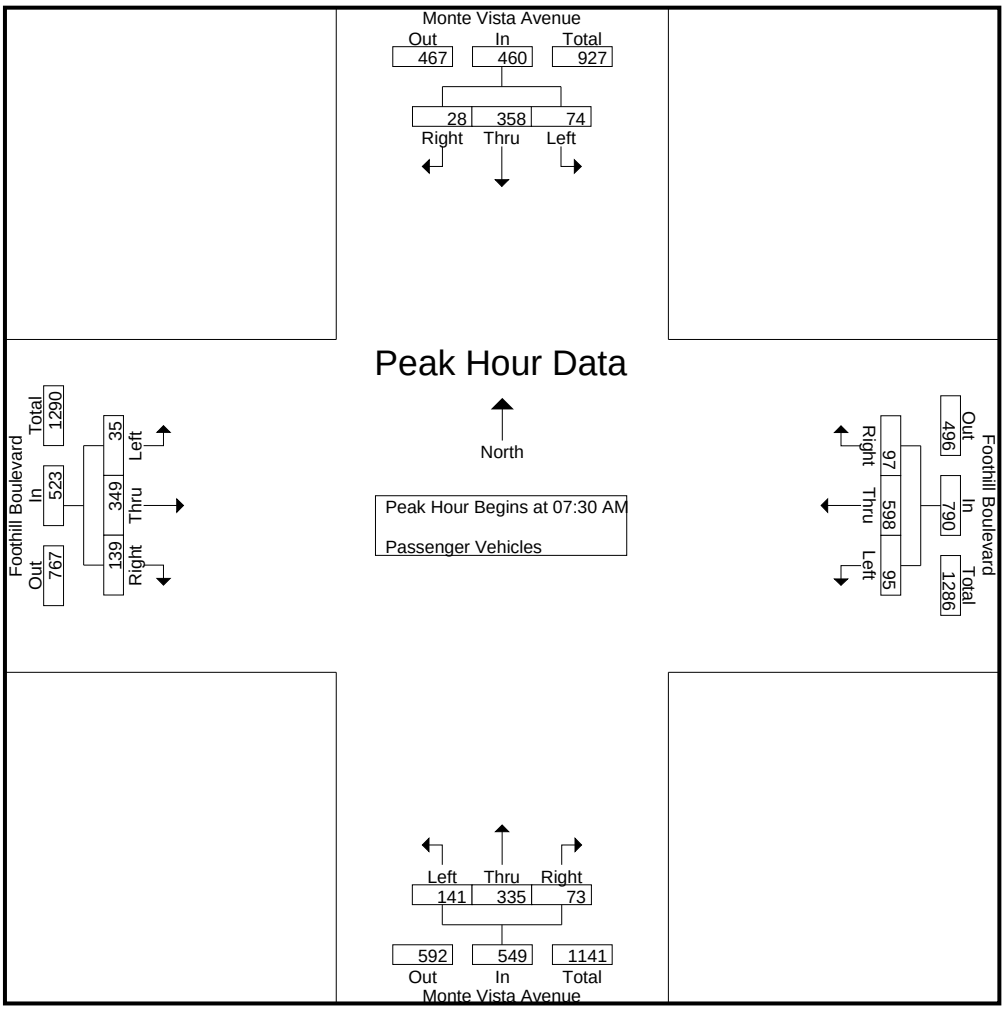
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	17	98	10	125	12	86	15	113	26	69	16	111	5	50	21	76	425
07:15 AM	13	85	7	105	19	101	15	135	19	70	12	101	4	37	19	60	401
07:30 AM	19	94	5	118	24	157	24	205	42	61	25	128	7	71	32	110	561
07:45 AM	12	115	5	132	24	187	26	237	43	87	16	146	10	78	30	118	633
Total	61	392	27	480	79	531	80	690	130	287	69	486	26	236	102	364	2020
08:00 AM	22	79	9	110	21	144	22	187	35	97	18	150	9	95	49	153	600
08:15 AM	21	70	9	100	26	110	25	161	21	90	14	125	9	105	28	142	528
08:30 AM	25	69	6	100	12	143	25	180	28	82	16	126	8	76	27	111	517
08:45 AM	25	94	12	131	10	134	23	167	36	62	13	111	11	71	24	106	515
Total	93	312	36	441	69	531	95	695	120	331	61	512	37	347	128	512	2160
Grand Total	154	704	63	921	148	1062	175	1385	250	618	130	998	63	583	230	876	4180
Apprch %	16.7	76.4	6.8		10.7	76.7	12.6		25.1	61.9	13		7.2	66.6	26.3		
Total %	3.7	16.8	1.5	22	3.5	25.4	4.2	33.1	6	14.8	3.1	23.9	1.5	13.9	5.5	21	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	19	94	5	118	24	157	24	205	42	61	**25**	128	7	71	32	110	561
07:45 AM	12	**115**	5	**132**	24	**187**	**26**	**237**	**43**	87	16	146	**10**	78	30	118	**633**
08:00 AM	**22**	79	**9**	110	21	144	22	187	35	**97**	18	**150**	9	95	**49**	**153**	600
08:15 AM	21	70	9	100	**26**	110	25	161	21	90	14	125	9	**105**	28	142	528
Total Volume	74	358	28	460	95	598	97	790	141	335	73	549	35	349	139	523	2322
% App. Total	16.1	77.8	6.1		12	75.7	12.3		25.7	61	13.3		6.7	66.7	26.6		
PHF	.841	.778	.778	.871	.913	.799	.933	.833	.820	.863	.730	.915	.875	.831	.709	.855	.917

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	19	94	5	118	24	157	24	205	42	61	**25**	128	7	71	32	110
+15 mins.	12	**115**	5	**132**	24	**187**	**26**	**237**	**43**	87	16	146	**10**	78	30	118
+30 mins.	**22**	79	**9**	110	21	144	22	187	35	**97**	18	**150**	9	95	**49**	**153**
+45 mins.	21	70	9	100	**26**	110	25	161	21	90	14	125	9	**105**	28	142
Total Volume	74	358	28	460	95	598	97	790	141	335	73	549	35	349	139	523
% App. Total	16.1	77.8	6.1		12	75.7	12.3		25.7	61	13.3		6.7	66.7	26.6	
PHF	.841	.778	.778	.871	.913	.799	.933	.833	.820	.863	.730	.915	.875	.831	.709	.855

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

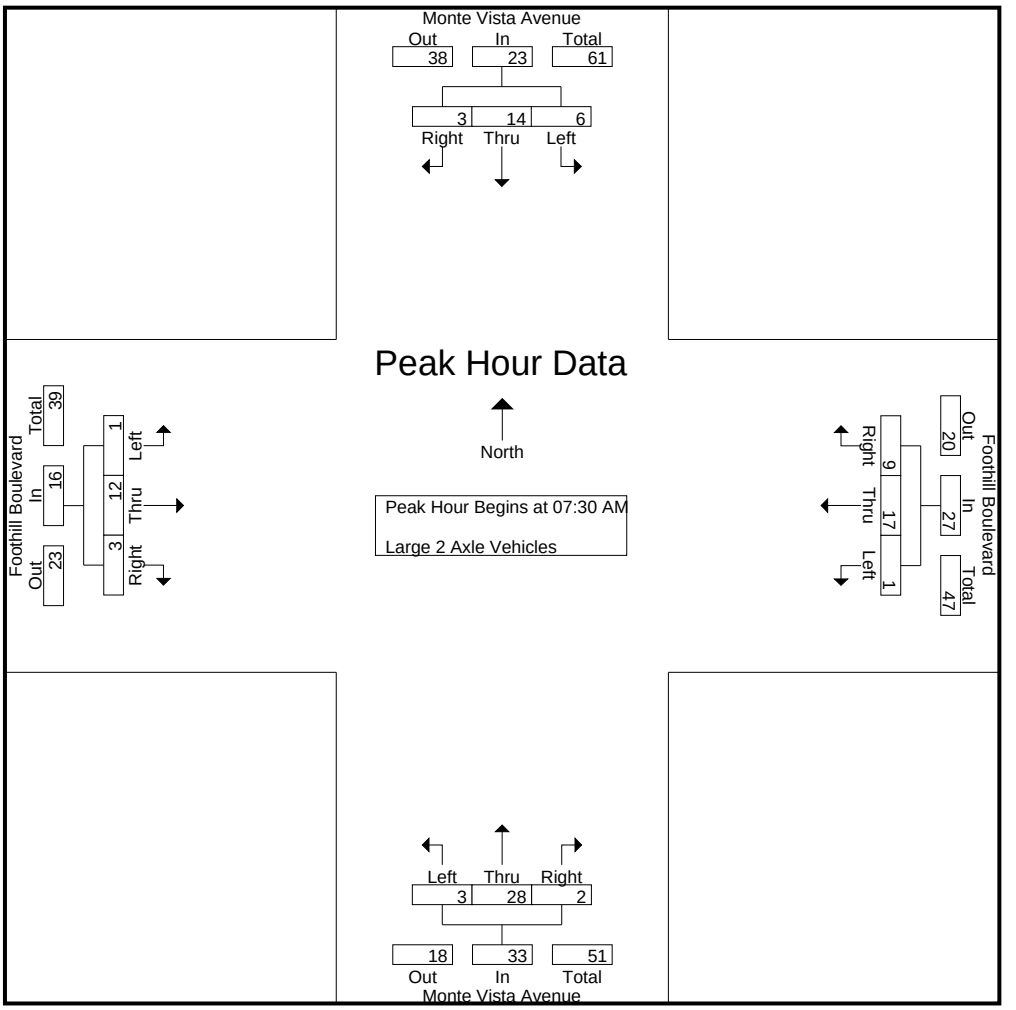
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	2	0	2	4	1	0	5	0	0	0	0	8
07:15 AM	0	3	1	4	0	1	3	4	4	7	0	11	0	0	3	3	22
07:30 AM	2	2	1	5	0	6	1	7	1	9	0	10	0	1	0	1	23
07:45 AM	1	2	1	4	1	5	4	10	0	8	0	8	0	2	2	4	26
Total	3	8	3	14	1	14	8	23	9	25	0	34	0	3	5	8	79
08:00 AM	1	4	1	6	0	3	1	4	1	4	2	7	1	4	1	6	23
08:15 AM	2	6	0	8	0	3	3	6	1	7	0	8	0	5	0	5	27
08:30 AM	1	5	2	8	1	3	2	6	0	3	0	3	1	2	1	4	21
08:45 AM	0	2	0	2	1	2	1	4	3	4	1	8	0	2	0	2	16
Total	4	17	3	24	2	11	7	20	5	18	3	26	2	13	2	17	87
Grand Total	7	25	6	38	3	25	15	43	14	43	3	60	2	16	7	25	166
Apprch %	18.4	65.8	15.8		7	58.1	34.9		23.3	71.7	5		8	64	28		
Total %	4.2	15.1	3.6	22.9	1.8	15.1	9	25.9	8.4	25.9	1.8	36.1	1.2	9.6	4.2	15.1	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**2**	2	**1**	5	0	**6**	1	7	**1**	**9**	0	**10**	0	1	0	1	23
07:45 AM	1	2	1	4	**1**	5	**4**	**10**	0	8	0	8	0	2	**2**	4	26
08:00 AM	1	4	1	6	0	3	1	4	1	4	**2**	7	**1**	4	1	**6**	23
08:15 AM	2	**6**	0	**8**	0	3	3	6	1	7	0	8	0	**5**	0	5	**27**
Total Volume	6	14	3	23	1	17	9	27	3	28	2	33	1	12	3	16	99
% App. Total	26.1	60.9	13		3.7	63	33.3		9.1	84.8	6.1		6.2	75	18.8		
PHF	.750	.583	.750	.719	.250	.708	.563	.675	.750	.778	.250	.825	.250	.600	.375	.667	.917

Counts Unlimited
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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	**2**	2	**1**	5	0	**6**	1	7	**1**	**9**	0	**10**	0	1	0	1
+15 mins.	1	2	1	4	**1**	5	**4**	**10**	0	8	0	8	0	2	**2**	4
+30 mins.	1	4	1	6	0	3	1	4	1	4	**2**	7	**1**	4	1	**6**
+45 mins.	2	**6**	0	**8**	0	3	3	6	1	7	0	8	0	**5**	0	5
Total Volume	6	14	3	23	1	17	9	27	3	28	2	33	1	12	3	16
% App. Total	26.1	60.9	13		3.7	63	33.3		9.1	84.8	6.1		6.2	75	18.8	
PHF	.750	.583	.750	.719	.250	.708	.563	.675	.750	.778	.250	.825	.250	.600	.375	.667

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

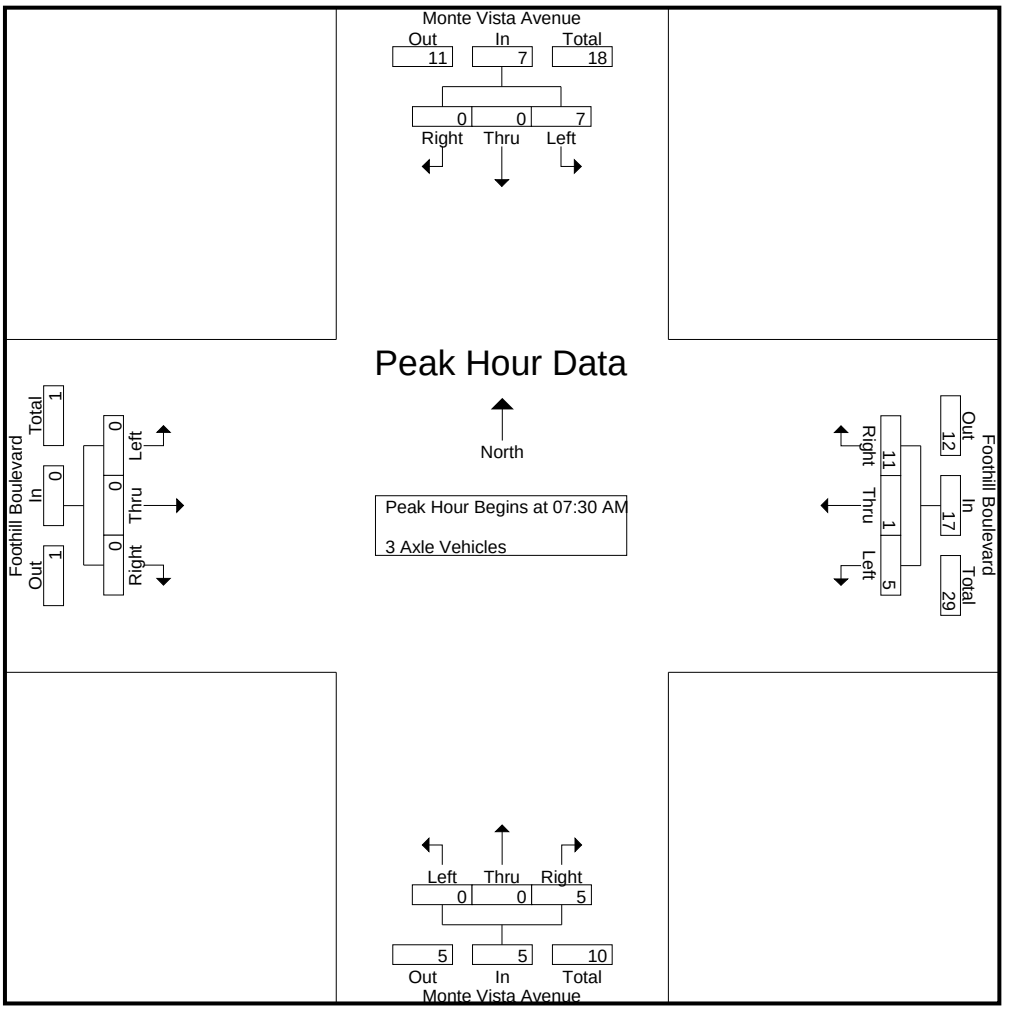
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	4	0	2	6	0	0	1	1	0	0	0	0	7
07:15 AM	2	2	0	4	2	0	2	4	0	0	1	1	0	0	0	0	9
07:30 AM	1	0	0	1	0	0	2	2	0	0	3	3	0	0	0	0	6
07:45 AM	2	0	0	2	1	0	3	4	0	0	1	1	0	0	0	0	7
Total	5	2	0	7	7	0	9	16	0	0	6	6	0	0	0	0	29
08:00 AM	4	0	0	4	1	0	3	4	0	0	0	0	0	0	0	0	8
08:15 AM	0	0	0	0	3	1	3	7	0	0	1	1	0	0	0	0	8
08:30 AM	1	0	0	1	2	0	1	3	0	0	1	1	0	0	0	0	5
08:45 AM	1	1	0	2	1	0	4	5	1	0	1	2	0	0	0	0	9
Total	6	1	0	7	7	1	11	19	1	0	3	4	0	0	0	0	30
Grand Total	11	3	0	14	14	1	20	35	1	0	9	10	0	0	0	0	59
Apprch %	78.6	21.4	0		40	2.9	57.1		10	0	90		0	0	0		
Total %	18.6	5.1	0	23.7	23.7	1.7	33.9	59.3	1.7	0	15.3	16.9	0	0	0	0	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	0	0	1	0	0	2	2	0	0	**3**	**3**	0	0	0	0	6
07:45 AM	2	0	0	2	1	0	**3**	4	0	0	1	1	0	0	0	0	7
08:00 AM	**4**	0	0	**4**	1	0	3	4	0	0	0	0	0	0	0	0	**8**
08:15 AM	0	0	0	0	**3**	**1**	3	**7**	0	0	1	1	0	0	0	0	8
Total Volume	7	0	0	7	5	1	11	17	0	0	5	5	0	0	0	0	29
% App. Total	100	0	0		29.4	5.9	64.7		0	0	100		0	0	0		
PHF	.438	.000	.000	.438	.417	.250	.917	.607	.000	.000	.417	.417	.000	.000	.000	.000	.906

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City of Upland
N/S: Monte Vista Avenue
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Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	1	0	0	1	0	0	2	2	0	0	**3**	**3**	0	0	0	0
+15 mins.	2	0	0	2	1	0	**3**	4	0	0	1	1	0	0	0	0
+30 mins.	**4**	0	0	**4**	1	0	3	4	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**3**	**1**	3	**7**	0	0	1	1	0	0	0	0
Total Volume	7	0	0	7	5	1	11	17	0	0	5	5	0	0	0	0
% App. Total	100	0	0		29.4	5.9	64.7		0	0	100		0	0	0	
PHF	.438	.000	.000	.438	.417	.250	.917	.607	.000	.000	.417	.417	.000	.000	.000	.000

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

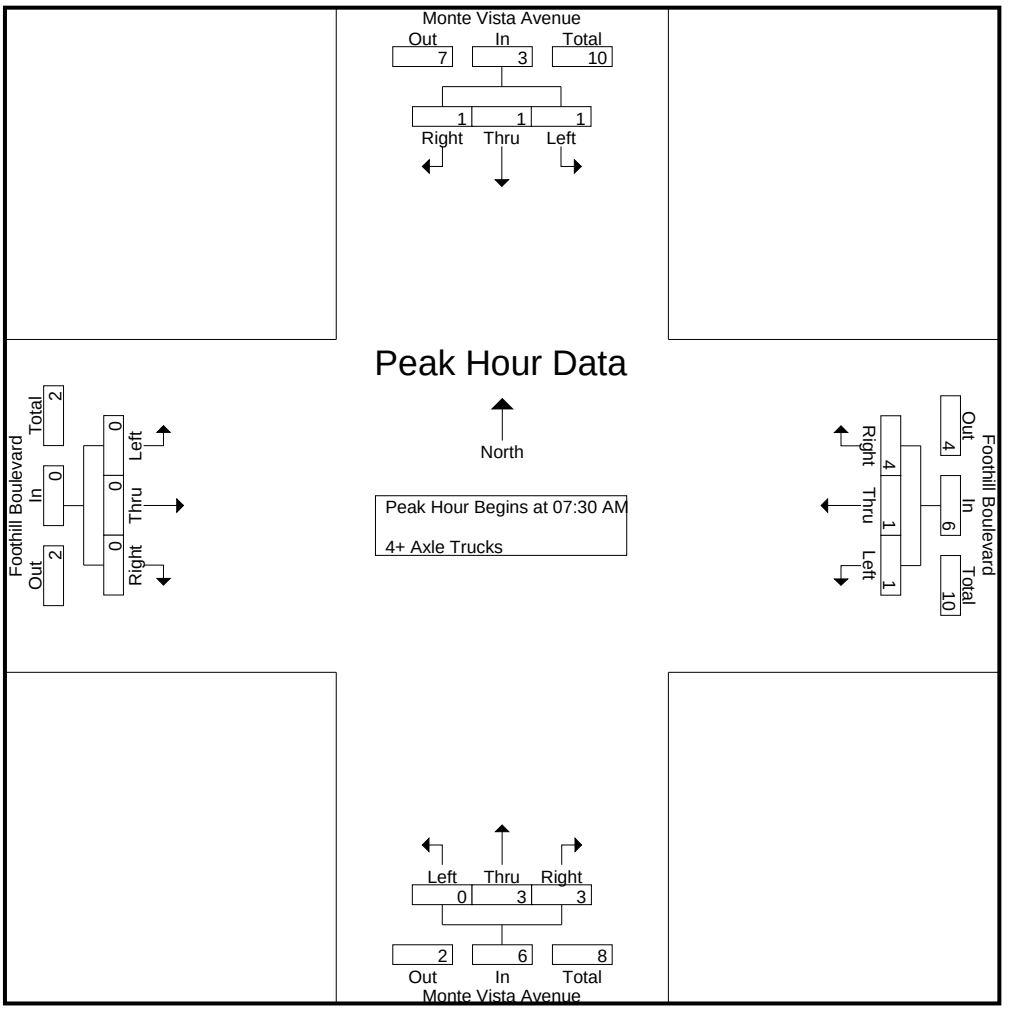
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	1	0	2	1	1	1	3	0	2	0	2	0	2	0	2	9
07:15 AM	0	0	0	0	1	1	1	3	0	0	0	0	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	3	3	0	1	1	2	0	0	0	0	5
07:45 AM	1	0	1	2	0	0	1	1	0	0	0	0	0	0	0	0	3
Total	2	1	1	4	2	2	6	10	0	3	1	4	0	2	0	2	20
08:00 AM	0	0	0	0	0	1	0	1	0	2	0	2	0	0	0	0	3
08:15 AM	0	1	0	1	1	0	0	1	0	0	2	2	0	0	0	0	4
08:30 AM	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
08:45 AM	0	0	0	0	3	1	0	4	0	1	0	1	0	0	0	0	5
Total	0	2	0	2	5	2	0	7	0	5	2	7	0	0	0	0	16
Grand Total	2	3	1	6	7	4	6	17	0	8	3	11	0	2	0	2	36
Apprch %	33.3	50	16.7		41.2	23.5	35.3		0	72.7	27.3		0	100	0		
Total %	5.6	8.3	2.8	16.7	19.4	11.1	16.7	47.2	0	22.2	8.3	30.6	0	5.6	0	5.6	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	**3**	**3**	0	1	1	**2**	0	0	0	0	**5**
07:45 AM	**1**	0	**1**	**2**	0	0	1	1	0	0	0	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	**1**	0	1	0	**2**	0	2	0	0	0	0	3
08:15 AM	0	**1**	0	1	**1**	0	0	1	0	0	**2**	2	0	0	0	0	4
Total Volume	1	1	1	3	1	1	4	6	0	3	3	6	0	0	0	0	15
% App. Total	33.3	33.3	33.3		16.7	16.7	66.7		0	50	50		0	0	0		
PHF	.250	.250	.250	.375	.250	.250	.333	.500	.000	.375	.375	.750	.000	.000	.000	.000	.750

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Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill AM
Site Code : 99918629
Start Date : 8/28/2018
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Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	**3**	**3**	0	1	1	**2**	0	0	0	0
+15 mins.	**1**	0	**1**	**2**	0	0	1	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	**1**	0	1	0	**2**	0	2	0	0	0	0
+45 mins.	0	**1**	0	1	**1**	0	0	1	0	0	**2**	2	0	0	0	0
Total Volume	1	1	1	3	1	1	4	6	0	3	3	6	0	0	0	0
% App. Total	33.3	33.3	33.3		16.7	16.7	66.7		0	50	50		0	0	0	
PHF	.250	.250	.250	.375	.250	.250	.333	.500	.000	.375	.375	.750	.000	.000	.000	.000

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City of Upland
N/S: Monte Vista Avenue
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Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

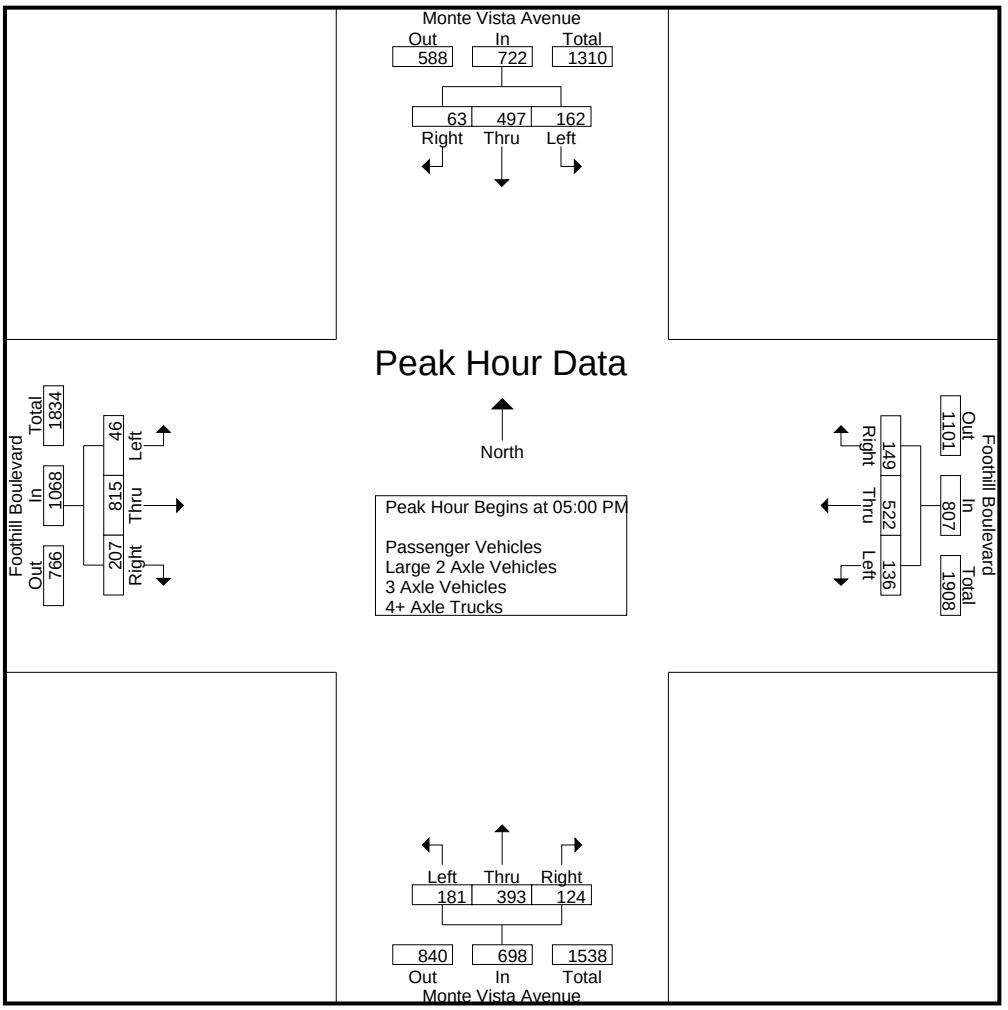
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	32	98	13	143	32	130	35	197	33	93	21	147	15	179	47	241	728
04:15 PM	34	110	20	164	38	114	45	197	38	79	25	142	8	167	29	204	707
04:30 PM	29	96	9	134	25	121	20	166	40	87	25	152	3	165	34	202	654
04:45 PM	56	97	9	162	24	95	26	145	44	85	28	157	12	200	36	248	712
Total	151	401	51	603	119	460	126	705	155	344	99	598	38	711	146	895	2801
05:00 PM	48	141	18	207	41	138	42	221	40	93	33	166	14	201	44	259	853
05:15 PM	35	127	13	175	36	137	37	210	44	85	28	157	13	224	47	284	826
05:30 PM	43	117	15	175	25	139	36	200	48	96	30	174	9	214	55	278	827
05:45 PM	36	112	17	165	34	108	34	176	49	119	33	201	10	176	61	247	789
Total	162	497	63	722	136	522	149	807	181	393	124	698	46	815	207	1068	3295
Grand Total	313	898	114	1325	255	982	275	1512	336	737	223	1296	84	1526	353	1963	6096
Apprch %	23.6	67.8	8.6		16.9	64.9	18.2		25.9	56.9	17.2		4.3	77.7	18		
Total %	5.1	14.7	1.9	21.7	4.2	16.1	4.5	24.8	5.5	12.1	3.7	21.3	1.4	25	5.8	32.2	
Passenger Vehicles	302	885	113	1300	248	975	272	1495	335	725	217	1277	83	1518	352	1953	6025
% Passenger Vehicles	96.5	98.6	99.1	98.1	97.3	99.3	98.9	98.9	99.7	98.4	97.3	98.5	98.8	99.5	99.7	99.5	98.8
Large 2 Axle Vehicles	4	8	0	12	5	5	0	10	1	10	2	13	1	5	1	7	42
% Large 2 Axle Vehicles	1.3	0.9	0	0.9	2	0.5	0	0.7	0.3	1.4	0.9	1	1.2	0.3	0.3	0.4	0.7
3 Axle Vehicles	5	1	1	7	2	0	2	4	0	2	3	5	0	1	0	1	17
% 3 Axle Vehicles	1.6	0.1	0.9	0.5	0.8	0	0.7	0.3	0	0.3	1.3	0.4	0	0.1	0	0.1	0.3
4+ Axle Trucks	2	4	0	6	0	2	1	3	0	0	1	1	0	2	0	2	12
% 4+ Axle Trucks	0.6	0.4	0	0.5	0	0.2	0.4	0.2	0	0	0.4	0.1	0	0.1	0	0.1	0.2

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**48**	**141**	**18**	**207**	**41**	138	**42**	**221**	40	93	**33**	166	**14**	201	44	259	**853**
05:15 PM	35	127	13	175	36	137	37	210	44	85	28	157	13	**224**	47	**284**	826
05:30 PM	43	117	15	175	25	**139**	36	200	48	96	30	174	9	214	55	278	827
05:45 PM	36	112	17	165	34	108	34	176	**49**	**119**	33	**201**	10	176	**61**	247	789
Total Volume	162	497	63	722	136	522	149	807	181	393	124	698	46	815	207	1068	3295
% App. Total	22.4	68.8	8.7		16.9	64.7	18.5		25.9	56.3	17.8		4.3	76.3	19.4		
PHF	.844	.881	.875	.872	.829	.939	.887	.913	.923	.826	.939	.868	.821	.910	.848	.940	.966

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Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				04:45 PM			
+0 mins.	**48**	**141**	**18**	**207**	**41**	138	**42**	**221**	40	93	**33**	166	12	200	36	248
+15 mins.	35	127	13	175	36	137	37	210	44	85	28	157	**14**	201	44	259
+30 mins.	43	117	15	175	25	**139**	36	200	48	96	30	174	13	**224**	47	**284**
+45 mins.	36	112	17	165	34	108	34	176	**49**	**119**	33	**201**	9	214	**55**	278
Total Volume	162	497	63	722	136	522	149	807	181	393	124	698	48	839	182	1069
% App. Total	22.4	68.8	8.7		16.9	64.7	18.5		25.9	56.3	17.8		4.5	78.5	17	
PHF	.844	.881	.875	.872	.829	.939	.887	.913	.923	.826	.939	.868	.857	.936	.827	.941

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Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles

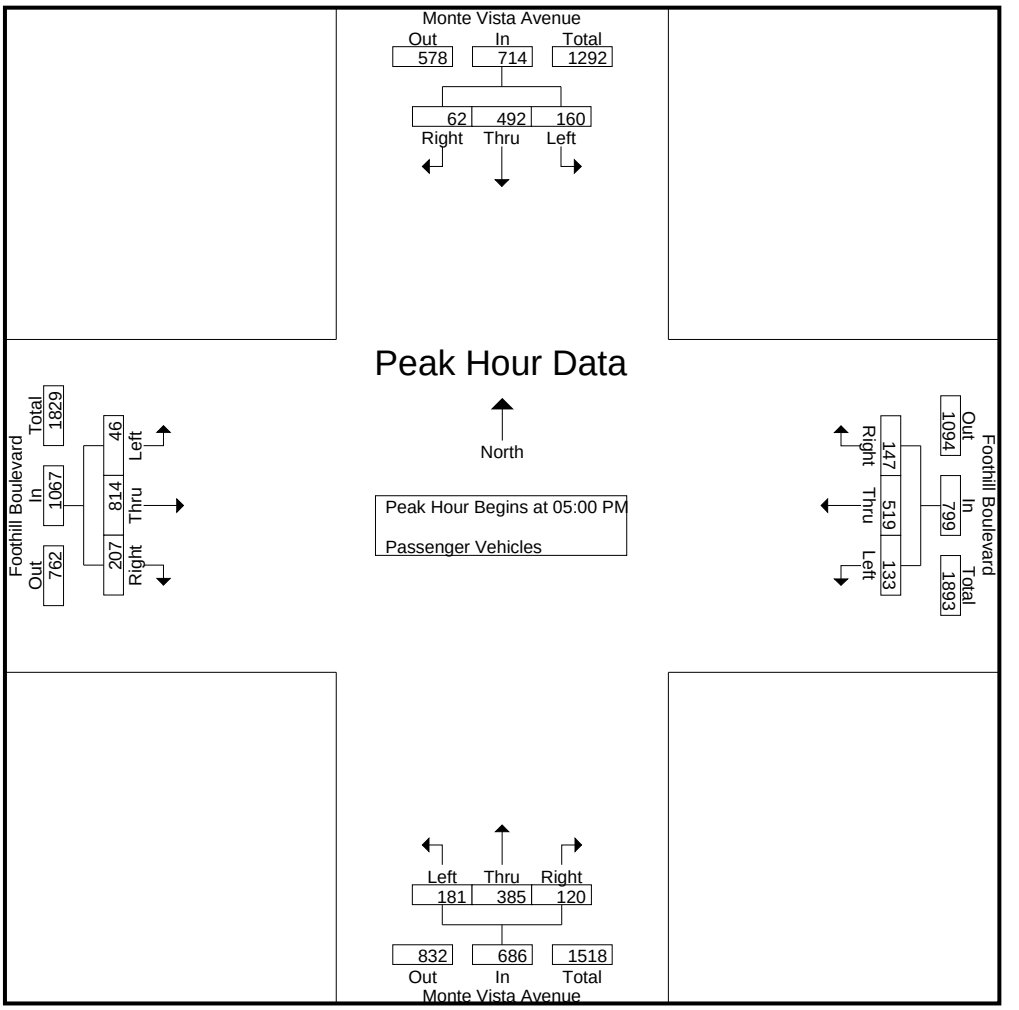
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	31	97	13	141	30	127	35	192	33	93	20	146	15	177	47	239	718
04:15 PM	31	107	20	158	36	113	44	193	37	78	25	140	8	164	29	201	692
04:30 PM	28	93	9	130	25	121	20	166	40	84	24	148	3	164	34	201	645
04:45 PM	52	96	9	157	24	95	26	145	44	85	28	157	11	199	35	245	704
Total	142	393	51	586	115	456	125	696	154	340	97	591	37	704	145	886	2759
05:00 PM	48	141	18	207	40	137	42	219	40	91	32	163	14	201	44	259	848
05:15 PM	34	126	13	173	36	136	35	207	44	81	27	152	13	224	47	284	816
05:30 PM	43	114	14	171	25	138	36	199	48	96	29	173	9	213	55	277	820
05:45 PM	35	111	17	163	32	108	34	174	49	117	32	198	10	176	61	247	782
Total	160	492	62	714	133	519	147	799	181	385	120	686	46	814	207	1067	3266
Grand Total	302	885	113	1300	248	975	272	1495	335	725	217	1277	83	1518	352	1953	6025
Apprch %	23.2	68.1	8.7		16.6	65.2	18.2		26.2	56.8	17		4.2	77.7	18		
Total %	5	14.7	1.9	21.6	4.1	16.2	4.5	24.8	5.6	12	3.6	21.2	1.4	25.2	5.8	32.4	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**48**	**141**	**18**	**207**	**40**	137	**42**	**219**	40	91	**32**	163	**14**	201	44	259	**848**
05:15 PM	34	126	13	173	36	136	35	207	44	81	27	152	13	**224**	47	**284**	816
05:30 PM	43	114	14	171	25	**138**	36	199	48	96	29	173	9	213	55	277	820
05:45 PM	35	111	17	163	32	108	34	174	**49**	**117**	32	**198**	10	176	**61**	247	782
Total Volume	160	492	62	714	133	519	147	799	181	385	120	686	46	814	207	1067	3266
% App. Total	22.4	68.9	8.7		16.6	65	18.4		26.4	56.1	17.5		4.3	76.3	19.4		
PHF	.833	.872	.861	.862	.831	.940	.875	.912	.923	.823	.938	.866	.821	.908	.848	.939	.963

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City of Upland
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Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	**48**	**141**	**18**	**207**	**40**	137	**42**	**219**	40	91	**32**	163	**14**	201	44	259
+15 mins.	34	126	13	173	36	136	35	207	44	81	27	152	13	**224**	47	**284**
+30 mins.	43	114	14	171	25	**138**	36	199	48	96	29	173	9	213	55	277
+45 mins.	35	111	17	163	32	108	34	174	**49**	**117**	32	**198**	10	176	**61**	247
Total Volume	160	492	62	714	133	519	147	799	181	385	120	686	46	814	207	1067
% App. Total	22.4	68.9	8.7		16.6	65	18.4		26.4	56.1	17.5		4.3	76.3	19.4	
PHF	.833	.872	.861	.862	.831	.940	.875	.912	.923	.823	.938	.866	.821	.908	.848	.939

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Page No : 1

Groups Printed- Large 2 Axle Vehicles

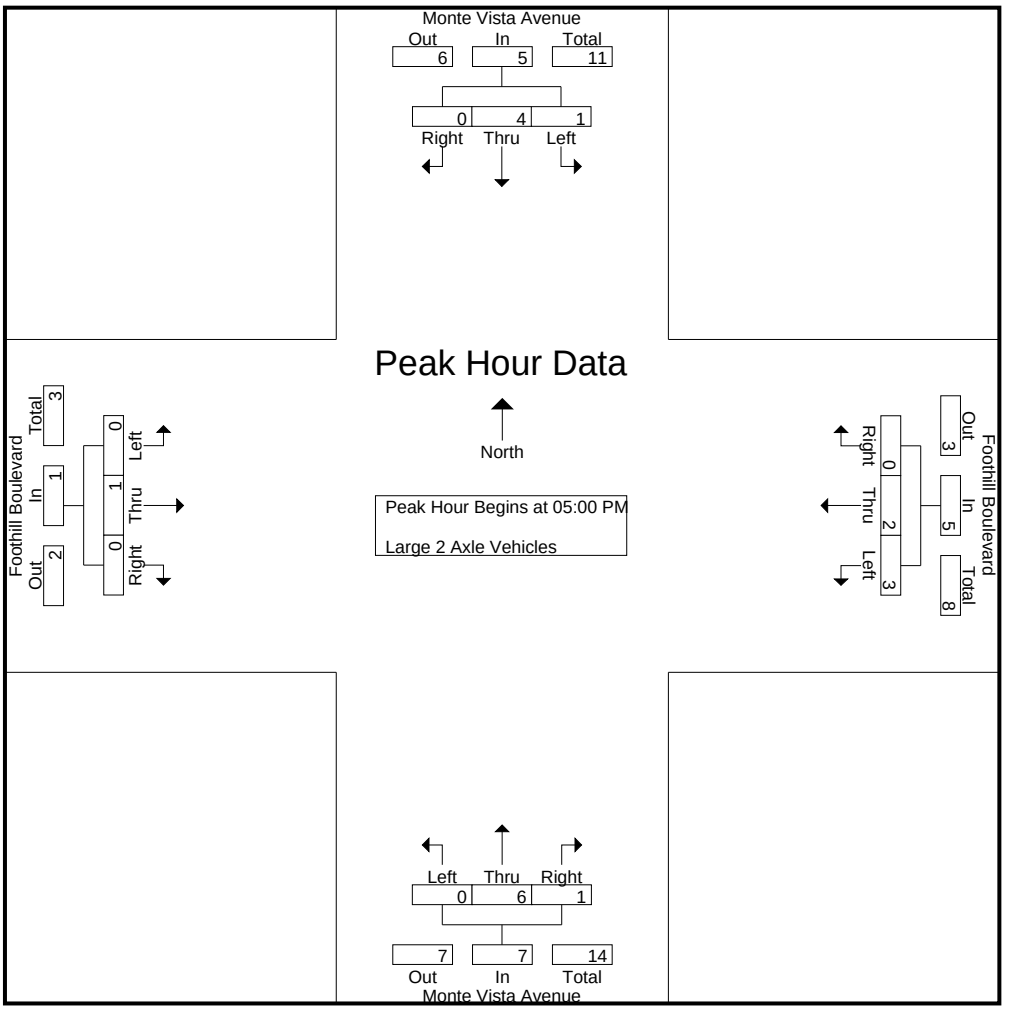
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	1	2	0	3	0	0	0	0	0	2	0	2	6
04:15 PM	0	1	0	1	1	1	0	2	1	1	0	2	0	1	0	1	6
04:30 PM	0	2	0	2	0	0	0	0	0	3	1	4	0	0	0	0	6
04:45 PM	2	1	0	3	0	0	0	0	0	0	0	0	1	1	1	3	6
Total	3	4	0	7	2	3	0	5	1	4	1	6	1	4	1	6	24
05:00 PM	0	0	0	0	1	0	0	1	0	2	1	3	0	0	0	0	4
05:15 PM	0	0	0	0	0	1	0	1	0	2	0	2	0	0	0	0	3
05:30 PM	0	3	0	3	0	1	0	1	0	0	0	0	0	1	0	1	5
05:45 PM	1	1	0	2	2	0	0	2	0	2	0	2	0	0	0	0	6
Total	1	4	0	5	3	2	0	5	0	6	1	7	0	1	0	1	18
Grand Total	4	8	0	12	5	5	0	10	1	10	2	13	1	5	1	7	42
Apprch %	33.3	66.7	0		50	50	0		7.7	76.9	15.4		14.3	71.4	14.3		
Total %	9.5	19	0	28.6	11.9	11.9	0	23.8	2.4	23.8	4.8	31	2.4	11.9	2.4	16.7	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	1	0	0	1	0	**2**	**1**	**3**	0	0	0	0	4
05:15 PM	0	0	0	0	0	**1**	0	1	0	2	0	2	0	0	0	0	3
05:30 PM	0	**3**	0	**3**	0	1	0	1	0	0	0	0	0	**1**	0	**1**	5
05:45 PM	**1**	1	0	2	**2**	0	0	**2**	0	2	0	2	0	0	0	0	**6**
Total Volume	1	4	0	5	3	2	0	5	0	6	1	7	0	1	0	1	18
% App. Total	20	80	0		60	40	0		0	85.7	14.3		0	100	0		
PHF	.250	.333	.000	.417	.375	.500	.000	.625	.000	.750	.250	.583	.000	.250	.000	.250	.750

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	1	0	0	1	0	**2**	**1**	**3**	0	0	0	0
+15 mins.	0	0	0	0	0	**1**	0	1	0	2	0	2	0	0	0	0
+30 mins.	0	**3**	0	**3**	0	1	0	1	0	0	0	0	0	**1**	0	**1**
+45 mins.	**1**	1	0	2	**2**	0	0	**2**	0	2	0	2	0	0	0	0
Total Volume	1	4	0	5	3	2	0	5	0	6	1	7	0	1	0	1
% App. Total	20	80	0		60	40	0		0	85.7	14.3		0	100	0	
PHF	.250	.333	.000	.417	.375	.500	.000	.625	.000	.750	.250	.583	.000	.250	.000	.250

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018

Groups Printed- 3 Axle Vehicles

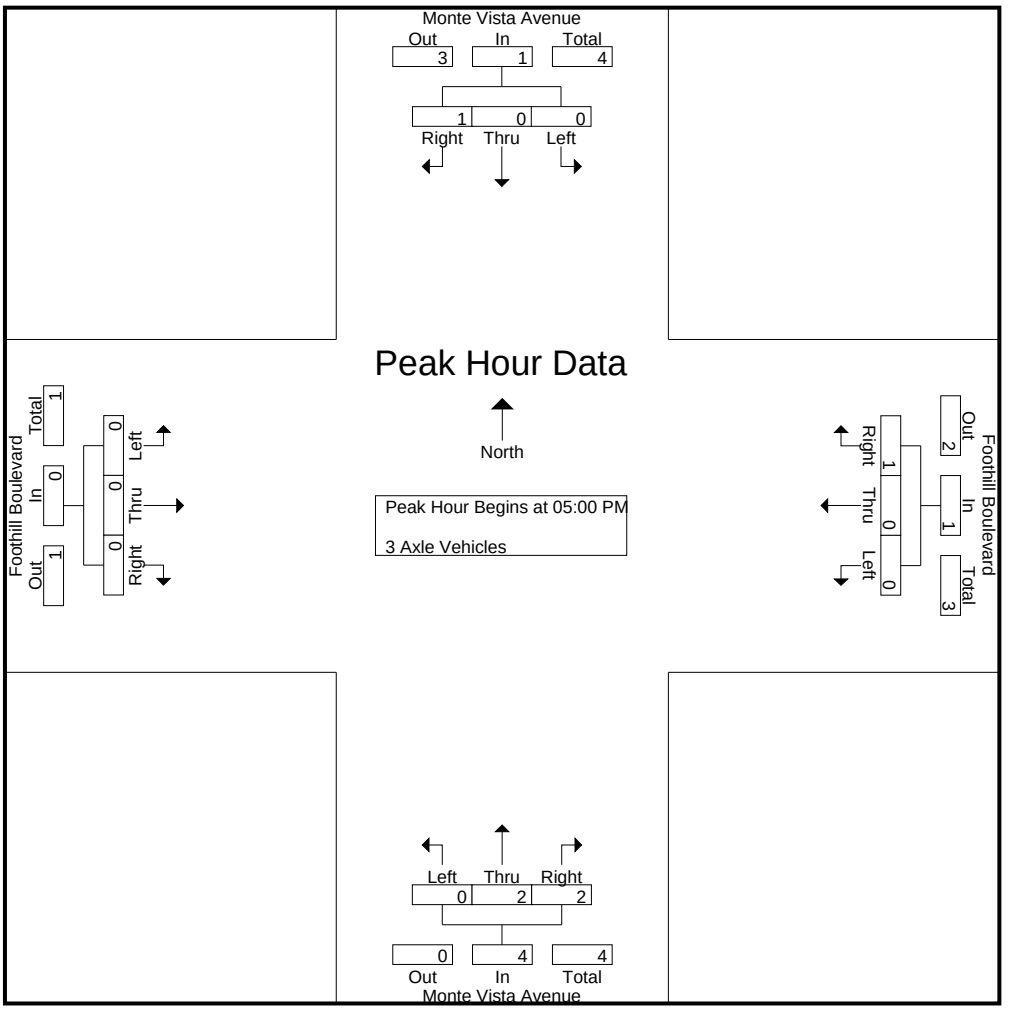
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	1	0	0	1	0	0	1	1	0	0	0	0	3
04:15 PM	2	0	0	2	1	0	1	2	0	0	0	0	0	1	0	1	5
04:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	5	1	0	6	2	0	1	3	0	0	1	1	0	1	0	1	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	1	0	2	1	3	0	0	0	0	4
05:30 PM	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	1	1	0	2	2	4	0	0	0	0	6
Grand Total	5	1	1	7	2	0	2	4	0	2	3	5	0	1	0	1	17
Apprch %	71.4	14.3	14.3		50	0	50		0	40	60		0	100	0		
Total %	29.4	5.9	5.9	41.2	11.8	0	11.8	23.5	0	11.8	17.6	29.4	0	5.9	0	5.9	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	**1**	**1**	0	**2**	**1**	**3**	0	0	0	0	**4**
05:30 PM	0	0	**1**	**1**	0	0	0	0	0	0	1	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	1	1	0	2	2	4	0	0	0	0	6
% App. Total	0	0	100		0	0	100		0	50	50		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.000	.250	.500	.333	.000	.000	.000	.000	.375

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	**1**	**1**	0	**2**	**1**	**3**	0	0	0	0
+30 mins.	0	0	**1**	**1**	0	0	0	0	0	0	1	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	1	1	0	2	2	4	0	0	0	0
% App. Total	0	0	100		0	0	100		0	50	50		0	0	0	
PHF	.000	.000	.250	.250	.000	.000	.250	.250	.000	.250	.500	.333	.000	.000	.000	.000

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

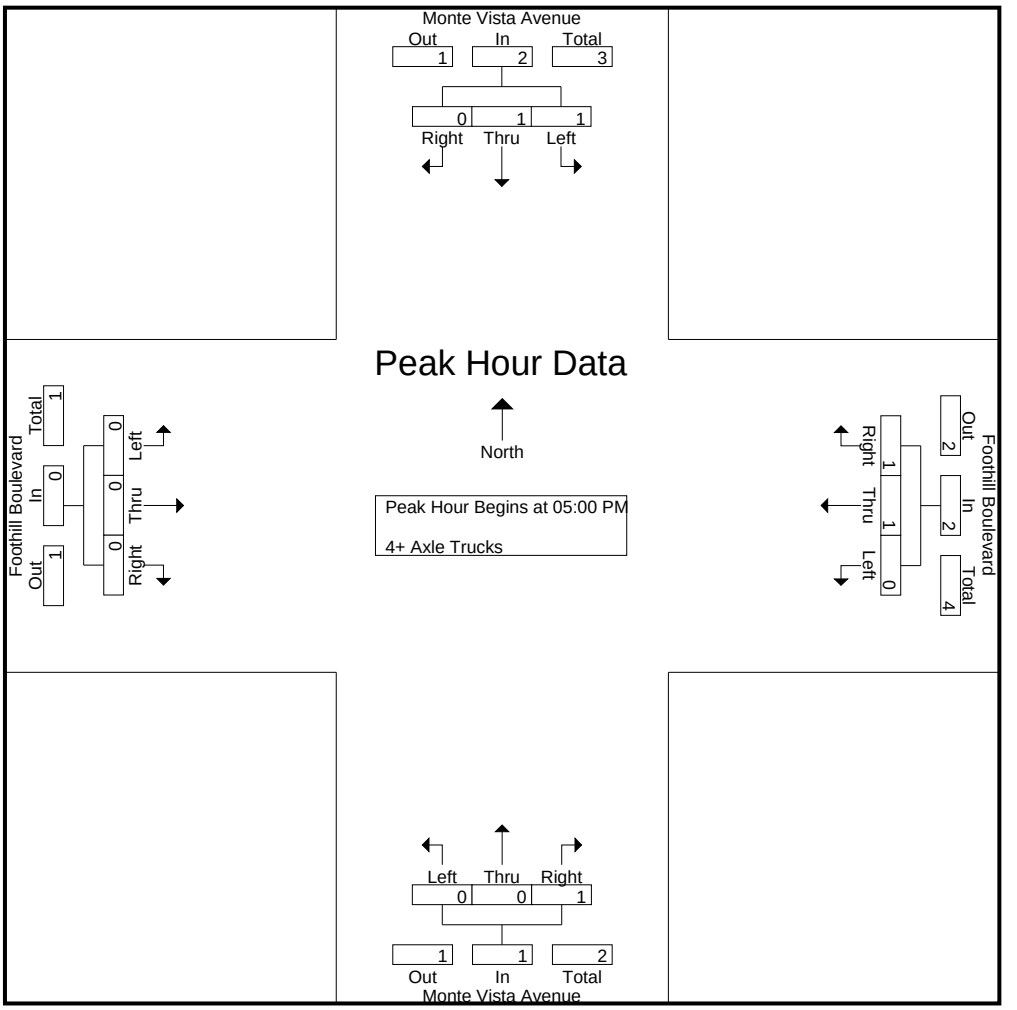
	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	1	2	0	3	0	0	0	0	0	0	0	0	0	1	0	1	4
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	3	0	4	0	1	0	1	0	0	0	0	0	2	0	2	7
05:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:15 PM	1	1	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	1	1	0	2	0	1	1	2	0	0	1	1	0	0	0	0	5
Grand Total	2	4	0	6	0	2	1	3	0	0	1	1	0	2	0	2	12
Apprch %	33.3	66.7	0		0	66.7	33.3		0	0	100		0	100	0		
Total %	16.7	33.3	0	50	0	16.7	8.3	25	0	0	8.3	8.3	0	16.7	0	16.7	

	Monte Vista Avenue Southbound				Foothill Boulevard Westbound				Monte Vista Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
05:15 PM	**1**	**1**	0	**2**	0	0	**1**	1	0	0	0	0	0	0	0	0	**3**
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
Total Volume	1	1	0	2	0	1	1	2	0	0	1	1	0	0	0	0	5
% App. Total	50	50	0		0	50	50		0	0	100		0	0	0		
PHF	.250	.250	.000	.250	.000	.250	.250	.500	.000	.000	.250	.250	.000	.000	.000	.000	.417

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City of Upland
N/S: Monte Vista Avenue
E/W: Foothill Boulevard
Weather: Clear

File Name : 01_UPL_Monte Vista_Foothill PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0
+15 mins.	**1**	**1**	0	**2**	0	0	**1**	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
Total Volume	1	1	0	2	0	1	1	2	0	0	1	1	0	0	0	0
% App. Total	50	50	0		0	50	50		0	0	100		0	0	0	
PHF	.250	.250	.000	.250	.000	.250	.250	.500	.000	.000	.250	.250	.000	.000	.000	.000

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

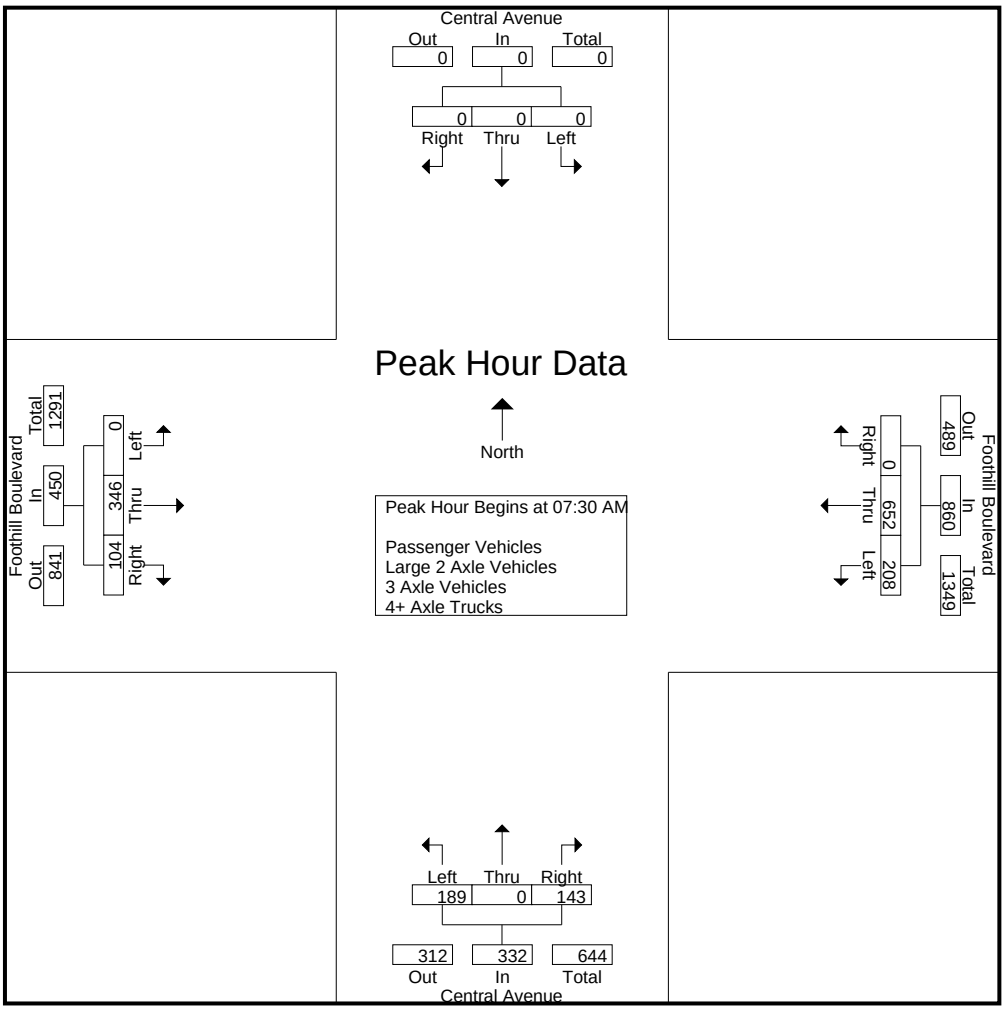
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	37	103	0	140	33	0	25	58	0	41	23	64	262
07:15 AM	0	0	0	0	45	141	0	186	29	0	24	53	0	48	27	75	314
07:30 AM	0	0	0	0	58	167	0	225	55	0	44	99	0	63	25	88	412
07:45 AM	0	0	0	0	66	218	0	284	49	0	41	90	0	89	26	115	489
Total	0	0	0	0	206	629	0	835	166	0	134	300	0	241	101	342	1477
08:00 AM	0	0	0	0	31	130	0	161	41	0	26	67	0	97	29	126	354
08:15 AM	0	0	0	0	53	137	0	190	44	0	32	76	0	97	24	121	387
08:30 AM	0	0	0	0	50	129	0	179	36	0	23	59	0	101	34	135	373
08:45 AM	0	0	0	0	46	118	0	164	29	0	31	60	0	101	28	129	353
Total	0	0	0	0	180	514	0	694	150	0	112	262	0	396	115	511	1467
Grand Total	0	0	0	0	386	1143	0	1529	316	0	246	562	0	637	216	853	2944
Apprch %	0	0	0		25.2	74.8	0		56.2	0	43.8		0	74.7	25.3		
Total %	0	0	0	0	13.1	38.8	0	51.9	10.7	0	8.4	19.1	0	21.6	7.3	29	
Passenger Vehicles	0	0	0	0	365	1114	0	1479	304	0	225	529	0	620	194	814	2822
% Passenger Vehicles	0	0	0	0	94.6	97.5	0	96.7	96.2	0	91.5	94.1	0	97.3	89.8	95.4	95.9
Large 2 Axle Vehicles	0	0	0	0	15	9	0	24	5	0	17	22	0	12	12	24	70
% Large 2 Axle Vehicles	0	0	0	0	3.9	0.8	0	1.6	1.6	0	6.9	3.9	0	1.9	5.6	2.8	2.4
3 Axle Vehicles	0	0	0	0	0	3	0	3	7	0	4	11	0	1	6	7	21
% 3 Axle Vehicles	0	0	0	0	0	0.3	0	0.2	2.2	0	1.6	2	0	0.2	2.8	0.8	0.7
4+ Axle Trucks	0	0	0	0	6	17	0	23	0	0	0	0	0	4	4	8	31
% 4+ Axle Trucks	0	0	0	0	1.6	1.5	0	1.5	0	0	0	0	0	0.6	1.9	0.9	1.1

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	58	167	0	225	**55**	0	**44**	**99**	0	63	25	88	412
07:45 AM	0	0	0	0	**66**	**218**	0	**284**	49	0	41	90	0	89	26	115	**489**
08:00 AM	0	0	0	0	31	130	0	161	41	0	26	67	0	**97**	**29**	**126**	354
08:15 AM	0	0	0	0	53	137	0	190	44	0	32	76	0	97	24	121	387
Total Volume	0	0	0	0	208	652	0	860	189	0	143	332	0	346	104	450	1642
% App. Total	0	0	0		24.2	75.8	0		56.9	0	43.1		0	76.9	23.1		
PHF	.000	.000	.000	.000	.788	.748	.000	.757	.859	.000	.813	.838	.000	.892	.897	.893	.839

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:30 AM				08:00 AM			
+0 mins.	0	0	0	0	58	167	0	225	**55**	0	**44**	**99**	0	97	29	126
+15 mins.	0	0	0	0	**66**	**218**	0	**284**	49	0	41	90	0	97	24	121
+30 mins.	0	0	0	0	31	130	0	161	41	0	26	67	0	**101**	**34**	**135**
+45 mins.	0	0	0	0	53	137	0	190	44	0	32	76	0	101	28	129
Total Volume	0	0	0	0	208	652	0	860	189	0	143	332	0	396	115	511
% App. Total	0	0	0		24.2	75.8	0		56.9	0	43.1		0	77.5	22.5	
PHF	.000	.000	.000	.000	.788	.748	.000	.757	.859	.000	.813	.838	.000	.980	.846	.946

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- Passenger Vehicles

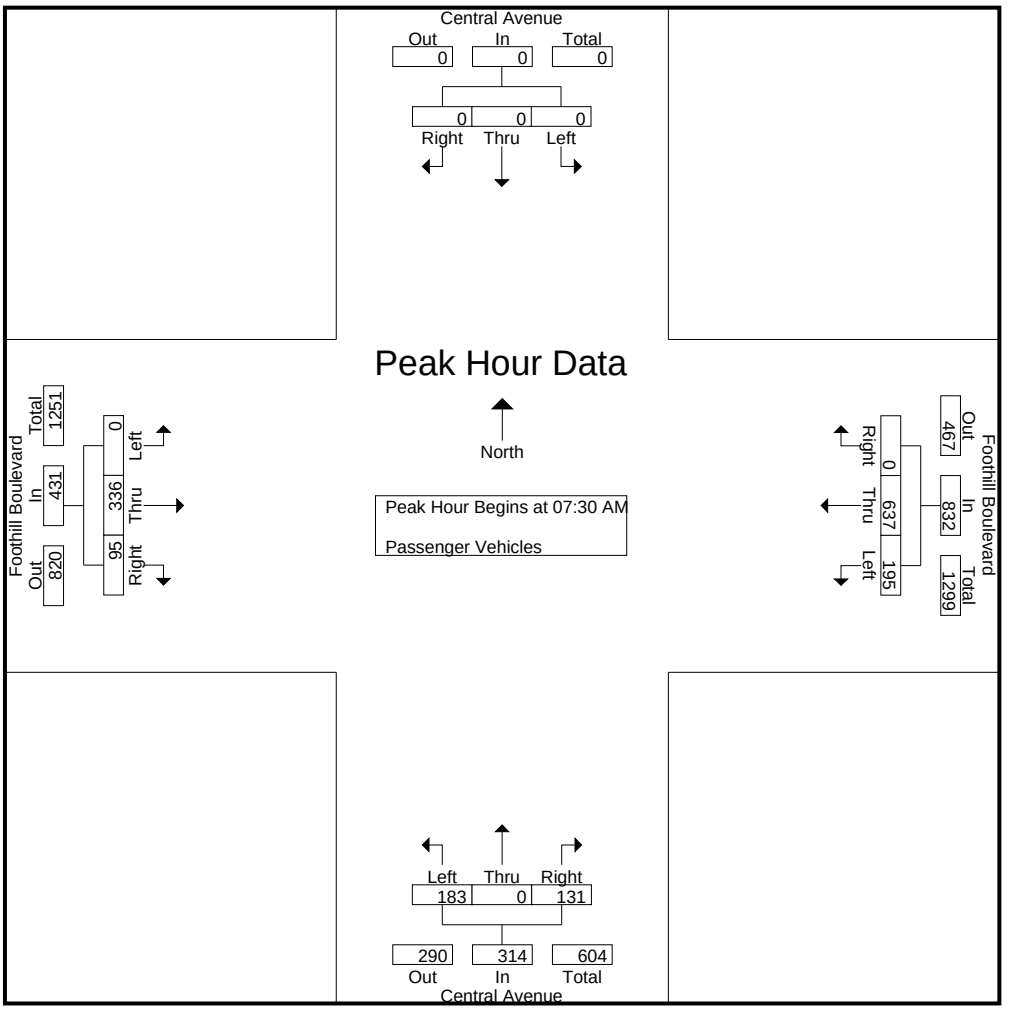
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	35	98	0	133	32	0	23	55	0	41	20	61	249
07:15 AM	0	0	0	0	45	140	0	185	27	0	19	46	0	46	22	68	299
07:30 AM	0	0	0	0	51	163	0	214	52	0	38	90	0	60	23	83	387
07:45 AM	0	0	0	0	64	212	0	276	49	0	39	88	0	88	24	112	476
Total	0	0	0	0	195	613	0	808	160	0	119	279	0	235	89	324	1411
08:00 AM	0	0	0	0	29	127	0	156	39	0	23	62	0	94	25	119	337
08:15 AM	0	0	0	0	51	135	0	186	43	0	31	74	0	94	23	117	377
08:30 AM	0	0	0	0	46	124	0	170	33	0	22	55	0	98	31	129	354
08:45 AM	0	0	0	0	44	115	0	159	29	0	30	59	0	99	26	125	343
Total	0	0	0	0	170	501	0	671	144	0	106	250	0	385	105	490	1411
Grand Total	0	0	0	0	365	1114	0	1479	304	0	225	529	0	620	194	814	2822
Apprch %	0	0	0		24.7	75.3	0		57.5	0	42.5		0	76.2	23.8		
Total %	0	0	0	0	12.9	39.5	0	52.4	10.8	0	8	18.7	0	22	6.9	28.8	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	51	163	0	214	**52**	0	38	**90**	0	60	23	83	387
07:45 AM	0	0	0	0	**64**	**212**	0	**276**	49	0	**39**	88	0	88	24	112	**476**
08:00 AM	0	0	0	0	29	127	0	156	39	0	23	62	0	**94**	**25**	**119**	337
08:15 AM	0	0	0	0	51	135	0	186	43	0	31	74	0	94	23	117	377
Total Volume	0	0	0	0	195	637	0	832	183	0	131	314	0	336	95	431	1577
% App. Total	0	0	0		23.4	76.6	0		58.3	0	41.7		0	78	22		
PHF	.000	.000	.000	.000	.762	.751	.000	.754	.880	.000	.840	.872	.000	.894	.950	.905	.828

Counts Unlimited
PO Box 1178
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(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	51	163	0	214	**52**	0	38	**90**	0	60	23	83
+15 mins.	0	0	0	0	**64**	**212**	0	**276**	49	0	**39**	88	0	88	24	112
+30 mins.	0	0	0	0	29	127	0	156	39	0	23	62	0	**94**	**25**	**119**
+45 mins.	0	0	0	0	51	135	0	186	43	0	31	74	0	94	23	117
Total Volume	0	0	0	0	195	637	0	832	183	0	131	314	0	336	95	431
% App. Total	0	0	0		23.4	76.6	0		58.3	0	41.7		0	78	22	
PHF	.000	.000	.000	.000	.762	.751	.000	.754	.880	.000	.840	.872	.000	.894	.950	.905

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- Large 2 Axle Vehicles

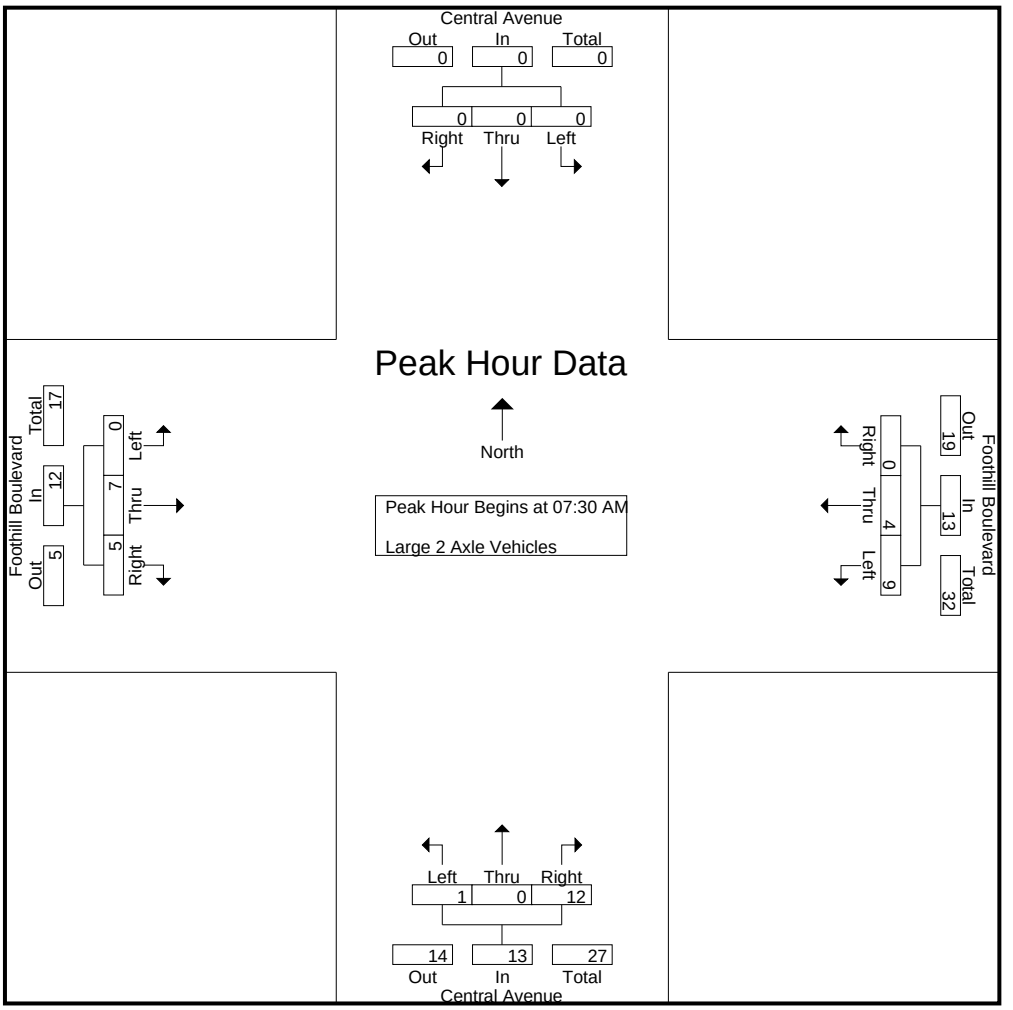
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	2	3	0	5	1	0	1	2	0	0	1	1	8
07:15 AM	0	0	0	0	0	1	0	1	2	0	2	4	0	2	3	5	10
07:30 AM	0	0	0	0	5	0	0	5	1	0	6	7	0	2	1	3	15
07:45 AM	0	0	0	0	1	1	0	2	0	0	2	2	0	0	1	1	5
Total	0	0	0	0	8	5	0	13	4	0	11	15	0	4	6	10	38
08:00 AM	0	0	0	0	2	3	0	5	0	0	3	3	0	2	3	5	13
08:15 AM	0	0	0	0	1	0	0	1	0	0	1	1	0	3	0	3	5
08:30 AM	0	0	0	0	2	1	0	3	1	0	1	2	0	1	2	3	8
08:45 AM	0	0	0	0	2	0	0	2	0	0	1	1	0	2	1	3	6
Total	0	0	0	0	7	4	0	11	1	0	6	7	0	8	6	14	32
Grand Total	0	0	0	0	15	9	0	24	5	0	17	22	0	12	12	24	70
Apprch %	0	0	0		62.5	37.5	0		22.7	0	77.3		0	50	50		
Total %	0	0	0	0	21.4	12.9	0	34.3	7.1	0	24.3	31.4	0	17.1	17.1	34.3	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	**5**	0	0	**5**	**1**	0	**6**	**7**	0	2	1	3	**15**
07:45 AM	0	0	0	0	1	1	0	2	0	0	2	2	0	0	1	1	5
08:00 AM	0	0	0	0	2	**3**	0	5	0	0	3	3	0	2	**3**	**5**	13
08:15 AM	0	0	0	0	1	0	0	1	0	0	1	1	0	**3**	0	3	5
Total Volume	0	0	0	0	9	4	0	13	1	0	12	13	0	7	5	12	38
% App. Total	0	0	0		69.2	30.8	0		7.7	0	92.3		0	58.3	41.7		
PHF	.000	.000	.000	.000	.450	.333	.000	.650	.250	.000	.500	.464	.000	.583	.417	.600	.633

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	**5**	0	0	**5**	**1**	0	**6**	**7**	0	2	1	3
+15 mins.	0	0	0	0	1	1	0	2	0	0	2	2	0	0	1	1
+30 mins.	0	0	0	0	2	**3**	0	5	0	0	3	3	0	2	**3**	**5**
+45 mins.	0	0	0	0	1	0	0	1	0	0	1	1	0	**3**	0	3
Total Volume	0	0	0	0	9	4	0	13	1	0	12	13	0	7	5	12
% App. Total	0	0	0		69.2	30.8	0		7.7	0	92.3		0	58.3	41.7	
PHF	.000	.000	.000	.000	.450	.333	.000	.650	.250	.000	.500	.464	.000	.583	.417	.600

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- 3 Axle Vehicles

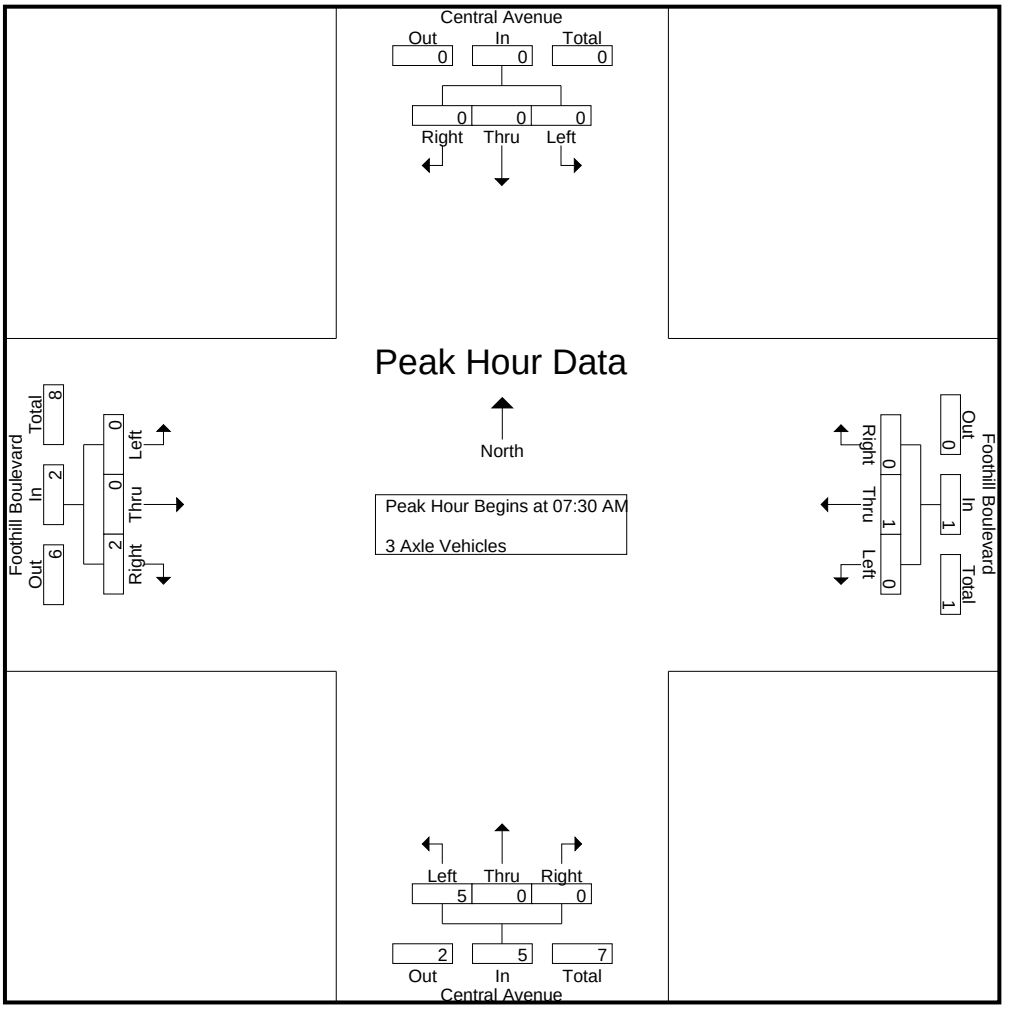
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	1	1	4
07:15 AM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	2	2	5
07:30 AM	0	0	0	0	0	1	0	1	2	0	0	2	0	0	1	1	4
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	3	0	3	2	0	4	6	0	0	5	5	14
08:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	1	1	2	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	5	0	0	5	0	1	1	2	7
Grand Total	0	0	0	0	0	3	0	3	7	0	4	11	0	1	6	7	21
Apprch %	0	0	0		0	100	0		63.6	0	36.4		0	14.3	85.7		
Total %	0	0	0	0	0	14.3	0	14.3	33.3	0	19	52.4	0	4.8	28.6	33.3	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	**1**	0	**1**	**2**	0	0	**2**	0	0	**1**	**1**	**4**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	1	0	1	5	0	0	5	0	0	2	2	8
% App. Total	0	0	0		0	100	0		100	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.625	.000	.000	.625	.000	.000	.500	.500	.500

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	**1**	0	**1**	**2**	0	0	**2**	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	5	0	0	5	0	0	2	2
% App. Total	0	0	0		0	100	0		100	0	0		0	0	100	
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.625	.000	.000	.625	.000	.000	.500	.500

Counts Unlimited
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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

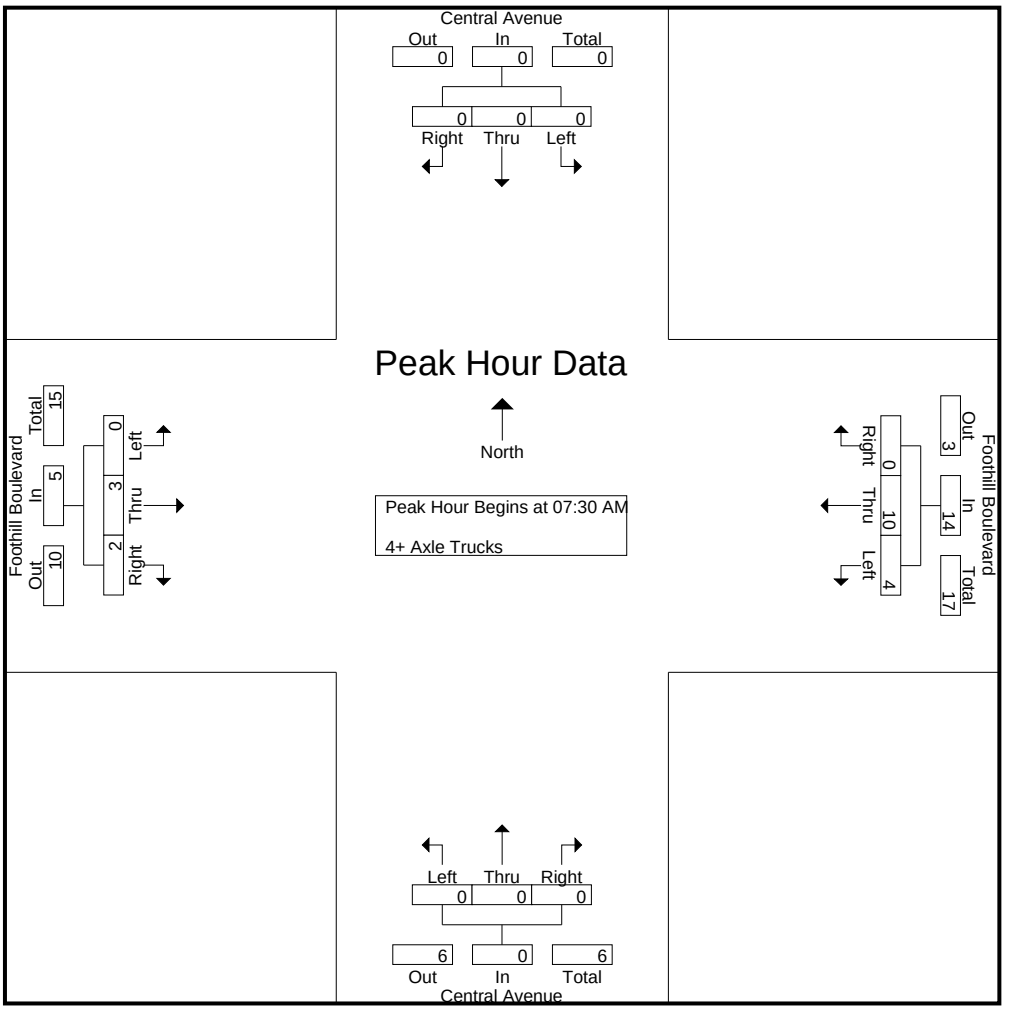
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	2	3	0	5	0	0	0	0	0	1	0	1	6
07:45 AM	0	0	0	0	1	5	0	6	0	0	0	0	0	1	0	1	7
Total	0	0	0	0	3	8	0	11	0	0	0	0	0	2	1	3	14
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
08:15 AM	0	0	0	0	1	2	0	3	0	0	0	0	0	0	1	1	4
08:30 AM	0	0	0	0	2	4	0	6	0	0	0	0	0	1	0	1	7
08:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	1	1	4
Total	0	0	0	0	3	9	0	12	0	0	0	0	0	2	3	5	17
Grand Total	0	0	0	0	6	17	0	23	0	0	0	0	0	4	4	8	31
Apprch %	0	0	0		26.1	73.9	0		0	0	0		0	50	50		
Total %	0	0	0	0	19.4	54.8	0	74.2	0	0	0	0	0	12.9	12.9	25.8	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	**2**	3	0	5	0	0	0	0	0	**1**	0	1	6
07:45 AM	0	0	0	0	1	**5**	0	**6**	0	0	0	0	0	1	0	1	**7**
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**1**	**2**	2
08:15 AM	0	0	0	0	1	2	0	3	0	0	0	0	0	0	1	1	4
Total Volume	0	0	0	0	4	10	0	14	0	0	0	0	0	3	2	5	19
% App. Total	0	0	0		28.6	71.4	0		0	0	0		0	60	40		
PHF	.000	.000	.000	.000	.500	.500	.000	.583	.000	.000	.000	.000	.000	.750	.500	.625	.679

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City of Upland
N/S: Central Avenue
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Weather: Clear

File Name : 03_UPL_Central_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	**2**	3	0	5	0	0	0	0	0	**1**	0	1
+15 mins.	0	0	0	0	1	**5**	0	**6**	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**1**	**2**
+45 mins.	0	0	0	0	1	2	0	3	0	0	0	0	0	0	1	1
Total Volume	0	0	0	0	4	10	0	14	0	0	0	0	0	3	2	5
% App. Total	0	0	0		28.6	71.4	0		0	0	0		0	60	40	
PHF	.000	.000	.000	.000	.500	.500	.000	.583	.000	.000	.000	.000	.000	.750	.500	.625

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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

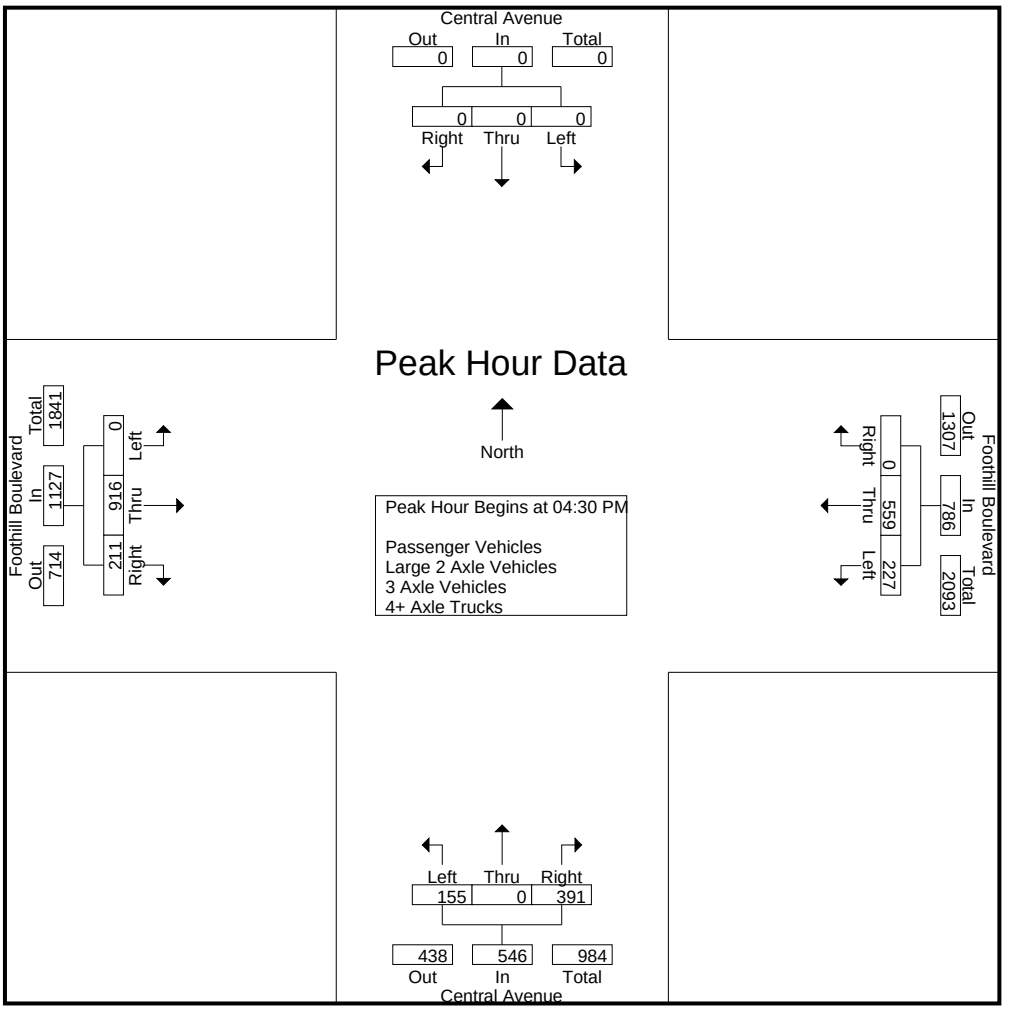
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	49	122	0	171	45	0	94	139	0	176	71	247	558
04:15 PM	1	0	0	1	61	131	0	192	30	0	75	105	0	209	48	257	555
04:30 PM	0	0	0	0	67	130	0	197	30	0	92	122	0	215	49	264	583
04:45 PM	0	0	0	0	56	155	0	211	50	0	96	146	0	237	50	287	644
Total	2	0	0	2	233	538	0	771	155	0	357	512	0	837	218	1055	2340
05:00 PM	0	0	0	0	50	129	0	179	42	0	89	131	0	237	69	306	616
05:15 PM	0	0	0	0	54	145	0	199	33	0	114	147	0	227	43	270	616
05:30 PM	0	0	0	0	52	117	0	169	45	0	96	141	0	221	52	273	583
05:45 PM	0	0	0	0	49	119	0	168	47	0	116	163	0	203	47	250	581
Total	0	0	0	0	205	510	0	715	167	0	415	582	0	888	211	1099	2396
Grand Total	2	0	0	2	438	1048	0	1486	322	0	772	1094	0	1725	429	2154	4736
Apprch %	100	0	0		29.5	70.5	0		29.4	0	70.6		0	80.1	19.9		
Total %	0	0	0	0	9.2	22.1	0	31.4	6.8	0	16.3	23.1	0	36.4	9.1	45.5	
Passenger Vehicles	2	0	0	2	428	1045	0	1473	318	0	756	1074	0	1717	428	2145	4694
% Passenger Vehicles	100	0	0	100	97.7	99.7	0	99.1	98.8	0	97.9	98.2	0	99.5	99.8	99.6	99.1
Large 2 Axle Vehicles	0	0	0	0	9	2	0	11	4	0	13	17	0	8	1	9	37
% Large 2 Axle Vehicles	0	0	0	0	2.1	0.2	0	0.7	1.2	0	1.7	1.6	0	0.5	0.2	0.4	0.8
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	1	1	0	2	0	0	1	1	0	0	0	0	3
% 4+ Axle Trucks	0	0	0	0	0.2	0.1	0	0.1	0	0	0.1	0.1	0	0	0	0	0.1

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	**67**	130	0	197	30	0	92	122	0	215	49	264	583
04:45 PM	0	0	0	0	56	**155**	0	**211**	**50**	0	96	146	0	**237**	50	287	**644**
05:00 PM	0	0	0	0	50	129	0	179	42	0	89	131	0	237	**69**	**306**	616
05:15 PM	0	0	0	0	54	145	0	199	33	0	**114**	**147**	0	227	43	270	616
Total Volume	0	0	0	0	227	559	0	786	155	0	391	546	0	916	211	1127	2459
% App. Total	0	0	0		28.9	71.1	0		28.4	0	71.6		0	81.3	18.7		
PHF	.000	.000	.000	.000	.847	.902	.000	.931	.775	.000	.857	.929	.000	.966	.764	.921	.955

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City of Upland
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E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				05:00 PM				04:45 PM			
+0 mins.	**1**	0	0	**1**	**67**	130	0	197	42	0	89	131	0	**237**	50	287
+15 mins.	1	0	0	1	56	**155**	0	**211**	33	0	114	147	0	237	**69**	**306**
+30 mins.	0	0	0	0	50	129	0	179	45	0	96	141	0	227	43	270
+45 mins.	0	0	0	0	54	145	0	199	**47**	0	**116**	**163**	0	221	52	273
Total Volume	2	0	0	2	227	559	0	786	167	0	415	582	0	922	214	1136
% App. Total	100	0	0		28.9	71.1	0		28.7	0	71.3		0	81.2	18.8	
PHF	.500	.000	.000	.500	.847	.902	.000	.931	.888	.000	.894	.893	.000	.973	.775	.928

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- Passenger Vehicles

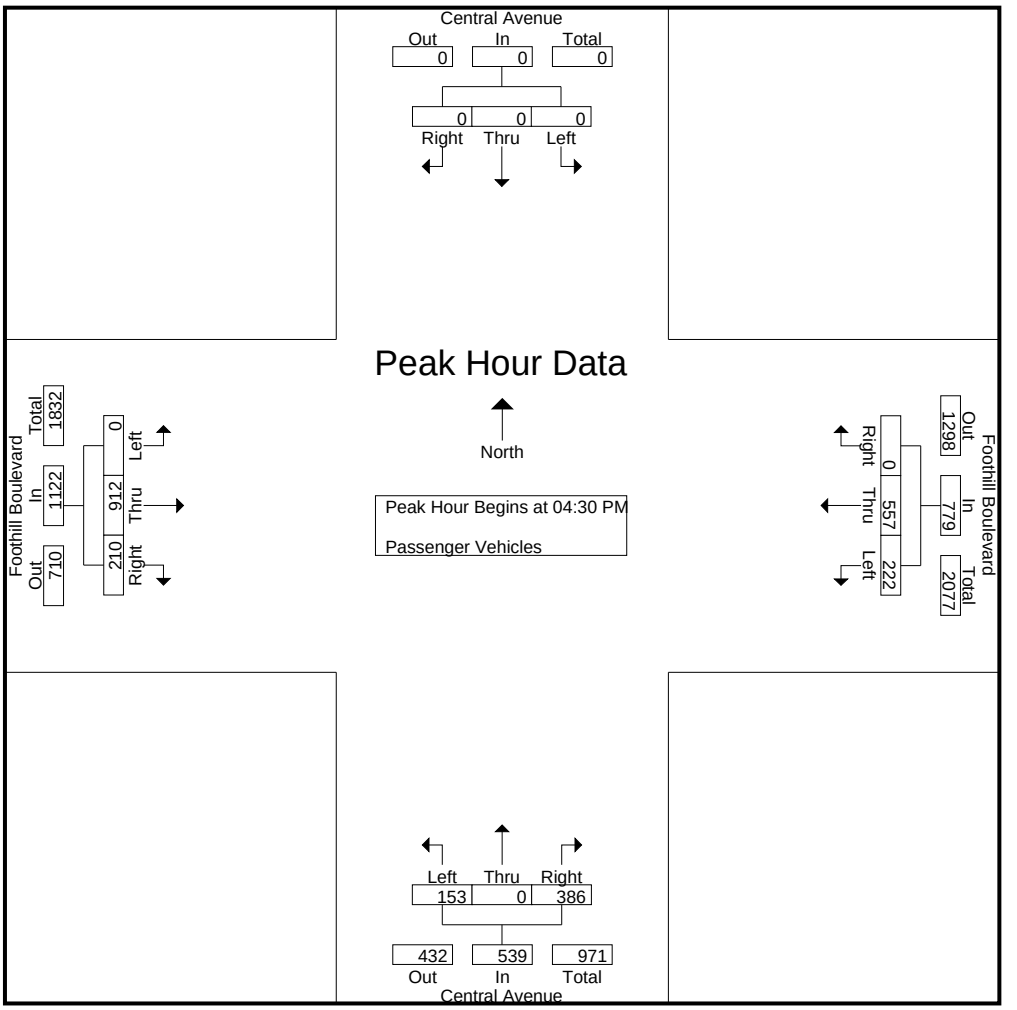
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	48	122	0	170	44	0	88	132	0	174	71	245	548
04:15 PM	1	0	0	1	59	130	0	189	29	0	74	103	0	207	48	255	548
04:30 PM	0	0	0	0	66	130	0	196	29	0	91	120	0	214	49	263	579
04:45 PM	0	0	0	0	55	155	0	210	49	0	94	143	0	236	49	285	638
Total	2	0	0	2	228	537	0	765	151	0	347	498	0	831	217	1048	2313
05:00 PM	0	0	0	0	49	127	0	176	42	0	88	130	0	237	69	306	612
05:15 PM	0	0	0	0	52	145	0	197	33	0	113	146	0	225	43	268	611
05:30 PM	0	0	0	0	51	117	0	168	45	0	93	138	0	221	52	273	579
05:45 PM	0	0	0	0	48	119	0	167	47	0	115	162	0	203	47	250	579
Total	0	0	0	0	200	508	0	708	167	0	409	576	0	886	211	1097	2381
Grand Total	2	0	0	2	428	1045	0	1473	318	0	756	1074	0	1717	428	2145	4694
Apprch %	100	0	0		29.1	70.9	0		29.6	0	70.4		0	80	20		
Total %	0	0	0	0	9.1	22.3	0	31.4	6.8	0	16.1	22.9	0	36.6	9.1	45.7	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	**66**	130	0	196	29	0	91	120	0	214	49	263	579
04:45 PM	0	0	0	0	55	**155**	0	**210**	**49**	0	94	143	0	236	49	285	**638**
05:00 PM	0	0	0	0	49	127	0	176	42	0	88	130	0	**237**	**69**	**306**	612
05:15 PM	0	0	0	0	52	145	0	197	33	0	**113**	**146**	0	225	43	268	611
Total Volume	0	0	0	0	222	557	0	779	153	0	386	539	0	912	210	1122	2440
% App. Total	0	0	0		28.5	71.5	0		28.4	0	71.6		0	81.3	18.7		
PHF	.000	.000	.000	.000	.841	.898	.000	.927	.781	.000	.854	.923	.000	.962	.761	.917	.956

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	**66**	130	0	196	29	0	91	120	0	214	49	263
+15 mins.	0	0	0	0	55	**155**	0	**210**	**49**	0	94	143	0	236	49	285
+30 mins.	0	0	0	0	49	127	0	176	42	0	88	130	0	**237**	**69**	**306**
+45 mins.	0	0	0	0	52	145	0	197	33	0	**113**	**146**	0	225	43	268
Total Volume	0	0	0	0	222	557	0	779	153	0	386	539	0	912	210	1122
% App. Total	0	0	0		28.5	71.5	0		28.4	0	71.6		0	81.3	18.7	
PHF	.000	.000	.000	.000	.841	.898	.000	.927	.781	.000	.854	.923	.000	.962	.761	.917

Counts Unlimited
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(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

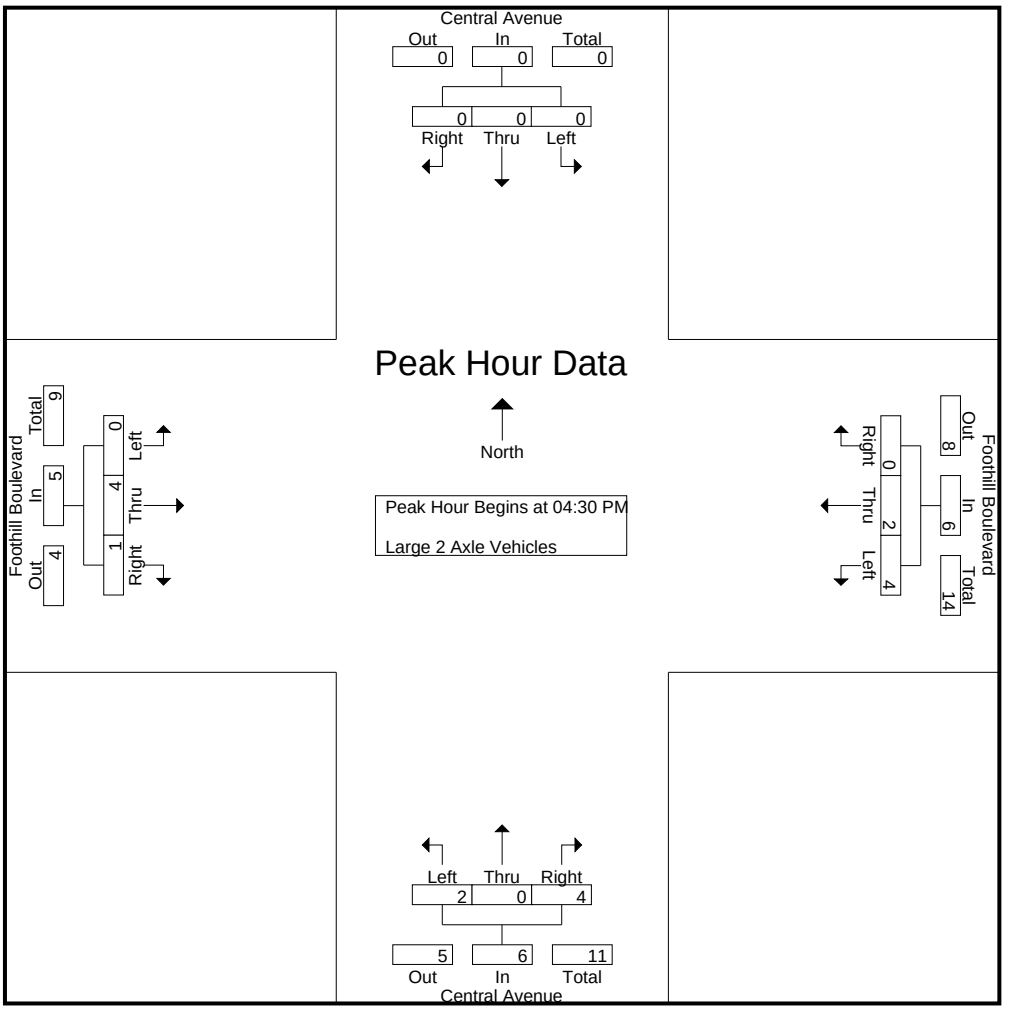
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	1	0	5	6	0	2	0	2	9
04:15 PM	0	0	0	0	2	0	0	2	1	0	1	2	0	2	0	2	6
04:30 PM	0	0	0	0	1	0	0	1	1	0	1	2	0	1	0	1	4
04:45 PM	0	0	0	0	1	0	0	1	1	0	1	2	0	1	1	2	5
Total	0	0	0	0	5	0	0	5	4	0	8	12	0	6	1	7	24
05:00 PM	0	0	0	0	1	2	0	3	0	0	1	1	0	0	0	0	4
05:15 PM	0	0	0	0	1	0	0	1	0	0	1	1	0	2	0	2	4
05:30 PM	0	0	0	0	1	0	0	1	0	0	2	2	0	0	0	0	3
05:45 PM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
Total	0	0	0	0	4	2	0	6	0	0	5	5	0	2	0	2	13
Grand Total	0	0	0	0	9	2	0	11	4	0	13	17	0	8	1	9	37
Apprch %	0	0	0		81.8	18.2	0		23.5	0	76.5		0	88.9	11.1		
Total %	0	0	0	0	24.3	5.4	0	29.7	10.8	0	35.1	45.9	0	21.6	2.7	24.3	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	**1**	0	0	1	**1**	0	**1**	**2**	0	1	0	1	4
04:45 PM	0	0	0	0	1	0	0	1	1	0	1	2	0	1	**1**	**2**	**5**
05:00 PM	0	0	0	0	1	**2**	0	**3**	0	0	1	1	0	0	0	0	4
05:15 PM	0	0	0	0	1	0	0	1	0	0	1	1	0	**2**	0	2	4
Total Volume	0	0	0	0	4	2	0	6	2	0	4	6	0	4	1	5	17
% App. Total	0	0	0		66.7	33.3	0		33.3	0	66.7		0	80	20		
PHF	.000	.000	.000	.000	1.00	.250	.000	.500	.500	.000	1.00	.750	.000	.500	.250	.625	.850

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	**1**	0	0	1	**1**	0	**1**	**2**	0	1	0	1
+15 mins.	0	0	0	0	1	0	0	1	1	0	1	2	0	1	**1**	**2**
+30 mins.	0	0	0	0	1	**2**	0	**3**	0	0	1	1	0	0	0	0
+45 mins.	0	0	0	0	1	0	0	1	0	0	1	1	0	**2**	0	2
Total Volume	0	0	0	0	4	2	0	6	2	0	4	6	0	4	1	5
% App. Total	0	0	0		66.7	33.3	0		33.3	0	66.7		0	80	20	
PHF	.000	.000	.000	.000	1.000	.250	.000	.500	.500	.000	1.000	.750	.000	.500	.250	.625

Counts Unlimited
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Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018

Groups Printed- 3 Axle Vehicles

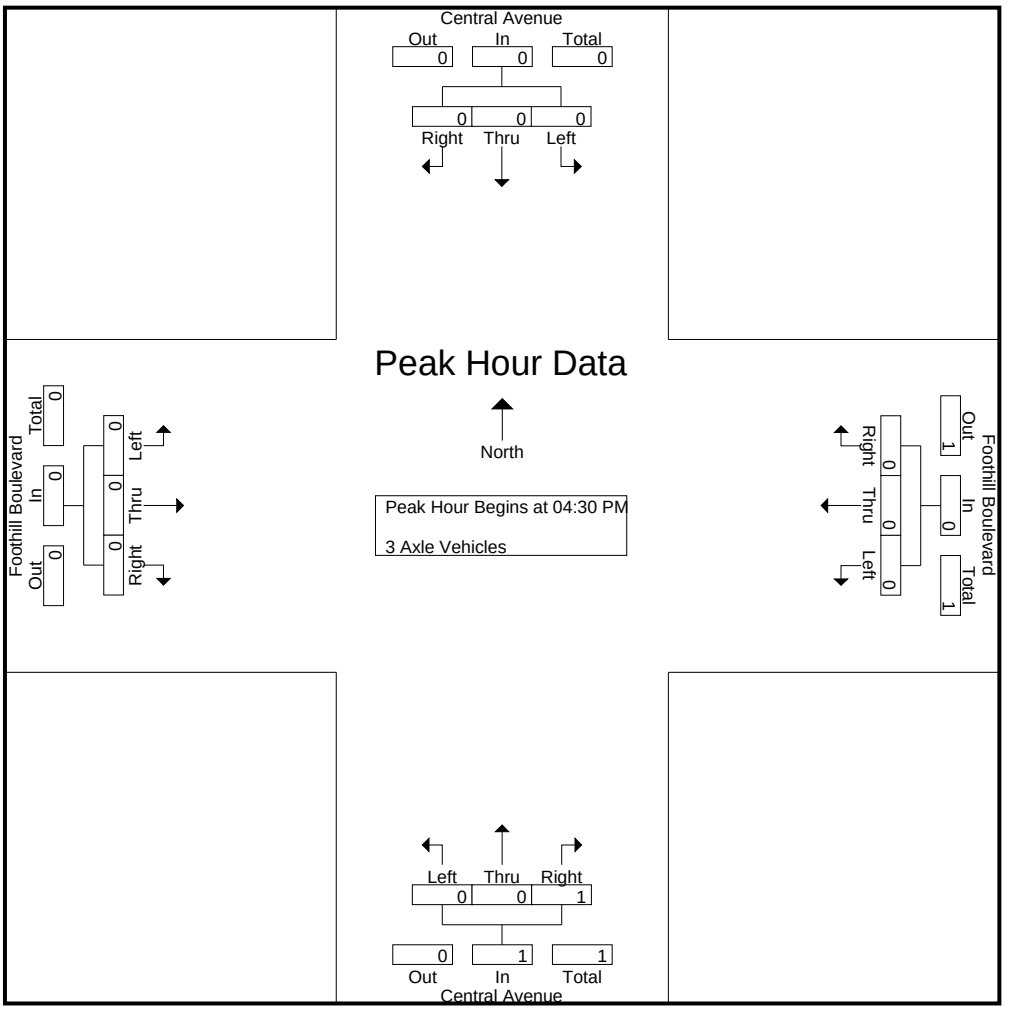
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
Apprch %	0	0	0		0	0	0		0	0	100		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000

Counts Unlimited
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City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

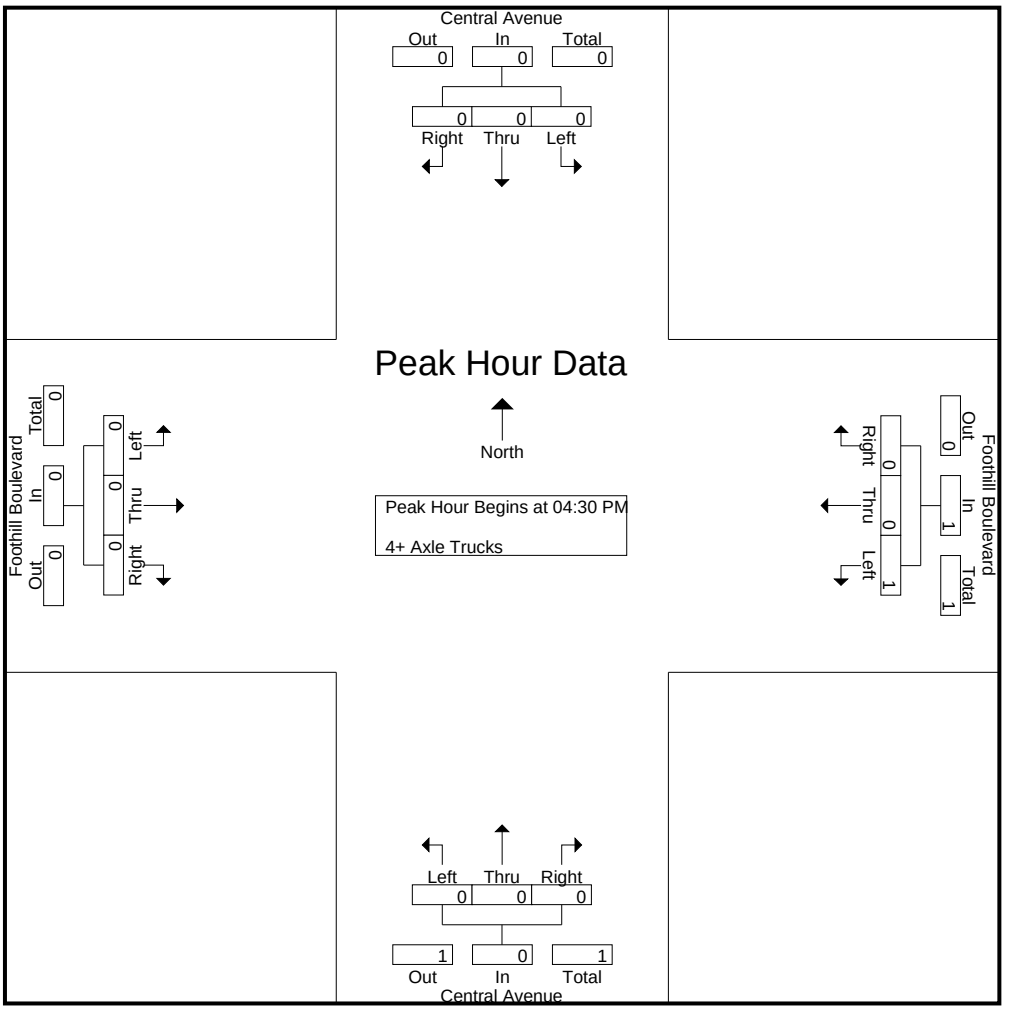
	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
Grand Total	0	0	0	0	1	1	0	2	0	0	1	1	0	0	0	0	3
Apprch %	0	0	0		50	50	0		0	0	100		0	0	0		
Total %	0	0	0	0	33.3	33.3	0	66.7	0	0	33.3	33.3	0	0	0	0	

	Central Avenue Southbound				Foothill Boulevard Westbound				Central Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Counts Unlimited
PO Box 1178
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(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 03_UPL_Central_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

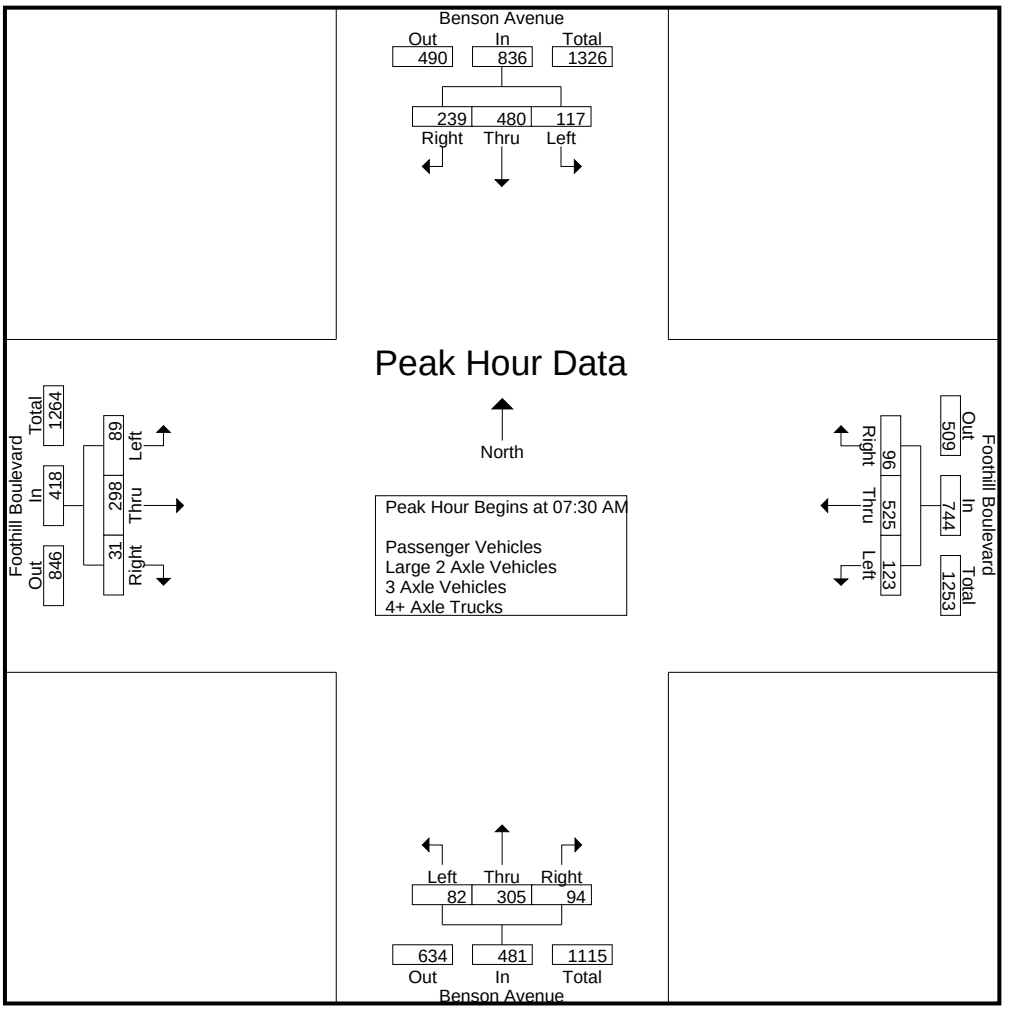
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	28	86	21	135	19	112	23	154	14	56	15	85	14	30	4	48	422
07:15 AM	32	111	40	183	24	122	23	169	16	79	18	113	16	46	4	66	531
07:30 AM	33	121	57	211	36	156	41	233	15	81	30	126	24	63	5	92	662
07:45 AM	26	157	86	269	32	157	23	212	30	84	23	137	27	64	6	97	715
Total	119	475	204	798	111	547	110	768	75	300	86	461	81	203	19	303	2330
08:00 AM	27	105	37	169	24	104	22	150	20	75	22	117	20	102	11	133	569
08:15 AM	31	97	59	187	31	108	10	149	17	65	19	101	18	69	9	96	533
08:30 AM	21	93	51	165	17	119	22	158	23	70	11	104	10	86	16	112	539
08:45 AM	29	112	40	181	29	105	22	156	17	81	25	123	18	87	14	119	579
Total	108	407	187	702	101	436	76	613	77	291	77	445	66	344	50	460	2220
Grand Total	227	882	391	1500	212	983	186	1381	152	591	163	906	147	547	69	763	4550
Apprch %	15.1	58.8	26.1		15.4	71.2	13.5		16.8	65.2	18		19.3	71.7	9		
Total %	5	19.4	8.6	33	4.7	21.6	4.1	30.4	3.3	13	3.6	19.9	3.2	12	1.5	16.8	
Passenger Vehicles	203	869	382	1454	207	944	175	1326	147	573	159	879	143	524	67	734	4393
% Passenger Vehicles	89.4	98.5	97.7	96.9	97.6	96	94.1	96	96.7	97	97.5	97	97.3	95.8	97.1	96.2	96.5
Large 2 Axle Vehicles	3	12	5	20	5	18	3	26	4	18	3	25	3	16	2	21	92
% Large 2 Axle Vehicles	1.3	1.4	1.3	1.3	2.4	1.8	1.6	1.9	2.6	3	1.8	2.8	2	2.9	2.9	2.8	2
3 Axle Vehicles	1	1	1	3	0	4	2	6	1	0	0	1	1	4	0	5	15
% 3 Axle Vehicles	0.4	0.1	0.3	0.2	0	0.4	1.1	0.4	0.7	0	0	0.1	0.7	0.7	0	0.7	0.3
4+ Axle Trucks	20	0	3	23	0	17	6	23	0	0	1	1	0	3	0	3	50
% 4+ Axle Trucks	8.8	0	0.8	1.5	0	1.7	3.2	1.7	0	0	0.6	0.1	0	0.5	0	0.4	1.1

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**33**	121	57	211	**36**	156	**41**	**233**	15	81	**30**	126	24	63	5	92	662
07:45 AM	26	**157**	**86**	**269**	32	**157**	23	212	**30**	**84**	23	**137**	**27**	64	6	97	**715**
08:00 AM	27	105	37	169	24	104	22	150	20	75	22	117	20	**102**	**11**	**133**	569
08:15 AM	31	97	59	187	31	108	10	149	17	65	19	101	18	69	9	96	533
Total Volume	117	480	239	836	123	525	96	744	82	305	94	481	89	298	31	418	2479
% App. Total	14	57.4	28.6		16.5	70.6	12.9		17	63.4	19.5		21.3	71.3	7.4		
PHF	.886	.764	.695	.777	.854	.836	.585	.798	.683	.908	.783	.878	.824	.730	.705	.786	.867

Counts Unlimited
PO Box 1178
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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:00 AM				07:15 AM				08:00 AM			
+0 mins.	**33**	121	57	211	19	112	23	154	16	79	18	113	**20**	**102**	11	**133**
+15 mins.	26	**157**	**86**	**269**	24	122	23	169	15	81	**30**	126	18	69	9	96
+30 mins.	27	105	37	169	**36**	156	**41**	**233**	**30**	**84**	23	**137**	10	86	**16**	112
+45 mins.	31	97	59	187	32	**157**	23	212	20	75	22	117	18	87	14	119
Total Volume	117	480	239	836	111	547	110	768	81	319	93	493	66	344	50	460
% App. Total	14	57.4	28.6		14.5	71.2	14.3		16.4	64.7	18.9		14.3	74.8	10.9	
PHF	.886	.764	.695	.777	.771	.871	.671	.824	.675	.949	.775	.900	.825	.843	.781	.865

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

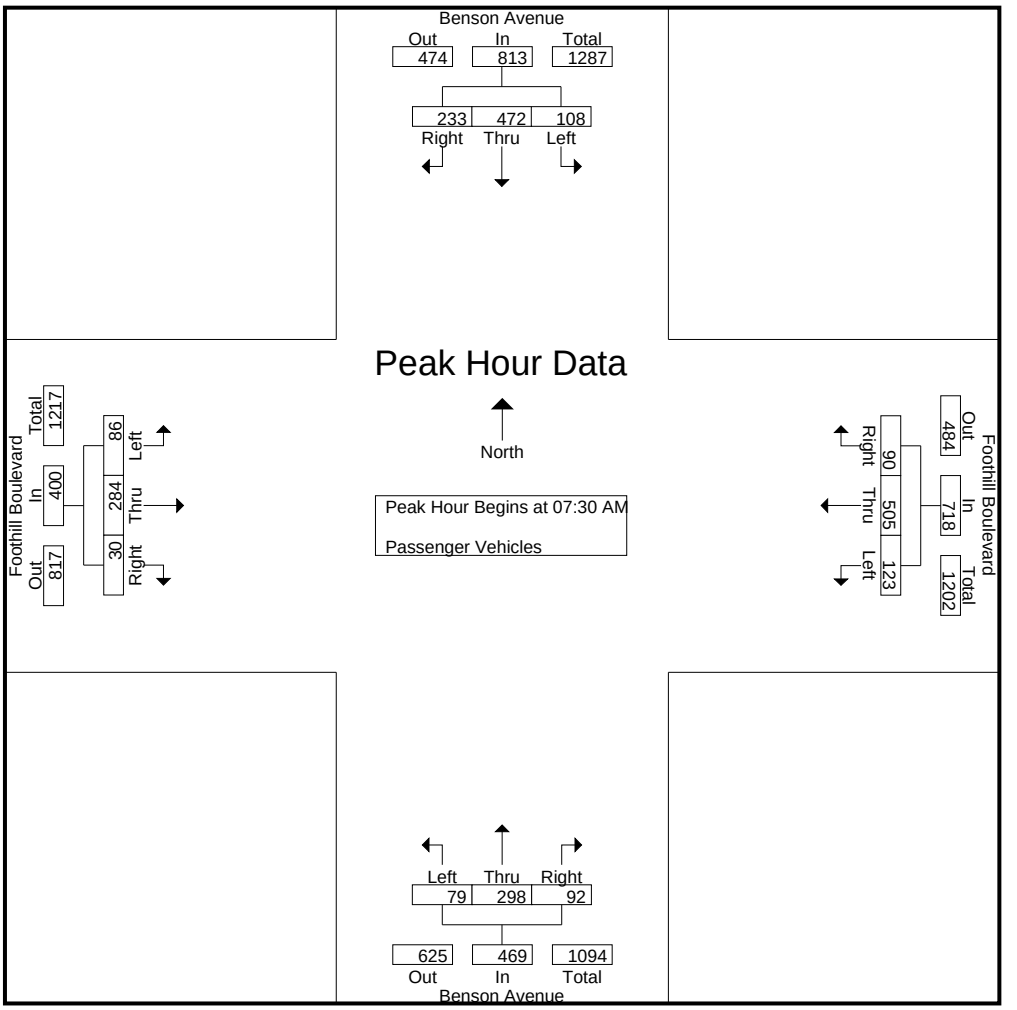
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	23	85	20	128	16	107	23	146	14	54	14	82	14	28	4	46	402
07:15 AM	28	109	40	177	23	121	23	167	15	75	17	107	15	45	4	64	515
07:30 AM	33	121	56	210	36	148	38	222	15	80	29	124	23	58	5	86	642
07:45 AM	26	155	84	265	32	150	22	204	28	83	23	134	25	62	6	93	696
Total	110	470	200	780	107	526	106	739	72	292	83	447	77	193	19	289	2255
08:00 AM	21	103	36	160	24	101	21	146	19	74	22	115	20	98	10	128	549
08:15 AM	28	93	57	178	31	106	9	146	17	61	18	96	18	66	9	93	513
08:30 AM	20	92	51	163	16	109	21	146	23	68	11	102	10	82	16	108	519
08:45 AM	24	111	38	173	29	102	18	149	16	78	25	119	18	85	13	116	557
Total	93	399	182	674	100	418	69	587	75	281	76	432	66	331	48	445	2138
Grand Total	203	869	382	1454	207	944	175	1326	147	573	159	879	143	524	67	734	4393
Apprch %	14	59.8	26.3		15.6	71.2	13.2		16.7	65.2	18.1		19.5	71.4	9.1		
Total %	4.6	19.8	8.7	33.1	4.7	21.5	4	30.2	3.3	13	3.6	20	3.3	11.9	1.5	16.7	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**33**	121	56	210	**36**	148	**38**	**222**	15	80	**29**	124	23	58	5	86	642
07:45 AM	26	**155**	**84**	**265**	32	**150**	22	204	**28**	**83**	23	**134**	**25**	62	6	93	**696**
08:00 AM	21	103	36	160	24	101	21	146	19	74	22	115	20	**98**	**10**	**128**	549
08:15 AM	28	93	57	178	31	106	9	146	17	61	18	96	18	66	9	93	513
Total Volume	108	472	233	813	123	505	90	718	79	298	92	469	86	284	30	400	2400
% App. Total	13.3	58.1	28.7		17.1	70.3	12.5		16.8	63.5	19.6		21.5	71	7.5		
PHF	.818	.761	.693	.767	.854	.842	.592	.809	.705	.898	.793	.875	.860	.724	.750	.781	.862

Counts Unlimited
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(951) 268-6268

City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	**33**	121	56	210	**36**	148	**38**	**222**	15	80	**29**	124	23	58	5	86
+15 mins.	26	**155**	**84**	**265**	32	**150**	22	204	**28**	**83**	23	**134**	**25**	62	6	93
+30 mins.	21	103	36	160	24	101	21	146	19	74	22	115	20	**98**	**10**	**128**
+45 mins.	28	93	57	178	31	106	9	146	17	61	18	96	18	66	9	93
Total Volume	108	472	233	813	123	505	90	718	79	298	92	469	86	284	30	400
% App. Total	13.3	58.1	28.7		17.1	70.3	12.5		16.8	63.5	19.6		21.5	71	7.5	
PHF	.818	.761	.693	.767	.854	.842	.592	.809	.705	.898	.793	.875	.860	.724	.750	.781

Counts Unlimited
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(951) 268-6268

City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

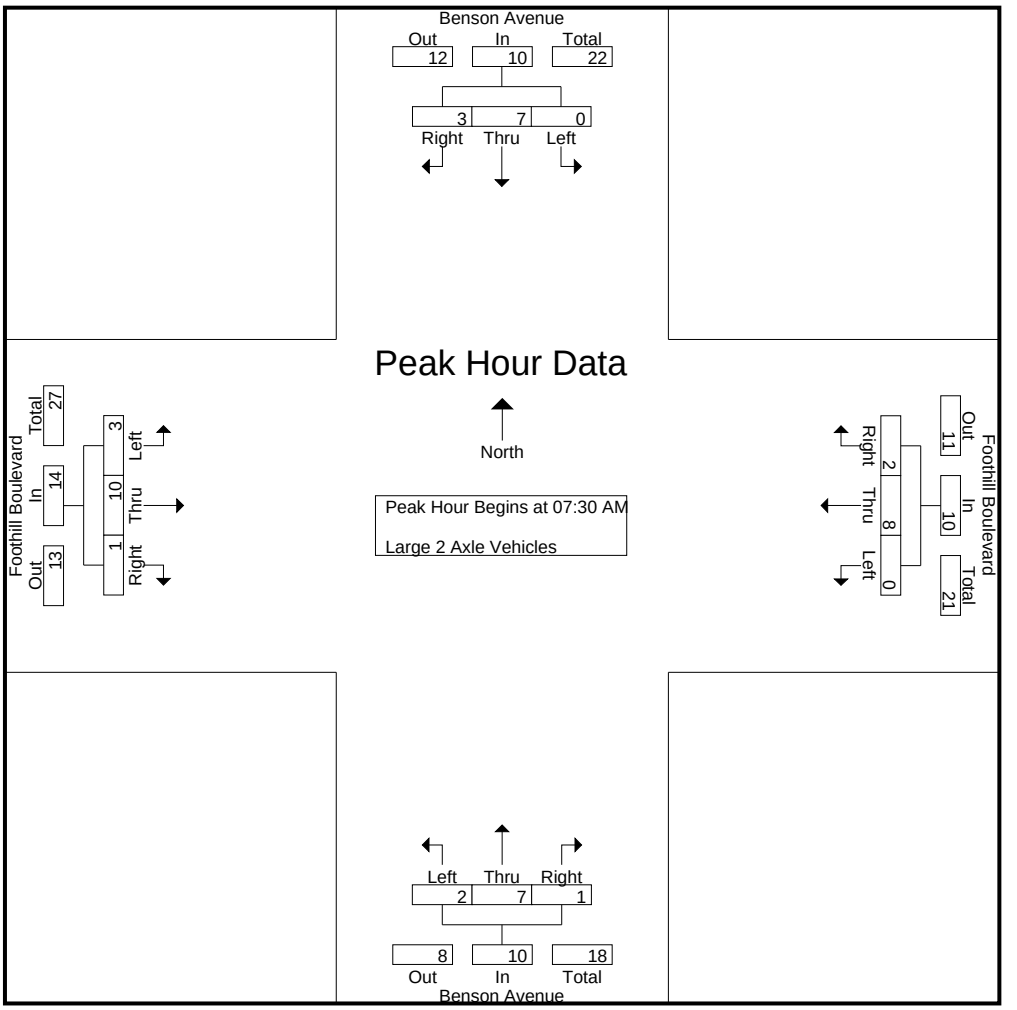
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	1	1	3	3	4	0	7	0	2	1	3	0	2	0	2	15
07:15 AM	0	2	0	2	1	1	0	2	1	4	1	6	0	1	0	1	11
07:30 AM	0	0	1	1	0	3	1	4	0	1	1	2	1	3	0	4	11
07:45 AM	0	1	1	2	0	1	0	1	1	1	0	2	2	1	0	3	8
Total	1	4	3	8	4	9	1	14	2	8	3	13	3	7	0	10	45
08:00 AM	0	2	1	3	0	3	0	3	1	1	0	2	0	3	1	4	12
08:15 AM	0	4	0	4	0	1	1	2	0	4	0	4	0	3	0	3	13
08:30 AM	1	1	0	2	1	4	1	6	0	2	0	2	0	2	0	2	12
08:45 AM	1	1	1	3	0	1	0	1	1	3	0	4	0	1	1	2	10
Total	2	8	2	12	1	9	2	12	2	10	0	12	0	9	2	11	47
Grand Total	3	12	5	20	5	18	3	26	4	18	3	25	3	16	2	21	92
Apprch %	15	60	25		19.2	69.2	11.5		16	72	12		14.3	76.2	9.5		
Total %	3.3	13	5.4	21.7	5.4	19.6	3.3	28.3	4.3	19.6	3.3	27.2	3.3	17.4	2.2	22.8	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	**1**	1	0	**3**	**1**	**4**	0	1	**1**	2	1	**3**	0	**4**	11
07:45 AM	0	1	1	2	0	1	0	1	**1**	1	0	2	**2**	1	0	3	8
08:00 AM	0	2	1	3	0	3	0	3	1	1	0	2	0	3	**1**	4	12
08:15 AM	0	**4**	0	**4**	0	1	1	2	0	**4**	0	**4**	0	3	0	3	**13**
Total Volume	0	7	3	10	0	8	2	10	2	7	1	10	3	10	1	14	44
% App. Total	0	70	30		0	80	20		20	70	10		21.4	71.4	7.1		
PHF	.000	.438	.750	.625	.000	.667	.500	.625	.500	.438	.250	.625	.375	.833	.250	.875	.846

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	**1**	1	0	**3**	**1**	**4**	0	1	**1**	2	1	**3**	0	**4**
+15 mins.	0	1	1	2	0	1	0	1	**1**	1	0	2	**2**	1	0	3
+30 mins.	0	2	1	3	0	3	0	3	1	1	0	2	0	3	**1**	4
+45 mins.	0	**4**	0	**4**	0	1	1	2	0	**4**	0	**4**	0	3	0	3
Total Volume	0	7	3	10	0	8	2	10	2	7	1	10	3	10	1	14
% App. Total	0	70	30		0	80	20		20	70	10		21.4	71.4	7.1	
PHF	.000	.438	.750	.625	.000	.667	.500	.625	.500	.438	.250	.625	.375	.833	.250	.875

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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

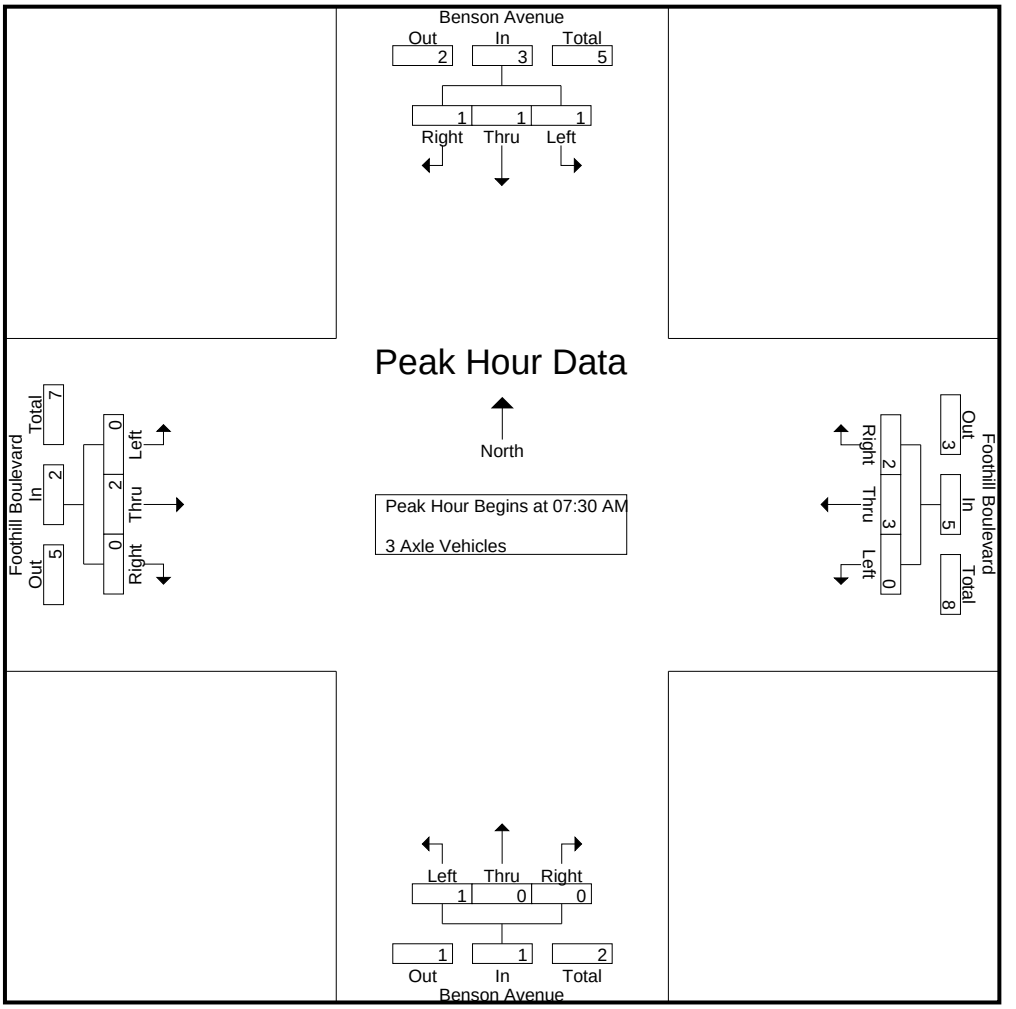
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
07:45 AM	0	1	0	1	0	1	1	2	1	0	0	1	0	1	0	1	5
Total	0	1	0	1	0	2	1	3	1	0	0	1	1	2	0	3	8
08:00 AM	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	1	0	1	2	0	2	1	3	0	0	0	0	0	2	0	2	7
Grand Total	1	1	1	3	0	4	2	6	1	0	0	1	1	4	0	5	15
Apprch %	33.3	33.3	33.3		0	66.7	33.3		100	0	0		20	80	0		
Total %	6.7	6.7	6.7	20	0	26.7	13.3	40	6.7	0	0	6.7	6.7	26.7	0	33.3	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	**1**	0	1	0	0	0	0	0	**1**	0	**1**	2
07:45 AM	0	**1**	0	**1**	0	1	**1**	**2**	**1**	0	0	**1**	0	1	0	1	**5**
08:00 AM	**1**	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	**1**	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Total Volume	1	1	1	3	0	3	2	5	1	0	0	1	0	2	0	2	11
% App. Total	33.3	33.3	33.3		0	60	40		100	0	0		0	100	0		
PHF	.250	.250	.250	.750	.000	.750	.500	.625	.250	.000	.000	.250	.000	.500	.000	.500	.550

Counts Unlimited
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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	**1**	0	1	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	**1**	0	**1**	0	1	**1**	**2**	**1**	0	0	**1**	0	1	0	1
+30 mins.	**1**	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	**1**	1	0	1	0	1	0	0	0	0	0	0	0	0
Total Volume	1	1	1	3	0	3	2	5	1	0	0	1	0	2	0	2
% App. Total	33.3	33.3	33.3		0	60	40		100	0	0		0	100	0	
PHF	.250	.250	.250	.750	.000	.750	.500	.625	.250	.000	.000	.250	.000	.500	.000	.500

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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

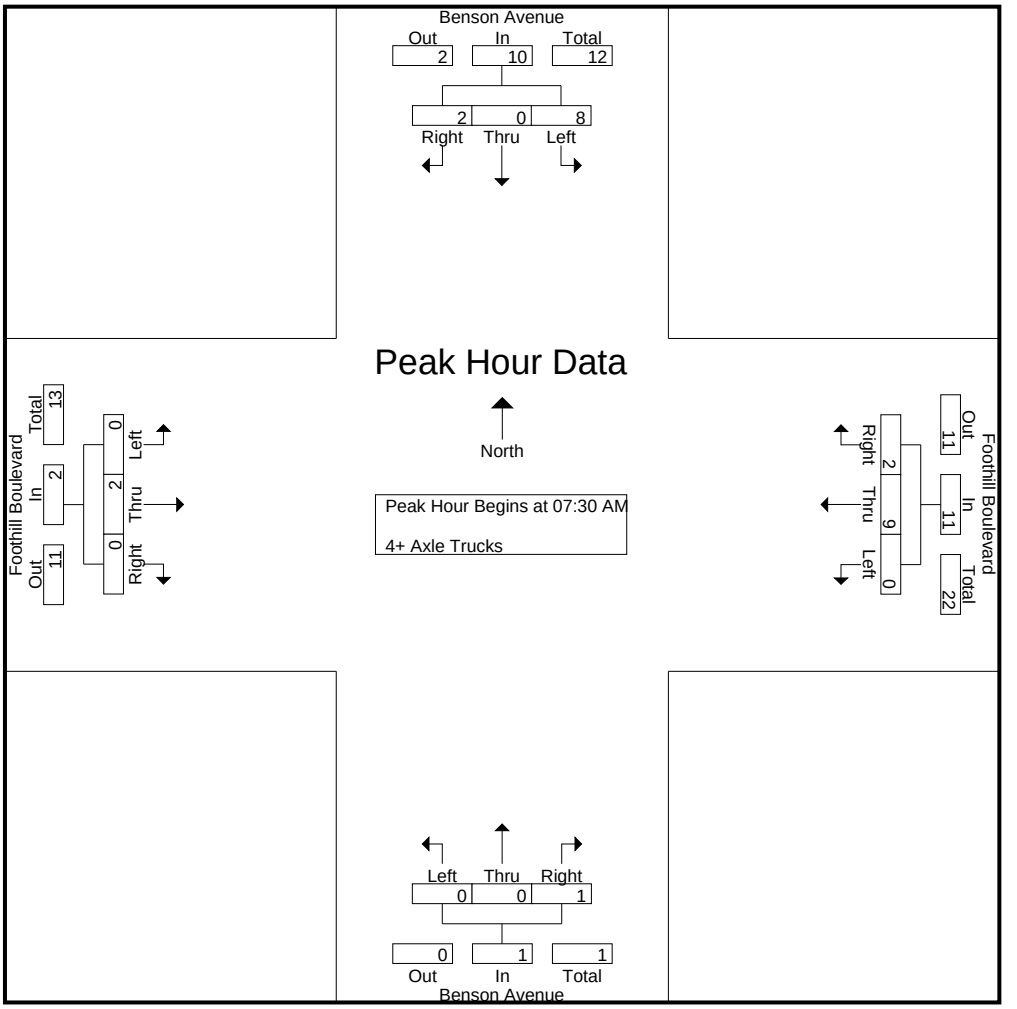
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	0	0	4	0	1	0	1	0	0	0	0	0	0	0	0	5
07:15 AM	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
07:30 AM	0	0	0	0	0	4	2	6	0	0	0	0	0	1	0	1	7
07:45 AM	0	0	1	1	0	5	0	5	0	0	0	0	0	0	0	0	6
Total	8	0	1	9	0	10	2	12	0	0	0	0	0	1	0	1	22
08:00 AM	5	0	0	5	0	0	0	0	0	0	0	0	0	1	0	1	6
08:15 AM	3	0	1	4	0	0	0	0	0	0	1	1	0	0	0	0	5
08:30 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	1	0	1	6
08:45 AM	4	0	1	5	0	2	4	6	0	0	0	0	0	0	0	0	11
Total	12	0	2	14	0	7	4	11	0	0	1	1	0	2	0	2	28
Grand Total	20	0	3	23	0	17	6	23	0	0	1	1	0	3	0	3	50
Apprch %	87	0	13		0	73.9	26.1		0	0	100		0	100	0		
Total %	40	0	6	46	0	34	12	46	0	0	2	2	0	6	0	6	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	4	**2**	**6**	0	0	0	0	0	**1**	0	**1**	**7**
07:45 AM	0	0	**1**	1	0	**5**	0	5	0	0	0	0	0	0	0	0	6
08:00 AM	**5**	0	0	**5**	0	0	0	0	0	0	0	0	0	1	0	1	6
08:15 AM	3	0	1	4	0	0	0	0	0	0	**1**	**1**	0	0	0	0	5
Total Volume	8	0	2	10	0	9	2	11	0	0	1	1	0	2	0	2	24
% App. Total	80	0	20		0	81.8	18.2		0	0	100		0	100	0		
PHF	.400	.000	.500	.500	.000	.450	.250	.458	.000	.000	.250	.250	.000	.500	.000	.500	.857

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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill AM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	4	**2**	**6**	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	**1**	1	0	**5**	0	5	0	0	0	0	0	0	0	0
+30 mins.	**5**	0	0	**5**	0	0	0	0	0	0	0	0	0	1	0	1
+45 mins.	3	0	1	4	0	0	0	0	0	0	**1**	**1**	0	0	0	0
Total Volume	8	0	2	10	0	9	2	11	0	0	1	1	0	2	0	2
% App. Total	80	0	20		0	81.8	18.2		0	0	100		0	100	0	
PHF	.400	.000	.500	.500	.000	.450	.250	.458	.000	.000	.250	.250	.000	.500	.000	.500

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City of Upland
N/S: Benson Avenue
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Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

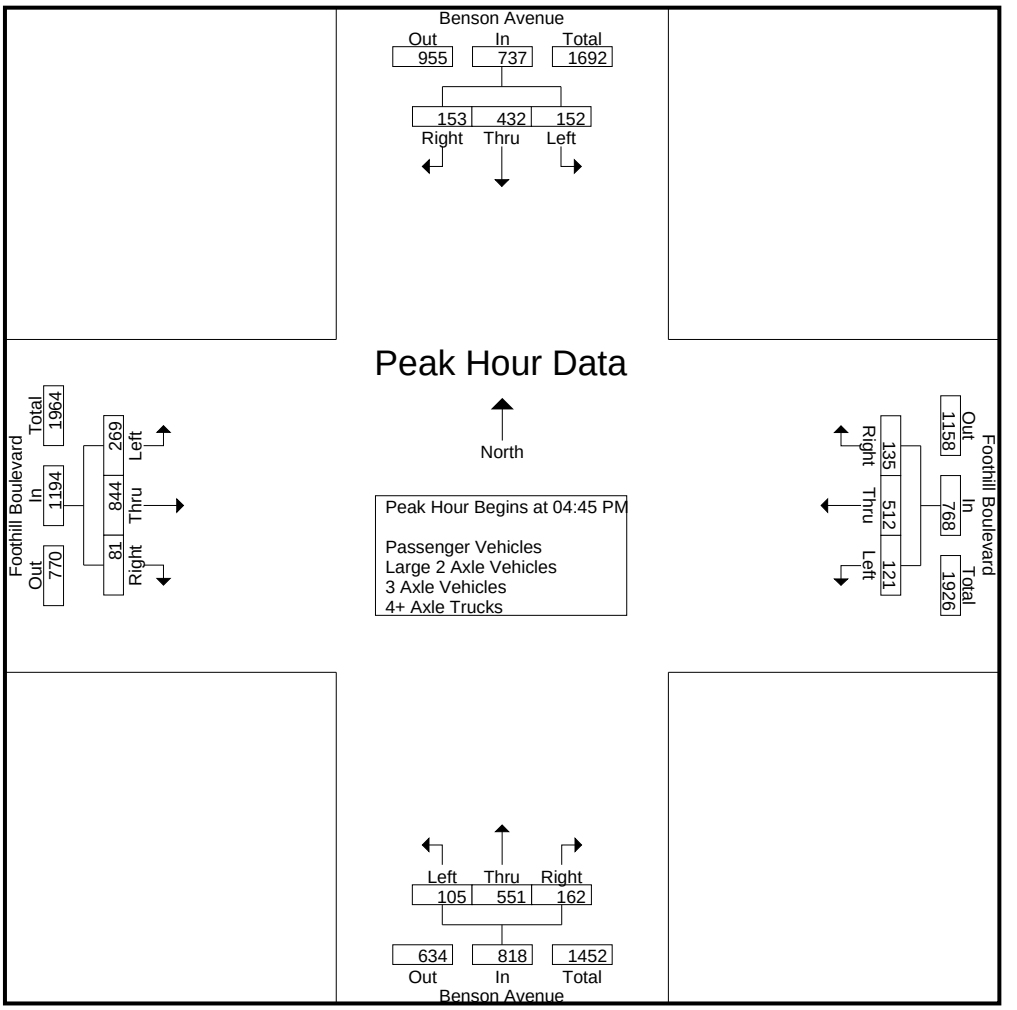
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	30	110	26	166	35	123	21	179	23	139	42	204	72	173	21	266	815
04:15 PM	24	80	33	137	29	134	24	187	30	116	34	180	49	194	21	264	768
04:30 PM	34	100	37	171	17	121	25	163	30	121	41	192	76	184	17	277	803
04:45 PM	40	111	40	191	32	137	37	206	34	109	42	185	61	213	25	299	881
Total	128	401	136	665	113	515	107	735	117	485	159	761	258	764	84	1106	3267
05:00 PM	35	83	32	150	33	127	34	194	29	169	37	235	72	213	18	303	882
05:15 PM	43	124	41	208	30	135	34	199	17	137	39	193	69	198	17	284	884
05:30 PM	34	114	40	188	26	113	30	169	25	136	44	205	67	220	21	308	870
05:45 PM	34	103	35	172	23	145	32	200	27	112	48	187	56	244	18	318	877
Total	146	424	148	718	112	520	130	762	98	554	168	820	264	875	74	1213	3513
Grand Total	274	825	284	1383	225	1035	237	1497	215	1039	327	1581	522	1639	158	2319	6780
Apprch %	19.8	59.7	20.5		15	69.1	15.8		13.6	65.7	20.7		22.5	70.7	6.8		
Total %	4	12.2	4.2	20.4	3.3	15.3	3.5	22.1	3.2	15.3	4.8	23.3	7.7	24.2	2.3	34.2	
Passenger Vehicles	271	811	281	1363	225	1022	235	1482	213	1034	323	1570	515	1623	157	2295	6710
% Passenger Vehicles	98.9	98.3	98.9	98.6	100	98.7	99.2	99	99.1	99.5	98.8	99.3	98.7	99	99.4	99	99
Large 2 Axle Vehicles	1	13	1	15	0	11	1	12	2	3	4	9	6	14	0	20	56
% Large 2 Axle Vehicles	0.4	1.6	0.4	1.1	0	1.1	0.4	0.8	0.9	0.3	1.2	0.6	1.1	0.9	0	0.9	0.8
3 Axle Vehicles	1	1	0	2	0	1	0	1	0	1	0	1	1	1	1	3	7
% 3 Axle Vehicles	0.4	0.1	0	0.1	0	0.1	0	0.1	0	0.1	0	0.1	0.2	0.1	0.6	0.1	0.1
4+ Axle Trucks	1	0	2	3	0	1	1	2	0	1	0	1	0	1	0	1	7
% 4+ Axle Trucks	0.4	0	0.7	0.2	0	0.1	0.4	0.1	0	0.1	0	0.1	0	0.1	0	0	0.1

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	40	111	40	191	32	**137**	**37**	**206**	**34**	109	42	185	61	213	**25**	299	881
05:00 PM	35	83	32	150	**33**	127	34	194	29	**169**	37	**235**	**72**	213	18	303	882
05:15 PM	**43**	**124**	**41**	**208**	30	135	34	199	17	137	39	193	69	198	17	284	**884**
05:30 PM	34	114	40	188	26	113	30	169	25	136	**44**	205	67	**220**	21	**308**	870
Total Volume	152	432	153	737	121	512	135	768	105	551	162	818	269	844	81	1194	3517
% App. Total	20.6	58.6	20.8		15.8	66.7	17.6		12.8	67.4	19.8		22.5	70.7	6.8		
PHF	.884	.871	.933	.886	.917	.934	.912	.932	.772	.815	.920	.870	.934	.959	.810	.969	.995

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Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				05:00 PM				05:00 PM			
+0 mins.	40	111	40	191	32	**137**	**37**	**206**	**29**	**169**	37	**235**	**72**	213	18	303
+15 mins.	35	83	32	150	**33**	127	34	194	17	137	39	193	69	198	17	284
+30 mins.	**43**	**124**	**41**	**208**	30	135	34	199	25	136	44	205	67	220	**21**	308
+45 mins.	34	114	40	188	26	113	30	169	27	112	**48**	187	56	**244**	18	**318**
Total Volume	152	432	153	737	121	512	135	768	98	554	168	820	264	875	74	1213
% App. Total	20.6	58.6	20.8		15.8	66.7	17.6		12	67.6	20.5		21.8	72.1	6.1	
PHF	.884	.871	.933	.886	.917	.934	.912	.932	.845	.820	.875	.872	.917	.897	.881	.954

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City of Upland
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Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Passenger Vehicles

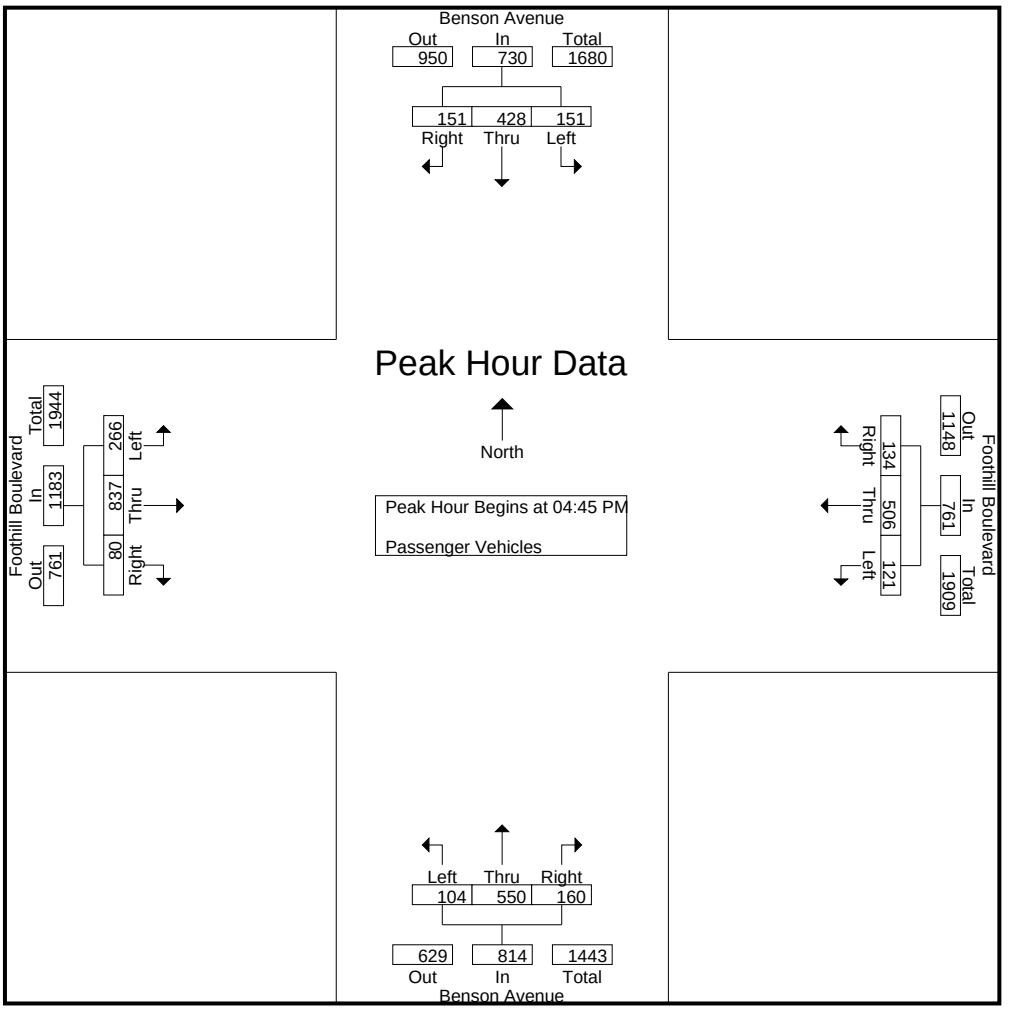
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	29	109	26	164	35	121	20	176	23	139	40	202	68	170	21	259	801
04:15 PM	24	76	32	132	29	132	24	185	29	115	34	178	49	190	21	260	755
04:30 PM	33	96	37	166	17	119	25	161	30	120	41	191	76	183	17	276	794
04:45 PM	40	109	39	188	32	136	37	205	34	109	41	184	60	211	24	295	872
Total	126	390	134	650	113	508	106	727	116	483	156	755	253	754	83	1090	3222
05:00 PM	34	83	32	149	33	124	33	190	29	169	37	235	72	210	18	300	874
05:15 PM	43	123	40	206	30	134	34	198	17	137	38	192	67	197	17	281	877
05:30 PM	34	113	40	187	26	112	30	168	24	135	44	203	67	219	21	307	865
05:45 PM	34	102	35	171	23	144	32	199	27	110	48	185	56	243	18	317	872
Total	145	421	147	713	112	514	129	755	97	551	167	815	262	869	74	1205	3488
Grand Total	271	811	281	1363	225	1022	235	1482	213	1034	323	1570	515	1623	157	2295	6710
Apprch %	19.9	59.5	20.6		15.2	69	15.9		13.6	65.9	20.6		22.4	70.7	6.8		
Total %	4	12.1	4.2	20.3	3.4	15.2	3.5	22.1	3.2	15.4	4.8	23.4	7.7	24.2	2.3	34.2	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	40	109	39	188	32	**136**	**37**	**205**	**34**	109	41	184	60	211	**24**	295	872
05:00 PM	34	83	32	149	**33**	124	33	190	29	**169**	37	**235**	**72**	210	18	300	874
05:15 PM	**43**	**123**	**40**	**206**	30	134	34	198	17	137	38	192	67	197	17	281	**877**
05:30 PM	34	113	40	187	26	112	30	168	24	135	**44**	203	67	**219**	21	**307**	865
Total Volume	151	428	151	730	121	506	134	761	104	550	160	814	266	837	80	1183	3488
% App. Total	20.7	58.6	20.7		15.9	66.5	17.6		12.8	67.6	19.7		22.5	70.8	6.8		
PHF	.878	.870	.944	.886	.917	.930	.905	.928	.765	.814	.909	.866	.924	.955	.833	.963	.994

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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	40	109	39	188	32	**136**	**37**	**205**	**34**	109	41	184	60	211	**24**	295
+15 mins.	34	83	32	149	**33**	124	33	190	29	**169**	37	**235**	**72**	210	18	300
+30 mins.	**43**	**123**	**40**	**206**	30	134	34	198	17	137	38	192	67	197	17	281
+45 mins.	34	113	40	187	26	112	30	168	24	135	**44**	203	67	**219**	21	**307**
Total Volume	151	428	151	730	121	506	134	761	104	550	160	814	266	837	80	1183
% App. Total	20.7	58.6	20.7		15.9	66.5	17.6		12.8	67.6	19.7		22.5	70.8	6.8	
PHF	.878	.870	.944	.886	.917	.930	.905	.928	.765	.814	.909	.866	.924	.955	.833	.963

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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

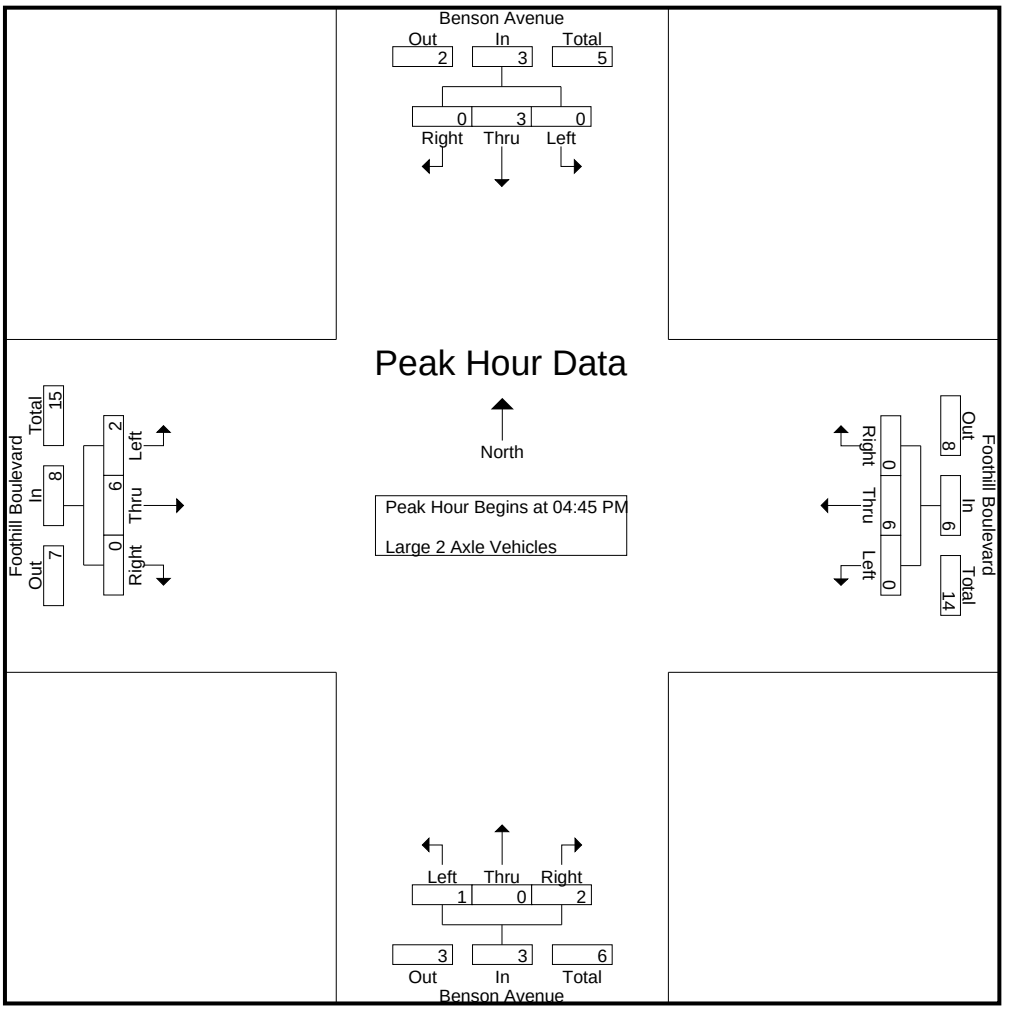
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	1	0	2	0	2	1	3	0	0	2	2	4	3	0	7	14
04:15 PM	0	4	1	5	0	1	0	1	1	1	0	2	0	3	0	3	11
04:30 PM	0	4	0	4	0	1	0	1	0	1	0	1	0	1	0	1	7
04:45 PM	0	1	0	1	0	1	0	1	0	0	1	1	1	2	0	3	6
Total	1	10	1	12	0	5	1	6	1	2	3	6	5	9	0	14	38
05:00 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3	6
05:15 PM	0	1	0	1	0	1	0	1	0	0	1	1	1	1	0	2	5
05:30 PM	0	1	0	1	0	1	0	1	1	0	0	1	0	0	0	0	3
05:45 PM	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	4
Total	0	3	0	3	0	6	0	6	1	1	1	3	1	5	0	6	18
Grand Total	1	13	1	15	0	11	1	12	2	3	4	9	6	14	0	20	56
Apprch %	6.7	86.7	6.7		0	91.7	8.3		22.2	33.3	44.4		30	70	0		
Total %	1.8	23.2	1.8	26.8	0	19.6	1.8	21.4	3.6	5.4	7.1	16.1	10.7	25	0	35.7	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**1**	0	**1**	0	1	0	1	0	0	**1**	**1**	**1**	2	0	**3**	**6**
05:00 PM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	**3**	0	3	6
05:15 PM	0	1	0	1	0	1	0	1	0	0	1	1	1	1	0	2	5
05:30 PM	0	1	0	1	0	1	0	1	**1**	0	0	1	0	0	0	0	3
Total Volume	0	3	0	3	0	6	0	6	1	0	2	3	2	6	0	8	20
% App. Total	0	100	0		0	100	0		33.3	0	66.7		25	75	0		
PHF	.000	.750	.000	.750	.000	.500	.000	.500	.250	.000	.500	.750	.500	.500	.000	.667	.833

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City of Upland
N/S: Benson Avenue
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File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 2



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	**1**	0	**1**	0	1	0	1	0	0	**1**	**1**	**1**	2	0	**3**
+15 mins.	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	**3**	0	3
+30 mins.	0	1	0	1	0	1	0	1	0	0	1	1	1	1	0	2
+45 mins.	0	1	0	1	0	1	0	1	**1**	0	0	1	0	0	0	0
Total Volume	0	3	0	3	0	6	0	6	1	0	2	3	2	6	0	8
% App. Total	0	100	0		0	100	0		33.3	0	66.7		25	75	0	
PHF	.000	.750	.000	.750	.000	.500	.000	.500	.250	.000	.500	.750	.500	.500	.000	.667

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File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

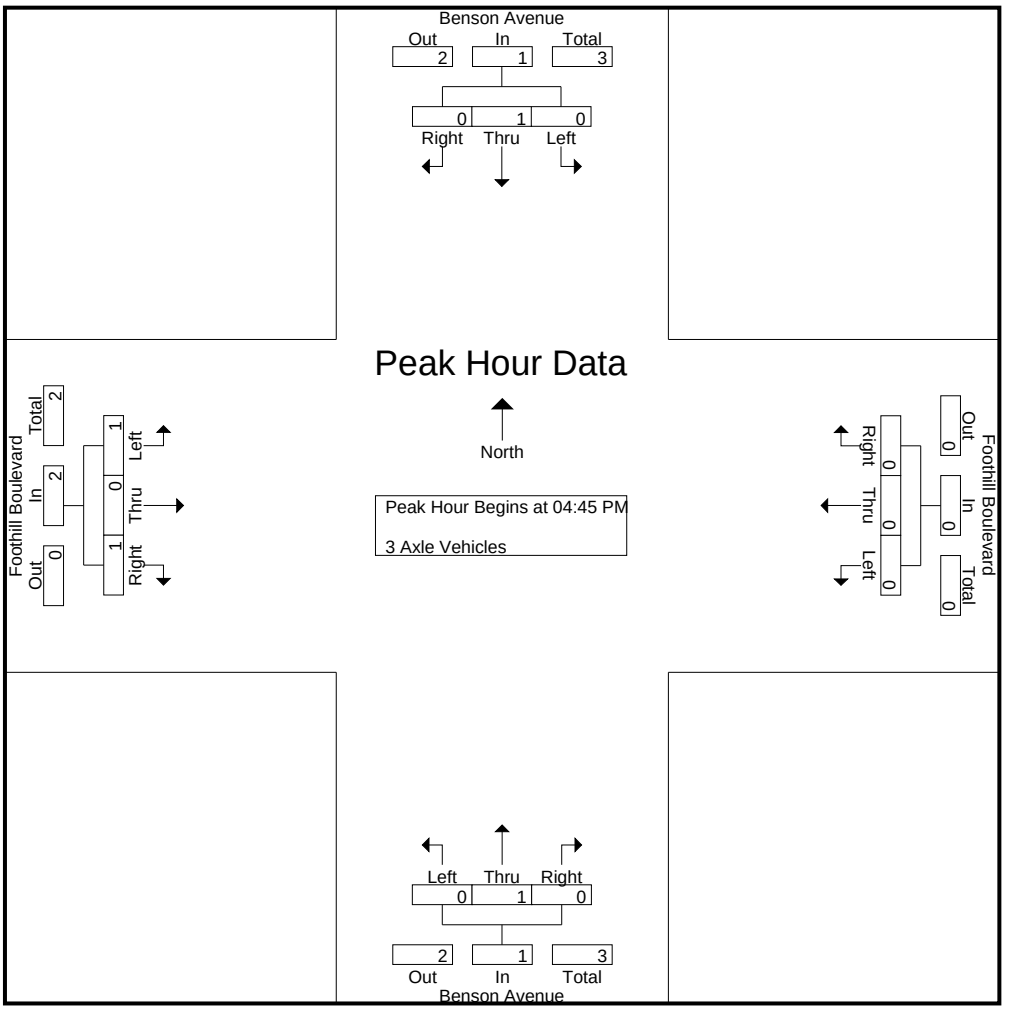
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
04:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	1	1	0	2	0	1	0	1	0	0	0	0	0	1	1	2	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
Grand Total	1	1	0	2	0	1	0	1	0	1	0	1	1	1	1	3	7
Apprch %	50	50	0		0	100	0		0	100	0		33.3	33.3	33.3		
Total %	14.3	14.3	0	28.6	0	14.3	0	14.3	0	14.3	0	14.3	14.3	14.3	14.3	42.9	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**2**
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	1	0	1	2	4
% App. Total	0	100	0		0	0	0		0	100	0		50	0	50		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.250	.500	.500

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E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	1
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	1	0	1	2
% App. Total	0	100	0		0	0	0		0	100	0		50	0	50	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.250	.500

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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

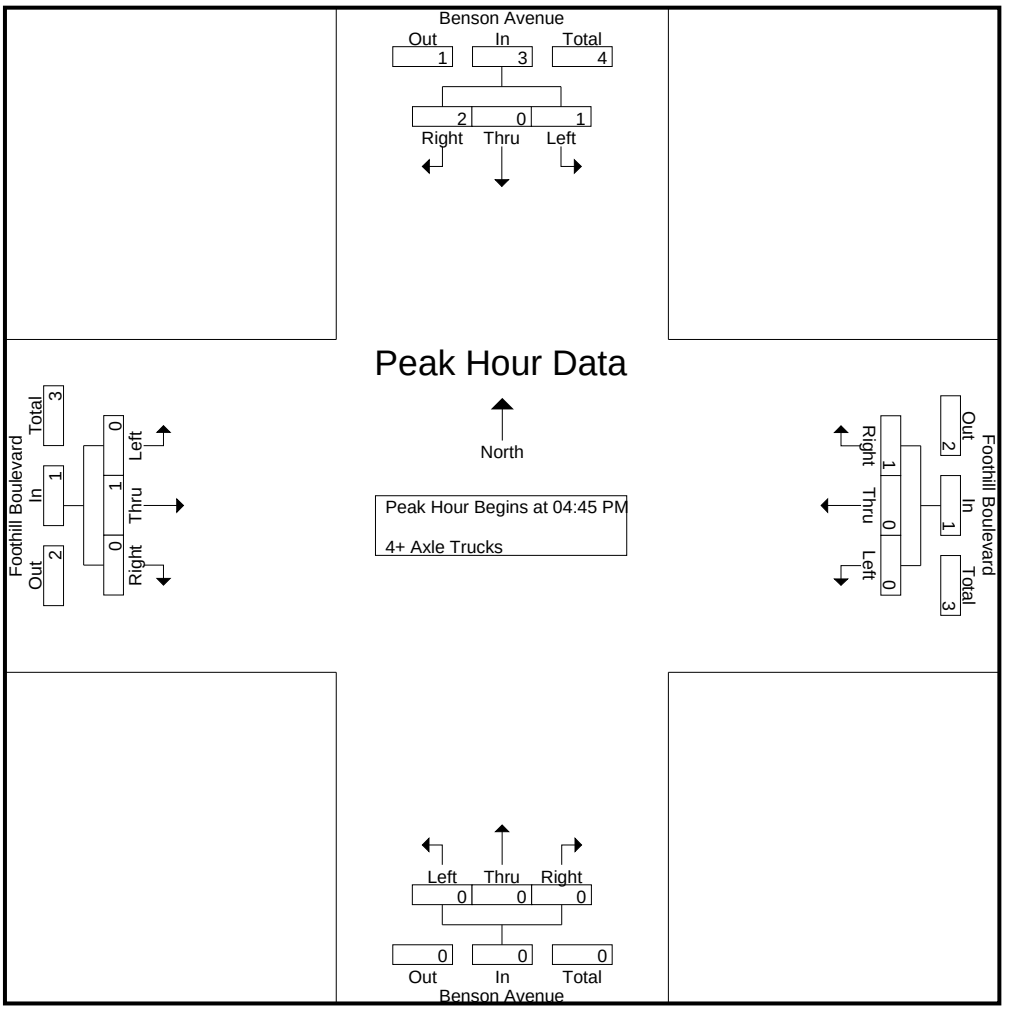
	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:00 PM	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	0	1	2	0	0	1	1	0	1	0	1	0	1	0	1	5
Grand Total	1	0	2	3	0	1	1	2	0	1	0	1	0	1	0	1	7
Apprch %	33.3	0	66.7		0	50	50		0	100	0		0	100	0		
Total %	14.3	0	28.6	42.9	0	14.3	14.3	28.6	0	14.3	0	14.3	0	14.3	0	14.3	

	Benson Avenue Southbound				Foothill Boulevard Westbound				Benson Avenue Northbound				Foothill Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	**1**	0	0	1	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**2**
05:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
Total Volume	1	0	2	3	0	0	1	1	0	0	0	0	0	1	0	1	5
% App. Total	33.3	0	66.7		0	0	100		0	0	0		0	100	0		
PHF	.250	.000	.500	.750	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250	.625

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City of Upland
N/S: Benson Avenue
E/W: Foothill Boulevard (CA-66)
Weather: Clear

File Name : 07_UPL_Benson_Foothill PM
Site Code : 99918442
Start Date : 5/23/2018



Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	**1**	0	0	1	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+30 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
Total Volume	1	0	2	3	0	0	1	1	0	0	0	0	0	1	0	1
% App. Total	33.3	0	66.7		0	0	100		0	0	0		0	100	0	
PHF	.250	.000	.500	.750	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

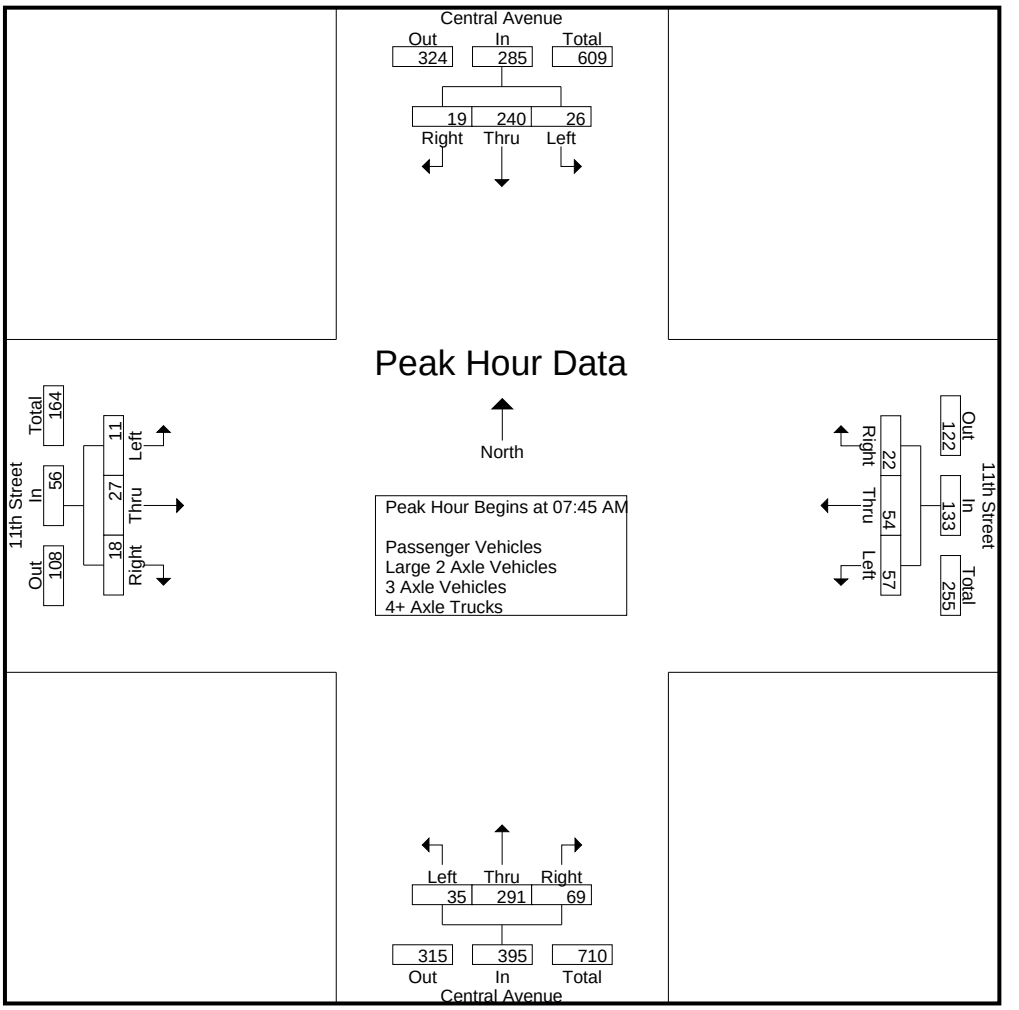
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	53	1	57	10	16	11	37	8	54	14	76	5	5	1	11	181
07:15 AM	2	64	2	68	11	11	4	26	10	51	15	76	2	4	6	12	182
07:30 AM	5	58	6	69	12	13	9	34	4	52	20	76	6	4	3	13	192
07:45 AM	4	59	5	68	13	15	2	30	20	79	19	118	3	7	5	15	231
Total	14	234	14	262	46	55	26	127	42	236	68	346	16	20	15	51	786
08:00 AM	6	61	7	74	17	19	7	43	8	73	19	100	2	9	2	13	230
08:15 AM	7	55	5	67	17	9	5	31	4	76	19	99	2	7	7	16	213
08:30 AM	9	65	2	76	10	11	8	29	3	63	12	78	4	4	4	12	195
08:45 AM	4	66	1	71	15	9	11	35	4	60	23	87	0	9	4	13	206
Total	26	247	15	288	59	48	31	138	19	272	73	364	8	29	17	54	844
Grand Total	40	481	29	550	105	103	57	265	61	508	141	710	24	49	32	105	1630
Apprch %	7.3	87.5	5.3		39.6	38.9	21.5		8.6	71.5	19.9		22.9	46.7	30.5		
Total %	2.5	29.5	1.8	33.7	6.4	6.3	3.5	16.3	3.7	31.2	8.7	43.6	1.5	3	2	6.4	
Passenger Vehicles	36	450	27	513	78	82	47	207	55	466	124	645	20	46	26	92	1457
% Passenger Vehicles	90	93.6	93.1	93.3	74.3	79.6	82.5	78.1	90.2	91.7	87.9	90.8	83.3	93.9	81.2	87.6	89.4
Large 2 Axle Vehicles	3	22	1	26	22	19	10	51	3	30	16	49	2	3	6	11	137
% Large 2 Axle Vehicles	7.5	4.6	3.4	4.7	21	18.4	17.5	19.2	4.9	5.9	11.3	6.9	8.3	6.1	18.8	10.5	8.4
3 Axle Vehicles	1	8	1	10	2	2	0	4	2	9	1	12	1	0	0	1	27
% 3 Axle Vehicles	2.5	1.7	3.4	1.8	1.9	1.9	0	1.5	3.3	1.8	0.7	1.7	4.2	0	0	1	1.7
4+ Axle Trucks	0	1	0	1	3	0	0	3	1	3	0	4	1	0	0	1	9
% 4+ Axle Trucks	0	0.2	0	0.2	2.9	0	0	1.1	1.6	0.6	0	0.6	4.2	0	0	1	0.6

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	4	59	5	68	13	15	2	30	**20**	**79**	**19**	**118**	3	7	5	15	**231**
08:00 AM	6	61	**7**	74	**17**	**19**	7	**43**	8	73	19	100	2	**9**	2	13	230
08:15 AM	7	55	5	67	17	9	5	31	4	76	19	99	2	7	**7**	**16**	213
08:30 AM	**9**	**65**	2	**76**	10	11	**8**	29	3	63	12	78	**4**	4	4	12	195
Total Volume	26	240	19	285	57	54	22	133	35	291	69	395	11	27	18	56	869
% App. Total	9.1	84.2	6.7		42.9	40.6	16.5		8.9	73.7	17.5		19.6	48.2	32.1		
PHF	.722	.923	.679	.938	.838	.711	.688	.773	.438	.921	.908	.837	.688	.750	.643	.875	.940

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:45 AM				07:30 AM			
+0 mins.	6	61	**7**	74	12	13	**9**	34	**20**	**79**	**19**	**118**	**6**	4	3	13
+15 mins.	7	55	5	67	13	15	2	30	8	73	19	100	3	7	5	15
+30 mins.	**9**	65	2	**76**	**17**	**19**	7	**43**	4	76	19	99	2	**9**	2	13
+45 mins.	4	**66**	1	71	17	9	5	31	3	63	12	78	2	7	**7**	**16**
Total Volume	26	247	15	288	59	56	23	138	35	291	69	395	13	27	17	57
% App. Total	9	85.8	5.2		42.8	40.6	16.7		8.9	73.7	17.5		22.8	47.4	29.8	
PHF	.722	.936	.536	.947	.868	.737	.639	.802	.438	.921	.908	.837	.542	.750	.607	.891

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City of Upland
N/S: Central Avenue
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File Name : 02_UPL_Central_11th AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles

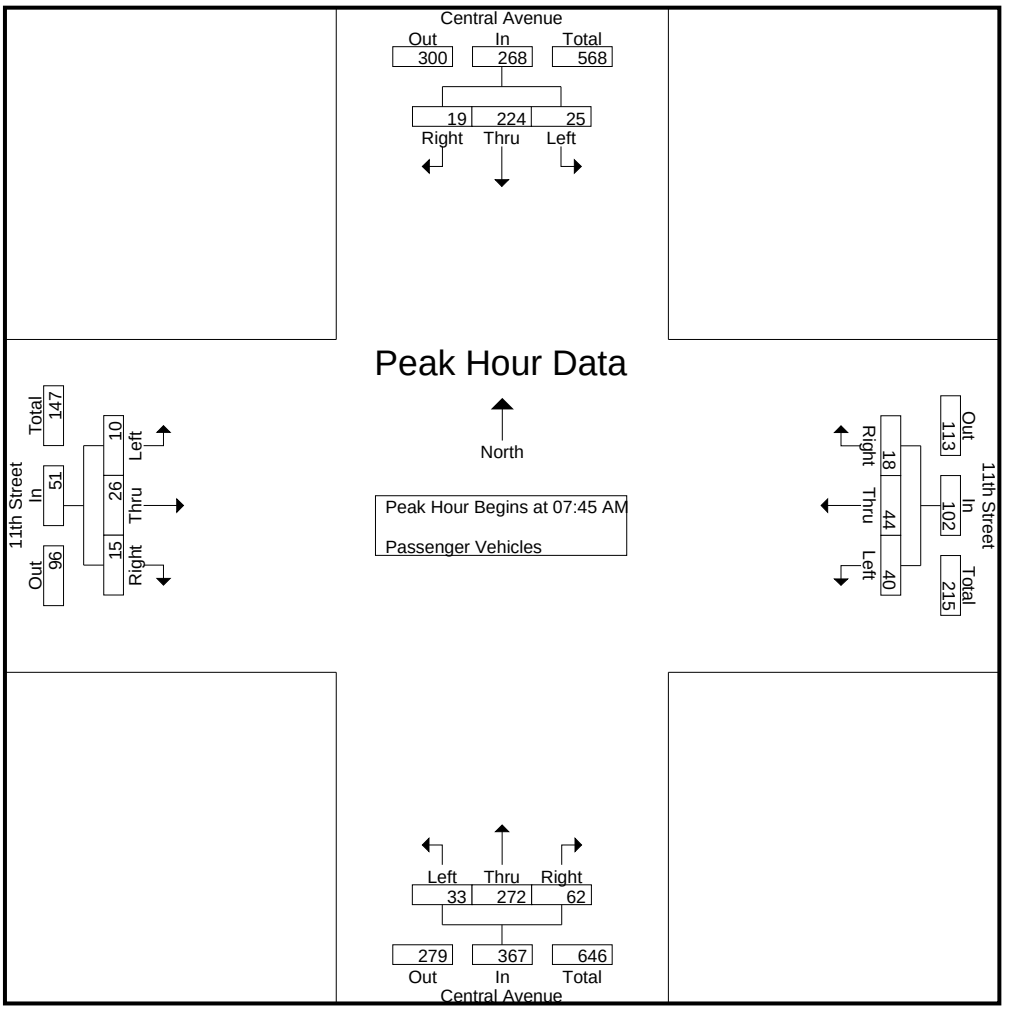
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	49	1	52	5	11	9	25	6	50	14	70	4	4	1	9	156
07:15 AM	0	60	1	61	11	9	2	22	8	42	12	62	2	4	5	11	156
07:30 AM	5	54	5	64	10	10	8	28	4	48	17	69	4	4	1	9	170
07:45 AM	3	55	5	63	12	14	2	28	20	73	17	110	3	7	5	15	216
Total	10	218	12	240	38	44	21	103	38	213	60	311	13	19	12	44	698
08:00 AM	6	57	7	70	13	14	5	32	7	70	17	94	2	9	2	13	209
08:15 AM	7	52	5	64	7	8	3	18	3	72	17	92	2	6	6	14	188
08:30 AM	9	60	2	71	8	8	8	24	3	57	11	71	3	4	2	9	175
08:45 AM	4	63	1	68	12	8	10	30	4	54	19	77	0	8	4	12	187
Total	26	232	15	273	40	38	26	104	17	253	64	334	7	27	14	48	759
Grand Total	36	450	27	513	78	82	47	207	55	466	124	645	20	46	26	92	1457
Apprch %	7	87.7	5.3		37.7	39.6	22.7		8.5	72.2	19.2		21.7	50	28.3		
Total %	2.5	30.9	1.9	35.2	5.4	5.6	3.2	14.2	3.8	32	8.5	44.3	1.4	3.2	1.8	6.3	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	55	5	63	12	**14**	2	28	**20**	**73**	**17**	**110**	**3**	7	5	**15**	**216**
08:00 AM	6	57	**7**	70	**13**	14	5	**32**	7	70	17	94	2	**9**	2	13	209
08:15 AM	7	52	5	64	7	8	3	18	3	72	17	92	2	6	**6**	14	188
08:30 AM	**9**	**60**	2	**71**	8	8	**8**	24	3	57	11	71	3	4	2	9	175
Total Volume	25	224	19	268	40	44	18	102	33	272	62	367	10	26	15	51	788
% App. Total	9.3	83.6	7.1		39.2	43.1	17.6		9	74.1	16.9		19.6	51	29.4		
PHF	.694	.933	.679	.944	.769	.786	.563	.797	.413	.932	.912	.834	.833	.722	.625	.850	.912

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	3	55	5	63	12	**14**	2	28	**20**	**73**	**17**	**110**	**3**	7	5	**15**
+15 mins.	6	57	**7**	70	**13**	14	5	**32**	7	70	17	94	2	**9**	2	13
+30 mins.	7	52	5	64	7	8	3	18	3	72	17	92	2	6	**6**	14
+45 mins.	**9**	**60**	2	**71**	8	8	**8**	24	3	57	11	71	3	4	2	9
Total Volume	25	224	19	268	40	44	18	102	33	272	62	367	10	26	15	51
% App. Total	9.3	83.6	7.1		39.2	43.1	17.6		9	74.1	16.9		19.6	51	29.4	
PHF	.694	.933	.679	.944	.769	.786	.563	.797	.413	.932	.912	.834	.833	.722	.625	.850

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City of Upland
N/S: Central Avenue
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File Name : 02_UPL_Central_11th AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

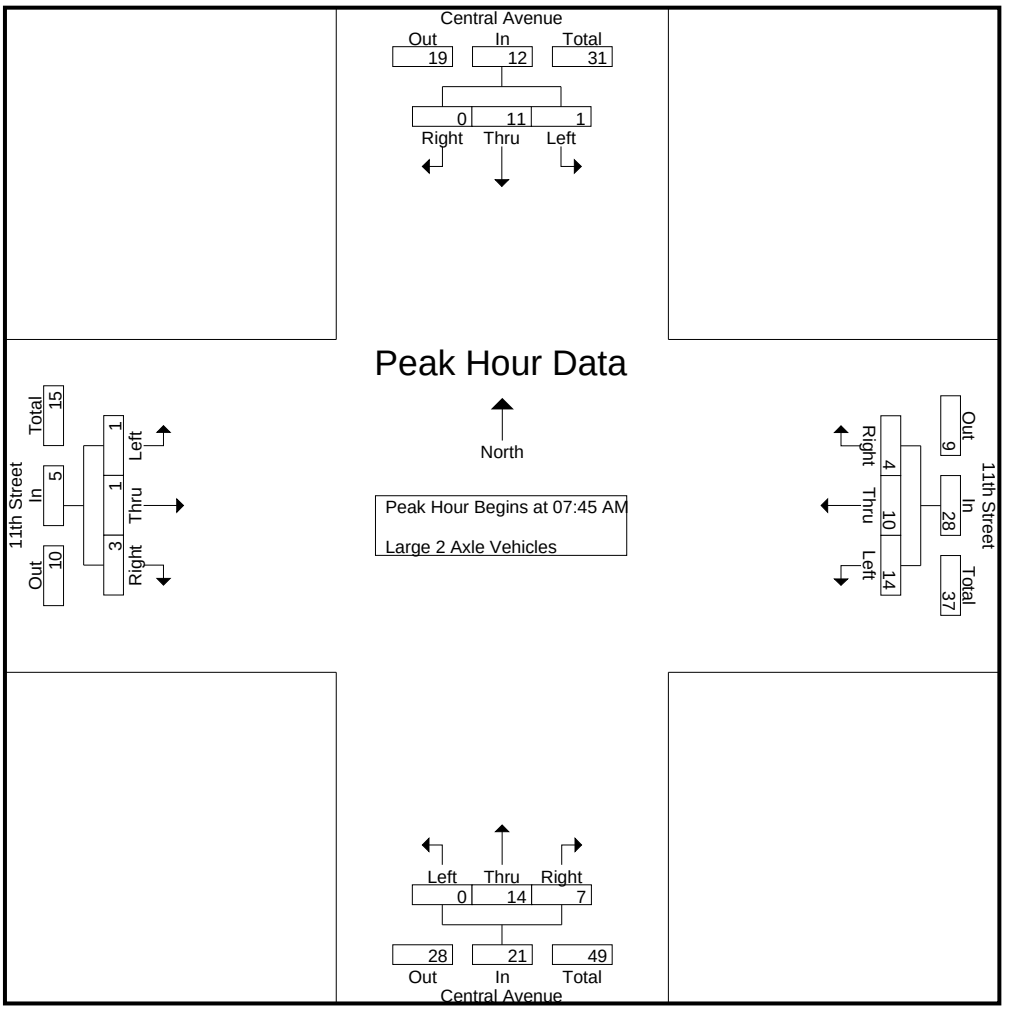
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	3	0	4	4	3	2	9	1	4	0	5	0	1	0	1	19
07:15 AM	1	2	0	3	0	2	2	4	2	6	2	10	0	0	1	1	18
07:30 AM	0	3	1	4	1	3	1	5	0	3	3	6	1	0	2	3	18
07:45 AM	1	3	0	4	1	1	0	2	0	3	2	5	0	0	0	0	11
Total	3	11	1	15	6	9	5	20	3	16	7	26	1	1	3	5	66
08:00 AM	0	2	0	2	3	5	2	10	0	2	2	4	0	0	0	0	16
08:15 AM	0	3	0	3	8	1	2	11	0	3	2	5	0	1	1	2	21
08:30 AM	0	3	0	3	2	3	0	5	0	6	1	7	1	0	2	3	18
08:45 AM	0	3	0	3	3	1	1	5	0	3	4	7	0	1	0	1	16
Total	0	11	0	11	16	10	5	31	0	14	9	23	1	2	3	6	71
Grand Total	3	22	1	26	22	19	10	51	3	30	16	49	2	3	6	11	137
Apprch %	11.5	84.6	3.8		43.1	37.3	19.6		6.1	61.2	32.7		18.2	27.3	54.5		
Total %	2.2	16.1	0.7	19	16.1	13.9	7.3	37.2	2.2	21.9	11.7	35.8	1.5	2.2	4.4	8	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**1**	**3**	0	**4**	1	1	0	2	0	3	**2**	5	0	0	0	0	11
08:00 AM	0	2	0	2	3	**5**	**2**	10	0	2	2	4	0	0	0	0	16
08:15 AM	0	3	0	3	**8**	1	2	**11**	0	3	2	5	0	**1**	1	2	**21**
08:30 AM	0	3	0	3	2	3	0	5	0	**6**	1	**7**	**1**	0	**2**	**3**	18
Total Volume	1	11	0	12	14	10	4	28	0	14	7	21	1	1	3	5	66
% App. Total	8.3	91.7	0		50	35.7	14.3		0	66.7	33.3		20	20	60		
PHF	.250	.917	.000	.750	.438	.500	.500	.636	.000	.583	.875	.750	.250	.250	.375	.417	.786

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City of Upland
N/S: Central Avenue
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Weather: Clear

File Name : 02_UPL_Central_11th AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	**1**	**3**	0	**4**	1	1	0	2	0	3	**2**	5	0	0	0	0
+15 mins.	0	2	0	2	3	**5**	**2**	10	0	2	2	4	0	0	0	0
+30 mins.	0	3	0	3	**8**	1	2	**11**	0	3	2	5	0	**1**	1	2
+45 mins.	0	3	0	3	2	3	0	5	0	**6**	1	**7**	**1**	0	**2**	**3**
Total Volume	1	11	0	12	14	10	4	28	0	14	7	21	1	1	3	5
% App. Total	8.3	91.7	0		50	35.7	14.3		0	66.7	33.3		20	20	60	
PHF	.250	.917	.000	.750	.438	.500	.500	.636	.000	.583	.875	.750	.250	.250	.375	.417

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City of Upland
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E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

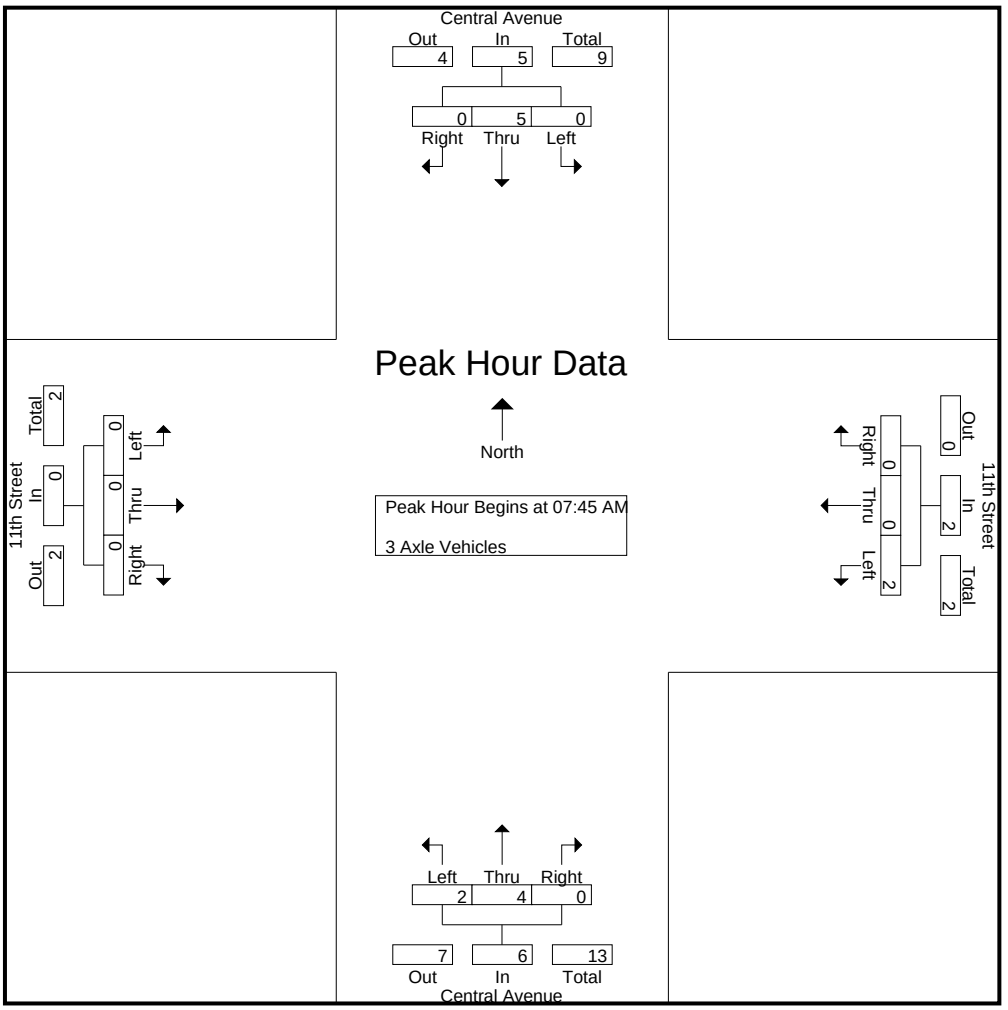
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	2	0	2	0	0	0	0	1	0	0	1	4
07:15 AM	1	1	1	3	0	0	0	0	0	2	1	3	0	0	0	0	6
07:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:45 AM	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
Total	1	4	1	6	0	2	0	2	0	6	1	7	1	0	0	1	16
08:00 AM	0	2	0	2	1	0	0	1	1	1	0	2	0	0	0	0	5
08:15 AM	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
08:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	4	0	4	2	0	0	2	2	3	0	5	0	0	0	0	11
Grand Total	1	8	1	10	2	2	0	4	2	9	1	12	1	0	0	1	27
Apprch %	10	80	10		50	50	0		16.7	75	8.3		100	0	0		
Total %	3.7	29.6	3.7	37	7.4	7.4	0	14.8	7.4	33.3	3.7	44.4	3.7	0	0	3.7	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	1	0	1	0	0	0	0	0	**3**	0	**3**	0	0	0	0	4
08:00 AM	0	**2**	0	**2**	**1**	0	0	**1**	**1**	1	0	2	0	0	0	0	**5**
08:15 AM	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
08:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	5	0	5	2	0	0	2	2	4	0	6	0	0	0	0	13
% App. Total	0	100	0		100	0	0		33.3	66.7	0		0	0	0		
PHF	.000	.625	.000	.625	.500	.000	.000	.500	.500	.333	.000	.500	.000	.000	.000	.000	.650

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	**3**	0	**3**	0	0	0	0
+15 mins.	0	**2**	0	**2**	**1**	0	0	**1**	**1**	1	0	2	0	0	0	0
+30 mins.	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	5	0	5	2	0	0	2	2	4	0	6	0	0	0	0
% App. Total	0	100	0		100	0	0		33.3	66.7	0		0	0	0	
PHF	.000	.625	.000	.625	.500	.000	.000	.500	.500	.333	.000	.500	.000	.000	.000	.000

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City of Upland
N/S: Central Avenue
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Weather: Clear

File Name : 02_UPL_Central_11th AM
Site Code : 99918629
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Groups Printed- 4+ Axle Trucks

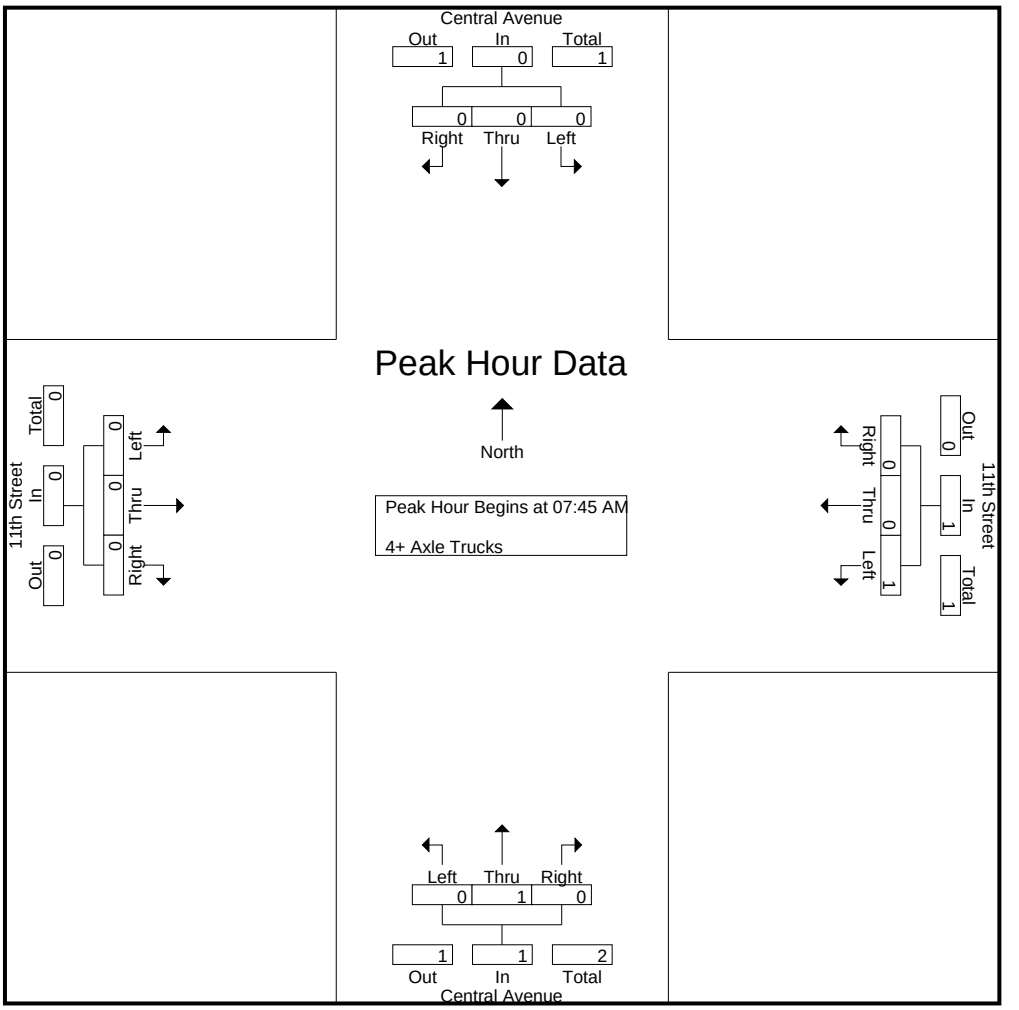
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
07:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	2	0	0	2	1	1	0	2	1	0	0	1	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	2	0	2	0	0	0	0	3
Grand Total	0	1	0	1	3	0	0	3	1	3	0	4	1	0	0	1	9
Apprch %	0	100	0		100	0	0		25	75	0		100	0	0		
Total %	0	11.1	0	11.1	33.3	0	0	33.3	11.1	33.3	0	44.4	11.1	0	0	11.1	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	**1**	0	0	**1**	0	**1**	0	**1**	0	0	0	0	**2**
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
% App. Total	0	0	0		100	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000	.250

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Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	**1**	0	0	**1**	0	**1**	0	**1**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0
% App. Total	0	0	0		100	0	0		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000

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City of Upland
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E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th PM
Site Code : 99918629
Start Date : 8/28/2018
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

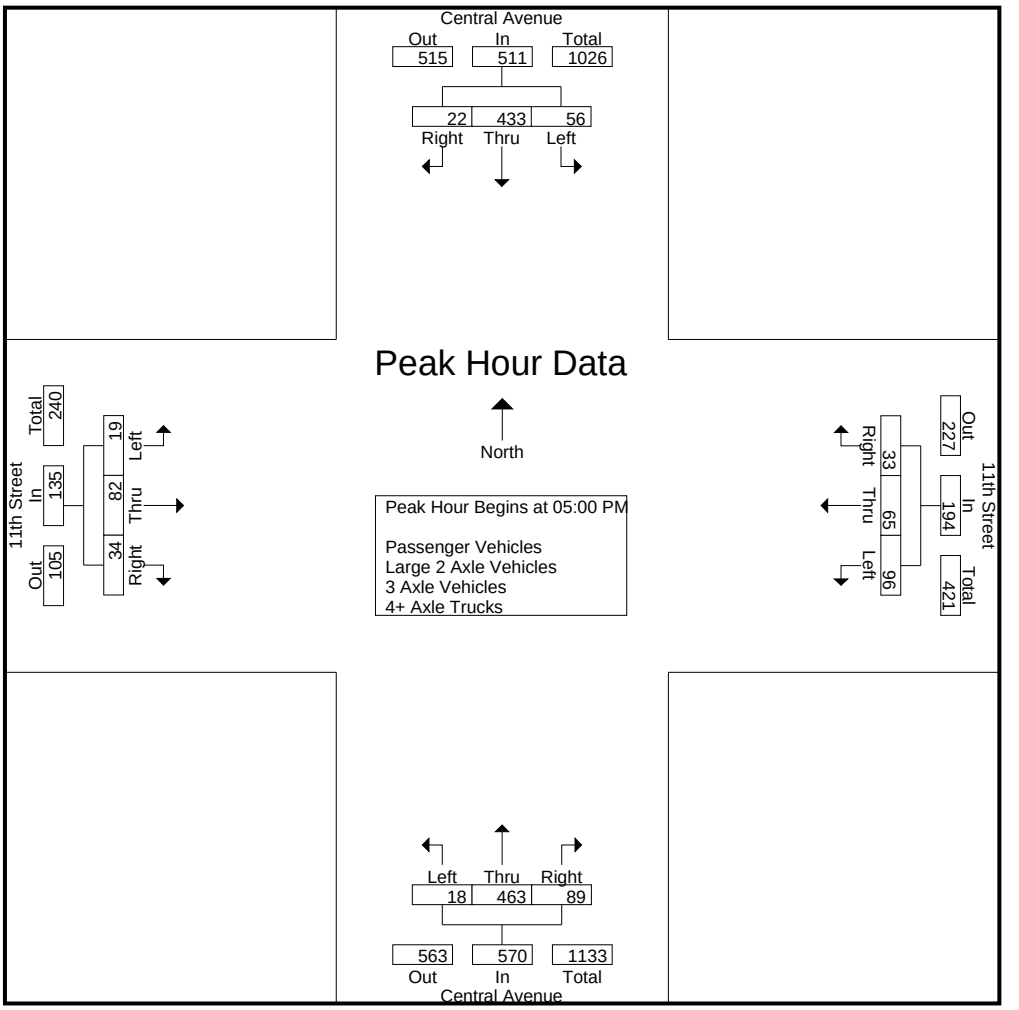
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	9	109	6	124	22	16	6	44	8	133	20	161	9	15	12	36	365
04:15 PM	9	95	2	106	10	11	9	30	2	98	20	120	6	16	4	26	282
04:30 PM	8	99	4	111	26	13	11	50	1	103	10	114	11	24	10	45	320
04:45 PM	5	94	4	103	14	12	12	38	4	112	18	134	5	19	7	31	306
Total	31	397	16	444	72	52	38	162	15	446	68	529	31	74	33	138	1273
05:00 PM	16	107	5	128	33	18	11	62	7	121	23	151	9	28	11	48	389
05:15 PM	15	128	8	151	21	10	10	41	2	117	25	144	3	22	8	33	369
05:30 PM	16	95	5	116	20	19	3	42	5	129	18	152	4	13	8	25	335
05:45 PM	9	103	4	116	22	18	9	49	4	96	23	123	3	19	7	29	317
Total	56	433	22	511	96	65	33	194	18	463	89	570	19	82	34	135	1410
Grand Total	87	830	38	955	168	117	71	356	33	909	157	1099	50	156	67	273	2683
Apprch %	9.1	86.9	4		47.2	32.9	19.9		3	82.7	14.3		18.3	57.1	24.5		
Total %	3.2	30.9	1.4	35.6	6.3	4.4	2.6	13.3	1.2	33.9	5.9	41	1.9	5.8	2.5	10.2	
Passenger Vehicles	86	807	37	930	164	114	70	348	30	885	150	1065	50	150	65	265	2608
% Passenger Vehicles	98.9	97.2	97.4	97.4	97.6	97.4	98.6	97.8	90.9	97.4	95.5	96.9	100	96.2	97	97.1	97.2
Large 2 Axle Vehicles	1	19	1	21	1	3	1	5	2	20	6	28	0	6	2	8	62
% Large 2 Axle Vehicles	1.1	2.3	2.6	2.2	0.6	2.6	1.4	1.4	6.1	2.2	3.8	2.5	0	3.8	3	2.9	2.3
3 Axle Vehicles	0	3	0	3	1	0	0	1	1	4	1	6	0	0	0	0	10
% 3 Axle Vehicles	0	0.4	0	0.3	0.6	0	0	0.3	3	0.4	0.6	0.5	0	0	0	0	0.4
4+ Axle Trucks	0	1	0	1	2	0	0	2	0	0	0	0	0	0	0	0	3
% 4+ Axle Trucks	0	0.1	0	0.1	1.2	0	0	0.6	0	0	0	0	0	0	0	0	0.1

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**16**	107	5	128	**33**	18	**11**	**62**	**7**	121	23	151	**9**	**28**	**11**	**48**	**389**
05:15 PM	15	**128**	**8**	**151**	21	10	10	41	2	117	**25**	144	3	22	8	33	369
05:30 PM	16	95	5	116	20	**19**	3	42	5	**129**	18	**152**	4	13	8	25	335
05:45 PM	9	103	4	116	22	18	9	49	4	96	23	123	3	19	7	29	317
Total Volume	56	433	22	511	96	65	33	194	18	463	89	570	19	82	34	135	1410
% App. Total	11	84.7	4.3		49.5	33.5	17		3.2	81.2	15.6		14.1	60.7	25.2		
PHF	.875	.846	.688	.846	.727	.855	.750	.782	.643	.897	.890	.938	.528	.732	.773	.703	.906

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N/S: Central Avenue
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Weather: Clear

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Site Code : 99918629
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:45 PM				04:30 PM			
+0 mins.	**16**	107	5	128	**33**	18	**11**	**62**	4	112	18	134	**11**	24	10	45
+15 mins.	15	**128**	**8**	**151**	21	10	10	41	**7**	121	23	151	5	19	7	31
+30 mins.	16	95	5	116	20	**19**	3	42	2	117	**25**	144	9	**28**	**11**	**48**
+45 mins.	9	103	4	116	22	18	9	49	5	**129**	18	**152**	3	22	8	33
Total Volume	56	433	22	511	96	65	33	194	18	479	84	581	28	93	36	157
% App. Total	11	84.7	4.3		49.5	33.5	17		3.1	82.4	14.5		17.8	59.2	22.9	
PHF	.875	.846	.688	.846	.727	.855	.750	.782	.643	.928	.840	.956	.636	.830	.818	.818

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City of Upland
N/S: Central Avenue
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Weather: Clear

File Name : 02_UPL_Central_11th PM
Site Code : 99918629
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Groups Printed- Passenger Vehicles

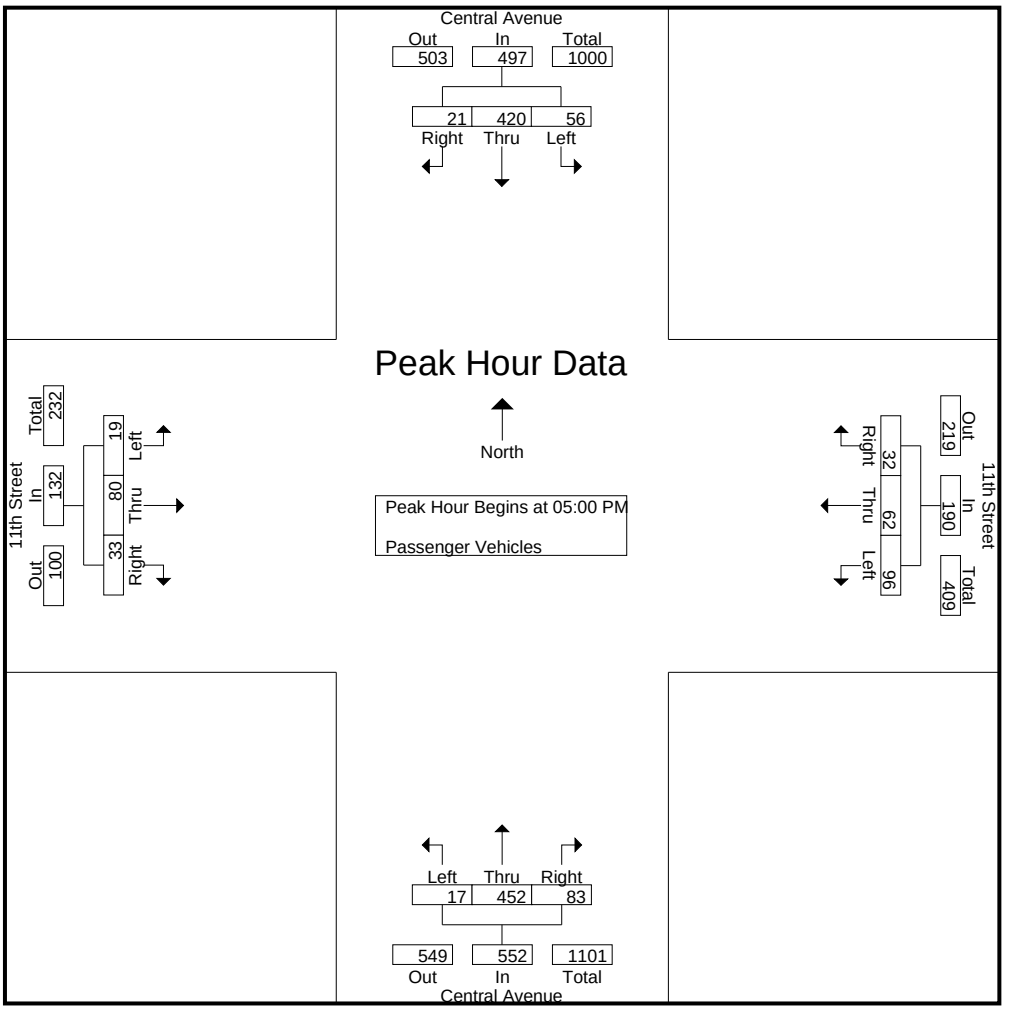
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	9	107	6	122	20	16	6	42	6	127	20	153	9	14	12	35	352
04:15 PM	8	90	2	100	9	11	9	29	2	96	19	117	6	16	4	26	272
04:30 PM	8	97	4	109	25	13	11	49	1	101	10	112	11	22	9	42	312
04:45 PM	5	93	4	102	14	12	12	38	4	109	18	131	5	18	7	30	301
Total	30	387	16	433	68	52	38	158	13	433	67	513	31	70	32	133	1237
05:00 PM	16	102	4	122	33	18	11	62	6	117	22	145	9	27	11	47	376
05:15 PM	15	125	8	148	21	8	10	39	2	114	23	139	3	21	8	32	358
05:30 PM	16	93	5	114	20	19	2	41	5	128	17	150	4	13	7	24	329
05:45 PM	9	100	4	113	22	17	9	48	4	93	21	118	3	19	7	29	308
Total	56	420	21	497	96	62	32	190	17	452	83	552	19	80	33	132	1371
Grand Total	86	807	37	930	164	114	70	348	30	885	150	1065	50	150	65	265	2608
Apprch %	9.2	86.8	4		47.1	32.8	20.1		2.8	83.1	14.1		18.9	56.6	24.5		
Total %	3.3	30.9	1.4	35.7	6.3	4.4	2.7	13.3	1.2	33.9	5.8	40.8	1.9	5.8	2.5	10.2	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**16**	102	4	122	**33**	18	**11**	**62**	**6**	117	22	145	**9**	**27**	**11**	**47**	**376**
05:15 PM	15	**125**	**8**	**148**	21	8	10	39	2	114	**23**	139	3	21	8	32	358
05:30 PM	16	93	5	114	20	**19**	2	41	5	**128**	17	**150**	4	13	7	24	329
05:45 PM	9	100	4	113	22	17	9	48	4	93	21	118	3	19	7	29	308
Total Volume	56	420	21	497	96	62	32	190	17	452	83	552	19	80	33	132	1371
% App. Total	11.3	84.5	4.2		50.5	32.6	16.8		3.1	81.9	15		14.4	60.6	25		
PHF	.875	.840	.656	.840	.727	.816	.727	.766	.708	.883	.902	.920	.528	.741	.750	.702	.912

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Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	**16**	102	4	122	**33**	18	**11**	**62**	**6**	117	22	145	**9**	**27**	**11**	**47**
+15 mins.	15	**125**	**8**	**148**	21	8	10	39	2	114	**23**	139	3	21	8	32
+30 mins.	16	93	5	114	20	**19**	2	41	5	**128**	17	**150**	4	13	7	24
+45 mins.	9	100	4	113	22	17	9	48	4	93	21	118	3	19	7	29
Total Volume	56	420	21	497	96	62	32	190	17	452	83	552	19	80	33	132
% App. Total	11.3	84.5	4.2		50.5	32.6	16.8		3.1	81.9	15		14.4	60.6	25	
PHF	.875	.840	.656	.840	.727	.816	.727	.766	.708	.883	.902	.920	.528	.741	.750	.702

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File Name : 02_UPL_Central_11th PM
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Groups Printed- Large 2 Axle Vehicles

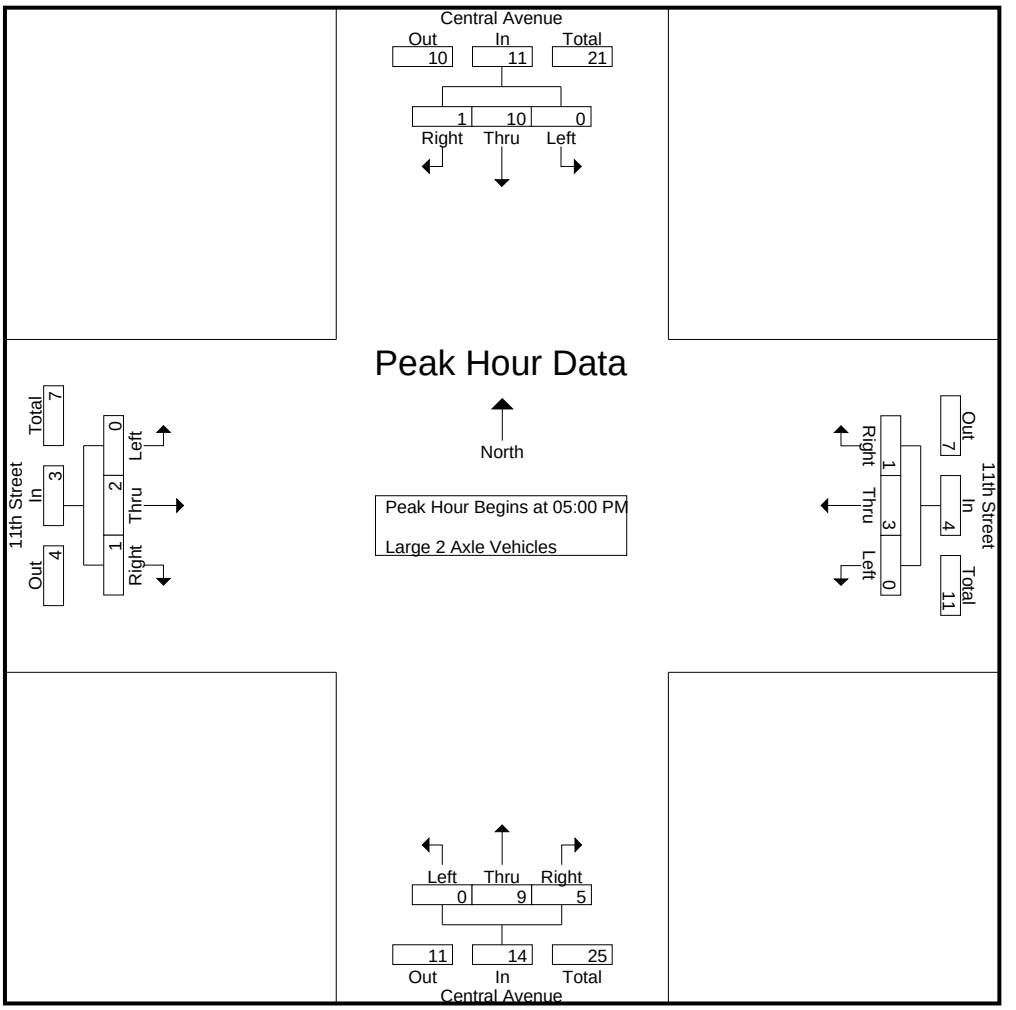
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	2	0	2	0	0	0	0	2	5	0	7	0	1	0	1	10
04:15 PM	1	4	0	5	0	0	0	0	0	1	1	2	0	0	0	0	7
04:30 PM	0	2	0	2	1	0	0	1	0	2	0	2	0	2	1	3	8
04:45 PM	0	1	0	1	0	0	0	0	0	3	0	3	0	1	0	1	5
Total	1	9	0	10	1	0	0	1	2	11	1	14	0	4	1	5	30
05:00 PM	0	4	1	5	0	0	0	0	0	3	1	4	0	1	0	1	10
05:15 PM	0	2	0	2	0	2	0	2	0	2	2	4	0	1	0	1	9
05:30 PM	0	1	0	1	0	0	1	1	0	1	0	1	0	0	1	1	4
05:45 PM	0	3	0	3	0	1	0	1	0	3	2	5	0	0	0	0	9
Total	0	10	1	11	0	3	1	4	0	9	5	14	0	2	1	3	32
Grand Total	1	19	1	21	1	3	1	5	2	20	6	28	0	6	2	8	62
Apprch %	4.8	90.5	4.8		20	60	20		7.1	71.4	21.4		0	75	25		
Total %	1.6	30.6	1.6	33.9	1.6	4.8	1.6	8.1	3.2	32.3	9.7	45.2	0	9.7	3.2	12.9	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**4**	**1**	**5**	0	0	0	0	0	**3**	1	4	0	**1**	0	**1**	**10**
05:15 PM	0	2	0	2	0	**2**	0	**2**	0	2	**2**	4	0	1	0	1	9
05:30 PM	0	1	0	1	0	0	**1**	1	0	1	0	1	0	0	**1**	1	4
05:45 PM	0	3	0	3	0	1	0	1	0	3	2	**5**	0	0	0	0	9
Total Volume	0	10	1	11	0	3	1	4	0	9	5	14	0	2	1	3	32
% App. Total	0	90.9	9.1		0	75	25		0	64.3	35.7		0	66.7	33.3		
PHF	.000	.625	.250	.550	.000	.375	.250	.500	.000	.750	.625	.700	.000	.500	.250	.750	.800

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**4**	**1**	**5**	0	0	0	0	0	**3**	1	4	0	**1**	0	**1**
+15 mins.	0	2	0	2	0	**2**	0	**2**	0	2	**2**	4	0	1	0	1
+30 mins.	0	1	0	1	0	0	**1**	1	0	1	0	1	0	0	**1**	1
+45 mins.	0	3	0	3	0	1	0	1	0	3	2	**5**	0	0	0	0
Total Volume	0	10	1	11	0	3	1	4	0	9	5	14	0	2	1	3
% App. Total	0	90.9	9.1		0	75	25		0	64.3	35.7		0	66.7	33.3	
PHF	.000	.625	.250	.550	.000	.375	.250	.500	.000	.750	.625	.700	.000	.500	.250	.750

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th PM
Site Code : 99918629
Start Date : 8/28/2018

Groups Printed- 3 Axle Vehicles

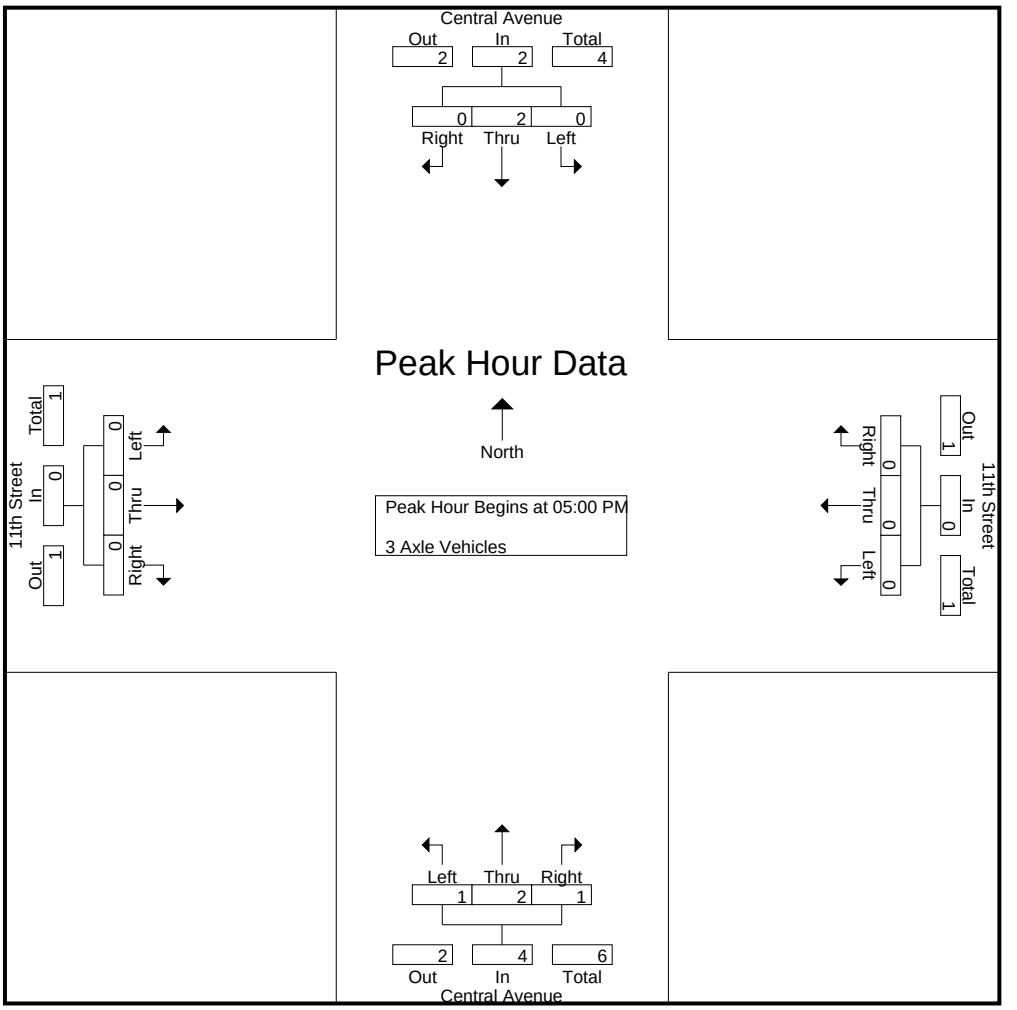
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
04:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
05:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	1	2	1	4	0	0	0	0	6
Grand Total	0	3	0	3	1	0	0	1	1	4	1	6	0	0	0	0	10
Apprch %	0	100	0		100	0	0		16.7	66.7	16.7		0	0	0		
Total %	0	30	0	30	10	0	0	10	10	40	10	60	0	0	0	0	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	**1**	**1**	0	**2**	0	0	0	0	**2**
05:15 PM	0	**1**	0	**1**	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	1	0	1	0	0	0	0	0	0	**1**	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	1	2	1	4	0	0	0	0	6
% App. Total	0	100	0		0	0	0		25	50	25		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.500	.250	.500	.000	.000	.000	.000	.750

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th PM
Site Code : 99918629
Start Date : 8/28/2018
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Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	**1**	**1**	0	**2**	0	0	0	0
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	**1**	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	1	2	1	4	0	0	0	0
% App. Total	0	100	0		0	0	0		25	50	25		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.500	.250	.500	.000	.000	.000	.000

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City of Upland
N/S: Central Avenue
E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th PM
Site Code : 99918629
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Groups Printed- 4+ Axle Trucks

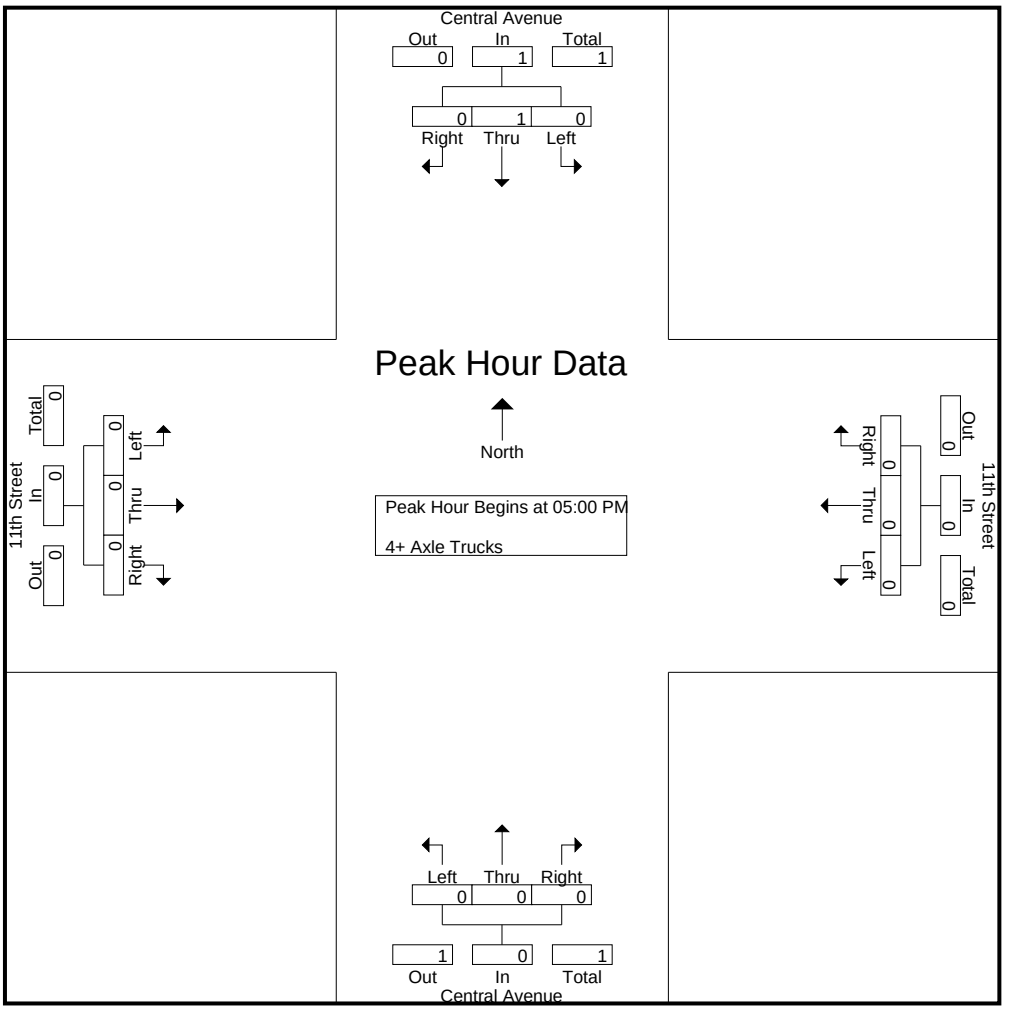
	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	1	2	0	0	2	0	0	0	0	0	0	0	0	3
Apprch %	0	100	0		100	0	0		0	0	0		0	0	0		
Total %	0	33.3	0	33.3	66.7	0	0	66.7	0	0	0	0	0	0	0	0	

	Central Avenue Southbound				11th Street Westbound				Central Avenue Northbound				11th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

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City of Upland
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E/W: 11th Street
Weather: Clear

File Name : 02_UPL_Central_11th PM
Site Code : 99918629
Start Date : 8/28/2018
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Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

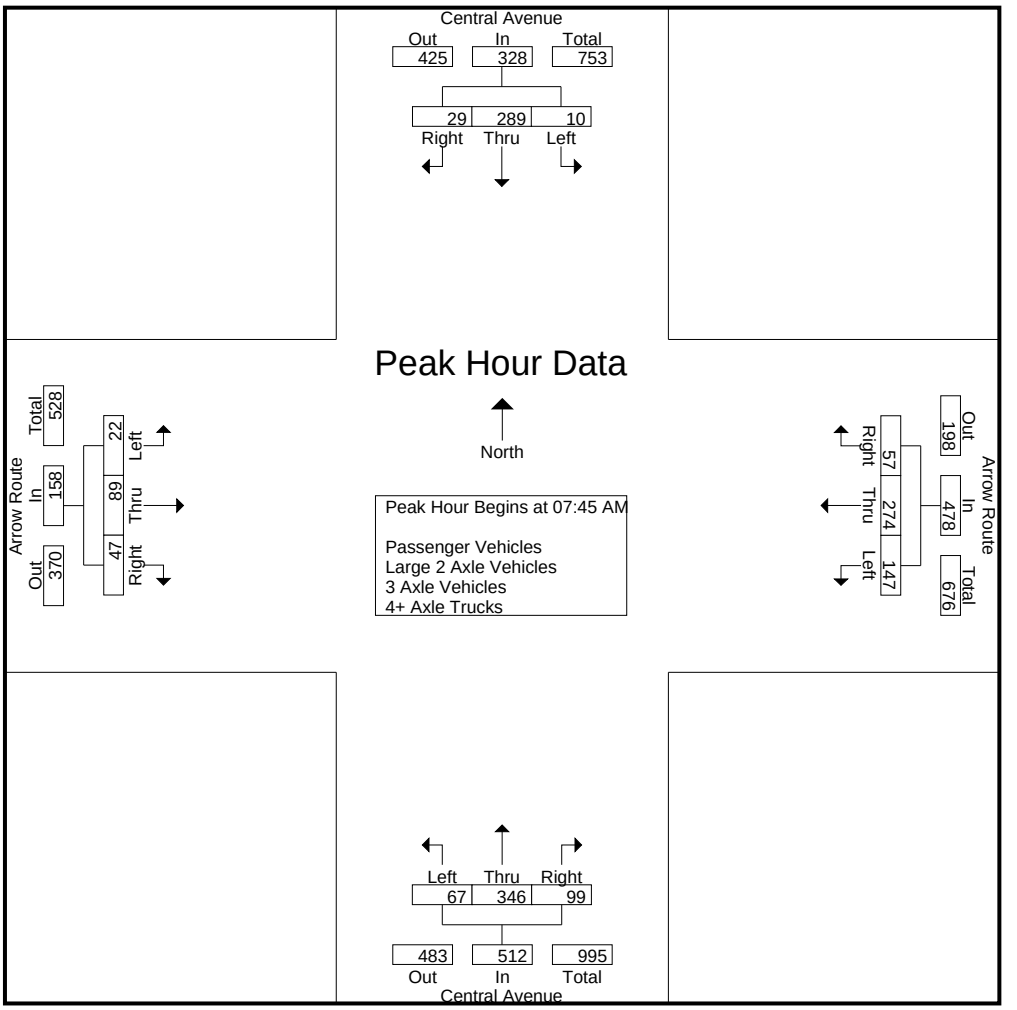
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	51	4	56	30	45	7	82	8	59	14	81	1	6	11	18	237
07:15 AM	1	68	3	72	28	41	6	75	10	75	13	98	2	10	13	25	270
07:30 AM	7	62	4	73	40	61	8	109	8	61	29	98	2	25	13	40	320
07:45 AM	0	84	7	91	37	63	12	112	15	88	24	127	4	18	18	40	370
Total	9	265	18	292	135	210	33	378	41	283	80	404	9	59	55	123	1197
08:00 AM	3	61	8	72	42	83	19	144	16	89	26	131	6	29	11	46	393
08:15 AM	3	73	7	83	32	70	17	119	19	85	19	123	7	22	10	39	364
08:30 AM	4	71	7	82	36	58	9	103	17	84	30	131	5	20	8	33	349
08:45 AM	6	71	7	84	36	55	11	102	9	71	15	95	10	27	12	49	330
Total	16	276	29	321	146	266	56	468	61	329	90	480	28	98	41	167	1436
Grand Total	25	541	47	613	281	476	89	846	102	612	170	884	37	157	96	290	2633
Apprch %	4.1	88.3	7.7		33.2	56.3	10.5		11.5	69.2	19.2		12.8	54.1	33.1		
Total %	0.9	20.5	1.8	23.3	10.7	18.1	3.4	32.1	3.9	23.2	6.5	33.6	1.4	6	3.6	11	
Passenger Vehicles	22	485	45	552	273	466	84	823	92	559	158	809	35	153	93	281	2465
% Passenger Vehicles	88	89.6	95.7	90	97.2	97.9	94.4	97.3	90.2	91.3	92.9	91.5	94.6	97.5	96.9	96.9	93.6
Large 2 Axle Vehicles	3	40	1	44	8	8	4	20	6	38	11	55	2	4	1	7	126
% Large 2 Axle Vehicles	12	7.4	2.1	7.2	2.8	1.7	4.5	2.4	5.9	6.2	6.5	6.2	5.4	2.5	1	2.4	4.8
3 Axle Vehicles	0	12	0	12	0	1	1	2	2	12	0	14	0	0	1	1	29
% 3 Axle Vehicles	0	2.2	0	2	0	0.2	1.1	0.2	2	2	0	1.6	0	0	1	0.3	1.1
4+ Axle Trucks	0	4	1	5	0	1	0	1	2	3	1	6	0	0	1	1	13
% 4+ Axle Trucks	0	0.7	2.1	0.8	0	0.2	0	0.1	2	0.5	0.6	0.7	0	0	1	0.3	0.5

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	**84**	7	**91**	37	63	12	112	15	88	24	127	4	18	**18**	40	370
08:00 AM	3	61	**8**	72	**42**	**83**	**19**	**144**	16	**89**	26	**131**	6	**29**	11	**46**	**393**
08:15 AM	3	73	7	83	32	70	17	119	**19**	85	19	123	**7**	22	10	39	364
08:30 AM	**4**	71	7	82	36	58	9	103	17	84	**30**	131	5	20	8	33	349
Total Volume	10	289	29	328	147	274	57	478	67	346	99	512	22	89	47	158	1476
% App. Total	3	88.1	8.8		30.8	57.3	11.9		13.1	67.6	19.3		13.9	56.3	29.7		
PHF	.625	.860	.906	.901	.875	.825	.750	.830	.882	.972	.825	.977	.786	.767	.653	.859	.939

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City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				07:45 AM				08:00 AM			
+0 mins.	0	**84**	7	**91**	40	61	8	109	15	88	24	127	6	**29**	11	46
+15 mins.	3	61	**8**	72	37	63	12	112	16	**89**	26	**131**	7	22	10	39
+30 mins.	3	73	7	83	**42**	**83**	**19**	**144**	**19**	85	19	123	5	20	8	33
+45 mins.	**4**	71	7	82	32	70	17	119	17	84	**30**	131	**10**	27	**12**	**49**
Total Volume	10	289	29	328	151	277	56	484	67	346	99	512	28	98	41	167
% App. Total	3	88.1	8.8		31.2	57.2	11.6		13.1	67.6	19.3		16.8	58.7	24.6	
PHF	.625	.860	.906	.901	.899	.834	.737	.840	.882	.972	.825	.977	.700	.845	.854	.852

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City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles

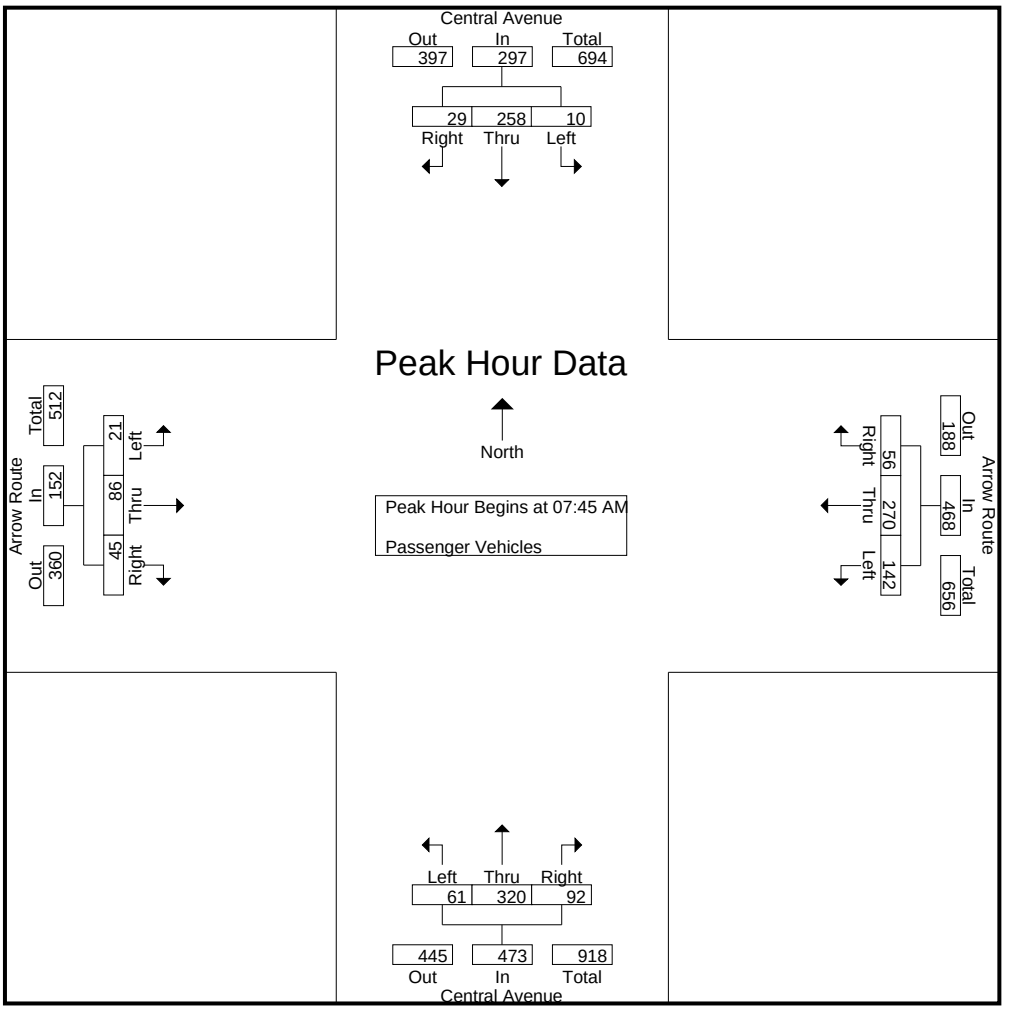
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	45	4	50	29	43	7	79	7	53	13	73	1	6	11	18	220
07:15 AM	1	60	3	64	28	41	6	75	8	69	12	89	2	10	13	25	253
07:30 AM	6	57	3	66	39	61	5	105	8	53	27	88	2	25	13	40	299
07:45 AM	0	75	7	82	37	61	12	110	15	81	23	119	4	18	16	38	349
Total	8	237	17	262	133	206	30	369	38	256	75	369	9	59	53	121	1121
08:00 AM	3	56	8	67	38	82	18	138	15	84	23	122	6	29	11	46	373
08:15 AM	3	67	7	77	32	70	17	119	17	78	18	113	6	22	10	38	347
08:30 AM	4	60	7	71	35	57	9	101	14	77	28	119	5	17	8	30	321
08:45 AM	4	65	6	75	35	51	10	96	8	64	14	86	9	26	11	46	303
Total	14	248	28	290	140	260	54	454	54	303	83	440	26	94	40	160	1344
Grand Total	22	485	45	552	273	466	84	823	92	559	158	809	35	153	93	281	2465
Apprch %	4	87.9	8.2		33.2	56.6	10.2		11.4	69.1	19.5		12.5	54.4	33.1		
Total %	0.9	19.7	1.8	22.4	11.1	18.9	3.4	33.4	3.7	22.7	6.4	32.8	1.4	6.2	3.8	11.4	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	**75**	7	**82**	37	61	12	110	15	81	23	119	4	18	**16**	38	349
08:00 AM	3	56	**8**	67	**38**	**82**	**18**	**138**	15	**84**	23	**122**	**6**	**29**	11	**46**	**373**
08:15 AM	3	67	7	77	32	70	17	119	**17**	78	18	113	6	22	10	38	347
08:30 AM	**4**	60	7	71	35	57	9	101	14	77	**28**	119	5	17	8	30	321
Total Volume	10	258	29	297	142	270	56	468	61	320	92	473	21	86	45	152	1390
% App. Total	3.4	86.9	9.8		30.3	57.7	12		12.9	67.7	19.5		13.8	56.6	29.6		
PHF	.625	.860	.906	.905	.934	.823	.778	.848	.897	.952	.821	.969	.875	.741	.703	.826	.932

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	**75**	7	**82**	37	61	12	110	15	81	23	119	4	18	**16**	38
+15 mins.	3	56	**8**	67	**38**	**82**	**18**	**138**	15	**84**	23	**122**	**6**	**29**	11	**46**
+30 mins.	3	67	7	77	32	70	17	119	**17**	78	18	113	6	22	10	38
+45 mins.	**4**	60	7	71	35	57	9	101	14	77	**28**	119	5	17	8	30
Total Volume	10	258	29	297	142	270	56	468	61	320	92	473	21	86	45	152
% App. Total	3.4	86.9	9.8		30.3	57.7	12		12.9	67.7	19.5		13.8	56.6	29.6	
PHF	.625	.860	.906	.905	.934	.823	.778	.848	.897	.952	.821	.969	.875	.741	.703	.826

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

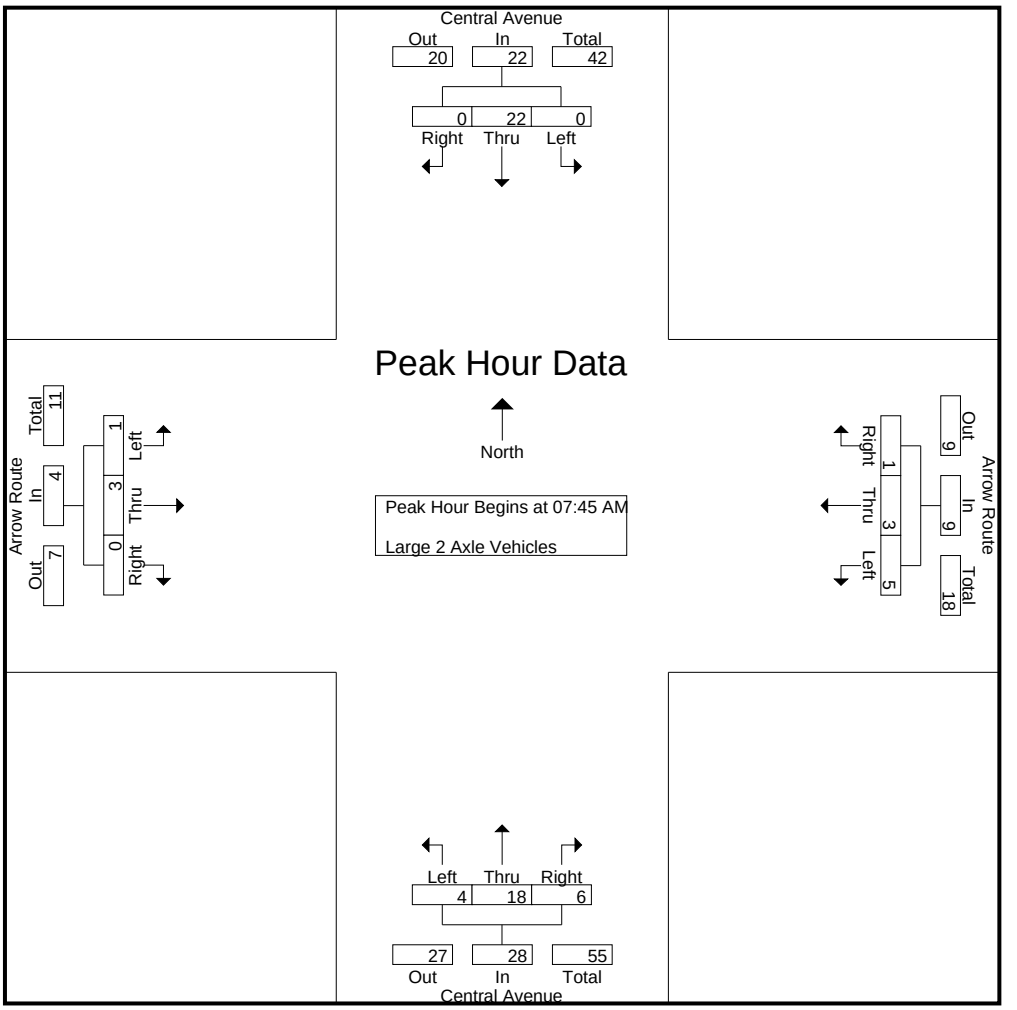
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	5	0	5	1	2	0	3	0	4	1	5	0	0	0	0	13
07:15 AM	0	5	0	5	0	0	0	0	1	6	1	8	0	0	0	0	13
07:30 AM	1	3	0	4	1	0	2	3	0	5	2	7	0	0	0	0	14
07:45 AM	0	7	0	7	0	1	0	1	0	6	1	7	0	0	0	0	15
Total	1	20	0	21	2	3	2	7	1	21	5	27	0	0	0	0	55
08:00 AM	0	3	0	3	4	1	1	6	0	2	3	5	0	0	0	0	14
08:15 AM	0	4	0	4	0	0	0	0	2	5	0	7	1	0	0	1	12
08:30 AM	0	8	0	8	1	1	0	2	2	5	2	9	0	3	0	3	22
08:45 AM	2	5	1	8	1	3	1	5	1	5	1	7	1	1	1	3	23
Total	2	20	1	23	6	5	2	13	5	17	6	28	2	4	1	7	71
Grand Total	3	40	1	44	8	8	4	20	6	38	11	55	2	4	1	7	126
Apprch %	6.8	90.9	2.3		40	40	20		10.9	69.1	20		28.6	57.1	14.3		
Total %	2.4	31.7	0.8	34.9	6.3	6.3	3.2	15.9	4.8	30.2	8.7	43.7	1.6	3.2	0.8	5.6	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	7	0	7	0	**1**	0	1	0	**6**	1	7	0	0	0	0	15
08:00 AM	0	3	0	3	**4**	1	**1**	**6**	0	2	**3**	5	0	0	0	0	14
08:15 AM	0	4	0	4	0	0	0	0	**2**	5	0	7	**1**	0	0	1	12
08:30 AM	0	**8**	0	**8**	1	1	0	2	2	5	2	**9**	0	**3**	0	**3**	**22**
Total Volume	0	22	0	22	5	3	1	9	4	18	6	28	1	3	0	4	63
% App. Total	0	100	0		55.6	33.3	11.1		14.3	64.3	21.4		25	75	0		
PHF	.000	.688	.000	.688	.313	.750	.250	.375	.500	.750	.500	.778	.250	.250	.000	.333	.716

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	7	0	7	0	**1**	0	1	0	**6**	1	7	0	0	0	0
+15 mins.	0	3	0	3	**4**	1	**1**	**6**	0	2	**3**	5	0	0	0	0
+30 mins.	0	4	0	4	0	0	0	0	**2**	5	0	7	**1**	0	0	1
+45 mins.	0	**8**	0	**8**	1	1	0	2	2	5	2	**9**	0	**3**	0	**3**
Total Volume	0	22	0	22	5	3	1	9	4	18	6	28	1	3	0	4
% App. Total	0	100	0		55.6	33.3	11.1		14.3	64.3	21.4		25	75	0	
PHF	.000	.688	.000	.688	.313	.750	.250	.375	.500	.750	.500	.778	.250	.250	.000	.333

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

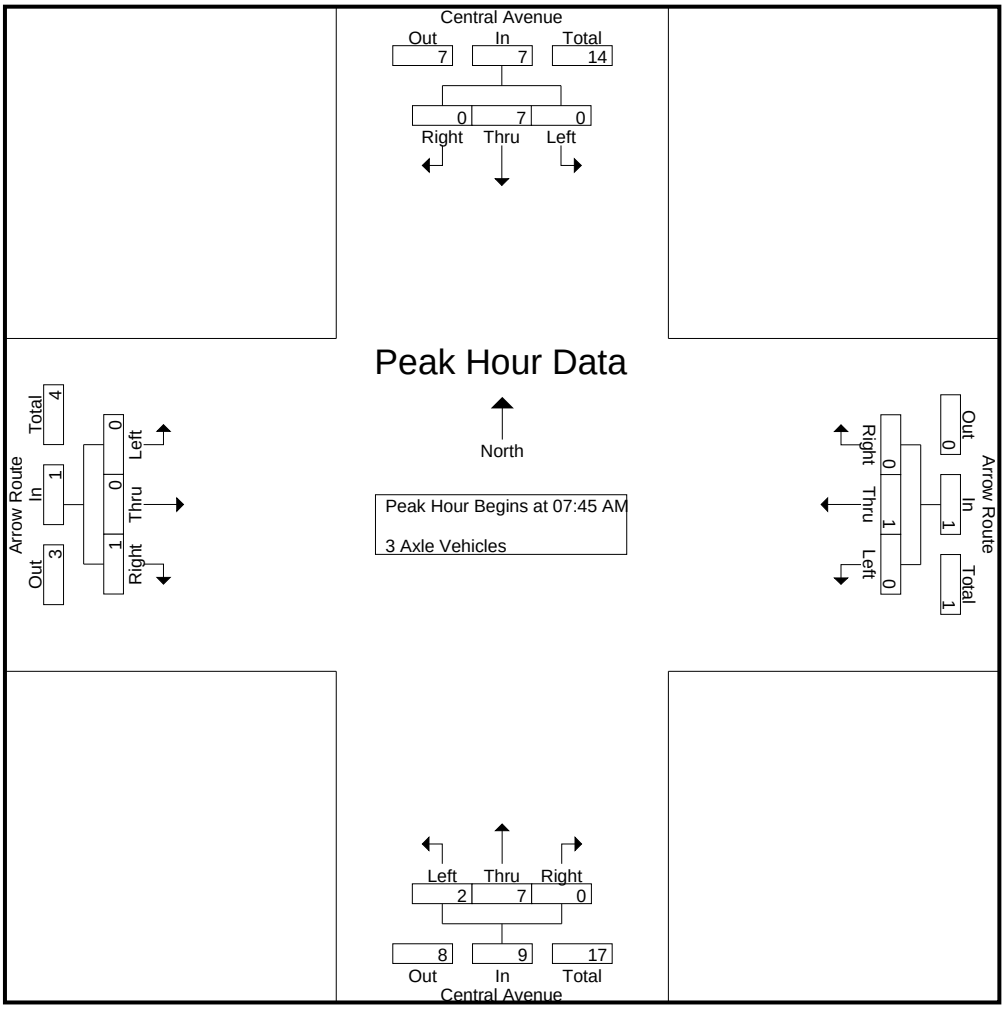
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:15 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	2	0	2	0	0	1	1	0	2	0	2	0	0	0	0	5
07:45 AM	0	1	0	1	0	1	0	1	0	1	0	1	0	0	1	1	4
Total	0	6	0	6	0	1	1	2	0	4	0	4	0	0	1	1	13
08:00 AM	0	2	0	2	0	0	0	0	1	3	0	4	0	0	0	0	6
08:15 AM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
08:30 AM	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0	4
08:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	6	0	6	0	0	0	0	2	8	0	10	0	0	0	0	16
Grand Total	0	12	0	12	0	1	1	2	2	12	0	14	0	0	1	1	29
Apprch %	0	100	0		0	50	50		14.3	85.7	0		0	0	100		
Total %	0	41.4	0	41.4	0	3.4	3.4	6.9	6.9	41.4	0	48.3	0	0	3.4	3.4	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	1	0	1	0	**1**	0	**1**	0	1	0	1	0	0	**1**	**1**	4
08:00 AM	0	**2**	0	**2**	0	0	0	0	**1**	**3**	0	**4**	0	0	0	0	**6**
08:15 AM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
08:30 AM	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0	4
Total Volume	0	7	0	7	0	1	0	1	2	7	0	9	0	0	1	1	18
% App. Total	0	100	0		0	100	0		22.2	77.8	0		0	0	100		
PHF	.000	.875	.000	.875	.000	.250	.000	.250	.500	.583	.000	.563	.000	.000	.250	.250	.750

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	1	0	1	0	**1**	0	**1**	0	1	0	1	0	0	**1**	**1**
+15 mins.	0	**2**	0	**2**	0	0	0	0	**1**	**3**	0	**4**	0	0	0	0
+30 mins.	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0
Total Volume	0	7	0	7	0	1	0	1	2	7	0	9	0	0	1	1
% App. Total	0	100	0		0	100	0		22.2	77.8	0		0	0	100	
PHF	.000	.875	.000	.875	.000	.250	.000	.250	.500	.583	.000	.563	.000	.000	.250	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

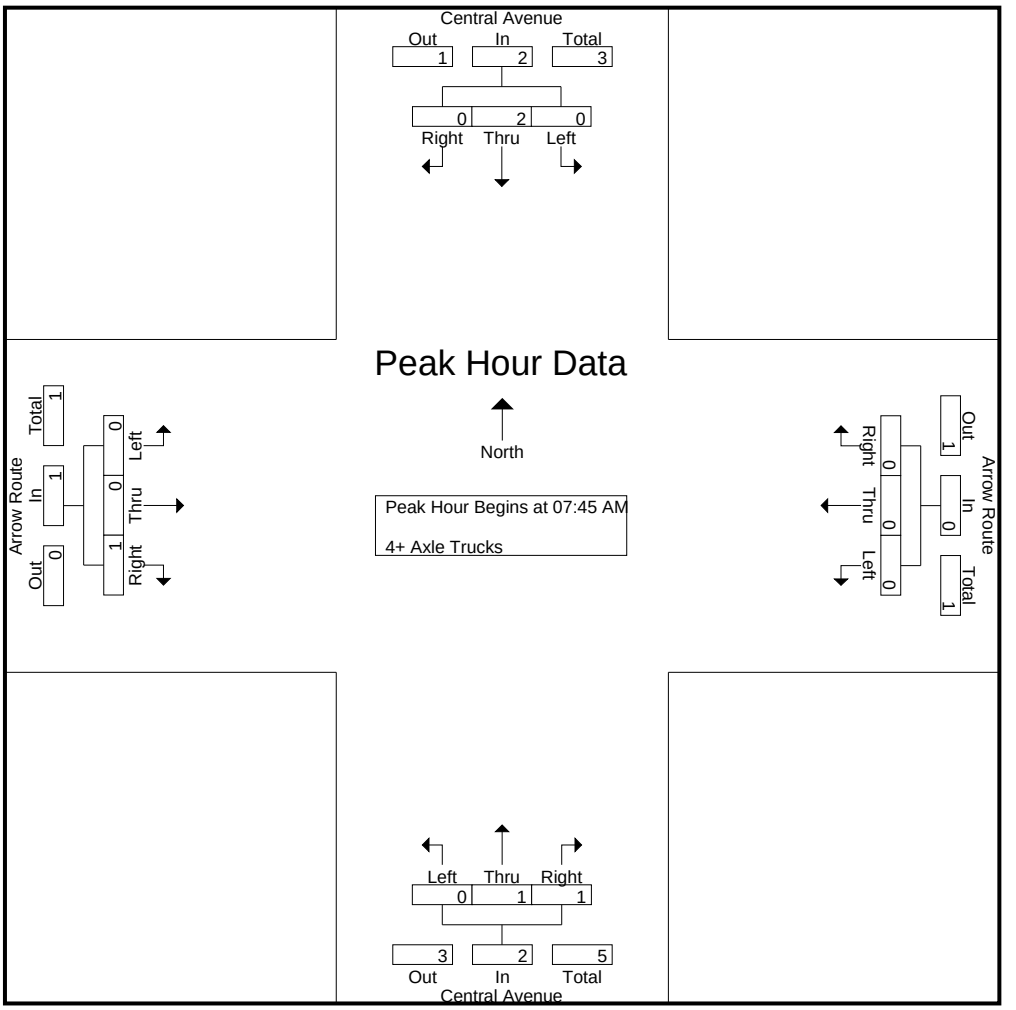
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
07:15 AM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
07:30 AM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	0	2	1	3	0	0	0	0	2	2	0	4	0	0	1	1	8
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:45 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Total	0	2	0	2	0	1	0	1	0	1	1	2	0	0	0	0	5
Grand Total	0	4	1	5	0	1	0	1	2	3	1	6	0	0	1	1	13
Apprch %	0	80	20		0	100	0		33.3	50	16.7		0	0	100		
Total %	0	30.8	7.7	38.5	0	7.7	0	7.7	15.4	23.1	7.7	46.2	0	0	7.7	7.7	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**	**1**	**2**
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
08:30 AM	0	1	0	1	0	0	0	0	0	**1**	0	1	0	0	0	0	2
Total Volume	0	2	0	2	0	0	0	0	0	1	1	2	0	0	1	1	5
% App. Total	0	100	0		0	0	0		0	50	50		0	0	100		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.250	.500	.000	.000	.250	.250	.625

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte AM
Site Code : 99918629
Start Date : 8/28/2018



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	**1**	0	1	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	1	1	2	0	0	1	1
% App. Total	0	100	0		0	0	0		0	50	50		0	0	100	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.250	.500	.000	.000	.250	.250

Counts Unlimited
PO Box 1178
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(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

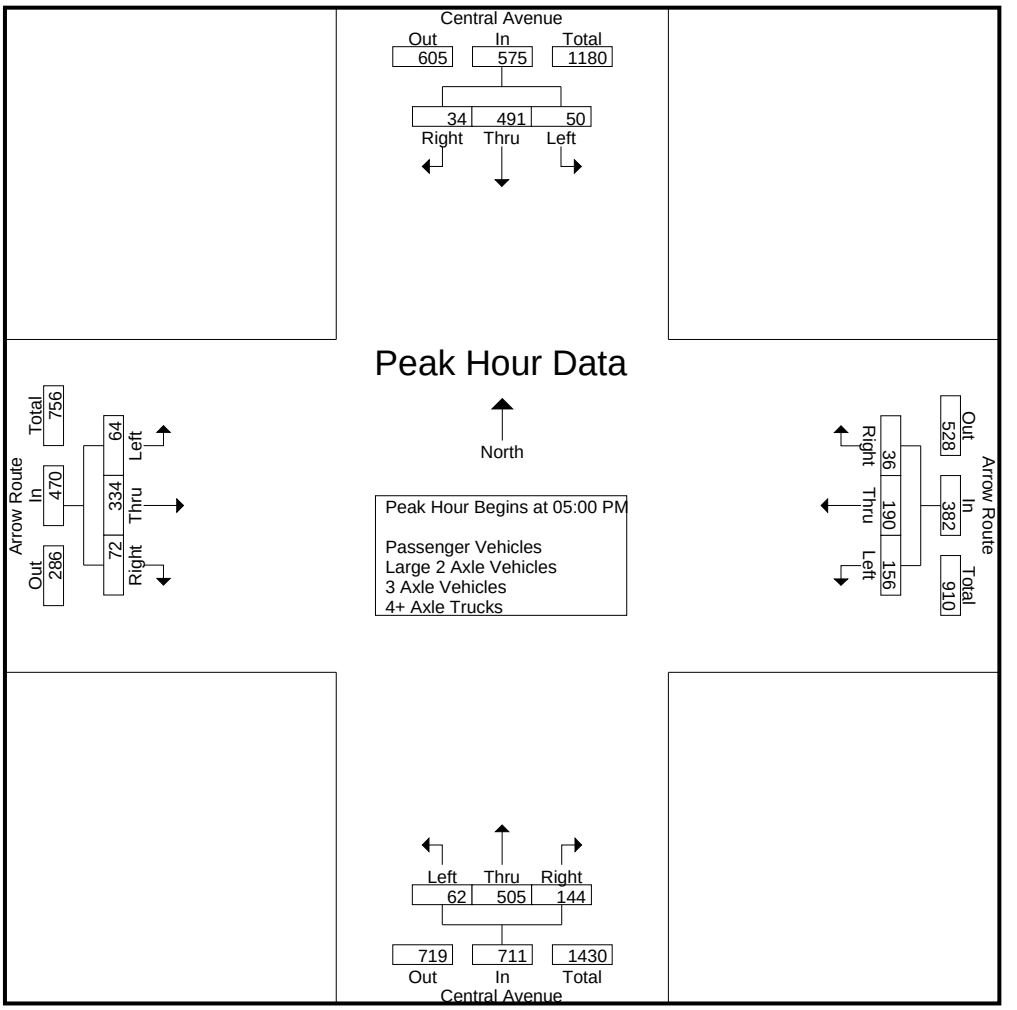
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	13	117	2	132	41	46	9	96	14	127	36	177	12	48	18	78	483
04:15 PM	10	112	5	127	39	43	12	94	11	130	34	175	14	73	18	105	501
04:30 PM	8	111	5	124	24	31	9	64	9	99	37	145	7	58	14	79	412
04:45 PM	11	108	11	130	30	30	7	67	12	108	34	154	10	87	22	119	470
Total	42	448	23	513	134	150	37	321	46	464	141	651	43	266	72	381	1866
05:00 PM	11	117	8	136	24	38	8	70	17	117	26	160	12	57	11	80	446
05:15 PM	11	138	12	161	47	57	9	113	18	138	42	198	24	115	31	170	642
05:30 PM	15	124	5	144	50	53	6	109	9	126	30	165	17	101	17	135	553
05:45 PM	13	112	9	134	35	42	13	90	18	124	46	188	11	61	13	85	497
Total	50	491	34	575	156	190	36	382	62	505	144	711	64	334	72	470	2138
Grand Total	92	939	57	1088	290	340	73	703	108	969	285	1362	107	600	144	851	4004
Apprch %	8.5	86.3	5.2		41.3	48.4	10.4		7.9	71.1	20.9		12.6	70.5	16.9		
Total %	2.3	23.5	1.4	27.2	7.2	8.5	1.8	17.6	2.7	24.2	7.1	34	2.7	15	3.6	21.3	
Passenger Vehicles	91	911	57	1059	281	339	72	692	102	939	276	1317	105	598	141	844	3912
% Passenger Vehicles	98.9	97	100	97.3	96.9	99.7	98.6	98.4	94.4	96.9	96.8	96.7	98.1	99.7	97.9	99.2	97.7
Large 2 Axle Vehicles	1	19	0	20	8	1	1	10	5	22	9	36	2	2	3	7	73
% Large 2 Axle Vehicles	1.1	2	0	1.8	2.8	0.3	1.4	1.4	4.6	2.3	3.2	2.6	1.9	0.3	2.1	0.8	1.8
3 Axle Vehicles	0	5	0	5	1	0	0	1	0	5	0	5	0	0	0	0	11
% 3 Axle Vehicles	0	0.5	0	0.5	0.3	0	0	0.1	0	0.5	0	0.4	0	0	0	0	0.3
4+ Axle Trucks	0	4	0	4	0	0	0	0	1	3	0	4	0	0	0	0	8
% 4+ Axle Trucks	0	0.4	0	0.4	0	0	0	0	0.9	0.3	0	0.3	0	0	0	0	0.2

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	11	117	8	136	24	38	8	70	17	117	26	160	12	57	11	80	446
05:15 PM	11	**138**	**12**	**161**	47	**57**	9	**113**	**18**	**138**	42	**198**	**24**	**115**	**31**	**170**	**642**
05:30 PM	**15**	124	5	144	**50**	53	6	109	9	126	30	165	17	101	17	135	553
05:45 PM	13	112	9	134	35	42	**13**	90	18	124	**46**	188	11	61	13	85	497
Total Volume	50	491	34	575	156	190	36	382	62	505	144	711	64	334	72	470	2138
% App. Total	8.7	85.4	5.9		40.8	49.7	9.4		8.7	71	20.3		13.6	71.1	15.3		
PHF	.833	.889	.708	.893	.780	.833	.692	.845	.861	.915	.783	.898	.667	.726	.581	.691	.833

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				04:45 PM			
+0 mins.	11	117	8	136	24	38	8	70	17	117	26	160	10	87	22	119
+15 mins.	11	**138**	**12**	**161**	47	**57**	9	**113**	**18**	**138**	42	**198**	12	57	11	80
+30 mins.	**15**	124	5	144	**50**	53	6	109	9	126	30	165	**24**	**115**	**31**	**170**
+45 mins.	13	112	9	134	35	42	**13**	90	18	124	**46**	188	17	101	17	135
Total Volume	50	491	34	575	156	190	36	382	62	505	144	711	63	360	81	504
% App. Total	8.7	85.4	5.9		40.8	49.7	9.4		8.7	71	20.3		12.5	71.4	16.1	
PHF	.833	.889	.708	.893	.780	.833	.692	.845	.861	.915	.783	.898	.656	.783	.653	.741

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Passenger Vehicles

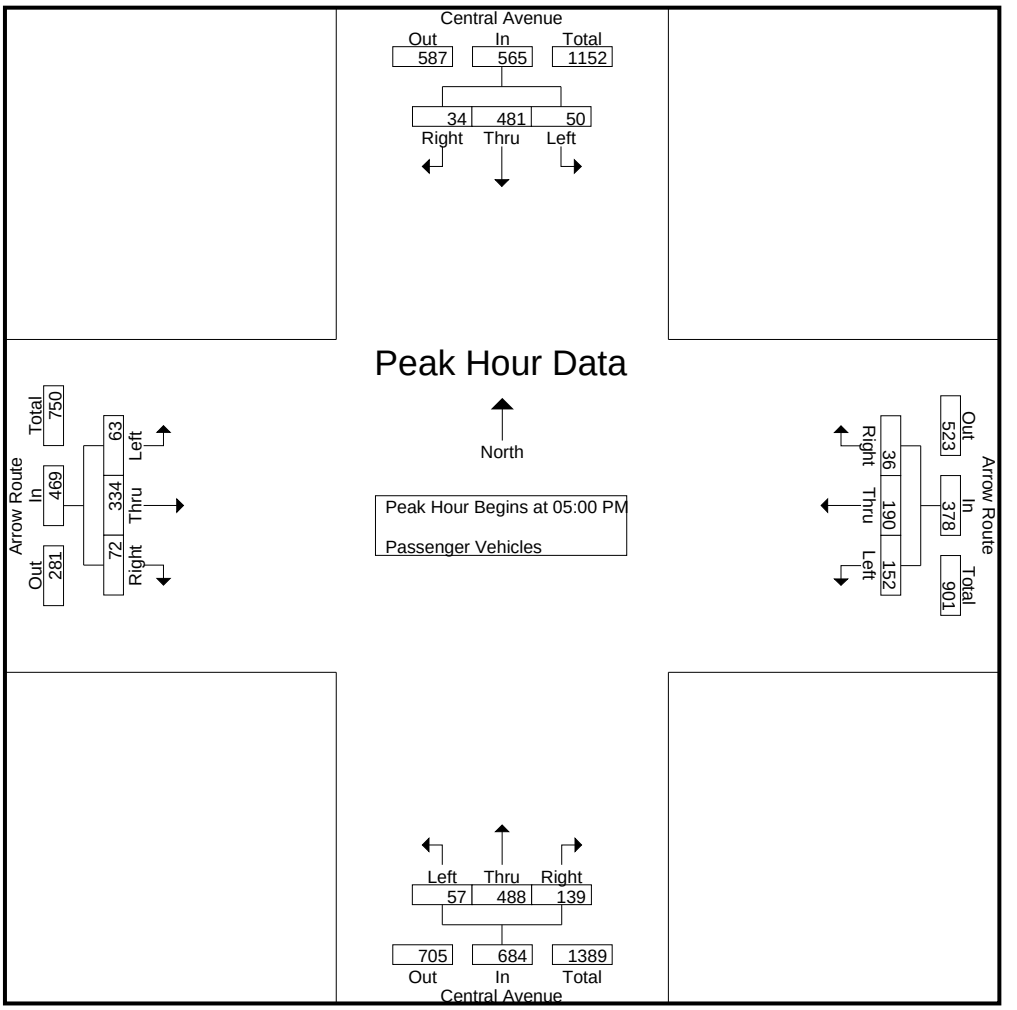
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	12	110	2	124	39	46	8	93	13	121	35	169	12	48	18	78	464
04:15 PM	10	110	5	125	38	42	12	92	11	125	34	170	13	72	16	101	488
04:30 PM	8	104	5	117	23	31	9	63	9	98	35	142	7	58	13	78	400
04:45 PM	11	106	11	128	29	30	7	66	12	107	33	152	10	86	22	118	464
Total	41	430	23	494	129	149	36	314	45	451	137	633	42	264	69	375	1816
05:00 PM	11	114	8	133	22	38	8	68	16	114	23	153	12	57	11	80	434
05:15 PM	11	135	12	158	46	57	9	112	18	134	42	194	24	115	31	170	634
05:30 PM	15	122	5	142	50	53	6	109	6	121	29	156	17	101	17	135	542
05:45 PM	13	110	9	132	34	42	13	89	17	119	45	181	10	61	13	84	486
Total	50	481	34	565	152	190	36	378	57	488	139	684	63	334	72	469	2096
Grand Total	91	911	57	1059	281	339	72	692	102	939	276	1317	105	598	141	844	3912
Apprch %	8.6	86	5.4		40.6	49	10.4		7.7	71.3	21		12.4	70.9	16.7		
Total %	2.3	23.3	1.5	27.1	7.2	8.7	1.8	17.7	2.6	24	7.1	33.7	2.7	15.3	3.6	21.6	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	11	114	8	133	22	38	8	68	16	114	23	153	12	57	11	80	434
05:15 PM	11	**135**	**12**	**158**	46	**57**	9	**112**	**18**	**134**	42	**194**	**24**	**115**	**31**	**170**	**634**
05:30 PM	**15**	122	5	142	**50**	53	6	109	6	121	29	156	17	101	17	135	542
05:45 PM	13	110	9	132	34	42	**13**	89	17	119	**45**	181	10	61	13	84	486
Total Volume	50	481	34	565	152	190	36	378	57	488	139	684	63	334	72	469	2096
% App. Total	8.8	85.1	6		40.2	50.3	9.5		8.3	71.3	20.3		13.4	71.2	15.4		
PHF	.833	.891	.708	.894	.760	.833	.692	.844	.792	.910	.772	.881	.656	.726	.581	.690	.826

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	11	114	8	133	22	38	8	68	16	114	23	153	12	57	11	80
+15 mins.	11	**135**	**12**	**158**	46	**57**	9	**112**	**18**	**134**	42	**194**	**24**	**115**	**31**	**170**
+30 mins.	**15**	122	5	142	**50**	53	6	109	6	121	29	156	17	101	17	135
+45 mins.	13	110	9	132	34	42	**13**	89	17	119	**45**	181	10	61	13	84
Total Volume	50	481	34	565	152	190	36	378	57	488	139	684	63	334	72	469
% App. Total	8.8	85.1	6		40.2	50.3	9.5		8.3	71.3	20.3		13.4	71.2	15.4	
PHF	.833	.891	.708	.894	.760	.833	.692	.844	.792	.910	.772	.881	.656	.726	.581	.690

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- Large 2 Axle Vehicles

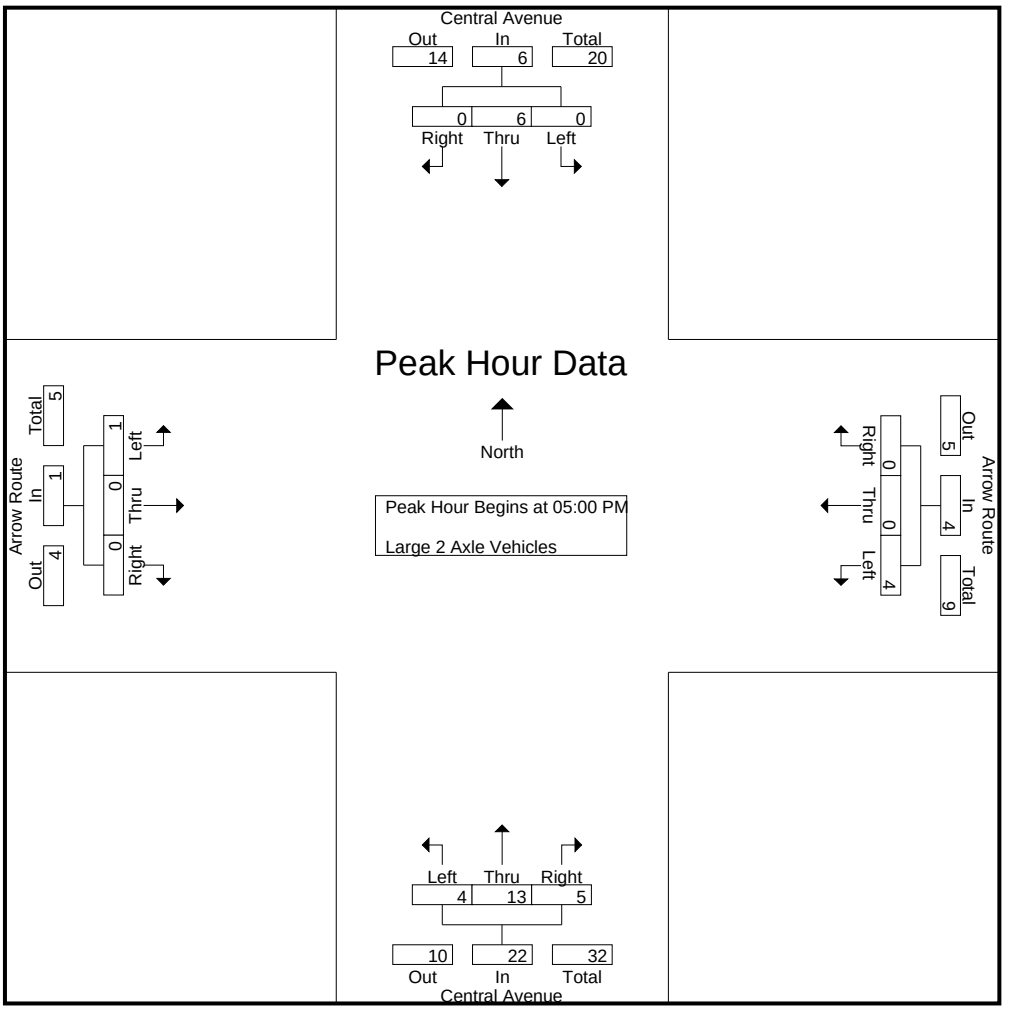
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	6	0	7	2	0	1	3	1	4	1	6	0	0	0	0	16
04:15 PM	0	1	0	1	1	1	0	2	0	3	0	3	1	1	2	4	10
04:30 PM	0	4	0	4	1	0	0	1	0	1	2	3	0	0	1	1	9
04:45 PM	0	2	0	2	0	0	0	0	0	1	1	2	0	1	0	1	5
Total	1	13	0	14	4	1	1	6	1	9	4	14	1	2	3	6	40
05:00 PM	0	2	0	2	2	0	0	2	0	3	3	6	0	0	0	0	10
05:15 PM	0	2	0	2	1	0	0	1	0	2	0	2	0	0	0	0	5
05:30 PM	0	1	0	1	0	0	0	0	3	4	1	8	0	0	0	0	9
05:45 PM	0	1	0	1	1	0	0	1	1	4	1	6	1	0	0	1	9
Total	0	6	0	6	4	0	0	4	4	13	5	22	1	0	0	1	33
Grand Total	1	19	0	20	8	1	1	10	5	22	9	36	2	2	3	7	73
Apprch %	5	95	0		80	10	10		13.9	61.1	25		28.6	28.6	42.9		
Total %	1.4	26	0	27.4	11	1.4	1.4	13.7	6.8	30.1	12.3	49.3	2.7	2.7	4.1	9.6	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**2**	0	**2**	**2**	0	0	**2**	0	3	**3**	6	0	0	0	0	**10**
05:15 PM	0	2	0	2	1	0	0	1	0	2	0	2	0	0	0	0	5
05:30 PM	0	1	0	1	0	0	0	0	**3**	**4**	1	**8**	0	0	0	0	9
05:45 PM	0	1	0	1	1	0	0	1	1	4	1	6	**1**	0	0	**1**	9
Total Volume	0	6	0	6	4	0	0	4	4	13	5	22	1	0	0	1	33
% App. Total	0	100	0		100	0	0		18.2	59.1	22.7		100	0	0		
PHF	.000	.750	.000	.750	.500	.000	.000	.500	.333	.813	.417	.688	.250	.000	.000	.250	.825

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**2**	0	**2**	**2**	0	0	**2**	0	3	**3**	6	0	0	0	0
+15 mins.	0	2	0	2	1	0	0	1	0	2	0	2	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	**3**	**4**	1	**8**	0	0	0	0
+45 mins.	0	1	0	1	1	0	0	1	1	4	1	6	**1**	0	0	**1**
Total Volume	0	6	0	6	4	0	0	4	4	13	5	22	1	0	0	1
% App. Total	0	100	0		100	0	0		18.2	59.1	22.7		100	0	0	
PHF	.000	.750	.000	.750	.500	.000	.000	.500	.333	.813	.417	.688	.250	.000	.000	.250

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 3 Axle Vehicles

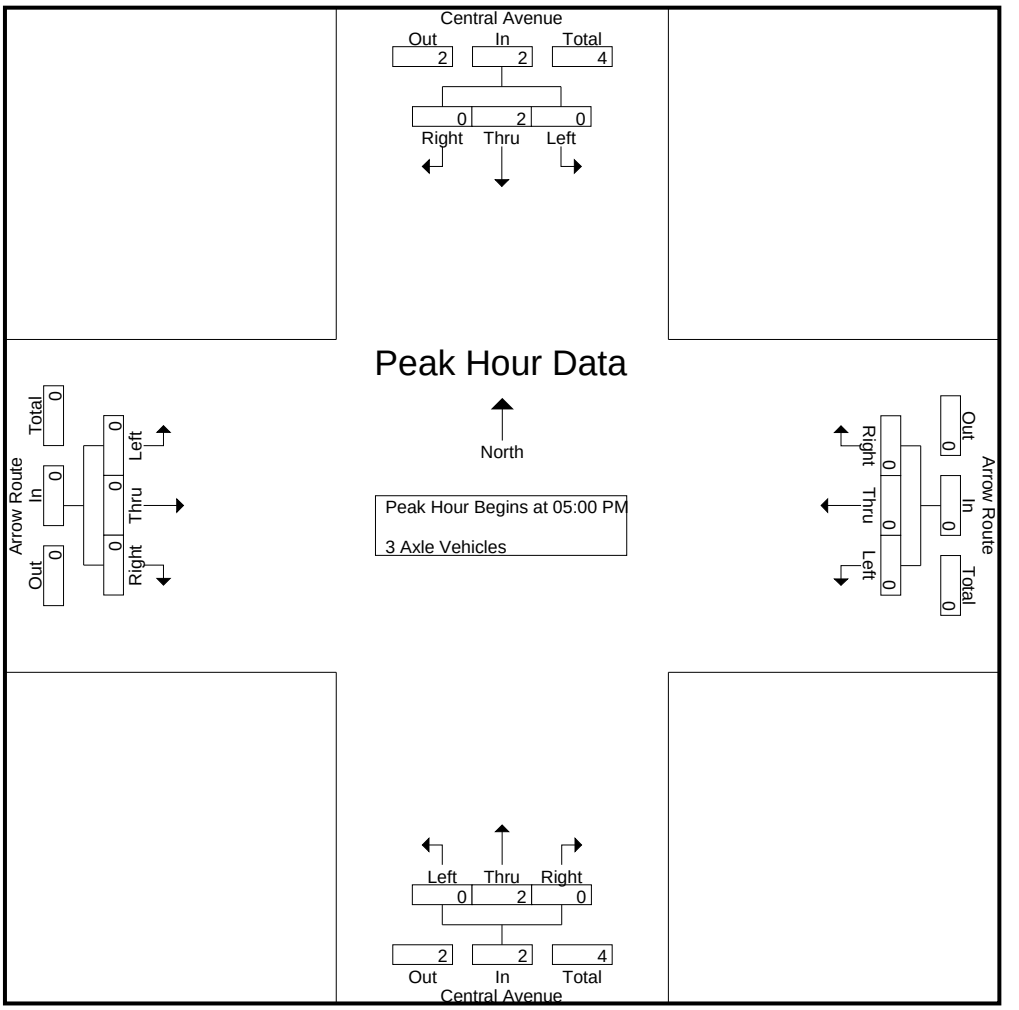
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:15 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	3	0	3	1	0	0	1	0	3	0	3	0	0	0	0	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Grand Total	0	5	0	5	1	0	0	1	0	5	0	5	0	0	0	0	11
Apprch %	0	100	0		100	0	0		0	100	0		0	0	0		
Total %	0	45.5	0	45.5	9.1	0	0	9.1	0	45.5	0	45.5	0	0	0	0	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**2**
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.500

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

Counts Unlimited
PO Box 1178
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City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 1

Groups Printed- 4+ Axle Trucks

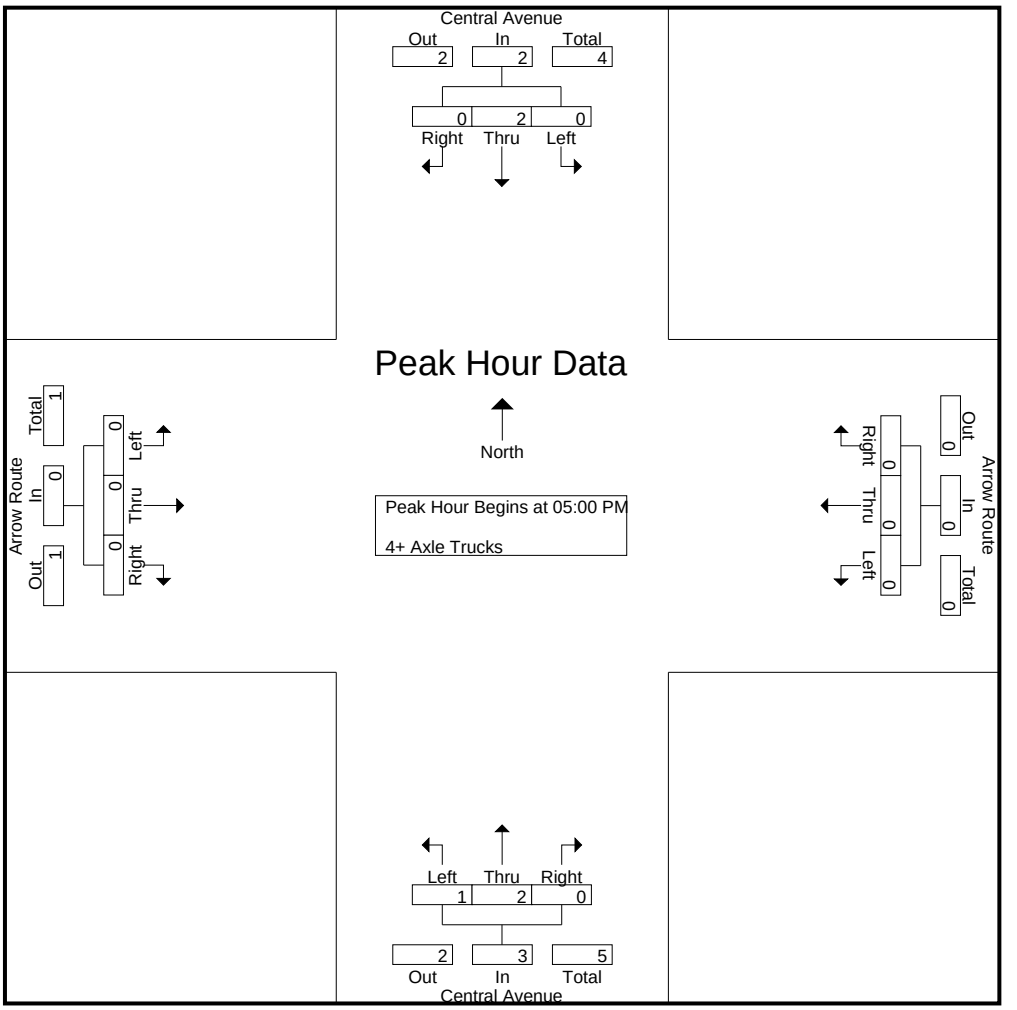
	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	1	2	0	3	0	0	0	0	5
Grand Total	0	4	0	4	0	0	0	0	1	3	0	4	0	0	0	0	8
Apprch %	0	100	0		0	0	0		25	75	0		0	0	0		
Total %	0	50	0	50	0	0	0	0	12.5	37.5	0	50	0	0	0	0	

	Central Avenue Southbound				Arrow Route Westbound				Central Avenue Northbound				Arrow Route Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	**1**	0	**1**	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**2**
05:15 PM	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0	1
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	1	2	0	3	0	0	0	0	5
% App. Total	0	100	0		0	0	0		33.3	66.7	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.500	.000	.750	.000	.000	.000	.000	.625

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Upland
N/S: Central Avenue
E/W: Arrow Route
Weather: Clear

File Name : 03_UPL_Central_Arrow Rte PM
Site Code : 99918629
Start Date : 8/28/2018
Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	**1**	0	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	**1**	0	1	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	1	2	0	3	0	0	0	0
% App. Total	0	100	0		0	0	0		33.3	66.7	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.500	.000	.750	.000	.000	.000	.000

National Data & Surveying Services

Intersection Turning Movement Count

Location: Central Ave & E Arrow Hwy
City: Montclair
Control: Signalized

Project ID: 18-06063-004
Date: 5/10/2018

Total

NS/EW Streets:	Central Ave				Central Ave				E Arrow Hwy				E Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	29	95	7	2	1	121	0	0	6	21	17	0	15	83	7	0	404
7:15 AM	32	120	14	0	8	106	11	0	11	46	13	0	13	107	7	0	488
7:30 AM	49	140	17	0	4	130	8	1	4	57	23	0	29	132	11	0	605
7:45 AM	45	164	18	1	3	141	14	1	10	51	33	0	34	168	8	0	691
8:00 AM	29	123	21	1	3	107	16	3	12	79	25	0	25	110	9	0	563
8:15 AM	30	137	26	3	9	106	8	0	15	72	22	0	30	94	8	0	560
8:30 AM	26	105	16	0	1	89	6	2	6	42	26	0	33	64	9	0	425
8:45 AM	18	126	14	0	11	116	7	3	7	75	20	0	30	61	11	0	499
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	258	1010	133	7	40	916	70	10	71	443	179	0	209	819	70	0	4235
APPROACH %'s :	18.32%	71.73%	9.45%	0.50%	3.86%	88.42%	6.76%	0.97%	10.25%	63.92%	25.83%	0.00%	19.03%	74.59%	6.38%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	153	564	82	5	19	484	46	5	41	259	103	0	118	504	36	0	2419
PEAK HR FACTOR :	0.781	0.860	0.788	0.417	0.528	0.858	0.719	0.417	0.683	0.820	0.780	0.000	0.868	0.750	0.818	0.000	0.875
	0.882				0.871				0.869				0.783				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	27	149	36	1	11	186	15	3	23	127	36	0	38	62	10	0	724
4:15 PM	28	164	25	3	13	167	13	2	26	132	43	0	41	83	10	0	750
4:30 PM	27	154	38	2	5	166	13	3	31	178	47	0	34	63	8	0	769
4:45 PM	18	166	26	4	7	173	11	3	32	188	47	0	33	67	13	0	788
5:00 PM	21	164	24	2	15	270	19	2	32	171	45	0	46	68	11	0	890
5:15 PM	26	148	36	3	9	186	11	3	31	193	65	1	38	56	14	0	820
5:30 PM	25	152	31	3	12	174	19	4	23	179	57	0	44	84	4	0	811
5:45 PM	24	155	39	5	10	146	24	1	34	136	51	0	32	58	10	0	725
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	196	1252	255	23	82	1468	125	21	232	1304	391	1	306	541	80	0	6277
APPROACH %'s :	11.36%	72.54%	14.77%	1.33%	4.83%	86.56%	7.37%	1.24%	12.03%	67.63%	20.28%	0.05%	33.01%	58.36%	8.63%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	90	630	117	12	43	803	60	12	118	731	214	1	161	275	42	0	3309
PEAK HR FACTOR :	0.865	0.949	0.813	0.750	0.717	0.744	0.789	0.750	0.922	0.947	0.823	0.250	0.875	0.818	0.750	0.000	0.929
	0.992				0.750				0.917				0.905				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Central Ave & Moreno St
City: Montclair
Control: Signalized

Project ID: 18-06063-011
Date: 5/10/2018

Total

NS/EW Streets:	Central Ave				Central Ave				Moreno St				Moreno St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	2	3	0	0	2	2	1	0	2	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	30	135	21	1	6	133	4	0	4	21	15	0	39	20	6	0	435
7:15 AM	36	165	40	1	10	119	4	0	5	38	12	0	40	37	5	0	512
7:30 AM	32	209	25	2	7	172	4	0	8	29	22	0	45	33	3	0	591
7:45 AM	36	226	34	3	5	187	8	0	4	29	9	0	44	43	6	0	634
8:00 AM	30	178	27	2	9	133	7	0	4	25	12	0	51	42	3	0	523
8:15 AM	33	186	32	3	14	148	5	0	8	21	19	0	40	32	4	0	545
8:30 AM	44	137	28	0	16	127	6	0	10	27	18	0	42	32	3	0	490
8:45 AM	44	150	20	0	7	150	3	0	3	30	21	0	42	24	4	0	498
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	285	1386	227	12	74	1169	41	0	46	220	128	0	343	263	34	0	4228
APPROACH %'s :	14.92%	72.57%	11.88%	0.63%	5.76%	91.04%	3.19%	0.00%	11.68%	55.84%	32.49%	0.00%	53.59%	41.09%	5.31%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	131	799	118	10	35	640	24	0	24	104	62	0	180	150	16	0	2293
PEAK HR FACTOR :	0.910	0.884	0.868	0.833	0.625	0.856	0.750	0.000	0.750	0.897	0.705	0.000	0.882	0.872	0.667	0.000	0.904
	0.885				0.874				0.805				0.901				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	2	3	0	0	2	2	1	0	2	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	67	182	46	1	23	234	19	0	24	89	74	0	81	82	14	0	936
4:15 PM	78	211	48	1	27	227	26	0	23	77	56	0	83	60	10	0	927
4:30 PM	85	192	57	1	28	227	18	0	27	105	54	0	80	78	14	0	966
4:45 PM	76	197	54	4	23	244	20	0	24	86	51	0	64	60	15	0	918
5:00 PM	73	210	59	1	36	308	22	0	33	84	62	0	93	50	10	0	1041
5:15 PM	66	213	49	1	44	271	22	0	19	88	76	0	75	65	10	0	999
5:30 PM	76	200	40	1	46	239	12	0	23	79	58	0	99	70	14	0	957
5:45 PM	66	210	44	3	42	191	18	0	24	91	50	0	76	68	12	0	895
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	587	1615	397	13	269	1941	157	0	197	699	481	0	651	533	99	0	7639
APPROACH %'s :	22.47%	61.83%	15.20%	0.50%	11.36%	82.00%	6.63%	0.00%	14.31%	50.76%	34.93%	0.00%	50.74%	41.54%	7.72%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	300	812	219	7	131	1050	82	0	103	363	243	0	312	253	49	0	3924
PEAK HR FACTOR :	0.882	0.953	0.928	0.438	0.744	0.852	0.932	0.000	0.780	0.864	0.799	0.000	0.839	0.811	0.817	0.000	0.942
	0.975				0.863				0.953				0.892				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Central Ave & I-10 westbound ramps
City: Montclair
Control: Signalized

Project ID: 18-06063-016
Date: 5/10/2018

Total

NS/EW Streets:	Central Ave				Central Ave				I-10 westbound ramps				I-10 westbound ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	0	3	1	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	114	162	0	0	0	105	68	0	0	0	0	0	68	1	69	0	587
7:15 AM	101	195	0	0	0	127	68	0	0	0	0	0	77	0	67	0	635
7:30 AM	103	229	0	0	0	160	80	0	0	0	0	0	76	0	64	0	712
7:45 AM	96	229	0	0	0	169	82	0	0	0	0	0	84	1	83	0	744
8:00 AM	87	181	0	0	0	128	66	0	0	0	0	0	74	2	64	0	602
8:15 AM	80	191	0	0	0	137	62	0	0	0	0	0	86	0	74	0	630
8:30 AM	81	180	0	0	0	138	68	0	0	0	0	0	89	2	72	0	630
8:45 AM	80	134	0	2	0	135	68	0	0	0	0	0	85	1	102	0	607
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	742	1501	0	2	0	1099	562	0	0	0	0	0	639	7	595	0	5147
APPROACH %'s :	33.05%	66.86%	0.00%	0.09%	0.00%	66.16%	33.84%	0.00%					51.49%	0.56%	47.95%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	387	834	0	0	0	584	296	0	0	0	0	0	311	3	278	0	2693
PEAK HR FACTOR :	0.939	0.910	0.000	0.000	0.000	0.864	0.902	0.000	0.000	0.000	0.000	0.000	0.926	0.375	0.837	0.000	0.905
	0.919				0.876								0.881				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	0	3	1	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	77	267	0	0	0	341	102	0	0	0	0	0	102	2	104	0	995
4:15 PM	93	294	0	2	0	306	91	0	0	0	0	0	122	1	123	0	1032
4:30 PM	96	314	0	0	0	313	119	0	0	0	0	0	108	2	103	0	1055
4:45 PM	76	295	0	0	0	311	108	0	0	0	0	0	130	0	120	0	1040
5:00 PM	87	308	0	1	0	365	123	0	0	0	0	0	143	0	95	0	1122
5:15 PM	69	313	0	0	0	342	106	0	0	0	0	0	130	0	123	0	1083
5:30 PM	85	290	0	0	0	340	84	0	0	0	0	0	77	0	92	0	968
5:45 PM	74	317	0	1	0	274	92	0	0	0	0	0	130	0	89	0	977
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	657	2398	0	4	0	2592	825	0	0	0	0	0	942	5	849	0	8272
APPROACH %'s :	21.48%	78.39%	0.00%	0.13%	0.00%	75.86%	24.14%	0.00%					52.45%	0.28%	47.27%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	328	1230	0	1	0	1331	456	0	0	0	0	0	511	2	441	0	4300
PEAK HR FACTOR :	0.854	0.979	0.000	0.250	0.000	0.912	0.927	0.000	0.000	0.000	0.000	0.000	0.893	0.250	0.896	0.000	0.958
	0.951				0.915								0.943				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Central Ave & I-10 eastbound ramps
City: Montclair
Control: Signalized

Project ID: 18-06063-017
Date: 5/10/2018

Total

NS/EW Streets:	Central Ave				Central Ave				I-10 eastbound ramps				I-10 eastbound ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	4	1	0	2	3	0	0	1.5	0.5	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	186	112	0	39	163	0	0	53	1	64	0	0	0	0	0	618
7:15 AM	0	223	114	0	41	140	0	0	55	0	59	0	0	0	0	0	632
7:30 AM	0	258	144	0	46	165	0	1	50	0	66	0	0	0	0	0	730
7:45 AM	0	252	147	0	45	203	0	0	68	1	55	0	0	0	0	0	771
8:00 AM	0	236	106	0	36	186	0	0	62	1	70	0	0	0	0	0	697
8:15 AM	0	203	110	0	39	164	0	0	76	1	66	0	0	0	0	0	659
8:30 AM	0	216	90	0	41	175	0	1	59	0	68	0	0	0	0	0	650
8:45 AM	0	201	99	0	58	175	0	1	33	0	32	0	0	0	0	0	599
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1775	922	0	345	1371	0	3	456	4	480	0	0	0	0	0	5356
APPROACH %'s :	0.00%	65.81%	34.19%	0.00%	20.07%	79.76%	0.00%	0.17%	48.51%	0.43%	51.06%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	949	507	0	166	718	0	1	256	3	257	0	0	0	0	0	2857
PEAK HR FACTOR :	0.000	0.920	0.862	0.000	0.902	0.884	0.000	0.250	0.842	0.750	0.918	0.000	0.000	0.000	0.000	0.000	0.926
		0.905				0.892				0.902							

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	4	1	0	2	3	0	0	1.5	0.5	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	254	112	0	98	310	0	0	87	0	107	0	0	0	0	0	968
4:15 PM	0	283	166	0	98	338	0	0	80	1	91	0	0	0	0	0	1057
4:30 PM	0	293	141	0	87	334	0	1	90	1	92	0	0	0	0	0	1039
4:45 PM	0	292	127	0	118	317	0	1	86	2	113	0	0	0	0	0	1056
5:00 PM	0	296	147	0	118	343	0	0	98	0	94	0	0	0	0	0	1096
5:15 PM	0	286	141	0	136	374	0	0	96	1	78	0	0	0	0	0	1112
5:30 PM	0	281	142	0	127	337	0	2	97	2	73	0	0	0	0	0	1061
5:45 PM	0	297	137	0	97	261	0	0	106	0	82	0	0	0	0	0	980
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2282	1113	0	879	2614	0	4	740	7	730	0	0	0	0	0	8369
APPROACH %'s :	0.00%	67.22%	32.78%	0.00%	25.14%	74.75%	0.00%	0.11%	50.10%	0.47%	49.42%	0.00%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1155	557	0	499	1371	0	3	377	5	358	0	0	0	0	0	4325
PEAK HR FACTOR :	0.000	0.976	0.947	0.000	0.917	0.916	0.000	0.375	0.962	0.625	0.792	0.000	0.000	0.000	0.000	0.000	0.972
		0.966				0.918				0.920							

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

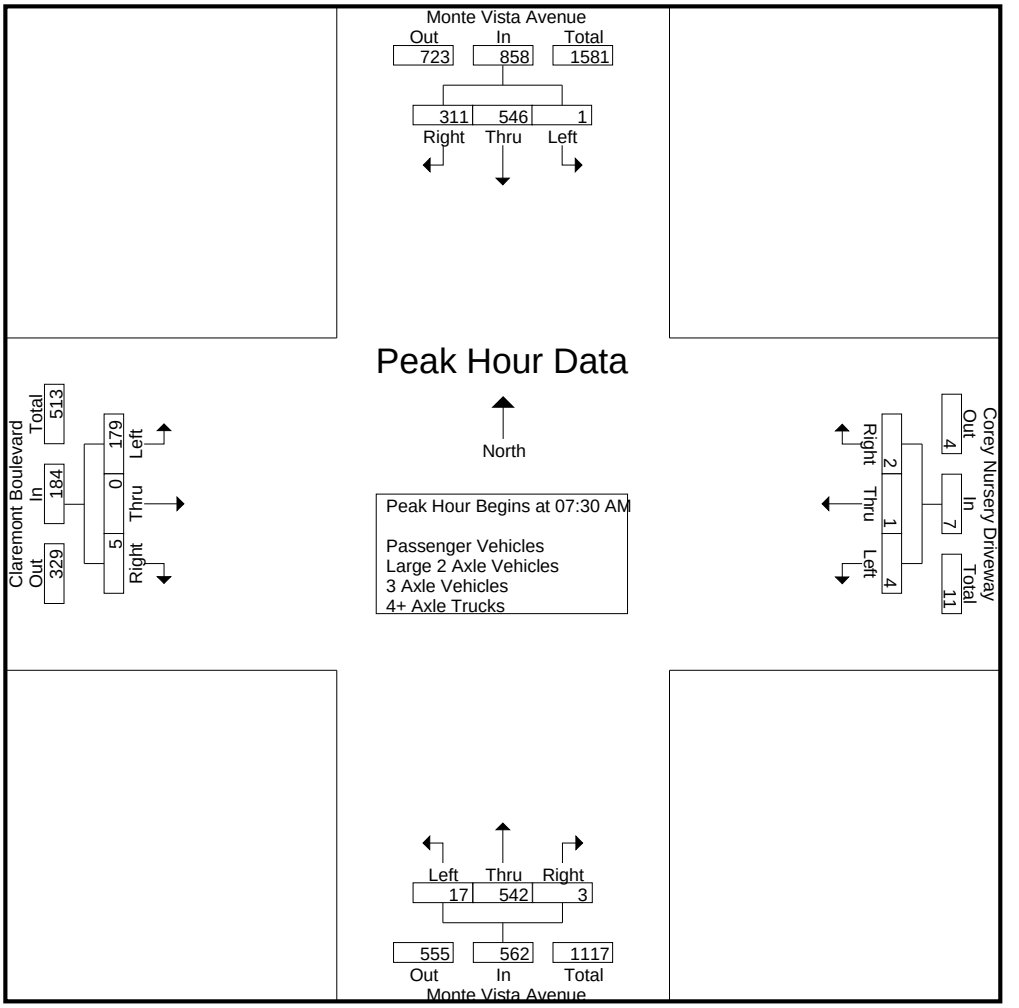
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	88	44	133	0	1	1	2	0	67	2	69	30	4	4	38	242
07:15 AM	1	108	63	172	0	0	0	0	2	105	0	107	36	0	1	37	316
07:30 AM	0	115	56	171	0	0	1	1	3	149	2	154	44	0	2	46	372
07:45 AM	0	147	100	247	1	0	1	2	4	153	0	157	47	0	1	48	454
Total	2	458	263	723	1	1	3	5	9	474	4	487	157	4	8	169	1384
08:00 AM	1	132	80	213	1	0	0	1	6	128	1	135	47	0	1	48	397
08:15 AM	0	152	75	227	2	1	0	3	4	112	0	116	41	0	1	42	388
08:30 AM	0	134	69	203	0	0	0	0	5	78	0	83	32	1	8	41	327
08:45 AM	0	116	56	172	0	0	0	0	8	98	0	106	34	1	4	39	317
Total	1	534	280	815	3	1	0	4	23	416	1	440	154	2	14	170	1429
Grand Total	3	992	543	1538	4	2	3	9	32	890	5	927	311	6	22	339	2813
Apprch %	0.2	64.5	35.3		44.4	22.2	33.3		3.5	96	0.5		91.7	1.8	6.5		
Total %	0.1	35.3	19.3	54.7	0.1	0.1	0.1	0.3	1.1	31.6	0.2	33	11.1	0.2	0.8	12.1	
Passenger Vehicles	2	959	538	1499	2	2	3	7	32	839	4	875	296	6	22	324	2705
% Passenger Vehicles	66.7	96.7	99.1	97.5	50	100	100	77.8	100	94.3	80	94.4	95.2	100	100	95.6	96.2
Large 2 Axle Vehicles	0	19	1	20	1	0	0	1	0	27	1	28	10	0	0	10	59
% Large 2 Axle Vehicles	0	1.9	0.2	1.3	25	0	0	11.1	0	3	20	3	3.2	0	0	2.9	2.1
3 Axle Vehicles	0	10	4	14	1	0	0	1	0	18	0	18	5	0	0	5	38
% 3 Axle Vehicles	0	1	0.7	0.9	25	0	0	11.1	0	2	0	1.9	1.6	0	0	1.5	1.4
4+ Axle Trucks	1	4	0	5	0	0	0	0	0	6	0	6	0	0	0	0	11
% 4+ Axle Trucks	33.3	0.4	0	0.3	0	0	0	0	0	0.7	0	0.6	0	0	0	0	0.4

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	115	56	171	0	0	**1**	1	3	149	**2**	154	44	0	**2**	46	372
07:45 AM	0	147	**100**	**247**	1	0	1	2	4	**153**	0	**157**	**47**	0	1	**48**	**454**
08:00 AM	**1**	132	80	213	1	0	0	1	**6**	128	1	135	47	0	1	48	397
08:15 AM	0	**152**	75	227	**2**	**1**	0	**3**	4	112	0	116	41	0	1	42	388
Total Volume	1	546	311	858	4	1	2	7	17	542	3	562	179	0	5	184	1611
% App. Total	0.1	63.6	36.2		57.1	14.3	28.6		3	96.4	0.5		97.3	0	2.7		
PHF	.250	.898	.778	.868	.500	.250	.500	.583	.708	.886	.375	.895	.952	.000	.625	.958	.887

Counts Unlimited
PO Box 1178
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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	147	**100**	**247**	0	0	**1**	1	3	149	**2**	154	44	0	**2**	46
+15 mins.	**1**	132	80	213	1	0	1	2	4	**153**	0	**157**	**47**	0	1	**48**
+30 mins.	0	**152**	75	227	1	0	0	1	**6**	128	1	135	47	0	1	48
+45 mins.	0	134	69	203	**2**	**1**	0	**3**	4	112	0	116	41	0	1	42
Total Volume	1	565	324	890	4	1	2	7	17	542	3	562	179	0	5	184
% App. Total	0.1	63.5	36.4		57.1	14.3	28.6		3	96.4	0.5		97.3	0	2.7	
PHF	.250	.929	.810	.901	.500	.250	.500	.583	.708	.886	.375	.895	.952	.000	.625	.958

Counts Unlimited
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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- Passenger Vehicles

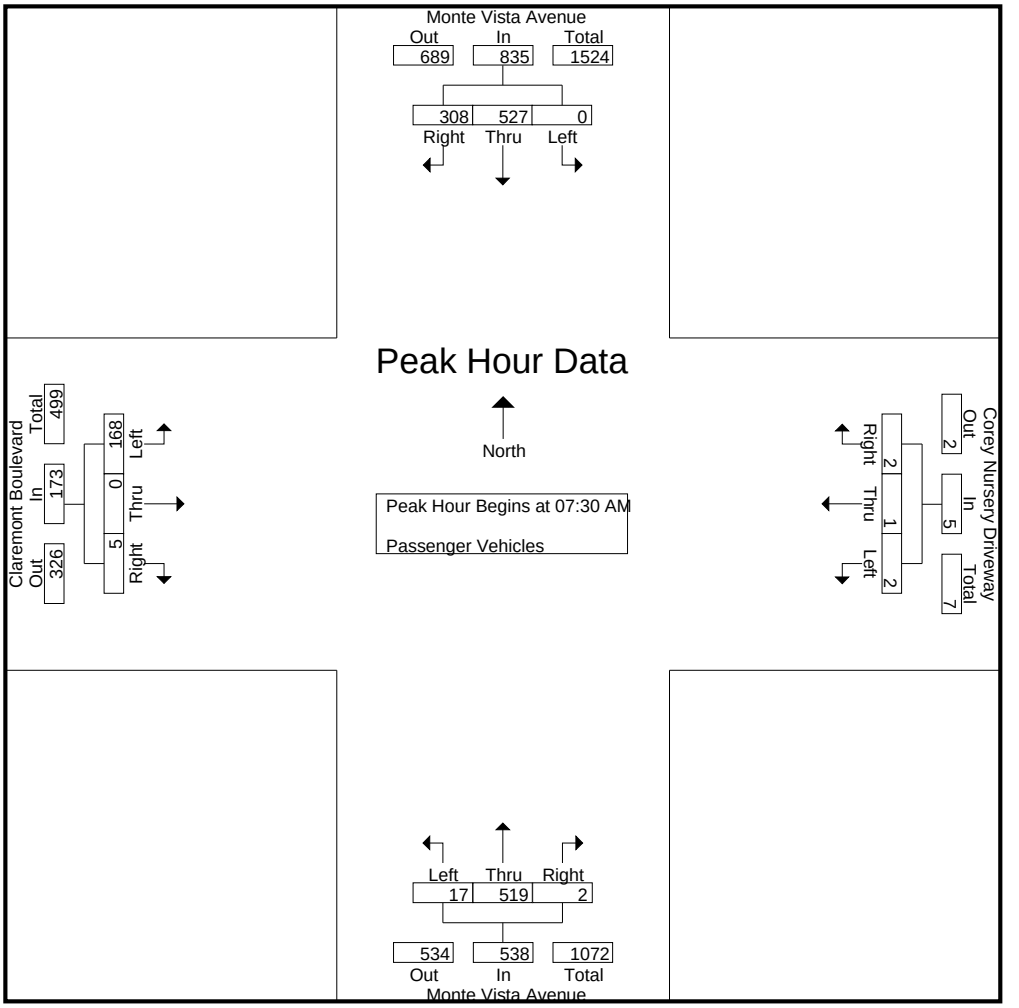
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	86	44	131	0	1	1	2	0	62	2	64	30	4	4	38	235
07:15 AM	1	107	63	171	0	0	0	0	2	100	0	102	34	0	1	35	308
07:30 AM	0	112	56	168	0	0	1	1	3	145	1	149	41	0	2	43	361
07:45 AM	0	144	99	243	0	0	1	1	4	145	0	149	44	0	1	45	438
Total	2	449	262	713	0	1	3	4	9	452	3	464	149	4	8	161	1342
08:00 AM	0	127	79	206	1	0	0	1	6	124	1	131	44	0	1	45	383
08:15 AM	0	144	74	218	1	1	0	2	4	105	0	109	39	0	1	40	369
08:30 AM	0	128	67	195	0	0	0	0	5	72	0	77	30	1	8	39	311
08:45 AM	0	111	56	167	0	0	0	0	8	86	0	94	34	1	4	39	300
Total	0	510	276	786	2	1	0	3	23	387	1	411	147	2	14	163	1363
Grand Total	2	959	538	1499	2	2	3	7	32	839	4	875	296	6	22	324	2705
Apprch %	0.1	64	35.9		28.6	28.6	42.9		3.7	95.9	0.5		91.4	1.9	6.8		
Total %	0.1	35.5	19.9	55.4	0.1	0.1	0.1	0.3	1.2	31	0.1	32.3	10.9	0.2	0.8	12	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	112	56	168	0	0	**1**	1	3	**145**	**1**	**149**	41	0	**2**	43	361
07:45 AM	0	**144**	**99**	**243**	0	0	1	1	4	145	0	149	**44**	0	1	**45**	**438**
08:00 AM	0	127	79	206	**1**	0	0	1	**6**	124	1	131	44	0	1	45	383
08:15 AM	0	144	74	218	1	**1**	0	**2**	4	105	0	109	39	0	1	40	369
Total Volume	0	527	308	835	2	1	2	5	17	519	2	538	168	0	5	173	1551
% App. Total	0	63.1	36.9		40	20	40		3.2	96.5	0.4		97.1	0	2.9		
PHF	.000	.915	.778	.859	.500	.250	.500	.625	.708	.895	.500	.903	.955	.000	.625	.961	.885

Counts Unlimited
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Corona, CA 92878
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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	112	56	168	0	0	**1**	1	3	**145**	**1**	**149**	41	0	**2**	43
+15 mins.	0	**144**	**99**	**243**	0	0	1	1	4	145	0	149	**44**	0	1	**45**
+30 mins.	0	127	79	206	**1**	0	0	1	**6**	124	1	131	44	0	1	45
+45 mins.	0	144	74	218	1	**1**	0	**2**	4	105	0	109	39	0	1	40
Total Volume	0	527	308	835	2	1	2	5	17	519	2	538	168	0	5	173
% App. Total	0	63.1	36.9		40	20	40		3.2	96.5	0.4		97.1	0	2.9	
PHF	.000	.915	.778	.859	.500	.250	.500	.625	.708	.895	.500	.903	.955	.000	.625	.961

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019

Groups Printed- Large 2 Axle Vehicles

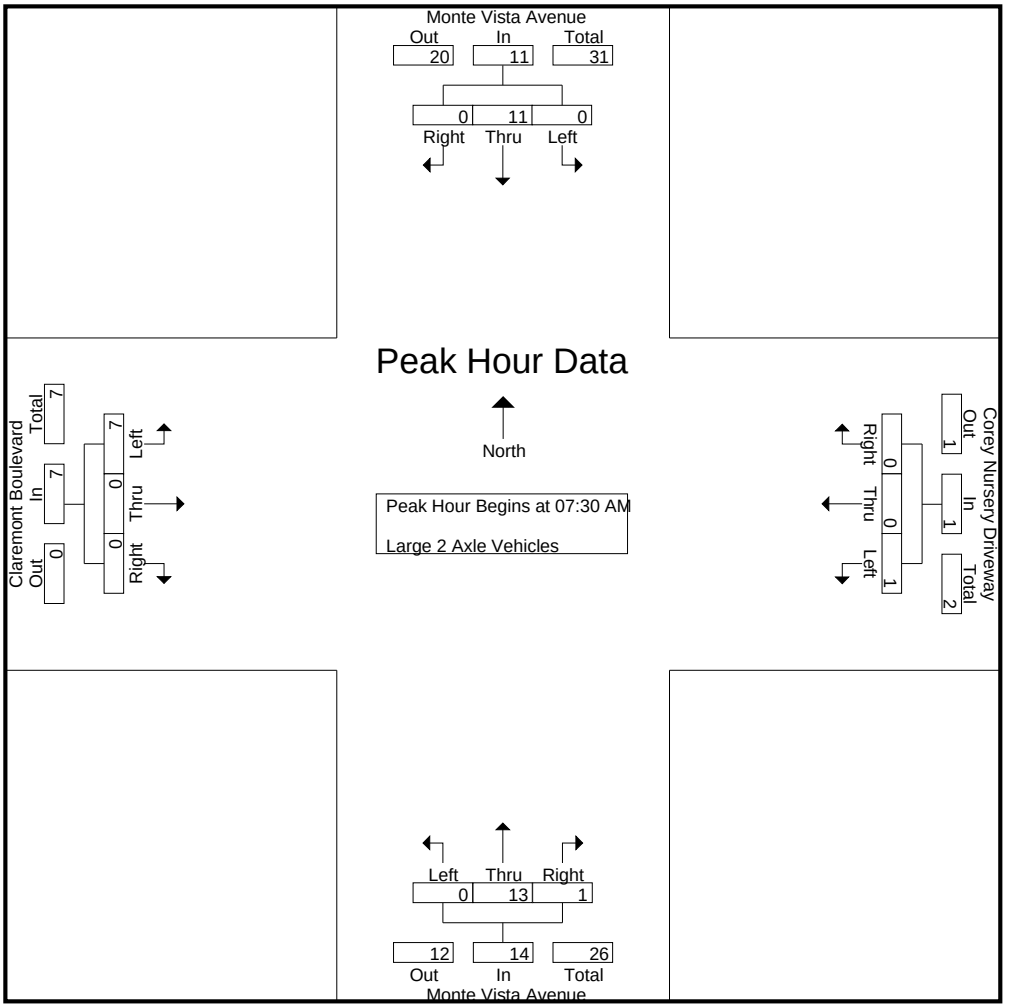
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	2	0	0	2	4
07:30 AM	0	0	0	0	0	0	0	0	0	3	1	4	2	0	0	2	6
07:45 AM	0	2	0	2	1	0	0	1	0	4	0	4	2	0	0	2	9
Total	0	3	0	3	1	0	0	1	0	9	1	10	6	0	0	6	20
08:00 AM	0	4	0	4	0	0	0	0	0	3	0	3	1	0	0	1	8
08:15 AM	0	5	0	5	0	0	0	0	0	3	0	3	2	0	0	2	10
08:30 AM	0	4	1	5	0	0	0	0	0	5	0	5	1	0	0	1	11
08:45 AM	0	3	0	3	0	0	0	0	0	7	0	7	0	0	0	0	10
Total	0	16	1	17	0	0	0	0	0	18	0	18	4	0	0	4	39
Grand Total	0	19	1	20	1	0	0	1	0	27	1	28	10	0	0	10	59
Apprch %	0	95	5		100	0	0		0	96.4	3.6		100	0	0		
Total %	0	32.2	1.7	33.9	1.7	0	0	1.7	0	45.8	1.7	47.5	16.9	0	0	16.9	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	3	**1**	**4**	**2**	0	0	**2**	6
07:45 AM	0	2	0	2	**1**	0	0	**1**	0	**4**	0	4	2	0	0	2	9
08:00 AM	0	4	0	4	0	0	0	0	0	3	0	3	1	0	0	1	8
08:15 AM	0	**5**	0	**5**	0	0	0	0	0	3	0	3	2	0	0	2	**10**
Total Volume	0	11	0	11	1	0	0	1	0	13	1	14	7	0	0	7	33
% App. Total	0	100	0		100	0	0		0	92.9	7.1		100	0	0		
PHF	.000	.550	.000	.550	.250	.000	.000	.250	.000	.813	.250	.875	.875	.000	.000	.875	.825

Counts Unlimited
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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	3	**1**	**4**	**2**	0	0	**2**
+15 mins.	0	2	0	2	**1**	0	0	**1**	0	**4**	0	4	2	0	0	2
+30 mins.	0	4	0	4	0	0	0	0	0	3	0	3	1	0	0	1
+45 mins.	0	**5**	0	**5**	0	0	0	0	0	3	0	3	2	0	0	2
Total Volume	0	11	0	11	1	0	0	1	0	13	1	14	7	0	0	7
% App. Total	0	100	0		100	0	0		0	92.9	7.1		100	0	0	
PHF	.000	.550	.000	.550	.250	.000	.000	.250	.000	.813	.250	.875	.875	.000	.000	.875

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- 3 Axle Vehicles

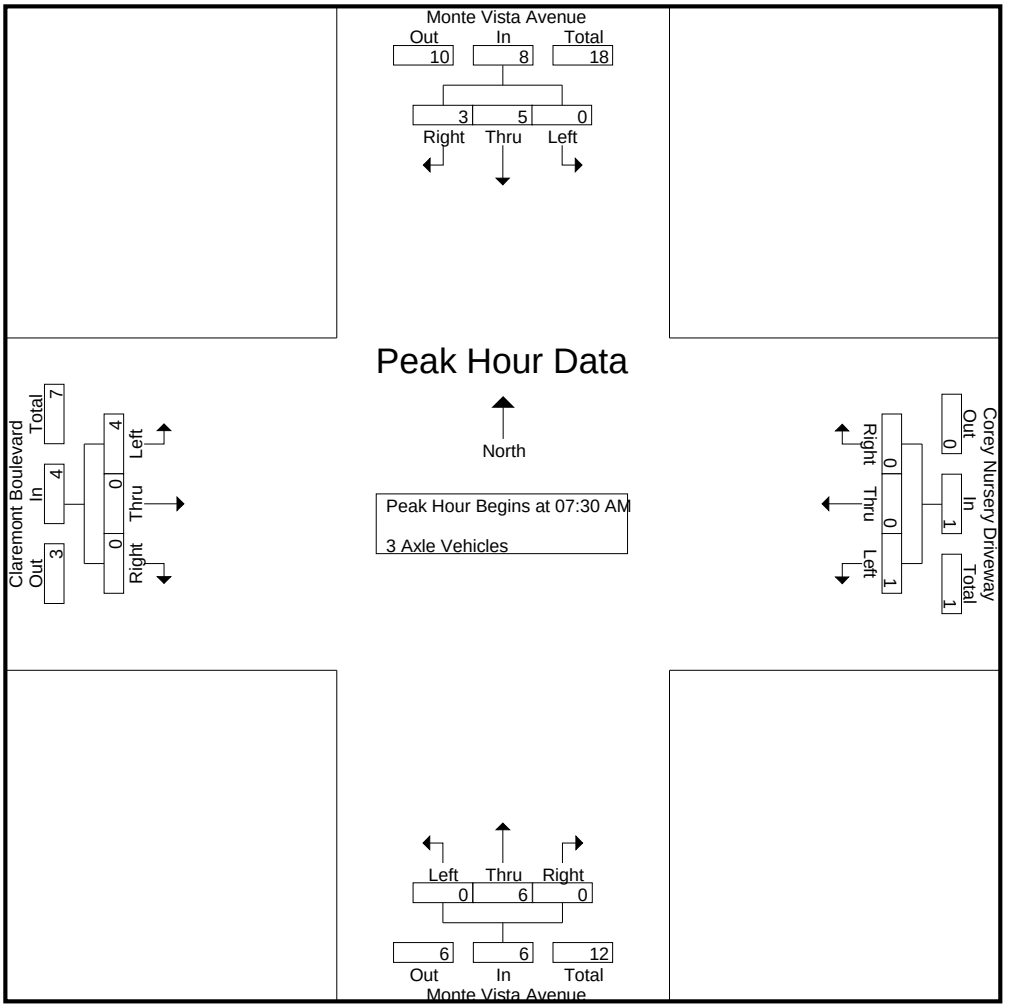
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
07:15 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
07:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	1	0	0	1	4
07:45 AM	0	0	1	1	0	0	0	0	0	3	0	3	1	0	0	1	5
Total	0	4	1	5	0	0	0	0	0	10	0	10	2	0	0	2	17
08:00 AM	0	0	1	1	0	0	0	0	0	1	0	1	2	0	0	2	4
08:15 AM	0	2	1	3	1	0	0	1	0	2	0	2	0	0	0	0	6
08:30 AM	0	2	1	3	0	0	0	0	0	1	0	1	1	0	0	1	5
08:45 AM	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
Total	0	6	3	9	1	0	0	1	0	8	0	8	3	0	0	3	21
Grand Total	0	10	4	14	1	0	0	1	0	18	0	18	5	0	0	5	38
Apprch %	0	71.4	28.6		100	0	0		0	100	0		100	0	0		
Total %	0	26.3	10.5	36.8	2.6	0	0	2.6	0	47.4	0	47.4	13.2	0	0	13.2	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**3**	0	**3**	0	0	0	0	0	0	0	0	1	0	0	1	4
07:45 AM	0	0	**1**	1	0	0	0	0	0	**3**	0	**3**	1	0	0	1	5
08:00 AM	0	0	1	1	0	0	0	0	0	1	0	1	**2**	0	0	**2**	4
08:15 AM	0	2	1	3	**1**	0	0	**1**	0	2	0	2	0	0	0	0	**6**
Total Volume	0	5	3	8	1	0	0	1	0	6	0	6	4	0	0	4	19
% App. Total	0	62.5	37.5		100	0	0		0	100	0		100	0	0		
PHF	.000	.417	.750	.667	.250	.000	.000	.250	.000	.500	.000	.500	.500	.000	.000	.500	.792

Counts Unlimited
PO Box 1178
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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019
Page No : 2



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	**3**	0	**3**	0	0	0	0	0	0	0	0	1	0	0	1
+15 mins.	0	0	**1**	1	0	0	0	0	0	**3**	0	**3**	1	0	0	1
+30 mins.	0	0	1	1	0	0	0	0	0	1	0	1	**2**	0	0	**2**
+45 mins.	0	2	1	3	**1**	0	0	**1**	0	2	0	2	0	0	0	0
Total Volume	0	5	3	8	1	0	0	1	0	6	0	6	4	0	0	4
% App. Total	0	62.5	37.5		100	0	0		0	100	0		100	0	0	
PHF	.000	.417	.750	.667	.250	.000	.000	.250	.000	.500	.000	.500	.500	.000	.000	.500

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- 4+ Axle Trucks

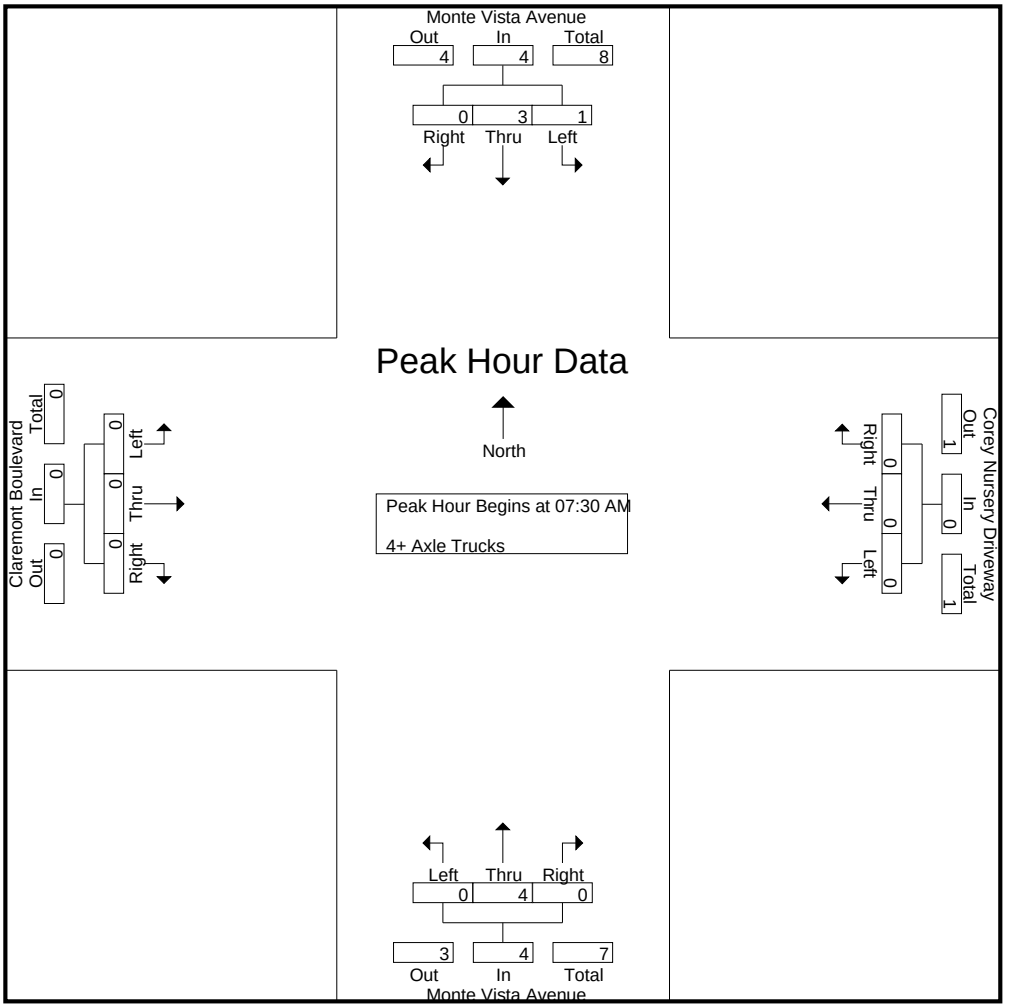
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
08:00 AM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	2	0	3	0	0	0	0	0	3	0	3	0	0	0	0	6
Grand Total	1	4	0	5	0	0	0	0	0	6	0	6	0	0	0	0	11
Apprch %	20	80	0		0	0	0		0	100	0		0	0	0		
Total %	9.1	36.4	0	45.5	0	0	0	0	0	54.5	0	54.5	0	0	0	0	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	**1**	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:00 AM	**1**	1	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**3**
Total Volume	1	3	0	4	0	0	0	0	0	4	0	4	0	0	0	0	8
% App. Total	25	75	0		0	0	0		0	100	0		0	0	0		
PHF	.250	.750	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.667

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont AM
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	**1**	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	**1**	1	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0
Total Volume	1	3	0	4	0	0	0	0	0	4	0	4	0	0	0	0
% App. Total	25	75	0		0	0	0		0	100	0		0	0	0	
PHF	.250	.750	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

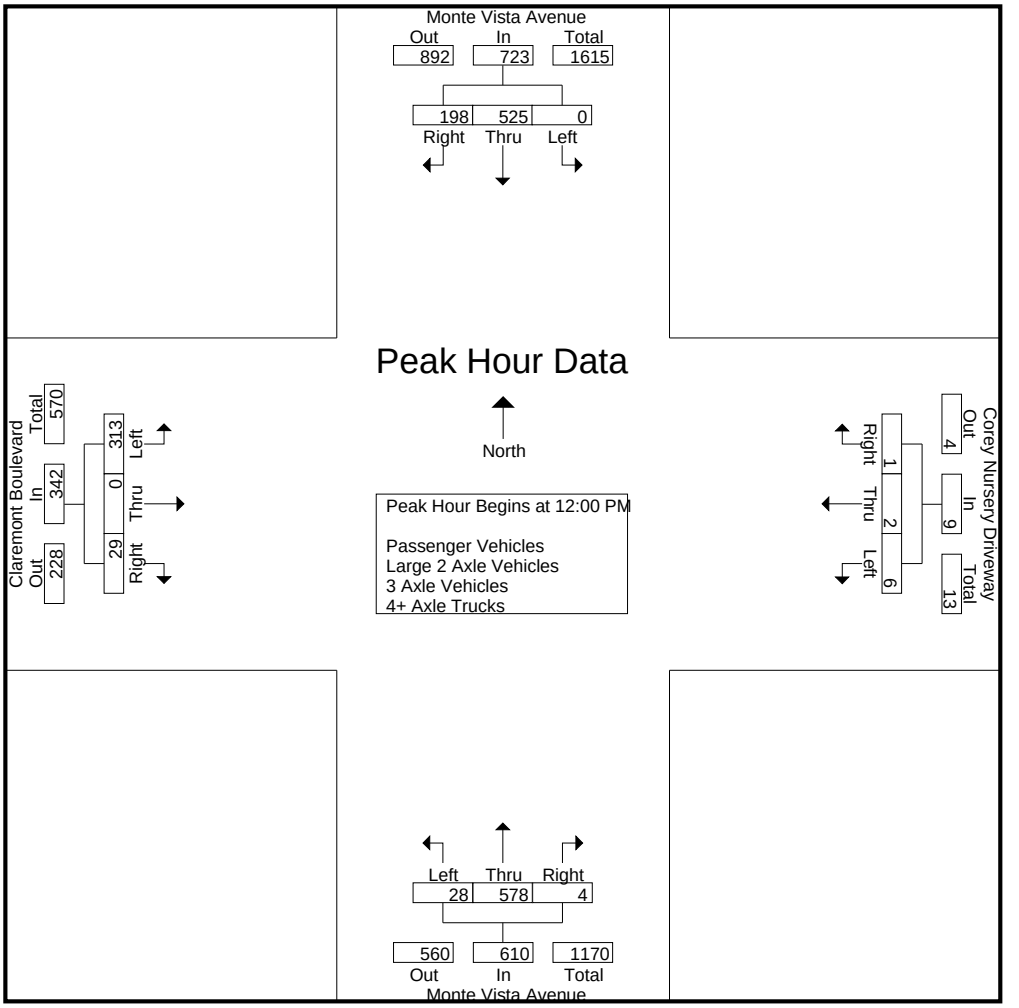
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	98	40	138	1	0	2	3	8	124	1	133	67	0	9	76	350
11:15 AM	0	139	47	186	1	0	0	1	8	119	0	127	56	1	7	64	378
11:30 AM	1	124	54	179	2	1	0	3	5	111	0	116	59	0	2	61	359
11:45 AM	0	145	61	206	0	0	0	0	6	123	0	129	73	0	6	79	414
Total	1	506	202	709	4	1	2	7	27	477	1	505	255	1	24	280	1501
12:00 PM	0	122	49	171	3	0	1	4	6	159	0	165	88	0	9	97	437
12:15 PM	0	149	55	204	0	1	0	1	8	122	0	130	78	0	6	84	419
12:30 PM	0	123	48	171	1	1	0	2	6	149	2	157	74	0	8	82	412
12:45 PM	0	131	46	177	2	0	0	2	8	148	2	158	73	0	6	79	416
Total	0	525	198	723	6	2	1	9	28	578	4	610	313	0	29	342	1684
Grand Total	1	1031	400	1432	10	3	3	16	55	1055	5	1115	568	1	53	622	3185
Apprch %	0.1	72	27.9		62.5	18.8	18.8		4.9	94.6	0.4		91.3	0.2	8.5		
Total %	0	32.4	12.6	45	0.3	0.1	0.1	0.5	1.7	33.1	0.2	35	17.8	0	1.7	19.5	
Passenger Vehicles	0	1013	398	1411	10	3	3	16	55	1047	2	1104	567	1	52	620	3151
% Passenger Vehicles	0	98.3	99.5	98.5	100	100	100	100	100	99.2	40	99	99.8	100	98.1	99.7	98.9
Large 2 Axle Vehicles	0	13	2	15	0	0	0	0	0	5	2	7	1	0	1	2	24
% Large 2 Axle Vehicles	0	1.3	0.5	1	0	0	0	0	0	0.5	40	0.6	0.2	0	1.9	0.3	0.8
3 Axle Vehicles	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
% 3 Axle Vehicles	0	0.2	0	0.1	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0.1
4+ Axle Trucks	1	3	0	4	0	0	0	0	0	1	1	2	0	0	0	0	6
% 4+ Axle Trucks	100	0.3	0	0.3	0	0	0	0	0	0.1	20	0.2	0	0	0	0	0.2

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	122	49	171	**3**	0	**1**	**4**	6	**159**	0	**165**	**88**	0	**9**	**97**	**437**
12:15 PM	0	**149**	**55**	**204**	0	**1**	0	1	**8**	122	0	130	78	0	6	84	419
12:30 PM	0	123	48	171	1	1	0	2	6	149	**2**	157	74	0	8	82	412
12:45 PM	0	131	46	177	2	0	0	2	8	148	2	158	73	0	6	79	416
Total Volume	0	525	198	723	6	2	1	9	28	578	4	610	313	0	29	342	1684
% App. Total	0	72.6	27.4		66.7	22.2	11.1		4.6	94.8	0.7		91.5	0	8.5		
PHF	.000	.881	.900	.886	.500	.500	.250	.563	.875	.909	.500	.924	.889	.000	.806	.881	.963

Counts Unlimited
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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:30 AM				12:00 PM				12:00 PM				11:45 AM			
+0 mins.	**1**	124	54	179	**3**	0	**1**	**4**	6	**159**	0	**165**	73	0	6	79
+15 mins.	0	145	**61**	**206**	0	**1**	0	1	**8**	122	0	130	**88**	0	**9**	**97**
+30 mins.	0	122	49	171	1	1	0	2	6	149	**2**	157	78	0	6	84
+45 mins.	0	**149**	55	204	2	0	0	2	8	148	2	158	74	0	8	82
Total Volume	1	540	219	760	6	2	1	9	28	578	4	610	313	0	29	342
% App. Total	0.1	71.1	28.8		66.7	22.2	11.1		4.6	94.8	0.7		91.5	0	8.5	
PHF	.250	.906	.898	.922	.500	.500	.250	.563	.875	.909	.500	.924	.889	.000	.806	.881

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- Passenger Vehicles

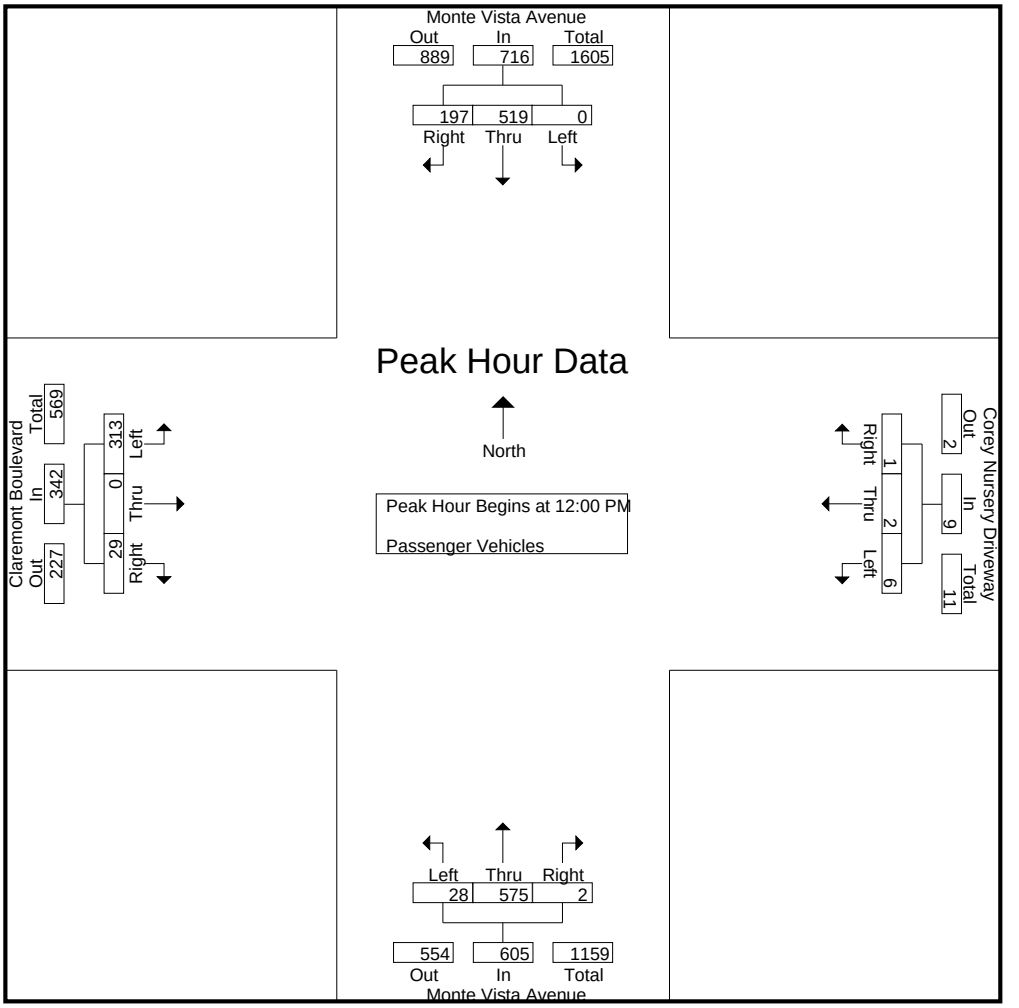
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	95	40	135	1	0	2	3	8	124	0	132	67	0	9	76	346
11:15 AM	0	137	46	183	1	0	0	1	8	119	0	127	55	1	7	63	374
11:30 AM	0	120	54	174	2	1	0	3	5	107	0	112	59	0	2	61	350
11:45 AM	0	142	61	203	0	0	0	0	6	122	0	128	73	0	5	78	409
Total	0	494	201	695	4	1	2	7	27	472	0	499	254	1	23	278	1479
12:00 PM	0	122	48	170	3	0	1	4	6	158	0	164	88	0	9	97	435
12:15 PM	0	147	55	202	0	1	0	1	8	122	0	130	78	0	6	84	417
12:30 PM	0	121	48	169	1	1	0	2	6	148	1	155	74	0	8	82	408
12:45 PM	0	129	46	175	2	0	0	2	8	147	1	156	73	0	6	79	412
Total	0	519	197	716	6	2	1	9	28	575	2	605	313	0	29	342	1672
Grand Total	0	1013	398	1411	10	3	3	16	55	1047	2	1104	567	1	52	620	3151
Apprch %	0	71.8	28.2		62.5	18.8	18.8		5	94.8	0.2		91.5	0.2	8.4		
Total %	0	32.1	12.6	44.8	0.3	0.1	0.1	0.5	1.7	33.2	0.1	35	18	0	1.7	19.7	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	122	48	170	**3**	0	**1**	**4**	6	**158**	0	**164**	**88**	0	**9**	**97**	**435**
12:15 PM	0	**147**	**55**	**202**	0	**1**	0	1	**8**	122	0	130	78	0	6	84	417
12:30 PM	0	121	48	169	1	1	0	2	6	148	**1**	155	74	0	8	82	408
12:45 PM	0	129	46	175	2	0	0	2	8	147	1	156	73	0	6	79	412
Total Volume	0	519	197	716	6	2	1	9	28	575	2	605	313	0	29	342	1672
% App. Total	0	72.5	27.5		66.7	22.2	11.1		4.6	95	0.3		91.5	0	8.5		
PHF	.000	.883	.895	.886	.500	.500	.250	.563	.875	.910	.500	.922	.889	.000	.806	.881	.961

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019
Page No : 2



Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				12:00 PM			
+0 mins.	0	122	48	170	**3**	0	**1**	**4**	6	**158**	0	**164**	**88**	0	**9**	**97**
+15 mins.	0	**147**	**55**	**202**	0	**1**	0	1	**8**	122	0	130	78	0	6	84
+30 mins.	0	121	48	169	1	1	0	2	6	148	**1**	155	74	0	8	82
+45 mins.	0	129	46	175	2	0	0	2	8	147	1	156	73	0	6	79
Total Volume	0	519	197	716	6	2	1	9	28	575	2	605	313	0	29	342
% App. Total	0	72.5	27.5		66.7	22.2	11.1		4.6	95	0.3		91.5	0	8.5	
PHF	.000	.883	.895	.886	.500	.500	.250	.563	.875	.910	.500	.922	.889	.000	.806	.881

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- Large 2 Axle Vehicles

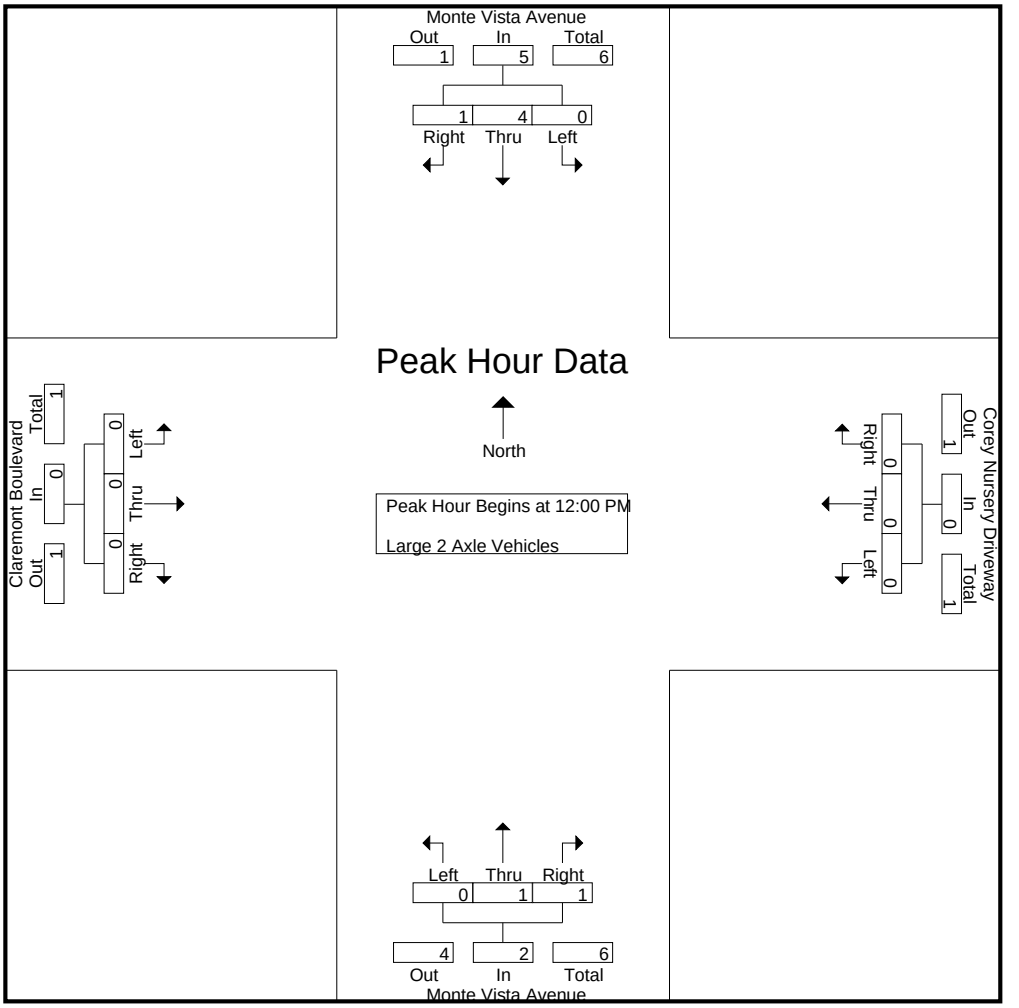
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	3	0	3	0	0	0	0	0	0	1	1	0	0	0	0	4
11:15 AM	0	1	1	2	0	0	0	0	0	0	0	0	1	0	0	1	3
11:30 AM	0	3	0	3	0	0	0	0	0	3	0	3	0	0	0	0	6
11:45 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	1	1	4
Total	0	9	1	10	0	0	0	0	0	4	1	5	1	0	1	2	17
12:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	1	0	1	0	0	0	0	0	1	1	2	0	0	0	0	3
12:45 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	4	1	5	0	0	0	0	0	1	1	2	0	0	0	0	7
Grand Total	0	13	2	15	0	0	0	0	0	5	2	7	1	0	1	2	24
Apprch %	0	86.7	13.3		0	0	0		0	71.4	28.6		50	0	50		
Total %	0	54.2	8.3	62.5	0	0	0	0	0	20.8	8.3	29.2	4.2	0	4.2	8.3	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	**1**	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	1	0	1	0	0	0	0	0	**1**	**1**	**2**	0	0	0	0	**3**
12:45 PM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	4	1	5	0	0	0	0	0	1	1	2	0	0	0	0	7
% App. Total	0	80	20		0	0	0		0	50	50		0	0	0		
PHF	.000	.500	.250	.625	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.000	.000	.583

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				12:00 PM			
+0 mins.	0	0	**1**	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	**1**	**1**	**2**	0	0	0	0
+45 mins.	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	4	1	5	0	0	0	0	0	1	1	2	0	0	0	0
% App. Total	0	80	20		0	0	0		0	50	50		0	0	0	
PHF	.000	.500	.250	.625	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.000	.000

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- 3 Axle Vehicles

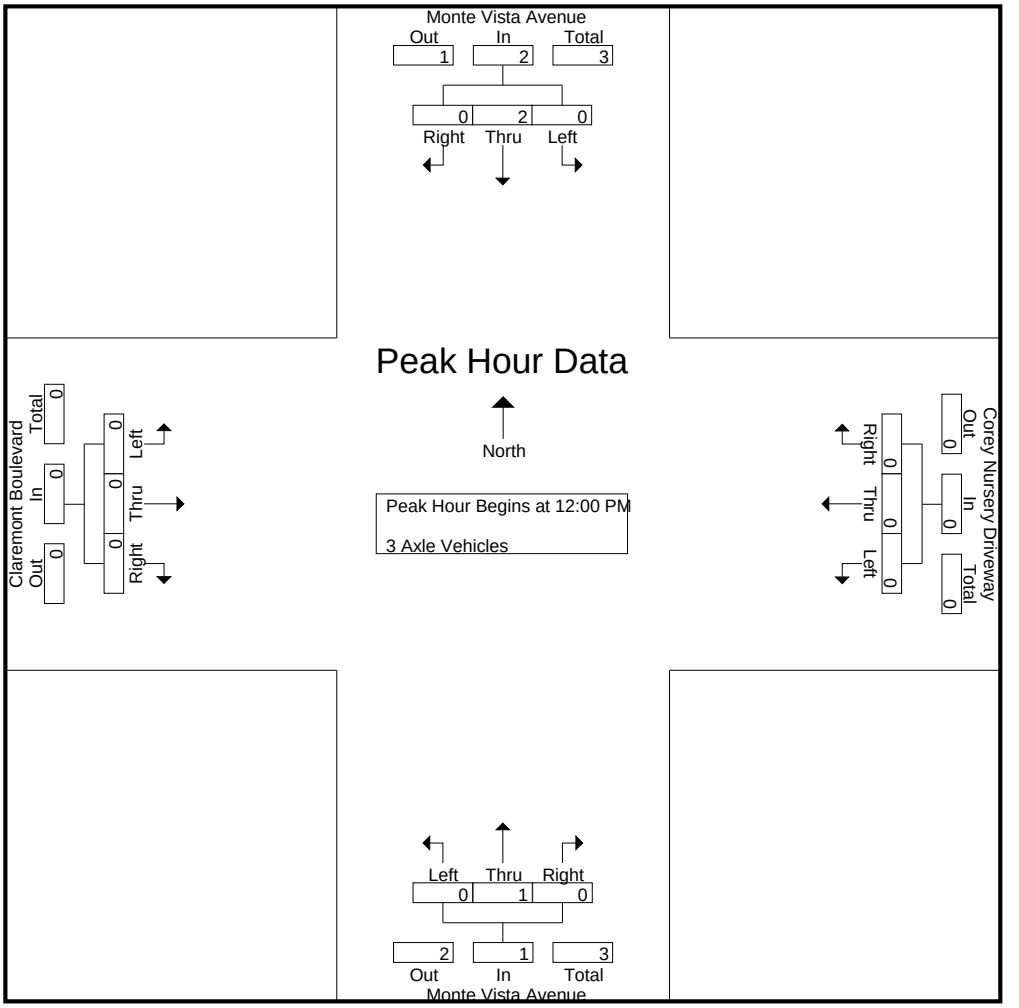
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Grand Total	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	50	0	50	0	0	0	0	0	50	0	50	0	0	0	0	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
12:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.750

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City of Claremont
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Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				12:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

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City of Claremont
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Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019
Page No : 1

Groups Printed- 4+ Axle Trucks

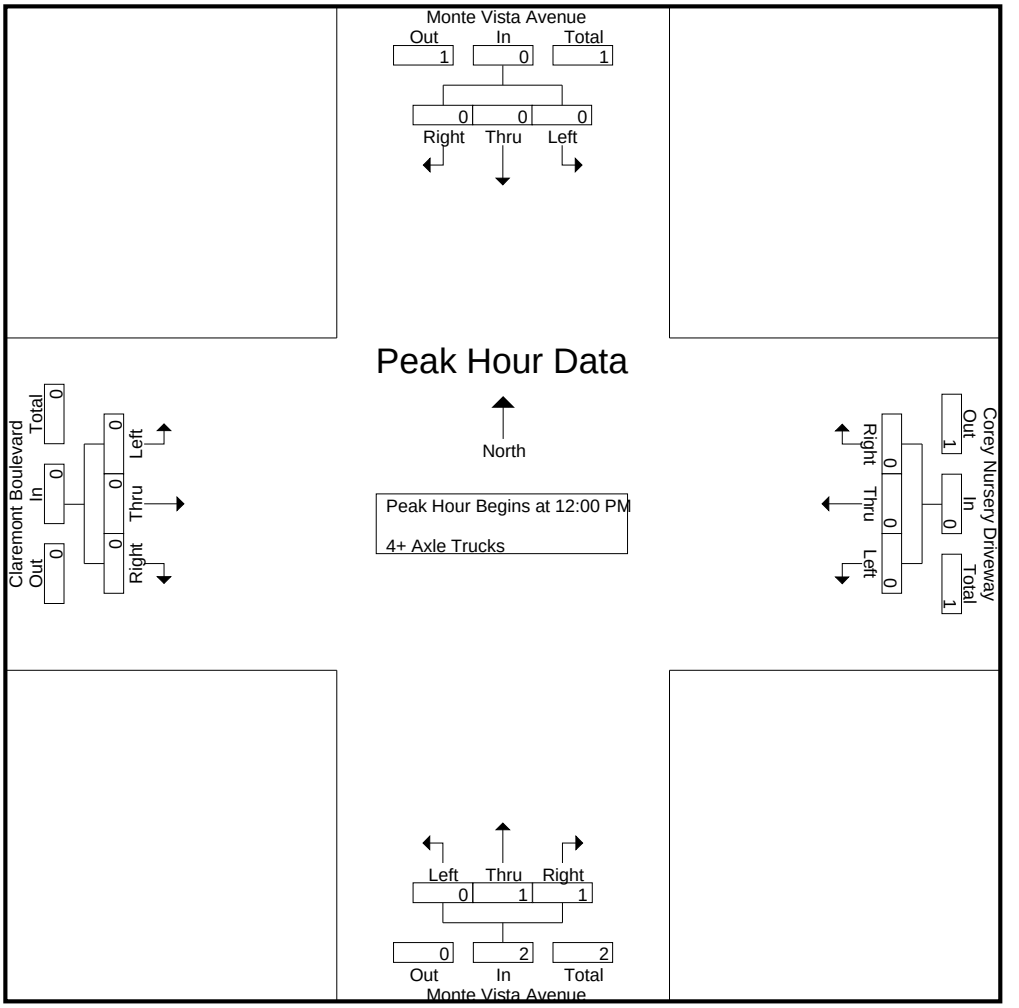
	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
11:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Grand Total	1	3	0	4	0	0	0	0	0	1	1	2	0	0	0	0	6
Apprch %	25	75	0		0	0	0		0	50	50		0	0	0		
Total %	16.7	50	0	66.7	0	0	0	0	0	16.7	16.7	33.3	0	0	0	0	

	Monte Vista Avenue Southbound				Corey Nursery Driveway Westbound				Monte Vista Avenue Northbound				Claremont Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	**1**	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
% App. Total	0	0	0		0	0	0		0	50	50		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500	.000	.000	.000	.000	.500

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City of Claremont
N/S: Monte Vista Avenue
E/W: Claremont Boulevard
Weather: Clear

File Name : 01_CMT_Monte Vista_Claremont MD
Site Code : 99919589
Start Date : 9/12/2019



Peak Hour Analysis From 12:00 PM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				12:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	**1**	1	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0
% App. Total	0	0	0		0	0	0		0	50	50		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.500	.000	.000	.000	.000

APPENDIX B:
VOLUME DEVELOPMENT WORKSHEETS

translutions
the transportation solutions company

Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
1 . Monte Vista Avenue/Baseline Road												
NBL	121	5	1	0	10	131	153	0	0	0	0	153
NBT	94	3	1	0	7	101	161	0	0	0	0	161
NBR	336	4	2	11	43	379	651	1	0	0	2	653
SBL	206	5	0	0	8	214	163	2	0	0	3	166
SBT	140	1	0	0	2	142	112	0	0	0	0	112
SBR	105	1	0	0	2	107	46	0	0	0	0	46
EBL	43	1	0	0	2	45	57	0	0	0	0	57
EBT	346	0	2	0	4	350	766	2	0	0	3	769
EBR	155	4	2	1	13	168	162	0	0	0	0	162
WBL	703	1	0	3	11	714	450	3	1	2	13	463
WBT	607	1	0	2	8	615	460	1	0	1	5	465
WBR	232	1	0	1	5	237	142	1	0	1	5	147
North Leg												
Approach	451	7	0	0	12	463	321	2	0	0	3	324
Departure	369	5	1	1	14	383	360	1	0	1	5	365
Total	820	12	1	1	26	846	681	3	0	1	8	689
South Leg												
Approach	551	12	4	11	60	611	965	1	0	0	2	967
Departure	998	6	2	4	26	1,024	724	3	1	2	13	737
Total	1,549	18	6	15	86	1,635	1,689	4	1	2	15	1,704
East Leg												
Approach	1,542	3	0	6	24	1,566	1,052	5	1	4	23	1,075
Departure	888	9	4	11	55	943	1,580	5	0	0	8	1,588
Total	2,430	12	4	17	79	2,509	2,632	10	1	4	31	2,663
West Leg												
Approach	544	5	4	1	19	563	985	2	0	0	3	988
Departure	833	7	1	2	20	853	659	1	0	1	5	664
Total	1,377	12	5	3	39	1,416	1,644	3	0	1	8	1,652
Total Approaches												
Approach	3,088	27	8	18	115	3,203	3,323	10	1	4	31	3,354
Departure	3,088	27	8	18	115	3,203	3,323	10	1	4	31	3,354
Total	6,176	54	16	36	230	6,406	6,646	20	2	8	62	6,708

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
2 . SR-210 Ramps/Baseline Road												
NBL	225	7	1	0	13	238	176	3	0	0	5	181
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	382	13	0	16	68	450	821	3	4	1	16	837
SBL	53	2	3	1	12	65	57	0	0	1	3	60
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	761	5	0	0	8	769	572	1	0	1	5	577
EBL	161	3	2	1	12	173	168	3	0	1	8	176
EBT	320	2	4	0	11	331	819	4	0	0	6	825
EBR	462	3	2	1	12	474	492	4	0	0	6	498
WBL	15	2	0	3	12	27	28	0	0	0	0	28
WBT	805	6	2	1	16	821	407	1	0	0	2	409
WBR	655	3	0	12	41	696	322	1	0	0	2	324
North Leg												
Approach	814	7	3	1	20	834	629	1	0	2	8	637
Departure	816	6	2	13	53	869	490	4	0	1	10	500
Total	1,630	13	5	14	73	1,703	1,119	5	0	3	18	1,137
South Leg												
Approach	607	20	1	16	81	688	997	6	4	1	21	1,018
Departure	477	5	2	4	24	501	520	4	0	0	6	526
Total	1,084	25	3	20	105	1,189	1,517	10	4	1	27	1,544
East Leg												
Approach	1,475	11	2	16	69	1,544	757	2	0	0	4	761
Departure	755	17	7	17	91	846	1,697	7	4	2	25	1,722
Total	2,230	28	9	33	160	2,390	2,454	9	4	2	29	2,483
West Leg												
Approach	943	8	8	2	35	978	1,479	11	0	1	20	1,499
Departure	1,791	18	3	1	37	1,828	1,155	5	0	1	12	1,167
Total	2,734	26	11	3	72	2,806	2,634	16	0	2	32	2,666
Total Approaches												
Approach	3,839	46	14	35	205	4,044	3,862	20	4	4	53	3,915
Departure	3,839	46	14	35	205	4,044	3,862	20	4	4	53	3,915
Total	7,678	92	28	70	410	8,088	7,724	40	8	8	106	7,830

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
3 . Benson Avenue/Baseline Road												
NBL	287	4	3	1	15	302	252	3	0	0	5	257
NBT	126	3	0	0	5	131	355	0	0	0	0	355
NBR	65	4	0	0	6	71	214	4	0	0	6	220
SBL	15	1	0	0	2	17	16	0	0	0	0	16
SBT	282	2	0	1	6	288	168	0	1	0	2	170
SBR	208	0	0	0	0	208	94	0	0	0	0	94
EBL	51	0	0	0	0	51	212	0	0	0	0	212
EBT	283	3	0	0	5	288	807	4	0	0	6	813
EBR	282	3	1	1	10	292	406	2	0	1	6	412
WBL	232	2	0	0	3	235	137	2	0	0	3	140
WBT	668	3	0	2	11	679	354	3	0	0	5	359
WBR	17	1	0	0	2	19	32	0	0	0	0	32
North Leg												
Approach	505	3	0	1	8	513	278	0	1	0	2	280
Departure	194	4	0	0	7	201	599	0	0	0	0	599
Total	699	7	0	1	15	714	877	0	1	0	2	879
South Leg												
Approach	478	11	3	1	26	504	821	7	0	0	11	832
Departure	796	7	1	2	19	815	711	4	1	1	11	722
Total	1,274	18	4	3	45	1,319	1,532	11	1	1	22	1,554
East Leg												
Approach	917	6	0	2	16	933	523	5	0	0	8	531
Departure	363	8	0	0	13	376	1,037	8	0	0	12	1,049
Total	1,280	14	0	2	29	1,309	1,560	13	0	0	20	1,580
West Leg												
Approach	616	6	1	1	15	631	1,425	6	0	1	12	1,437
Departure	1,163	7	3	3	26	1,189	700	6	0	0	10	710
Total	1,779	13	4	4	41	1,820	2,125	12	0	1	22	2,147
Total Approaches												
Approach	2,516	26	4	5	65	2,581	3,047	18	1	1	33	3,080
Departure	2,516	26	4	5	65	2,581	3,047	18	1	1	33	3,080
Total	5,032	52	8	10	130	5,162	6,094	36	2	2	66	6,160

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
4 . Benson Avenue/15th Street												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	413	10	0	4	27	440	810	3	0	2	11	821
NBR	35	0	0	0	0	35	143	1	0	0	2	145
SBL	28	0	0	1	3	31	85	0	0	0	0	85
SBT	774	5	1	1	13	787	616	5	1	0	10	626
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	69	1	0	0	2	71	51	0	0	0	0	51
WBT	0	0	0	0	0	0	0	0	0	0	0	0
WBR	66	0	0	0	0	66	37	1	0	0	2	39
North Leg												
Approach	802	5	1	2	16	818	701	5	1	0	10	711
Departure	479	10	0	4	27	506	847	4	0	2	13	860
Total	1,281	15	1	6	43	1,324	1,548	9	1	2	23	1,571
South Leg												
Approach	448	10	0	4	27	475	953	4	0	2	13	966
Departure	843	6	1	1	15	858	667	5	1	0	10	677
Total	1,291	16	1	5	42	1,333	1,620	9	1	2	23	1,643
East Leg												
Approach	135	1	0	0	2	137	88	1	0	0	2	90
Departure	63	0	0	1	3	66	228	1	0	0	2	230
Total	198	1	0	1	5	203	316	2	0	0	4	320
West Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches												
Approach	1,385	16	1	6	45	1,430	1,742	10	1	2	25	1,767
Departure	1,385	16	1	6	45	1,430	1,742	10	1	2	25	1,767
Total	2,770	32	2	12	90	2,860	3,484	20	2	4	50	3,534

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
5 . Benson Avenue/13th Street												
NBL	3	0	0	0	0	3	2	0	0	0	0	2
NBT	449	10	1	3	26	475	850	4	1	0	8	858
NBR	51	3	1	0	7	58	165	0	0	0	0	165
SBL	48	1	0	0	2	50	80	0	0	0	0	80
SBT	728	10	0	1	18	746	622	5	0	1	11	633
SBR	5	0	0	1	3	8	3	0	0	1	3	6
EBL	2	0	0	1	3	5	8	0	0	0	0	8
EBT	1	0	0	0	0	1	6	0	0	0	0	6
EBR	2	0	0	10	30	32	5	0	1	1	5	10
WBL	124	1	0	0	2	126	102	0	0	0	0	102
WBT	3	0	1	0	2	5	0	0	0	0	0	0
WBR	44	0	0	0	0	44	56	0	0	0	0	56
North Leg												
Approach	781	11	0	2	23	804	705	5	0	2	14	719
Departure	495	10	1	4	29	524	914	4	1	0	8	922
Total	1,276	21	1	6	52	1,328	1,619	9	1	2	22	1,641
South Leg												
Approach	503	13	2	3	33	536	1,017	4	1	0	8	1,025
Departure	854	11	0	11	50	904	729	5	1	2	16	745
Total	1,357	24	2	14	83	1,440	1,746	9	2	2	24	1,770
East Leg												
Approach	171	1	1	0	4	175	158	0	0	0	0	158
Departure	100	4	1	0	9	109	251	0	0	0	0	251
Total	271	5	2	0	13	284	409	0	0	0	0	409
West Leg												
Approach	5	0	0	11	33	38	19	0	1	1	5	24
Departure	11	0	1	1	5	16	5	0	0	1	3	8
Total	16	0	1	12	38	54	24	0	1	2	8	32
Total Approaches												
Approach	1,460	25	3	16	93	1,553	1,899	9	2	3	27	1,926
Departure	1,460	25	3	16	93	1,553	1,899	9	2	3	27	1,926
Total	2,920	50	6	32	186	3,106	3,798	18	4	6	54	3,852

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
6 . Monte Vista Avenue/Foothill Boulevard												
NBL	141	3	0	0	5	146	181	0	0	0	0	181
NBT	335	28	0	3	51	386	685	6	2	0	13	698
NBR	73	2	5	3	22	95	120	1	2	1	9	129
SBL	74	6	7	1	26	100	160	1	0	1	5	165
SBT	358	14	0	1	24	382	492	4	0	1	9	501
SBR	28	3	0	1	8	36	62	0	1	0	2	64
EBL	35	1	0	0	2	37	46	0	0	0	0	46
EBT	349	12	0	0	18	367	814	1	0	0	2	816
EBR	139	3	0	0	5	144	207	0	0	0	0	207
WBL	95	1	5	1	15	110	133	3	0	0	5	138
WBT	598	17	1	1	31	629	519	2	0	1	6	525
WBR	97	9	11	4	48	145	147	0	1	1	5	152
North Leg												
Approach	460	23	7	3	58	518	714	5	1	2	16	730
Departure	467	38	11	7	101	568	878	6	3	1	18	896
Total	927	61	18	10	159	1,086	1,592	11	4	3	34	1,626
South Leg												
Approach	549	33	5	6	78	627	986	7	4	1	22	1,008
Departure	592	18	5	2	44	636	832	7	0	1	14	846
Total	1,141	51	10	8	122	1,263	1,818	14	4	2	36	1,854
East Leg												
Approach	790	27	17	6	94	884	799	5	1	2	16	815
Departure	496	20	12	4	66	562	1,094	3	2	2	16	1,110
Total	1,286	47	29	10	160	1,446	1,893	8	3	4	32	1,925
West Leg												
Approach	523	16	0	0	25	548	1,067	1	0	0	2	1,069
Departure	767	23	1	2	44	811	762	2	1	1	8	770
Total	1,290	39	1	2	69	1,359	1,829	3	1	1	10	1,839
Total Approaches												
Approach	2,322	99	29	15	255	2,577	3,566	18	6	5	56	3,622
Departure	2,322	99	29	15	255	2,577	3,566	18	6	5	56	3,622
Total	4,644	198	58	30	510	5,154	7,132	36	12	10	112	7,244

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
7 . Central Avenue/Foothill Boulevard												
NBL	183	1	5	0	12	195	153	2	0	0	3	156
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	131	12	0	0	18	149	386	4	1	0	8	394
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	336	7	0	3	20	356	912	4	0	0	6	918
EBR	95	5	2	2	18	113	210	1	0	0	2	212
WBL	195	9	0	4	26	221	222	4	0	1	9	231
WBT	637	4	1	10	38	675	557	2	0	0	3	560
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	314	13	5	0	30	344	539	6	1	0	11	550
Departure	290	14	2	6	44	334	432	5	0	1	11	443
Total	604	27	7	6	74	678	971	11	1	1	22	993
East Leg												
Approach	832	13	1	14	64	896	779	6	0	1	12	791
Departure	467	19	0	3	38	505	1,298	8	1	0	14	1,312
Total	1,299	32	1	17	102	1,401	2,077	14	1	1	26	2,103
West Leg												
Approach	431	12	2	5	38	469	1,122	5	0	0	8	1,130
Departure	820	5	6	10	50	870	710	4	0	0	6	716
Total	1,251	17	8	15	88	1,339	1,832	9	0	0	14	1,846
Total Approaches												
Approach	1,577	38	8	19	132	1,709	2,440	17	1	1	31	2,471
Departure	1,577	38	8	19	132	1,709	2,440	17	1	1	31	2,471
Total	3,154	76	16	38	264	3,418	4,880	34	2	2	62	4,942

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
9 . Benson Avenue/Foothill Boulevard												
NBL	79	2	1	0	5	84	104	1	0	0	2	106
NBT	298	7	0	0	11	309	550	0	1	0	2	552
NBR	92	1	0	1	5	97	160	2	0	0	3	163
SBL	108	0	1	8	26	134	151	0	0	1	3	154
SBT	472	7	1	0	13	485	428	3	1	0	7	435
SBR	233	3	1	2	13	246	151	0	0	2	6	157
EBL	86	3	0	0	5	91	266	2	1	0	5	271
EBT	284	10	2	2	25	309	837	6	0	1	12	849
EBR	30	1	0	0	2	32	80	0	1	0	2	82
WBL	123	0	0	0	0	123	121	0	0	0	0	121
WBT	505	8	3	9	45	550	506	6	0	0	9	515
WBR	90	2	2	2	13	103	134	0	0	1	3	137
North Leg												
Approach	813	10	3	10	52	865	730	3	1	3	16	746
Departure	474	12	2	2	29	503	950	2	2	1	10	960
Total	1,287	22	5	12	81	1,368	1,680	5	3	4	26	1,706
South Leg												
Approach	469	10	1	1	21	490	814	3	1	0	7	821
Departure	625	8	1	0	15	640	629	3	2	0	9	638
Total	1,094	18	2	1	36	1,130	1,443	6	3	0	16	1,459
East Leg												
Approach	718	10	5	11	58	776	761	6	0	1	12	773
Departure	484	11	3	11	56	540	1,148	8	0	2	18	1,166
Total	1,202	21	8	22	114	1,316	1,909	14	0	3	30	1,939
West Leg												
Approach	400	14	2	2	32	432	1,183	8	2	1	19	1,202
Departure	817	13	5	11	63	880	761	7	0	2	17	778
Total	1,217	27	7	13	95	1,312	1,944	15	2	3	36	1,980
Total Approaches												
Approach	2,400	44	11	24	163	2,563	3,488	20	4	5	54	3,542
Departure	2,400	44	11	24	163	2,563	3,488	20	4	5	54	3,542
Total	4,800	88	22	48	326	5,126	6,976	40	8	10	108	7,084

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
10 . Central Avenue/11th Street												
NBL	33	0	2	0	4	37	17	0	1	0	2	19
NBT	272	14	4	1	32	304	452	9	2	0	18	470
NBR	62	7	0	0	11	73	83	5	1	0	10	93
SBL	25	1	0	0	2	27	56	0	0	0	0	56
SBT	224	11	5	0	27	251	420	10	2	1	22	442
SBR	19	0	0	0	0	19	21	1	0	0	2	23
EBL	10	1	0	0	2	12	19	0	0	0	0	19
EBT	26	1	0	0	2	28	80	2	0	0	3	83
EBR	15	3	0	0	5	20	33	1	0	0	2	35
WBL	40	14	2	1	28	68	96	0	0	0	0	96
WBT	44	10	0	0	15	59	62	3	0	0	5	67
WBR	18	4	0	0	6	24	32	1	0	0	2	34
North Leg												
Approach	268	12	5	0	29	297	497	11	2	1	24	521
Departure	300	19	4	1	40	340	503	10	2	0	20	523
Total	568	31	9	1	69	637	1,000	21	4	1	44	1,044
South Leg												
Approach	367	21	6	1	47	414	552	14	4	0	30	582
Departure	279	28	7	1	60	339	549	11	2	1	24	573
Total	646	49	13	2	107	753	1,101	25	6	1	54	1,155
East Leg												
Approach	102	28	2	1	49	151	190	4	0	0	7	197
Departure	113	9	0	0	15	128	219	7	1	0	13	232
Total	215	37	2	1	64	279	409	11	1	0	20	429
West Leg												
Approach	51	5	0	0	9	60	132	3	0	0	5	137
Departure	96	10	2	0	19	115	100	4	1	0	9	109
Total	147	15	2	0	28	175	232	7	1	0	14	246
Total Approaches												
Approach	788	66	13	2	134	922	1,371	32	6	1	66	1,437
Departure	788	66	13	2	134	922	1,371	32	6	1	66	1,437
Total	1,576	132	26	4	268	1,844	2,742	64	12	2	132	2,874

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
11 . Central Avenue/Arrow Route												
NBL	61	4	2	0	10	71	57	4	0	1	9	66
NBT	320	18	7	1	44	364	488	13	2	2	30	518
NBR	92	6	0	1	12	104	139	5	0	0	8	147
SBL	10	0	0	0	0	10	50	0	0	0	0	50
SBT	258	22	7	2	53	311	481	6	2	2	19	500
SBR	29	0	0	0	0	29	34	0	0	0	0	34
EBL	21	1	0	0	2	23	63	1	0	0	2	65
EBT	86	3	0	0	5	91	334	0	0	0	0	334
EBR	45	0	1	1	5	50	72	0	0	0	0	72
WBL	142	5	0	0	8	150	152	4	0	0	6	158
WBT	270	3	1	0	7	277	190	0	0	0	0	190
WBR	56	1	0	0	2	58	36	0	0	0	0	36
North Leg												
Approach	297	22	7	2	53	350	565	6	2	2	19	584
Departure	397	20	7	1	48	445	587	14	2	2	32	619
Total	694	42	14	3	101	795	1,152	20	4	4	51	1,203
South Leg												
Approach	473	28	9	2	66	539	684	22	2	3	47	731
Departure	445	27	8	3	66	511	705	10	2	2	25	730
Total	918	55	17	5	132	1,050	1,389	32	4	5	72	1,461
East Leg												
Approach	468	9	1	0	17	485	378	4	0	0	6	384
Departure	188	9	0	1	17	205	523	5	0	0	8	531
Total	656	18	1	1	34	690	901	9	0	0	14	915
West Leg												
Approach	152	4	1	1	12	164	469	1	0	0	2	471
Departure	360	7	3	0	17	377	281	4	0	1	9	290
Total	512	11	4	1	29	541	750	5	0	1	11	761
Total Approaches												
Approach	1,390	63	18	5	148	1,538	2,096	33	4	5	74	2,170
Departure	1,390	63	18	5	148	1,538	2,096	33	4	5	74	2,170
Total	2,780	126	36	10	296	3,076	4,192	66	8	10	148	4,340

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Table B-1 - Existing Peak Hour Volumes
(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume	Pass. Veh.	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
17 . Monte Vista Avenue/Claremont Boulevard												
NBL	17	0	0	0	0	17	28	0	0	0	0	28
NBT	519	13	6	4	44	563	575	1	1	1	7	582
NBR	2	1	0	0	2	4	2	1	0	1	5	7
SBL	0	0	0	1	3	3	0	0	0	0	0	0
SBT	527	11	5	3	36	563	519	4	2	0	10	529
SBR	308	0	3	0	6	314	197	1	0	0	2	199
EBL	168	7	4	0	19	187	313	0	0	0	0	313
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	5	0	0	0	0	5	29	0	0	0	0	29
WBL	2	1	1	0	4	6	6	0	0	0	0	6
WBT	1	0	0	0	0	1	2	0	0	0	0	2
WBR	2	0	0	0	0	2	1	0	0	0	0	1
North Leg												
Approach	835	11	8	4	45	880	716	5	2	0	12	728
Departure	689	20	10	4	63	752	889	1	1	1	7	896
Total	1,524	31	18	8	108	1,632	1,605	6	3	1	19	1,624
South Leg												
Approach	538	14	6	4	46	584	605	2	1	2	12	617
Departure	534	12	6	3	40	574	554	4	2	0	10	564
Total	1,072	26	12	7	86	1,158	1,159	6	3	2	22	1,181
East Leg												
Approach	5	1	1	0	4	9	9	0	0	0	0	9
Departure	2	1	0	1	5	7	2	1	0	1	5	7
Total	7	2	1	1	9	16	11	1	0	1	5	16
West Leg												
Approach	173	7	4	0	19	192	342	0	0	0	0	342
Departure	326	0	3	0	6	332	227	1	0	0	2	229
Total	499	7	7	0	25	524	569	1	0	0	2	571
Total Approaches												
Approach	1,551	33	19	8	114	1,665	1,672	7	3	2	24	1,696
Departure	1,551	33	19	8	114	1,665	1,672	7	3	2	24	1,696
Total	3,102	66	38	16	228	3,330	3,344	14	6	4	48	3,392

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
1 . Monte Vista Avenue/Baseline Road								
NBL	121	6	127	4.7%	153	0	153	0.0%
NBT	94	4	98	4.1%	161	0	161	0.0%
NBR	336	17	353	4.8%	651	1	652	0.2%
SBL	206	5	211	2.4%	163	2	165	1.2%
SBT	140	1	141	0.7%	112	0	112	0.0%
SBR	105	1	106	0.9%	46	0	46	0.0%
EBL	43	1	44	2.3%	57	0	57	0.0%
EBT	346	2	348	0.6%	766	2	768	0.3%
EBR	155	7	162	4.3%	162	0	162	0.0%
WBL	703	4	707	0.6%	450	6	456	1.3%
WBT	607	3	610	0.5%	460	2	462	0.4%
WBR	232	2	234	0.9%	142	2	144	1.4%
North Leg								
Approach	451	7	458	1.5%	321	2	323	0.6%
Departure	369	7	376	1.9%	360	2	362	0.6%
Total	820	14	834	1.7%	681	4	685	0.6%
South Leg								
Approach	551	27	578	4.7%	965	1	966	0.1%
Departure	998	12	1,010	1.2%	724	6	730	0.8%
Total	1,549	39	1,588	2.5%	1,689	7	1,696	0.4%
East Leg								
Approach	1,542	9	1,551	0.6%	1,052	10	1,062	0.9%
Departure	888	24	912	2.6%	1,580	5	1,585	0.3%
Total	2,430	33	2,463	1.3%	2,632	15	2,647	0.6%
West Leg								
Approach	544	10	554	1.8%	985	2	987	0.2%
Departure	833	10	843	1.2%	659	2	661	0.3%
Total	1,377	20	1,397	1.4%	1,644	4	1,648	0.2%
Total Approaches								
Approach	3,088	53	3,141		3,323	15	3,338	
Departure	3,088	53	3,141		3,323	15	3,338	
Total	6,176	106	6,282	1.7%	6,646	30	6,676	0.4%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
2 . SR-210 Ramps/Baseline Road								
NBL	225	8	233	3.4%	176	3	179	1.7%
NBT	0	0	0	0.0%	0	0	0	0.0%
NBR	382	29	411	7.1%	821	8	829	1.0%
SBL	53	6	59	10.2%	57	1	58	1.7%
SBT	0	0	0	0.0%	0	0	0	0.0%
SBR	761	5	766	0.7%	572	2	574	0.3%
EBL	161	6	167	3.6%	168	4	172	2.3%
EBT	320	6	326	1.8%	819	4	823	0.5%
EBR	462	6	468	1.3%	492	4	496	0.8%
WBL	15	5	20	25.0%	28	0	28	0.0%
WBT	805	9	814	1.1%	407	1	408	0.2%
WBR	655	15	670	2.2%	322	1	323	0.3%
North Leg								
Approach	814	11	825		629	3	632	
Departure	816	21	837		490	5	495	
Total	1,630	32	1,662	1.9%	1,119	8	1,127	0.7%
South Leg								
Approach	607	37	644		997	11	1,008	
Departure	477	11	488		520	4	524	
Total	1,084	48	1,132	4.2%	1,517	15	1,532	1.0%
East Leg								
Approach	1,475	29	1,504		757	2	759	
Departure	755	41	796		1,697	13	1,710	
Total	2,230	70	2,300	3.0%	2,454	15	2,469	0.6%
West Leg								
Approach	943	18	961		1,479	12	1,491	
Departure	1,791	22	1,813		1,155	6	1,161	
Total	2,734	40	2,774	1.4%	2,634	18	2,652	0.7%
Total Approaches								
Approach	3,839	95	3,934		3,862	28	3,890	
Departure	3,839	95	3,934		3,862	28	3,890	
Total	7,678	190	7,868	2.4%	7,724	56	7,780	0.7%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
3 . Benson Avenue/Baseline Road								
NBL	287	8	295	2.7%	252	3	255	1.2%
NBT	126	3	129	2.3%	355	0	355	0.0%
NBR	65	4	69	5.8%	214	4	218	1.8%
SBL	15	1	16	6.3%	16	0	16	0.0%
SBT	282	3	285	1.1%	168	1	169	0.6%
SBR	208	0	208	0.0%	94	0	94	0.0%
EBL	51	0	51	0.0%	212	0	212	0.0%
EBT	283	3	286	1.0%	807	4	811	0.5%
EBR	282	5	287	1.7%	406	3	409	0.7%
WBL	232	2	234	0.9%	137	2	139	1.4%
WBT	668	5	673	0.7%	354	3	357	0.8%
WBR	17	1	18	5.6%	32	0	32	0.0%
North Leg								
Approach	505	4	509		278	1	279	
Departure	194	4	198		599	0	599	
Total	699	8	707	1.1%	877	1	878	0.1%
South Leg								
Approach	478	15	493		821	7	828	
Departure	796	10	806		711	6	717	
Total	1,274	25	1,299	1.9%	1,532	13	1,545	0.8%
East Leg								
Approach	917	8	925		523	5	528	
Departure	363	8	371		1,037	8	1,045	
Total	1,280	16	1,296	1.2%	1,560	13	1,573	0.8%
West Leg								
Approach	616	8	624		1,425	7	1,432	
Departure	1,163	13	1,176		700	6	706	
Total	1,779	21	1,800	1.2%	2,125	13	2,138	0.6%
Total Approaches								
Approach	2,516	35	2,551		3,047	20	3,067	
Departure	2,516	35	2,551		3,047	20	3,067	
Total	5,032	70	5,102	1.4%	6,094	40	6,134	0.7%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
4 . Benson Avenue/15th Street								
NBL	0	0	0	0.0%	0	0	0	0.0%
NBT	413	14	427	3.3%	810	5	815	0.6%
NBR	35	0	35	0.0%	143	1	144	0.7%
SBL	28	1	29	3.4%	85	0	85	0.0%
SBT	774	7	781	0.9%	616	6	622	1.0%
SBR	0	0	0	0.0%	0	0	0	0.0%
EBL	0	0	0	0.0%	0	0	0	0.0%
EBT	0	0	0	0.0%	0	0	0	0.0%
EBR	0	0	0	0.0%	0	0	0	0.0%
WBL	69	1	70	1.4%	51	0	51	0.0%
WBT	0	0	0	0.0%	0	0	0	0.0%
WBR	66	0	66	0.0%	37	1	38	2.6%
North Leg								
Approach	802	8	810		701	6	707	
Departure	479	14	493		847	6	853	
Total	1,281	22	1,303	1.7%	1,548	12	1,560	0.8%
South Leg								
Approach	448	14	462		953	6	959	
Departure	843	8	851		667	6	673	
Total	1,291	22	1,313	1.7%	1,620	12	1,632	0.7%
East Leg								
Approach	135	1	136		88	1	89	
Departure	63	1	64		228	1	229	
Total	198	2	200	1.0%	316	2	318	0.6%
West Leg								
Approach	0	0	0		0	0	0	
Departure	0	0	0		0	0	0	
Total	0	0	0	0.0%	0	0	0	0.0%
Total Approaches								
Approach	1,385	23	1,408		1,742	13	1,755	
Departure	1,385	23	1,408		1,742	13	1,755	
Total	2,770	46	2,816	1.6%	3,484	26	3,510	0.7%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
5 . Benson Avenue/13th Street								
NBL	3	0	3	0.0%	2	0	2	0.0%
NBT	449	14	463	3.0%	850	5	855	0.6%
NBR	51	4	55	7.3%	165	0	165	0.0%
SBL	48	1	49	2.0%	80	0	80	0.0%
SBT	728	11	739	1.5%	622	6	628	1.0%
SBR	5	1	6	16.7%	3	1	4	25.0%
EBL	2	1	3	33.3%	8	0	8	0.0%
EBT	1	0	1	0.0%	6	0	6	0.0%
EBR	2	10	12	83.3%	5	2	7	28.6%
WBL	124	1	125	0.8%	102	0	102	0.0%
WBT	3	1	4	25.0%	0	0	0	0.0%
WBR	44	0	44	0.0%	56	0	56	0.0%
North Leg								
Approach	781	13	794		705	7	712	
Departure	495	15	510		914	5	919	
Total	1,276	28	1,304	2.1%	1,619	12	1,631	0.7%
South Leg								
Approach	503	18	521		1,017	5	1,022	
Departure	854	22	876		729	8	737	
Total	1,357	40	1,397	2.9%	1,746	13	1,759	0.7%
East Leg								
Approach	171	2	173		158	0	158	
Departure	100	5	105		251	0	251	
Total	271	7	278	2.5%	409	0	409	0.0%
West Leg								
Approach	5	11	16		19	2	21	
Departure	11	2	13		5	1	6	
Total	16	13	29	44.8%	24	3	27	11.1%
Total Approaches								
Approach	1,460	44	1,504		1,899	14	1,913	
Departure	1,460	44	1,504		1,899	14	1,913	
Total	2,920	88	3,008	2.9%	3,798	28	3,826	0.7%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
6 . Monte Vista Avenue/Foothill Boulevard								
NBL	141	3	144	2.1%	181	0	181	0.0%
NBT	335	31	366	8.5%	685	8	693	1.2%
NBR	73	10	83	12.0%	120	4	124	3.2%
SBL	74	14	88	15.9%	160	2	162	1.2%
SBT	358	15	373	4.0%	492	5	497	1.0%
SBR	28	4	32	12.5%	62	1	63	1.6%
EBL	35	1	36	2.8%	46	0	46	0.0%
EBT	349	12	361	3.3%	814	1	815	0.1%
EBR	139	3	142	2.1%	207	0	207	0.0%
WBL	95	7	102	6.9%	133	3	136	2.2%
WBT	598	19	617	3.1%	519	3	522	0.6%
WBR	97	24	121	19.8%	147	2	149	1.3%
North Leg								
Approach	460	33	493		714	8	722	
Departure	467	56	523		878	10	888	
Total	927	89	1,016	8.8%	1,592	18	1,610	1.1%
South Leg								
Approach	549	44	593		986	12	998	
Departure	592	25	617		832	8	840	
Total	1,141	69	1,210	5.7%	1,818	20	1,838	1.1%
East Leg								
Approach	790	50	840		799	8	807	
Departure	496	36	532		1,094	7	1,101	
Total	1,286	86	1,372	6.3%	1,893	15	1,908	0.8%
West Leg								
Approach	523	16	539		1,067	1	1,068	
Departure	767	26	793		762	4	766	
Total	1,290	42	1,332	3.2%	1,829	5	1,834	0.3%
Total Approaches								
Approach	2,322	143	2,465		3,566	29	3,595	
Departure	2,322	143	2,465		3,566	29	3,595	
Total	4,644	286	4,930	5.8%	7,132	58	7,190	0.8%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
7 . Central Avenue/Foothill Boulevard								
NBL	183	6	189	3.2%	153	2	155	1.3%
NBT	0	0	0	0.0%	0	0	0	0.0%
NBR	131	12	143	8.4%	386	5	391	1.3%
SBL	0	0	0	0.0%	0	0	0	0.0%
SBT	0	0	0	0.0%	0	0	0	0.0%
SBR	0	0	0	0.0%	0	0	0	0.0%
EBL	0	0	0	0.0%	0	0	0	0.0%
EBT	336	10	346	2.9%	912	4	916	0.4%
EBR	95	9	104	8.7%	210	1	211	0.5%
WBL	195	13	208	6.3%	222	5	227	2.2%
WBT	637	15	652	2.3%	557	2	559	0.4%
WBR	0	0	0	0.0%	0	0	0	0.0%
North Leg								
Approach	0	0	0		0	0	0	
Departure	0	0	0		0	0	0	
Total	0	0	0	0.0%	0	0	0	0.0%
South Leg								
Approach	314	18	332		539	7	546	
Departure	290	22	312		432	6	438	
Total	604	40	644	6.2%	971	13	984	1.3%
East Leg								
Approach	832	28	860		779	7	786	
Departure	467	22	489		1,298	9	1,307	
Total	1,299	50	1,349	3.7%	2,077	16	2,093	0.8%
West Leg								
Approach	431	19	450		1,122	5	1,127	
Departure	820	21	841		710	4	714	
Total	1,251	40	1,291	3.1%	1,832	9	1,841	0.5%
Total Approaches								
Approach	1,577	65	1,642		2,440	19	2,459	
Departure	1,577	65	1,642		2,440	19	2,459	
Total	3,154	130	3,284	4.0%	4,880	38	4,918	0.8%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
9 . Benson Avenue/Foothill Boulevard								
NBL	79	3	82	3.7%	104	1	105	1.0%
NBT	298	7	305	2.3%	550	1	551	0.2%
NBR	92	2	94	2.1%	160	2	162	1.2%
SBL	108	9	117	7.7%	151	1	152	0.7%
SBT	472	8	480	1.7%	428	4	432	0.9%
SBR	233	6	239	2.5%	151	2	153	1.3%
EBL	86	3	89	3.4%	266	3	269	1.1%
EBT	284	14	298	4.7%	837	7	844	0.8%
EBR	30	1	31	3.2%	80	1	81	1.2%
WBL	123	0	123	0.0%	121	0	121	0.0%
WBT	505	20	525	3.8%	506	6	512	1.2%
WBR	90	6	96	6.3%	134	1	135	0.7%
North Leg								
Approach	813	23	836		730	7	737	
Departure	474	16	490		950	5	955	
Total	1,287	39	1,326	2.9%	1,680	12	1,692	0.7%
South Leg								
Approach	469	12	481		814	4	818	
Departure	625	9	634		629	5	634	
Total	1,094	21	1,115	1.9%	1,443	9	1,452	0.6%
East Leg								
Approach	718	26	744		761	7	768	
Departure	484	25	509		1,148	10	1,158	
Total	1,202	51	1,253	4.1%	1,909	17	1,926	0.9%
West Leg								
Approach	400	18	418		1,183	11	1,194	
Departure	817	29	846		761	9	770	
Total	1,217	47	1,264	3.7%	1,944	20	1,964	1.0%
Total Approaches								
Approach	2,400	79	2,479		3,488	29	3,517	
Departure	2,400	79	2,479		3,488	29	3,517	
Total	4,800	158	4,958	3.2%	6,976	58	7,034	0.8%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
10 . Central Avenue/11th Street								
NBL	33	2	35	5.7%	17	1	18	5.6%
NBT	272	19	291	6.5%	452	11	463	2.4%
NBR	62	7	69	10.1%	83	6	89	6.7%
SBL	25	1	26	3.8%	56	0	56	0.0%
SBT	224	16	240	6.7%	420	13	433	3.0%
SBR	19	0	19	0.0%	21	1	22	4.5%
EBL	10	1	11	9.1%	19	0	19	0.0%
EBT	26	1	27	3.7%	80	2	82	2.4%
EBR	15	3	18	16.7%	33	1	34	2.9%
WBL	40	17	57	29.8%	96	0	96	0.0%
WBT	44	10	54	18.5%	62	3	65	4.6%
WBR	18	4	22	18.2%	32	1	33	3.0%
North Leg								
Approach	268	17	285		497	14	511	
Departure	300	24	324		503	12	515	
Total	568	41	609	6.7%	1,000	26	1,026	2.5%
South Leg								
Approach	367	28	395		552	18	570	
Departure	279	36	315		549	14	563	
Total	646	64	710	9.0%	1,101	32	1,133	2.8%
East Leg								
Approach	102	31	133		190	4	194	
Departure	113	9	122		219	8	227	
Total	215	40	255	15.7%	409	12	421	2.9%
West Leg								
Approach	51	5	56		132	3	135	
Departure	96	12	108		100	5	105	
Total	147	17	164	10.4%	232	8	240	3.3%
Total Approaches								
Approach	788	81	869		1,371	39	1,410	
Departure	788	81	869		1,371	39	1,410	
Total	1,576	162	1,738	9.3%	2,742	78	2,820	2.8%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
11 . Central Avenue/Arrow Route								
NBL	61	6	67	9.0%	57	5	62	8.1%
NBT	320	26	346	7.5%	488	17	505	3.4%
NBR	92	7	99	7.1%	139	5	144	3.5%
SBL	10	0	10	0.0%	50	0	50	0.0%
SBT	258	31	289	10.7%	481	10	491	2.0%
SBR	29	0	29	0.0%	34	0	34	0.0%
EBL	21	1	22	4.5%	63	1	64	1.6%
EBT	86	3	89	3.4%	334	0	334	0.0%
EBR	45	2	47	4.3%	72	0	72	0.0%
WBL	142	5	147	3.4%	152	4	156	2.6%
WBT	270	4	274	1.5%	190	0	190	0.0%
WBR	56	1	57	1.8%	36	0	36	0.0%
North Leg								
Approach	297	31	328		565	10	575	
Departure	397	28	425		587	18	605	
Total	694	59	753	7.8%	1,152	28	1,180	2.4%
South Leg								
Approach	473	39	512		684	27	711	
Departure	445	38	483		705	14	719	
Total	918	77	995	7.7%	1,389	41	1,430	2.9%
East Leg								
Approach	468	10	478		378	4	382	
Departure	188	10	198		523	5	528	
Total	656	20	676	3.0%	901	9	910	1.0%
West Leg								
Approach	152	6	158		469	1	470	
Departure	360	10	370		281	5	286	
Total	512	16	528	3.0%	750	6	756	0.8%
Total Approaches								
Approach	1,390	86	1,476		2,096	42	2,138	
Departure	1,390	86	1,476		2,096	42	2,138	
Total	2,780	172	2,952	5.8%	4,192	84	4,276	2.0%

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Table B-2 - Existing Peak Hour Truck Percentages

	AM Peak Hour				PM Peak Hour			
	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %	Passenger Vehicles	Total Trucks	Total Vehicle Volume	Truck %
17 . Monte Vista Avenue/Claremont Boulevard								
NBL	17	0	17	0.0%	28	0	28	0.0%
NBT	519	23	542	4.2%	575	3	578	0.5%
NBR	2	1	3	33.3%	2	2	4	50.0%
SBL	0	1	1	100.0%	0	0	0	0.0%
SBT	527	19	546	3.5%	519	6	525	1.1%
SBR	308	3	311	1.0%	197	1	198	0.5%
EBL	168	11	179	6.1%	313	0	313	0.0%
EBT	0	0	0	0.0%	0	0	0	0.0%
EBR	5	0	5	0.0%	29	0	29	0.0%
WBL	2	2	4	50.0%	6	0	6	0.0%
WBT	1	0	1	0.0%	2	0	2	0.0%
WBR	2	0	2	0.0%	1	0	1	0.0%
North Leg								
Approach	835	23	858		716	7	723	
Departure	689	34	723		889	3	892	
Total	1,524	57	1,581	3.6%	1,605	10	1,615	0.6%
South Leg								
Approach	538	24	562		605	5	610	
Departure	534	21	555		554	6	560	
Total	1,072	45	1,117	4.0%	1,159	11	1,170	0.9%
East Leg								
Approach	5	2	7		9	0	9	
Departure	2	2	4		2	2	4	
Total	7	4	11	36.4%	11	2	13	15.4%
West Leg								
Approach	173	11	184		342	0	342	
Departure	326	3	329		227	1	228	
Total	499	14	513	2.7%	569	1	570	0.2%
Total Approaches								
Approach	1,551	60	1,611		1,672	12	1,684	
Departure	1,551	60	1,611		1,672	12	1,684	
Total	3,102	120	3,222	3.7%	3,344	24	3,368	0.7%

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Table B-3 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
12 . Central Avenue/Arrow Highway												
NBL	153	7.7%	141	12	21	162	90	2.9%	87	3	5	92
NBT	564	7.7%	520	44	75	595	630	2.9%	612	18	32	644
NBR	82	7.7%	76	6	10	86	117	2.9%	114	3	5	119
SBL	19	7.7%	18	1	2	20	43	2.9%	42	1	2	44
SBT	484	7.7%	447	37	63	510	803	2.9%	780	23	40	820
SBR	46	7.7%	42	4	7	49	60	2.9%	58	2	4	62
EBL	41	7.7%	38	3	5	43	118	2.9%	115	3	5	120
EBT	259	7.7%	239	20	34	273	731	2.9%	710	21	37	747
EBR	103	7.7%	95	8	14	109	214	2.9%	208	6	11	219
WBL	118	7.7%	109	9	15	124	161	2.9%	156	5	9	165
WBT	504	7.7%	465	39	67	532	275	2.9%	267	8	14	281
WBR	36	7.7%	33	3	5	38	42	2.9%	41	1	2	43
North Leg												
Approach	549		507	42	72	579	906		880	26	46	926
Departure	641		591	50	85	676	790		768	22	39	807
Total	1,190		1,098	92	157	1,255	1,696		1,648	48	85	1,733
South Leg												
Approach	799		737	62	106	843	837		813	24	42	855
Departure	705		651	54	92	743	1,178		1,144	34	60	1,204
Total	1,504		1,388	116	198	1,586	2,015		1,957	58	102	2,059
East Leg												
Approach	658		607	51	87	694	478		464	14	25	489
Departure	360		333	27	46	379	891		866	25	44	910
Total	1,018		940	78	133	1,073	1,369		1,330	39	69	1,399
West Leg												
Approach	403		372	31	53	425	1,063		1,033	30	53	1,086
Departure	703		648	55	95	743	425		412	13	23	435
Total	1,106		1,020	86	148	1,168	1,488		1,445	43	76	1,521
Total Approaches												
Approach	2,409		2,223	186	318	2,541	3,284		3,190	94	166	3,356
Departure	2,409		2,223	186	318	2,541	3,284		3,190	94	166	3,356
Total	4,818		4,446	372	636	5,082	6,568		6,380	188	332	6,712

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Table B-3 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
13 . Central Avenue/Moreno Street												
NBL	131	7.7%	121	10	17	138	300	2.9%	291	9	16	307
NBT	799	7.7%	737	62	106	843	812	2.9%	789	23	40	829
NBR	118	7.7%	109	9	15	124	219	2.9%	213	6	11	224
SBL	35	7.7%	32	3	5	37	131	2.9%	127	4	7	134
SBT	640	7.7%	590	50	86	676	1,050	2.9%	1,020	30	53	1,073
SBR	24	7.7%	22	2	3	25	82	2.9%	80	2	4	84
EBL	24	7.7%	22	2	3	25	103	2.9%	100	3	5	105
EBT	104	7.7%	96	8	14	110	363	2.9%	353	10	18	371
EBR	62	7.7%	57	5	9	66	243	2.9%	236	7	12	248
WBL	180	7.7%	166	14	24	190	312	2.9%	303	9	16	319
WBT	150	7.7%	138	12	21	159	253	2.9%	246	7	12	258
WBR	16	7.7%	15	1	2	17	49	2.9%	48	1	2	50
North Leg												
Approach	699		644	55	94	738	1,263		1,227	36	64	1,291
Departure	839		774	65	111	885	964		937	27	47	984
Total	1,538		1,418	120	205	1,623	2,227		2,164	63	111	2,275
South Leg												
Approach	1,048		967	81	138	1,105	1,331		1,293	38	67	1,360
Departure	882		813	69	119	932	1,605		1,559	46	81	1,640
Total	1,930		1,780	150	257	2,037	2,936		2,852	84	148	3,000
East Leg												
Approach	346		319	27	47	366	614		597	17	30	627
Departure	257		237	20	34	271	713		693	20	36	729
Total	603		556	47	81	637	1,327		1,290	37	66	1,356
West Leg												
Approach	190		175	15	26	201	709		689	20	35	724
Departure	305		281	24	41	322	635		617	18	32	649
Total	495		456	39	67	523	1,344		1,306	38	67	1,373
Total Approaches												
Approach	2,283		2,105	178	305	2,410	3,917		3,806	111	196	4,002
Departure	2,283		2,105	178	305	2,410	3,917		3,806	111	196	4,002
Total	4,566		4,210	356	610	4,820	7,834		7,612	222	392	8,004

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Table B-3 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
14 . Central Avenue/I-10 Westbound Ramps												
NBL	387	7.7%	357	30	51	408	328	2.9%	319	9	16	335
NBT	834	7.7%	769	65	111	880	1,230	2.9%	1,195	35	61	1,256
NBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
SBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
SBT	584	7.7%	539	45	77	616	1,331	2.9%	1,293	38	67	1,360
SBR	296	7.7%	273	23	39	312	456	2.9%	443	13	23	466
EBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
EBT	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
EBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
WBL	311	7.7%	287	24	41	328	511	2.9%	496	15	26	522
WBT	3	7.7%	3	0	0	3	2	2.9%	2	0	0	2
WBR	278	7.7%	256	22	38	294	441	2.9%	428	13	23	451
North Leg												
Approach	880		812	68	116	928	1,787		1,736	51	90	1,826
Departure	1,112		1,025	87	149	1,174	1,671		1,623	48	84	1,707
Total	1,992		1,837	155	265	2,102	3,458		3,359	99	174	3,533
South Leg												
Approach	1,221		1,126	95	162	1,288	1,558		1,514	44	77	1,591
Departure	895		826	69	118	944	1,842		1,789	53	93	1,882
Total	2,116		1,952	164	280	2,232	3,400		3,303	97	170	3,473
East Leg												
Approach	592		546	46	79	625	954		926	28	49	975
Departure	0		0	0	0	0	0		0	0	0	0
Total	592		546	46	79	625	954		926	28	49	975
West Leg												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	686		633	53	90	723	786		764	22	39	803
Total	686		633	53	90	723	786		764	22	39	803
Total Approaches												
Approach	2,693		2,484	209	357	2,841	4,299		4,176	123	216	4,392
Departure	2,693		2,484	209	357	2,841	4,299		4,176	123	216	4,392
Total	5,386		4,968	418	714	5,682	8,598		8,352	246	432	8,784

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Table B-3 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
15 . Central Avenue/I-10 Eastbound Ramps												
NBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
NBT	949	7.7%	876	73	125	1,001	1,155	2.9%	1,122	33	58	1,180
NBR	507	7.7%	468	39	67	535	557	2.9%	541	16	28	569
SBL	166	7.7%	153	13	22	175	499	2.9%	485	14	25	510
SBT	718	7.7%	662	56	96	758	1,371	2.9%	1,332	39	68	1,400
SBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
EBL	256	7.7%	236	20	34	270	377	2.9%	366	11	19	385
EBT	3	7.7%	3	0	0	3	5	2.9%	5	0	0	5
EBR	257	7.7%	237	20	34	271	358	2.9%	348	10	18	366
WBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
WBT	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
WBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
North Leg												
Approach	884		815	69	118	933	1,870		1,817	53	93	1,910
Departure	1,205		1,112	93	159	1,271	1,532		1,488	44	77	1,565
Total	2,089		1,927	162	277	2,204	3,402		3,305	97	170	3,475
South Leg												
Approach	1,456		1,344	112	192	1,536	1,712		1,663	49	86	1,749
Departure	975		899	76	130	1,029	1,729		1,680	49	86	1,766
Total	2,431		2,243	188	322	2,565	3,441		3,343	98	172	3,515
East Leg												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	676		624	52	89	713	1,061		1,031	30	53	1,084
Total	676		624	52	89	713	1,061		1,031	30	53	1,084
West Leg												
Approach	516		476	40	68	544	740		719	21	37	756
Departure	0		0	0	0	0	0		0	0	0	0
Total	516		476	40	68	544	740		719	21	37	756
Total Approaches												
Approach	2,856		2,635	221	378	3,013	4,322		4,199	123	216	4,415
Departure	2,856		2,635	221	378	3,013	4,322		4,199	123	216	4,415
Total	5,712		5,270	442	756	6,026	8,644		8,398	246	432	8,830

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
1 . Monte Vista Avenue/Baseline Road						
NBL	131	2	133	153	1	154
NBT	101	1	102	161	1	162
NBR	393	0	393	616	0	616
SBL	222	0	222	157	0	157
SBT	142	1	143	112	1	113
SBR	107	0	107	46	0	46
EBL	45	0	45	57	0	57
EBT	363	0	363	726	0	726
EBR	168	2	170	162	3	165
WBL	833	0	833	503	0	503
WBT	718	0	718	505	0	505
WBR	277	0	277	160	0	160
North Leg						
Approach	471	1	472	315	1	316
Departure	423	1	424	378	1	379
Total	894	2	896	693	2	695
South Leg						
Approach	625	3	628	930	2	932
Departure	1,143	3	1,146	777	4	781
Total	1,768	6	1,774	1,707	6	1,713
East Leg						
Approach	1,828	0	1,828	1,168	0	1,168
Departure	978	0	978	1,499	0	1,499
Total	2,806	0	2,806	2,667	0	2,667
West Leg						
Approach	576	2	578	945	3	948
Departure	956	2	958	704	1	705
Total	1,532	4	1,536	1,649	4	1,653
Total Approaches						
Approach	3,500	6	3,506	3,358	6	3,364
Departure	3,500	6	3,506	3,358	6	3,364
Total	7,000	12	7,012	6,716	12	6,728

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
2 SR-210 Ramps/Baseline Road						
NBL	238	0	238	181	0	181
NBT	0	0	0	0	0	0
NBR	450	5	455	837	6	843
SBL	65	5	70	60	6	66
SBT	0	0	0	0	0	0
SBR	769	0	769	577	0	577
EBL	173	0	173	176	0	176
EBT	331	0	331	825	0	825
EBR	474	0	474	498	0	498
WBL	27	5	32	28	3	31
WBT	821	0	821	409	0	409
WBR	696	5	701	324	3	327
North Leg						
Approach	834	5	839	637	6	643
Departure	869	5	874	500	3	503
Total	1,703	10	1,713	1,137	9	1,146
South Leg						
Approach	688	5	693	1,018	6	1,024
Departure	501	5	506	526	3	529
Total	1,189	10	1,199	1,544	9	1,553
East Leg						
Approach	1,544	10	1,554	761	6	767
Departure	846	10	856	1,722	12	1,734
Total	2,390	20	2,410	2,483	18	2,501
West Leg						
Approach	978	0	978	1,499	0	1,499
Departure	1,828	0	1,828	1,167	0	1,167
Total	2,806	0	2,806	2,666	0	2,666
Total Approaches						
Approach	4,044	20	4,064	3,915	18	3,933
Departure	4,044	20	4,064	3,915	18	3,933
Total	8,088	40	8,128	7,830	36	7,866

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
3 Benson Avenue/Baseline Road						
NBL	392	10	402	275	7	282
NBT	131	3	134	355	2	357
NBR	71	2	73	220	1	221
SBL	17	0	17	16	0	16
SBT	288	3	291	170	4	174
SBR	270	0	270	101	0	101
EBL	68	0	68	254	0	254
EBT	386	0	386	974	0	974
EBR	391	10	401	494	13	507
WBL	235	2	237	140	3	143
WBT	882	0	882	385	0	385
WBR	19	0	19	32	0	32
North Leg						
Approach	575	3	578	287	4	291
Departure	218	3	221	641	2	643
Total	793	6	799	928	6	934
South Leg						
Approach	594	15	609	850	10	860
Departure	914	15	929	804	20	824
Total	1,508	30	1,538	1,654	30	1,684
East Leg						
Approach	1,136	2	1,138	557	3	560
Departure	474	2	476	1,210	1	1,211
Total	1,610	4	1,614	1,767	4	1,771
West Leg						
Approach	845	10	855	1,722	13	1,735
Departure	1,544	10	1,554	761	7	768
Total	2,389	20	2,409	2,483	20	2,503
Total Approaches						
Approach	3,150	30	3,180	3,416	30	3,446
Departure	3,150	30	3,180	3,416	30	3,446
Total	6,300	60	6,360	6,832	60	6,892

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
4 Benson Avenue/15th Street						
NBL	0	0	0	0	0	0
NBT	440	15	455	821	10	831
NBR	35	0	35	145	0	145
SBL	31	0	31	85	0	85
SBT	787	15	802	626	19	645
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	71	0	71	51	0	51
WBT	0	0	0	0	0	0
WBR	66	0	66	39	0	39
North Leg						
Approach	818	15	833	711	19	730
Departure	506	15	521	860	10	870
Total	1,324	30	1,354	1,571	29	1,600
South Leg						
Approach	475	15	490	966	10	976
Departure	858	15	873	677	19	696
Total	1,333	30	1,363	1,643	29	1,672
East Leg						
Approach	137	0	137	90	0	90
Departure	66	0	66	230	0	230
Total	203	0	203	320	0	320
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	1,430	30	1,460	1,767	29	1,796
Departure	1,430	30	1,460	1,767	29	1,796
Total	2,860	60	2,920	3,534	58	3,592

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
5 Benson Avenue/13th Street						
NBL	3	10	13	2	13	15
NBT	475	5	480	858	3	861
NBR	58	0	58	165	0	165
SBL	50	0	50	80	0	80
SBT	746	5	751	633	6	639
SBR	8	10	18	6	13	19
EBL	5	10	15	8	7	15
EBT	1	0	1	6	0	6
EBR	32	10	42	10	7	17
WBL	126	0	126	102	0	102
WBT	5	0	5	0	0	0
WBR	44	0	44	56	0	56
North Leg						
Approach	804	15	819	719	19	738
Departure	524	15	539	922	10	932
Total	1,328	30	1,358	1,641	29	1,670
South Leg						
Approach	536	15	551	1,025	16	1,041
Departure	904	15	919	745	13	758
Total	1,440	30	1,470	1,770	29	1,799
East Leg						
Approach	175	0	175	158	0	158
Departure	109	0	109	251	0	251
Total	284	0	284	409	0	409
West Leg						
Approach	38	20	58	24	14	38
Departure	16	20	36	8	26	34
Total	54	40	94	32	40	72
Total Approaches						
Approach	1,553	50	1,603	1,926	49	1,975
Departure	1,553	50	1,603	1,926	49	1,975
Total	3,106	100	3,206	3,852	98	3,950

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
6 Monte Vista Avenue/Foothill Boulevard						
NBL	146	0	146	181	0	181
NBT	386	0	386	698	0	698
NBR	95	5	100	129	6	135
SBL	100	5	105	165	6	171
SBT	382	0	382	501	0	501
SBR	36	0	36	64	0	64
EBL	37	0	37	46	0	46
EBT	367	10	377	816	13	829
EBR	144	0	144	207	0	207
WBL	110	5	115	138	3	141
WBT	629	10	639	525	7	532
WBR	145	5	150	152	3	155
North Leg						
Approach	518	5	523	730	6	736
Departure	568	5	573	896	3	899
Total	1,086	10	1,096	1,626	9	1,635
South Leg						
Approach	627	5	632	1,008	6	1,014
Departure	636	5	641	846	3	849
Total	1,263	10	1,273	1,854	9	1,863
East Leg						
Approach	884	20	904	815	13	828
Departure	562	20	582	1,110	25	1,135
Total	1,446	40	1,486	1,925	38	1,963
West Leg						
Approach	548	10	558	1,069	13	1,082
Departure	811	10	821	770	7	777
Total	1,359	20	1,379	1,839	20	1,859
Total Approaches						
Approach	2,577	40	2,617	3,622	38	3,660
Departure	2,577	40	2,617	3,622	38	3,660
Total	5,154	80	5,234	7,244	76	7,320

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
7 Central Avenue/Foothill Boulevard						
NBL	195	0	195	156	0	156
NBT	0	33	33	0	41	41
NBR	149	0	149	394	0	394
SBL	0	29	29	0	20	20
SBT	0	18	18	0	13	13
SBR	0	5	5	0	3	3
EBL	0	20	20	0	26	26
EBT	356	0	356	918	0	918
EBR	113	0	113	212	0	212
WBL	221	15	236	231	10	241
WBT	675	15	690	560	10	570
WBR	0	10	10	0	13	13
North Leg						
Approach	0	52	52	0	36	36
Departure	0	63	63	0	80	80
Total	0	115	115	0	116	116
South Leg						
Approach	344	33	377	550	41	591
Departure	334	33	367	443	23	466
Total	678	66	744	993	64	1,057
East Leg						
Approach	896	40	936	791	33	824
Departure	505	29	534	1,312	20	1,332
Total	1,401	69	1,470	2,103	53	2,156
West Leg						
Approach	469	20	489	1,130	26	1,156
Departure	870	20	890	716	13	729
Total	1,339	40	1,379	1,846	39	1,885
Total Approaches						
Approach	1,709	145	1,854	2,471	136	2,607
Departure	1,709	145	1,854	2,471	136	2,607
Total	3,418	290	3,708	4,942	272	5,214

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
8 Project Driveway/Foothill Boulevard						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	15	15	0	10	10
EBL	0	0	0	0	0	0
EBT	505	29	534	1,312	20	1,332
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	896	20	916	791	26	817
WBR	0	10	10	0	13	13
North Leg						
Approach	0	15	15	0	10	10
Departure	0	10	10	0	13	13
Total	0	25	25	0	23	23
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	896	30	926	791	39	830
Departure	505	29	534	1,312	20	1,332
Total	1,401	59	1,460	2,103	59	2,162
West Leg						
Approach	505	29	534	1,312	20	1,332
Departure	896	35	931	791	36	827
Total	1,401	64	1,465	2,103	56	2,159
Total Approaches						
Approach	1,401	74	1,475	2,103	69	2,172
Departure	1,401	74	1,475	2,103	69	2,172
Total	2,802	148	2,950	4,206	138	4,344

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
9 Benson Avenue/Foothill Boulevard						
NBL	84	10	94	106	13	119
NBT	309	5	314	552	6	558
NBR	97	0	97	163	0	163
SBL	134	5	139	154	3	157
SBT	485	5	490	435	3	438
SBR	246	5	251	157	6	163
EBL	91	5	96	271	3	274
EBT	309	15	324	849	10	859
EBR	32	10	42	82	7	89
WBL	123	0	123	121	0	121
WBT	550	15	565	515	19	534
WBR	103	5	108	137	6	143
North Leg						
Approach	865	15	880	746	12	758
Departure	503	15	518	960	15	975
Total	1,368	30	1,398	1,706	27	1,733
South Leg						
Approach	490	15	505	821	19	840
Departure	640	15	655	638	10	648
Total	1,130	30	1,160	1,459	29	1,488
East Leg						
Approach	776	20	796	773	25	798
Departure	540	20	560	1,166	13	1,179
Total	1,316	40	1,356	1,939	38	1,977
West Leg						
Approach	432	30	462	1,202	20	1,222
Departure	880	30	910	778	38	816
Total	1,312	60	1,372	1,980	58	2,038
Total Approaches						
Approach	2,563	80	2,643	3,542	76	3,618
Departure	2,563	80	2,643	3,542	76	3,618
Total	5,126	160	5,286	7,084	152	7,236

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
10 Central Avenue/11th Street						
NBL	37	0	37	19	0	19
NBT	304	33	337	470	41	511
NBR	73	0	73	93	0	93
SBL	27	0	27	56	0	56
SBT	251	32	283	442	23	465
SBR	19	0	19	23	0	23
EBL	12	0	12	19	0	19
EBT	28	0	28	83	0	83
EBR	20	0	20	35	0	35
WBL	68	0	68	96	0	96
WBT	59	0	59	67	0	67
WBR	24	0	24	34	0	34
North Leg						
Approach	297	32	329	521	23	544
Departure	340	33	373	523	41	564
Total	637	65	702	1,044	64	1,108
South Leg						
Approach	414	33	447	582	41	623
Departure	339	32	371	573	23	596
Total	753	65	818	1,155	64	1,219
East Leg						
Approach	151	0	151	197	0	197
Departure	128	0	128	232	0	232
Total	279	0	279	429	0	429
West Leg						
Approach	60	0	60	137	0	137
Departure	115	0	115	109	0	109
Total	175	0	175	246	0	246
Total Approaches						
Approach	922	65	987	1,437	64	1,501
Departure	922	65	987	1,437	64	1,501
Total	1,844	130	1,974	2,874	128	3,002

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
11 Central Avenue/Arrow Route						
NBL	71	0	71	66	0	66
NBT	364	31	395	518	39	557
NBR	104	0	104	147	0	147
SBL	10	1	11	50	1	51
SBT	311	30	341	500	22	522
SBR	29	1	30	34	1	35
EBL	23	1	24	65	1	66
EBT	91	0	91	334	0	334
EBR	50	0	50	72	0	72
WBL	150	0	150	158	0	158
WBT	277	0	277	190	0	190
WBR	58	1	59	36	1	37
North Leg						
Approach	350	32	382	584	24	608
Departure	445	33	478	619	41	660
Total	795	65	860	1,203	65	1,268
South Leg						
Approach	539	31	570	731	39	770
Departure	511	30	541	730	22	752
Total	1,050	61	1,111	1,461	61	1,522
East Leg						
Approach	485	1	486	384	1	385
Departure	205	1	206	531	1	532
Total	690	2	692	915	2	917
West Leg						
Approach	164	1	165	471	1	472
Departure	377	1	378	290	1	291
Total	541	2	543	761	2	763
Total Approaches						
Approach	1,538	65	1,603	2,170	65	2,235
Departure	1,538	65	1,603	2,170	65	2,235
Total	3,076	130	3,206	4,340	130	4,470

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
12 Central Avenue/Arrow Highway						
NBL	162	0	162	92	0	92
NBT	595	29	624	644	36	680
NBR	86	0	86	119	0	119
SBL	20	1	21	44	1	45
SBT	510	28	538	820	21	841
SBR	49	1	50	62	1	63
EBL	43	1	44	120	1	121
EBT	273	0	273	747	0	747
EBR	109	0	109	219	0	219
WBL	124	0	124	165	0	165
WBT	532	0	532	281	0	281
WBR	38	1	39	43	1	44
North Leg						
Approach	579	30	609	926	23	949
Departure	676	31	707	807	38	845
Total	1,255	61	1,316	1,733	61	1,794
South Leg						
Approach	843	29	872	855	36	891
Departure	743	28	771	1,204	21	1,225
Total	1,586	57	1,643	2,059	57	2,116
East Leg						
Approach	694	1	695	489	1	490
Departure	379	1	380	910	1	911
Total	1,073	2	1,075	1,399	2	1,401
West Leg						
Approach	425	1	426	1,086	1	1,087
Departure	743	1	744	435	1	436
Total	1,168	2	1,170	1,521	2	1,523
Total Approaches						
Approach	2,541	61	2,602	3,356	61	3,417
Departure	2,541	61	2,602	3,356	61	3,417
Total	5,082	122	5,204	6,712	122	6,834

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
13 Central Avenue/Moreno Street						
NBL	138	0	138	307	0	307
NBT	843	27	870	829	34	863
NBR	124	0	124	224	0	224
SBL	37	1	38	134	1	135
SBT	676	26	702	1,073	19	1,092
SBR	25	1	26	84	1	85
EBL	25	1	26	105	1	106
EBT	110	0	110	371	0	371
EBR	66	0	66	248	0	248
WBL	190	0	190	319	0	319
WBT	159	0	159	258	0	258
WBR	17	1	18	50	1	51
North Leg						
Approach	738	28	766	1,291	21	1,312
Departure	885	29	914	984	36	1,020
Total	1,623	57	1,680	2,275	57	2,332
South Leg						
Approach	1,105	27	1,132	1,360	34	1,394
Departure	932	26	958	1,640	19	1,659
Total	2,037	53	2,090	3,000	53	3,053
East Leg						
Approach	366	1	367	627	1	628
Departure	271	1	272	729	1	730
Total	637	2	639	1,356	2	1,358
West Leg						
Approach	201	1	202	724	1	725
Departure	322	1	323	649	1	650
Total	523	2	525	1,373	2	1,375
Total Approaches						
Approach	2,410	57	2,467	4,002	57	4,059
Departure	2,410	57	2,467	4,002	57	4,059
Total	4,820	114	4,934	8,004	114	8,118

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
14 Central Avenue/I-10 Westbound Ramps						
NBL	408	0	408	335	0	335
NBT	880	12	892	1,256	15	1,271
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	616	16	632	1,360	12	1,372
SBR	312	12	324	466	9	475
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	328	0	328	522	0	522
WBT	3	0	3	2	0	2
WBR	294	16	310	451	20	471
North Leg						
Approach	928	28	956	1,826	21	1,847
Departure	1,174	28	1,202	1,707	35	1,742
Total	2,102	56	2,158	3,533	56	3,589
South Leg						
Approach	1,288	12	1,300	1,591	15	1,606
Departure	944	16	960	1,882	12	1,894
Total	2,232	28	2,260	3,473	27	3,500
East Leg						
Approach	625	16	641	975	20	995
Departure	0	0	0	0	0	0
Total	625	16	641	975	20	995
West Leg						
Approach	0	0	0	0	0	0
Departure	723	12	735	803	9	812
Total	723	12	735	803	9	812
Total Approaches						
Approach	2,841	56	2,897	4,392	56	4,448
Departure	2,841	56	2,897	4,392	56	4,448
Total	5,682	112	5,794	8,784	112	8,896

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
15 Central Avenue/I-10 Eastbound Ramps						
NBL	0	0	0	0	0	0
NBT	1,001	0	1,001	1,180	0	1,180
NBR	535	0	535	569	0	569
SBL	175	16	191	510	12	522
SBT	758	0	758	1,400	0	1,400
SBR	0	0	0	0	0	0
EBL	270	12	282	385	15	400
EBT	3	0	3	5	0	5
EBR	271	0	271	366	0	366
WBL	0	0	0	0	0	0
WBT	0	0	0	0	0	0
WBR	0	0	0	0	0	0
North Leg						
Approach	933	16	949	1,910	12	1,922
Departure	1,271	12	1,283	1,565	15	1,580
Total	2,204	28	2,232	3,475	27	3,502
South Leg						
Approach	1,536	0	1,536	1,749	0	1,749
Departure	1,029	0	1,029	1,766	0	1,766
Total	2,565	0	2,565	3,515	0	3,515
East Leg						
Approach	0	0	0	0	0	0
Departure	713	16	729	1,084	12	1,096
Total	713	16	729	1,084	12	1,096
West Leg						
Approach	544	12	556	756	15	771
Departure	0	0	0	0	0	0
Total	544	12	556	756	15	771
Total Approaches						
Approach	3,013	28	3,041	4,415	27	4,442
Departure	3,013	28	3,041	4,415	27	4,442
Total	6,026	56	6,082	8,830	54	8,884

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
16 Project Driveway 2/Foothill Boulevard						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	15	15	0	10	10
EBL	0	0	0	0	0	0
EBT	505	29	534	1,312	20	1,332
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	896	25	921	791	23	814
WBR	0	10	10	0	13	13
North Leg						
Approach	0	15	15	0	10	10
Departure	0	10	10	0	13	13
Total	0	25	25	0	23	23
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	896	35	931	791	36	827
Departure	505	29	534	1,312	20	1,332
Total	1,401	64	1,465	2,103	56	2,159
West Leg						
Approach	505	29	534	1,312	20	1,332
Departure	896	40	936	791	33	824
Total	1,401	69	1,470	2,103	53	2,156
Total Approaches						
Approach	1,401	79	1,480	2,103	66	2,169
Departure	1,401	79	1,480	2,103	66	2,169
Total	2,802	158	2,960	4,206	132	4,338

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Table B-4 - Existing Peak Hour PCE Volume Summary

	AM Peak Hour			PM Peak Hour		
	AM Peak Hour Without Project	Project Trips	Existing With Project	Existing Without Project	Project Trips	Existing With Project
17 Monte Vista Avenue/Claremont Boulevard						
NBL	17	2	19	28	1	29
NBT	563	3	566	582	2	584
NBR	4	0	4	7	0	7
SBL	3	0	3	0	0	0
SBT	563	3	566	529	4	533
SBR	314	0	314	199	0	199
EBL	187	0	187	313	0	313
EBT	0	0	0	0	0	0
EBR	5	2	7	29	3	32
WBL	6	0	6	6	0	6
WBT	1	0	1	2	0	2
WBR	2	0	2	1	0	1
North Leg						
Approach	880	3	883	728	4	732
Departure	752	3	755	896	2	898
Total	1,632	6	1,638	1,624	6	1,630
South Leg						
Approach	584	5	589	617	3	620
Departure	574	5	579	564	7	571
Total	1,158	10	1,168	1,181	10	1,191
East Leg						
Approach	9	0	9	9	0	9
Departure	7	0	7	7	0	7
Total	16	0	16	16	0	16
West Leg						
Approach	192	2	194	342	3	345
Departure	332	2	334	229	1	230
Total	524	4	528	571	4	575
Total Approaches						
Approach	1,665	10	1,675	1,696	10	1,706
Departure	1,665	10	1,675	1,696	10	1,706
Total	3,330	20	3,350	3,392	20	3,412

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
1 . Monte Vista Avenue/Baseline Road														
NBL	131	5	136	18	154	2	156	153	6	159	64	223	1	224
NBT	101	4	105	3	108	1	109	161	6	167	44	211	1	212
NBR	393	16	409	79	488	0	488	616	25	641	175	816	0	816
SBL	222	9	231	3	234	0	234	157	6	163	5	168	0	168
SBT	142	6	148	38	186	1	187	112	4	116	6	122	1	123
SBR	107	4	111	0	111	0	111	46	2	48	0	48	0	48
EBL	45	2	47	0	47	0	47	57	2	59	0	59	0	59
EBT	363	15	378	43	421	0	421	726	29	755	49	804	0	804
EBR	168	7	175	42	217	2	219	162	6	168	34	202	3	205
WBL	833	33	866	109	975	0	975	503	20	523	105	628	0	628
WBT	718	29	747	20	767	0	767	505	20	525	57	582	0	582
WBR	277	11	288	2	290	0	290	160	6	166	5	171	0	171
North Leg														
Approach	471	19	490	41	531	1	532	315	12	327	11	338	1	339
Departure	423	17	440	5	445	1	446	378	14	392	49	441	1	442
Total	894	36	930	46	976	2	978	693	26	719	60	779	2	781
South Leg														
Approach	625	25	650	100	750	3	753	930	37	967	283	1,250	2	1,252
Departure	1,143	46	1,189	189	1,378	3	1,381	777	30	807	145	952	4	956
Total	1,768	71	1,839	289	2,128	6	2,134	1,707	67	1,774	428	2,202	6	2,208
East Leg														
Approach	1,828	73	1,901	131	2,032	0	2,032	1,168	46	1,214	167	1,381	0	1,381
Departure	978	40	1,018	125	1,143	0	1,143	1,499	60	1,559	229	1,788	0	1,788
Total	2,806	113	2,919	256	3,175	0	3,175	2,667	106	2,773	396	3,169	0	3,169
West Leg														
Approach	576	24	600	85	685	2	687	945	37	982	83	1,065	3	1,068
Departure	956	38	994	38	1,032	2	1,034	704	28	732	121	853	1	854
Total	1,532	62	1,594	123	1,717	4	1,721	1,649	65	1,714	204	1,918	4	1,922
Total Approaches														
Approach	3,500	141	3,641	357	3,998	6	4,004	3,358	132	3,490	544	4,034	6	4,040
Departure	3,500	141	3,641	357	3,998	6	4,004	3,358	132	3,490	544	4,034	6	4,040
Total	7,000	282	7,282	714	7,996	12	8,008	6,716	264	6,980	1,088	8,068	12	8,080

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
2 SR-210 Ramps/Baseline Road														
NBL	238	10	248	38	286	0	286	181	7	188	40	228	0	228
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	450	18	468	55	523	5	528	837	33	870	161	1,031	6	1037
SBL	65	3	68	55	123	5	128	60	2	62	161	223	6	229
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	769	31	800	61	861	0	861	577	23	600	58	658	0	658
EBL	173	7	180	29	209	0	209	176	7	183	61	244	0	244
EBT	331	13	344	39	383	0	383	825	33	858	64	922	0	922
EBR	474	19	493	53	546	0	546	498	20	518	93	611	0	611
WBL	27	1	28	147	175	5	180	28	1	29	107	136	3	139
WBT	821	33	854	30	884	0	884	409	16	425	61	486	0	486
WBR	696	28	724	148	872	5	877	324	13	337	108	445	3	448
North Leg														
Approach	834	34	868	116	984	5	989	637	25	662	219	881	6	887
Departure	869	35	904	177	1,081	5	1,086	500	20	520	169	689	3	692
Total	1,703	69	1,772	293	2,065	10	2,075	1,137	45	1,182	388	1,570	9	1,579
South Leg														
Approach	688	28	716	93	809	5	814	1,018	40	1,058	201	1,259	6	1,265
Departure	501	20	521	200	721	5	726	526	21	547	200	747	3	750
Total	1,189	48	1,237	293	1,530	10	1,540	1,544	61	1,605	401	2,006	9	2,015
East Leg														
Approach	1,544	62	1,606	325	1,931	10	1,941	761	30	791	276	1,067	6	1,073
Departure	846	34	880	149	1,029	10	1,039	1,722	68	1,790	386	2,176	12	2,188
Total	2,390	96	2,486	474	2,960	20	2,980	2,483	98	2,581	662	3,243	18	3,261
West Leg														
Approach	978	39	1,017	121	1,138	0	1,138	1,499	60	1,559	218	1,777	0	1,777
Departure	1,828	74	1,902	129	2,031	0	2,031	1,167	46	1,213	159	1,372	0	1,372
Total	2,806	113	2,919	250	3,169	0	3,169	2,666	106	2,772	377	3,149	0	3,149
Total Approaches														
Approach	4,044	163	4,207	655	4,862	20	4,882	3,915	155	4,070	914	4,984	18	5,002
Departure	4,044	163	4,207	655	4,862	20	4,882	3,915	155	4,070	914	4,984	18	5,002
Total	8,088	326	8,414	1,310	9,724	40	9,764	7,830	310	8,140	1,828	9,968	36	10,004

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
3 Benson Avenue/Baseline Road														
NBL	392	16	408	49	457	10	467	275	11	286	95	381	7	388
NBT	131	5	136	14	150	3	153	355	14	369	112	481	2	483
NBR	71	3	74	11	85	2	87	220	9	229	30	259	1	260
SBL	17	1	18	1	19	0	19	16	1	17	9	26	0	26
SBT	288	12	300	22	322	3	325	170	7	177	57	234	4	238
SBR	270	11	281	17	298	0	298	101	4	105	27	132	0	132
EBL	68	3	71	11	82	0	82	254	10	264	29	293	0	293
EBT	386	15	401	36	437	0	437	974	39	1013	55	1,068	0	1068
EBR	391	16	407	67	474	10	484	494	20	514	68	582	13	595
WBL	235	9	244	27	271	2	273	140	6	146	17	163	3	166
WBT	882	35	917	36	953	0	953	385	15	400	58	458	0	458
WBR	19	1	20	1	21	0	21	32	1	33	17	50	0	50
North Leg														
Approach	575	24	599	40	639	3	642	287	12	299	93	392	4	396
Departure	218	9	227	26	253	3	256	641	25	666	158	824	2	826
Total	793	33	826	66	892	6	898	928	37	965	251	1,216	6	1,222
South Leg														
Approach	594	24	618	74	692	15	707	850	34	884	237	1,121	10	1,131
Departure	914	37	951	116	1,067	15	1,082	804	33	837	142	979	20	999
Total	1,508	61	1,569	190	1,759	30	1,789	1,654	67	1,721	379	2,100	30	2,130
East Leg														
Approach	1,136	45	1,181	64	1,245	2	1,247	557	22	579	92	671	3	674
Departure	474	19	493	48	541	2	543	1,210	49	1,259	94	1,353	1	1,354
Total	1,610	64	1,674	112	1,786	4	1,790	1,767	71	1,838	186	2,024	4	2,028
West Leg														
Approach	845	34	879	114	993	10	1,003	1,722	69	1,791	152	1,943	13	1,956
Departure	1,544	62	1,606	102	1,708	10	1,718	761	30	791	180	971	7	978
Total	2,389	96	2,485	216	2,701	20	2,721	2,483	99	2,582	332	2,914	20	2,934
Total Approaches														
Approach	3,150	127	3,277	292	3,569	30	3,599	3,416	137	3,553	574	4,127	30	4,157
Departure	3,150	127	3,277	292	3,569	30	3,599	3,416	137	3,553	574	4,127	30	4,157
Total	6,300	254	6,554	584	7,138	60	7,198	6,832	274	7,106	1,148	8,254	60	8,314

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
4 Benson Avenue/15th Street														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	440	18	458	59	517	15	532	821	33	854	220	1,074	10	1084
NBR	35	1	36	2	38	0	38	145	6	151	18	169	0	169
SBL	31	1	32	5	37	0	37	85	3	88	20	108	0	108
SBT	787	31	818	113	931	15	946	626	25	651	119	770	19	789
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	71	3	74	16	90	0	90	51	2	53	4	57	0	57
WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	66	3	69	13	82	0	82	39	2	41	18	59	0	59
North Leg														
Approach	818	32	850	118	968	15	983	711	28	739	139	878	19	897
Departure	506	21	527	72	599	15	614	860	35	895	238	1,133	10	1,143
Total	1,324	53	1,377	190	1,567	30	1,597	1,571	63	1,634	377	2,011	29	2,040
South Leg														
Approach	475	19	494	61	555	15	570	966	39	1,005	238	1,243	10	1,253
Departure	858	34	892	129	1,021	15	1,036	677	27	704	123	827	19	846
Total	1,333	53	1,386	190	1,576	30	1,606	1,643	66	1,709	361	2,070	29	2,099
East Leg														
Approach	137	6	143	29	172	0	172	90	4	94	22	116	0	116
Departure	66	2	68	7	75	0	75	230	9	239	38	277	0	277
Total	203	8	211	36	247	0	247	320	13	333	60	393	0	393
West Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches														
Approach	1,430	57	1,487	208	1,695	30	1,725	1,767	71	1,838	399	2,237	29	2,266
Departure	1,430	57	1,487	208	1,695	30	1,725	1,767	71	1,838	399	2,237	29	2,266
Total	2,860	114	2,974	416	3,390	60	3,450	3,534	142	3,676	798	4,474	58	4,532

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
5 Benson Avenue/13th Street														
NBL	3	0	3	0	3	10	13	2	0	2	0	2	13	15
NBT	475	19	494	57	551	5	556	858	34	892	227	1,119	3	1122
NBR	58	2	60	0	60	0	60	165	7	172	13	185	0	185
SBL	50	2	52	1	53	0	53	80	3	83	8	91	0	91
SBT	746	30	776	128	904	5	909	633	25	658	117	775	6	781
SBR	8	0	8	0	8	10	18	6	0	6	0	6	13	19
EBL	5	0	5	0	5	10	15	8	0	8	0	8	7	15
EBT	1	0	1	0	1	0	1	6	0	6	0	6	0	6
EBR	32	1	33	0	33	10	43	10	0	10	0	10	7	17
WBL	126	5	131	12	143	0	143	102	4	106	1	107	0	107
WBT	5	0	5	0	5	0	5	0	0	0	0	0	0	0
WBR	44	2	46	2	48	0	48	56	2	58	10	68	0	68
North Leg														
Approach	804	32	836	129	965	15	980	719	28	747	125	872	19	891
Departure	524	21	545	59	604	15	619	922	36	958	237	1,195	10	1,205
Total	1,328	53	1,381	188	1,569	30	1,599	1,641	64	1,705	362	2,067	29	2,096
South Leg														
Approach	536	21	557	57	614	15	629	1,025	41	1,066	240	1,306	16	1,322
Departure	904	36	940	140	1,080	15	1,095	745	29	774	118	892	13	905
Total	1,440	57	1,497	197	1,694	30	1,724	1,770	70	1,840	358	2,198	29	2,227
East Leg														
Approach	175	7	182	14	196	0	196	158	6	164	11	175	0	175
Departure	109	4	113	1	114	0	114	251	10	261	21	282	0	282
Total	284	11	295	15	310	0	310	409	16	425	32	457	0	457
West Leg														
Approach	38	1	39	0	39	20	59	24	0	24	0	24	14	38
Departure	16	0	16	0	16	20	36	8	0	8	0	8	26	34
Total	54	1	55	0	55	40	95	32	0	32	0	32	40	72
Total Approaches														
Approach	1,553	61	1,614	200	1,814	50	1,864	1,926	75	2,001	376	2,377	49	2,426
Departure	1,553	61	1,614	200	1,814	50	1,864	1,926	75	2,001	376	2,377	49	2,426
Total	3,106	122	3,228	400	3,628	100	3,728	3,852	150	4,002	752	4,754	98	4,852

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
6 Monte Vista Avenue/Foothill Boulevard														
NBL	146	6	152	20	172	0	172	181	7	188	47	235	0	235
NBT	386	15	401	21	422	0	422	698	28	726	140	866	0	866
NBR	95	4	99	14	113	5	118	129	5	134	45	179	6	185
SBL	100	4	104	11	115	5	120	165	7	172	32	204	6	210
SBT	382	15	397	123	520	0	520	501	20	521	45	566	0	566
SBR	36	1	37	18	55	0	55	64	3	67	42	109	0	109
EBL	37	1	38	35	73	0	73	46	2	48	39	87	0	87
EBT	367	15	382	35	417	10	427	816	33	849	161	1,010	13	1023
EBR	144	6	150	43	193	0	193	207	8	215	23	238	0	238
WBL	110	4	114	39	153	5	158	138	6	144	27	171	3	174
WBT	629	25	654	131	785	10	795	525	21	546	75	621	7	628
WBR	145	6	151	28	179	5	184	152	6	158	21	179	3	182
North Leg														
Approach	518	20	538	152	690	5	695	730	30	760	119	879	6	885
Departure	568	22	590	84	674	5	679	896	36	932	200	1,132	3	1,135
Total	1,086	42	1,128	236	1,364	10	1,374	1,626	66	1,692	319	2,011	9	2,020
South Leg														
Approach	627	25	652	55	707	5	712	1,008	40	1,048	232	1,280	6	1,286
Departure	636	25	661	205	866	5	871	846	34	880	95	975	3	978
Total	1,263	50	1,313	260	1,573	10	1,583	1,854	74	1,928	327	2,255	9	2,264
East Leg														
Approach	884	35	919	198	1,117	20	1,137	815	33	848	123	971	13	984
Departure	562	23	585	60	645	20	665	1,110	45	1,155	238	1,393	25	1,418
Total	1,446	58	1,504	258	1,762	40	1,802	1,925	78	2,003	361	2,364	38	2,402
West Leg														
Approach	548	22	570	113	683	10	693	1,069	43	1,112	223	1,335	13	1,348
Departure	811	32	843	169	1,012	10	1,022	770	31	801	164	965	7	972
Total	1,359	54	1,413	282	1,695	20	1,715	1,839	74	1,913	387	2,300	20	2,320
Total Approaches														
Approach	2,577	102	2,679	518	3,197	40	3,237	3,622	146	3,768	697	4,465	38	4,503
Departure	2,577	102	2,679	518	3,197	40	3,237	3,622	146	3,768	697	4,465	38	4,503
Total	5,154	204	5,358	1,036	6,394	80	6,474	7,244	292	7,536	1,394	8,930	76	9,006

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
7 Central Avenue/Foothill Boulevard														
NBL	195	8	203	20	223	0	223	156	6	162	49	211	0	211
NBT	0	0	0	0	0	33	33	0	0	0	0	0	41	41
NBR	149	6	155	41	196	0	196	394	16	410	143	553	0	553
SBL	0	0	0	0	0	29	29	0	0	0	0	0	20	20
SBT	0	0	0	0	0	18	18	0	0	0	0	0	13	13
SBR	0	0	0	2	2	5	7	0	0	0	7	7	3	10
EBL	0	0	0	6	6	20	26	0	0	0	4	4	26	30
EBT	356	14	370	55	425	0	425	918	37	955	107	1,062	0	1062
EBR	113	5	118	41	159	0	159	212	8	220	33	253	0	253
WBL	221	9	230	119	349	15	364	231	9	240	75	315	10	325
WBT	675	27	702	69	771	15	786	560	22	582	74	656	10	666
WBR	0	0	0	0	0	10	10	0	0	0	0	0	13	13
North Leg														
Approach	0	0	0	2	2	52	54	0	0	0	7	7	36	43
Departure	0	0	0	6	6	63	69	0	0	0	4	4	80	84
Total	0	0	0	8	8	115	123	0	0	0	11	11	116	127
South Leg														
Approach	344	14	358	61	419	33	452	550	22	572	192	764	41	805
Departure	334	14	348	160	508	33	541	443	17	460	108	568	23	591
Total	678	28	706	221	927	66	993	993	39	1,032	300	1,332	64	1,396
East Leg														
Approach	896	36	932	188	1,120	40	1,160	791	31	822	149	971	33	1,004
Departure	505	20	525	96	621	29	650	1,312	53	1,365	250	1,615	20	1,635
Total	1,401	56	1,457	284	1,741	69	1,810	2,103	84	2,187	399	2,586	53	2,639
West Leg														
Approach	469	19	488	102	590	20	610	1,130	45	1,175	144	1,319	26	1,345
Departure	870	35	905	91	996	20	1,016	716	28	744	130	874	13	887
Total	1,339	54	1,393	193	1,586	40	1,626	1,846	73	1,919	274	2,193	39	2,232
Total Approaches														
Approach	1,709	69	1,778	353	2,131	145	2,276	2,471	98	2,569	492	3,061	136	3,197
Departure	1,709	69	1,778	353	2,131	145	2,276	2,471	98	2,569	492	3,061	136	3,197
Total	3,418	138	3,556	706	4,262	290	4,552	4,942	196	5,138	984	6,122	272	6,394

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
8 Project Driveway/Foothill Boulevard														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	15	15	0	0	0	0	0	10	10
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	505	20	525	95	620	29	649	1,312	52	1364	251	1,615	20	1635
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	896	36	932	188	1,120	20	1140	791	32	823	148	971	26	997
WBR	0	0	0	0	0	10	10	0	0	0	0	0	13	13
North Leg														
Approach	0	0	0	0	0	15	15	0	0	0	0	0	10	10
Departure	0	0	0	0	0	10	10	0	0	0	0	0	13	13
Total	0	0	0	0	0	25	25	0	0	0	0	0	23	23
South Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg														
Approach	896	36	932	188	1,120	30	1,150	791	32	823	148	971	39	1,010
Departure	505	20	525	95	620	29	649	1,312	52	1,364	251	1,615	20	1,635
Total	1,401	56	1,457	283	1,740	59	1,799	2,103	84	2,187	399	2,586	59	2,645
West Leg														
Approach	505	20	525	95	620	29	649	1,312	52	1,364	251	1,615	20	1,635
Departure	896	36	932	188	1,120	35	1,155	791	32	823	148	971	36	1,007
Total	1,401	56	1,457	283	1,740	64	1,804	2,103	84	2,187	399	2,586	56	2,642
Total Approaches														
Approach	1,401	56	1,457	283	1,740	74	1,814	2,103	84	2,187	399	2,586	69	2,655
Departure	1,401	56	1,457	283	1,740	74	1,814	2,103	84	2,187	399	2,586	69	2,655
Total	2,802	112	2,914	566	3,480	148	3,628	4,206	168	4,374	798	5,172	138	5,310

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
9 Benson Avenue/Foothill Boulevard														
NBL	84	3	87	8	95	10	105	106	4	110	11	121	13	134
NBT	309	12	321	40	361	5	366	552	22	574	147	721	6	727
NBR	97	4	101	4	105	0	105	163	7	170	6	176	0	176
SBL	134	5	139	5	144	5	149	154	6	160	19	179	3	182
SBT	485	19	504	79	583	5	588	435	17	452	79	531	3	534
SBR	246	10	256	58	314	5	319	157	6	163	22	185	6	191
EBL	91	4	95	12	107	5	112	271	11	282	65	347	3	350
EBT	309	12	321	75	396	15	411	849	34	883	174	1,057	10	1067
EBR	32	1	33	9	42	10	52	82	3	85	12	97	7	104
WBL	123	5	128	2	130	0	130	121	5	126	3	129	0	129
WBT	550	22	572	121	693	15	708	515	21	536	117	653	19	672
WBR	103	4	107	8	115	5	120	137	5	142	27	169	6	175
North Leg														
Approach	865	34	899	142	1,041	15	1,056	746	29	775	120	895	12	907
Departure	503	20	523	60	583	15	598	960	38	998	239	1,237	15	1,252
Total	1,368	54	1,422	202	1,624	30	1,654	1,706	67	1,773	359	2,132	27	2,159
South Leg														
Approach	490	19	509	52	561	15	576	821	33	854	164	1,018	19	1,037
Departure	640	25	665	90	755	15	770	638	25	663	94	757	10	767
Total	1,130	44	1,174	142	1,316	30	1,346	1,459	58	1,517	258	1,775	29	1,804
East Leg														
Approach	776	31	807	131	938	20	958	773	31	804	147	951	25	976
Departure	540	21	561	84	645	20	665	1,166	47	1,213	199	1,412	13	1,425
Total	1,316	52	1,368	215	1,583	40	1,623	1,939	78	2,017	346	2,363	38	2,401
West Leg														
Approach	432	17	449	96	545	30	575	1,202	48	1,250	251	1,501	20	1,521
Departure	880	35	915	187	1,102	30	1,132	778	31	809	150	959	38	997
Total	1,312	52	1,364	283	1,647	60	1,707	1,980	79	2,059	401	2,460	58	2,518
Total Approaches														
Approach	2,563	101	2,664	421	3,085	80	3,165	3,542	141	3,683	682	4,365	76	4,441
Departure	2,563	101	2,664	421	3,085	80	3,165	3,542	141	3,683	682	4,365	76	4,441
Total	5,126	202	5,328	842	6,170	160	6,330	7,084	282	7,366	1,364	8,730	152	8,882

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
10 Central Avenue/11th Street														
NBL	37	1	38	14	52	0	52	19	1	20	47	67	0	67
NBT	304	12	316	47	363	33	396	470	19	489	183	672	41	713
NBR	73	3	76	16	92	0	92	93	4	97	43	140	0	140
SBL	27	1	28	2	30	0	30	56	2	58	5	63	0	63
SBT	251	10	261	155	416	32	448	442	18	460	93	553	23	576
SBR	19	1	20	4	24	0	24	23	1	24	13	37	0	37
EBL	12	0	12	12	24	0	24	19	1	20	8	28	0	28
EBT	28	1	29	0	29	0	29	83	3	86	0	86	0	86
EBR	20	1	21	42	63	0	63	35	1	36	28	64	0	64
WBL	68	3	71	46	117	0	117	96	4	100	33	133	0	133
WBT	59	2	61	0	61	0	61	67	3	70	0	70	0	70
WBR	24	1	25	4	29	0	29	34	1	35	4	39	0	39
North Leg														
Approach	297	12	309	161	470	32	502	521	21	542	111	653	23	676
Departure	340	13	353	63	416	33	449	523	21	544	195	739	41	780
Total	637	25	662	224	886	65	951	1,044	42	1,086	306	1,392	64	1,456
South Leg														
Approach	414	16	430	77	507	33	540	582	24	606	273	879	41	920
Departure	339	14	353	243	596	32	628	573	23	596	154	750	23	773
Total	753	30	783	320	1,103	65	1,168	1,155	47	1,202	427	1,629	64	1,693
East Leg														
Approach	151	6	157	50	207	0	207	197	8	205	37	242	0	242
Departure	128	5	133	18	151	0	151	232	9	241	48	289	0	289
Total	279	11	290	68	358	0	358	429	17	446	85	531	0	531
West Leg														
Approach	60	2	62	54	116	0	116	137	5	142	36	178	0	178
Departure	115	4	119	18	137	0	137	109	5	114	60	174	0	174
Total	175	6	181	72	253	0	253	246	10	256	96	352	0	352
Total Approaches														
Approach	922	36	958	342	1,300	65	1,365	1,437	58	1,495	457	1,952	64	2,016
Departure	922	36	958	342	1,300	65	1,365	1,437	58	1,495	457	1,952	64	2,016
Total	1,844	72	1,916	684	2,600	130	2,730	2,874	116	2,990	914	3,904	128	4,032

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
11 Central Avenue/Arrow Route														
NBL	71	3	74	1	75	0	75	66	3	69	13	82	0	82
NBT	364	15	379	72	451	31	482	518	21	539	264	803	39	842
NBR	104	4	108	14	122	0	122	147	6	153	51	204	0	204
SBL	10	0	10	21	31	1	32	50	2	52	15	67	1	68
SBT	311	12	323	236	559	30	589	500	20	520	140	660	22	682
SBR	29	1	30	0	30	1	31	34	1	35	3	38	1	39
EBL	23	1	24	1	25	1	26	65	3	68	1	69	1	70
EBT	91	4	95	5	100	0	100	334	13	347	3	350	0	350
EBR	50	2	52	12	64	0	64	72	3	75	1	76	0	76
WBL	150	6	156	28	184	0	184	158	6	164	24	188	0	188
WBT	277	11	288	2	290	0	290	190	8	198	6	204	0	204
WBR	58	2	60	6	66	1	67	36	1	37	23	60	1	61
North Leg														
Approach	350	13	363	257	620	32	652	584	23	607	158	765	24	789
Departure	445	18	463	79	542	33	575	619	25	644	288	932	41	973
Total	795	31	826	336	1,162	65	1,227	1,203	48	1,251	446	1,697	65	1,762
South Leg														
Approach	539	22	561	87	648	31	679	731	30	761	328	1,089	39	1,128
Departure	511	20	531	276	807	30	837	730	29	759	165	924	22	946
Total	1,050	42	1,092	363	1,455	61	1,516	1,461	59	1,520	493	2,013	61	2,074
East Leg														
Approach	485	19	504	36	540	1	541	384	15	399	53	452	1	453
Departure	205	8	213	40	253	1	254	531	21	552	69	621	1	622
Total	690	27	717	76	793	2	795	915	36	951	122	1,073	2	1,075
West Leg														
Approach	164	7	171	18	189	1	190	471	19	490	5	495	1	496
Departure	377	15	392	3	395	1	396	290	12	302	22	324	1	325
Total	541	22	563	21	584	2	586	761	31	792	27	819	2	821
Total Approaches														
Approach	1,538	61	1,599	398	1,997	65	2,062	2,170	87	2,257	544	2,801	65	2,866
Departure	1,538	61	1,599	398	1,997	65	2,062	2,170	87	2,257	544	2,801	65	2,866
Total	3,076	122	3,198	796	3,994	130	4,124	4,340	174	4,514	1,088	5,602	130	5,732

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
12 Central Avenue/Arrow Highway														
NBL	162	6	168	83	251	0	251	92	4	96	197	293	0	293
NBT	595	24	619	175	794	29	823	644	26	670	85	755	36	791
NBR	86	3	89	5	94	0	94	119	5	124	20	144	0	144
SBL	20	1	21	14	35	1	36	44	2	46	25	71	1	72
SBT	510	20	530	78	608	28	636	820	33	853	194	1,047	21	1068
SBR	49	2	51	39	90	1	91	62	2	64	111	175	1	176
EBL	43	2	45	65	110	1	111	120	5	125	83	208	1	209
EBT	273	11	284	64	348	0	348	747	30	777	115	892	0	892
EBR	109	4	113	115	228	0	228	219	9	228	175	403	0	403
WBL	124	5	129	14	143	0	143	165	7	172	12	184	0	184
WBT	532	21	553	58	611	0	611	281	11	292	124	416	0	416
WBR	38	2	40	12	52	1	53	43	2	45	17	62	1	63
North Leg														
Approach	579	23	602	131	733	30	763	926	37	963	330	1,293	23	1,316
Departure	676	28	704	252	956	31	987	807	33	840	185	1,025	38	1,063
Total	1,255	51	1,306	383	1,689	61	1,750	1,733	70	1,803	515	2,318	61	2,379
South Leg														
Approach	843	33	876	263	1,139	29	1,168	855	35	890	302	1,192	36	1,228
Departure	743	29	772	207	979	28	1,007	1,204	49	1,253	381	1,634	21	1,655
Total	1,586	62	1,648	470	2,118	57	2,175	2,059	84	2,143	683	2,826	57	2,883
East Leg														
Approach	694	28	722	84	806	1	807	489	20	509	153	662	1	663
Departure	379	15	394	83	477	1	478	910	37	947	160	1,107	1	1,108
Total	1,073	43	1,116	167	1,283	2	1,285	1,399	57	1,456	313	1,769	2	1,771
West Leg														
Approach	425	17	442	244	686	1	687	1,086	44	1,130	373	1,503	1	1,504
Departure	743	29	772	180	952	1	953	435	17	452	432	884	1	885
Total	1,168	46	1,214	424	1,638	2	1,640	1,521	61	1,582	805	2,387	2	2,389
Total Approaches														
Approach	2,541	101	2,642	722	3,364	61	3,425	3,356	136	3,492	1,158	4,650	61	4,711
Departure	2,541	101	2,642	722	3,364	61	3,425	3,356	136	3,492	1,158	4,650	61	4,711
Total	5,082	202	5,284	1,444	6,728	122	6,850	6,712	272	6,984	2,316	9,300	122	9,422

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
13 Central Avenue/Moreno Street														
NBL	138	6	144	27	171	0	171	307	12	319	83	402	0	402
NBT	843	34	877	197	1,074	27	1101	829	33	862	225	1,087	34	1121
NBR	124	5	129	3	132	0	132	224	9	233	10	243	0	243
SBL	37	1	38	33	71	1	72	134	5	139	76	215	1	216
SBT	676	27	703	160	863	26	889	1,073	43	1116	283	1,399	19	1418
SBR	25	1	26	7	33	1	34	84	3	87	19	106	1	107
EBL	25	1	26	3	29	1	30	105	4	109	22	131	1	132
EBT	110	4	114	14	128	0	128	371	15	386	32	418	0	418
EBR	66	3	69	33	102	0	102	248	10	258	82	340	0	340
WBL	190	8	198	10	208	0	208	319	13	332	6	338	0	338
WBT	159	6	165	15	180	0	180	258	10	268	30	298	0	298
WBR	17	1	18	59	77	1	78	50	2	52	52	104	1	105
North Leg														
Approach	738	29	767	200	967	28	995	1,291	51	1,342	378	1,720	21	1,741
Departure	885	36	921	259	1,180	29	1,209	984	39	1,023	299	1,322	36	1,358
Total	1,623	65	1,688	459	2,147	57	2,204	2,275	90	2,365	677	3,042	57	3,099
South Leg														
Approach	1,105	45	1,150	227	1,377	27	1,404	1,360	54	1,414	318	1,732	34	1,766
Departure	932	38	970	203	1,173	26	1,199	1,640	66	1,706	371	2,077	19	2,096
Total	2,037	83	2,120	430	2,550	53	2,603	3,000	120	3,120	689	3,809	53	3,862
East Leg														
Approach	366	15	381	84	465	1	466	627	25	652	88	740	1	741
Departure	271	10	281	50	331	1	332	729	29	758	118	876	1	877
Total	637	25	662	134	796	2	798	1,356	54	1,410	206	1,616	2	1,618
West Leg														
Approach	201	8	209	50	259	1	260	724	29	753	136	889	1	890
Departure	322	13	335	49	384	1	385	649	25	674	132	806	1	807
Total	523	21	544	99	643	2	645	1,373	54	1,427	268	1,695	2	1,697
Total Approaches														
Approach	2,410	97	2,507	561	3,068	57	3,125	4,002	159	4,161	920	5,081	57	5,138
Departure	2,410	97	2,507	561	3,068	57	3,125	4,002	159	4,161	920	5,081	57	5,138
Total	4,820	194	5,014	1,122	6,136	114	6,250	8,004	318	8,322	1,840	10,162	114	10,276

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
14 Central Avenue/I-10 Westbound Ramps														
NBL	408	16	424	0	424	0	424	335	13	348	0	348	0	348
NBT	880	35	915	153	1,068	12	1080	1,256	50	1306	195	1,501	15	1516
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	616	25	641	115	756	16	772	1,360	54	1414	238	1,652	12	1664
SBR	312	12	324	71	395	12	407	466	19	485	141	626	9	635
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	328	13	341	0	341	0	341	522	21	543	0	543	0	543
WBT	3	0	3	0	3	0	3	2	0	2	0	2	0	2
WBR	294	12	306	73	379	16	395	451	18	469	121	590	20	610
North Leg														
Approach	928	37	965	186	1,151	28	1,179	1,826	73	1,899	379	2,278	21	2,299
Departure	1,174	47	1,221	226	1,447	28	1,475	1,707	68	1,775	316	2,091	35	2,126
Total	2,102	84	2,186	412	2,598	56	2,654	3,533	141	3,674	695	4,369	56	4,425
South Leg														
Approach	1,288	51	1,339	153	1,492	12	1,504	1,591	63	1,654	195	1,849	15	1,864
Departure	944	38	982	115	1,097	16	1,113	1,882	75	1,957	238	2,195	12	2,207
Total	2,232	89	2,321	268	2,589	28	2,617	3,473	138	3,611	433	4,044	27	4,071
East Leg														
Approach	625	25	650	73	723	16	739	975	39	1,014	121	1,135	20	1,155
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	625	25	650	73	723	16	739	975	39	1,014	121	1,135	20	1,155
West Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	723	28	751	71	822	12	834	803	32	835	141	976	9	985
Total	723	28	751	71	822	12	834	803	32	835	141	976	9	985
Total Approaches														
Approach	2,841	113	2,954	412	3,366	56	3,422	4,392	175	4,567	695	5,262	56	5,318
Departure	2,841	113	2,954	412	3,366	56	3,422	4,392	175	4,567	695	5,262	56	5,318
Total	5,682	226	5,908	824	6,732	112	6,844	8,784	350	9,134	1,390	10,524	112	10,636

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
15 Central Avenue/I-10 Eastbound Ramps														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	1,001	40	1041	87	1,128	0	1128	1,180	47	1227	71	1,298	0	1298
NBR	535	21	556	0	556	0	556	569	23	592	0	592	0	592
SBL	175	7	182	73	255	16	271	510	20	530	128	658	12	670
SBT	758	30	788	41	829	0	829	1,400	56	1456	111	1,567	0	1567
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	270	11	281	65	346	12	358	385	15	400	123	523	15	538
EBT	3	0	3	0	3	0	3	5	0	5	0	5	0	5
EBR	271	11	282	0	282	0	282	366	15	381	0	381	0	381
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	933	37	970	114	1,084	16	1,100	1,910	76	1,986	239	2,225	12	2,237
Departure	1,271	51	1,322	152	1,474	12	1,486	1,565	62	1,627	194	1,821	15	1,836
Total	2,204	88	2,292	266	2,558	28	2,586	3,475	138	3,613	433	4,046	27	4,073
South Leg														
Approach	1,536	61	1,597	87	1,684	0	1,684	1,749	70	1,819	71	1,890	0	1,890
Departure	1,029	41	1,070	41	1,111	0	1,111	1,766	71	1,837	111	1,948	0	1,948
Total	2,565	102	2,667	128	2,795	0	2,795	3,515	141	3,656	182	3,838	0	3,838
East Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	713	28	741	73	814	16	830	1,084	43	1,127	128	1,255	12	1,267
Total	713	28	741	73	814	16	830	1,084	43	1,127	128	1,255	12	1,267
West Leg														
Approach	544	22	566	65	631	12	643	756	30	786	123	909	15	924
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	544	22	566	65	631	12	643	756	30	786	123	909	15	924
Total Approaches														
Approach	3,013	120	3,133	266	3,399	28	3,427	4,415	176	4,591	433	5,024	27	5,051
Departure	3,013	120	3,133	266	3,399	28	3,427	4,415	176	4,591	433	5,024	27	5,051
Total	6,026	240	6,266	532	6,798	56	6,854	8,830	352	9,182	866	10,048	54	10,102

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
16 Project Driveway 2/Foothill Boulevard														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	15	15	0	0	0	0	0	10	10
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	505	20	525	95	620	29	649	1,312	52	1364	251	1,615	20	1635
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	896	36	932	188	1,120	25	1145	791	32	823	148	971	23	994
WBR	0	0	0	0	0	10	10	0	0	0	0	0	13	13
North Leg														
Approach	0	0	0	0	0	15	15	0	0	0	0	0	10	10
Departure	0	0	0	0	0	10	10	0	0	0	0	0	13	13
Total	0	0	0	0	0	25	25	0	0	0	0	0	23	23
South Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg														
Approach	896	36	932	188	1,120	35	1,155	791	32	823	148	971	36	1,007
Departure	505	20	525	95	620	29	649	1,312	52	1,364	251	1,615	20	1,635
Total	1,401	56	1,457	283	1,740	64	1,804	2,103	84	2,187	399	2,586	56	2,642
West Leg														
Approach	505	20	525	95	620	29	649	1,312	52	1,364	251	1,615	20	1,635
Departure	896	36	932	188	1,120	40	1,160	791	32	823	148	971	33	1,004
Total	1,401	56	1,457	283	1,740	69	1,809	2,103	84	2,187	399	2,586	53	2,639
Total Approaches														
Approach	1,401	56	1,457	283	1,740	79	1,819	2,103	84	2,187	399	2,586	66	2,652
Departure	1,401	56	1,457	283	1,740	79	1,819	2,103	84	2,187	399	2,586	66	2,652
Total	2,802	112	2,914	566	3,480	158	3,638	4,206	168	4,374	798	5,172	132	5,304

Table B-5 - Opening Year (2020) Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP	Exist Volumes	Growth	OY 2,019 Background	Cumul. Pr.	OY 2,019 NP	Project Trips	Year 2,019 WP
17 Monte Vista Avenue/Claremont Boulevard														
NBL	17	0	17	0	17	2	19	28	1	29	0	29	1	30
NBT	563	11	574	93	667	3	670	582	12	594	200	794	2	796
NBR	4	0	4	0	4	0	4	7	0	7	0	7	0	7
SBL	3	0	3	0	3	0	3	0	0	0	0	0	0	0
SBT	563	11	574	149	723	3	726	529	11	540	128	668	4	672
SBR	314	6	320	40	360	0	360	199	4	203	14	217	0	217
EBL	187	4	191	5	196	0	196	313	6	319	76	395	0	395
EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	5	0	5	0	5	2	7	29	1	30	0	30	3	33
WBL	6	0	6	0	6	0	6	6	0	6	0	6	0	6
WBT	1	0	1	0	1	0	1	2	0	2	0	2	0	2
WBR	2	0	2	0	2	0	2	1	0	1	0	1	0	1
North Leg														
Approach	880	17	897	189	1,086	3	1,089	728	15	743	142	885	4	889
Departure	752	15	767	98	865	3	868	896	18	914	276	1,190	2	1,192
Total	1,632	32	1,664	287	1,951	6	1,957	1,624	33	1,657	418	2,075	6	2,081
South Leg														
Approach	584	11	595	93	688	5	693	617	13	630	200	830	3	833
Departure	574	11	585	149	734	5	739	564	12	576	128	704	7	711
Total	1,158	22	1,180	242	1,422	10	1,432	1,181	25	1,206	328	1,534	10	1,544
East Leg														
Approach	9	0	9	0	9	0	9	9	0	9	0	9	0	9
Departure	7	0	7	0	7	0	7	7	0	7	0	7	0	7
Total	16	0	16	0	16	0	16	16	0	16	0	16	0	16
West Leg														
Approach	192	4	196	5	201	2	203	342	7	349	76	425	3	428
Departure	332	6	338	40	378	2	380	229	5	234	14	248	1	249
Total	524	10	534	45	579	4	583	571	12	583	90	673	4	677
Total Approaches														
Approach	1,665	32	1,697	287	1,984	10	1,994	1,696	35	1,731	418	2,149	10	2,159
Departure	1,665	32	1,697	287	1,984	10	1,994	1,696	35	1,731	418	2,149	10	2,159
Total	3,330	64	3,394	574	3,968	20	3,988	3,392	70	3,462	836	4,298	20	4,318

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
1 Monte Vista Avenue/Baseline Road										
AM Peak Hour										
Northbound	Left	127	Approach	578	1,403	1,959	556	211	166	744
	Through	98	Departure	1,010	2,442	2,798	356	135	106	1,116
	Right	353								
Southbound	Left	211	Approach	458	44	61	17	6	5	463
	Through	141	Departure	376	37	46	9	3	3	379
	Right	106								
Eastbound	Left	44	Approach	554	990	1,881	891	339	266	820
	Through	348	Departure	843	2,023	2,790	767	291	229	1,072
	Right	162								
Westbound	Left	707	Approach	1,551	3,313	4,070	757	288	226	1,777
	Through	610	Departure	912	1,247	2,336	1,089	414	325	1,237
	Right	234								
PM Peak Hour										
Northbound	Left	153	Approach	966	3,525	4,243	718	201	158	1,124
	Through	161	Departure	730	2,572	3,234	662	185	146	876
	Right	652								
Southbound	Left	165	Approach	323	36	63	27	8	6	329
	Through	112	Departure	362	115	145	30	8	7	369
	Right	46								
Eastbound	Left	57	Approach	987	5,621	5,390	-231	-65	-51	936
	Through	768	Departure	661	3,527	6,330	2,803	785	617	1,278
	Right	162								
Westbound	Left	456	Approach	1,062	4,986	7,579	2,593	726	570	1,632
	Through	462	Departure	1,585	7,954	7,566	-388	-109	-85	1,500
	Right	144								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
2 SR-210 Ramps/Baseline Road										
AM Peak Hour										
Northbound	Left	233	Approach	644	2,141	2,402	261	99	78	722
	Through	0	Departure	488	1,015	1,511	496	188	148	636
	Right	411								
Southbound	Left	59	Approach	825	1,832	2,180	348	132	104	929
	Through	0	Departure	837	1,770	1,892	122	46	36	873
	Right	766								
Eastbound	Left	167	Approach	961	1,247	2,336	1,089	414	325	1,286
	Through	326	Departure	1,813	3,313	4,070	757	288	226	2,039
	Right	468								
Westbound	Left	20	Approach	1,504	3,005	3,964	959	364	286	1,790
	Through	814	Departure	796	2,127	3,409	1,282	487	383	1,179
	Right	670								
PM Peak Hour										
Northbound	Left	179	Approach	1,008	2,236	2,895	659	185	145	1,153
	Through	0	Departure	524	2,742	3,486	744	208	164	688
	Right	829								
Southbound	Left	58	Approach	632	1,933	2,607	674	189	148	780
	Through	0	Departure	495	3,894	3,218	-676	-189	-149	346
	Right	574								
Eastbound	Left	172	Approach	1,491	7,954	7,566	-388	-109	-85	1,406
	Through	823	Departure	1,161	4,986	7,579	2,593	726	570	1,731
	Right	496								
Westbound	Left	28	Approach	759	5,754	8,082	2,328	652	512	1,271
	Through	408	Departure	1,710	6,256	6,867	611	171	134	1,844
	Right	323								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
3 Benson Avenue/Baseline Road										
AM Peak Hour										
Northbound	Left	295	Approach	493	519	946	427	162	127	620
	Through	129	Departure	806	1,622	2,311	689	262	206	1,012
	Right	69								
Southbound	Left	16	Approach	509	576	1,430	854	325	255	764
	Through	285	Departure	198	153	338	185	70	55	253
	Right	208								
Eastbound	Left	51	Approach	624	1,803	2,102	299	114	89	713
	Through	286	Departure	1,176	2,744	3,424	680	258	203	1,379
	Right	287								
Westbound	Left	234	Approach	925	2,739	3,460	721	274	215	1,140
	Through	673	Departure	371	1,117	1,863	746	283	223	594
	Right	18								
PM Peak Hour										
Northbound	Left	255	Approach	828	2,744	3,350	606	170	133	961
	Through	355	Departure	717	1,820	2,460	640	179	141	858
	Right	218								
Southbound	Left	16	Approach	279	890	1,859	969	271	213	492
	Through	169	Departure	599	1,808	2,223	415	116	91	690
	Right	94								
Eastbound	Left	212	Approach	1,432	5,772	5,625	-147	-41	-32	1,400
	Through	811	Departure	706	5,107	5,749	642	180	141	847
	Right	409								
Westbound	Left	139	Approach	528	3,943	4,769	826	231	182	710
	Through	357	Departure	1,045	4,613	5,170	557	156	123	1,168
	Right	32								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
4 Benson Avenue/15th Street										
AM Peak Hour										
Northbound	Left	0	Approach	462	519	673	154	59	46	508
	Through	427	Departure	851	1,610	2,294	684	260	204	1,055
	Right	35								
Southbound	Left	29	Approach	810	1,599	2,153	554	211	165	975
	Through	781	Departure	493	519	945	426	162	127	620
	Right	0								
Eastbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	0	0	0	0	0	0	0
	Right	0								
Westbound	Left	70	Approach	136	13	422	409	155	122	258
	Through	0	Departure	64	2	9	7	3	2	66
	Right	66								
PM Peak Hour										
Northbound	Left	0	Approach	959	2,586	3,254	668	187	147	1,106
	Through	815	Departure	673	1,534	2,328	794	222	175	848
	Right	144								
Southbound	Left	85	Approach	707	1,819	2,362	543	152	119	826
	Through	622	Departure	853	2,482	3,094	612	171	135	988
	Right	0								
Eastbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	0	0	0	0	0	0	0
	Right	0								
Westbound	Left	51	Approach	89	167	780	613	172	135	224
	Through	0	Departure	229	556	974	418	117	92	321
	Right	38								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
5 Benson Avenue/13th Street										
AM Peak Hour										
Northbound	Left	3	Approach	521	1,059	1,997	938	356	280	801
	Through	463	Departure	876	1,557	1,816	259	98	77	953
	Right	55								
Southbound	Left	49	Approach	794	1,633	2,463	830	315	248	1,042
	Through	739	Departure	510	1,016	2,142	1,126	428	336	846
	Right	6								
Eastbound	Left	3	Approach	16	156	698	542	206	162	24
	Through	1	Departure	13	289	1,680	1,391	529	415	275
	Right	12								
Westbound	Left	125	Approach	173	15	494	479	182	143	316
	Through	4	Departure	105	2	14	12	5	4	109
	Right	44								
PM Peak Hour										
Northbound	Left	2	Approach	1,022	3,194	3,073	-121	-34	-27	995
	Through	855	Departure	737	2,137	4,135	1,998	559	440	1,177
	Right	165								
Southbound	Left	80	Approach	712	2,223	4,404	2,181	611	480	1,192
	Through	628	Departure	919	2,958	4,435	1,477	414	325	1,244
	Right	4								
Eastbound	Left	8	Approach	21	349	3,614	3,265	914	718	280
	Through	6	Departure	6	199	2,306	2,107	590	464	10
	Right	7								
Westbound	Left	102	Approach	158	95	885	790	221	174	332
	Through	0	Departure	251	569	1,101	532	149	117	368
	Right	56								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
6	**Monte Vista Avenue/Foothill Boulevard**									
AM Peak Hour										
Northbound	Left	144	Approach	593	705	1,350	645	245	193	786
	Through	366	Departure	617	769	1,217	448	170	134	751
	Right	83								
Southbound	Left	88	Approach	493	1,491	1,870	379	144	113	606
	Through	373	Departure	523	1,197	1,545	348	132	104	627
	Right	32								
Eastbound	Left	36	Approach	539	1,778	2,782	1,004	382	300	839
	Through	361	Departure	793	3,227	3,875	648	246	193	986
	Right	142								
Westbound	Left	102	Approach	840	3,734	4,099	365	139	109	949
	Through	617	Departure	532	2,514	3,464	950	361	284	816
	Right	121								
PM Peak Hour										
Northbound	Left	181	Approach	998	1,942	3,587	1,645	461	362	1,360
	Through	693	Departure	840	1,753	2,767	1,014	284	223	1,063
	Right	124								
Southbound	Left	162	Approach	722	2,176	2,513	337	94	74	796
	Through	497	Departure	888	2,910	3,408	498	139	110	998
	Right	63								
Eastbound	Left	46	Approach	1,068	5,915	5,725	-190	-53	-42	1,026
	Through	815	Departure	766	4,638	6,560	1,922	538	423	1,189
	Right	207								
Westbound	Left	136	Approach	807	5,608	6,781	1,173	328	258	1,065
	Through	522	Departure	1,101	6,340	5,870	-470	-132	-103	998
	Right	149								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
7 Central Avenue/Foothill Boulevard										
AM Peak Hour										
Northbound	Left	189	Approach	332	2,059	2,335	276	105	82	414
	Through	0	Departure	312	2,244	2,722	478	182	143	455
	Right	143								
Southbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	0	0	0	0	0	0	0
	Right	0								
Eastbound	Left	0	Approach	450	2,474	3,220	746	283	223	673
	Through	346	Departure	841	3,691	3,950	259	98	77	918
	Right	104								
Westbound	Left	208	Approach	860	3,598	4,104	506	192	151	1,011
	Through	652	Departure	489	2,198	2,986	788	299	235	724
	Right	0								
PM Peak Hour										
Northbound	Left	155	Approach	546	2,419	3,477	1,058	296	233	779
	Through	0	Departure	438	2,256	3,103	847	237	186	624
	Right	391								
Southbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	0	0	0	0	0	0	0
	Right	0								
Eastbound	Left	0	Approach	1,127	6,227	5,447	-780	-218	-172	955
	Through	916	Departure	714	5,506	6,085	579	162	127	841
	Right	211								
Westbound	Left	227	Approach	786	5,246	5,777	531	149	117	903
	Through	559	Departure	1,307	6,131	5,512	-619	-173	-136	1,171
	Right	0								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
9	**Benson Avenue/Foothill Boulevard**									
AM Peak Hour										
Northbound	Left	82	Approach	481	548	877	329	125	98	579
	Through	305	Departure	634	665	1,206	541	206	162	796
	Right	94								
Southbound	Left	117	Approach	836	1,557	2,588	1,031	392	308	1,144
	Through	480	Departure	490	1,059	1,959	900	342	269	759
	Right	239								
Eastbound	Left	89	Approach	418	2,224	3,099	875	333	261	679
	Through	298	Departure	846	3,656	4,415	759	288	227	1,073
	Right	31								
Westbound	Left	123	Approach	744	3,603	4,261	658	250	196	940
	Through	525	Departure	509	2,587	3,245	658	250	196	705
	Right	96								
PM Peak Hour										
Northbound	Left	105	Approach	818	1,558	1,838	280	78	62	880
	Through	551	Departure	634	830	2,323	1,493	418	328	962
	Right	162								
Southbound	Left	152	Approach	737	2,197	4,546	2,349	658	517	1,254
	Through	432	Departure	955	3,267	3,839	572	160	126	1,081
	Right	153								
Eastbound	Left	269	Approach	1,194	6,245	6,143	-102	-29	-22	1,172
	Through	844	Departure	770	5,341	6,226	885	248	195	965
	Right	81								
Westbound	Left	121	Approach	768	5,205	6,126	921	258	203	971
	Through	512	Departure	1,158	5,766	6,265	499	140	110	1,268
	Right	135								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
10	**Central Avenue/11th Street**									
AM Peak Hour										
Northbound	Left	35	Approach	395	2,246	2,693	447	170	133	528
	Through	291	Departure	315	1,986	2,200	214	81	64	379
	Right	69								
Southbound	Left	26	Approach	285	2,270	2,825	555	211	166	451
	Through	240	Departure	324	2,092	2,512	420	160	125	449
	Right	19								
Eastbound	Left	11	Approach	56	74	177	103	39	31	87
	Through	27	Departure	108	108	362	254	97	76	184
	Right	18								
Westbound	Left	57	Approach	133	265	334	69	26	21	154
	Through	54	Departure	122	670	955	285	108	85	207
	Right	22								
PM Peak Hour										
Northbound	Left	18	Approach	570	2,190	2,828	638	179	140	710
	Through	463	Departure	563	2,374	3,428	1,054	295	232	795
	Right	89								
Southbound	Left	56	Approach	511	2,298	3,458	1,160	325	255	766
	Through	433	Departure	515	2,463	3,747	1,284	360	282	797
	Right	22								
Eastbound	Left	19	Approach	135	127	649	522	146	115	250
	Through	82	Departure	105	108	319	211	59	46	151
	Right	34								
Westbound	Left	96	Approach	194	1,080	1,348	268	75	59	253
	Through	65	Departure	227	613	789	176	49	39	266
	Right	33								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
11	**Central Avenue/Arrow Route**									
AM Peak Hour										
Northbound	Left	67	Approach	512	2,246	2,676	430	163	128	640
	Through	346	Departure	483	2,429	2,727	298	113	89	572
	Right	99								
Southbound	Left	10	Approach	328	1,986	2,200	214	81	64	392
	Through	289	Departure	425	2,248	2,693	445	169	133	558
	Right	29								
Eastbound	Left	22	Approach	158	268	538	270	103	81	239
	Through	89	Departure	370	434	1,127	693	263	207	577
	Right	47								
Westbound	Left	147	Approach	478	761	1,433	672	255	201	679
	Through	274	Departure	198	150	299	149	57	44	242
	Right	57								
PM Peak Hour										
Northbound	Left	62	Approach	711	3,247	3,039	-208	-58	-46	665
	Through	505	Departure	719	3,077	4,654	1,577	442	347	1,066
	Right	144								
Southbound	Left	50	Approach	575	2,374	3,428	1,054	295	232	807
	Through	491	Departure	605	2,190	2,828	638	179	140	745
	Right	34								
Eastbound	Left	64	Approach	470	1,037	2,099	1,062	297	234	704
	Through	334	Departure	286	560	1,310	750	210	165	451
	Right	72								
Westbound	Left	156	Approach	382	1,157	2,455	1,298	363	286	668
	Through	190	Departure	528	1,987	2,230	243	68	53	581
	Right	36								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
12	**Central Avenue/Arrow Highway**									
AM Peak Hour										
Northbound	Left	153	Approach	799	3,417	4,252	835	317	249	1,048
	Through	564	Departure	705	2,987	3,621	634	241	189	894
	Right	82								
Southbound	Left	19	Approach	549	2,791	3,456	665	253	199	748
	Through	484	Departure	641	2,472	3,226	754	287	225	866
	Right	46								
Eastbound	Left	41	Approach	403	908	1,563	655	249	196	599
	Through	259	Departure	703	2,036	2,823	787	299	235	938
	Right	103								
Westbound	Left	118	Approach	658	1,549	2,051	502	191	150	808
	Through	504	Departure	360	1,171	1,653	482	183	144	504
	Right	36								
PM Peak Hour										
Northbound	Left	90	Approach	837	4,162	5,764	1,602	449	352	1,189
	Through	630	Departure	1,178	4,754	6,441	1,687	472	371	1,549
	Right	117								
Southbound	Left	43	Approach	906	4,549	6,924	2,375	665	523	1,429
	Through	803	Departure	790	4,199	5,503	1,304	365	287	1,077
	Right	60								
Eastbound	Left	118	Approach	1,063	3,621	4,003	382	107	84	1,147
	Through	731	Departure	425	2,567	4,730	2,163	606	476	901
	Right	214								
Westbound	Left	161	Approach	478	2,374	3,578	1,204	337	265	743
	Through	275	Departure	891	3,185	3,595	410	115	90	981
	Right	42								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
13	**Central Avenue/Moreno Street**									
AM Peak Hour										
Northbound	Left	131	Approach	1,048	4,413	5,359	946	359	282	1,330
	Through	799	Departure	882	3,621	4,746	1,125	428	336	1,218
	Right	118								
Southbound	Left	35	Approach	699	2,987	3,621	634	241	189	888
	Through	640	Departure	839	3,417	4,252	835	317	249	1,088
	Right	24								
Eastbound	Left	24	Approach	190	291	442	151	57	45	235
	Through	104	Departure	305	450	708	258	98	77	382
	Right	62								
Westbound	Left	180	Approach	346	614	1,202	588	223	176	522
	Through	150	Departure	257	818	919	101	38	30	287
	Right	16								
PM Peak Hour										
Northbound	Left	300	Approach	1,331	5,953	7,545	1,592	446	350	1,681
	Through	812	Departure	1,605	6,267	8,439	2,172	608	478	2,083
	Right	219								
Southbound	Left	131	Approach	1,263	4,754	6,441	1,687	472	371	1,634
	Through	1,050	Departure	964	4,162	5,764	1,602	449	352	1,316
	Right	82								
Eastbound	Left	103	Approach	709	933	1,276	343	96	75	784
	Through	363	Departure	635	892	1,323	431	121	95	730
	Right	243								
Westbound	Left	312	Approach	614	1,810	2,867	1,057	296	233	847
	Through	253	Departure	713	2,130	2,603	473	132	104	817
	Right	49								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
14	**Central Avenue/I-10 Westbound Ramps**									
AM Peak Hour										
Northbound	Left	387	Approach	1,221	3,614	4,696	1,082	411	323	1,544
	Through	834	Departure	895	2,686	3,695	1,009	383	301	1,196
	Right	0								
Southbound	Left	0	Approach	880	3,830	4,876	1,046	397	312	1,192
	Through	584	Departure	1,112	5,176	6,282	1,106	420	330	1,442
	Right	296								
Eastbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	686	1,488	1,582	94	36	28	714
	Right	0								
Westbound	Left	311	Approach	592	1,906	1,986	80	30	24	616
	Through	3	Departure	0	0	0	0	0	0	0
	Right	278								
PM Peak Hour										
Northbound	Left	328	Approach	1,558	5,190	6,130	940	263	207	1,765
	Through	1,230	Departure	1,842	5,237	7,563	2,326	651	512	2,354
	Right	0								
Southbound	Left	0	Approach	1,787	7,621	9,767	2,146	601	472	2,259
	Through	1,331	Departure	1,671	6,722	8,220	1,498	419	330	2,001
	Right	456								
Eastbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	786	3,254	2,949	-305	-85	-67	719
	Right	0								
Westbound	Left	511	Approach	954	2,402	2,835	433	121	95	1,049
	Through	2	Departure	0	0	0	0	0	0	0
	Right	441								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
15	**Central Avenue/I-10 Eastbound Ramps**									
AM Peak Hour										
Northbound	Left	0	Approach	1,456	2,237	3,288	1,051	399	314	1,770
	Through	949	Departure	975	2,005	2,562	557	212	166	1,141
	Right	507								
Southbound	Left	166	Approach	884	2,686	3,695	1,009	383	301	1,185
	Through	718	Departure	1,205	3,614	4,696	1,082	411	323	1,528
	Right	0								
Eastbound	Left	256	Approach	516	1,927	2,044	117	44	35	551
	Through	3	Departure	0	0	0	0	0	0	0
	Right	257								
Westbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	676	1,231	1,770	539	205	161	837
	Right	0								
PM Peak Hour										
Northbound	Left	0	Approach	1,712	3,845	4,433	588	165	129	1,841
	Through	1,155	Departure	1,729	4,440	5,860	1,420	398	312	2,041
	Right	557								
Southbound	Left	499	Approach	1,870	5,237	7,563	2,326	651	512	2,382
	Through	1,371	Departure	1,532	5,190	6,130	940	263	207	1,739
	Right	0								
Eastbound	Left	377	Approach	740	2,996	2,647	-349	-98	-77	663
	Through	5	Departure	0	0	0	0	0	0	0
	Right	358								
Westbound	Left	0	Approach	0	0	0	0	0	0	0
	Through	0	Departure	1,061	2,448	2,652	204	57	45	1,106
	Right	0								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-6 - Forecast Peak Hour Link Volume Worksheet
Year 2040 Link Volumes

		Existing 2018 Volume		Existing 2018 Link Volume	Base Yr. Modeled Pk. Per. Volume	Fut. Yr. Modeled Pk. Per. Volume	Base to Future Year Pk. Per. Change	Base to Future Year Pk. Hr. Change	2018 to 2040 Link Vol Growth[1]	2040 Link Volume
17	**Monte Vista Avenue/Claremont Boulevard**									
AM Peak Hour										
Northbound	Left	17	Approach	562	1,197	1,809	612	233	183	745
	Through	542	Departure	555	1,491	2,161	670	255	200	755
	Right	3								
Southbound	Left	1	Approach	858	2,442	3,189	747	284	223	1,081
	Through	546	Departure	723	1,403	2,280	877	333	262	985
	Right	311								
Eastbound	Left	179	Approach	184	938	1,442	504	192	150	334
	Through	0	Departure	329	1,684	1,996	312	119	93	422
	Right	5								
Westbound	Left	4	Approach	7	0	0	0	0	0	7
	Through	1	Departure	4	0	0	0	0	0	4
	Right	2								
PM Peak Hour										
Northbound	Left	28	Approach	610	2,910	3,899	989	277	218	828
	Through	578	Departure	560	2,176	2,574	398	111	88	648
	Right	4								
Southbound	Left	0	Approach	723	2,572	3,490	918	257	202	925
	Through	525	Departure	892	3,525	4,716	1,191	333	262	1,154
	Right	198								
Eastbound	Left	313	Approach	342	2,281	2,855	574	161	126	468
	Through	0	Departure	228	2,062	2,953	891	249	196	424
	Right	29								
Westbound	Left	6	Approach	9	0	0	0	0	0	9
	Through	2	Departure	4	0	0	0	0	0	4
	Right	1								

[1] Modeled base year (2012) to modeled future year (2040) conditions represent 28 years of traffic growth. Since it is 22 years from 2018 to 2040 the growth represents 0.785714285714286 % of the growth between 2012 and 2040 model years. Also the a.m. peak hour is 38% of the peak p the p.m. peak hour is 28 percent of the peak period.

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
1 Monte Vista Avenue/Baseline Road						
A.M. Peak Hour						
Northbound	Left	127	Approach	744	Left	174
	Through	98	Departure	1,116	Through	100
	Right	353			Right	470
Southbound	Left	211	Approach	463	Left	221
	Through	141	Departure	379	Through	128
	Right	106			Right	114
Eastbound	Left	44	Approach	820	Left	53
	Through	348	Departure	1,072	Through	546
	Right	162			Right	221
Westbound	Left	707	Approach	1,777	Left	767
	Through	610	Departure	1,237	Through	784
	Right	234			Right	225
P.M. Peak Hour						
Northbound	Left	153	Approach	1,124	Left	297
	Through	161	Departure	876	Through	166
	Right	652			Right	661
Southbound	Left	165	Approach	329	Left	139
	Through	112	Departure	369	Through	116
	Right	46			Right	74
Eastbound	Left	57	Approach	936	Left	53
	Through	768	Departure	1,278	Through	700
	Right	162			Right	182
Westbound	Left	456	Approach	1,632	Left	577
	Through	462	Departure	1,500	Through	907
	Right	144			Right	150

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
2 SR-210 Ramps/Baseline Road						
A.M. Peak Hour						
Northbound	Left	233	Approach	722	Left	189
	Through	0	Departure	636	Through	0
	Right	411			Right	535
Southbound	Left	59	Approach	929	Left	102
	Through	0	Departure	873	Through	0
	Right	766			Right	824
Eastbound	Left	167	Approach	1,286	Left	148
	Through	326	Departure	2,039	Through	541
	Right	468			Right	605
Westbound	Left	20	Approach	1,790	Left	32
	Through	814	Departure	1,179	Through	1,027
	Right	670			Right	726
P.M. Peak Hour						
Northbound	Left	179	Approach	1,153	Left	170
	Through	0	Departure	688	Through	0
	Right	829			Right	988
Southbound	Left	58	Approach	780	Left	87
	Through	0	Departure	346	Through	0
	Right	574			Right	688
Eastbound	Left	172	Approach	1,406	Left	54
	Through	823	Departure	1,731	Through	769
	Right	496			Right	592
Westbound	Left	28	Approach	1,271	Left	96
	Through	408	Departure	1,844	Through	874
	Right	323			Right	292

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
3 Benson Avenue/Baseline Road						
A.M. Peak Hour						
Northbound	Left	295	Approach	620	Left	307
	Through	129	Departure	1,012	Through	175
	Right	69			Right	138
Southbound	Left	16	Approach	764	Left	41
	Through	285	Departure	253	Through	443
	Right	208			Right	279
Eastbound	Left	51	Approach	713	Left	50
	Through	286	Departure	1,379	Through	414
	Right	287			Right	250
Westbound	Left	234	Approach	1,140	Left	319
	Through	673	Departure	594	Through	793
	Right	18			Right	28
P.M. Peak Hour						
Northbound	Left	255	Approach	961	Left	242
	Through	355	Departure	858	Through	433
	Right	218			Right	287
Southbound	Left	16	Approach	492	Left	35
	Through	169	Departure	690	Through	307
	Right	94			Right	150
Eastbound	Left	212	Approach	1,400	Left	205
	Through	811	Departure	847	Through	845
	Right	409			Right	350
Westbound	Left	139	Approach	710	Left	202
	Through	357	Departure	1,168	Through	455
	Right	32			Right	52

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
4 Benson Avenue/15th Street						
A.M. Peak Hour						
Northbound	Left	0	Approach	508	Left	0
	Through	427	Departure	1,055	Through	481
	Right	35			Right	32
Southbound	Left	29	Approach	975	Left	35
	Through	781	Departure	620	Through	936
	Right	0			Right	0
Eastbound	Left	0	Approach	0	Left	0
	Through	0	Departure	0	Through	0
	Right	0			Right	0
Westbound	Left	70	Approach	258	Left	119
	Through	0	Departure	66	Through	0
	Right	66			Right	140
P.M. Peak Hour						
Northbound	Left	0	Approach	1,106	Left	0
	Through	815	Departure	848	Through	898
	Right	144			Right	206
Southbound	Left	85	Approach	826	Left	115
	Through	622	Departure	988	Through	714
	Right	0			Right	0
Eastbound	Left	0	Approach	0	Left	0
	Through	0	Departure	0	Through	0
	Right	0			Right	0
Westbound	Left	51	Approach	224	Left	134
	Through	0	Departure	321	Through	0
	Right	38			Right	90

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
5 Benson Avenue/13th Street						
A.M. Peak Hour						
Northbound	Left	3	Approach	801	Left	43
	Through	463	Departure	953	Through	732
	Right	55			Right	43
Southbound	Left	49	Approach	1,042	Left	65
	Through	739	Departure	846	Through	816
	Right	6			Right	146
Eastbound	Left	3	Approach	24	Left	9
	Through	1	Departure	275	Through	1
	Right	12			Right	14
Westbound	Left	125	Approach	316	Left	123
	Through	4	Departure	109	Through	87
	Right	44			Right	106
P.M. Peak Hour						
Northbound	Left	2	Approach	995	Left	1
	Through	855	Departure	1,177	Through	900
	Right	165			Right	108
Southbound	Left	80	Approach	1,192	Left	188
	Through	628	Departure	1,244	Through	979
	Right	4			Right	9
Eastbound	Left	8	Approach	280	Left	154
	Through	6	Departure	10	Through	72
	Right	7			Right	55
Westbound	Left	102	Approach	332	Left	142
	Through	0	Departure	368	Through	0
	Right	56			Right	190

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
6 Monte Vista Avenue/Foothill Boulevard						
A.M. Peak Hour						
Northbound	Left	144	Approach	786	Left	214
	Through	366	Departure	751	Through	456
	Right	83			Right	117
Southbound	Left	88	Approach	606	Left	117
	Through	373	Departure	627	Through	444
	Right	32			Right	45
Eastbound	Left	36	Approach	839	Left	51
	Through	361	Departure	986	Through	582
	Right	142			Right	205
Westbound	Left	102	Approach	949	Left	102
	Through	617	Departure	816	Through	728
	Right	121			Right	120
P.M. Peak Hour						
Northbound	Left	181	Approach	1,360	Left	366
	Through	693	Departure	1,063	Through	833
	Right	124			Right	160
Southbound	Left	162	Approach	796	Left	126
	Through	497	Departure	998	Through	594
	Right	63			Right	77
Eastbound	Left	46	Approach	1,026	Left	37
	Through	815	Departure	1,189	Through	711
	Right	207			Right	278
Westbound	Left	136	Approach	1,065	Left	191
	Through	522	Departure	998	Through	747
	Right	149			Right	127

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
7 Central Avenue/Foothill Boulevard						
A.M. Peak Hour						
Northbound	Left	189	Approach	414	Left	208
	Through	0	Departure	455	Through	0
	Right	143			Right	207
Southbound	Left	0	Approach	0	Left	0
	Through	0	Departure	0	Through	0
	Right	0			Right	0
Eastbound	Left	0	Approach	673	Left	0
	Through	346	Departure	918	Through	518
	Right	104			Right	156
Westbound	Left	208	Approach	1,011	Left	299
	Through	652	Departure	724	Through	711
	Right	0			Right	0
P.M. Peak Hour						
Northbound	Left	155	Approach	779	Left	270
	Through	0	Departure	624	Through	0
	Right	391			Right	508
Southbound	Left	0	Approach	0	Left	0
	Through	0	Departure	0	Through	0
	Right	0			Right	0
Eastbound	Left	0	Approach	955	Left	0
	Through	916	Departure	841	Through	662
	Right	211			Right	292
Westbound	Left	227	Approach	903	Left	332
	Through	559	Departure	1,171	Through	571
	Right	0			Right	0

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

			Forecast Future Year			
Approach Direction		Traffic Counts		Link Volume		Forecast TM Volume
9	**Benson Avenue/Foothill Boulevard**					
A.M. Peak Hour						
Northbound	Left	82	Approach	579	Left	80
	Through	305	Departure	796	Through	409
	Right	94			Right	90
Southbound	Left	117	Approach	1,144	Left	168
	Through	480	Departure	759	Through	621
	Right	239			Right	350
Eastbound	Left	89	Approach	679	Left	188
	Through	298	Departure	1,073	Through	448
	Right	31			Right	42
Westbound	Left	123	Approach	940	Left	133
	Through	525	Departure	705	Through	642
	Right	96			Right	162
P.M. Peak Hour						
Northbound	Left	105	Approach	880	Left	98
	Through	551	Departure	962	Through	611
	Right	162			Right	171
Southbound	Left	152	Approach	1,254	Left	275
	Through	432	Departure	1,081	Through	733
	Right	153			Right	245
Eastbound	Left	269	Approach	1,172	Left	276
	Through	844	Departure	965	Through	822
	Right	81			Right	74
Westbound	Left	121	Approach	971	Left	155
	Through	512	Departure	1,268	Through	621
	Right	135			Right	194

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
10 Central Avenue/11th Street						
A.M. Peak Hour						
Northbound	Left	35	Approach	528	Left	48
	Through	291	Departure	379	Through	396
	Right	69			Right	88
Southbound	Left	26	Approach	451	Left	70
	Through	240	Departure	449	Through	323
	Right	19			Right	55
Eastbound	Left	11	Approach	87	Left	21
	Through	27	Departure	184	Through	49
	Right	18			Right	16
Westbound	Left	57	Approach	154	Left	40
	Through	54	Departure	207	Through	81
	Right	22			Right	33
P.M. Peak Hour						
Northbound	Left	18	Approach	710	Left	17
	Through	463	Departure	795	Through	659
	Right	89			Right	56
Southbound	Left	56	Approach	766	Left	79
	Through	433	Departure	797	Through	643
	Right	22			Right	45
Eastbound	Left	19	Approach	250	Left	68
	Through	82	Departure	151	Through	130
	Right	34			Right	56
Westbound	Left	96	Approach	253	Left	96
	Through	65	Departure	266	Through	90
	Right	33			Right	71

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
11 Central Avenue/Arrow Route						
A.M. Peak Hour						
Northbound	Left	67	Approach	640	Left	98
	Through	346	Departure	572	Through	440
	Right	99			Right	102
Southbound	Left	10	Approach	392	Left	11
	Through	289	Departure	558	Through	334
	Right	29			Right	46
Eastbound	Left	22	Approach	239	Left	39
	Through	89	Departure	577	Through	129
	Right	47			Right	70
Westbound	Left	147	Approach	679	Left	168
	Through	274	Departure	242	Through	432
	Right	57			Right	78
P.M. Peak Hour						
Northbound	Left	62	Approach	665	Left	54
	Through	505	Departure	1,066	Through	524
	Right	144			Right	87
Southbound	Left	50	Approach	807	Left	55
	Through	491	Departure	745	Through	696
	Right	34			Right	55
Eastbound	Left	64	Approach	704	Left	144
	Through	334	Departure	451	Through	439
	Right	72			Right	121
Westbound	Left	156	Approach	668	Left	249
	Through	190	Departure	581	Through	342
	Right	36			Right	77

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
12 Central Avenue/Arrow Highway						
A.M. Peak Hour						
Northbound	Left	67	Approach	1,048	Left	214
	Through	346	Departure	894	Through	684
	Right	99			Right	151
Southbound	Left	10	Approach	748	Left	22
	Through	289	Departure	866	Through	591
	Right	29			Right	133
Eastbound	Left	22	Approach	599	Left	106
	Through	89	Departure	938	Through	331
	Right	47			Right	162
Westbound	Left	147	Approach	808	Left	141
	Through	274	Departure	504	Through	591
	Right	57			Right	76
P.M. Peak Hour						
Northbound	Left	62	Approach	1,189	Left	206
	Through	505	Departure	1,549	Through	823
	Right	144			Right	160
Southbound	Left	50	Approach	1,429	Left	90
	Through	491	Departure	1,077	Through	1,158
	Right	34			Right	183
Eastbound	Left	64	Approach	1,147	Left	206
	Through	334	Departure	901	Through	732
	Right	72			Right	207
Westbound	Left	156	Approach	743	Left	184
	Through	190	Departure	981	Through	512
	Right	36			Right	48

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
13 Central Avenue/Moreno Street						
A.M. Peak Hour						
Northbound	Left	131	Approach	1,330	Left	156
	Through	799	Departure	1,218	Through	1,035
	Right	118			Right	136
Southbound	Left	35	Approach	888	Left	35
	Through	640	Departure	1,088	Through	831
	Right	24			Right	25
Eastbound	Left	24	Approach	235	Left	30
	Through	104	Departure	382	Through	116
	Right	62			Right	89
Westbound	Left	180	Approach	522	Left	298
	Through	150	Departure	287	Through	201
	Right	16			Right	23
P.M. Peak Hour						
Northbound	Left	300	Approach	1,681	Left	316
	Through	812	Departure	2,083	Through	1,108
	Right	219			Right	258
Southbound	Left	131	Approach	1,634	Left	168
	Through	1,050	Departure	1,316	Through	1,370
	Right	82			Right	94
Eastbound	Left	103	Approach	784	Left	128
	Through	363	Departure	730	Through	391
	Right	243			Right	265
Westbound	Left	312	Approach	847	Left	447
	Through	253	Departure	817	Through	319
	Right	49			Right	80

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
14 Central Avenue/I-10 Westbound Ramps						
A.M. Peak Hour						
Northbound	Left	387	Approach	1,544	Left	391
	Through	834	Departure	1,196	Through	1,153
	Right	0			Right	0
Southbound	Left	0	Approach	1,192	Left	0
	Through	584	Departure	1,442	Through	871
	Right	296			Right	321
Eastbound	Left	0	Approach	0	Left	0
	Through	0	Departure	714	Through	0
	Right	0			Right	0
Westbound	Left	311	Approach	616	Left	325
	Through	3	Departure	0	Through	2
	Right	278			Right	289
P.M. Peak Hour						
Northbound	Left	328	Approach	1,765	Left	269
	Through	1,230	Departure	2,354	Through	1,497
	Right	0			Right	0
Southbound	Left	0	Approach	2,259	Left	0
	Through	1,331	Departure	2,001	Through	1,809
	Right	456			Right	448
Eastbound	Left	0	Approach	0	Left	0
	Through	0	Departure	719	Through	0
	Right	0			Right	0
Westbound	Left	511	Approach	1,049	Left	544
	Through	2	Departure	0	Through	2
	Right	441			Right	503

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume			Forecast TM Volume
15 Central Avenue/I-10 Eastbound Ramps						
A.M. Peak Hour						
Northbound	Left	0	Approach	1,770	Left	0
	Through	949	Departure	1,141	Through	1,206
	Right	507			Right	567
Southbound	Left	166	Approach	1,185	Left	266
	Through	718	Departure	1,528	Through	915
	Right	0			Right	0
Eastbound	Left	256	Approach	551	Left	322
	Through	3	Departure	0	Through	3
	Right	257			Right	226
Westbound	Left	0	Approach	0	Left	0
	Through	0	Departure	837	Through	0
	Right	0			Right	0
P.M. Peak Hour						
Northbound	Left	0	Approach	1,841	Left	0
	Through	1,155	Departure	2,041	Through	1,358
	Right	557			Right	487
Southbound	Left	499	Approach	2,382	Left	615
	Through	1,371	Departure	1,739	Through	1,762
	Right	0			Right	0
Eastbound	Left	377	Approach	663	Left	380
	Through	5	Departure	0	Through	4
	Right	358			Right	280
Westbound	Left	0	Approach	0	Left	0
	Through	0	Departure	1,106	Through	0
	Right	0			Right	0

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Table B-7 - Calculation of Future Directional Turn Movement Volumes
From Future Directional Link Volumes '(Based on NCHRP 255)
Year 2040 Conditions

Approach Direction		Traffic Counts	Forecast Future Year Link Volume		Forecast TM Volume
17 Monte Vista Avenue/Claremont Boulevard					
A.M. Peak Hour					
Northbound	Left	0	Approach	745	Left 0
	Through	542	Departure	755	Through 691
	Right	3			Right 4
Southbound	Left	1	Approach	1,081	Left 0
	Through	546	Departure	985	Through 728
	Right	311			Right 421
Eastbound	Left	179	Approach	334	Left 293
	Through	0	Departure	422	Through 0
	Right	5			Right 22
Westbound	Left	4	Approach	7	Left 5
	Through	1	Departure	4	Through 1
	Right	2			Right 1
P.M. Peak Hour					
Northbound	Left	28	Approach	828	Left 73
	Through	578	Departure	648	Through 740
	Right	4			Right 4
Southbound	Left	0	Approach	925	Left 0
	Through	525	Departure	1,154	Through 592
	Right	198			Right 348
Eastbound	Left	313	Approach	468	Left 413
	Through	0	Departure	424	Through 0
	Right	29			Right 50
Westbound	Left	6	Approach	9	Left 6
	Through	2	Departure	4	Through 3
	Right	1			Right 1

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
1 . Monte Vista Avenue/Baseline Road												
NBL	174	4.7%	166	8	13	179	297	0.0%	297	0	0	297
NBT	100	4.1%	96	4	7	103	166	0.0%	166	0	0	166
NBR	470	4.8%	447	23	58	505	661	0.2%	660	1	2	662
SBL	221	2.4%	216	5	8	224	139	1.2%	137	2	3	140
SBT	128	0.7%	127	1	2	129	116	0.0%	116	0	0	116
SBR	114	0.9%	113	1	2	115	74	0.0%	74	0	0	74
EBL	53	2.3%	52	1	2	54	53	0.0%	53	0	0	53
EBT	546	0.6%	543	3	6	549	700	0.3%	698	2	3	701
EBR	221	4.3%	211	10	19	230	182	0.0%	182	0	0	182
WBL	767	0.6%	763	4	11	774	577	1.3%	569	8	17	586
WBT	784	0.5%	780	4	11	791	907	0.4%	903	4	10	913
WBR	225	0.9%	223	2	5	228	150	1.4%	148	2	5	153
North Leg												
Approach	463		456	7	12	468	329		327	2	3	330
Departure	378		371	7	14	385	369		367	2	5	372
Total	841		827	14	26	853	698		694	4	8	702
South Leg												
Approach	744		709	35	78	787	1,124		1,123	1	2	1,125
Departure	1,116		1,101	15	32	1,133	875		867	8	17	884
Total	1,860		1,810	50	110	1,920	1,999		1,990	9	19	2,009
East Leg												
Approach	1,776		1,766	10	27	1,793	1,634		1,620	14	32	1,652
Departure	1,237		1,206	31	72	1,278	1,500		1,495	5	8	1,503
Total	3,013		2,972	41	99	3,071	3,134		3,115	19	40	3,155
West Leg												
Approach	820		806	14	27	833	935		933	2	3	936
Departure	1,072		1,059	13	26	1,085	1,278		1,274	4	10	1,284
Total	1,892		1,865	27	53	1,918	2,213		2,207	6	13	2,220
Total Approaches												
Approach	3,803		3,737	66	144	3,881	4,022		4,003	19	40	4,043
Departure	3,803		3,737	66	144	3,881	4,022		4,003	19	40	4,043
Total	7,606		7,474	132	288	7,762	8,044		8,006	38	80	8,086

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
2 . SR-210 Ramps/Baseline Road												
NBL	189	3.4%	183	6	10	193	170	1.7%	167	3	5	172
NBT	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
NBR	535	7.1%	497	38	89	586	988	1.0%	978	10	20	998
SBL	102	10.2%	92	10	20	112	87	1.7%	85	2	6	91
SBT	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
SBR	824	0.7%	819	5	8	827	688	0.3%	686	2	5	691
EBL	148	3.6%	143	5	10	153	54	2.3%	53	1	2	55
EBT	541	1.8%	531	10	18	549	769	0.5%	765	4	6	771
EBR	605	1.3%	597	8	16	613	592	0.8%	587	5	8	595
WBL	32	25.0%	24	8	19	43	96	0.0%	96	0	0	96
WBT	1,027	1.1%	1,016	11	20	1,036	874	0.2%	872	2	4	876
WBR	726	2.2%	710	16	44	754	292	0.3%	291	1	2	293
North Leg												
Approach	926		911	15	28	939	775		771	4	11	782
Departure	874		853	21	54	907	346		344	2	4	348
Total	1,800		1,764	36	82	1,846	1,121		1,115	6	15	1,130
South Leg												
Approach	724		680	44	99	779	1,158		1,145	13	25	1,170
Departure	637		621	16	35	656	688		683	5	8	691
Total	1,361		1,301	60	134	1,435	1,846		1,828	18	33	1,861
East Leg												
Approach	1,785		1,750	35	83	1,833	1,262		1,259	3	6	1,265
Departure	1,178		1,120	58	127	1,247	1,844		1,828	16	32	1,860
Total	2,963		2,870	93	210	3,080	3,106		3,087	19	38	3,125
West Leg												
Approach	1,294		1,271	23	44	1,315	1,415		1,405	10	16	1,421
Departure	2,040		2,018	22	38	2,056	1,732		1,725	7	14	1,739
Total	3,334		3,289	45	82	3,371	3,147		3,130	17	30	3,160
Total Approaches												
Approach	4,729		4,612	117	254	4,866	4,610		4,580	30	58	4,638
Departure	4,729		4,612	117	254	4,866	4,610		4,580	30	58	4,638
Total	9,458		9,224	234	508	9,732	9,220		9,160	60	116	9,276

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
3 . Benson Avenue/Baseline Road												
NBL	307	2.7%	299	8	15	314	242	1.2%	239	3	5	244
NBT	175	2.3%	171	4	7	178	433	0.0%	433	0	0	433
NBR	138	5.8%	130	8	12	142	287	1.8%	282	5	8	290
SBL	41	6.3%	38	3	6	44	35	0.0%	35	0	0	35
SBT	443	1.1%	438	5	10	448	307	0.6%	305	2	4	309
SBR	279	0.0%	279	0	0	279	150	0.0%	150	0	0	150
EBL	50	0.0%	50	0	0	50	205	0.0%	205	0	0	205
EBT	414	1.0%	410	4	7	417	845	0.5%	841	4	6	847
EBR	250	1.7%	246	4	8	254	350	0.7%	347	3	6	353
WBL	319	0.9%	316	3	5	321	202	1.4%	199	3	5	204
WBT	793	0.7%	787	6	13	800	455	0.8%	451	4	7	458
WBR	28	5.6%	26	2	4	30	52	0.0%	52	0	0	52
North Leg												
Approach	763		755	8	16	771	492		490	2	4	494
Departure	253		247	6	11	258	690		690	0	0	690
Total	1,016		1,002	14	27	1,029	1,182		1,180	2	4	1,184
South Leg												
Approach	620		600	20	34	634	962		954	8	13	967
Departure	1,012		1,000	12	23	1,023	859		851	8	15	866
Total	1,632		1,600	32	57	1,657	1,821		1,805	16	28	1,833
East Leg												
Approach	1,140		1,129	11	22	1,151	709		702	7	12	714
Departure	593		578	15	25	603	1,167		1,158	9	14	1,172
Total	1,733		1,707	26	47	1,754	1,876		1,860	16	26	1,886
West Leg												
Approach	714		706	8	15	721	1,400		1,393	7	12	1,405
Departure	1,379		1,365	14	28	1,393	847		840	7	12	852
Total	2,093		2,071	22	43	2,114	2,247		2,233	14	24	2,257
Total Approaches												
Approach	3,237		3,190	47	87	3,277	3,563		3,539	24	41	3,580
Departure	3,237		3,190	47	87	3,277	3,563		3,539	24	41	3,580
Total	6,474		6,380	94	174	6,554	7,126		7,078	48	82	7,160

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
4 . Benson Avenue/15th Street												
NBL	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
NBT	481	3.3%	465	16	31	496	898	0.6%	892	6	13	905
NBR	32	0.0%	32	0	0	32	206	0.7%	205	1	2	207
SBL	35	3.4%	34	1	3	37	115	0.0%	115	0	0	115
SBT	936	0.9%	928	8	15	943	714	1.0%	707	7	12	719
SBR	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
EBL	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
EBT	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
EBR	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
WBL	119	1.4%	117	2	4	121	134	0.0%	134	0	0	134
WBT	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
WBR	140	0.0%	140	0	0	140	90	2.6%	88	2	4	92
North Leg												
Approach	971		962	9	18	980	829		822	7	12	834
Departure	621		605	16	31	636	988		980	8	17	997
Total	1,592		1,567	25	49	1,616	1,817		1,802	15	29	1,831
South Leg												
Approach	513		497	16	31	528	1,104		1,097	7	15	1,112
Departure	1,055		1,045	10	19	1,064	848		841	7	12	853
Total	1,568		1,542	26	50	1,592	1,952		1,938	14	27	1,965
East Leg												
Approach	259		257	2	4	261	224		222	2	4	226
Departure	67		66	1	3	69	321		320	1	2	322
Total	326		323	3	7	330	545		542	3	6	548
West Leg												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	0		0	0	0	0	0		0	0	0	0
Total	0		0	0	0	0	0		0	0	0	0
Total Approaches												
Approach	1,743		1,716	27	53	1,769	2,157		2,141	16	31	2,172
Departure	1,743		1,716	27	53	1,769	2,157		2,141	16	31	2,172
Total	3,486		3,432	54	106	3,538	4,314		4,282	32	62	4,344

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
5 . Benson Avenue/13th Street												
NBL	43	0.0%	43	0	0	43	1	0.0%	1	0	0	1
NBT	732	3.0%	710	22	41	751	900	0.6%	895	5	8	903
NBR	43	7.3%	40	3	5	45	108	0.0%	108	0	0	108
SBL	65	2.0%	64	1	2	66	188	0.0%	188	0	0	188
SBT	816	1.5%	804	12	20	824	979	1.0%	970	9	17	987
SBR	146	16.7%	122	24	72	194	9	25.0%	7	2	6	13
EBL	9	33.3%	6	3	9	15	154	0.0%	154	0	0	154
EBT	1	0.0%	1	0	0	1	72	0.0%	72	0	0	72
EBR	14	83.3%	2	12	36	38	55	28.6%	39	16	40	79
WBL	123	0.8%	122	1	2	124	142	0.0%	142	0	0	142
WBT	87	25.0%	65	22	44	109	0	0.0%	0	0	0	0
WBR	106	0.0%	106	0	0	106	190	0.0%	190	0	0	190
North Leg												
Approach	1,027		990	37	94	1,084	1,176		1,165	11	23	1,188
Departure	847		822	25	50	872	1,244		1,239	5	8	1,247
Total	1,874		1,812	62	144	1,956	2,420		2,404	16	31	2,435
South Leg												
Approach	818		793	25	46	839	1,009		1,004	5	8	1,012
Departure	953		928	25	58	986	1,176		1,151	25	57	1,208
Total	1,771		1,721	50	104	1,825	2,185		2,155	30	65	2,220
East Leg												
Approach	316		293	23	46	339	332		332	0	0	332
Departure	109		105	4	7	112	368		368	0	0	368
Total	425		398	27	53	451	700		700	0	0	700
West Leg												
Approach	24		9	15	45	54	281		265	16	40	305
Departure	276		230	46	116	346	10		8	2	6	14
Total	300		239	61	161	400	291		273	18	46	319
Total Approaches												
Approach	2,185		2,085	100	231	2,316	2,798		2,766	32	71	2,837
Departure	2,185		2,085	100	231	2,316	2,798		2,766	32	71	2,837
Total	4,370		4,170	200	462	4,632	5,596		5,532	64	142	5,674

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
6 . Monte Vista Avenue/Foothill Boulevard												
NBL	214	2.1%	210	4	7	217	366	0.0%	366	0	0	366
NBT	456	8.5%	417	39	64	481	833	1.2%	823	10	16	839
NBR	117	12.0%	103	14	31	134	160	3.2%	155	5	11	166
SBL	117	15.9%	98	19	35	133	126	1.2%	124	2	5	129
SBT	444	4.0%	426	18	29	455	594	1.0%	588	6	11	599
SBR	45	12.5%	39	6	12	51	77	1.6%	76	1	2	78
EBL	51	2.8%	50	1	2	52	37	0.0%	37	0	0	37
EBT	582	3.3%	563	19	29	592	711	0.1%	710	1	2	712
EBR	205	2.1%	201	4	7	208	278	0.0%	278	0	0	278
WBL	102	6.9%	95	7	15	110	191	2.2%	187	4	7	194
WBT	728	3.1%	706	22	36	742	747	0.6%	743	4	8	751
WBR	120	19.8%	96	24	48	144	127	1.3%	125	2	5	130
North Leg												
Approach	606		563	43	76	639	797		788	9	18	806
Departure	627		563	64	114	677	997		985	12	21	1,006
Total	1,233		1,126	107	190	1,316	1,794		1,773	21	39	1,812
South Leg												
Approach	787		730	57	102	832	1,359		1,344	15	27	1,371
Departure	751		722	29	51	773	1,063		1,053	10	18	1,071
Total	1,538		1,452	86	153	1,605	2,422		2,397	25	45	2,442
East Leg												
Approach	950		897	53	99	996	1,065		1,055	10	20	1,075
Departure	816		764	52	95	859	997		989	8	18	1,007
Total	1,766		1,661	105	194	1,855	2,062		2,044	18	38	2,082
West Leg												
Approach	838		814	24	38	852	1,026		1,025	1	2	1,027
Departure	987		955	32	55	1,010	1,190		1,185	5	10	1,195
Total	1,825		1,769	56	93	1,862	2,216		2,210	6	12	2,222
Total Approaches												
Approach	3,181		3,004	177	315	3,319	4,247		4,212	35	67	4,279
Departure	3,181		3,004	177	315	3,319	4,247		4,212	35	67	4,279
Total	6,362		6,008	354	630	6,638	8,494		8,424	70	134	8,558

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
7 . Central Avenue/Foothill Boulevard												
NBL	208	3.2%	201	7	14	215	270	1.3%	267	3	5	272
NBT	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
NBR	207	8.4%	190	17	26	216	508	1.3%	502	6	10	512
SBL	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
SBT	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
SBR	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
EBL	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
EBT	518	2.9%	503	15	30	533	662	0.4%	659	3	5	664
EBR	156	8.7%	142	14	28	170	292	0.5%	291	1	2	293
WBL	299	6.3%	280	19	38	318	332	2.2%	325	7	13	338
WBT	711	2.3%	695	16	41	736	571	0.4%	569	2	3	572
WBR	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
North Leg												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	0		0	0	0	0	0		0	0	0	0
Total	0		0	0	0	0	0		0	0	0	0
South Leg												
Approach	415		391	24	40	431	778		769	9	15	784
Departure	455		422	33	66	488	624		616	8	15	631
Total	870		813	57	106	919	1,402		1,385	17	30	1,415
East Leg												
Approach	1,010		975	35	79	1,054	903		894	9	16	910
Departure	725		693	32	56	749	1,170		1,161	9	15	1,176
Total	1,735		1,668	67	135	1,803	2,073		2,055	18	31	2,086
West Leg												
Approach	674		645	29	58	703	954		950	4	7	957
Departure	919		896	23	55	951	841		836	5	8	844
Total	1,593		1,541	52	113	1,654	1,795		1,786	9	15	1,801
Total Approaches												
Approach	2,099		2,011	88	177	2,188	2,635		2,613	22	38	2,651
Departure	2,099		2,011	88	177	2,188	2,635		2,613	22	38	2,651
Total	4,198		4,022	176	354	4,376	5,270		5,226	44	76	5,302

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
9 . Benson Avenue/Foothill Boulevard												
NBL	80	3.7%	77	3	5	82	98	1.0%	97	1	2	99
NBT	409	2.3%	400	9	14	414	611	0.2%	610	1	2	612
NBR	90	2.1%	88	2	5	93	171	1.2%	169	2	3	172
SBL	168	7.7%	155	13	38	193	275	0.7%	273	2	6	279
SBT	621	1.7%	611	10	16	627	733	0.9%	726	7	12	738
SBR	350	2.5%	341	9	20	361	245	1.3%	242	3	9	251
EBL	188	3.4%	182	6	10	192	276	1.1%	273	3	5	278
EBT	448	4.7%	427	21	38	465	822	0.8%	815	7	12	827
EBR	42	3.2%	41	1	2	43	74	1.2%	73	1	2	75
WBL	133	0.0%	133	0	0	133	155	0.0%	155	0	0	155
WBT	642	3.8%	618	24	54	672	621	1.2%	614	7	11	625
WBR	162	6.3%	152	10	22	174	194	0.7%	193	1	3	196
North Leg												
Approach	1,139		1,107	32	74	1,181	1,253		1,241	12	27	1,268
Departure	759		734	25	46	780	1,081		1,076	5	10	1,086
Total	1,898		1,841	57	120	1,961	2,334		2,317	17	37	2,354
South Leg												
Approach	579		565	14	24	589	880		876	4	7	883
Departure	796		785	11	18	803	962		954	8	14	968
Total	1,375		1,350	25	42	1,392	1,842		1,830	12	21	1,851
East Leg												
Approach	937		903	34	76	979	970		962	8	14	976
Departure	706		670	36	81	751	1,268		1,257	11	21	1,278
Total	1,643		1,573	70	157	1,730	2,238		2,219	19	35	2,254
West Leg												
Approach	678		650	28	50	700	1,172		1,161	11	19	1,180
Departure	1,072		1,036	36	79	1,115	964		953	11	22	975
Total	1,750		1,686	64	129	1,815	2,136		2,114	22	41	2,155
Total Approaches												
Approach	3,333		3,225	108	224	3,449	4,275		4,240	35	67	4,307
Departure	3,333		3,225	108	224	3,449	4,275		4,240	35	67	4,307
Total	6,666		6,450	216	448	6,898	8,550		8,480	70	134	8,614

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
10 . Central Avenue/11th Street												
NBL	48	5.7%	45	3	6	51	17	5.6%	16	1	2	18
NBT	396	6.5%	370	26	44	414	659	2.4%	643	16	26	669
NBR	88	10.1%	79	9	14	93	56	6.7%	52	4	7	59
SBL	70	3.8%	67	3	6	73	79	0.0%	79	0	0	79
SBT	323	6.7%	301	22	37	338	643	3.0%	624	19	32	656
SBR	55	0.0%	55	0	0	55	45	4.5%	43	2	4	47
EBL	21	9.1%	19	2	4	23	68	0.0%	68	0	0	68
EBT	49	3.7%	47	2	4	51	130	2.4%	127	3	5	132
EBR	16	16.7%	13	3	5	18	56	2.9%	54	2	4	58
WBL	40	29.8%	28	12	20	48	96	0.0%	96	0	0	96
WBT	81	18.5%	66	15	23	89	90	4.6%	86	4	7	93
WBR	33	18.2%	27	6	9	36	71	3.0%	69	2	4	73
North Leg												
Approach	448		423	25	43	466	767		746	21	36	782
Departure	450		416	34	57	473	798		780	18	30	810
Total	898		839	59	100	939	1,565		1,526	39	66	1,592
South Leg												
Approach	532		494	38	64	558	732		711	21	35	746
Departure	379		342	37	62	404	795		774	21	36	810
Total	911		836	75	126	962	1,527		1,485	42	71	1,556
East Leg												
Approach	154		121	33	52	173	257		251	6	11	262
Departure	207		193	14	24	217	265		258	7	12	270
Total	361		314	47	76	390	522		509	13	23	532
West Leg												
Approach	86		79	7	13	92	254		249	5	9	258
Departure	184		166	18	29	195	152		145	7	13	158
Total	270		245	25	42	287	406		394	12	22	416
Total Approaches												
Approach	1,220		1,117	103	172	1,289	2,010		1,957	53	91	2,048
Departure	1,220		1,117	103	172	1,289	2,010		1,957	53	91	2,048
Total	2,440		2,234	206	344	2,578	4,020		3,914	106	182	4,096

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
11 . Central Avenue/Arrow Route												
NBL	98	9.0%	89	9	15	104	54	8.1%	50	4	7	57
NBT	440	7.5%	407	33	56	463	524	3.4%	506	18	32	538
NBR	102	7.1%	95	7	12	107	87	3.5%	84	3	5	89
SBL	11	0.0%	11	0	0	11	55	0.0%	55	0	0	55
SBT	334	10.7%	298	36	62	360	696	2.0%	682	14	27	709
SBR	46	0.0%	46	0	0	46	55	0.0%	55	0	0	55
EBL	39	4.5%	37	2	4	41	144	1.6%	142	2	4	146
EBT	129	3.4%	125	4	7	132	439	0.0%	439	0	0	439
EBR	70	4.3%	67	3	8	75	121	0.0%	121	0	0	121
WBL	168	3.4%	162	6	10	172	249	2.6%	243	6	9	252
WBT	432	1.5%	426	6	11	437	342	0.0%	342	0	0	342
WBR	78	1.8%	77	1	2	79	77	0.0%	77	0	0	77
North Leg												
Approach	391		355	36	62	417	806		792	14	27	819
Departure	557		521	36	62	583	745		725	20	36	761
Total	948		876	72	124	1,000	1,551		1,517	34	63	1,580
South Leg												
Approach	640		591	49	83	674	665		640	25	44	684
Departure	572		527	45	80	607	1,066		1,046	20	36	1,082
Total	1,212		1,118	94	163	1,281	1,731		1,686	45	80	1,766
East Leg												
Approach	678		665	13	23	688	668		662	6	9	671
Departure	242		231	11	19	250	581		578	3	5	583
Total	920		896	24	42	938	1,249		1,240	9	14	1,254
West Leg												
Approach	238		229	9	19	248	704		702	2	4	706
Departure	576		561	15	26	587	451		447	4	7	454
Total	814		790	24	45	835	1,155		1,149	6	11	1,160
Total Approaches												
Approach	1,947		1,840	107	187	2,027	2,843		2,796	47	84	2,880
Departure	1,947		1,840	107	187	2,027	2,843		2,796	47	84	2,880
Total	3,894		3,680	214	374	4,054	5,686		5,592	94	168	5,760

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
12 . Central Avenue/Arrow Highway												
NBL	214	7.7%	197	17	29	226	206	2.9%	200	6	11	211
NBT	684	7.7%	631	53	91	722	823	2.9%	799	24	42	841
NBR	151	7.7%	139	12	21	160	160	2.9%	155	5	9	164
SBL	22	7.7%	20	2	3	23	90	2.9%	87	3	5	92
SBT	591	7.7%	545	46	79	624	1,158	2.9%	1,125	33	58	1,183
SBR	133	7.7%	123	10	17	140	183	2.9%	178	5	9	187
EBL	106	7.7%	98	8	14	112	206	2.9%	200	6	11	211
EBT	331	7.7%	305	26	45	350	732	2.9%	711	21	37	748
EBR	162	7.7%	149	13	22	171	207	2.9%	201	6	11	212
WBL	141	7.7%	130	11	19	149	184	2.9%	179	5	9	188
WBT	591	7.7%	545	46	79	624	512	2.9%	497	15	26	523
WBR	76	7.7%	70	6	10	80	48	2.9%	47	1	2	49
North Leg												
Approach	746		688	58	99	787	1,431		1,390	41	72	1,462
Departure	866		799	67	115	914	1,077		1,046	31	55	1,101
Total	1,612		1,487	125	214	1,701	2,508		2,436	72	127	2,563
South Leg												
Approach	1,049		967	82	141	1,108	1,189		1,154	35	62	1,216
Departure	894		824	70	120	944	1,549		1,505	44	78	1,583
Total	1,943		1,791	152	261	2,052	2,738		2,659	79	140	2,799
East Leg												
Approach	808		745	63	108	853	744		723	21	37	760
Departure	504		464	40	69	533	982		953	29	51	1,004
Total	1,312		1,209	103	177	1,386	1,726		1,676	50	88	1,764
West Leg												
Approach	599		552	47	81	633	1,145		1,112	33	59	1,171
Departure	938		865	73	125	990	901		875	26	46	921
Total	1,537		1,417	120	206	1,623	2,046		1,987	59	105	2,092
Total Approaches												
Approach	3,202		2,952	250	429	3,381	4,509		4,379	130	230	4,609
Departure	3,202		2,952	250	429	3,381	4,509		4,379	130	230	4,609
Total	6,404		5,904	500	858	6,762	9,018		8,758	260	460	9,218

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
13 . Central Avenue/Moreno Street												
NBL	156	7.7%	144	12	21	165	316	2.9%	307	9	16	323
NBT	1,035	7.7%	955	80	137	1,092	1,108	2.9%	1,076	32	56	1,132
NBR	136	7.7%	125	11	19	144	258	2.9%	251	7	12	263
SBL	35	7.7%	32	3	5	37	168	2.9%	163	5	9	172
SBT	831	7.7%	767	64	110	877	1,370	2.9%	1,331	39	68	1,399
SBR	25	7.7%	23	2	3	26	94	2.9%	91	3	5	96
EBL	30	7.7%	28	2	3	31	128	2.9%	124	4	7	131
EBT	116	7.7%	107	9	15	122	391	2.9%	380	11	19	399
EBR	89	7.7%	82	7	12	94	265	2.9%	257	8	14	271
WBL	298	7.7%	275	23	39	314	447	2.9%	434	13	23	457
WBT	201	7.7%	185	16	27	212	319	2.9%	310	9	16	326
WBR	23	7.7%	21	2	3	24	80	2.9%	78	2	4	82
North Leg												
Approach	891		822	69	118	940	1,632		1,585	47	82	1,667
Departure	1,088		1,004	84	143	1,147	1,316		1,278	38	67	1,345
Total	1,979		1,826	153	261	2,087	2,948		2,863	85	149	3,012
South Leg												
Approach	1,327		1,224	103	177	1,401	1,682		1,634	48	84	1,718
Departure	1,218		1,124	94	161	1,285	2,082		2,022	60	105	2,127
Total	2,545		2,348	197	338	2,686	3,764		3,656	108	189	3,845
East Leg												
Approach	522		481	41	69	550	846		822	24	43	865
Departure	287		264	23	39	303	817		794	23	40	834
Total	809		745	64	108	853	1,663		1,616	47	83	1,699
West Leg												
Approach	235		217	18	30	247	784		761	23	40	801
Departure	382		352	30	51	403	729		708	21	37	745
Total	617		569	48	81	650	1,513		1,469	44	77	1,546
Total Approaches												
Approach	2,975		2,744	231	394	3,138	4,944		4,802	142	249	5,051
Departure	2,975		2,744	231	394	3,138	4,944		4,802	142	249	5,051
Total	5,950		5,488	462	788	6,276	9,888		9,604	284	498	10,102

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
14 . Central Avenue/I-10 Westbound Ramps												
NBL	391	7.7%	361	30	51	412	269	2.9%	261	8	14	275
NBT	1,153	7.7%	1,064	89	153	1,217	1,497	2.9%	1,454	43	76	1,530
NBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
SBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
SBT	871	7.7%	804	67	115	919	1,809	2.9%	1,757	52	91	1,848
SBR	321	7.7%	296	25	43	339	448	2.9%	435	13	23	458
EBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
EBT	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
EBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
WBL	325	7.7%	300	25	43	343	544	2.9%	528	16	28	556
WBT	2	7.7%	2	0	0	2	2	2.9%	2	0	0	2
WBR	289	7.7%	267	22	38	305	503	2.9%	489	14	25	514
North Leg												
Approach	1,192		1,100	92	158	1,258	2,257		2,192	65	114	2,306
Departure	1,442		1,331	111	191	1,522	2,000		1,943	57	101	2,044
Total	2,634		2,431	203	349	2,780	4,257		4,135	122	215	4,350
South Leg												
Approach	1,544		1,425	119	204	1,629	1,766		1,715	51	90	1,805
Departure	1,196		1,104	92	158	1,262	2,353		2,285	68	119	2,404
Total	2,740		2,529	211	362	2,891	4,119		4,000	119	209	4,209
East Leg												
Approach	616		569	47	81	650	1,049		1,019	30	53	1,072
Departure	0		0	0	0	0	0		0	0	0	0
Total	616		569	47	81	650	1,049		1,019	30	53	1,072
West Leg												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	714		659	55	94	753	719		698	21	37	735
Total	714		659	55	94	753	719		698	21	37	735
Total Approaches												
Approach	3,352		3,094	258	443	3,537	5,072		4,926	146	257	5,183
Departure	3,352		3,094	258	443	3,537	5,072		4,926	146	257	5,183
Total	6,704		6,188	516	886	7,074	10,144		9,852	292	514	10,366

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
15 . Central Avenue/I-10 Eastbound Ramps												
NBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
NBT	1,206	7.7%	1,113	93	159	1,272	1,358	2.9%	1,319	39	68	1,387
NBR	567	7.7%	523	44	75	598	487	2.9%	473	14	25	498
SBL	266	7.7%	245	21	36	281	615	2.9%	597	18	32	629
SBT	915	7.7%	844	71	122	966	1,762	2.9%	1,711	51	90	1,801
SBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
EBL	322	7.7%	297	25	43	340	380	2.9%	369	11	19	388
EBT	3	7.7%	3	0	0	3	4	2.9%	4	0	0	4
EBR	226	7.7%	209	17	29	238	280	2.9%	272	8	14	286
WBL	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
WBT	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
WBR	0	7.7%	0	0	0	0	0	2.9%	0	0	0	0
North Leg												
Approach	1,181		1,089	92	158	1,247	2,377		2,308	69	122	2,430
Departure	1,528		1,410	118	202	1,612	1,738		1,688	50	87	1,775
Total	2,709		2,499	210	360	2,859	4,115		3,996	119	209	4,205
South Leg												
Approach	1,773		1,636	137	234	1,870	1,845		1,792	53	93	1,885
Departure	1,141		1,053	88	151	1,204	2,042		1,983	59	104	2,087
Total	2,914		2,689	225	385	3,074	3,887		3,775	112	197	3,972
East Leg												
Approach	0		0	0	0	0	0		0	0	0	0
Departure	836		771	65	111	882	1,106		1,074	32	57	1,131
Total	836		771	65	111	882	1,106		1,074	32	57	1,131
West Leg												
Approach	551		509	42	72	581	664		645	19	33	678
Departure	0		0	0	0	0	0		0	0	0	0
Total	551		509	42	72	581	664		645	19	33	678
Total Approaches												
Approach	3,505		3,234	271	464	3,698	4,886		4,745	141	248	4,993
Departure	3,505		3,234	271	464	3,698	4,886		4,745	141	248	4,993
Total	7,010		6,468	542	928	7,396	9,772		9,490	282	496	9,986

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Table B-8 - Year 2040 Peak Hour PCE Volume Summary

	AM Peak Hour						PM Peak Hour					
	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol	Total Veh.	Truck %	Pass. Veh.	Truck	Truck PCE	Total PCE Vol
17 . Monte Vista Avenue/Claremont Boulevard												
NBL	0	0.0%	0	0	0	0	73	0.0%	73	0	0	73
NBT	691	4.2%	662	29	50	712	740	0.5%	736	4	7	743
NBR	4	33.3%	3	1	2	5	4	50.0%	2	2	4	6
SBL	0	100.0%	0	0	0	0	0	0.0%	0	0	0	0
SBT	728	3.5%	703	25	43	746	592	1.1%	585	7	12	597
SBR	421	1.0%	417	4	7	424	348	0.5%	346	2	4	350
EBL	293	6.1%	275	18	31	306	413	0.0%	413	0	0	413
EBT	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0
EBR	22	0.0%	22	0	0	22	50	0.0%	50	0	0	50
WBL	5	50.0%	2	3	5	7	6	0.0%	6	0	0	6
WBT	1	0.0%	1	0	0	1	3	0.0%	3	0	0	3
WBR	1	0.0%	1	0	0	1	1	0.0%	1	0	0	1
North Leg												
Approach	1,149		1,120	29	50	1,170	940		931	9	16	947
Departure	985		938	47	81	1,019	1,154		1,150	4	7	1,157
Total	2,134		2,058	76	131	2,189	2,094		2,081	13	23	2,104
South Leg												
Approach	695		665	30	52	717	817		811	6	11	822
Departure	755		727	28	48	775	648		641	7	12	653
Total	1,450		1,392	58	100	1,492	1,465		1,452	13	23	1,475
East Leg												
Approach	7		4	3	5	9	10		10	0	0	10
Departure	4		3	1	2	5	4		2	2	4	6
Total	11		7	4	7	14	14		12	2	4	16
West Leg												
Approach	315		297	18	31	328	463		463	0	0	463
Departure	422		418	4	7	425	424		422	2	4	426
Total	737		715	22	38	753	887		885	2	4	889
Total Approaches												
Approach	2,166		2,086	80	138	2,224	2,230		2,215	15	27	2,242
Departure	2,166		2,086	80	138	2,224	2,230		2,215	15	27	2,242
Total	4,332		4,172	160	276	4,448	4,460		4,430	30	54	4,484

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
1 . Monte Vista Avenue/Baseline Road								
NBL	179	154	25	179	297	223	74	297
NBT	103	108	-5	113	166	211	-45	222
NBR	505	488	17	505	662	816	-154	857
SBL	224	234	-10	246	140	168	-28	176
SBT	129	186	-57	195	116	122	-6	128
SBR	115	111	4	115	74	48	26	74
EBL	54	47	7	54	53	59	-6	62
EBT	549	421	128	549	701	804	-103	844
EBR	230	217	13	230	182	202	-20	212
WBL	774	975	-201	1024	586	628	-42	659
WBT	791	767	24	791	913	582	331	913
WBR	228	290	-62	305	153	171	-18	180
North Leg								
Approach	468	531	-63	556	330	338	-8	379
Departure	385	445	-60	472	372	441	-69	463
Total	853	976	-123	1,028	702	779	-77	842
South Leg								
Approach	787	750	37	797	1,125	1,250	-125	1,375
Departure	1,133	1,378	-245	1,449	884	952	-68	1,000
Total	1,920	2,128	-208	2,246	2,009	2,202	-193	2,375
East Leg								
Approach	1,793	2,032	-239	2,119	1,652	1,381	271	1,752
Departure	1,278	1,143	135	1,300	1,503	1,788	-285	1,877
Total	3,071	3,175	-104	3,419	3,155	3,169	-14	3,629
West Leg								
Approach	833	685	148	833	936	1,065	-129	1,118
Departure	1,085	1,032	53	1,085	1,284	853	431	1,284
Total	1,918	1,717	201	1,918	2,220	1,918	302	2,402
Total Approaches								
Approach	3,881	3,998	-117	4,306	4,043	4,034	9	4,624
Departure	3,881	3,998	-117	4,306	4,043	4,034	9	4,624
Total	7,762	7,996	-234	8,611	8,086	8,068	18	9,248

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
2 SR-210 Ramps/Baseline Road								
NBL	193	286	-93	300	172	228	-56	239
NBT	0	0	0	0	0	0	0	0
NBR	586	523	63	586	998	1,031	-33	1083
SBL	112	123	-11	129	91	223	-132	234
SBT	0	0	0	0	0	0	0	0
SBR	827	861	-34	904	691	658	33	691
EBL	153	209	-56	219	55	244	-189	256
EBT	549	383	166	549	771	922	-151	968
EBR	613	546	67	613	595	611	-16	642
WBL	43	175	-132	184	96	136	-40	143
WBT	1,036	884	152	1036	876	486	390	876
WBR	754	872	-118	916	293	445	-152	467
North Leg								
Approach	939	984	-45	1,033	782	881	-99	925
Departure	907	1,081	-174	1,135	348	689	-341	723
Total	1,846	2,065	-219	2,168	1,130	1,570	-440	1,649
South Leg								
Approach	779	809	-30	886	1,170	1,259	-89	1,322
Departure	656	721	-65	797	691	747	-56	784
Total	1,435	1,530	-95	1,683	1,861	2,006	-145	2,106
East Leg								
Approach	1,833	1,931	-98	2,135	1,265	1,067	198	1,486
Departure	1,247	1,029	218	1,264	1,860	2,176	-316	2,285
Total	3,080	2,960	120	3,400	3,125	3,243	-118	3,771
West Leg								
Approach	1,315	1,138	177	1,381	1,421	1,777	-356	1,866
Departure	2,056	2,031	25	2,240	1,739	1,372	367	1,806
Total	3,371	3,169	202	3,622	3,160	3,149	11	3,672
Total Approaches								
Approach	4,866	4,862	4	5,436	4,638	4,984	-346	5,599
Departure	4,866	4,862	4	5,436	4,638	4,984	-346	5,599
Total	9,732	9,724	8	10,873	9,276	9,968	-692	11,198

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
3 Benson Avenue/Baseline Road								
NBL	314	457	-143	480	244	381	-137	400
NBT	178	150	28	178	433	481	-48	505
NBR	142	85	57	142	290	259	31	290
SBL	44	19	25	44	35	26	9	35
SBT	448	322	126	448	309	234	75	309
SBR	279	298	-19	313	150	132	18	150
EBL	50	82	-32	86	205	293	-88	308
EBT	417	437	-20	459	847	1,068	-221	1121
EBR	254	474	-220	498	353	582	-229	611
WBL	321	271	50	321	204	163	41	204
WBT	800	953	-153	1001	458	458	0	481
WBR	30	21	9	30	52	50	2	52
North Leg								
Approach	771	639	132	805	494	392	102	494
Departure	258	253	5	294	690	824	-134	865
Total	1,029	892	137	1,099	1,184	1,216	-32	1,359
South Leg								
Approach	634	692	-58	800	967	1,121	-154	1,195
Departure	1,023	1,067	-44	1,267	866	979	-113	1,124
Total	1,657	1,759	-102	2,067	1,833	2,100	-267	2,319
East Leg								
Approach	1,151	1,245	-94	1,352	714	671	43	737
Departure	603	541	62	645	1,172	1,353	-181	1,446
Total	1,754	1,786	-32	1,997	1,886	2,024	-138	2,183
West Leg								
Approach	721	993	-272	1,043	1,405	1,943	-538	2,040
Departure	1,393	1,708	-315	1,793	852	971	-119	1,031
Total	2,114	2,701	-587	2,836	2,257	2,914	-657	3,071
Total Approaches								
Approach	3,277	3,569	-292	3,999	3,580	4,127	-547	4,466
Departure	3,277	3,569	-292	3,999	3,580	4,127	-547	4,466
Total	6,554	7,138	-584	7,998	7,160	8,254	-1,094	8,932

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
4 Benson Avenue/15th Street								
NBL	0	0	0	0	0	0	0	0
NBT	496	517	-21	543	905	1,074	-169	1128
NBR	32	38	-6	40	207	169	38	207
SBL	37	37	0	39	115	108	7	115
SBT	943	931	12	943	719	770	-51	809
SBR	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0
WBL	121	90	31	121	134	57	77	134
WBT	0	0	0	0	0	0	0	0
WBR	140	82	58	140	92	59	33	92
North Leg								
Approach	980	968	12	982	834	878	-44	924
Departure	636	599	37	683	997	1,133	-136	1,220
Total	1,616	1,567	49	1,665	1,831	2,011	-180	2,143
South Leg								
Approach	528	555	-27	583	1,112	1,243	-131	1,335
Departure	1,064	1,021	43	1,064	853	827	26	943
Total	1,592	1,576	16	1,647	1,965	2,070	-105	2,277
East Leg								
Approach	261	172	89	261	226	116	110	226
Departure	69	75	-6	79	322	277	45	322
Total	330	247	83	340	548	393	155	548
West Leg								
Approach	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Total Approaches								
Approach	1,769	1,695	74	1,826	2,172	2,237	-65	2,484
Departure	1,769	1,695	74	1,826	2,172	2,237	-65	2,484
Total	3,538	3,390	148	3,651	4,344	4,474	-130	4,968

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
5 Benson Avenue/13th Street								
NBL	43	3	40	43	1	2	-1	2
NBT	751	551	200	751	903	1,119	-216	1175
NBR	45	60	-15	63	108	185	-77	194
SBL	66	53	13	66	188	91	97	188
SBT	824	904	-80	949	987	775	212	987
SBR	194	8	186	194	13	6	7	13
EBL	15	5	10	15	154	8	146	154
EBT	1	1	0	1	72	6	66	72
EBR	38	33	5	38	79	10	69	79
WBL	124	143	-19	150	142	107	35	142
WBT	109	5	104	109	0	0	0	0
WBR	106	48	58	106	190	68	122	190
North Leg								
Approach	1,084	965	119	1,209	1,188	872	316	1,188
Departure	872	604	268	872	1,247	1,195	52	1,519
Total	1,956	1,569	387	2,081	2,435	2,067	368	2,707
South Leg								
Approach	839	614	225	857	1,012	1,306	-294	1,371
Departure	986	1,080	-94	1,137	1,208	892	316	1,208
Total	1,825	1,694	131	1,994	2,220	2,198	22	2,579
East Leg								
Approach	339	196	143	365	332	175	157	332
Departure	112	114	-2	130	368	282	86	454
Total	451	310	141	495	700	457	243	786
West Leg								
Approach	54	39	15	54	305	24	281	305
Departure	346	16	330	346	14	8	6	15
Total	400	55	345	400	319	32	287	320
Total Approaches								
Approach	2,316	1,814	502	2,485	2,837	2,377	460	3,196
Departure	2,316	1,814	502	2,485	2,837	2,377	460	3,196
Total	4,632	3,628	1,004	4,971	5,674	4,754	920	6,393

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
6 Monte Vista Avenue/Foothill Boulevard								
NBL	217	172	45	217	366	235	131	366
NBT	481	422	59	481	839	866	-27	909
NBR	134	113	21	134	166	179	-13	188
SBL	133	115	18	133	129	204	-75	214
SBT	455	520	-65	546	599	566	33	599
SBR	51	55	-4	58	78	109	-31	114
EBL	52	73	-21	77	37	87	-50	91
EBT	592	417	175	592	712	1,010	-298	1061
EBR	208	193	15	208	278	238	40	278
WBL	110	153	-43	161	194	171	23	194
WBT	742	785	-43	824	751	621	130	751
WBR	144	179	-35	188	130	179	-49	188
North Leg								
Approach	639	690	-51	737	806	879	-73	928
Departure	677	674	3	746	1,006	1,132	-126	1,189
Total	1,316	1,364	-48	1,482	1,812	2,011	-199	2,116
South Leg								
Approach	832	707	125	832	1,371	1,280	91	1,463
Departure	773	866	-93	915	1,071	975	96	1,071
Total	1,605	1,573	32	1,747	2,442	2,255	187	2,534
East Leg								
Approach	996	1,117	-121	1,173	1,075	971	104	1,133
Departure	859	645	214	859	1,007	1,393	-386	1,463
Total	1,855	1,762	93	2,032	2,082	2,364	-282	2,596
West Leg								
Approach	852	683	169	877	1,027	1,335	-308	1,430
Departure	1,010	1,012	-2	1,099	1,195	965	230	1,231
Total	1,862	1,695	167	1,976	2,222	2,300	-78	2,661
Total Approaches								
Approach	3,319	3,197	122	3,618	4,279	4,465	-186	4,954
Departure	3,319	3,197	122	3,618	4,279	4,465	-186	4,954
Total	6,638	6,394	244	7,237	8,558	8,930	-372	9,907

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
7 Central Avenue/Foothill Boulevard								
NBL	215	223	-8	234	272	211	61	272
NBT	0	0	0	0	0	0	0	0
NBR	216	196	20	216	512	553	-41	581
SBL	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0
SBR	0	2	-2	2	0	7	-7	7
EBL	0	6	-6	6	0	4	-4	4
EBT	533	425	108	533	664	1,062	-398	1115
EBR	170	159	11	170	293	253	40	293
WBL	318	349	-31	366	338	315	23	338
WBT	736	771	-35	810	572	656	-84	689
WBR	0	0	0	0	0	0	0	0
North Leg								
Approach	0	2	-2	2	0	7	-7	7
Departure	0	6	-6	6	0	4	-4	4
Total	0	8	-8	8	0	11	-11	12
South Leg								
Approach	431	419	12	450	784	764	20	853
Departure	488	508	-20	536	631	568	63	631
Total	919	927	-8	987	1,415	1,332	83	1,484
East Leg								
Approach	1,054	1,120	-66	1,176	910	971	-61	1,027
Departure	749	621	128	749	1,176	1,615	-439	1,696
Total	1,803	1,741	62	1,925	2,086	2,586	-500	2,723
West Leg								
Approach	703	590	113	709	957	1,319	-362	1,412
Departure	951	996	-45	1,046	844	874	-30	968
Total	1,654	1,586	68	1,755	1,801	2,193	-392	2,380
Total Approaches								
Approach	2,188	2,131	57	2,338	2,651	3,061	-410	3,299
Departure	2,188	2,131	57	2,338	2,651	3,061	-410	3,299
Total	4,376	4,262	114	4,675	5,302	6,122	-820	6,598

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
9 Benson Avenue/Foothill Boulevard								
NBL	82	95	-13	100	99	121	-22	127
NBT	414	361	53	414	612	721	-109	757
NBR	93	105	-12	110	172	176	-4	185
SBL	193	144	49	193	279	179	100	279
SBT	627	583	44	627	738	531	207	738
SBR	361	314	47	361	251	185	66	251
EBL	192	107	85	192	278	347	-69	364
EBT	465	396	69	465	827	1,057	-230	1110
EBR	43	42	1	43	75	97	-22	102
WBL	133	130	3	133	155	129	26	155
WBT	672	693	-21	728	625	653	-28	686
WBR	174	115	59	174	196	169	27	196
North Leg								
Approach	1,181	1,041	140	1,181	1,268	895	373	1,268
Departure	780	583	197	780	1,086	1,237	-151	1,317
Total	1,961	1,624	337	1,961	2,354	2,132	222	2,585
South Leg								
Approach	589	561	28	624	883	1,018	-135	1,069
Departure	803	755	48	803	968	757	211	995
Total	1,392	1,316	76	1,427	1,851	1,775	76	2,064
East Leg								
Approach	979	938	41	1,035	976	951	25	1,037
Departure	751	645	106	768	1,278	1,412	-134	1,574
Total	1,730	1,583	147	1,803	2,254	2,363	-109	2,610
West Leg								
Approach	700	545	155	700	1,180	1,501	-321	1,576
Departure	1,115	1,102	13	1,188	975	959	16	1,064
Total	1,815	1,647	168	1,888	2,155	2,460	-305	2,640
Total Approaches								
Approach	3,449	3,085	364	3,540	4,307	4,365	-58	4,950
Departure	3,449	3,085	364	3,540	4,307	4,365	-58	4,950
Total	6,898	6,170	728	7,079	8,614	8,730	-116	9,899

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
10 Central Avenue/11th Street								
NBL	51	52	-1	55	18	67	-49	70
NBT	414	363	51	414	669	672	-3	706
NBR	93	92	1	93	59	140	-81	147
SBL	73	30	43	73	79	63	16	79
SBT	338	416	-78	437	656	553	103	656
SBR	55	24	31	55	47	37	10	47
EBL	23	24	-1	25	68	28	40	68
EBT	51	29	22	51	132	86	46	132
EBR	18	63	-45	66	58	64	-6	67
WBL	48	117	-69	123	96	133	-37	140
WBT	89	61	28	89	93	70	23	93
WBR	36	29	7	36	73	39	34	73
North Leg								
Approach	466	470	-4	565	782	653	129	782
Departure	473	416	57	475	810	739	71	847
Total	939	886	53	1,040	1,592	1,392	200	1,629
South Leg								
Approach	558	507	51	562	746	879	-133	923
Departure	404	596	-192	626	810	750	60	863
Total	962	1,103	-141	1,187	1,556	1,629	-73	1,786
East Leg								
Approach	173	207	-34	248	262	242	20	306
Departure	217	151	66	217	270	289	-19	358
Total	390	358	32	465	532	531	1	664
West Leg								
Approach	92	116	-24	142	258	178	80	267
Departure	195	137	58	199	158	174	-16	210
Total	287	253	34	341	416	352	64	478
Total Approaches								
Approach	1,289	1,300	-11	1,517	2,048	1,952	96	2,278
Departure	1,289	1,300	-11	1,517	2,048	1,952	96	2,278
Total	2,578	2,600	-22	3,033	4,096	3,904	192	4,556

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
11 Central Avenue/Arrow Route								
NBL	104	75	29	104	57	82	-25	86
NBT	463	451	12	463	538	803	-265	843
NBR	107	122	-15	128	89	204	-115	214
SBL	11	31	-20	33	55	67	-12	70
SBT	360	559	-199	587	709	660	49	709
SBR	46	30	16	46	55	38	17	55
EBL	41	25	16	41	146	69	77	146
EBT	132	100	32	132	439	350	89	439
EBR	75	64	11	75	121	76	45	121
WBL	172	184	-12	193	252	188	64	252
WBT	437	290	147	437	342	204	138	342
WBR	79	66	13	79	77	60	17	77
North Leg								
Approach	417	620	-203	666	819	765	54	834
Departure	583	542	41	583	761	932	-171	1,066
Total	1,000	1,162	-162	1,249	1,580	1,697	-117	1,901
South Leg								
Approach	674	648	26	695	684	1,089	-405	1,143
Departure	607	807	-200	855	1,082	924	158	1,082
Total	1,281	1,455	-174	1,550	1,766	2,013	-247	2,225
East Leg								
Approach	688	540	148	709	671	452	219	671
Departure	250	253	-3	293	583	621	-38	724
Total	938	793	145	1,002	1,254	1,073	181	1,395
West Leg								
Approach	248	189	59	248	706	495	211	706
Departure	587	395	192	587	454	324	130	483
Total	835	584	251	835	1,160	819	341	1,189
Total Approaches								
Approach	2,027	1,997	30	2,318	2,880	2,801	79	3,355
Departure	2,027	1,997	30	2,318	2,880	2,801	79	3,355
Total	4,054	3,994	60	4,636	5,760	5,602	158	6,710

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
12 Central Avenue/Arrow Highway								
NBL	226	251	-25	264	211	293	-82	308
NBT	722	794	-72	834	841	755	86	841
NBR	160	94	66	160	164	144	20	164
SBL	23	35	-12	37	92	71	21	92
SBT	624	608	16	624	1,183	1,047	136	1183
SBR	140	90	50	140	187	175	12	187
EBL	112	110	2	112	211	208	3	211
EBT	350	348	2	350	748	892	-144	937
EBR	171	228	-57	239	212	403	-191	423
WBL	149	143	6	149	188	184	4	188
WBT	624	611	13	624	523	416	107	523
WBR	80	52	28	80	49	62	-13	65
North Leg								
Approach	787	733	54	801	1,462	1,293	169	1,462
Departure	914	956	-42	1,026	1,101	1,025	76	1,117
Total	1,701	1,689	12	1,826	2,563	2,318	245	2,579
South Leg								
Approach	1,108	1,139	-31	1,257	1,216	1,192	24	1,313
Departure	944	979	-35	1,012	1,583	1,634	-51	1,794
Total	2,052	2,118	-66	2,270	2,799	2,826	-27	3,107
East Leg								
Approach	853	806	47	853	760	662	98	776
Departure	533	477	56	547	1,004	1,107	-103	1,193
Total	1,386	1,283	103	1,400	1,764	1,769	-5	1,969
West Leg								
Approach	633	686	-53	701	1,171	1,503	-332	1,571
Departure	990	952	38	1,028	921	884	37	1,018
Total	1,623	1,638	-15	1,729	2,092	2,387	-295	2,588
Total Approaches								
Approach	3,381	3,364	17	3,612	4,609	4,650	-41	5,122
Departure	3,381	3,364	17	3,612	4,609	4,650	-41	5,122
Total	6,762	6,728	34	7,225	9,218	9,300	-82	10,243

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
13 Central Avenue/Moreno Street								
NBL	165	171	-6	180	323	402	-79	422
NBT	1,092	1,074	18	1092	1,132	1,087	45	1132
NBR	144	132	12	144	263	243	20	263
SBL	37	71	-34	75	172	215	-43	226
SBT	877	863	14	877	1,399	1,399	0	1469
SBR	26	33	-7	35	96	106	-10	111
EBL	31	29	2	31	131	131	0	138
EBT	122	128	-6	134	399	418	-19	439
EBR	94	102	-8	107	271	340	-69	357
WBL	314	208	106	314	457	338	119	457
WBT	212	180	32	212	326	298	28	326
WBR	24	77	-53	81	82	104	-22	109
North Leg								
Approach	940	967	-27	986	1,667	1,720	-53	1,806
Departure	1,147	1,180	-33	1,204	1,345	1,322	23	1,379
Total	2,087	2,147	-60	2,190	3,012	3,042	-30	3,185
South Leg								
Approach	1,401	1,377	24	1,416	1,718	1,732	-14	1,817
Departure	1,285	1,173	112	1,298	2,127	2,077	50	2,283
Total	2,686	2,550	136	2,714	3,845	3,809	36	4,100
East Leg								
Approach	550	465	85	607	865	740	125	892
Departure	303	331	-28	353	834	876	-42	928
Total	853	796	57	960	1,699	1,616	83	1,820
West Leg								
Approach	247	259	-12	273	801	889	-88	933
Departure	403	384	19	426	745	806	-61	859
Total	650	643	7	699	1,546	1,695	-149	1,793
Total Approaches								
Approach	3,138	3,068	70	3,281	5,051	5,081	-30	5,449
Departure	3,138	3,068	70	3,281	5,051	5,081	-30	5,449
Total	6,276	6,136	140	6,562	10,102	10,162	-60	10,898

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
14 Central Avenue/I-10 Westbound Ramps								
NBL	412	424	-12	445	275	348	-73	365
NBT	1,217	1,068	149	1217	1,530	1,501	29	1530
NBR	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0
SBT	919	756	163	919	1,848	1,652	196	1848
SBR	339	395	-56	415	458	626	-168	657
EBL	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0
WBL	343	341	2	343	556	543	13	556
WBT	2	3	-1	3	2	2	0	2
WBR	305	379	-74	398	514	590	-76	620
North Leg								
Approach	1,258	1,151	107	1,334	2,306	2,278	28	2,505
Departure	1,522	1,447	75	1,615	2,044	2,091	-47	2,150
Total	2,780	2,598	182	2,949	4,350	4,369	-19	4,655
South Leg								
Approach	1,629	1,492	137	1,662	1,805	1,849	-44	1,895
Departure	1,262	1,097	165	1,262	2,404	2,195	209	2,404
Total	2,891	2,589	302	2,924	4,209	4,044	165	4,299
East Leg								
Approach	650	723	-73	744	1,072	1,135	-63	1,178
Departure	0	0	0	0	0	0	0	0
Total	650	723	-73	744	1,072	1,135	-63	1,178
West Leg								
Approach	0	0	0	0	0	0	0	0
Departure	753	822	-69	863	735	976	-241	1,025
Total	753	822	-69	863	735	976	-241	1,025
Total Approaches								
Approach	3,537	3,366	171	3,740	5,183	5,262	-79	5,578
Departure	3,537	3,366	171	3,740	5,183	5,262	-79	5,578
Total	7,074	6,732	342	7,480	10,366	10,524	-158	11,157

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
15 Central Avenue/I-10 Eastbound Ramps								
NBL	0	0	0	0	0	0	0	0
NBT	1,272	1,128	144	1272	1,387	1,298	89	1387
NBR	598	556	42	598	498	592	-94	622
SBL	281	255	26	281	629	658	-29	691
SBT	966	829	137	966	1,801	1,567	234	1801
SBR	0	0	0	0	0	0	0	0
EBL	340	346	-6	363	388	523	-135	549
EBT	3	3	0	3	4	5	-1	5
EBR	238	282	-44	296	286	381	-95	400
WBL	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0
North Leg								
Approach	1,247	1,084	163	1,247	2,430	2,225	205	2,492
Departure	1,612	1,474	138	1,635	1,775	1,821	-46	1,936
Total	2,859	2,558	301	2,882	4,205	4,046	159	4,428
South Leg								
Approach	1,870	1,684	186	1,870	1,885	1,890	-5	2,009
Departure	1,204	1,111	93	1,262	2,087	1,948	139	2,201
Total	3,074	2,795	279	3,132	3,972	3,838	134	4,210
East Leg								
Approach	0	0	0	0	0	0	0	0
Departure	882	814	68	882	1,131	1,255	-124	1,318
Total	882	814	68	882	1,131	1,255	-124	1,318
West Leg								
Approach	581	631	-50	663	678	909	-231	954
Departure	0	0	0	0	0	0	0	0
Total	581	631	-50	663	678	909	-231	954
Total Approaches								
Approach	3,698	3,399	299	3,780	4,993	5,024	-31	5,455
Departure	3,698	3,399	299	3,780	4,993	5,024	-31	5,455
Total	7,396	6,798	598	7,559	9,986	10,048	-62	10,910

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Table B-9 - Comparison of Year 2040 to Opening Year (2020) Peak Hour Volumes

	AM Peak Hour				PM Peak Hour			
	2,040 NP	OY NP	Comparison	Year 2,040 NP	2,040 NP	OY NP	Comparison	Year 2,040 NP
17 Monte Vista Avenue/Claremont Boulevard								
NBL	0	17	-17	18	73	29	44	73
NBT	712	667	45	712	743	794	-51	834
NBR	5	4	1	5	6	7	-1	7
SBL	0	3	-3	3	0	0	0	0
SBT	746	723	23	746	597	668	-71	701
SBR	424	360	64	424	350	217	133	350
EBL	306	196	110	306	413	395	18	413
EBT	0	0	0	0	0	0	0	0
EBR	22	5	17	22	50	30	20	50
WBL	7	6	1	7	6	6	0	6
WBT	1	1	0	1	3	2	1	3
WBR	1	2	-1	2	1	1	0	1
North Leg								
Approach	1,170	1,086	84	1,173	947	885	62	1,051
Departure	1,019	865	154	1,020	1,157	1,190	-33	1,248
Total	2,189	1,951	238	2,193	2,104	2,075	29	2,299
South Leg								
Approach	717	688	29	735	822	830	-8	914
Departure	775	734	41	775	653	704	-51	758
Total	1,492	1,422	70	1,510	1,475	1,534	-59	1,672
East Leg								
Approach	9	9	0	10	10	9	1	10
Departure	5	7	-2	8	6	7	-1	7
Total	14	16	-2	18	16	16	0	18
West Leg								
Approach	328	201	127	328	463	425	38	463
Departure	425	378	47	443	426	248	178	426
Total	753	579	174	771	889	673	216	889
Total Approaches								
Approach	2,224	1,984	240	2,246	2,242	2,149	93	2,439
Departure	2,224	1,984	240	2,246	2,242	2,149	93	2,439
Total	4,448	3,968	480	4,492	4,484	4,298	186	4,878

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
1 . Monte Vista Avenue/Baseline Road						
NBL	179	2	181	297	1	298
NBT	113	1	114	222	1	223
NBR	505	0	505	857	0	857
SBL	246	0	246	176	0	176
SBT	195	1	196	128	1	129
SBR	115	0	115	74	0	74
EBL	54	0	54	62	0	62
EBT	549	0	549	844	0	844
EBR	230	2	232	212	3	215
WBL	1024	0	1024	659	0	659
WBT	791	0	791	913	0	913
WBR	305	0	305	180	0	180
North Leg						
Approach	556	1	557	379	1	380
Departure	472	1	473	463	1	464
Total	1,028	2	1,030	842	2	844
South Leg						
Approach	797	3	800	1,375	2	1,377
Departure	1,449	3	1,452	1,000	4	1,004
Total	2,246	6	2,252	2,375	6	2,381
East Leg						
Approach	2,119	0	2,119	1,752	0	1,752
Departure	1,300	0	1,300	1,877	0	1,877
Total	3,419	0	3,419	3,629	0	3,629
West Leg						
Approach	833	2	835	1,118	3	1,121
Departure	1,085	2	1,087	1,284	1	1,285
Total	1,918	4	1,922	2,402	4	2,406
Total Approaches						
Approach	4,306	6	4,312	4,624	6	4,630
Departure	4,306	6	4,312	4,624	6	4,630
Total	8,611	12	8,623	9,248	12	9,260

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
2 SR-210 Ramps/Baseline Road						
NBL	300	0	300	239	0	239
NBT	0	0	0	0	0	0
NBR	586	5	591	1083	6	1089
SBL	129	5	134	234	6	240
SBT	0	0	0	0	0	0
SBR	904	0	904	691	0	691
EBL	219	0	219	256	0	256
EBT	549	0	549	968	0	968
EBR	613	0	613	642	0	642
WBL	184	5	189	143	3	146
WBT	1036	0	1036	876	0	876
WBR	916	5	921	467	3	470
North Leg						
Approach	1,033	5	1,038	925	6	931
Departure	1,135	5	1,140	723	3	726
Total	2,168	10	2,178	1,649	9	1,658
South Leg						
Approach	886	5	891	1,322	6	1,328
Departure	797	5	802	784	3	787
Total	1,683	10	1,693	2,106	9	2,115
East Leg						
Approach	2,135	10	2,145	1,486	6	1,492
Departure	1,264	10	1,274	2,285	12	2,297
Total	3,400	20	3,420	3,771	18	3,789
West Leg						
Approach	1,381	0	1,381	1,866	0	1,866
Departure	2,240	0	2,240	1,806	0	1,806
Total	3,622	0	3,622	3,672	0	3,672
Total Approaches						
Approach	5,436	20	5,456	5,599	18	5,617
Departure	5,436	20	5,456	5,599	18	5,617
Total	10,873	40	10,913	11,198	36	11,234

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
3 Benson Avenue/Baseline Road						
NBL	480	10	490	400	7	407
NBT	178	3	181	505	2	507
NBR	142	2	144	290	1	291
SBL	44	0	44	35	0	35
SBT	448	3	451	309	4	313
SBR	313	0	313	150	0	150
EBL	86	0	86	308	0	308
EBT	459	0	459	1121	0	1121
EBR	498	10	508	611	13	624
WBL	321	2	323	204	3	207
WBT	1001	0	1001	481	0	481
WBR	30	0	30	52	0	52
North Leg						
Approach	805	3	808	494	4	498
Departure	294	3	297	865	2	867
Total	1,099	6	1,105	1,359	6	1,365
South Leg						
Approach	800	15	815	1,195	10	1,205
Departure	1,267	15	1,282	1,124	20	1,144
Total	2,067	30	2,097	2,319	30	2,349
East Leg						
Approach	1,352	2	1,354	737	3	740
Departure	645	2	647	1,446	1	1,447
Total	1,997	4	2,001	2,183	4	2,187
West Leg						
Approach	1,043	10	1,053	2,040	13	2,053
Departure	1,793	10	1,803	1,031	7	1,038
Total	2,836	20	2,856	3,071	20	3,091
Total Approaches						
Approach	3,999	30	4,029	4,466	30	4,496
Departure	3,999	30	4,029	4,466	30	4,496
Total	7,998	60	8,058	8,932	60	8,992

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
4 Benson Avenue/15th Street						
NBL	0	0	0	0	0	0
NBT	543	15	558	1128	10	1138
NBR	40	0	40	207	0	207
SBL	39	0	39	115	0	115
SBT	943	15	958	809	19	828
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	121	0	121	134	0	134
WBT	0	0	0	0	0	0
WBR	140	0	140	92	0	92
North Leg						
Approach	982	15	997	924	19	943
Departure	683	15	698	1,220	10	1,230
Total	1,665	30	1,695	2,143	29	2,172
South Leg						
Approach	583	15	598	1,335	10	1,345
Departure	1,064	15	1,079	943	19	962
Total	1,647	30	1,677	2,277	29	2,306
East Leg						
Approach	261	0	261	226	0	226
Departure	79	0	79	322	0	322
Total	340	0	340	548	0	548
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	1,826	30	1,856	2,484	29	2,513
Departure	1,826	30	1,856	2,484	29	2,513
Total	3,651	60	3,711	4,968	58	5,026

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
5 Benson Avenue/13th Street						
NBL	43	10	53	2	13	15
NBT	751	5	756	1175	3	1178
NBR	63	0	63	194	0	194
SBL	66	0	66	188	0	188
SBT	949	5	954	987	6	993
SBR	194	10	204	13	13	26
EBL	15	10	25	154	7	161
EBT	1	0	1	72	0	72
EBR	38	10	48	79	7	86
WBL	150	0	150	142	0	142
WBT	109	0	109	0	0	0
WBR	106	0	106	190	0	190
North Leg						
Approach	1,209	15	1,224	1,188	19	1,207
Departure	872	15	887	1,519	10	1,529
Total	2,081	30	2,111	2,707	29	2,736
South Leg						
Approach	857	15	872	1,371	16	1,387
Departure	1,137	15	1,152	1,208	13	1,221
Total	1,994	30	2,024	2,579	29	2,608
East Leg						
Approach	365	0	365	332	0	332
Departure	130	0	130	454	0	454
Total	495	0	495	786	0	786
West Leg						
Approach	54	20	74	305	14	319
Departure	346	20	366	15	26	41
Total	400	40	440	320	40	360
Total Approaches						
Approach	2,485	50	2,535	3,196	49	3,245
Departure	2,485	50	2,535	3,196	49	3,245
Total	4,971	100	5,071	6,393	98	6,491

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
6 Monte Vista Avenue/Foothill Boulevard						
NBL	217	0	217	366	0	366
NBT	481	0	481	909	0	909
NBR	134	5	139	188	6	194
SBL	133	5	138	214	6	220
SBT	546	0	546	599	0	599
SBR	58	0	58	114	0	114
EBL	77	0	77	91	0	91
EBT	592	10	602	1061	13	1074
EBR	208	0	208	278	0	278
WBL	161	5	166	194	3	197
WBT	824	10	834	751	7	758
WBR	188	5	193	188	3	191
North Leg						
Approach	737	5	742	928	6	934
Departure	746	5	751	1,189	3	1,192
Total	1,482	10	1,492	2,116	9	2,125
South Leg						
Approach	832	5	837	1,463	6	1,469
Departure	915	5	920	1,071	3	1,074
Total	1,747	10	1,757	2,534	9	2,543
East Leg						
Approach	1,173	20	1,193	1,133	13	1,146
Departure	859	20	879	1,463	25	1,488
Total	2,032	40	2,072	2,596	38	2,634
West Leg						
Approach	877	10	887	1,430	13	1,443
Departure	1,099	10	1,109	1,231	7	1,238
Total	1,976	20	1,996	2,661	20	2,681
Total Approaches						
Approach	3,618	40	3,658	4,954	38	4,992
Departure	3,618	40	3,658	4,954	38	4,992
Total	7,237	80	7,317	9,907	76	9,983

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
7 Central Avenue/Foothill Boulevard						
NBL	234	0	234	272	0	272
NBT	0	33	33	0	41	41
NBR	216	0	216	581	0	581
SBL	0	29	29	0	20	20
SBT	0	18	18	0	13	13
SBR	2	5	7	7	3	10
EBL	6	20	26	4	26	30
EBT	533	0	533	1115	0	1115
EBR	170	0	170	293	0	293
WBL	366	15	381	338	10	348
WBT	810	15	825	689	10	699
WBR	0	10	10	0	13	13
North Leg						
Approach	2	52	54	7	36	43
Departure	6	63	69	4	80	84
Total	8	115	123	12	116	128
South Leg						
Approach	450	33	483	853	41	894
Departure	536	33	569	631	23	654
Total	987	66	1,053	1,484	64	1,548
East Leg						
Approach	1,176	40	1,216	1,027	33	1,060
Departure	749	29	778	1,696	20	1,716
Total	1,925	69	1,994	2,723	53	2,776
West Leg						
Approach	709	20	729	1,412	26	1,438
Departure	1,046	20	1,066	968	13	981
Total	1,755	40	1,795	2,380	39	2,419
Total Approaches						
Approach	2,338	145	2,483	3,299	136	3,435
Departure	2,338	145	2,483	3,299	136	3,435
Total	4,675	290	4,965	6,598	272	6,870

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
8 Project Driveway/Foothill Boulevard						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	15	15	0	10	10
EBL	0	0	0	0	0	0
EBT	651	29	680	1696	20	1716
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	1176	20	1196	1020	26	1046
WBR	0	10	10	0	13	13
North Leg						
Approach	0	15	15	0	10	10
Departure	0	10	10	0	13	13
Total	0	25	25	0	23	23
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	1,176	30	1,206	1,020	39	1,059
Departure	651	29	680	1,696	20	1,716
Total	1,827	59	1,886	2,715	59	2,774
West Leg						
Approach	651	29	680	1,696	20	1,716
Departure	1,176	35	1,211	1,020	36	1,056
Total	1,827	64	1,891	2,715	56	2,771
Total Approaches						
Approach	1,827	74	1,901	2,715	69	2,784
Departure	1,827	74	1,901	2,715	69	2,784
Total	3,654	148	3,802	5,431	138	5,569

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
9 Benson Avenue/Foothill Boulevard						
NBL	100	10	110	127	13	140
NBT	414	5	419	757	6	763
NBR	110	0	110	185	0	185
SBL	193	5	198	279	3	282
SBT	627	5	632	738	3	741
SBR	361	5	366	251	6	257
EBL	192	5	197	364	3	367
EBT	465	15	480	1110	10	1120
EBR	43	10	53	102	7	109
WBL	133	0	133	155	0	155
WBT	728	15	743	686	19	705
WBR	174	5	179	196	6	202
North Leg						
Approach	1,181	15	1,196	1,268	12	1,280
Departure	780	15	795	1,317	15	1,332
Total	1,961	30	1,991	2,585	27	2,612
South Leg						
Approach	624	15	639	1,069	19	1,088
Departure	803	15	818	995	10	1,005
Total	1,427	30	1,457	2,064	29	2,093
East Leg						
Approach	1,035	20	1,055	1,037	25	1,062
Departure	768	20	788	1,574	13	1,587
Total	1,803	40	1,843	2,610	38	2,648
West Leg						
Approach	700	30	730	1,576	20	1,596
Departure	1,188	30	1,218	1,064	38	1,102
Total	1,888	60	1,948	2,640	58	2,698
Total Approaches						
Approach	3,540	80	3,620	4,950	76	5,026
Departure	3,540	80	3,620	4,950	76	5,026
Total	7,079	160	7,239	9,899	152	10,051

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
10 Central Avenue/11th Street						
NBL	55	0	55	70	0	70
NBT	414	33	447	706	41	747
NBR	93	0	93	147	0	147
SBL	73	0	73	79	0	79
SBT	437	32	469	656	23	679
SBR	55	0	55	47	0	47
EBL	25	0	25	68	0	68
EBT	51	0	51	132	0	132
EBR	66	0	66	67	0	67
WBL	123	0	123	140	0	140
WBT	89	0	89	93	0	93
WBR	36	0	36	73	0	73
North Leg						
Approach	565	32	597	782	23	805
Departure	475	33	508	847	41	888
Total	1,040	65	1,105	1,629	64	1,693
South Leg						
Approach	562	33	595	923	41	964
Departure	626	32	658	863	23	886
Total	1,187	65	1,252	1,786	64	1,850
East Leg						
Approach	248	0	248	306	0	306
Departure	217	0	217	358	0	358
Total	465	0	465	664	0	664
West Leg						
Approach	142	0	142	267	0	267
Departure	199	0	199	210	0	210
Total	341	0	341	478	0	478
Total Approaches						
Approach	1,517	65	1,582	2,278	64	2,342
Departure	1,517	65	1,582	2,278	64	2,342
Total	3,033	130	3,163	4,556	128	4,684

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
11 Central Avenue/Arrow Route						
NBL	104	0	104	86	0	86
NBT	463	31	494	843	39	882
NBR	128	0	128	214	0	214
SBL	33	1	34	70	1	71
SBT	587	30	617	709	22	731
SBR	46	1	47	55	1	56
EBL	41	1	42	146	1	147
EBT	132	0	132	439	0	439
EBR	75	0	75	121	0	121
WBL	193	0	193	252	0	252
WBT	437	0	437	342	0	342
WBR	79	1	80	77	1	78
North Leg						
Approach	666	32	698	834	24	858
Departure	583	33	616	1,066	41	1,107
Total	1,249	65	1,314	1,901	65	1,966
South Leg						
Approach	695	31	726	1,143	39	1,182
Departure	855	30	885	1,082	22	1,104
Total	1,550	61	1,611	2,225	61	2,286
East Leg						
Approach	709	1	710	671	1	672
Departure	293	1	294	724	1	725
Total	1,002	2	1,004	1,395	2	1,397
West Leg						
Approach	248	1	249	706	1	707
Departure	587	1	588	483	1	484
Total	835	2	837	1,189	2	1,191
Total Approaches						
Approach	2,318	65	2,383	3,355	65	3,420
Departure	2,318	65	2,383	3,355	65	3,420
Total	4,636	130	4,766	6,710	130	6,840

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
12 Central Avenue/Arrow Highway						
NBL	264	0	264	308	0	308
NBT	834	29	863	841	36	877
NBR	160	0	160	164	0	164
SBL	37	1	38	92	1	93
SBT	624	28	652	1183	21	1204
SBR	140	1	141	187	1	188
EBL	112	1	113	211	1	212
EBT	350	0	350	937	0	937
EBR	239	0	239	423	0	423
WBL	149	0	149	188	0	188
WBT	624	0	624	523	0	523
WBR	80	1	81	65	1	66
North Leg						
Approach	801	30	831	1,462	23	1,485
Departure	1,026	31	1,057	1,117	38	1,155
Total	1,826	61	1,887	2,579	61	2,640
South Leg						
Approach	1,257	29	1,286	1,313	36	1,349
Departure	1,012	28	1,040	1,794	21	1,815
Total	2,270	57	2,327	3,107	57	3,164
East Leg						
Approach	853	1	854	776	1	777
Departure	547	1	548	1,193	1	1,194
Total	1,400	2	1,402	1,969	2	1,971
West Leg						
Approach	701	1	702	1,571	1	1,572
Departure	1,028	1	1,029	1,018	1	1,019
Total	1,729	2	1,731	2,588	2	2,590
Total Approaches						
Approach	3,612	61	3,673	5,122	61	5,183
Departure	3,612	61	3,673	5,122	61	5,183
Total	7,225	122	7,347	10,243	122	10,365

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
13 Central Avenue/Moreno Street						
NBL	180	0	180	422	0	422
NBT	1092	27	1119	1132	34	1166
NBR	144	0	144	263	0	263
SBL	75	1	76	226	1	227
SBT	877	26	903	1469	19	1488
SBR	35	1	36	111	1	112
EBL	31	1	32	138	1	139
EBT	134	0	134	439	0	439
EBR	107	0	107	357	0	357
WBL	314	0	314	457	0	457
WBT	212	0	212	326	0	326
WBR	81	1	82	109	1	110
North Leg						
Approach	986	28	1,014	1,806	21	1,827
Departure	1,204	29	1,233	1,379	36	1,415
Total	2,190	57	2,247	3,185	57	3,242
South Leg						
Approach	1,416	27	1,443	1,817	34	1,851
Departure	1,298	26	1,324	2,283	19	2,302
Total	2,714	53	2,767	4,100	53	4,153
East Leg						
Approach	607	1	608	892	1	893
Departure	353	1	354	928	1	929
Total	960	2	962	1,820	2	1,822
West Leg						
Approach	273	1	274	933	1	934
Departure	426	1	427	859	1	860
Total	699	2	701	1,793	2	1,795
Total Approaches						
Approach	3,281	57	3,338	5,449	57	5,506
Departure	3,281	57	3,338	5,449	57	5,506
Total	6,562	114	6,676	10,898	114	11,012

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
14 Central Avenue/I-10 Westbound Ramps						
NBL	445	0	445	365	0	365
NBT	1217	12	1229	1530	15	1545
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	919	16	935	1848	12	1860
SBR	415	12	427	657	9	666
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	343	0	343	556	0	556
WBT	3	0	3	2	0	2
WBR	398	16	414	620	20	640
North Leg						
Approach	1,334	28	1,362	2,505	21	2,526
Departure	1,615	28	1,643	2,150	35	2,185
Total	2,949	56	3,005	4,655	56	4,711
South Leg						
Approach	1,662	12	1,674	1,895	15	1,910
Departure	1,262	16	1,278	2,404	12	2,416
Total	2,924	28	2,952	4,299	27	4,326
East Leg						
Approach	744	16	760	1,178	20	1,198
Departure	0	0	0	0	0	0
Total	744	16	760	1,178	20	1,198
West Leg						
Approach	0	0	0	0	0	0
Departure	863	12	875	1,025	9	1,034
Total	863	12	875	1,025	9	1,034
Total Approaches						
Approach	3,740	56	3,796	5,578	56	5,634
Departure	3,740	56	3,796	5,578	56	5,634
Total	7,480	112	7,592	11,157	112	11,269

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
15 Central Avenue/I-10 Eastbound Ramps						
NBL	0	0	0	0	0	0
NBT	1272	0	1272	1387	0	1387
NBR	598	0	598	622	0	622
SBL	281	16	297	691	12	703
SBT	966	0	966	1801	0	1801
SBR	0	0	0	0	0	0
EBL	363	12	375	549	15	564
EBT	3	0	3	5	0	5
EBR	296	0	296	400	0	400
WBL	0	0	0	0	0	0
WBT	0	0	0	0	0	0
WBR	0	0	0	0	0	0
North Leg						
Approach	1,247	16	1,263	2,492	12	2,504
Departure	1,635	12	1,647	1,936	15	1,951
Total	2,882	28	2,910	4,428	27	4,455
South Leg						
Approach	1,870	0	1,870	2,009	0	2,009
Departure	1,262	0	1,262	2,201	0	2,201
Total	3,132	0	3,132	4,210	0	4,210
East Leg						
Approach	0	0	0	0	0	0
Departure	882	16	898	1,318	12	1,330
Total	882	16	898	1,318	12	1,330
West Leg						
Approach	663	12	675	954	15	969
Departure	0	0	0	0	0	0
Total	663	12	675	954	15	969
Total Approaches						
Approach	3,780	28	3,808	5,455	27	5,482
Departure	3,780	28	3,808	5,455	27	5,482
Total	7,559	56	7,615	10,910	54	10,964

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Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
16 Project Driveway 2/Foothill Boulevard						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	15	15	0	10	10
EBL	0	0	0	0	0	0
EBT	651	29	680	1696	20	1716
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	1176	25	1201	1020	23	1043
WBR	0	10	10	0	13	13
North Leg						
Approach	0	15	15	0	10	10
Departure	0	10	10	0	13	13
Total	0	25	25	0	23	23
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	1,176	35	1,211	1,020	36	1,056
Departure	651	29	680	1,696	20	1,716
Total	1,827	64	1,891	2,715	56	2,771
West Leg						
Approach	651	29	680	1,696	20	1,716
Departure	1,176	40	1,216	1,020	33	1,053
Total	1,827	69	1,896	2,715	53	2,768
Total Approaches						
Approach	1,827	79	1,906	2,715	66	2,781
Departure	1,827	79	1,906	2,715	66	2,781
Total	3,654	158	3,812	5,431	132	5,563

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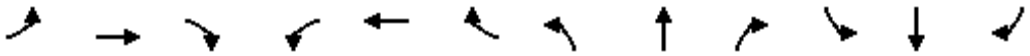
Table B-10 - Year 2040 Peak Hour Volume Summary

	AM Peak Hour			PM Peak Hour		
	Year 2,040 NP	Project Trips	OY 2,040 WP	Year 2,040 NP	Project Trips	Year 2,040 WP
17 Monte Vista Avenue/Claremont Boulevard						
NBL	18	2	20	73	1	74
NBT	712	3	715	834	2	836
NBR	5	0	5	7	0	7
SBL	3	0	3	0	0	0
SBT	746	3	749	701	4	705
SBR	424	0	424	350	0	350
EBL	306	0	306	413	0	413
EBT	0	0	0	0	0	0
EBR	22	2	24	50	3	53
WBL	7	0	7	6	0	6
WBT	1	0	1	3	0	3
WBR	2	0	2	1	0	1
North Leg						
Approach	1,173	3	1,176	1,051	4	1,055
Departure	1,020	3	1,023	1,248	2	1,250
Total	2,193	6	2,199	2,299	6	2,305
South Leg						
Approach	735	5	740	914	3	917
Departure	775	5	780	758	7	765
Total	1,510	10	1,520	1,672	10	1,682
East Leg						
Approach	10	0	10	10	0	10
Departure	8	0	8	7	0	7
Total	18	0	18	18	0	18
West Leg						
Approach	328	2	330	463	3	466
Departure	443	2	445	426	1	427
Total	771	4	775	889	4	893
Total Approaches						
Approach	2,246	10	2,256	2,439	10	2,449
Departure	2,246	10	2,256	2,439	10	2,449
Total	4,492	20	4,512	4,878	20	4,898

APPENDIX C:
LEVEL OF SERVICE WORKSHEETS

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

09/26/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	363	168	833	718	277	131	101	393	222	142	107
Future Volume (veh/h)	45	363	168	833	718	277	131	101	393	222	142	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	47	382	177	877	756	292	138	106	414	234	149	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	270	834	372	1377	1628	726	456	371	818	452	426	302
Arrive On Green	0.10	0.24	0.24	0.55	0.80	0.80	0.12	0.21	0.21	0.14	0.22	0.22
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	1911	1355
Grp Volume(v), veh/h	47	382	177	877	756	292	138	106	414	234	132	130
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1556
Q Serve(g_s), s	2.1	9.5	7.1	6.1	7.2	5.8	5.9	5.0	5.0	10.1	6.5	7.1
Cycle Q Clear(g_c), s	2.1	9.5	7.1	6.1	7.2	5.8	5.9	5.0	5.0	10.1	6.5	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	270	834	372	1377	1628	726	456	371	818	452	382	347
V/C Ratio(X)	0.17	0.46	0.48	0.64	0.46	0.40	0.30	0.29	0.51	0.52	0.35	0.37
Avail Cap(c_a), veh/h	316	834	372	1377	1628	726	463	371	818	452	382	347
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	32.2	16.7	14.8	6.1	6.0	24.7	33.5	5.2	23.8	32.7	32.9
Incr Delay (d2), s/veh	0.3	1.8	4.3	0.1	0.1	0.1	0.4	1.9	2.2	1.0	2.5	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.1	2.9	4.6	1.9	1.5	2.4	2.4	2.6	4.1	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	34.0	21.0	14.9	6.2	6.1	25.0	35.4	7.3	24.8	35.2	36.0
LnGrp LOS	C	C	C	B	A	A	C	D	A	C	D	D
Approach Vol, veh/h		606			1925			658			496	
Approach Delay, s/veh		29.9			10.1			15.6			30.5	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	26.4	14.3	24.3	11.8	49.6	16.0	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	21.9	10.2	19.4	10.0	42.4	11.5	18.1
Max Q Clear Time (g_c+I1), s	8.1	11.5	7.9	9.1	4.1	9.2	12.1	7.0
Green Ext Time (p_c), s	3.5	2.3	0.1	1.0	0.0	7.4	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	331	474	27	821	696	238	0	450	65	0	769
Future Volume (veh/h)	173	331	474	27	821	696	238	0	450	65	0	769
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	194	372	533	30	922	782	267	0	506	73	0	864
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	2389	1065	140	2147	957	274	0	0	274	0	0
Arrive On Green	0.25	1.00	1.00	0.08	0.63	0.63	0.16	0.00	0.03	0.16	0.00	0.03
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	267		1714	73	
Grp Volume(v), veh/h	194	372	533	30	922	782	267	88.6		73	37.4	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	F		1714	D	
Q Serve(g_s), s	10.4	0.0	0.0	1.6	13.7	39.2	15.5			3.7		
Cycle Q Clear(g_c), s	10.4	0.0	0.0	1.6	13.7	39.2	15.5			3.7		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	261	2389	1065	140	2147	957	274			274		
V/C Ratio(X)	0.74	0.16	0.50	0.21	0.43	0.82	0.97			0.27		
Avail Cap(c_a), veh/h	446	2389	1065	262	2147	957	274			274		
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.88	0.88	0.88	0.45	0.45	0.45	1.00			1.00		
Uniform Delay (d), s/veh	35.5	0.0	0.0	42.9	9.5	14.2	41.8			36.8		
Incr Delay (d2), s/veh	3.7	0.1	1.5	0.3	0.3	3.6	46.9			0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.0	0.7	4.8	12.9	10.0			1.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	0.1	1.5	43.3	9.8	17.8	88.6			37.4		
LnGrp LOS	D	A	A	D	A	B	F			D		
Approach Vol, veh/h		1099			1734							
Approach Delay, s/veh		7.7			14.0							
Approach LOS		A			B							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	10.2	71.8	18.0		17.2	64.8	18.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	12.8	37.7	13.5		23.5	27.0	10.0
Max Q Clear Time (g_c+I1), s	13.6	2.0	17.5		12.4	41.2	5.7
Green Ext Time (p_c), s	0.0	5.1	0.0		0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	386	391	235	882	19	392	131	71	17	288	270
Future Volume (veh/h)	68	386	391	235	882	19	392	131	71	17	288	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	75	424	430	258	969	21	431	144	78	19	316	297
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	961	429	281	1138	25	463	765	393	214	701	313
Arrive On Green	0.11	0.28	0.28	0.16	0.33	0.33	0.27	0.35	0.35	0.13	0.20	0.20
Sat Flow, veh/h	1714	3420	1525	1714	3422	74	1714	2186	1122	1714	3420	1525
Grp Volume(v), veh/h	75	424	430	258	484	506	431	111	111	19	316	297
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1787	1714	1710	1598	1714	1710	1525
Q Serve(g_s), s	4.1	10.2	14.0	14.8	26.4	26.4	24.5	4.5	4.9	1.0	8.1	14.3
Cycle Q Clear(g_c), s	4.1	10.2	14.0	14.8	26.4	26.4	24.5	4.5	4.9	1.0	8.1	14.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	193	961	429	281	568	594	463	599	559	214	701	313
V/C Ratio(X)	0.39	0.44	1.00	0.92	0.85	0.85	0.93	0.19	0.20	0.09	0.45	0.95
Avail Cap(c_a), veh/h	214	961	429	281	568	594	463	599	559	214	701	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	29.5	9.0	41.1	31.1	31.1	35.6	22.6	22.7	38.7	34.8	21.8
Incr Delay (d2), s/veh	1.1	1.3	41.3	32.9	14.9	14.3	25.3	0.7	0.8	0.2	2.1	39.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.3	9.1	8.7	12.9	13.4	13.3	1.9	1.9	0.4	3.5	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	30.8	50.3	74.1	45.9	45.4	60.9	23.3	23.5	38.9	36.9	61.4
LnGrp LOS	D	C	F	E	D	D	E	C	C	D	D	E
Approach Vol, veh/h		929			1248			653			632	
Approach Delay, s/veh		40.7			51.5			48.1			48.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	30.1	29.0	22.5	13.3	35.2	14.5	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.9	25.6	24.5	18.0	10.0	29.5	10.0	32.5
Max Q Clear Time (g_c+I1), s	16.8	16.0	26.5	16.3	6.1	28.4	3.0	6.9
Green Ext Time (p_c), s	0.0	3.2	0.0	0.6	0.0	0.7	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	66	440	35	31	787
Future Volume (veh/h)	71	66	440	35	31	787
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	79	73	489	39	34	874
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	234	208	1462	116	1008	2802
Arrive On Green	0.14	0.14	0.91	0.91	0.34	0.82
Sat Flow, veh/h	1714	1525	3299	255	1714	3510
Grp Volume(v), veh/h	79	73	260	268	34	874
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1754	1714	1710
Q Serve(g_s), s	3.8	3.9	1.7	1.8	0.0	5.6
Cycle Q Clear(g_c), s	3.8	3.9	1.7	1.8	0.0	5.6
Prop In Lane	1.00	1.00		0.15	1.00	
Lane Grp Cap(c), veh/h	234	208	779	799	1008	2802
V/C Ratio(X)	0.34	0.35	0.33	0.34	0.03	0.31
Avail Cap(c_a), veh/h	533	475	779	799	1008	2802
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.95	0.95	0.65	0.65
Uniform Delay (d), s/veh	35.2	35.2	2.3	2.3	3.5	2.0
Incr Delay (d2), s/veh	0.8	1.0	1.1	1.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.5	0.7	0.7	0.1	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.0	36.3	3.4	3.3	3.5	2.2
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	152		528			908
Approach Delay, s/veh	36.1		3.3			2.2
Approach LOS	D		A			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	32.7	43.0				75.7	14.3
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	12.5	38.5				55.5	25.5
Max Q Clear Time (g_c+I1), s	12.0	3.8				7.6	5.9
Green Ext Time (p_c), s	0.0	3.5				7.7	0.4

Intersection Summary	
HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	32	126	5	44	3	475	58	50	746	8
Future Volume (veh/h)	5	1	32	126	5	44	3	475	58	50	746	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	6	1	39	152	6	53	4	572	70	60	899	10
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	220	5	195	234	22	193	679	1227	150	679	1390	15
Arrive On Green	0.13	0.13	0.13	0.14	0.14	0.14	0.08	0.13	0.13	0.49	0.80	0.80
Sat Flow, veh/h	1714	38	1493	1714	158	1392	1714	3068	375	1714	3465	39
Grp Volume(v), veh/h	6	0	40	152	0	59	4	318	324	60	444	465
Grp Sat Flow(s),veh/h/ln	1714	0	1531	1714	0	1549	1714	1710	1733	1714	1710	1793
Q Serve(g_s), s	0.3	0.0	2.1	7.6	0.0	3.1	0.0	15.5	15.6	0.0	9.6	9.6
Cycle Q Clear(g_c), s	0.3	0.0	2.1	7.6	0.0	3.1	0.0	15.5	15.6	0.0	9.6	9.6
Prop In Lane	1.00		0.98	1.00		0.90	1.00		0.22	1.00		0.02
Lane Grp Cap(c), veh/h	220	0	200	234	0	215	679	684	693	679	686	719
V/C Ratio(X)	0.03	0.00	0.20	0.65	0.00	0.27	0.01	0.47	0.47	0.09	0.65	0.65
Avail Cap(c_a), veh/h	240	0	350	244	0	358	679	684	693	679	686	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.90	0.90	0.90	0.96	0.96	0.96
Uniform Delay (d), s/veh	34.3	0.0	34.9	36.8	0.0	34.7	11.9	30.2	30.2	9.0	6.3	6.3
Incr Delay (d2), s/veh	0.0	0.0	0.5	5.7	0.0	0.7	0.0	2.0	2.0	0.1	4.5	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.8	3.5	0.0	1.2	0.0	7.4	7.5	0.5	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	35.4	42.5	0.0	35.4	11.9	32.2	32.2	9.1	10.8	10.6
LnGrp LOS	C	A	D	D	A	D	B	C	C	A	B	B
Approach Vol, veh/h		46			211			646			969	
Approach Delay, s/veh		35.3			40.5			32.1			10.6	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.9	38.0	14.3	13.8	23.8	38.1	13.6	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	33.5	10.3	18.1	10.0	33.6	10.1	18.3
Max Q Clear Time (g_c+I1), s	12.0	17.6	9.6	4.1	2.0	11.6	2.3	5.1
Green Ext Time (p_c), s	0.1	3.6	0.0	0.1	0.0	6.1	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	367	144	110	629	145	146	386	95	100	382	36
Future Volume (veh/h)	37	367	144	110	629	145	146	386	95	100	382	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	40	399	157	120	684	158	159	420	103	109	415	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	871	389	535	1042	465	558	1078	481	525	1398	129
Arrive On Green	0.11	0.25	0.25	0.16	0.30	0.30	0.17	0.32	0.32	0.16	0.31	0.31
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4576	424
Grp Volume(v), veh/h	40	399	157	120	684	158	159	420	103	109	295	159
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1724
Q Serve(g_s), s	1.5	7.1	6.2	2.3	12.5	5.8	3.0	6.9	3.6	2.1	5.0	5.1
Cycle Q Clear(g_c), s	1.5	7.1	6.2	2.3	12.5	5.8	3.0	6.9	3.6	2.1	5.0	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	191	871	389	535	1042	465	558	1078	481	525	1001	526
V/C Ratio(X)	0.21	0.46	0.40	0.22	0.66	0.34	0.28	0.39	0.21	0.21	0.30	0.30
Avail Cap(c_a), veh/h	309	1614	720	600	1614	720	600	1078	481	600	1001	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	22.6	22.3	26.3	21.8	19.4	26.2	19.2	18.1	26.4	19.1	19.1
Incr Delay (d2), s/veh	0.5	0.4	0.7	0.2	0.7	0.4	0.3	1.1	1.0	0.2	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.8	2.2	0.9	4.8	2.0	1.2	2.7	1.3	0.8	1.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	23.0	23.0	26.5	22.5	19.9	26.5	20.3	19.1	26.6	19.9	20.6
LnGrp LOS	C	C	C	C	C	B	C	C	B	C	B	C
Approach Vol, veh/h		596			962			682			563	
Approach Delay, s/veh		23.5			22.6			21.6			21.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	20.4	14.1	24.0	10.0	23.9	13.4	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	31.5	10.5	19.5	10.5	31.5	10.5	19.5
Max Q Clear Time (g_c+I1), s	14.3	9.1	5.0	7.1	3.5	14.5	4.1	8.9
Green Ext Time (p_c), s	0.2	3.2	0.2	2.3	0.0	4.9	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C



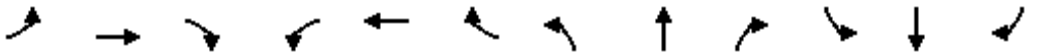
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	356	113	221	675	0	195	0	149	0	0	0
Future Volume (veh/h)	0	356	113	221	675	0	195	0	149	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	0	424	135	263	804	0	287	0	118	0	0	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	2	931	415	606	1630	0	785	0	627	390	410	0
Arrive On Green	0.00	0.27	0.27	0.36	0.95	0.00	0.23	0.00	0.23	0.00	0.00	0.00
Sat Flow, veh/h	1714	3420	1525	3326	3510	0	3429	0	1525	1714	1800	0
Grp Volume(v), veh/h	0	424	135	263	804	0	287	0	118	0	0	0
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	0	1714	0	1525	1714	1800	0
Q Serve(g_s), s	0.0	9.3	6.4	5.4	1.9	0.0	6.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.3	6.4	5.4	1.9	0.0	6.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	2	931	415	606	1630	0	785	0	627	390	410	0
V/C Ratio(X)	0.00	0.46	0.33	0.43	0.49	0.00	0.37	0.00	0.19	0.00	0.00	0.00
Avail Cap(c_a), veh/h	238	931	415	606	1630	0	785	0	627	390	410	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.96	0.96	1.00	1.00	0.00	0.99	0.00	0.99	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	27.2	26.1	25.1	1.1	0.0	29.2	0.0	16.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	2.0	0.5	0.2	0.0	1.3	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	2.5	2.0	0.4	0.0	2.7	0.0	1.6	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.8	28.1	25.6	1.4	0.0	30.5	0.0	17.6	0.0	0.0	0.0
LnGrp LOS	A	C	C	C	A	A	C	A	B	A	A	A
Approach Vol, veh/h		559			1067			405			0	
Approach Delay, s/veh		28.6			7.3			26.7			0.0	
Approach LOS		C			A			C				

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.4	26.5		22.5	0.0	44.9		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	13.9	22.0		18.0	10.0	25.9		18.1				
Max Q Clear Time (g_c+I1), s	7.4	11.3		0.0	0.0	3.9		8.3				
Green Ext Time (p_c), s	0.5	2.4		0.0	0.0	5.9		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	309	32	123	550	103	84	309	97	134	485	246
Future Volume (veh/h)	91	309	32	123	550	103	84	309	97	134	485	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	105	355	37	141	632	118	97	355	111	154	557	283
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	266	1185	528	232	1117	498	221	749	231	237	659	334
Arrive On Green	0.31	0.69	0.69	0.14	0.33	0.33	0.13	0.29	0.29	0.05	0.10	0.10
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2574	793	1714	2196	1114
Grp Volume(v), veh/h	105	355	37	141	632	118	97	234	232	154	434	406
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1657	1714	1710	1600
Q Serve(g_s), s	4.3	3.6	0.5	7.0	13.7	3.3	4.7	10.1	10.4	8.0	22.4	22.5
Cycle Q Clear(g_c), s	4.3	3.6	0.5	7.0	13.7	3.3	4.7	10.1	10.4	8.0	22.4	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		0.70
Lane Grp Cap(c), veh/h	266	1185	528	232	1117	498	221	498	482	237	513	480
V/C Ratio(X)	0.39	0.30	0.07	0.61	0.57	0.24	0.44	0.47	0.48	0.65	0.85	0.85
Avail Cap(c_a), veh/h	266	1185	528	274	1117	498	240	498	482	350	513	480
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	27.7	9.6	3.9	36.6	25.0	9.2	36.2	26.2	26.3	40.8	38.5	38.5
Incr Delay (d2), s/veh	0.9	0.6	0.3	2.8	2.1	1.1	1.4	3.2	3.4	2.7	14.4	15.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.3	0.3	3.1	5.7	1.9	2.0	4.5	4.5	3.7	12.3	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	10.2	4.1	39.4	27.1	10.4	37.5	29.4	29.7	43.6	52.9	53.9
LnGrp LOS	C	B	A	D	C	B	D	C	C	D	D	D
Approach Vol, veh/h		497			891			563			994	
Approach Delay, s/veh		13.7			26.8			30.9			51.9	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	33.2	13.6	29.0	16.0	31.4	14.4	28.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.9	25.5	10.1	24.5	10.5	26.9	15.9	18.7
Max Q Clear Time (g_c+I1), s	9.0	5.6	6.7	24.5	6.3	15.7	10.0	12.4
Green Ext Time (p_c), s	0.1	2.3	0.1	0.0	0.1	3.6	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	33.9
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	28	20	68	59	24	37	304	73	27	251	19
Future Volume (veh/h)	12	28	20	68	59	24	37	304	73	27	251	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	13	30	21	72	63	26	39	323	78	29	267	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	201	137	96	233	168	69	166	1066	254	696	2252	168
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.19	0.78	0.78	0.81	1.00	1.00
Sat Flow, veh/h	1329	986	690	1375	1211	500	1714	2740	652	1714	3227	240
Grp Volume(v), veh/h	13	0	51	72	0	89	39	200	201	29	141	146
Grp Sat Flow(s),veh/h/ln	1329	0	1676	1375	0	1710	1714	1710	1683	1714	1710	1757
Q Serve(g_s), s	0.8	0.0	2.4	4.4	0.0	4.3	1.7	3.1	3.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	2.4	6.9	0.0	4.3	1.7	3.1	3.1	0.3	0.0	0.0
Prop In Lane	1.00		0.41	1.00		0.29	1.00		0.39	1.00		0.14
Lane Grp Cap(c), veh/h	201	0	232	233	0	237	166	665	654	696	1193	1226
V/C Ratio(X)	0.06	0.00	0.22	0.31	0.00	0.38	0.23	0.30	0.31	0.04	0.12	0.12
Avail Cap(c_a), veh/h	475	0	577	516	0	589	305	665	654	696	1193	1226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	0.92	0.92	0.92
Uniform Delay (d), s/veh	37.5	0.0	34.4	37.5	0.0	35.2	33.5	6.5	6.5	5.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.7	0.0	1.0	0.7	1.1	1.2	0.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	1.5	0.0	1.8	0.7	1.2	1.2	0.1	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	34.9	38.2	0.0	36.2	34.2	7.6	7.7	5.1	0.2	0.2
LnGrp LOS	D	A	C	D	A	D	C	A	A	A	A	A
Approach Vol, veh/h		64			161			440			316	
Approach Delay, s/veh		35.5			37.1			10.0			0.6	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	37.0		14.5	10.7	64.8		14.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	4.5	32.5		28.5	13.5	34.5		28.5
Max Q Clear Time (g_c+I1), s	2.3	5.1		7.1	3.7	2.0		8.9
Green Ext Time (p_c), s	0.0	2.5		0.2	0.0	1.7		0.6

Intersection Summary		
HCM 6th Ctrl Delay	13.1	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	91	50	150	277	58	71	364	104	10	311	29
Future Volume (veh/h)	23	91	50	150	277	58	71	364	104	10	311	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	24	97	53	160	295	62	76	387	111	11	331	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	284	291	247	458	397	336	576	1909	851	93	875	81
Arrive On Green	0.08	0.16	0.16	0.14	0.22	0.22	0.34	0.56	0.56	0.11	0.55	0.55
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3163	294
Grp Volume(v), veh/h	24	97	53	160	295	62	76	387	111	11	178	184
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1747
Q Serve(g_s), s	1.0	4.3	1.3	6.3	13.7	3.0	2.8	5.1	3.1	0.5	5.3	5.4
Cycle Q Clear(g_c), s	1.0	4.3	1.3	6.3	13.7	3.0	2.8	5.1	3.1	0.5	5.3	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	284	291	247	458	397	336	576	1909	851	93	473	483
V/C Ratio(X)	0.08	0.33	0.21	0.35	0.74	0.18	0.13	0.20	0.13	0.12	0.38	0.38
Avail Cap(c_a), veh/h	389	638	541	463	640	542	576	1909	851	238	473	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	26.8	33.4	7.5	23.2	32.7	28.5	20.8	9.9	9.5	38.1	15.7	15.7
Incr Delay (d2), s/veh	0.1	0.7	0.4	0.5	2.8	0.3	0.1	0.2	0.3	0.5	2.3	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.9	1.0	2.5	6.2	1.1	1.1	1.8	1.0	0.2	2.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	34.1	8.0	23.6	35.5	28.8	20.9	10.1	9.8	38.7	18.0	18.0
LnGrp LOS	C	C	A	C	D	C	C	B	A	D	B	B
Approach Vol, veh/h		174			517			574			373	
Approach Delay, s/veh		25.2			31.0			11.5			18.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	52.2	14.3	16.5	32.2	26.9	9.0	21.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	22.5	10.1	29.4	10.1	22.4	10.0	29.5
Max Q Clear Time (g_c+I1), s	2.5	7.1	8.3	6.3	4.8	7.4	3.0	15.7
Green Ext Time (p_c), s	0.0	2.6	0.1	0.6	0.1	1.8	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	273	109	124	532	38	162	595	86	20	510	49
Future Volume (veh/h)	43	273	109	124	532	38	162	595	86	20	510	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	49	310	124	141	605	43	184	676	98	23	580	56
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	317	700	312	434	800	357	270	2146	308	131	1884	180
Arrive On Green	0.11	0.20	0.20	0.14	0.23	0.23	0.05	0.16	0.16	0.08	0.41	0.41
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4341	623	1714	4561	436
Grp Volume(v), veh/h	49	310	124	141	605	43	184	508	266	23	415	221
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1688	1714	1638	1722
Q Serve(g_s), s	1.8	7.1	6.3	5.1	14.8	2.0	9.5	12.3	12.5	1.1	7.7	7.8
Cycle Q Clear(g_c), s	1.8	7.1	6.3	5.1	14.8	2.0	9.5	12.3	12.5	1.1	7.7	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.25
Lane Grp Cap(c), veh/h	317	700	312	434	800	357	270	1620	835	131	1353	711
V/C Ratio(X)	0.15	0.44	0.40	0.32	0.76	0.12	0.68	0.31	0.32	0.18	0.31	0.31
Avail Cap(c_a), veh/h	373	912	407	440	912	407	440	1620	835	238	1353	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	31.3	31.0	20.5	32.1	27.2	40.4	24.2	24.3	38.9	17.7	17.8
Incr Delay (d2), s/veh	0.2	0.4	0.8	0.4	3.2	0.1	2.8	0.5	0.9	0.6	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.9	2.4	2.0	6.3	0.7	4.5	5.5	5.8	0.5	2.9	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	31.7	31.8	20.9	35.3	27.3	43.2	24.7	25.2	39.5	18.3	18.9
LnGrp LOS	C	C	C	C	D	C	D	C	C	D	B	B
Approach Vol, veh/h		483			789			958			659	
Approach Delay, s/veh		30.9			32.3			28.4			19.3	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	46.5	14.2	20.4	16.2	39.2	11.6	23.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	30.5	10.0	21.5	20.6	19.9	10.0	21.5
Max Q Clear Time (g_c+I1), s	3.1	14.5	7.1	9.1	11.5	9.8	3.8	16.8
Green Ext Time (p_c), s	0.0	4.6	0.1	1.9	0.3	2.9	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	110	66	190	159	17	138	843	124	37	676	25
Future Volume (veh/h)	25	110	66	190	159	17	138	843	124	37	676	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	28	122	73	211	177	19	153	937	138	41	751	28
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	278	475	616	460	604	64	881	2314	340	329	1794	67
Arrive On Green	0.08	0.14	0.14	0.14	0.19	0.19	0.27	0.53	0.53	0.10	0.37	0.37
Sat Flow, veh/h	3326	3420	1525	3326	3119	331	3326	4327	635	3326	4863	181
Grp Volume(v), veh/h	28	122	73	211	96	100	153	709	366	41	505	274
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1740	1663	1638	1686	1663	1638	1767
Q Serve(g_s), s	0.7	2.9	0.0	5.3	4.3	4.4	3.2	11.6	11.6	1.0	10.4	10.4
Cycle Q Clear(g_c), s	0.7	2.9	0.0	5.3	4.3	4.4	3.2	11.6	11.6	1.0	10.4	10.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.38	1.00		0.10
Lane Grp Cap(c), veh/h	278	475	616	460	331	337	881	1752	902	329	1208	652
V/C Ratio(X)	0.10	0.26	0.12	0.46	0.29	0.30	0.17	0.40	0.41	0.12	0.42	0.42
Avail Cap(c_a), veh/h	466	790	757	554	441	449	881	1752	902	466	1208	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.95	0.95	0.95
Uniform Delay (d), s/veh	38.1	34.6	16.8	35.7	31.0	31.1	25.5	12.4	12.4	37.0	21.2	21.2
Incr Delay (d2), s/veh	0.2	0.3	0.1	0.7	0.5	0.5	0.1	0.7	1.3	0.2	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.9	2.1	1.8	1.9	1.3	4.1	4.4	0.4	4.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	34.9	16.9	36.4	31.5	31.5	25.6	13.1	13.7	37.1	22.2	23.1
LnGrp LOS	D	C	B	D	C	C	C	B	B	D	C	C
Approach Vol, veh/h		223			407			1228			820	
Approach Delay, s/veh		29.4			34.0			14.8			23.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	50.1	14.4	14.5	25.9	35.2	9.5	19.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	31.1	12.5	18.3	10.5	30.7	10.1	20.7
Max Q Clear Time (g_c+I1), s	13.0	13.6	7.3	4.9	5.2	12.4	2.7	6.4
Green Ext Time (p_c), s	0.0	7.0	0.3	0.7	0.2	4.9	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	328	3	294	408	880	0	0	616	312
Future Volume (veh/h)	0	0	0	328	3	294	408	880	0	0	616	312
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				462	0	216	448	967	0	0	677	343
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				757	0	337	667	3540	0	0	3037	748
Arrive On Green				0.22	0.00	0.22	0.20	0.72	0.00	0.00	0.49	0.49
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				462	0	216	448	967	0	0	677	343
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				8.3	0.0	8.7	8.5	4.7	0.0	0.0	4.3	10.1
Cycle Q Clear(g_c), s				8.3	0.0	8.7	8.5	4.7	0.0	0.0	4.3	10.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				757	0	337	667	3540	0	0	3037	748
V/C Ratio(X)				0.61	0.00	0.64	0.67	0.27	0.00	0.00	0.22	0.46
Avail Cap(c_a), veh/h				1109	0	494	831	3540	0	0	3037	748
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.96	0.96	0.00	0.00	0.95	0.95
Uniform Delay (d), s/veh				23.9	0.0	24.0	25.1	3.3	0.0	0.0	9.9	11.4
Incr Delay (d2), s/veh				0.8	0.0	2.0	1.5	0.2	0.0	0.0	0.2	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	3.2	3.3	1.0	0.0	0.0	1.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.7	0.0	26.1	26.6	3.5	0.0	0.0	10.1	13.3
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					678			1415			1020	
Approach Delay, s/veh					25.1			10.8			11.2	
Approach LOS					C			B			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	51.0		15.6	35.3		17.0
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	39.0		14.5	20.0		19.5
Max Q Clear Time (g_c+I1), s	6.7		10.5	12.1		10.7
Green Ext Time (p_c), s	8.1		0.7	3.6		1.8

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	3	271	0	0	0	0	1001	535	175	758	0
Future Volume (veh/h)	270	3	271	0	0	0	0	1001	535	175	758	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	292	0	291				0	1076	575	188	815	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	822	0	366				0	3096	763	644	3517	0
Arrive On Green	0.24	0.00	0.24				0.00	0.50	0.50	0.19	0.72	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	292	0	291				0	1076	575	188	815	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	6.4	0.0	16.1				0.0	9.5	27.2	4.3	5.1	0.0
Cycle Q Clear(g_c), s	6.4	0.0	16.1				0.0	9.5	27.2	4.3	5.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	822	0	366				0	3096	763	644	3517	0
V/C Ratio(X)	0.36	0.00	0.80				0.00	0.35	0.75	0.29	0.23	0.00
Avail Cap(c_a), veh/h	952	0	424				0	3096	763	644	3517	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	28.4	0.0	32.1				0.0	13.6	18.1	31.0	4.4	0.0
Incr Delay (d2), s/veh	0.3	0.0	8.9				0.0	0.3	6.8	0.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	6.7				0.0	3.2	10.3	1.7	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	41.0				0.0	13.9	24.9	31.3	4.5	0.0
LnGrp LOS	C	A	D				A	B	C	C	A	A
Approach Vol, veh/h		583						1651			1003	
Approach Delay, s/veh		34.8						17.7			9.5	
Approach LOS		C						B			A	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.4	47.0		23.6		66.4						
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5						
Max Green Setting (Gmax), s	11.5	42.5		22.5		58.5						
Max Q Clear Time (g_c+I1), s	18.3	29.2		18.1		7.1						
Green Ext Time (p_c), s	0.3	8.0		1.0		7.0						

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	0	5	6	1	2	17	563	4	3	563	314
Future Volume (veh/h)	187	0	5	6	1	2	17	563	4	3	563	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	212	0	4	7	1	2	19	633	4	3	633	353
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	474	0	211	62	9	18	120	2385	15	61	2225	992
Arrive On Green	0.14	0.00	0.14	0.05	0.05	0.05	0.07	0.68	0.68	0.04	0.65	0.65
Sat Flow, veh/h	3429	0	1525	1176	168	336	1714	3484	22	1714	3420	1525
Grp Volume(v), veh/h	212	0	4	10	0	0	19	311	326	3	633	353
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1681	0	0	1714	1710	1796	1714	1710	1525
Q Serve(g_s), s	5.1	0.0	0.2	0.5	0.0	0.0	0.9	6.3	6.3	0.2	7.1	9.5
Cycle Q Clear(g_c), s	5.1	0.0	0.2	0.5	0.0	0.0	0.9	6.3	6.3	0.2	7.1	9.5
Prop In Lane	1.00		1.00	0.70		0.20	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	474	0	211	88	0	0	120	1171	1229	61	2225	992
V/C Ratio(X)	0.45	0.00	0.02	0.11	0.00	0.00	0.16	0.27	0.27	0.05	0.28	0.36
Avail Cap(c_a), veh/h	800	0	356	383	0	0	238	1171	1229	238	2225	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	35.6	0.0	33.5	40.7	0.0	0.0	39.4	5.5	5.5	41.9	6.7	7.1
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.6	0.0	0.0	0.6	0.6	0.5	0.3	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.1	0.2	0.0	0.0	0.4	2.1	2.2	0.1	2.4	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	0.0	33.5	41.2	0.0	0.0	40.0	6.0	6.0	42.2	7.0	8.0
LnGrp LOS	D	A	C	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		216			10			656			989	
Approach Delay, s/veh		36.2			41.2			7.0			7.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	63.6		14.5	8.3	60.6		6.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.0	25.5		18.5	10.0	25.5		18.0
Max Q Clear Time (g_c+I1), s	2.2	8.3		7.1	2.9	11.5		2.5
Green Ext Time (p_c), s	0.0	3.6		0.5	0.0	4.9		0.0

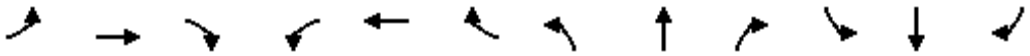
Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

09/26/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	726	162	503	505	160	153	161	616	157	112	46
Future Volume (veh/h)	57	726	162	503	505	160	153	161	616	157	112	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	58	741	165	513	515	163	156	164	629	160	114	47
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	334	923	412	1351	1809	807	439	337	830	333	449	177
Arrive On Green	0.10	0.27	0.27	0.60	0.88	0.88	0.11	0.19	0.19	0.11	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	2398	942
Grp Volume(v), veh/h	58	741	165	513	515	163	156	164	629	160	80	81
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1630
Q Serve(g_s), s	2.8	22.2	7.1	1.9	2.6	1.7	7.7	9.0	8.4	7.9	4.4	4.7
Cycle Q Clear(g_c), s	2.8	22.2	7.1	1.9	2.6	1.7	7.7	9.0	8.4	7.9	4.4	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	334	923	412	1351	1809	807	439	337	830	333	320	305
V/C Ratio(X)	0.17	0.80	0.40	0.38	0.28	0.20	0.36	0.49	0.76	0.48	0.25	0.27
Avail Cap(c_a), veh/h	361	923	412	1351	1809	807	442	337	830	334	320	305
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.40	0.40	0.40	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	37.4	17.7	14.3	3.2	3.1	29.8	40.0	7.7	30.2	38.1	38.2
Incr Delay (d2), s/veh	0.2	7.3	2.9	0.1	0.2	0.2	0.5	4.8	6.2	1.1	1.8	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	10.1	2.8	2.7	0.8	0.5	3.2	4.4	7.0	3.4	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	44.7	20.6	14.3	3.3	3.4	30.2	44.7	13.8	31.3	39.9	40.4
LnGrp LOS	C	D	C	B	A	A	C	D	B	C	D	D
Approach Vol, veh/h		964			1191			949			321	
Approach Delay, s/veh		39.8			8.1			21.9			35.7	
Approach LOS		D			A			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.3	31.7	14.4	22.6	12.8	60.2	14.4	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	36.7	27.2	10.1	18.0	10.0	53.9	10.0	18.1
Max Q Clear Time (g_c+I1), s	3.9	24.2	9.7	6.7	4.8	4.6	9.9	11.0
Green Ext Time (p_c), s	1.9	1.6	0.0	0.6	0.0	4.6	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	825	498	28	409	324	181	0	837	60	0	577
Future Volume (veh/h)	176	825	498	28	409	324	181	0	837	60	0	577
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	187	878	530	30	435	345	193	0	890	64	0	614
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	257	1088	485	817	2206	984	258	0	0	258	0	0
Arrive On Green	0.05	0.11	0.11	0.48	0.65	0.65	0.15	0.00	0.02	0.15	0.00	0.02
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	193		1714	64	
Grp Volume(v), veh/h	187	878	530	30	435	345	193	51.3		64	41.7	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	D		1714	D	
Q Serve(g_s), s	11.8	27.6	23.1	1.0	5.7	4.7	11.9			3.6		
Cycle Q Clear(g_c), s	11.8	27.6	23.1	1.0	5.7	4.7	11.9			3.6		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	257	1088	485	817	2206	984	258			258		
V/C Ratio(X)	0.73	0.81	1.09	0.04	0.20	0.35	0.75			0.25		
Avail Cap(c_a), veh/h	327	1088	485	817	2206	984	335			258		
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.61	0.61	0.61	0.80	0.80	0.80	1.00			1.00		
Uniform Delay (d), s/veh	50.1	45.9	22.9	15.3	7.9	1.5	44.7			41.2		
Incr Delay (d2), s/veh	3.6	4.0	59.9	0.0	0.2	0.8	6.6			0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	5.7	13.3	17.3	0.4	2.0	3.3	5.5			1.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	49.9	82.8	15.3	8.1	2.3	51.3			41.7		
LnGrp LOS	D	D	F	B	A	A	D			D		
Approach Vol, veh/h		1595			810							
Approach Delay, s/veh		61.3			5.9							
Approach LOS		E			A							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	14.5	37.0	18.5		18.5	73.0	18.5
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.5	19.0		18.5	24.0	10.0
Max Q Clear Time (g_c+I1), s	13.8	29.6	13.9		13.8	7.7	5.6
Green Ext Time (p_c), s	0.0	2.0	0.2		0.2	3.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	974	494	140	385	32	275	355	220	16	170	101
Future Volume (veh/h)	254	974	494	140	385	32	275	355	220	16	170	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	259	994	504	143	393	33	281	362	224	16	173	103
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	477	1352	603	220	784	66	349	613	373	178	684	305
Arrive On Green	0.28	0.40	0.40	0.13	0.25	0.25	0.07	0.10	0.10	0.10	0.20	0.20
Sat Flow, veh/h	1714	3420	1525	1714	3195	267	1714	2043	1243	1714	3420	1525
Grp Volume(v), veh/h	259	994	504	143	210	216	281	302	284	16	173	103
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1752	1714	1710	1576	1714	1710	1525
Q Serve(g_s), s	14.1	27.2	32.8	8.7	11.6	11.7	17.8	18.6	19.0	0.9	4.7	6.4
Cycle Q Clear(g_c), s	14.1	27.2	32.8	8.7	11.6	11.7	17.8	18.6	19.0	0.9	4.7	6.4
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.79	1.00		1.00
Lane Grp Cap(c), veh/h	477	1352	603	220	420	430	349	513	473	178	684	305
V/C Ratio(X)	0.54	0.73	0.84	0.65	0.50	0.50	0.81	0.59	0.60	0.09	0.25	0.34
Avail Cap(c_a), veh/h	477	1352	603	220	420	430	366	513	473	195	684	305
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	28.3	30.0	45.6	35.7	35.7	49.2	43.1	43.2	44.6	37.1	37.7
Incr Delay (d2), s/veh	0.7	2.1	8.1	6.6	4.2	4.2	11.2	4.6	5.2	0.2	0.9	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	11.3	13.1	4.1	5.3	5.5	9.3	9.2	8.7	0.4	2.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	30.5	38.1	52.2	39.9	39.9	60.3	47.6	48.4	44.8	38.0	40.7
LnGrp LOS	C	C	D	D	D	D	E	D	D	D	D	D
Approach Vol, veh/h		1757			569			867			292	
Approach Delay, s/veh		33.3			43.0			52.0			39.3	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	45.5	24.4	24.0	32.6	29.0	13.4	35.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	41.0	21.0	19.5	27.0	24.5	10.0	30.5
Max Q Clear Time (g_c+I1), s	10.7	34.8	19.8	8.4	16.1	13.7	2.9	21.0
Green Ext Time (p_c), s	0.0	4.2	0.1	1.0	0.6	1.8	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	39	821	145	85	626
Future Volume (veh/h)	51	39	821	145	85	626
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	52	40	838	148	87	639
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	185	165	1769	312	786	2926
Arrive On Green	0.11	0.11	1.00	1.00	0.30	1.00
Sat Flow, veh/h	1714	1525	2995	513	1714	3510
Grp Volume(v), veh/h	52	40	493	493	87	639
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1708	1714	1710
Q Serve(g_s), s	3.1	2.6	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.1	2.6	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.30	1.00	
Lane Grp Cap(c), veh/h	185	165	1042	1040	786	2926
V/C Ratio(X)	0.28	0.24	0.47	0.47	0.11	0.22
Avail Cap(c_a), veh/h	358	319	1042	1040	786	2926
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.88	0.88	0.75	0.75
Uniform Delay (d), s/veh	45.1	44.9	0.0	0.0	2.4	0.0
Incr Delay (d2), s/veh	0.8	0.8	1.4	1.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.0	0.4	0.4	0.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.9	45.7	1.4	1.4	2.4	0.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	92		986			726
Approach Delay, s/veh	45.8		1.4			0.4
Approach LOS	D		A			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.1	69.0				96.1	13.9
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	11.5	64.5				80.5	20.5
Max Q Clear Time (g_c+I1), s	12.0	2.0				2.0	5.1
Green Ext Time (p_c), s	0.1	8.3				5.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	3.2
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	6	10	102	0	56	2	858	165	80	633	6
Future Volume (veh/h)	8	6	10	102	0	56	2	858	165	80	633	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	8	6	10	105	0	58	2	885	170	82	653	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	176	64	107	189	0	173	352	1332	256	587	2372	22
Arrive On Green	0.10	0.11	0.11	0.11	0.00	0.11	0.03	0.47	0.47	0.16	0.46	0.46
Sat Flow, veh/h	1714	607	1011	1714	0	1525	1714	2862	550	1714	3472	32
Grp Volume(v), veh/h	8	0	16	105	0	58	2	529	526	82	322	337
Grp Sat Flow(s),veh/h/ln	1714	0	1618	1714	0	1525	1714	1710	1701	1714	1710	1794
Q Serve(g_s), s	0.5	0.0	1.0	6.4	0.0	3.9	0.1	26.3	26.3	0.0	12.8	12.8
Cycle Q Clear(g_c), s	0.5	0.0	1.0	6.4	0.0	3.9	0.1	26.3	26.3	0.0	12.8	12.8
Prop In Lane	1.00		0.63	1.00		1.00	1.00		0.32	1.00		0.02
Lane Grp Cap(c), veh/h	176	0	172	189	0	173	352	796	792	587	1168	1225
V/C Ratio(X)	0.05	0.00	0.09	0.56	0.00	0.34	0.01	0.66	0.66	0.14	0.28	0.28
Avail Cap(c_a), veh/h	268	0	309	268	0	291	500	796	792	587	1168	1225
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.68	0.68	0.68	0.98	0.98	0.98
Uniform Delay (d), s/veh	44.5	0.0	44.4	46.4	0.0	45.0	16.7	22.8	22.8	23.7	12.9	12.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	2.6	0.0	1.1	0.0	3.0	3.0	0.1	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.4	2.9	0.0	1.5	0.0	10.9	10.9	1.6	5.6	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	44.6	49.0	0.0	46.1	16.7	25.7	25.8	23.8	13.5	13.5
LnGrp LOS	D	A	D	D	A	D	B	C	C	C	B	B
Approach Vol, veh/h		24			163			1057			741	
Approach Delay, s/veh		44.6			47.9			25.7			14.6	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	53.2	14.1	13.7	5.1	77.1	13.3	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	48.7	14.7	18.5	10.1	48.7	14.7	18.5
Max Q Clear Time (g_c+I1), s	2.0	28.3	8.4	3.0	2.1	14.8	2.5	5.9
Green Ext Time (p_c), s	0.1	7.3	0.1	0.0	0.0	4.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	816	207	138	525	152	181	698	129	165	501	64
Future Volume (veh/h)	46	816	207	138	525	152	181	698	129	165	501	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	47	841	213	142	541	157	187	720	133	170	516	66
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	1068	477	516	1208	539	528	929	414	525	1196	151
Arrive On Green	0.11	0.31	0.31	0.16	0.35	0.35	0.16	0.27	0.27	0.16	0.27	0.27
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4419	557
Grp Volume(v), veh/h	47	841	213	142	541	157	187	720	133	170	381	201
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1700
Q Serve(g_s), s	1.9	17.4	8.7	2.9	9.4	5.8	3.9	15.1	5.4	3.5	7.4	7.6
Cycle Q Clear(g_c), s	1.9	17.4	8.7	2.9	9.4	5.8	3.9	15.1	5.4	3.5	7.4	7.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	196	1068	477	516	1208	539	528	929	414	525	887	460
V/C Ratio(X)	0.24	0.79	0.45	0.28	0.45	0.29	0.35	0.77	0.32	0.32	0.43	0.44
Avail Cap(c_a), veh/h	276	1146	511	536	1208	539	536	929	414	536	887	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	24.3	21.3	28.9	19.3	18.1	29.1	26.1	22.5	29.0	23.4	23.4
Incr Delay (d2), s/veh	0.6	3.5	0.7	0.3	0.3	0.3	0.4	6.3	2.0	0.4	1.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	7.2	3.0	1.2	3.6	2.0	1.5	6.7	2.1	1.4	2.9	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	27.8	22.0	29.2	19.5	18.4	29.5	32.4	24.6	29.4	24.9	26.4
LnGrp LOS	C	C	C	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1101			840			1040			752	
Approach Delay, s/veh		26.9			21.0			30.8			26.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	26.2	14.3	23.0	10.9	29.4	14.2	23.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	23.5	10.0	18.5	10.0	23.5	10.0	18.5
Max Q Clear Time (g_c+I1), s	11.4	19.4	5.9	9.6	3.9	11.4	5.5	17.1
Green Ext Time (p_c), s	0.2	2.3	0.2	2.5	0.0	3.3	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C



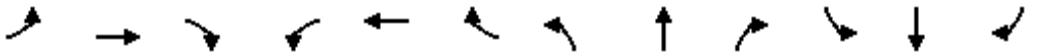
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	918	212	231	560	0	156	0	394	0	0	0
Future Volume (veh/h)	0	918	212	231	560	0	156	0	394	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	0	966	223	243	589	0	109	0	474	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	512	1284	573	490	766	0	374	0	1115	319	335	0
Arrive On Green	0.00	0.38	0.38	0.29	0.45	0.00	0.22	0.00	0.22	0.00	0.00	0.00
Sat Flow, veh/h	1714	3420	1525	3326	3510	0	1714	0	3051	1714	1800	0
Grp Volume(v), veh/h	0	966	223	243	589	0	109	0	474	0	0	0
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	0	1714	0	1525	1714	1800	0
Q Serve(g_s), s	0.0	27.0	11.8	6.6	16.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.0	11.8	6.6	16.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	512	1284	573	490	766	0	374	0	1115	319	335	0
V/C Ratio(X)	0.00	0.75	0.39	0.50	0.77	0.00	0.29	0.00	0.43	0.00	0.00	0.00
Avail Cap(c_a), veh/h	512	1284	573	490	1399	0	374	0	1115	319	335	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.72	0.72	1.00	1.00	0.00	0.97	0.00	0.97	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	29.9	25.1	35.4	28.0	0.0	35.9	0.0	26.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.0	1.4	0.8	1.7	0.0	1.9	0.0	1.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.4	4.5	2.5	5.1	0.0	2.6	0.0	4.8	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	32.9	26.6	36.2	29.6	0.0	37.8	0.0	27.4	0.0	0.0	0.0
LnGrp LOS	A	C	C	D	C	A	D	A	C	A	A	A
Approach Vol, veh/h		1189			832			583			0	
Approach Delay, s/veh		31.7			31.5			29.3			0.0	
Approach LOS		C			C			C				

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	43.3		22.5	34.9	26.6		26.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	13.7	38.8		18.0	10.0	42.5		21.5				
Max Q Clear Time (g_c+I1), s	13.6	29.0		0.0	0.0	18.0		7.8				
Green Ext Time (p_c), s	0.4	5.2		0.0	0.0	4.2		2.0				

Intersection Summary		
HCM 6th Ctrl Delay	31.1	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	271	849	82	121	515	137	106	552	163	154	435	157
Future Volume (veh/h)	271	849	82	121	515	137	106	552	163	154	435	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	274	858	83	122	520	138	107	558	165	156	439	159
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	385	1281	571	204	920	410	189	788	232	225	798	286
Arrive On Green	0.45	0.75	0.75	0.12	0.27	0.27	0.11	0.30	0.30	0.04	0.11	0.11
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2604	768	1714	2466	885
Grp Volume(v), veh/h	274	858	83	122	520	138	107	366	357	156	303	295
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1662	1714	1710	1641
Q Serve(g_s), s	14.2	13.9	1.7	7.4	14.4	5.7	6.5	20.9	21.0	9.9	18.5	18.8
Cycle Q Clear(g_c), s	14.2	13.9	1.7	7.4	14.4	5.7	6.5	20.9	21.0	9.9	18.5	18.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.54
Lane Grp Cap(c), veh/h	385	1281	571	204	920	410	189	518	503	225	553	531
V/C Ratio(X)	0.71	0.67	0.15	0.60	0.57	0.34	0.57	0.71	0.71	0.69	0.55	0.56
Avail Cap(c_a), veh/h	385	1281	571	204	920	410	196	518	503	293	553	531
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	27.4	10.4	8.8	46.0	34.7	16.2	46.4	34.0	34.1	50.4	41.5	41.6
Incr Delay (d2), s/veh	6.1	2.8	0.5	4.8	2.5	2.2	3.5	7.9	8.2	4.6	3.8	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	3.6	0.6	3.4	6.3	3.1	3.0	9.7	9.5	4.8	9.1	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	13.2	9.4	50.7	37.2	18.4	50.0	41.9	42.3	55.0	45.2	45.6
LnGrp LOS	C	B	A	D	D	B	D	D	D	E	D	D
Approach Vol, veh/h		1215			780			830			754	
Approach Delay, s/veh		17.5			36.0			43.1			47.4	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	43.2	14.1	37.6	26.7	31.6	16.4	35.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	38.7	10.1	33.1	21.7	27.1	16.3	26.9
Max Q Clear Time (g_c+I1), s	9.4	15.9	8.5	20.8	16.2	16.4	11.9	23.0
Green Ext Time (p_c), s	0.0	6.7	0.0	3.0	0.4	2.9	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	83	35	96	67	34	19	470	93	56	442	23
Future Volume (veh/h)	19	83	35	96	67	34	19	470	93	56	442	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	21	91	38	105	74	37	21	516	102	62	486	25
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	242	101	254	227	114	513	1234	243	513	1434	74
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.14	0.14	0.30	0.43	0.43
Sat Flow, veh/h	1302	1206	504	1281	1132	566	1714	2849	561	1714	3310	170
Grp Volume(v), veh/h	21	0	129	105	0	111	21	309	309	62	251	260
Grp Sat Flow(s),veh/h/ln	1302	0	1709	1281	0	1698	1714	1710	1699	1714	1710	1769
Q Serve(g_s), s	1.3	0.0	5.9	6.9	0.0	5.0	1.0	14.8	14.9	2.4	8.8	8.8
Cycle Q Clear(g_c), s	6.3	0.0	5.9	12.8	0.0	5.0	1.0	14.8	14.9	2.4	8.8	8.8
Prop In Lane	1.00		0.29	1.00		0.33	1.00		0.33	1.00		0.10
Lane Grp Cap(c), veh/h	269	0	343	254	0	341	513	741	736	513	741	767
V/C Ratio(X)	0.08	0.00	0.38	0.41	0.00	0.33	0.04	0.42	0.42	0.12	0.34	0.34
Avail Cap(c_a), veh/h	456	0	589	438	0	585	513	741	736	513	741	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.91	0.91	0.91	0.90	0.90	0.90
Uniform Delay (d), s/veh	33.5	0.0	31.1	36.6	0.0	30.8	28.9	28.2	28.3	22.9	16.9	16.9
Incr Delay (d2), s/veh	0.1	0.0	0.7	1.1	0.0	0.6	0.0	1.6	1.6	0.1	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.5	2.2	0.0	2.1	0.4	7.0	7.1	1.0	3.5	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	0.0	31.8	37.7	0.0	31.3	28.9	29.8	29.9	23.0	18.0	18.0
LnGrp LOS	C	A	C	D	A	C	C	C	C	C	B	B
Approach Vol, veh/h		150			216			639			573	
Approach Delay, s/veh		32.0			34.4			29.8			18.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.9	41.0		20.1	28.9	41.0		20.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.5	36.5		28.5	11.5	36.5		28.5
Max Q Clear Time (g_c+I1), s	14.4	16.9		8.3	3.0	10.8		14.8
Green Ext Time (p_c), s	0.1	3.8		0.7	0.0	3.2		0.7

Intersection Summary		
HCM 6th Ctrl Delay		26.6
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	334	72	158	190	36	66	518	147	50	500	34
Future Volume (veh/h)	65	334	72	158	190	36	66	518	147	50	500	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	78	402	87	190	229	43	80	624	177	60	602	41
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	495	487	413	373	514	436	315	1328	592	196	1036	70
Arrive On Green	0.12	0.27	0.27	0.14	0.29	0.29	0.18	0.39	0.39	0.08	0.21	0.21
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3249	221
Grp Volume(v), veh/h	78	402	87	190	229	43	80	624	177	60	316	327
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1760
Q Serve(g_s), s	2.6	18.9	2.4	6.5	9.4	1.9	3.6	12.3	7.2	3.0	14.9	15.0
Cycle Q Clear(g_c), s	2.6	18.9	2.4	6.5	9.4	1.9	3.6	12.3	7.2	3.0	14.9	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	495	487	413	373	514	436	315	1328	592	196	545	561
V/C Ratio(X)	0.16	0.82	0.21	0.51	0.45	0.10	0.25	0.47	0.30	0.31	0.58	0.58
Avail Cap(c_a), veh/h	522	544	461	395	566	480	315	1328	592	238	545	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	17.7	30.8	9.5	19.7	26.3	23.6	31.5	20.6	19.1	38.2	30.0	30.0
Incr Delay (d2), s/veh	0.1	9.2	0.3	1.1	0.6	0.1	0.4	1.2	1.3	0.9	4.3	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	9.2	1.4	2.6	4.0	0.7	1.5	5.0	2.7	1.3	7.1	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	40.0	9.7	20.8	26.9	23.7	31.9	21.8	20.3	39.0	34.3	34.2
LnGrp LOS	B	D	A	C	C	C	C	C	C	D	C	C
Approach Vol, veh/h		567			462			881			703	
Approach Delay, s/veh		32.3			24.1			22.4			34.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	36.9	14.4	26.4	18.5	30.7	13.1	27.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	26.2	11.1	24.7	10.0	26.2	10.0	25.8
Max Q Clear Time (g_c+I1), s	15.0	14.3	8.5	20.9	5.6	17.0	4.6	11.4
Green Ext Time (p_c), s	0.0	3.8	0.1	1.0	0.1	2.7	0.1	1.2

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	747	219	165	281	43	92	644	119	44	820	62
Future Volume (veh/h)	120	747	219	165	281	43	92	644	119	44	820	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	129	803	235	177	302	46	99	692	128	47	882	67
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	530	943	421	345	954	425	222	1485	271	244	1716	130
Arrive On Green	0.13	0.28	0.28	0.14	0.28	0.28	0.04	0.12	0.12	0.14	0.37	0.37
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4175	763	1714	4660	353
Grp Volume(v), veh/h	129	803	235	177	302	46	99	541	279	47	619	330
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1663	1714	1638	1736
Q Serve(g_s), s	4.3	20.0	11.9	6.0	6.3	1.3	5.1	13.9	14.1	2.2	13.3	13.3
Cycle Q Clear(g_c), s	4.3	20.0	11.9	6.0	6.3	1.3	5.1	13.9	14.1	2.2	13.3	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.20
Lane Grp Cap(c), veh/h	530	943	421	345	954	425	222	1165	591	244	1206	639
V/C Ratio(X)	0.24	0.85	0.56	0.51	0.32	0.11	0.45	0.46	0.47	0.19	0.51	0.52
Avail Cap(c_a), veh/h	579	950	424	348	954	425	324	1165	591	244	1206	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	30.8	27.9	20.2	25.7	10.6	39.9	31.7	31.8	34.0	22.1	22.2
Incr Delay (d2), s/veh	0.2	7.4	1.6	1.3	0.2	0.1	1.2	1.1	2.3	0.4	1.6	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	9.0	4.4	2.4	2.5	0.7	2.3	6.2	6.6	0.9	5.2	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	38.3	29.5	21.4	25.9	10.8	41.1	32.8	34.1	34.4	23.7	25.1
LnGrp LOS	B	D	C	C	C	B	D	C	C	C	C	C
Approach Vol, veh/h		1167			525			919			996	
Approach Delay, s/veh		34.2			23.0			34.1			24.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	34.0	14.4	26.8	13.7	35.1	14.1	27.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.3	29.5	10.0	22.5	14.5	25.0	12.2	20.3
Max Q Clear Time (g_c+I1), s	14.2	16.1	8.0	22.0	7.1	15.3	6.3	8.3
Green Ext Time (p_c), s	0.0	4.5	0.1	0.3	0.1	4.3	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	371	248	319	258	50	307	829	224	134	1073	84
Future Volume (veh/h)	105	371	248	319	258	50	307	829	224	134	1073	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	112	395	264	339	274	53	327	882	238	143	1141	89
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	572	611	586	493	444	85	683	1729	464	452	1761	137
Arrive On Green	0.17	0.18	0.18	0.15	0.15	0.15	0.21	0.45	0.45	0.14	0.38	0.38
Sat Flow, veh/h	3326	3420	1525	3326	2865	546	3326	3855	1035	3326	4648	362
Grp Volume(v), veh/h	112	395	264	339	162	165	327	749	371	143	804	426
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1702	1663	1638	1614	1663	1638	1735
Q Serve(g_s), s	2.6	9.7	0.0	8.7	8.0	8.2	7.8	14.7	14.8	3.5	18.2	18.2
Cycle Q Clear(g_c), s	2.6	9.7	0.0	8.7	8.0	8.2	7.8	14.7	14.8	3.5	18.2	18.2
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.64	1.00		0.21
Lane Grp Cap(c), veh/h	572	611	586	493	265	264	683	1469	724	452	1241	657
V/C Ratio(X)	0.20	0.65	0.45	0.69	0.61	0.63	0.48	0.51	0.51	0.32	0.65	0.65
Avail Cap(c_a), veh/h	572	779	661	525	422	420	683	1469	724	462	1241	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.85	0.85	0.85
Uniform Delay (d), s/veh	31.9	34.3	20.6	36.4	35.5	35.6	31.5	17.7	17.8	35.1	23.0	23.0
Incr Delay (d2), s/veh	0.2	1.2	0.5	3.5	2.3	2.4	0.5	1.1	2.3	0.3	2.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.0	4.1	3.7	3.4	3.5	3.1	5.5	5.7	1.4	7.1	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	35.5	21.2	39.9	37.8	38.0	32.0	18.9	20.1	35.5	25.2	27.2
LnGrp LOS	C	D	C	D	D	D	C	B	C	D	C	C
Approach Vol, veh/h		771			666			1447			1373	
Approach Delay, s/veh		30.1			38.9			22.1			26.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	42.4	15.3	18.1	20.5	36.1	17.5	15.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.3	11.7	18.0	10.7	31.6	10.0	19.7
Max Q Clear Time (g_c+I1), s	15.5	16.8	10.7	11.7	9.8	20.2	4.6	10.2
Green Ext Time (p_c), s	0.2	6.9	0.1	1.9	0.1	6.2	0.1	1.3

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	522	2	451	335	1256	0	0	1360	466
Future Volume (veh/h)	0	0	0	522	2	451	335	1256	0	0	1360	466
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				691	0	314	349	1308	0	0	1417	485
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				961	0	427	611	3248	0	0	2774	683
Arrive On Green				0.28	0.00	0.28	0.18	0.66	0.00	0.00	0.45	0.45
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				691	0	314	349	1308	0	0	1417	485
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				12.4	0.0	12.7	6.5	8.4	0.0	0.0	11.1	17.5
Cycle Q Clear(g_c), s				12.4	0.0	12.7	6.5	8.4	0.0	0.0	11.1	17.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				961	0	427	611	3248	0	0	2774	683
V/C Ratio(X)				0.72	0.00	0.73	0.57	0.40	0.00	0.00	0.51	0.71
Avail Cap(c_a), veh/h				1109	0	494	611	3248	0	0	2774	683
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.87	0.87	0.00	0.00	0.77	0.77
Uniform Delay (d), s/veh				22.1	0.0	22.2	25.3	5.3	0.0	0.0	13.4	15.2
Incr Delay (d2), s/veh				1.9	0.0	4.8	1.1	0.3	0.0	0.0	0.5	4.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.9	0.0	4.8	2.5	2.2	0.0	0.0	3.6	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.0	0.0	27.0	26.4	5.6	0.0	0.0	14.0	20.0
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					1005			1657			1902	
Approach Delay, s/veh					24.9			10.0			15.5	
Approach LOS					C			B			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	46.9		14.5	32.5		21.1
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	39.0		10.0	24.5		19.5
Max Q Clear Time (g_c+I1), s	10.4		8.5	19.5		14.7
Green Ext Time (p_c), s	11.5		0.2	4.1		1.9

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	5	366	0	0	0	0	1180	569	510	1400	0
Future Volume (veh/h)	385	5	366	0	0	0	0	1180	569	510	1400	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	401	0	377				0	1216	587	526	1443	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	981	0	436				0	2394	590	867	3290	0
Arrive On Green	0.29	0.00	0.29				0.00	0.39	0.39	0.26	0.67	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	401	0	377				0	1216	587	526	1443	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	8.5	0.0	21.1				0.0	13.5	34.5	12.5	12.4	0.0
Cycle Q Clear(g_c), s	8.5	0.0	21.1				0.0	13.5	34.5	12.5	12.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	981	0	436				0	2394	590	867	3290	0
V/C Ratio(X)	0.41	0.00	0.86				0.00	0.51	1.00	0.61	0.44	0.00
Avail Cap(c_a), veh/h	990	0	441				0	2394	590	867	3290	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.79	0.79	0.00
Uniform Delay (d), s/veh	26.0	0.0	30.5				0.0	21.1	27.5	29.2	7.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	16.0				0.0	0.8	35.9	1.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	9.4				0.0	4.8	17.8	5.0	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	0.0	46.5				0.0	21.8	63.4	30.2	7.3	0.0
LnGrp LOS	C	A	D				A	C	E	C	A	A
Approach Vol, veh/h		778						1803			1969	
Approach Delay, s/veh		36.1						35.4			13.4	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	35.4	36.8	27.8	62.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.7	32.3	23.5	57.5
Max Q Clear Time (g_c+I1), s	14.5	36.5	23.1	14.4
Green Ext Time (p_c), s	1.1	0.0	0.2	15.2

Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	0	29	6	2	1	28	582	7	0	529	199
Future Volume (veh/h)	313	0	29	6	2	1	28	582	7	0	529	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	335	0	20	6	2	1	29	606	7	0	551	207
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	520	0	231	57	19	10	146	2533	29	2	2135	952
Arrive On Green	0.15	0.00	0.15	0.05	0.05	0.05	0.09	0.73	0.73	0.00	0.62	0.62
Sat Flow, veh/h	3429	0	1525	1139	380	190	1714	3463	40	1714	3420	1525
Grp Volume(v), veh/h	335	0	20	9	0	0	29	299	314	0	551	207
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1709	0	0	1714	1710	1793	1714	1710	1525
Q Serve(g_s), s	8.3	0.0	1.0	0.5	0.0	0.0	1.4	5.1	5.1	0.0	6.5	5.3
Cycle Q Clear(g_c), s	8.3	0.0	1.0	0.5	0.0	0.0	1.4	5.1	5.1	0.0	6.5	5.3
Prop In Lane	1.00		1.00	0.67		0.11	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	520	0	231	86	0	0	146	1251	1312	2	2135	952
V/C Ratio(X)	0.64	0.00	0.09	0.10	0.00	0.00	0.20	0.24	0.24	0.00	0.26	0.22
Avail Cap(c_a), veh/h	838	0	373	389	0	0	248	1251	1312	238	2135	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.94	0.94
Uniform Delay (d), s/veh	35.9	0.0	32.8	40.8	0.0	0.0	38.3	3.9	3.9	0.0	7.6	7.3
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.5	0.0	0.0	0.7	0.5	0.4	0.0	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.4	0.2	0.0	0.0	0.6	1.5	1.6	0.0	2.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	0.0	33.0	41.3	0.0	0.0	39.0	4.4	4.4	0.0	7.8	7.8
LnGrp LOS	D	A	C	D	A	A	D	A	A	A	A	A
Approach Vol, veh/h		355			9			642			758	
Approach Delay, s/veh		37.0			41.3			5.9			7.8	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	67.8		15.6	9.7	58.2		6.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.0	24.5		19.5	10.5	24.0		18.0				
Max Q Clear Time (g_c+I1), s	10.3	7.1		10.3	3.4	8.5		2.5				
Green Ext Time (p_c), s	0.0	3.5		0.9	0.0	4.0		0.0				

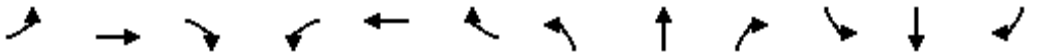
Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

11/15/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	363	170	833	718	277	133	102	393	222	143	107
Future Volume (veh/h)	45	363	170	833	718	277	133	102	393	222	143	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	47	382	179	877	756	292	140	107	414	234	151	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	429	1182	527	1344	1628	726	455	371	663	451	429	300
Arrive On Green	0.10	0.35	0.35	0.38	0.80	0.80	0.12	0.21	0.21	0.14	0.22	0.22
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	1921	1346
Grp Volume(v), veh/h	47	382	179	877	756	292	140	107	414	234	133	131
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1558
Q Serve(g_s), s	1.6	8.2	8.7	15.3	7.2	5.8	6.0	5.0	20.6	10.1	6.6	7.1
Cycle Q Clear(g_c), s	1.6	8.2	8.7	15.3	7.2	5.8	6.0	5.0	20.6	10.1	6.6	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	429	1182	527	1344	1628	726	455	371	663	451	381	347
V/C Ratio(X)	0.11	0.32	0.34	0.65	0.46	0.40	0.31	0.29	0.62	0.52	0.35	0.38
Avail Cap(c_a), veh/h	475	1182	527	1682	1628	726	462	371	663	451	381	347
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	24.1	24.3	9.8	6.1	6.0	24.7	33.5	21.9	23.8	32.7	32.9
Incr Delay (d2), s/veh	0.1	0.7	1.7	0.1	0.1	0.1	0.4	1.9	4.3	1.0	2.5	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.4	3.4	3.7	1.9	1.5	2.4	2.4	8.1	4.1	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	24.8	26.0	9.9	6.2	6.1	25.1	35.4	26.2	24.8	35.2	36.0
LnGrp LOS	B	C	C	A	A	A	C	D	C	C	D	D
Approach Vol, veh/h		608			1925			661			498	
Approach Delay, s/veh		24.5			7.9			27.5			30.6	
Approach LOS		C			A			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.9	36.5	14.3	24.3	11.8	49.6	16.0	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	21.9	10.2	19.4	10.0	42.4	11.5	18.1
Max Q Clear Time (g_c+I1), s	17.3	10.7	8.0	9.1	3.6	9.2	12.1	22.6
Green Ext Time (p_c), s	3.0	2.4	0.1	1.1	0.0	7.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	331	474	32	821	701	238	0	455	70	0	769
Future Volume (veh/h)	173	331	474	32	821	701	238	0	455	70	0	769
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	194	372	533	36	922	788	267	0	511	79	0	864
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	262	1491	665	600	2166	966	264	0	0	264	0	0
Arrive On Green	0.25	0.73	0.73	0.35	0.63	0.63	0.15	0.00	0.03	0.15	0.00	0.03
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	267		1714	79	
Grp Volume(v), veh/h	194	372	533	36	922	788	267	100.6		79	38.1	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	F		1714	D	
Q Serve(g_s), s	10.4	3.6	22.8	1.4	13.5	39.2	15.4			4.1		
Cycle Q Clear(g_c), s	10.4	3.6	22.8	1.4	13.5	39.2	15.4			4.1		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	262	1491	665	600	2166	966	264			264		
V/C Ratio(X)	0.74	0.25	0.80	0.06	0.43	0.82	1.01			0.30		
Avail Cap(c_a), veh/h	487	1491	665	600	2166	966	264			264		
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.90	0.90	0.90	0.43	0.43	0.43	1.00			1.00		
Uniform Delay (d), s/veh	35.4	8.2	10.8	21.6	9.2	13.9	42.3			37.5		
Incr Delay (d2), s/veh	3.7	0.4	8.9	0.0	0.3	3.4	58.3			0.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	4.2	1.3	5.6	0.6	4.7	12.8	10.7			1.8		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	8.5	19.7	21.6	9.5	17.3	100.6			38.1		
LnGrp LOS	D	A	B	C	A	B	F			D		
Approach Vol, veh/h		1099			1746							
Approach Delay, s/veh		19.4			13.3							
Approach LOS		B			B							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	37.0	45.6	17.4		17.3	65.3	17.4
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	41.1	12.9		25.9	25.2	10.0
Max Q Clear Time (g_c+I1), s	13.4	24.8	17.4		12.4	41.2	6.1
Green Ext Time (p_c), s	0.0	4.2	0.0		0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	386	401	237	882	19	402	134	73	17	291	270
Future Volume (veh/h)	68	386	401	237	882	19	402	134	73	17	291	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	75	424	441	260	969	21	442	147	80	19	320	297
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	193	906	404	291	1104	24	480	785	405	214	701	313
Arrive On Green	0.11	0.26	0.26	0.17	0.32	0.32	0.28	0.36	0.36	0.13	0.20	0.20
Sat Flow, veh/h	1714	3420	1525	1714	3422	74	1714	2182	1126	1714	3420	1525
Grp Volume(v), veh/h	75	424	441	260	484	506	442	113	114	19	320	297
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1787	1714	1710	1597	1714	1710	1525
Q Serve(g_s), s	4.1	10.4	13.2	14.8	26.8	26.8	25.0	4.5	4.9	1.0	8.2	14.3
Cycle Q Clear(g_c), s	4.1	10.4	13.2	14.8	26.8	26.8	25.0	4.5	4.9	1.0	8.2	14.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	193	906	404	291	551	576	480	616	575	214	701	313
V/C Ratio(X)	0.39	0.47	1.09	0.89	0.88	0.88	0.92	0.18	0.20	0.09	0.46	0.95
Avail Cap(c_a), veh/h	214	906	404	291	551	576	480	616	575	214	701	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	30.8	9.1	40.6	32.0	32.0	34.9	21.9	22.0	38.7	34.9	21.8
Incr Delay (d2), s/veh	1.1	1.5	68.4	27.2	17.8	17.1	22.8	0.6	0.8	0.2	2.1	39.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.4	11.7	8.4	13.5	14.0	13.2	1.9	1.9	0.4	3.6	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	32.3	77.5	67.8	49.8	49.2	57.7	22.6	22.8	38.9	37.0	61.4
LnGrp LOS	D	C	F	E	D	D	E	C	C	D	D	E
Approach Vol, veh/h		940			1250			669			636	
Approach Delay, s/veh		54.3			53.3			45.9			48.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	28.5	30.0	22.5	13.3	34.2	14.5	38.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.5	24.0	25.5	18.0	10.0	28.5	10.0	33.5
Max Q Clear Time (g_c+I1), s	6.8	15.2	27.0	16.3	6.1	28.8	3.0	6.9
Green Ext Time (p_c), s	0.0	3.1	0.0	0.6	0.0	0.0	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	66	455	35	31	802
Future Volume (veh/h)	71	66	455	35	31	802
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	79	73	506	39	34	891
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	234	208	1466	113	1002	2802
Arrive On Green	0.14	0.14	0.91	0.91	0.34	0.82
Sat Flow, veh/h	1714	1525	3308	247	1714	3510
Grp Volume(v), veh/h	79	73	268	277	34	891
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1755	1714	1710
Q Serve(g_s), s	3.8	3.9	1.8	1.8	0.0	5.7
Cycle Q Clear(g_c), s	3.8	3.9	1.8	1.8	0.0	5.7
Prop In Lane	1.00	1.00		0.14	1.00	
Lane Grp Cap(c), veh/h	234	208	779	800	1002	2802
V/C Ratio(X)	0.34	0.35	0.34	0.35	0.03	0.32
Avail Cap(c_a), veh/h	533	475	779	800	1002	2802
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.95	0.95	0.63	0.63
Uniform Delay (d), s/veh	35.2	35.2	2.3	2.3	3.5	2.0
Incr Delay (d2), s/veh	0.8	1.0	1.1	1.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.5	0.7	0.7	0.1	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.0	36.3	3.4	3.4	3.5	2.2
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	152		545			925
Approach Delay, s/veh	36.1		3.4			2.2
Approach LOS	D		A			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.7	43.0				75.7	14.3
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	12.5	38.5				55.5	25.5
Max Q Clear Time (g_c+I1), s	12.0	3.8				7.7	5.9
Green Ext Time (p_c), s	0.0	3.6				7.9	0.4

Intersection Summary	
HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1	42	126	5	44	13	480	58	50	751	18
Future Volume (veh/h)	15	1	42	126	5	44	13	480	58	50	751	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	18	1	51	152	6	53	16	578	70	60	905	22
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	227	4	202	234	22	193	667	1229	148	670	1369	33
Arrive On Green	0.13	0.13	0.13	0.14	0.14	0.14	0.08	0.13	0.13	0.48	0.80	0.80
Sat Flow, veh/h	1714	29	1500	1714	158	1392	1714	3072	371	1714	3412	83
Grp Volume(v), veh/h	18	0	52	152	0	59	16	321	327	60	454	473
Grp Sat Flow(s),veh/h/ln	1714	0	1530	1714	0	1549	1714	1710	1733	1714	1710	1785
Q Serve(g_s), s	0.8	0.0	2.7	7.6	0.0	3.1	0.0	15.6	15.7	0.0	10.1	10.1
Cycle Q Clear(g_c), s	0.8	0.0	2.7	7.6	0.0	3.1	0.0	15.6	15.7	0.0	10.1	10.1
Prop In Lane	1.00		0.98	1.00		0.90	1.00		0.21	1.00		0.05
Lane Grp Cap(c), veh/h	227	0	206	234	0	215	667	684	693	670	686	716
V/C Ratio(X)	0.08	0.00	0.25	0.65	0.00	0.27	0.02	0.47	0.47	0.09	0.66	0.66
Avail Cap(c_a), veh/h	240	0	350	244	0	358	667	684	693	670	686	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	0.96	0.96	0.96
Uniform Delay (d), s/veh	34.3	0.0	34.9	36.8	0.0	34.7	12.6	30.2	30.3	9.3	6.3	6.3
Incr Delay (d2), s/veh	0.1	0.0	0.6	5.7	0.0	0.7	0.0	2.1	2.0	0.1	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.0	3.5	0.0	1.2	0.2	7.5	7.6	0.5	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	0.0	35.5	42.5	0.0	35.4	12.6	32.3	32.3	9.4	11.1	10.9
LnGrp LOS	C	A	D	D	A	D	B	C	C	A	B	B
Approach Vol, veh/h		70			211			664			987	
Approach Delay, s/veh		35.2			40.5			31.8			10.9	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	38.0	14.3	14.1	23.5	38.1	13.9	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	33.5	10.3	18.1	10.0	33.6	10.1	18.3
Max Q Clear Time (g_c+I1), s	12.0	17.7	9.6	4.7	2.0	12.1	2.8	5.1
Green Ext Time (p_c), s	0.1	3.6	0.0	0.1	0.0	6.2	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	377	144	115	639	150	146	386	100	105	382	36
Future Volume (veh/h)	37	377	144	115	639	150	146	386	100	105	382	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	40	410	157	125	695	163	159	420	109	114	415	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	190	879	392	537	1052	469	556	1068	476	528	1391	129
Arrive On Green	0.11	0.26	0.26	0.16	0.31	0.31	0.17	0.31	0.31	0.16	0.30	0.30
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4576	424
Grp Volume(v), veh/h	40	410	157	125	695	163	159	420	109	114	295	159
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1724
Q Serve(g_s), s	1.5	7.3	6.2	2.4	12.8	6.0	3.0	7.0	3.8	2.2	5.0	5.1
Cycle Q Clear(g_c), s	1.5	7.3	6.2	2.4	12.8	6.0	3.0	7.0	3.8	2.2	5.0	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	190	879	392	537	1052	469	556	1068	476	528	996	524
V/C Ratio(X)	0.21	0.47	0.40	0.23	0.66	0.35	0.29	0.39	0.23	0.22	0.30	0.30
Avail Cap(c_a), veh/h	308	1606	717	597	1606	717	597	1068	476	597	996	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	22.7	22.3	26.4	21.8	19.4	26.4	19.5	18.4	26.5	19.3	19.3
Incr Delay (d2), s/veh	0.5	0.4	0.7	0.2	0.7	0.4	0.3	1.1	1.1	0.2	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.9	2.2	0.9	4.9	2.1	1.2	2.8	1.4	0.8	1.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	23.1	22.9	26.7	22.5	19.9	26.7	20.6	19.6	26.7	20.0	20.8
LnGrp LOS	C	C	C	C	C	B	C	C	B	C	C	C
Approach Vol, veh/h		607			983			688			568	
Approach Delay, s/veh		23.5			22.6			21.8			21.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	20.6	14.1	24.0	10.0	24.3	13.5	24.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	31.5	10.5	19.5	10.5	31.5	10.5	19.5
Max Q Clear Time (g_c+I1), s	14.4	9.3	5.0	7.1	3.5	14.8	4.2	9.0
Green Ext Time (p_c), s	0.2	3.2	0.2	2.3	0.0	5.0	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	356	113	236	690	10	195	33	149	29	18	5
Future Volume (veh/h)	20	356	113	236	690	10	195	33	149	29	18	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	24	424	135	281	821	12	303	0	131	35	21	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	134	931	415	606	1299	19	785	0	627	390	307	88
Arrive On Green	0.08	0.27	0.27	0.36	0.75	0.75	0.23	0.00	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1714	3420	1525	3326	3450	50	3429	0	1525	1714	1346	385
Grp Volume(v), veh/h	24	424	135	281	407	426	303	0	131	35	0	27
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1791	1714	0	1525	1714	0	1731
Q Serve(g_s), s	1.2	9.3	6.4	5.8	10.1	10.1	6.7	0.0	0.0	1.4	0.0	1.1
Cycle Q Clear(g_c), s	1.2	9.3	6.4	5.8	10.1	10.1	6.7	0.0	0.0	1.4	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	134	931	415	606	644	674	785	0	627	390	0	394
V/C Ratio(X)	0.18	0.46	0.33	0.46	0.63	0.63	0.39	0.00	0.21	0.09	0.00	0.07
Avail Cap(c_a), veh/h	238	931	415	606	644	674	785	0	627	390	0	394
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	0.99	0.00	0.99	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.8	27.2	26.1	25.2	8.2	8.2	29.4	0.0	17.1	27.4	0.0	27.3
Incr Delay (d2), s/veh	0.6	1.5	2.0	0.6	2.0	1.9	1.4	0.0	0.7	0.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.9	2.5	2.1	2.6	2.7	2.9	0.0	1.8	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	28.8	28.1	25.8	10.2	10.1	30.8	0.0	17.8	27.8	0.0	27.6
LnGrp LOS	D	C	C	C	B	B	C	A	B	C	A	C
Approach Vol, veh/h		583			1114			434			62	
Approach Delay, s/veh		29.0			14.1			26.9			27.7	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.4	26.5		22.5	9.0	35.9		22.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.9	22.0		18.0	10.0	25.9		18.1
Max Q Clear Time (g_c+I1), s	7.8	11.3		3.4	3.2	12.1		8.7
Green Ext Time (p_c), s	0.5	2.4		0.1	0.0	4.5		1.1

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.1

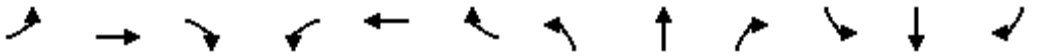
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	534	916	10	0	15
Future Vol, veh/h	0	534	916	10	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	562	964	11	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	488
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	*730
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*730
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	730
HCM Lane V/C Ratio	-	-	-	0.022
HCM Control Delay (s)	-	-	-	10
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	324	42	123	565	108	94	314	97	139	490	251
Future Volume (veh/h)	96	324	42	123	565	108	94	314	97	139	490	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	110	372	48	141	649	124	108	361	111	160	563	289
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	262	1177	525	232	1117	498	225	749	227	243	656	336
Arrive On Green	0.31	0.69	0.69	0.14	0.33	0.33	0.13	0.29	0.29	0.05	0.10	0.10
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2585	784	1714	2187	1121
Grp Volume(v), veh/h	110	372	48	141	649	124	108	237	235	160	440	412
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1659	1714	1710	1598
Q Serve(g_s), s	4.6	3.9	0.6	7.0	14.2	3.4	5.3	10.3	10.5	8.3	22.8	22.8
Cycle Q Clear(g_c), s	4.6	3.9	0.6	7.0	14.2	3.4	5.3	10.3	10.5	8.3	22.8	22.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		0.70
Lane Grp Cap(c), veh/h	262	1177	525	232	1117	498	225	495	481	243	513	479
V/C Ratio(X)	0.42	0.32	0.09	0.61	0.58	0.25	0.48	0.48	0.49	0.66	0.86	0.86
Avail Cap(c_a), veh/h	262	1177	525	274	1117	498	240	495	481	350	513	479
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	28.0	9.8	3.9	36.6	25.2	9.1	36.2	26.4	26.5	40.8	38.7	38.7
Incr Delay (d2), s/veh	1.1	0.7	0.3	2.8	2.2	1.2	1.6	3.3	3.5	2.7	15.4	16.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.4	0.4	3.1	5.9	2.0	2.3	4.5	4.5	3.9	12.6	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	10.5	4.3	39.4	27.4	10.3	37.8	29.7	30.0	43.5	54.0	55.1
LnGrp LOS	C	B	A	D	C	B	D	C	C	D	D	E
Approach Vol, veh/h		530			914			580			1012	
Approach Delay, s/veh		13.8			26.9			31.3			52.8	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	33.0	13.8	29.0	15.8	31.4	14.8	28.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.9	25.5	10.1	24.5	10.5	26.9	15.9	18.7
Max Q Clear Time (g_c+I1), s	9.0	5.9	7.3	24.8	6.6	16.2	10.3	12.5
Green Ext Time (p_c), s	0.1	2.5	0.1	0.0	0.1	3.6	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	28	20	68	59	24	37	337	73	27	283	19
Future Volume (veh/h)	12	28	20	68	59	24	37	337	73	27	283	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	13	30	21	72	63	26	39	359	78	29	301	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	201	137	96	233	168	69	166	1089	234	696	2272	150
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.19	0.78	0.78	0.81	1.00	1.00
Sat Flow, veh/h	1329	986	690	1375	1211	500	1714	2800	602	1714	3256	215
Grp Volume(v), veh/h	13	0	51	72	0	89	39	218	219	29	157	164
Grp Sat Flow(s),veh/h/ln	1329	0	1676	1375	0	1710	1714	1710	1692	1714	1710	1761
Q Serve(g_s), s	0.8	0.0	2.4	4.4	0.0	4.3	1.7	3.4	3.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	2.4	6.9	0.0	4.3	1.7	3.4	3.5	0.3	0.0	0.0
Prop In Lane	1.00		0.41	1.00		0.29	1.00		0.36	1.00		0.12
Lane Grp Cap(c), veh/h	201	0	232	233	0	237	166	665	658	696	1193	1229
V/C Ratio(X)	0.06	0.00	0.22	0.31	0.00	0.38	0.23	0.33	0.33	0.04	0.13	0.13
Avail Cap(c_a), veh/h	475	0	577	516	0	589	305	665	658	696	1193	1229
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	0.92	0.92	0.92
Uniform Delay (d), s/veh	37.5	0.0	34.4	37.5	0.0	35.2	33.5	6.5	6.5	5.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.7	0.0	1.0	0.7	1.3	1.3	0.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	1.5	0.0	1.8	0.7	1.3	1.3	0.1	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	34.9	38.2	0.0	36.2	34.2	7.8	7.8	5.1	0.2	0.2
LnGrp LOS	D	A	C	D	A	D	C	A	A	A	A	A
Approach Vol, veh/h		64			161			476			350	
Approach Delay, s/veh		35.5			37.1			10.0			0.6	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	37.0		14.5	10.7	64.8		14.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.5	32.5		28.5	13.5	34.5		28.5				
Max Q Clear Time (g_c+I1), s	2.3	5.5		7.1	3.7	2.0		8.9				
Green Ext Time (p_c), s	0.0	2.7		0.2	0.0	2.0		0.6				

Intersection Summary		
HCM 6th Ctrl Delay	12.6	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	91	50	150	277	59	71	395	104	11	341	30
Future Volume (veh/h)	24	91	50	150	277	59	71	395	104	11	341	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	26	97	53	160	295	63	76	420	111	12	363	32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	289	296	251	462	397	337	571	1891	844	97	880	77
Arrive On Green	0.08	0.16	0.16	0.14	0.22	0.22	0.33	0.55	0.55	0.11	0.55	0.55
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3181	279
Grp Volume(v), veh/h	26	97	53	160	295	63	76	420	111	12	194	201
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1750
Q Serve(g_s), s	1.0	4.3	1.3	6.3	13.7	3.0	2.8	5.6	3.2	0.6	5.9	6.0
Cycle Q Clear(g_c), s	1.0	4.3	1.3	6.3	13.7	3.0	2.8	5.6	3.2	0.6	5.9	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	289	296	251	462	397	337	571	1891	844	97	473	484
V/C Ratio(X)	0.09	0.33	0.21	0.35	0.74	0.19	0.13	0.22	0.13	0.12	0.41	0.41
Avail Cap(c_a), veh/h	389	638	541	467	640	542	571	1891	844	238	473	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	26.4	33.2	7.5	23.0	32.7	28.5	21.0	10.2	9.7	37.9	15.9	15.9
Incr Delay (d2), s/veh	0.1	0.6	0.4	0.4	2.8	0.3	0.1	0.3	0.3	0.6	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.9	1.0	2.5	6.2	1.1	1.1	2.1	1.1	0.3	2.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	33.8	8.0	23.4	35.5	28.8	21.1	10.5	10.0	38.5	18.5	18.5
LnGrp LOS	C	C	A	C	D	C	C	B	B	D	B	B
Approach Vol, veh/h		176			518			607			407	
Approach Delay, s/veh		25.0			30.9			11.7			19.0	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	51.8	14.3	16.8	32.0	26.9	9.3	21.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.6	22.5	10.1	29.4	10.1	22.4	10.0	29.5
Max Q Clear Time (g_c+I1), s	2.6	7.6	8.3	6.3	4.8	8.0	3.0	15.7
Green Ext Time (p_c), s	0.0	2.7	0.1	0.6	0.1	2.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	273	109	124	532	39	162	624	86	21	538	50
Future Volume (veh/h)	44	273	109	124	532	39	162	624	86	21	538	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	50	310	124	141	605	44	184	709	98	24	611	57
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	319	703	313	435	801	357	270	2150	295	134	1887	174
Arrive On Green	0.11	0.21	0.21	0.14	0.23	0.23	0.05	0.16	0.16	0.08	0.41	0.41
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4370	599	1714	4577	423
Grp Volume(v), veh/h	50	310	124	141	605	44	184	530	277	24	436	232
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1692	1714	1638	1724
Q Serve(g_s), s	1.9	7.1	6.3	5.1	14.8	2.0	9.5	12.9	13.0	1.2	8.1	8.2
Cycle Q Clear(g_c), s	1.9	7.1	6.3	5.1	14.8	2.0	9.5	12.9	13.0	1.2	8.1	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		0.25
Lane Grp Cap(c), veh/h	319	703	313	435	801	357	270	1612	833	134	1351	711
V/C Ratio(X)	0.16	0.44	0.40	0.32	0.76	0.12	0.68	0.33	0.33	0.18	0.32	0.33
Avail Cap(c_a), veh/h	373	912	407	441	912	407	440	1612	833	238	1351	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	31.2	30.9	20.4	32.1	27.2	40.4	24.5	24.6	38.8	17.9	18.0
Incr Delay (d2), s/veh	0.2	0.4	0.8	0.4	3.2	0.2	2.8	0.5	1.0	0.6	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.9	2.4	2.0	6.3	0.8	4.5	5.7	6.1	0.5	3.1	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	31.7	31.7	20.8	35.3	27.3	43.2	25.0	25.6	39.4	18.6	19.2
LnGrp LOS	C	C	C	C	D	C	D	C	C	D	B	B
Approach Vol, veh/h		484			790			991			692	
Approach Delay, s/veh		30.8			32.2			28.6			19.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	46.3	14.2	20.5	16.2	39.1	11.6	23.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	30.5	10.0	21.5	20.6	19.9	10.0	21.5
Max Q Clear Time (g_c+I1), s	3.9	15.0	7.1	9.1	11.5	10.2	3.9	16.8
Green Ext Time (p_c), s	0.0	4.8	0.1	1.9	0.3	3.0	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	110	66	190	159	18	138	870	124	38	702	26
Future Volume (veh/h)	26	110	66	190	159	18	138	870	124	38	702	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	29	122	73	211	177	20	153	967	138	42	780	29
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	283	475	616	460	596	67	881	2320	330	333	1794	67
Arrive On Green	0.09	0.14	0.14	0.14	0.19	0.19	0.27	0.53	0.53	0.10	0.37	0.37
Sat Flow, veh/h	3326	3420	1525	3326	3101	346	3326	4346	619	3326	4863	180
Grp Volume(v), veh/h	29	122	73	211	97	100	153	728	377	42	525	284
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1738	1663	1638	1689	1663	1638	1768
Q Serve(g_s), s	0.7	2.9	0.0	5.3	4.4	4.5	3.2	12.0	12.0	1.0	10.8	10.9
Cycle Q Clear(g_c), s	0.7	2.9	0.0	5.3	4.4	4.5	3.2	12.0	12.0	1.0	10.8	10.9
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.37	1.00		0.10
Lane Grp Cap(c), veh/h	283	475	616	460	329	334	881	1749	902	333	1208	652
V/C Ratio(X)	0.10	0.26	0.12	0.46	0.29	0.30	0.17	0.42	0.42	0.13	0.43	0.44
Avail Cap(c_a), veh/h	466	790	757	554	441	448	881	1749	902	466	1208	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.94	0.94	0.94
Uniform Delay (d), s/veh	38.0	34.6	16.8	35.7	31.1	31.2	25.5	12.6	12.6	36.9	21.3	21.4
Incr Delay (d2), s/veh	0.2	0.3	0.1	0.7	0.5	0.5	0.1	0.7	1.4	0.2	1.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.9	2.1	1.8	1.9	1.3	4.3	4.6	0.4	4.2	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	34.9	16.9	36.4	31.6	31.7	25.6	13.3	13.9	37.1	22.4	23.3
LnGrp LOS	D	C	B	D	C	C	C	B	B	D	C	C
Approach Vol, veh/h		224			408			1258			851	
Approach Delay, s/veh		29.4			34.1			15.0			23.4	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	50.1	14.4	14.5	25.9	35.2	9.7	19.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	31.1	12.5	18.3	10.5	30.7	10.1	20.7
Max Q Clear Time (g_c+I1), s	13.0	14.0	7.3	4.9	5.2	12.9	2.7	6.5
Green Ext Time (p_c), s	0.0	7.1	0.3	0.7	0.2	5.1	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	328	3	310	408	892	0	0	632	324
Future Volume (veh/h)	0	0	0	328	3	310	408	892	0	0	632	324
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				467	0	228	448	980	0	0	695	356
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				781	0	348	667	3505	0	0	2993	737
Arrive On Green				0.23	0.00	0.23	0.20	0.71	0.00	0.00	0.48	0.48
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				467	0	228	448	980	0	0	695	356
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				8.3	0.0	9.2	8.5	4.9	0.0	0.0	4.4	10.7
Cycle Q Clear(g_c), s				8.3	0.0	9.2	8.5	4.9	0.0	0.0	4.4	10.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				781	0	348	667	3505	0	0	2993	737
V/C Ratio(X)				0.60	0.00	0.66	0.67	0.28	0.00	0.00	0.23	0.48
Avail Cap(c_a), veh/h				1109	0	494	831	3505	0	0	2993	737
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.96	0.96	0.00	0.00	0.95	0.95
Uniform Delay (d), s/veh				23.5	0.0	23.8	25.1	3.5	0.0	0.0	10.2	11.8
Incr Delay (d2), s/veh				0.7	0.0	2.1	1.5	0.2	0.0	0.0	0.2	2.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	3.3	3.3	1.1	0.0	0.0	1.4	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.2	0.0	25.9	26.6	3.7	0.0	0.0	10.4	14.0
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					695			1428			1051	
Approach Delay, s/veh					24.8			10.9			11.6	
Approach LOS					C			B			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	50.5		15.6	34.9		17.5
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	39.0		14.5	20.0		19.5
Max Q Clear Time (g_c+I1), s	6.9		10.5	12.7		11.2
Green Ext Time (p_c), s	8.3		0.7	3.5		1.8

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	3	271	0	0	0	0	1001	535	191	758	0
Future Volume (veh/h)	282	3	271	0	0	0	0	1001	535	191	758	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	305	0	291				0	1076	575	205	815	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	823	0	366				0	3096	763	643	3516	0
Arrive On Green	0.24	0.00	0.24				0.00	0.50	0.50	0.19	0.72	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	305	0	291				0	1076	575	205	815	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	6.7	0.0	16.1				0.0	9.5	27.2	4.8	5.1	0.0
Cycle Q Clear(g_c), s	6.7	0.0	16.1				0.0	9.5	27.2	4.8	5.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	823	0	366				0	3096	763	643	3516	0
V/C Ratio(X)	0.37	0.00	0.79				0.00	0.35	0.75	0.32	0.23	0.00
Avail Cap(c_a), veh/h	952	0	424				0	3096	763	643	3516	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	28.5	0.0	32.1				0.0	13.6	18.1	31.2	4.4	0.0
Incr Delay (d2), s/veh	0.3	0.0	8.8				0.0	0.3	6.8	0.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	6.7				0.0	3.2	10.3	1.9	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	41.0				0.0	13.9	24.9	31.5	4.5	0.0
LnGrp LOS	C	A	D				A	B	C	C	A	A
Approach Vol, veh/h		596						1651			1020	
Approach Delay, s/veh		34.7						17.7			9.9	
Approach LOS		C						B			A	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.4	47.0		23.6		66.4						
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5						
Max Green Setting (Gmax), s	11.5	42.5		22.5		58.5						
Max Q Clear Time (g_c+I1), s	18.8	29.2		18.1		7.1						
Green Ext Time (p_c), s	0.3	8.0		1.0		7.0						

Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

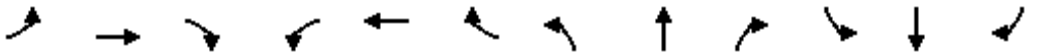
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	534	921	10	0	15
Future Vol, veh/h	0	534	921	10	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	562	969	11	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	490
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	529
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	529
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	529
HCM Lane V/C Ratio	-	-	-	0.03
HCM Control Delay (s)	-	-	-	12
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	0	7	6	1	2	19	566	4	3	566	314
Future Volume (veh/h)	187	0	7	6	1	2	19	566	4	3	566	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	212	0	5	7	1	2	21	636	4	3	636	353
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	475	0	211	62	9	18	125	2385	15	61	2213	987
Arrive On Green	0.14	0.00	0.14	0.05	0.05	0.05	0.07	0.68	0.68	0.04	0.65	0.65
Sat Flow, veh/h	3429	0	1525	1176	168	336	1714	3484	22	1714	3420	1525
Grp Volume(v), veh/h	212	0	5	10	0	0	21	312	328	3	636	353
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1681	0	0	1714	1710	1796	1714	1710	1525
Q Serve(g_s), s	5.1	0.0	0.3	0.5	0.0	0.0	1.0	6.3	6.3	0.2	7.3	9.6
Cycle Q Clear(g_c), s	5.1	0.0	0.3	0.5	0.0	0.0	1.0	6.3	6.3	0.2	7.3	9.6
Prop In Lane	1.00		1.00	0.70		0.20	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	475	0	211	88	0	0	125	1171	1229	61	2213	987
V/C Ratio(X)	0.45	0.00	0.02	0.11	0.00	0.00	0.17	0.27	0.27	0.05	0.29	0.36
Avail Cap(c_a), veh/h	857	0	381	420	0	0	276	1171	1229	276	2213	987
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	35.6	0.0	33.5	40.7	0.0	0.0	39.1	5.5	5.5	41.9	6.9	7.3
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.6	0.0	0.0	0.6	0.6	0.5	0.3	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.1	0.2	0.0	0.0	0.5	2.1	2.2	0.1	2.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	0.0	33.6	41.2	0.0	0.0	39.8	6.0	6.0	42.2	7.1	8.1
LnGrp LOS	D	A	C	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		217			10			661			992	
Approach Delay, s/veh		36.2			41.2			7.1			7.6	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	63.6		14.5	8.6	60.2		6.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.0	20.0		20.0	12.0	20.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	8.3		7.1	3.0	11.6		2.5				
Green Ext Time (p_c), s	0.0	3.0		0.6	0.0	3.6		0.0				

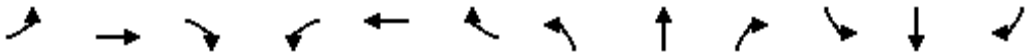
Intersection Summary			
HCM 6th Ctrl Delay		10.9	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

11/15/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	726	165	503	505	160	154	162	616	157	113	46
Future Volume (veh/h)	57	726	165	503	505	160	154	162	616	157	113	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	58	741	168	513	515	163	157	165	629	160	115	47
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	334	923	412	1351	1809	807	439	337	830	332	450	176
Arrive On Green	0.10	0.27	0.27	0.60	0.88	0.88	0.11	0.19	0.19	0.11	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	2404	937
Grp Volume(v), veh/h	58	741	168	513	515	163	157	165	629	160	80	82
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1631
Q Serve(g_s), s	2.8	22.2	7.3	1.9	2.6	1.7	7.8	9.0	8.4	7.9	4.4	4.7
Cycle Q Clear(g_c), s	2.8	22.2	7.3	1.9	2.6	1.7	7.8	9.0	8.4	7.9	4.4	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	334	923	412	1351	1809	807	439	337	830	332	320	306
V/C Ratio(X)	0.17	0.80	0.41	0.38	0.28	0.20	0.36	0.49	0.76	0.48	0.25	0.27
Avail Cap(c_a), veh/h	361	923	412	1351	1809	807	441	337	830	333	320	306
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.40	0.40	0.40	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	37.4	17.7	14.3	3.2	3.1	29.8	40.0	7.7	30.2	38.1	38.2
Incr Delay (d2), s/veh	0.2	7.3	3.0	0.1	0.2	0.2	0.5	4.8	6.2	1.1	1.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	10.1	2.9	2.7	0.8	0.5	3.2	4.4	7.0	3.4	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	44.7	20.7	14.3	3.3	3.4	30.2	44.8	13.8	31.3	40.0	40.4
LnGrp LOS	C	D	C	B	A	A	C	D	B	C	D	D
Approach Vol, veh/h		967			1191			951			322	
Approach Delay, s/veh		39.7			8.1			21.9			35.7	
Approach LOS		D			A			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.3	31.7	14.4	22.6	12.8	60.2	14.4	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	36.7	27.2	10.1	18.0	10.0	53.9	10.0	18.1
Max Q Clear Time (g_c+I1), s	3.9	24.2	9.8	6.7	4.8	4.6	9.9	11.0
Green Ext Time (p_c), s	1.9	1.6	0.0	0.6	0.0	4.6	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	825	498	31	409	327	181	0	843	66	0	577
Future Volume (veh/h)	176	825	498	31	409	327	181	0	843	66	0	577
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	187	878	530	33	435	348	193	0	897	70	0	614
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	257	1088	485	817	2206	984	258	0	0	258	0	0
Arrive On Green	0.05	0.11	0.11	0.48	0.65	0.65	0.15	0.00	0.02	0.15	0.00	0.02
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	193		1714	70	
Grp Volume(v), veh/h	187	878	530	33	435	348	193	51.2		70	41.9	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	D		1714	D	
Q Serve(g_s), s	11.8	27.6	23.1	1.1	5.7	4.7	11.9			4.0		
Cycle Q Clear(g_c), s	11.8	27.6	23.1	1.1	5.7	4.7	11.9			4.0		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	257	1088	485	817	2206	984	258			258		
V/C Ratio(X)	0.73	0.81	1.09	0.04	0.20	0.35	0.75			0.27		
Avail Cap(c_a), veh/h	327	1088	485	817	2206	984	337			258		
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.61	0.61	0.61	0.83	0.83	0.83	1.00			1.00		
Uniform Delay (d), s/veh	50.1	45.9	22.9	15.4	7.9	1.5	44.7			41.4		
Incr Delay (d2), s/veh	3.6	4.0	59.9	0.0	0.2	0.8	6.5			0.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	5.7	13.3	17.3	0.4	2.0	3.4	5.5			1.7		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	49.9	82.8	15.4	8.1	2.3	51.2			41.9		
LnGrp LOS	D	D	F	B	A	A	D			D		
Approach Vol, veh/h		1595			816							
Approach Delay, s/veh		61.3			5.9							
Approach LOS		E			A							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	14.4	37.0	18.6		18.5	73.0	18.6
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.5	19.1		18.5	24.0	10.0
Max Q Clear Time (g_c+I1), s	13.1	29.6	13.9		13.8	7.7	6.0
Green Ext Time (p_c), s	0.0	2.0	0.2		0.2	3.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	974	507	143	385	32	282	357	221	16	174	101
Future Volume (veh/h)	254	974	507	143	385	32	282	357	221	16	174	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	259	994	517	146	393	33	288	364	226	16	178	103
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	484	1290	576	264	796	67	359	649	396	133	637	284
Arrive On Green	0.28	0.38	0.38	0.15	0.25	0.25	0.07	0.11	0.11	0.08	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	1714	3195	267	1714	2040	1246	1714	3420	1525
Grp Volume(v), veh/h	259	994	517	146	210	216	288	304	286	16	178	103
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1752	1714	1710	1576	1714	1710	1525
Q Serve(g_s), s	14.1	28.1	35.1	8.7	11.5	11.6	18.2	18.6	19.0	1.0	4.9	6.5
Cycle Q Clear(g_c), s	14.1	28.1	35.1	8.7	11.5	11.6	18.2	18.6	19.0	1.0	4.9	6.5
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.79	1.00		1.00
Lane Grp Cap(c), veh/h	484	1290	576	264	426	436	359	544	501	133	637	284
V/C Ratio(X)	0.54	0.77	0.90	0.55	0.49	0.50	0.80	0.56	0.57	0.12	0.28	0.36
Avail Cap(c_a), veh/h	484	1290	576	264	426	436	421	544	501	195	637	284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	30.1	32.3	43.0	35.3	35.4	48.9	41.9	42.1	47.2	38.4	39.0
Incr Delay (d2), s/veh	0.7	2.7	12.8	2.5	4.0	4.0	8.7	3.8	4.3	0.4	1.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	11.8	14.6	3.8	5.3	5.4	9.2	9.1	8.6	0.4	2.2	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	32.8	45.0	45.5	39.4	39.4	57.6	45.7	46.4	47.6	39.5	42.6
LnGrp LOS	C	C	D	D	D	D	E	D	D	D	D	D
Approach Vol, veh/h		1770			572			878			297	
Approach Delay, s/veh		36.5			40.9			49.8			41.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	43.5	25.1	22.5	33.0	29.4	10.6	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	39.0	24.5	18.0	24.6	24.9	10.0	32.5
Max Q Clear Time (g_c+I1), s	10.7	37.1	20.2	8.5	16.1	13.6	3.0	21.0
Green Ext Time (p_c), s	0.0	1.4	0.4	0.9	0.5	1.9	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	39	831	145	85	645
Future Volume (veh/h)	51	39	831	145	85	645
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	52	40	848	148	87	658
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	185	165	1773	309	783	2926
Arrive On Green	0.11	0.11	1.00	1.00	0.30	1.00
Sat Flow, veh/h	1714	1525	3001	508	1714	3510
Grp Volume(v), veh/h	52	40	498	498	87	658
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1709	1714	1710
Q Serve(g_s), s	3.1	2.6	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.1	2.6	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.30	1.00	
Lane Grp Cap(c), veh/h	185	165	1042	1041	783	2926
V/C Ratio(X)	0.28	0.24	0.48	0.48	0.11	0.22
Avail Cap(c_a), veh/h	358	319	1042	1041	783	2926
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.88	0.88	0.73	0.73
Uniform Delay (d), s/veh	45.1	44.9	0.0	0.0	2.4	0.0
Incr Delay (d2), s/veh	0.8	0.8	1.4	1.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.0	0.4	0.4	0.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.9	45.7	1.4	1.4	2.4	0.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	92		996			745
Approach Delay, s/veh	45.8		1.4			0.4
Approach LOS	D		A			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.1	69.0				96.1	13.9
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	11.5	64.5				80.5	20.5
Max Q Clear Time (g_c+I1), s	12.0	2.0				2.0	5.1
Green Ext Time (p_c), s	0.1	8.5				5.4	0.2

Intersection Summary	
HCM 6th Ctrl Delay	3.2
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	6	17	102	0	56	15	861	165	80	639	19
Future Volume (veh/h)	15	6	17	102	0	56	15	861	165	80	639	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	15	6	18	105	0	58	15	888	170	82	659	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	43	130	189	0	173	367	1333	255	582	2210	67
Arrive On Green	0.11	0.11	0.11	0.11	0.00	0.11	0.06	0.47	0.47	0.16	0.44	0.44
Sat Flow, veh/h	1714	396	1189	1714	0	1525	1714	2863	548	1714	3389	103
Grp Volume(v), veh/h	15	0	24	105	0	58	15	530	528	82	332	347
Grp Sat Flow(s),veh/h/ln	1714	0	1586	1714	0	1525	1714	1710	1701	1714	1710	1781
Q Serve(g_s), s	0.9	0.0	1.5	6.4	0.0	3.9	0.5	26.4	26.4	0.0	13.8	13.9
Cycle Q Clear(g_c), s	0.9	0.0	1.5	6.4	0.0	3.9	0.5	26.4	26.4	0.0	13.8	13.9
Prop In Lane	1.00		0.75	1.00		1.00	1.00		0.32	1.00		0.06
Lane Grp Cap(c), veh/h	181	0	173	189	0	173	367	796	792	582	1115	1162
V/C Ratio(X)	0.08	0.00	0.14	0.56	0.00	0.34	0.04	0.67	0.67	0.14	0.30	0.30
Avail Cap(c_a), veh/h	268	0	303	268	0	291	467	796	792	582	1115	1162
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.67	0.67	0.67	0.98	0.98	0.98
Uniform Delay (d), s/veh	44.4	0.0	44.3	46.4	0.0	44.9	17.0	22.8	22.8	24.0	14.7	14.7
Incr Delay (d2), s/veh	0.2	0.0	0.4	2.6	0.0	1.1	0.0	3.0	3.0	0.1	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	2.9	0.0	1.5	0.2	11.0	10.9	1.6	6.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	44.7	49.0	0.0	46.1	17.1	25.7	25.8	24.1	15.3	15.3
LnGrp LOS	D	A	D	D	A	D	B	C	C	C	B	B
Approach Vol, veh/h		39			163			1073			761	
Approach Delay, s/veh		44.7			47.9			25.6			16.3	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	53.2	14.1	14.0	8.2	73.7	13.6	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	48.7	14.7	18.5	10.1	48.7	14.7	18.5
Max Q Clear Time (g_c+I1), s	2.0	28.4	8.4	3.5	2.5	15.9	2.9	5.9
Green Ext Time (p_c), s	0.1	7.3	0.1	0.0	0.0	4.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	829	207	141	532	155	181	698	135	171	501	64
Future Volume (veh/h)	46	829	207	141	532	155	181	698	135	171	501	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	47	855	213	145	548	160	187	720	139	176	516	66
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	196	1075	479	515	1215	542	526	924	412	524	1192	150
Arrive On Green	0.11	0.31	0.31	0.15	0.36	0.36	0.16	0.27	0.27	0.16	0.27	0.27
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4419	557
Grp Volume(v), veh/h	47	855	213	145	548	160	187	720	139	176	381	201
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1700
Q Serve(g_s), s	1.9	17.8	8.7	3.0	9.6	5.9	3.9	15.2	5.7	3.7	7.5	7.6
Cycle Q Clear(g_c), s	1.9	17.8	8.7	3.0	9.6	5.9	3.9	15.2	5.7	3.7	7.5	7.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	196	1075	479	515	1215	542	526	924	412	524	884	458
V/C Ratio(X)	0.24	0.80	0.44	0.28	0.45	0.30	0.36	0.78	0.34	0.34	0.43	0.44
Avail Cap(c_a), veh/h	275	1142	509	534	1215	542	534	924	412	534	884	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	24.4	21.3	29.1	19.3	18.1	29.2	26.3	22.8	29.2	23.5	23.6
Incr Delay (d2), s/veh	0.6	3.8	0.6	0.3	0.3	0.3	0.4	6.4	2.2	0.4	1.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	7.4	3.0	1.2	3.7	2.0	1.5	6.7	2.2	1.4	3.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	28.2	21.9	29.4	19.5	18.4	29.6	32.7	25.0	29.5	25.0	26.6
LnGrp LOS	C	C	C	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1115			853			1046			758	
Approach Delay, s/veh		27.2			21.0			31.1			26.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	26.5	14.3	23.0	10.9	29.7	14.3	23.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	23.5	10.0	18.5	10.0	23.5	10.0	18.5
Max Q Clear Time (g_c+I1), s	5.0	19.8	5.9	9.6	3.9	11.6	5.7	17.2
Green Ext Time (p_c), s	0.2	2.2	0.2	2.5	0.0	3.4	0.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	918	212	241	570	13	156	41	394	20	13	3
Future Volume (veh/h)	26	918	212	241	570	13	156	41	394	20	13	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	27	966	223	254	600	14	124	0	487	21	14	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	510	1284	573	490	769	18	374	0	1115	319	268	57
Arrive On Green	0.30	0.38	0.38	0.29	0.45	0.45	0.22	0.00	0.22	0.19	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	3326	3416	80	1714	0	3051	1714	1437	308
Grp Volume(v), veh/h	27	966	223	254	300	314	124	0	487	21	0	17
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1786	1714	0	1525	1714	0	1745
Q Serve(g_s), s	1.2	27.0	11.8	7.0	16.4	16.4	6.7	0.0	0.0	1.1	0.0	0.9
Cycle Q Clear(g_c), s	1.2	27.0	11.8	7.0	16.4	16.4	6.7	0.0	0.0	1.1	0.0	0.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	510	1284	573	490	385	402	374	0	1115	319	0	325
V/C Ratio(X)	0.05	0.75	0.39	0.52	0.78	0.78	0.33	0.00	0.44	0.07	0.00	0.05
Avail Cap(c_a), veh/h	510	1284	573	490	700	730	374	0	1115	319	0	325
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	0.96	0.00	0.96	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.6	29.9	25.1	35.6	27.9	27.9	36.2	0.0	26.4	36.9	0.0	36.8
Incr Delay (d2), s/veh	0.0	2.9	1.4	1.0	3.5	3.3	2.3	0.0	1.2	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	11.4	4.4	2.7	5.5	5.7	3.0	0.0	5.0	0.5	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	32.8	26.5	36.5	31.4	31.3	38.5	0.0	27.5	37.3	0.0	37.1
LnGrp LOS	C	C	C	D	C	C	D	A	C	D	A	D
Approach Vol, veh/h		1216			868			611			38	
Approach Delay, s/veh		31.6			32.8			29.8			37.2	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.2	43.3		22.5	34.7	26.8		26.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.7	38.8		18.0	10.0	42.5		21.5
Max Q Clear Time (g_c+I1), s	19.0	29.0		3.1	3.2	18.4		8.7
Green Ext Time (p_c), s	0.4	5.2		0.1	0.0	3.9		2.0

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

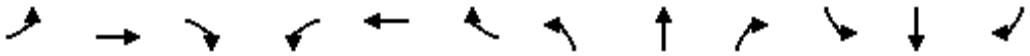
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1332	817	13	0	10
Future Vol, veh/h	0	1332	817	13	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1402	860	14	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	437
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	*766
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*766
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	766
HCM Lane V/C Ratio	-	-	-	0.014
HCM Control Delay (s)	-	-	-	9.8
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	859	89	121	534	143	119	558	163	157	438	163
Future Volume (veh/h)	274	859	89	121	534	143	119	558	163	157	438	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	277	868	90	122	539	144	120	564	165	159	442	165
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	383	1281	571	202	920	410	191	789	230	228	791	293
Arrive On Green	0.45	0.75	0.75	0.12	0.27	0.27	0.11	0.30	0.30	0.04	0.11	0.11
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2611	762	1714	2443	904
Grp Volume(v), veh/h	277	868	90	122	539	144	120	369	360	159	308	299
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1663	1714	1710	1637
Q Serve(g_s), s	14.5	14.2	1.8	7.4	15.0	5.9	7.4	21.1	21.2	10.1	18.8	19.1
Cycle Q Clear(g_c), s	14.5	14.2	1.8	7.4	15.0	5.9	7.4	21.1	21.2	10.1	18.8	19.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.55
Lane Grp Cap(c), veh/h	383	1281	571	202	920	410	191	517	502	228	553	530
V/C Ratio(X)	0.72	0.68	0.16	0.60	0.59	0.35	0.63	0.71	0.72	0.70	0.56	0.56
Avail Cap(c_a), veh/h	383	1281	571	202	920	410	196	517	502	293	553	530
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	27.7	10.4	8.9	46.1	34.9	16.2	46.7	34.2	34.2	50.4	41.6	41.7
Incr Delay (d2), s/veh	6.6	2.9	0.6	5.0	2.7	2.4	6.0	8.2	8.5	4.8	3.8	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	3.7	0.7	3.4	6.6	3.3	3.4	9.8	9.7	4.9	9.2	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	13.3	9.5	51.1	37.6	18.5	52.7	42.3	42.7	55.2	45.5	45.9
LnGrp LOS	C	B	A	D	D	B	D	D	D	E	D	D
Approach Vol, veh/h		1235			805			849			766	
Approach Delay, s/veh		17.7			36.2			44.0			47.7	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	43.2	14.2	37.6	26.6	31.6	16.6	35.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	38.7	10.1	33.1	21.7	27.1	16.3	26.9
Max Q Clear Time (g_c+I1), s	9.4	16.2	9.4	21.1	16.5	17.0	12.1	23.2
Green Ext Time (p_c), s	0.0	6.8	0.0	3.0	0.4	3.0	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	83	35	96	67	34	19	511	93	56	465	23
Future Volume (veh/h)	19	83	35	96	67	34	19	511	93	56	465	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	21	91	38	105	74	37	21	562	102	62	511	25
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	269	242	101	254	227	114	513	1253	227	513	1438	70
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.14	0.14	0.30	0.43	0.43
Sat Flow, veh/h	1302	1206	504	1281	1132	566	1714	2892	523	1714	3319	162
Grp Volume(v), veh/h	21	0	129	105	0	111	21	332	332	62	263	273
Grp Sat Flow(s),veh/h/ln	1302	0	1709	1281	0	1698	1714	1710	1706	1714	1710	1771
Q Serve(g_s), s	1.3	0.0	5.9	6.9	0.0	5.0	1.0	16.0	16.1	2.4	9.3	9.3
Cycle Q Clear(g_c), s	6.3	0.0	5.9	12.8	0.0	5.0	1.0	16.0	16.1	2.4	9.3	9.3
Prop In Lane	1.00		0.29	1.00		0.33	1.00		0.31	1.00		0.09
Lane Grp Cap(c), veh/h	269	0	343	254	0	341	513	741	739	513	741	767
V/C Ratio(X)	0.08	0.00	0.38	0.41	0.00	0.33	0.04	0.45	0.45	0.12	0.35	0.36
Avail Cap(c_a), veh/h	456	0	589	438	0	585	513	741	739	513	741	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	0.90	0.90	0.90
Uniform Delay (d), s/veh	33.5	0.0	31.1	36.6	0.0	30.8	28.9	28.7	28.7	22.9	17.1	17.1
Incr Delay (d2), s/veh	0.1	0.0	0.7	1.1	0.0	0.6	0.0	1.7	1.8	0.1	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.5	2.2	0.0	2.1	0.4	7.6	7.6	1.0	3.7	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	0.0	31.8	37.7	0.0	31.3	28.9	30.4	30.5	23.0	18.3	18.2
LnGrp LOS	C	A	C	D	A	C	C	C	C	C	B	B
Approach Vol, veh/h		150			216			685			598	
Approach Delay, s/veh		32.0			34.4			30.4			18.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.9	41.0		20.1	28.9	41.0		20.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.5	36.5		28.5	11.5	36.5		28.5
Max Q Clear Time (g_c+I1), s	14.4	18.1		8.3	3.0	11.3		14.8
Green Ext Time (p_c), s	0.1	4.0		0.7	0.0	3.4		0.7

Intersection Summary		
HCM 6th Ctrl Delay		26.9
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	334	72	158	190	37	66	557	147	51	522	35
Future Volume (veh/h)	66	334	72	158	190	37	66	557	147	51	522	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	80	402	87	190	229	45	80	671	177	61	629	42
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	495	487	413	373	513	435	315	1326	591	197	1038	69
Arrive On Green	0.12	0.27	0.27	0.14	0.28	0.28	0.18	0.39	0.39	0.11	0.32	0.32
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3254	217
Grp Volume(v), veh/h	80	402	87	190	229	45	80	671	177	61	330	341
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1761
Q Serve(g_s), s	2.7	18.9	2.4	6.5	9.4	2.0	3.6	13.5	7.2	2.9	14.7	14.7
Cycle Q Clear(g_c), s	2.7	18.9	2.4	6.5	9.4	2.0	3.6	13.5	7.2	2.9	14.7	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	495	487	413	373	513	435	315	1326	591	197	545	562
V/C Ratio(X)	0.16	0.82	0.21	0.51	0.45	0.10	0.25	0.51	0.30	0.31	0.61	0.61
Avail Cap(c_a), veh/h	521	544	461	395	566	480	315	1326	591	238	545	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	17.7	30.8	9.5	19.7	26.4	23.7	31.5	21.0	19.1	36.6	25.9	25.9
Incr Delay (d2), s/veh	0.2	9.2	0.3	1.1	0.6	0.1	0.4	1.4	1.3	0.9	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	9.2	1.4	2.6	4.0	0.7	1.5	5.4	2.7	1.3	6.5	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	40.0	9.7	20.8	27.0	23.8	31.9	22.4	20.4	37.4	30.7	30.6
LnGrp LOS	B	D	A	C	C	C	C	C	C	D	C	C
Approach Vol, veh/h		569			464			928			732	
Approach Delay, s/veh		32.3			24.1			22.8			31.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	36.9	14.4	26.4	18.5	30.7	13.1	27.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	26.2	11.1	24.7	10.0	26.2	10.0	25.8
Max Q Clear Time (g_c+I1), s	14.9	15.5	8.5	20.9	5.6	16.7	4.7	11.4
Green Ext Time (p_c), s	0.0	3.9	0.1	1.0	0.1	2.9	0.1	1.2

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	747	219	165	281	44	92	680	119	45	841	63
Future Volume (veh/h)	121	747	219	165	281	44	92	680	119	45	841	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	130	803	235	177	302	47	99	731	128	48	904	68
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	530	943	421	345	953	425	222	1498	260	244	1717	129
Arrive On Green	0.13	0.28	0.28	0.14	0.28	0.28	0.04	0.12	0.12	0.14	0.37	0.37
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4214	731	1714	4663	350
Grp Volume(v), veh/h	130	803	235	177	302	47	99	567	292	48	634	338
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1668	1714	1638	1737
Q Serve(g_s), s	4.4	20.0	11.9	6.0	6.3	1.4	5.1	14.6	14.8	2.2	13.7	13.7
Cycle Q Clear(g_c), s	4.4	20.0	11.9	6.0	6.3	1.4	5.1	14.6	14.8	2.2	13.7	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		0.20
Lane Grp Cap(c), veh/h	530	943	421	345	953	425	222	1165	593	244	1206	640
V/C Ratio(X)	0.25	0.85	0.56	0.51	0.32	0.11	0.45	0.49	0.49	0.20	0.53	0.53
Avail Cap(c_a), veh/h	579	950	424	348	953	425	324	1165	593	244	1206	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	30.8	27.9	20.2	25.7	10.7	39.9	32.0	32.1	34.1	22.3	22.3
Incr Delay (d2), s/veh	0.2	7.4	1.6	1.3	0.2	0.1	1.1	1.2	2.4	0.4	1.6	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	9.0	4.4	2.4	2.5	0.7	2.3	6.5	6.9	0.9	5.3	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	38.3	29.5	21.4	25.9	10.8	41.1	33.2	34.5	34.5	23.9	25.4
LnGrp LOS	B	D	C	C	C	B	D	C	C	C	C	C
Approach Vol, veh/h		1168			526			958			1020	
Approach Delay, s/veh		34.2			23.0			34.4			24.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	34.0	14.4	26.8	13.7	35.1	14.1	27.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.3	29.5	10.0	22.5	14.5	25.0	12.2	20.3
Max Q Clear Time (g_c+I1), s	14.2	16.8	8.0	22.0	7.1	15.7	6.4	8.3
Green Ext Time (p_c), s	0.0	4.6	0.1	0.3	0.1	4.3	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	371	248	319	258	51	307	863	224	135	1092	85
Future Volume (veh/h)	106	371	248	319	258	51	307	863	224	135	1092	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	113	395	264	339	274	54	327	918	238	144	1162	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	571	611	586	493	443	86	683	1745	451	452	1762	136
Arrive On Green	0.17	0.18	0.18	0.15	0.16	0.16	0.21	0.45	0.45	0.14	0.38	0.38
Sat Flow, veh/h	3326	3420	1525	3326	2856	555	3326	3890	1005	3326	4651	360
Grp Volume(v), veh/h	113	395	264	339	162	166	327	773	383	144	818	434
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1700	1663	1638	1619	1663	1638	1735
Q Serve(g_s), s	2.6	9.7	0.0	8.7	8.0	8.2	7.8	15.3	15.4	3.5	18.6	18.6
Cycle Q Clear(g_c), s	2.6	9.7	0.0	8.7	8.0	8.2	7.8	15.3	15.4	3.5	18.6	18.6
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.62	1.00		0.21
Lane Grp Cap(c), veh/h	571	611	586	493	265	264	683	1469	726	452	1241	657
V/C Ratio(X)	0.20	0.65	0.45	0.69	0.61	0.63	0.48	0.53	0.53	0.32	0.66	0.66
Avail Cap(c_a), veh/h	571	779	661	525	422	419	683	1469	726	462	1241	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88	0.85	0.85	0.85
Uniform Delay (d), s/veh	32.0	34.3	20.6	36.4	35.5	35.6	31.5	17.9	17.9	35.1	23.1	23.1
Incr Delay (d2), s/veh	0.2	1.2	0.5	3.5	2.3	2.4	0.5	1.2	2.4	0.3	2.3	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.0	4.1	3.7	3.4	3.5	3.1	5.8	6.0	1.4	7.3	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	35.5	21.2	39.9	37.8	38.0	32.0	19.1	20.4	35.5	25.5	27.5
LnGrp LOS	C	D	C	D	D	D	C	B	C	D	C	C
Approach Vol, veh/h		772			667			1483			1396	
Approach Delay, s/veh		30.1			38.9			22.3			27.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	42.4	15.3	18.1	20.5	36.1	17.4	16.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.3	11.7	18.0	10.7	31.6	10.0	19.7
Max Q Clear Time (g_c+I1), s	15.5	17.4	10.7	11.7	9.8	20.6	4.6	10.2
Green Ext Time (p_c), s	0.2	7.0	0.1	1.9	0.1	6.1	0.1	1.3

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	522	2	471	335	1271	0	0	1372	475
Future Volume (veh/h)	0	0	0	522	2	471	335	1271	0	0	1372	475
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				698	0	328	349	1324	0	0	1429	495
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				984	0	438	611	3215	0	0	2732	673
Arrive On Green				0.29	0.00	0.29	0.18	0.65	0.00	0.00	0.44	0.44
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				698	0	328	349	1324	0	0	1429	495
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				12.4	0.0	13.3	6.5	8.7	0.0	0.0	11.4	18.3
Cycle Q Clear(g_c), s				12.4	0.0	13.3	6.5	8.7	0.0	0.0	11.4	18.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				984	0	438	611	3215	0	0	2732	673
V/C Ratio(X)				0.71	0.00	0.75	0.57	0.41	0.00	0.00	0.52	0.74
Avail Cap(c_a), veh/h				1109	0	494	611	3215	0	0	2732	673
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.87	0.87	0.00	0.00	0.77	0.77
Uniform Delay (d), s/veh				21.7	0.0	22.0	25.3	5.6	0.0	0.0	13.8	15.7
Incr Delay (d2), s/veh				1.8	0.0	5.6	1.1	0.3	0.0	0.0	0.6	5.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.9	0.0	5.1	2.5	2.3	0.0	0.0	3.7	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.6	0.0	27.6	26.4	5.9	0.0	0.0	14.4	21.2
LnGrp LOS				C	A	C	C	A	A	A	B	C
Approach Vol, veh/h					1026			1673			1924	
Approach Delay, s/veh					24.8			10.2			16.1	
Approach LOS					C			B			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	46.5		14.5	32.0		21.5
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	39.0		10.0	24.5		19.5
Max Q Clear Time (g_c+I1), s	10.7		8.5	20.3		15.3
Green Ext Time (p_c), s	11.6		0.2	3.5		1.7

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	5	366	0	0	0	0	1180	569	522	1400	0
Future Volume (veh/h)	400	5	366	0	0	0	0	1180	569	522	1400	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	416	0	377				0	1216	587	538	1443	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	981	0	436				0	2394	590	866	3290	0
Arrive On Green	0.29	0.00	0.29				0.00	0.39	0.39	0.26	0.67	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	416	0	377				0	1216	587	538	1443	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	8.9	0.0	21.1				0.0	13.5	34.5	12.8	12.4	0.0
Cycle Q Clear(g_c), s	8.9	0.0	21.1				0.0	13.5	34.5	12.8	12.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	981	0	436				0	2394	590	866	3290	0
V/C Ratio(X)	0.42	0.00	0.86				0.00	0.51	1.00	0.62	0.44	0.00
Avail Cap(c_a), veh/h	990	0	441				0	2394	590	866	3290	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.78	0.78	0.00
Uniform Delay (d), s/veh	26.1	0.0	30.5				0.0	21.1	27.5	29.4	7.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	16.0				0.0	0.8	35.9	1.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	9.4				0.0	4.8	17.8	5.1	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.0	46.5				0.0	21.8	63.4	30.4	7.3	0.0
LnGrp LOS	C	A	D				A	C	E	C	A	A
Approach Vol, veh/h		793						1803			1981	
Approach Delay, s/veh		35.9						35.4			13.6	
Approach LOS		D						D			B	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	35.4	36.8	27.8	62.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.7	32.3	23.5	57.5
Max Q Clear Time (g_c+I1), s	14.8	36.5	23.1	14.4
Green Ext Time (p_c), s	1.1	0.0	0.2	15.2

Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

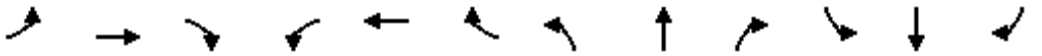
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1332	814	13	0	10
Future Vol, veh/h	0	1332	814	13	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1402	857	14	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	436
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	574
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	574
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	574
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	11.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	0	32	6	2	1	29	584	7	0	533	199
Future Volume (veh/h)	313	0	32	6	2	1	29	584	7	0	533	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	336	0	22	6	2	1	30	608	7	0	555	207
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	521	0	232	57	19	10	148	2532	29	2	2129	950
Arrive On Green	0.15	0.00	0.15	0.05	0.05	0.05	0.09	0.73	0.73	0.00	0.62	0.62
Sat Flow, veh/h	3429	0	1525	1139	380	190	1714	3463	40	1714	3420	1525
Grp Volume(v), veh/h	336	0	22	9	0	0	30	300	315	0	555	207
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1709	0	0	1714	1710	1793	1714	1710	1525
Q Serve(g_s), s	8.3	0.0	1.1	0.5	0.0	0.0	1.5	5.1	5.2	0.0	6.6	5.3
Cycle Q Clear(g_c), s	8.3	0.0	1.1	0.5	0.0	0.0	1.5	5.1	5.2	0.0	6.6	5.3
Prop In Lane	1.00		1.00	0.67		0.11	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	521	0	232	86	0	0	148	1250	1311	2	2129	950
V/C Ratio(X)	0.65	0.00	0.09	0.10	0.00	0.00	0.20	0.24	0.24	0.00	0.26	0.22
Avail Cap(c_a), veh/h	838	0	373	389	0	0	248	1250	1311	238	2129	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.94	0.94
Uniform Delay (d), s/veh	35.9	0.0	32.8	40.8	0.0	0.0	38.2	3.9	3.9	0.0	7.6	7.4
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.5	0.0	0.0	0.7	0.5	0.4	0.0	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.4	0.2	0.0	0.0	0.6	1.6	1.6	0.0	2.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	0.0	33.0	41.3	0.0	0.0	38.9	4.4	4.4	0.0	7.9	7.9
LnGrp LOS	D	A	C	D	A	A	D	A	A	A	A	A
Approach Vol, veh/h		358			9			645			762	
Approach Delay, s/veh		37.0			41.3			6.0			7.9	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	67.8		15.7	9.8	58.0		6.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.0	24.5		19.5	10.5	24.0		18.0				
Max Q Clear Time (g_c+I1), s	0.0	7.2		10.3	3.5	8.6		2.5				
Green Ext Time (p_c), s	0.0	3.5		0.9	0.0	4.0		0.0				

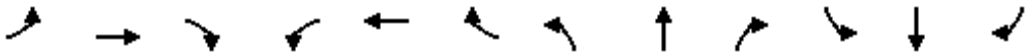
Intersection Summary			
HCM 6th Ctrl Delay		13.3	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

09/26/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	421	217	975	767	290	154	108	488	234	186	111
Future Volume (veh/h)	47	421	217	975	767	290	154	108	488	234	186	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	49	443	228	1026	807	305	162	114	514	246	196	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	834	372	1362	1623	724	434	371	818	435	466	266
Arrive On Green	0.10	0.24	0.24	0.55	0.79	0.79	0.12	0.21	0.21	0.14	0.22	0.22
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	2098	1196
Grp Volume(v), veh/h	49	443	228	1026	807	305	162	114	514	246	158	155
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1585
Q Serve(g_s), s	2.2	11.2	9.5	12.2	8.1	6.2	7.0	5.4	6.9	10.7	7.9	8.4
Cycle Q Clear(g_c), s	2.2	11.2	9.5	12.2	8.1	6.2	7.0	5.4	6.9	10.7	7.9	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	265	834	372	1362	1623	724	434	371	818	435	380	352
V/C Ratio(X)	0.18	0.53	0.61	0.75	0.50	0.42	0.37	0.31	0.63	0.56	0.42	0.44
Avail Cap(c_a), veh/h	309	834	372	1362	1623	724	439	371	818	435	380	352
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	32.8	17.3	15.7	6.3	6.1	25.1	33.7	5.7	24.1	33.3	33.5
Incr Delay (d2), s/veh	0.3	2.4	7.3	0.2	0.1	0.2	0.5	2.1	3.5	1.7	3.3	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.9	4.0	5.5	2.1	1.6	2.9	2.5	3.7	4.4	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	35.2	24.6	16.0	6.4	6.3	25.6	35.7	9.2	25.8	36.7	37.5
LnGrp LOS	C	D	C	B	A	A	C	D	A	C	D	D
Approach Vol, veh/h		720			2138			790			559	
Approach Delay, s/veh		31.5			11.0			16.4			32.1	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	26.4	14.4	24.2	11.9	49.5	16.0	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	21.9	10.2	19.4	10.0	42.4	11.5	18.1
Max Q Clear Time (g_c+I1), s	14.2	13.2	9.0	10.4	4.2	10.1	12.7	8.9
Green Ext Time (p_c), s	3.9	2.5	0.0	1.2	0.0	8.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	383	546	175	884	872	286	0	523	123	0	861
Future Volume (veh/h)	209	383	546	175	884	872	286	0	523	123	0	861
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	235	430	613	197	993	980	321	0	588	138	0	967
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	315	1365	609	653	2039	910	274	0	0	274	0	0
Arrive On Green	0.06	0.13	0.13	0.38	0.60	0.60	0.16	0.00	0.03	0.16	0.00	0.03
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	321		1714	138	
Grp Volume(v), veh/h	235	430	613	197	993	980	321	150.5		138	39.8	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	F		1714	D	
Q Serve(g_s), s	13.5	11.4	39.9	8.0	16.5	59.6	16.0			7.4		
Cycle Q Clear(g_c), s	13.5	11.4	39.9	8.0	16.5	59.6	16.0			7.4		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	315	1365	609	653	2039	910	274			274		
V/C Ratio(X)	0.75	0.32	1.01	0.30	0.49	1.08	1.17			0.50		
Avail Cap(c_a), veh/h	446	1365	609	653	2039	910	274			274		
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.82	0.82	0.82	0.28	0.28	0.28	1.00			1.00		
Uniform Delay (d), s/veh	44.7	31.0	43.4	21.6	11.5	20.2	42.0			38.4		
Incr Delay (d2), s/veh	3.5	0.5	34.8	0.1	0.2	41.4	108.5			1.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	6.5	5.3	22.1	3.2	5.9	29.2	14.9			3.2		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.1	31.5	78.2	21.7	11.7	61.6	150.5			39.8		
LnGrp LOS	D	C	F	C	B	F	F			D		
Approach Vol, veh/h		1278			2170							
Approach Delay, s/veh		57.0			35.1							
Approach LOS		E			D							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	40.1	41.9	18.0		20.4	61.6	18.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	13.1	37.4	13.5		23.5	27.0	10.0
Max Q Clear Time (g_c+I1), s	10.0	41.9	18.0		15.5	61.6	9.4
Green Ext Time (p_c), s	0.2	0.0	0.0		0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.9
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	437	474	271	953	21	457	150	85	19	322	298
Future Volume (veh/h)	82	437	474	271	953	21	457	150	85	19	322	298
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	90	480	521	298	1047	23	502	165	93	21	354	327
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	906	404	291	1061	23	480	774	415	214	701	313
Arrive On Green	0.13	0.26	0.26	0.17	0.31	0.31	0.28	0.36	0.36	0.13	0.20	0.20
Sat Flow, veh/h	1714	3420	1525	1714	3421	75	1714	2150	1152	1714	3420	1525
Grp Volume(v), veh/h	90	480	521	298	523	547	502	129	129	21	354	327
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1786	1714	1710	1593	1714	1710	1525
Q Serve(g_s), s	4.8	12.0	13.2	17.0	30.4	30.4	28.0	5.2	5.6	1.1	9.2	20.5
Cycle Q Clear(g_c), s	4.8	12.0	13.2	17.0	30.4	30.4	28.0	5.2	5.6	1.1	9.2	20.5
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	214	906	404	291	530	554	480	616	573	214	701	313
V/C Ratio(X)	0.42	0.53	1.29	1.02	0.99	0.99	1.05	0.21	0.22	0.10	0.50	1.05
Avail Cap(c_a), veh/h	214	906	404	291	530	554	480	616	573	214	701	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	1.00	1.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	31.4	9.1	41.5	34.3	34.3	36.0	22.2	22.3	38.8	35.2	39.8
Incr Delay (d2), s/veh	0.9	1.6	142.7	58.6	36.1	35.2	53.0	0.8	0.9	0.2	2.6	63.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.1	20.0	11.8	17.6	18.2	18.5	2.2	2.2	0.5	4.0	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	33.0	151.7	100.1	70.4	69.5	89.0	22.9	23.2	39.0	37.8	103.1
LnGrp LOS	D	C	F	F	E	E	F	C	C	D	D	F
Approach Vol, veh/h		1091			1368			760			702	
Approach Delay, s/veh		90.4			76.5			66.6			68.3	
Approach LOS		F			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	28.5	30.0	22.5	14.5	33.0	14.5	38.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.5	24.0	25.5	18.0	10.0	28.5	10.0	33.5
Max Q Clear Time (g_c+I1), s	19.0	15.2	30.0	22.5	6.8	32.4	3.1	7.6
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	0.0	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	77.0
HCM 6th LOS	E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	90	82	517	38	37	931
Future Volume (veh/h)	90	82	517	38	37	931
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	100	91	574	42	41	1034
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	236	210	2250	164	732	2796
Arrive On Green	0.14	0.14	0.47	0.47	0.10	0.82
Sat Flow, veh/h	1714	1525	3321	236	1714	3510
Grp Volume(v), veh/h	100	91	303	313	41	1034
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1758	1714	1710
Q Serve(g_s), s	4.8	4.9	9.7	9.7	0.4	7.1
Cycle Q Clear(g_c), s	4.8	4.9	9.7	9.7	0.4	7.1
Prop In Lane	1.00	1.00		0.13	1.00	
Lane Grp Cap(c), veh/h	236	210	1191	1224	732	2796
V/C Ratio(X)	0.42	0.43	0.25	0.26	0.06	0.37
Avail Cap(c_a), veh/h	533	475	1191	1224	848	2796
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.92	0.92	0.44	0.44
Uniform Delay (d), s/veh	35.5	35.6	9.9	9.9	2.3	2.1
Incr Delay (d2), s/veh	1.2	1.4	0.5	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.9	3.8	3.9	0.1	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.7	37.0	10.3	10.3	2.3	2.3
LnGrp LOS	D	D	B	B	A	A
Approach Vol, veh/h	191		616			1075
Approach Delay, s/veh	36.8		10.3			2.3
Approach LOS	D		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.9	64.7			75.6	14.4
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	12.5	38.5			55.5	25.5
Max Q Clear Time (g_c+I1), s	12.4	11.7			9.1	6.9
Green Ext Time (p_c), s	0.0	4.0			9.7	0.5

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	143	5	48	3	551	60	53	904	8
Future Volume (veh/h)	5	1	33	143	5	48	3	551	60	53	904	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	6	1	40	172	6	58	4	664	72	64	1089	10
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	5	197	244	20	195	606	1245	135	632	1393	13
Arrive On Green	0.14	0.13	0.13	0.14	0.14	0.14	0.08	0.13	0.13	0.47	0.80	0.80
Sat Flow, veh/h	1714	37	1494	1714	145	1402	1714	3112	337	1714	3472	32
Grp Volume(v), veh/h	6	0	41	172	0	64	4	365	371	64	536	563
Grp Sat Flow(s),veh/h/ln	1714	0	1531	1714	0	1548	1714	1710	1739	1714	1710	1794
Q Serve(g_s), s	0.3	0.0	2.1	8.6	0.0	3.3	0.0	17.9	18.0	0.0	15.0	15.0
Cycle Q Clear(g_c), s	0.3	0.0	2.1	8.6	0.0	3.3	0.0	17.9	18.0	0.0	15.0	15.0
Prop In Lane	1.00		0.98	1.00		0.91	1.00		0.19	1.00		0.02
Lane Grp Cap(c), veh/h	232	0	202	244	0	215	606	684	696	632	686	720
V/C Ratio(X)	0.03	0.00	0.20	0.71	0.00	0.30	0.01	0.53	0.53	0.10	0.78	0.78
Avail Cap(c_a), veh/h	240	0	350	244	0	358	606	684	696	632	686	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.84	0.84	0.84	0.93	0.93	0.93
Uniform Delay (d), s/veh	33.8	0.0	34.8	36.8	0.0	34.8	15.4	31.2	31.2	10.5	6.8	6.8
Incr Delay (d2), s/veh	0.0	0.0	0.5	8.9	0.0	0.8	0.0	2.5	2.5	0.1	8.1	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.8	4.1	0.0	1.3	0.1	8.6	8.8	0.5	3.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	0.0	35.3	45.7	0.0	35.6	15.4	33.7	33.7	10.6	14.9	14.5
LnGrp LOS	C	A	D	D	A	D	B	C	C	B	B	B
Approach Vol, veh/h		47			236			740			1163	
Approach Delay, s/veh		35.1			43.0			33.6			14.5	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.3	38.0	14.8	13.9	23.2	38.1	14.2	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	33.5	10.3	18.1	10.0	33.6	10.1	18.3
Max Q Clear Time (g_c+I1), s	12.0	20.0	10.6	4.1	2.0	17.0	2.3	5.3
Green Ext Time (p_c), s	0.1	3.9	0.0	0.1	0.0	6.8	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	417	193	153	785	179	172	422	113	115	520	55
Future Volume (veh/h)	73	417	193	153	785	179	172	422	113	115	520	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	79	453	210	166	853	195	187	459	123	125	565	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	230	1099	490	507	1162	518	510	955	426	491	1235	130
Arrive On Green	0.13	0.32	0.32	0.15	0.34	0.34	0.15	0.28	0.28	0.15	0.27	0.27
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4516	474
Grp Volume(v), veh/h	79	453	210	166	853	195	187	459	123	125	408	217
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1715
Q Serve(g_s), s	3.4	8.3	8.7	3.6	17.7	7.8	4.1	9.0	5.1	2.7	8.3	8.5
Cycle Q Clear(g_c), s	3.4	8.3	8.7	3.6	17.7	7.8	4.1	9.0	5.1	2.7	8.3	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	230	1099	490	507	1162	518	510	955	426	491	896	469
V/C Ratio(X)	0.34	0.41	0.43	0.33	0.73	0.38	0.37	0.48	0.29	0.25	0.46	0.46
Avail Cap(c_a), veh/h	277	1445	645	537	1445	645	537	955	426	537	896	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	21.4	21.5	30.4	23.4	20.1	30.6	24.1	22.7	30.4	24.3	24.3
Incr Delay (d2), s/veh	0.9	0.2	0.6	0.4	1.5	0.5	0.4	1.7	1.7	0.3	1.7	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.2	3.1	1.4	7.0	2.7	1.6	3.7	2.0	1.1	3.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	21.6	22.1	30.8	24.9	20.6	31.0	25.9	24.4	30.6	25.9	27.6
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		742			1214			769			750	
Approach Delay, s/veh		22.9			25.0			26.9			27.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	27.9	14.3	24.0	12.8	29.3	13.9	24.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	31.5	10.5	19.5	10.5	31.5	10.5	19.5
Max Q Clear Time (g_c+I1), s	5.6	10.7	6.1	10.5	5.4	19.7	4.7	11.0
Green Ext Time (p_c), s	0.2	3.7	0.2	2.7	0.1	5.2	0.2	2.2

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C



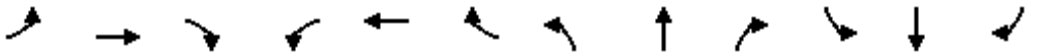
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	425	159	349	771	0	223	0	196	0	0	2
Future Volume (veh/h)	6	425	159	349	771	0	223	0	196	0	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	7	506	189	415	918	0	337	0	155	0	0	2
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	931	415	606	1398	0	785	0	627	390	0	347
Arrive On Green	0.05	0.27	0.27	0.36	0.82	0.00	0.23	0.00	0.23	0.00	0.00	0.23
Sat Flow, veh/h	1714	3420	1525	3326	3510	0	3429	0	1525	1714	0	1525
Grp Volume(v), veh/h	7	506	189	415	918	0	337	0	155	0	0	2
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	0	1714	0	1525	1714	0	1525
Q Serve(g_s), s	0.4	11.4	9.3	9.5	9.5	0.0	7.6	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.4	11.4	9.3	9.5	9.5	0.0	7.6	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	931	415	606	1398	0	785	0	627	390	0	347
V/C Ratio(X)	0.09	0.54	0.46	0.68	0.66	0.00	0.43	0.00	0.25	0.00	0.00	0.01
Avail Cap(c_a), veh/h	238	931	415	606	1398	0	785	0	627	390	0	347
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	0.00	0.98	0.00	0.98	0.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	28.0	27.2	26.4	5.7	0.0	29.7	0.0	17.4	0.0	0.0	26.9
Incr Delay (d2), s/veh	0.5	2.2	3.4	3.2	1.1	0.0	1.7	0.0	0.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.8	3.7	3.4	2.1	0.0	3.2	0.0	2.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	30.1	30.6	29.6	6.8	0.0	31.4	0.0	18.3	0.0	0.0	26.9
LnGrp LOS	D	C	C	C	A	A	C	A	B	A	A	C
Approach Vol, veh/h		702			1333			492			2	
Approach Delay, s/veh		30.4			13.9			27.2			26.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	26.5		22.5	6.1	38.8		22.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	3.9	22.0		18.0	10.0	25.9		18.1
Max Q Clear Time (g_c+I1), s	11.5	13.4		2.1	2.4	11.5		9.6
Green Ext Time (p_c), s	0.4	2.7		0.0	0.0	5.6		1.2

Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	396	42	130	693	115	95	361	105	144	583	314
Future Volume (veh/h)	107	396	42	130	693	115	95	361	105	144	583	314
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	123	455	48	149	797	132	109	415	121	166	670	361
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	262	1174	524	234	1117	498	226	749	216	249	644	347
Arrive On Green	0.31	0.69	0.69	0.14	0.33	0.33	0.13	0.29	0.29	0.05	0.10	0.10
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2618	756	1714	2146	1156
Grp Volume(v), veh/h	123	455	48	149	797	132	109	270	266	166	534	497
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1664	1714	1710	1592
Q Serve(g_s), s	5.2	5.1	0.6	7.4	18.4	3.6	5.3	12.0	12.2	8.6	27.0	27.0
Cycle Q Clear(g_c), s	5.2	5.1	0.6	7.4	18.4	3.6	5.3	12.0	12.2	8.6	27.0	27.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.73
Lane Grp Cap(c), veh/h	262	1174	524	234	1117	498	226	489	476	249	513	478
V/C Ratio(X)	0.47	0.39	0.09	0.64	0.71	0.26	0.48	0.55	0.56	0.67	1.04	1.04
Avail Cap(c_a), veh/h	262	1174	524	274	1117	498	240	489	476	350	513	478
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	28.3	10.1	3.9	36.8	26.6	9.0	36.2	27.2	27.3	40.7	40.5	40.5
Incr Delay (d2), s/veh	1.3	1.0	0.3	3.8	3.9	1.3	1.6	4.4	4.7	2.6	47.6	49.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.7	0.4	3.3	7.8	2.1	2.3	5.4	5.4	4.0	19.1	17.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	11.0	4.3	40.5	30.5	10.3	37.8	31.6	32.0	43.3	88.2	89.6
LnGrp LOS	C	B	A	D	C	B	D	C	C	D	F	F
Approach Vol, veh/h		626			1078			645			1197	
Approach Delay, s/veh		14.2			29.4			32.8			82.5	
Approach LOS		B			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	32.9	13.8	29.0	15.8	31.4	15.1	27.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.9	25.5	10.1	24.5	10.5	26.9	15.9	18.7
Max Q Clear Time (g_c+I1), s	9.4	7.1	7.3	29.0	7.2	20.4	10.6	14.2
Green Ext Time (p_c), s	0.1	3.0	0.1	0.0	0.1	3.1	0.2	1.3

Intersection Summary	
HCM 6th Ctrl Delay	45.3
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	29	63	117	61	29	52	363	92	30	416	24
Future Volume (veh/h)	24	29	63	117	61	29	52	363	92	30	416	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	26	31	67	124	65	31	55	386	98	32	443	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	101	218	273	229	109	190	1053	264	593	2048	120
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.13	0.13	0.69	1.00	1.00
Sat Flow, veh/h	1320	507	1096	1318	1152	549	1714	2708	680	1714	3283	192
Grp Volume(v), veh/h	26	0	98	124	0	96	55	242	242	32	230	239
Grp Sat Flow(s),veh/h/ln	1320	0	1603	1318	0	1701	1714	1710	1678	1714	1710	1765
Q Serve(g_s), s	1.5	0.0	4.7	8.0	0.0	4.3	2.8	11.7	11.9	0.5	0.0	0.0
Cycle Q Clear(g_c), s	5.8	0.0	4.7	12.7	0.0	4.3	2.8	11.7	11.9	0.5	0.0	0.0
Prop In Lane	1.00		0.68	1.00		0.32	1.00		0.41	1.00		0.11
Lane Grp Cap(c), veh/h	279	0	319	273	0	338	190	665	652	593	1067	1101
V/C Ratio(X)	0.09	0.00	0.31	0.45	0.00	0.28	0.29	0.36	0.37	0.05	0.22	0.22
Avail Cap(c_a), veh/h	471	0	552	465	0	586	305	665	652	593	1067	1101
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.98	0.98	0.98	0.78	0.78	0.78
Uniform Delay (d), s/veh	33.1	0.0	30.8	36.2	0.0	30.6	39.9	29.1	29.1	9.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.5	1.2	0.0	0.5	0.8	1.5	1.6	0.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.8	2.6	0.0	1.8	1.2	5.6	5.6	0.2	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	0.0	31.3	37.4	0.0	31.1	40.7	30.6	30.7	9.2	0.4	0.4
LnGrp LOS	C	A	C	D	A	C	D	C	C	A	A	A
Approach Vol, veh/h		124			220			539			501	
Approach Delay, s/veh		31.7			34.6			31.7			0.9	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.1	37.0		19.9	12.0	58.1		19.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	15.5	32.5		28.5	13.5	34.5		28.5				
Max Q Clear Time (g_c+I1), s	2.5	13.9		7.8	4.8	2.0		14.7				
Green Ext Time (p_c), s	0.0	2.8		0.5	0.1	3.0		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		21.0
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	100	64	184	290	66	75	451	122	31	559	30
Future Volume (veh/h)	25	100	64	184	290	66	75	451	122	31	559	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	27	106	68	196	309	70	80	480	130	33	595	32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	291	311	264	465	411	349	555	1745	778	155	913	49
Arrive On Green	0.08	0.17	0.17	0.14	0.23	0.23	0.32	0.51	0.51	0.18	0.55	0.55
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3301	177
Grp Volume(v), veh/h	27	106	68	196	309	70	80	480	130	33	308	319
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1768
Q Serve(g_s), s	1.1	4.7	1.7	7.7	14.4	3.3	3.0	7.2	4.1	1.5	11.3	11.4
Cycle Q Clear(g_c), s	1.1	4.7	1.7	7.7	14.4	3.3	3.0	7.2	4.1	1.5	11.3	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	291	311	264	465	411	349	555	1745	778	155	473	489
V/C Ratio(X)	0.09	0.34	0.26	0.42	0.75	0.20	0.14	0.28	0.17	0.21	0.65	0.65
Avail Cap(c_a), veh/h	388	638	541	469	640	542	555	1745	778	238	473	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	25.9	32.7	7.7	22.9	32.3	28.1	21.6	12.6	11.8	34.2	17.1	17.1
Incr Delay (d2), s/veh	0.1	0.6	0.5	0.6	2.8	0.3	0.1	0.4	0.5	0.7	6.6	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.1	1.3	3.1	6.4	1.2	1.2	2.7	1.4	0.6	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	33.4	8.2	23.5	35.1	28.4	21.7	13.0	12.3	34.8	23.7	23.5
LnGrp LOS	C	C	A	C	D	C	C	B	B	C	C	C
Approach Vol, veh/h		201			575			690			660	
Approach Delay, s/veh		23.9			30.3			13.8			24.1	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	47.9	14.4	17.5	31.1	26.9	9.4	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.6	22.5	10.1	29.4	10.1	22.4	10.0	29.5
Max Q Clear Time (g_c+I1), s	13.5	9.2	9.7	6.7	5.0	13.4	3.1	16.4
Green Ext Time (p_c), s	0.0	3.0	0.0	0.7	0.1	2.6	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	348	228	143	611	52	251	794	94	35	608	90
Future Volume (veh/h)	110	348	228	143	611	52	251	794	94	35	608	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	125	395	259	162	694	59	285	902	107	40	691	102
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	355	855	381	435	865	386	372	1899	224	168	1332	195
Arrive On Green	0.13	0.25	0.25	0.14	0.25	0.25	0.07	0.14	0.14	0.10	0.31	0.31
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4455	526	1714	4329	633
Grp Volume(v), veh/h	125	395	259	162	694	59	285	662	347	40	521	272
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1705	1714	1638	1686
Q Serve(g_s), s	4.4	8.8	13.8	5.7	17.1	2.7	14.7	16.8	16.8	1.9	11.8	12.0
Cycle Q Clear(g_c), s	4.4	8.8	13.8	5.7	17.1	2.7	14.7	16.8	16.8	1.9	11.8	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.38
Lane Grp Cap(c), veh/h	355	855	381	435	865	386	372	1396	727	168	1008	519
V/C Ratio(X)	0.35	0.46	0.68	0.37	0.80	0.15	0.77	0.47	0.48	0.24	0.52	0.52
Avail Cap(c_a), veh/h	363	912	407	438	912	407	440	1396	727	238	1008	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	28.6	30.5	19.1	31.5	26.1	39.5	29.4	29.4	37.5	25.7	25.7
Incr Delay (d2), s/veh	0.6	0.4	4.2	0.5	5.0	0.2	5.6	1.0	1.9	0.7	1.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.6	5.4	2.3	7.5	1.0	7.3	7.5	8.0	0.8	4.7	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	29.0	34.7	19.6	36.5	26.3	45.2	30.3	31.3	38.2	27.6	29.5
LnGrp LOS	C	C	C	B	D	C	D	C	C	D	C	C
Approach Vol, veh/h		779			915			1294			833	
Approach Delay, s/veh		29.6			32.9			33.9			28.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	40.4	14.3	24.5	21.5	29.7	14.1	24.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	30.5	10.0	21.5	20.6	19.9	10.0	21.5
Max Q Clear Time (g_c+I1), s	13.9	18.8	7.7	15.8	16.7	14.0	6.4	19.1
Green Ext Time (p_c), s	0.0	5.2	0.1	1.8	0.3	2.6	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	128	102	208	180	77	171	1074	132	71	863	33
Future Volume (veh/h)	29	128	102	208	180	77	171	1074	132	71	863	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	32	142	113	231	200	86	190	1193	147	79	959	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	296	475	616	461	444	184	881	1655	204	866	1791	69
Arrive On Green	0.09	0.14	0.14	0.14	0.19	0.19	0.26	0.37	0.37	0.52	0.74	0.74
Sat Flow, veh/h	3326	3420	1525	3326	2357	977	3326	4432	546	3326	4855	187
Grp Volume(v), veh/h	32	142	113	231	143	143	190	882	458	79	647	349
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1624	1663	1638	1702	1663	1638	1766
Q Serve(g_s), s	0.8	3.4	1.0	5.8	6.7	7.0	4.0	20.8	20.8	1.1	7.7	7.7
Cycle Q Clear(g_c), s	0.8	3.4	1.0	5.8	6.7	7.0	4.0	20.8	20.8	1.1	7.7	7.7
Prop In Lane	1.00		1.00	1.00		0.60	1.00		0.32	1.00		0.11
Lane Grp Cap(c), veh/h	296	475	616	461	322	306	881	1223	635	866	1208	652
V/C Ratio(X)	0.11	0.30	0.18	0.50	0.44	0.47	0.22	0.72	0.72	0.09	0.54	0.54
Avail Cap(c_a), veh/h	466	790	756	554	441	419	881	1223	635	866	1208	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.84	0.84	0.84
Uniform Delay (d), s/veh	37.7	34.8	7.3	35.9	32.3	32.5	25.8	24.2	24.2	16.2	8.5	8.5
Incr Delay (d2), s/veh	0.2	0.3	0.1	0.8	1.0	1.1	0.1	3.4	6.5	0.0	1.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	0.8	2.4	2.8	2.8	1.6	8.3	9.2	0.4	2.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	35.2	7.4	36.7	33.3	33.6	25.9	27.6	30.7	16.2	9.9	11.1
LnGrp LOS	D	D	A	D	C	C	C	C	C	B	A	B
Approach Vol, veh/h		287			517			1530			1075	
Approach Delay, s/veh		24.5			34.9			28.3			10.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.4	35.6	14.5	14.5	25.8	35.2	10.0	19.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.9	31.1	12.5	18.3	10.5	30.7	10.1	20.7
Max Q Clear Time (g_c+I1), s	13.1	22.8	7.8	5.4	6.0	9.7	2.8	9.0
Green Ext Time (p_c), s	0.1	5.3	0.3	1.0	0.2	6.9	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	341	3	379	424	1068	0	0	756	395
Future Volume (veh/h)	0	0	0	341	3	379	424	1068	0	0	756	395
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				512	0	272	466	1174	0	0	831	434
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				870	0	387	683	3377	0	0	2802	690
Arrive On Green				0.25	0.00	0.25	0.21	0.69	0.00	0.00	0.45	0.45
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				512	0	272	466	1174	0	0	831	434
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				8.9	0.0	11.0	8.8	6.7	0.0	0.0	5.8	14.8
Cycle Q Clear(g_c), s				8.9	0.0	11.0	8.8	6.7	0.0	0.0	5.8	14.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				870	0	387	683	3377	0	0	2802	690
V/C Ratio(X)				0.59	0.00	0.70	0.68	0.35	0.00	0.00	0.30	0.63
Avail Cap(c_a), veh/h				1109	0	494	831	3377	0	0	2802	690
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.94	0.94	0.00	0.00	0.91	0.91
Uniform Delay (d), s/veh				22.3	0.0	23.0	25.0	4.4	0.0	0.0	11.8	14.2
Incr Delay (d2), s/veh				0.6	0.0	3.2	1.6	0.3	0.0	0.0	0.2	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.4	0.0	4.1	3.4	1.6	0.0	0.0	1.8	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.9	0.0	26.2	26.6	4.6	0.0	0.0	12.0	18.2
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					784			1640			1265	
Approach Delay, s/veh					24.0			10.9			14.1	
Approach LOS					C			B			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	48.7		16.0	32.8		19.3
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	39.0		14.5	20.0		19.5
Max Q Clear Time (g_c+I1), s	8.7		10.8	16.8		13.0
Green Ext Time (p_c), s	10.2		0.7	2.1		1.8

Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	3	282	0	0	0	0	1128	556	255	829	0
Future Volume (veh/h)	346	3	282	0	0	0	0	1128	556	255	829	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	374	0	303				0	1213	598	274	891	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	849	0	378				0	3096	763	618	3479	0
Arrive On Green	0.25	0.00	0.25				0.00	0.50	0.50	0.19	0.71	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	374	0	303				0	1213	598	274	891	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	8.3	0.0	16.8				0.0	11.0	29.0	6.6	5.8	0.0
Cycle Q Clear(g_c), s	8.3	0.0	16.8				0.0	11.0	29.0	6.6	5.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	849	0	378				0	3096	763	618	3479	0
V/C Ratio(X)	0.44	0.00	0.80				0.00	0.39	0.78	0.44	0.26	0.00
Avail Cap(c_a), veh/h	952	0	424				0	3096	763	618	3479	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.92	0.92	0.00
Uniform Delay (d), s/veh	28.6	0.0	31.8				0.0	14.0	18.5	32.5	4.7	0.0
Incr Delay (d2), s/veh	0.4	0.0	9.6				0.0	0.4	7.9	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	7.0				0.0	3.7	11.1	2.6	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	41.4				0.0	14.4	26.4	33.0	4.9	0.0
LnGrp LOS	C	A	D				A	B	C	C	A	A
Approach Vol, veh/h		677						1811			1165	
Approach Delay, s/veh		34.5						18.3			11.5	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.7	47.0		24.3		65.7						
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5						
Max Green Setting (Gmax), s	11.5	42.5		22.5		58.5						
Max Q Clear Time (g_c+I1), s	18.6	31.0		18.8		7.8						
Green Ext Time (p_c), s	0.3	7.8		1.0		7.8						

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	0	5	6	1	2	17	667	4	3	723	360
Future Volume (veh/h)	196	0	5	6	1	2	17	667	4	3	723	360
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	222	0	4	7	1	2	19	749	4	3	812	404
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	475	0	211	62	9	18	120	2387	13	61	2225	992
Arrive On Green	0.14	0.00	0.14	0.05	0.05	0.05	0.07	0.68	0.68	0.04	0.65	0.65
Sat Flow, veh/h	3429	0	1525	1176	168	336	1714	3488	19	1714	3420	1525
Grp Volume(v), veh/h	222	0	4	10	0	0	19	367	386	3	812	404
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1681	0	0	1714	1710	1797	1714	1710	1525
Q Serve(g_s), s	5.4	0.0	0.2	0.5	0.0	0.0	0.9	7.8	7.8	0.2	9.8	11.3
Cycle Q Clear(g_c), s	5.4	0.0	0.2	0.5	0.0	0.0	0.9	7.8	7.8	0.2	9.8	11.3
Prop In Lane	1.00		1.00	0.70		0.20	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	475	0	211	88	0	0	120	1170	1230	61	2225	992
V/C Ratio(X)	0.47	0.00	0.02	0.11	0.00	0.00	0.16	0.31	0.31	0.05	0.37	0.41
Avail Cap(c_a), veh/h	781	0	347	383	0	0	238	1170	1230	238	2225	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	35.7	0.0	33.5	40.7	0.0	0.0	39.4	5.7	5.7	41.9	7.2	7.5
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.6	0.0	0.0	0.6	0.7	0.7	0.2	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.1	0.2	0.0	0.0	0.4	2.6	2.7	0.1	3.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	0.0	33.5	41.2	0.0	0.0	40.0	6.4	6.4	42.1	7.6	8.4
LnGrp LOS	D	A	C	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		226			10			772			1219	
Approach Delay, s/veh		36.4			41.2			7.2			7.9	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	63.6		14.5	8.3	60.5		6.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.0	26.0		18.0	10.0	26.0		18.0
Max Q Clear Time (g_c+I1), s	2.2	9.8		7.4	2.9	13.3		2.5
Green Ext Time (p_c), s	0.0	4.3		0.5	0.0	5.8		0.0

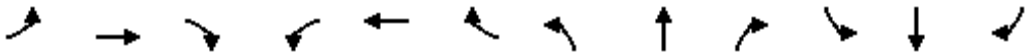
Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

09/26/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	804	202	628	582	171	223	211	816	168	122	48
Future Volume (veh/h)	59	804	202	628	582	171	223	211	816	168	122	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	820	206	641	594	174	228	215	833	171	124	49
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	323	923	412	1316	1803	804	435	337	829	302	452	171
Arrive On Green	0.10	0.27	0.27	0.60	0.88	0.88	0.11	0.19	0.19	0.11	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	2428	917
Grp Volume(v), veh/h	60	820	206	641	594	174	228	215	833	171	86	87
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1635
Q Serve(g_s), s	2.9	25.3	9.2	6.3	3.2	1.9	11.8	12.1	14.3	8.5	4.7	5.1
Cycle Q Clear(g_c), s	2.9	25.3	9.2	6.3	3.2	1.9	11.8	12.1	14.3	8.5	4.7	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	323	923	412	1316	1803	804	435	337	829	302	319	305
V/C Ratio(X)	0.19	0.89	0.50	0.49	0.33	0.22	0.52	0.64	1.00	0.57	0.27	0.29
Avail Cap(c_a), veh/h	348	923	412	1316	1803	804	435	337	829	302	319	305
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	38.6	18.1	15.0	3.3	3.2	31.1	41.3	9.9	30.9	38.3	38.5
Incr Delay (d2), s/veh	0.3	12.4	4.3	0.0	0.0	0.1	1.1	8.2	31.1	2.4	2.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.1	3.7	3.6	0.9	0.5	5.0	6.1	16.7	3.7	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	51.0	22.4	15.0	3.3	3.3	32.1	49.5	41.0	33.3	40.4	40.8
LnGrp LOS	C	D	C	B	A	A	C	D	F	C	D	D
Approach Vol, veh/h		1086			1409			1276			344	
Approach Delay, s/veh		44.4			8.6			40.8			37.0	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.2	31.7	14.6	22.5	12.9	60.0	14.5	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	36.7	27.2	10.1	18.0	10.0	53.9	10.0	18.1
Max Q Clear Time (g_c+I1), s	8.3	27.3	13.8	7.1	4.9	5.2	10.5	16.3
Green Ext Time (p_c), s	2.5	0.0	0.0	0.6	0.0	5.4	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	922	611	136	486	445	228	0	1031	223	0	658
Future Volume (veh/h)	244	922	611	136	486	445	228	0	1031	223	0	658
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	260	981	650	145	517	473	243	0	1097	237	0	700
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	908	2231	995	195	808	361	308	0	0	308	0	0
Arrive On Green	0.53	0.65	0.65	0.11	0.24	0.24	0.18	0.00	0.02	0.18	0.00	0.02
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	243		1714	237	
Grp Volume(v), veh/h	260	981	650	145	517	473	243	51.1		237	54.2	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	D		1714	D	
Q Serve(g_s), s	9.3	15.4	8.9	9.0	15.0	17.1	14.9			14.5		
Cycle Q Clear(g_c), s	9.3	15.4	8.9	9.0	15.0	17.1	14.9			14.5		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	908	2231	995	195	808	361	308			308		
V/C Ratio(X)	0.29	0.44	0.65	0.74	0.64	1.31	0.79			0.77		
Avail Cap(c_a), veh/h	908	2231	995	195	808	361	396			308		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.34	0.34	0.34	0.70	0.70	0.70	1.00			1.00		
Uniform Delay (d), s/veh	14.4	9.3	1.1	47.2	37.8	19.5	43.1			43.0		
Incr Delay (d2), s/veh	0.1	0.2	1.2	10.4	2.7	153.8	8.0			11.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	8.5	5.4	6.0	4.4	6.5	21.3	7.0			7.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.4	9.5	2.3	57.6	40.5	173.2	51.1			54.2		
LnGrp LOS	B	A	A	E	D	F	D			D		
Approach Vol, veh/h		1891			1135							
Approach Delay, s/veh		7.7			98.0							
Approach LOS		A			F							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	14.5	73.7	21.8		60.2	28.0	21.8
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	30.0	22.9		16.5	23.5	12.5
Max Q Clear Time (g_c+I1), s	11.0	17.4	16.9		11.3	19.1	16.5
Green Ext Time (p_c), s	0.0	7.6	0.4		0.4	2.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	1068	582	163	458	50	381	481	259	26	234	132
Future Volume (veh/h)	293	1068	582	163	458	50	381	481	259	26	234	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	299	1090	594	166	467	51	389	491	264	27	239	135
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	1259	562	203	823	90	436	704	377	195	637	284
Arrive On Green	0.22	0.37	0.37	0.12	0.26	0.26	0.08	0.11	0.11	0.11	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	1714	3111	338	1714	2151	1151	1714	3420	1525
Grp Volume(v), veh/h	299	1090	594	166	256	262	389	390	365	27	239	135
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1739	1714	1710	1593	1714	1710	1525
Q Serve(g_s), s	18.1	32.5	18.9	10.4	14.2	14.4	24.7	24.2	24.3	1.6	6.7	8.7
Cycle Q Clear(g_c), s	18.1	32.5	18.9	10.4	14.2	14.4	24.7	24.2	24.3	1.6	6.7	8.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	380	1259	562	203	452	460	436	560	521	195	637	284
V/C Ratio(X)	0.79	0.87	1.06	0.82	0.57	0.57	0.89	0.70	0.70	0.14	0.37	0.47
Avail Cap(c_a), veh/h	380	1259	562	203	452	460	436	560	521	195	637	284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	32.2	7.6	47.4	35.0	35.0	48.9	43.8	43.9	43.9	39.1	39.9
Incr Delay (d2), s/veh	1.0	0.8	30.4	22.6	5.0	5.1	17.6	6.0	6.5	0.3	1.7	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	13.3	10.2	5.7	6.5	6.7	13.5	12.0	11.3	0.7	3.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	33.0	38.0	70.0	40.0	40.1	66.4	49.8	50.4	44.2	40.8	45.5
LnGrp LOS	D	C	F	E	D	D	E	D	D	D	D	D
Approach Vol, veh/h		1983			684			1144			401	
Approach Delay, s/veh		35.8			47.3			55.7			42.6	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	42.5	30.0	22.5	26.4	31.1	14.5	38.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	38.0	25.5	18.0	21.9	26.6	10.0	33.5
Max Q Clear Time (g_c+I1), s	12.4	34.5	26.7	10.7	20.1	16.4	3.6	26.3
Green Ext Time (p_c), s	0.0	2.7	0.0	1.1	0.2	2.3	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	43.7
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	57	59	1074	169	108	770
Future Volume (veh/h)	57	59	1074	169	108	770
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	58	60	1096	172	110	786
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	191	170	1805	283	704	2915
Arrive On Green	0.11	0.11	1.00	1.00	0.30	1.00
Sat Flow, veh/h	1714	1525	3053	464	1714	3510
Grp Volume(v), veh/h	58	60	631	637	110	786
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1717	1714	1710
Q Serve(g_s), s	3.4	4.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	4.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.27	1.00	
Lane Grp Cap(c), veh/h	191	170	1042	1046	704	2915
V/C Ratio(X)	0.30	0.35	0.61	0.61	0.16	0.27
Avail Cap(c_a), veh/h	358	319	1042	1046	704	2915
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.77	0.77	0.56	0.56
Uniform Delay (d), s/veh	45.0	45.2	0.0	0.0	2.7	0.0
Incr Delay (d2), s/veh	0.9	1.3	2.0	2.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.6	0.6	0.6	0.5	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.9	46.5	2.0	2.0	2.8	0.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	118		1268			896
Approach Delay, s/veh	46.2		2.0			0.5
Approach LOS	D		A			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.8	69.0				95.8	14.2
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	11.5	64.5				80.5	20.5
Max Q Clear Time (g_c+I1), s	12.0	2.0				2.0	6.0
Green Ext Time (p_c), s	0.2	12.7				6.8	0.2

Intersection Summary	
HCM 6th Ctrl Delay	3.7
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	6	10	107	0	68	2	1119	185	91	775	6
Future Volume (veh/h)	8	6	10	107	0	68	2	1119	185	91	775	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	8	6	10	110	0	70	2	1154	191	94	799	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	181	66	110	189	0	173	300	1368	225	513	2366	18
Arrive On Green	0.11	0.11	0.11	0.11	0.00	0.11	0.03	0.47	0.47	0.16	0.46	0.46
Sat Flow, veh/h	1714	607	1011	1714	0	1525	1714	2938	484	1714	3479	26
Grp Volume(v), veh/h	8	0	16	110	0	70	2	670	675	94	393	412
Grp Sat Flow(s),veh/h/ln	1714	0	1618	1714	0	1525	1714	1710	1713	1714	1710	1795
Q Serve(g_s), s	0.5	0.0	1.0	6.7	0.0	4.7	0.1	37.8	38.3	0.0	16.2	16.3
Cycle Q Clear(g_c), s	0.5	0.0	1.0	6.7	0.0	4.7	0.1	37.8	38.3	0.0	16.2	16.3
Prop In Lane	1.00		0.63	1.00		1.00	1.00		0.28	1.00		0.01
Lane Grp Cap(c), veh/h	181	0	176	189	0	173	300	796	797	513	1163	1221
V/C Ratio(X)	0.04	0.00	0.09	0.58	0.00	0.40	0.01	0.84	0.85	0.18	0.34	0.34
Avail Cap(c_a), veh/h	268	0	309	268	0	291	448	796	797	513	1163	1221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.37	0.37	0.37	0.97	0.97	0.97
Uniform Delay (d), s/veh	44.2	0.0	44.2	46.5	0.0	45.3	17.3	25.8	25.9	33.5	14.0	14.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	2.8	0.0	1.5	0.0	4.2	4.4	0.2	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.4	3.0	0.0	1.8	0.0	15.7	16.0	2.1	7.1	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	0.0	44.4	49.3	0.0	46.8	17.3	30.0	30.3	33.6	14.8	14.7
LnGrp LOS	D	A	D	D	A	D	B	C	C	C	B	B
Approach Vol, veh/h		24			180			1347			899	
Approach Delay, s/veh		44.4			48.3			30.1			16.7	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.7	53.2	14.2	13.9	5.1	76.8	13.6	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	48.7	14.7	18.5	10.1	48.7	14.7	18.5
Max Q Clear Time (g_c+I1), s	12.0	40.3	8.7	3.0	2.1	18.3	2.5	6.7
Green Ext Time (p_c), s	0.1	5.4	0.1	0.0	0.0	5.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	1010	238	171	621	179	235	866	179	204	566	109
Future Volume (veh/h)	87	1010	238	171	621	179	235	866	179	204	566	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	90	1041	245	176	640	185	242	893	185	210	584	112
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	1115	497	513	1165	519	519	903	403	517	1093	206
Arrive On Green	0.14	0.33	0.33	0.15	0.34	0.34	0.16	0.26	0.26	0.16	0.26	0.26
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4152	783
Grp Volume(v), veh/h	90	1041	245	176	640	185	242	893	185	210	459	237
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1659
Q Serve(g_s), s	3.8	23.5	10.3	3.8	12.1	7.3	5.3	20.7	8.1	4.5	9.6	9.8
Cycle Q Clear(g_c), s	3.8	23.5	10.3	3.8	12.1	7.3	5.3	20.7	8.1	4.5	9.6	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	239	1115	497	513	1165	519	519	903	403	517	863	437
V/C Ratio(X)	0.38	0.93	0.49	0.34	0.55	0.36	0.47	0.99	0.46	0.41	0.53	0.54
Avail Cap(c_a), veh/h	269	1115	497	521	1165	519	521	903	403	521	863	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	26.0	21.6	30.1	21.3	19.7	30.6	29.2	24.6	30.4	25.2	25.3
Incr Delay (d2), s/veh	1.0	13.9	0.8	0.4	0.6	0.4	0.7	27.5	3.7	0.5	2.3	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	11.2	3.6	1.5	4.7	2.5	2.1	11.6	3.2	1.8	3.9	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	39.9	22.3	30.5	21.9	20.1	31.3	56.7	28.3	30.9	27.5	30.0
LnGrp LOS	C	D	C	C	C	C	C	E	C	C	C	C
Approach Vol, veh/h		1376			1001			1320			906	
Approach Delay, s/veh		36.3			23.1			48.1			28.9	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	28.0	14.5	23.0	13.1	29.2	14.4	23.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	23.5	10.0	18.5	10.0	23.5	10.0	18.5
Max Q Clear Time (g_c+I1), s	5.8	25.5	7.3	11.8	5.8	14.1	6.5	22.7
Green Ext Time (p_c), s	0.2	0.0	0.2	2.5	0.1	3.4	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.4
HCM 6th LOS	D



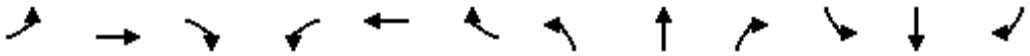
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1062	253	315	656	0	211	0	553	0	0	7
Future Volume (veh/h)	4	1062	253	315	656	0	211	0	553	0	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	4	1118	266	332	691	0	148	0	661	0	0	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	462	1284	573	490	865	0	374	0	1115	319	0	284
Arrive On Green	0.27	0.38	0.38	0.29	0.51	0.00	0.22	0.00	0.22	0.00	0.00	0.19
Sat Flow, veh/h	1714	3420	1525	3326	3510	0	1714	0	3051	1714	0	1525
Grp Volume(v), veh/h	4	1118	266	332	691	0	148	0	661	0	0	7
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	0	1714	0	1525	1714	0	1525
Q Serve(g_s), s	0.2	33.4	14.5	9.7	18.4	0.0	8.1	0.0	3.1	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.2	33.4	14.5	9.7	18.4	0.0	8.1	0.0	3.1	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	462	1284	573	490	865	0	374	0	1115	319	0	284
V/C Ratio(X)	0.01	0.87	0.46	0.68	0.80	0.00	0.40	0.00	0.59	0.00	0.00	0.02
Avail Cap(c_a), veh/h	462	1284	573	490	1399	0	374	0	1115	319	0	284
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.53	1.00	1.00	0.00	0.90	0.00	0.90	0.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	31.9	26.0	36.5	24.9	0.0	36.8	0.0	28.3	0.0	0.0	36.6
Incr Delay (d2), s/veh	0.0	4.6	1.4	3.7	1.8	0.0	2.8	0.0	2.1	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	14.3	5.4	3.7	5.6	0.0	3.7	0.0	7.3	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	36.5	27.4	40.2	26.6	0.0	39.6	0.0	30.4	0.0	0.0	36.7
LnGrp LOS	C	D	C	D	C	A	D	A	C	A	A	D
Approach Vol, veh/h		1388			1023			809			7	
Approach Delay, s/veh		34.7			31.0			32.1			36.7	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	43.3		22.5	31.7	29.8		26.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	13.7	38.8		18.0	10.0	42.5		21.5				
Max Q Clear Time (g_c+I1), s	11.7	35.4		2.4	2.2	20.4		10.1				
Green Ext Time (p_c), s	0.3	2.5		0.0	0.0	4.9		2.7				

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	1057	97	129	653	169	121	721	176	179	531	185
Future Volume (veh/h)	347	1057	97	129	653	169	121	721	176	179	531	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	351	1068	98	130	660	171	122	728	178	181	536	187
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	382	1281	571	202	920	410	191	788	193	250	806	280
Arrive On Green	0.45	0.75	0.75	0.12	0.27	0.27	0.11	0.29	0.29	0.05	0.11	0.11
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2724	666	1714	2489	865
Grp Volume(v), veh/h	351	1068	98	130	660	171	122	457	449	181	368	355
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1680	1714	1710	1644
Q Serve(g_s), s	21.1	23.0	2.0	8.0	19.2	7.0	7.5	28.5	28.5	11.5	22.7	22.9
Cycle Q Clear(g_c), s	21.1	23.0	2.0	8.0	19.2	7.0	7.5	28.5	28.5	11.5	22.7	22.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		0.53
Lane Grp Cap(c), veh/h	382	1281	571	202	920	410	191	495	486	250	553	532
V/C Ratio(X)	0.92	0.83	0.17	0.64	0.72	0.42	0.64	0.92	0.92	0.72	0.66	0.67
Avail Cap(c_a), veh/h	382	1281	571	202	920	410	196	495	486	293	553	532
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	29.5	11.5	8.9	46.3	36.4	15.7	46.8	37.9	37.9	50.2	43.4	43.4
Incr Delay (d2), s/veh	26.6	6.5	0.7	6.9	4.8	3.1	6.5	25.3	25.7	6.8	5.9	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	5.1	0.8	3.8	8.6	2.8	3.5	15.2	15.0	5.8	11.3	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.1	18.0	9.5	53.2	41.2	18.8	53.3	63.2	63.6	57.0	49.3	49.6
LnGrp LOS	E	B	A	D	D	B	D	E	E	E	D	D
Approach Vol, veh/h		1517			961			1028			904	
Approach Delay, s/veh		26.3			38.8			62.2			51.0	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	43.2	14.3	37.6	26.5	31.6	18.0	33.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	38.7	10.1	33.1	21.7	27.1	16.3	26.9
Max Q Clear Time (g_c+I1), s	10.0	25.0	9.5	24.9	23.1	21.2	13.5	30.5
Green Ext Time (p_c), s	0.0	6.7	0.0	2.9	0.0	2.5	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	86	64	133	70	39	67	672	140	63	553	37
Future Volume (veh/h)	28	86	64	133	70	39	67	672	140	63	553	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	31	95	70	146	77	43	74	738	154	69	608	41
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	331	242	178	290	273	152	426	1221	255	426	1409	95
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	0.14	0.14	0.25	0.43	0.43
Sat Flow, veh/h	1292	963	709	1240	1085	606	1714	2817	588	1714	3252	219
Grp Volume(v), veh/h	31	0	165	146	0	120	74	448	444	69	319	330
Grp Sat Flow(s),veh/h/ln	1292	0	1672	1240	0	1691	1714	1710	1694	1714	1710	1761
Q Serve(g_s), s	1.8	0.0	7.4	10.0	0.0	5.1	3.6	22.1	22.1	2.8	11.7	11.7
Cycle Q Clear(g_c), s	6.9	0.0	7.4	17.4	0.0	5.1	3.6	22.1	22.1	2.8	11.7	11.7
Prop In Lane	1.00		0.42	1.00		0.36	1.00		0.35	1.00		0.12
Lane Grp Cap(c), veh/h	331	0	420	290	0	425	426	741	734	426	741	763
V/C Ratio(X)	0.09	0.00	0.39	0.50	0.00	0.28	0.17	0.60	0.60	0.16	0.43	0.43
Avail Cap(c_a), veh/h	451	0	576	405	0	582	426	741	734	426	741	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.68	0.68	0.68	0.81	0.81	0.81
Uniform Delay (d), s/veh	29.9	0.0	28.0	35.2	0.0	27.2	32.7	31.3	31.3	26.5	17.8	17.8
Incr Delay (d2), s/veh	0.1	0.0	0.6	1.4	0.0	0.4	0.1	2.5	2.5	0.1	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	3.0	3.1	0.0	2.1	1.5	10.5	10.5	1.2	4.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	28.6	36.5	0.0	27.5	32.8	33.8	33.9	26.6	19.3	19.2
LnGrp LOS	C	A	C	D	A	C	C	C	C	C	B	B
Approach Vol, veh/h		196			266			966			718	
Approach Delay, s/veh		28.8			32.5			33.8			19.9	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.4	41.0		24.6	24.4	41.0		24.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.5	36.5		28.5	11.5	36.5		28.5
Max Q Clear Time (g_c+I1), s	14.8	24.1		9.4	5.6	13.7		19.4
Green Ext Time (p_c), s	0.1	4.7		0.9	0.1	4.1		0.8

Intersection Summary		
HCM 6th Ctrl Delay		28.5
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	350	76	188	204	60	82	803	204	67	660	38
Future Volume (veh/h)	69	350	76	188	204	60	82	803	204	67	660	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	83	422	92	227	246	72	99	967	246	81	795	46
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	490	504	427	371	528	447	298	1261	562	213	1048	61
Arrive On Green	0.12	0.28	0.28	0.14	0.29	0.29	0.17	0.37	0.37	0.17	0.42	0.42
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3286	190
Grp Volume(v), veh/h	83	422	92	227	246	72	99	967	246	81	414	427
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1766
Q Serve(g_s), s	2.7	19.9	2.6	7.8	10.1	3.2	4.6	22.4	10.9	3.8	18.5	18.5
Cycle Q Clear(g_c), s	2.7	19.9	2.6	7.8	10.1	3.2	4.6	22.4	10.9	3.8	18.5	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	490	504	427	371	528	447	298	1261	562	213	545	563
V/C Ratio(X)	0.17	0.84	0.22	0.61	0.47	0.16	0.33	0.77	0.44	0.38	0.76	0.76
Avail Cap(c_a), veh/h	514	544	461	392	566	480	298	1261	562	238	545	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	17.2	30.5	9.5	20.0	26.0	23.6	32.6	25.0	21.4	34.5	23.0	23.0
Incr Delay (d2), s/veh	0.2	10.5	0.3	2.6	0.6	0.2	0.6	4.5	2.5	1.0	8.8	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	9.8	1.5	3.2	4.3	1.1	1.9	9.5	4.2	1.6	7.8	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	41.0	9.8	22.6	26.7	23.8	33.2	29.5	23.9	35.5	31.8	31.6
LnGrp LOS	B	D	A	C	C	C	C	C	C	D	C	C
Approach Vol, veh/h		597			545			1312			922	
Approach Delay, s/veh		32.9			24.6			28.7			32.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	35.2	14.5	27.2	17.7	30.7	13.2	28.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	26.2	11.1	24.7	10.0	26.2	10.0	25.8
Max Q Clear Time (g_c+I1), s	5.8	24.4	9.8	21.9	6.6	20.5	4.7	12.1
Green Ext Time (p_c), s	0.1	1.2	0.1	0.8	0.1	2.6	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	892	403	184	416	62	293	755	144	71	1047	175
Future Volume (veh/h)	208	892	403	184	416	62	293	755	144	71	1047	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	224	959	433	198	447	67	315	812	155	76	1126	188
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	470	950	424	317	947	423	324	1475	280	239	1299	217
Arrive On Green	0.14	0.28	0.28	0.14	0.28	0.28	0.06	0.12	0.12	0.14	0.31	0.31
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4148	786	1714	4241	708
Grp Volume(v), veh/h	224	959	433	198	447	67	315	640	327	76	870	444
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1658	1714	1638	1673
Q Serve(g_s), s	7.9	25.0	25.0	6.9	9.8	2.0	16.5	16.6	16.8	3.6	22.6	22.6
Cycle Q Clear(g_c), s	7.9	25.0	25.0	6.9	9.8	2.0	16.5	16.6	16.8	3.6	22.6	22.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		0.42
Lane Grp Cap(c), veh/h	470	950	424	317	947	423	324	1165	590	239	1004	512
V/C Ratio(X)	0.48	1.01	1.02	0.63	0.47	0.16	0.97	0.55	0.55	0.32	0.87	0.87
Avail Cap(c_a), veh/h	512	950	424	318	947	423	324	1165	590	239	1004	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	32.5	32.5	20.9	27.1	11.0	42.0	32.9	33.0	34.9	29.5	29.5
Incr Delay (d2), s/veh	0.8	31.5	49.4	3.8	0.4	0.2	34.1	1.3	2.6	0.8	10.0	17.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	14.1	14.7	2.9	4.0	1.1	10.6	7.4	7.8	1.5	10.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	64.0	81.9	24.6	27.4	11.2	76.1	34.2	35.5	35.6	39.5	47.2
LnGrp LOS	B	F	F	C	C	B	E	C	D	D	D	D
Approach Vol, veh/h		1616			712			1282			1390	
Approach Delay, s/veh		62.6			25.1			44.8			41.7	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	34.0	14.4	27.0	19.0	29.6	14.5	26.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	29.5	10.0	22.5	14.5	25.0	12.2	20.3
Max Q Clear Time (g_c+I1), s	15.6	18.8	8.9	27.0	18.5	24.6	9.9	11.8
Green Ext Time (p_c), s	0.0	4.7	0.1	0.0	0.0	0.3	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	418	340	338	298	104	402	1087	243	215	1399	106
Future Volume (veh/h)	131	418	340	338	298	104	402	1087	243	215	1399	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	139	445	362	360	317	111	428	1156	259	229	1488	113
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	532	660	578	511	466	160	618	1711	383	461	1765	134
Arrive On Green	0.16	0.19	0.19	0.15	0.19	0.19	0.06	0.14	0.14	0.18	0.50	0.50
Sat Flow, veh/h	3326	3420	1525	3326	2497	858	3326	4015	899	3326	4659	354
Grp Volume(v), veh/h	139	445	362	360	215	213	428	943	472	229	1046	555
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1646	1663	1638	1638	1663	1638	1736
Q Serve(g_s), s	3.3	10.9	0.7	9.2	10.5	10.9	11.4	24.6	24.6	5.6	24.8	24.8
Cycle Q Clear(g_c), s	3.3	10.9	0.7	9.2	10.5	10.9	11.4	24.6	24.6	5.6	24.8	24.8
Prop In Lane	1.00		1.00	1.00		0.52	1.00		0.55	1.00		0.20
Lane Grp Cap(c), veh/h	532	660	578	511	319	307	618	1396	698	461	1241	658
V/C Ratio(X)	0.26	0.67	0.63	0.71	0.67	0.69	0.69	0.68	0.68	0.50	0.84	0.84
Avail Cap(c_a), veh/h	532	779	631	525	422	406	618	1396	698	462	1241	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	0.52	0.52	0.52
Uniform Delay (d), s/veh	33.1	33.7	22.8	36.2	34.1	34.2	39.7	32.8	32.8	33.9	20.0	20.0
Incr Delay (d2), s/veh	0.3	1.8	1.7	4.2	2.7	3.3	2.7	2.1	4.2	0.4	3.8	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.6	6.3	4.0	4.5	4.5	5.3	11.1	11.5	2.2	8.4	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	35.5	24.5	40.3	36.7	37.5	42.4	34.9	37.0	34.3	23.9	27.0
LnGrp LOS	C	D	C	D	D	D	D	C	D	C	C	C
Approach Vol, veh/h		946			788			1843			1830	
Approach Delay, s/veh		31.0			38.6			37.2			26.1	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	40.4	15.8	19.4	18.7	36.1	16.4	18.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.3	11.7	18.0	10.7	31.6	10.0	19.7
Max Q Clear Time (g_c+I1), s	7.3	26.6	11.2	12.9	13.4	26.8	5.3	12.9
Green Ext Time (p_c), s	0.2	4.0	0.1	2.0	0.0	3.7	0.2	1.4

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	543	2	590	348	1501	0	0	1652	626
Future Volume (veh/h)	0	0	0	543	2	590	348	1501	0	0	1652	626
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				766	0	402	362	1564	0	0	1721	652
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1121	0	499	499	3089	0	0	2825	696
Arrive On Green				0.33	0.00	0.33	0.30	1.00	0.00	0.00	0.91	0.91
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				766	0	402	362	1564	0	0	1721	652
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				17.4	0.0	21.7	8.8	0.0	0.0	0.0	4.9	23.2
Cycle Q Clear(g_c), s				17.4	0.0	21.7	8.8	0.0	0.0	0.0	4.9	23.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1121	0	499	499	3089	0	0	2825	696
V/C Ratio(X)				0.68	0.00	0.81	0.72	0.51	0.00	0.00	0.61	0.94
Avail Cap(c_a), veh/h				1333	0	593	554	3089	0	0	2825	696
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.82	0.82	0.00	0.00	0.56	0.56
Uniform Delay (d), s/veh				26.3	0.0	27.7	29.8	0.0	0.0	0.0	2.4	3.2
Incr Delay (d2), s/veh				1.1	0.0	6.9	3.5	0.5	0.0	0.0	0.6	14.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.1	0.0	8.6	3.2	0.1	0.0	0.0	0.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				27.4	0.0	34.6	33.3	0.5	0.0	0.0	2.9	17.4
LnGrp LOS				C	A	C	C	A	A	A	A	B
Approach Vol, veh/h					1168			1926			2373	
Approach Delay, s/veh					29.9			6.7			6.9	
Approach LOS					C			A			A	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	58.6		15.5	43.1		31.4
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	48.5		12.5	31.5		32.5
Max Q Clear Time (g_c+I1), s	2.0		10.8	25.2		23.7
Green Ext Time (p_c), s	17.6		0.3	5.6		3.2

Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	523	5	381	0	0	0	0	1298	592	658	1567	0
Future Volume (veh/h)	523	5	381	0	0	0	0	1298	592	658	1567	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	543	0	393				0	1338	610	678	1615	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	990	0	441				0	2394	590	857	3276	0
Arrive On Green	0.29	0.00	0.29				0.00	0.39	0.39	0.52	1.00	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	543	0	393				0	1338	610	678	1615	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	12.0	0.0	22.2				0.0	15.2	34.8	15.0	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	22.2				0.0	15.2	34.8	15.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	990	0	441				0	2394	590	857	3276	0
V/C Ratio(X)	0.55	0.00	0.89				0.00	0.56	1.03	0.79	0.49	0.00
Avail Cap(c_a), veh/h	990	0	441				0	2394	590	857	3276	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.68	0.68	0.00
Uniform Delay (d), s/veh	27.0	0.0	30.7				0.0	21.6	27.6	19.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	19.9				0.0	0.9	46.2	3.5	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	10.3				0.0	5.5	19.5	4.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	0.0	50.5				0.0	22.5	73.8	23.3	0.4	0.0
LnGrp LOS	C	A	D				A	C	F	C	A	A
Approach Vol, veh/h		936						1948			2293	
Approach Delay, s/veh		37.3						38.6			7.1	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	35.2	36.8	28.0	62.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.7	32.3	23.5	57.5
Max Q Clear Time (g_c+I1), s	17.0	36.8	24.2	2.0
Green Ext Time (p_c), s	1.0	0.0	0.0	19.6

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	395	0	30	6	2	1	29	794	7	0	668	217
Future Volume (veh/h)	395	0	30	6	2	1	29	794	7	0	668	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	421	0	21	6	2	1	30	827	7	0	696	226
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	600	0	267	57	19	10	148	2461	21	2	2051	915
Arrive On Green	0.17	0.00	0.17	0.05	0.05	0.05	0.09	0.71	0.71	0.00	0.60	0.60
Sat Flow, veh/h	3429	0	1525	1139	380	190	1714	3475	29	1714	3420	1525
Grp Volume(v), veh/h	421	0	21	9	0	0	30	407	427	0	696	226
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1709	0	0	1714	1710	1795	1714	1710	1525
Q Serve(g_s), s	10.4	0.0	1.0	0.5	0.0	0.0	1.5	8.2	8.2	0.0	9.2	6.3
Cycle Q Clear(g_c), s	10.4	0.0	1.0	0.5	0.0	0.0	1.5	8.2	8.2	0.0	9.2	6.3
Prop In Lane	1.00		1.00	0.67		0.11	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	600	0	267	86	0	0	148	1211	1271	2	2051	915
V/C Ratio(X)	0.70	0.00	0.08	0.10	0.00	0.00	0.20	0.34	0.34	0.00	0.34	0.25
Avail Cap(c_a), veh/h	785	0	349	389	0	0	238	1211	1271	238	2051	915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.90	0.90
Uniform Delay (d), s/veh	34.9	0.0	31.1	40.8	0.0	0.0	38.2	5.0	5.0	0.0	9.1	8.5
Incr Delay (d2), s/veh	1.9	0.0	0.1	0.5	0.0	0.0	0.7	0.8	0.7	0.0	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.4	0.2	0.0	0.0	0.6	2.6	2.7	0.0	3.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	0.0	31.2	41.3	0.0	0.0	38.9	5.8	5.7	0.0	9.5	9.0
LnGrp LOS	D	A	C	D	A	A	D	A	A	A	A	A
Approach Vol, veh/h		442			9			864			922	
Approach Delay, s/veh		36.6			41.3			6.9			9.4	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	65.7		17.7	9.8	56.0		6.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.0	25.9		18.1	10.0	25.9		18.0
Max Q Clear Time (g_c+I1), s	10.0	10.2		12.4	3.5	11.2		2.5
Green Ext Time (p_c), s	0.0	4.8		0.8	0.0	4.9		0.0

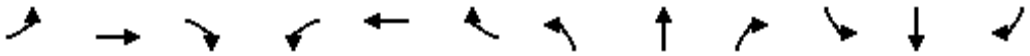
Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

11/15/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	421	219	975	767	290	156	109	488	234	187	111
Future Volume (veh/h)	47	421	219	975	767	290	156	109	488	234	187	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	49	443	231	1026	807	305	164	115	514	246	197	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	834	372	1361	1623	724	433	371	818	435	467	265
Arrive On Green	0.10	0.24	0.24	0.55	0.79	0.79	0.12	0.21	0.21	0.14	0.22	0.22
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	2102	1193
Grp Volume(v), veh/h	49	443	231	1026	807	305	164	115	514	246	159	155
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1585
Q Serve(g_s), s	2.2	11.2	9.7	12.2	8.1	6.2	7.1	5.4	6.9	10.7	7.9	8.5
Cycle Q Clear(g_c), s	2.2	11.2	9.7	12.2	8.1	6.2	7.1	5.4	6.9	10.7	7.9	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	265	834	372	1361	1623	724	433	371	818	435	380	352
V/C Ratio(X)	0.18	0.53	0.62	0.75	0.50	0.42	0.38	0.31	0.63	0.57	0.42	0.44
Avail Cap(c_a), veh/h	309	834	372	1361	1623	724	439	371	818	435	380	352
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	32.8	17.3	15.7	6.3	6.1	25.1	33.7	5.7	24.1	33.4	33.6
Incr Delay (d2), s/veh	0.3	2.4	7.6	0.2	0.1	0.2	0.5	2.1	3.5	1.7	3.4	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.9	4.1	5.5	2.1	1.6	2.9	2.6	3.7	4.4	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	35.2	24.9	16.0	6.4	6.3	25.6	35.8	9.2	25.8	36.7	37.5
LnGrp LOS	C	D	C	B	A	A	C	D	A	C	D	D
Approach Vol, veh/h		723			2138			793			560	
Approach Delay, s/veh		31.6			11.0			16.4			32.2	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	26.4	14.4	24.2	11.9	49.5	16.0	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	21.9	10.2	19.4	10.0	42.4	11.5	18.1
Max Q Clear Time (g_c+I1), s	14.2	13.2	9.1	10.5	4.2	10.1	12.7	8.9
Green Ext Time (p_c), s	3.9	2.5	0.0	1.2	0.0	8.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	383	546	180	884	877	286	0	528	128	0	861
Future Volume (veh/h)	209	383	546	180	884	877	286	0	528	128	0	861
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	235	430	613	202	993	985	321	0	593	144	0	967
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	316	1310	584	663	2004	894	291	0	0	291	0	0
Arrive On Green	0.06	0.13	0.13	0.39	0.59	0.59	0.17	0.00	0.03	0.17	0.00	0.03
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	321		1714	144	
Grp Volume(v), veh/h	235	430	613	202	993	985	321	124.2		144	38.9	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	F		1714	D	
Q Serve(g_s), s	13.5	11.5	38.3	8.2	16.9	25.3	17.0			7.6		
Cycle Q Clear(g_c), s	13.5	11.5	38.3	8.2	16.9	25.3	17.0			7.6		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	316	1310	584	663	2004	894	291			291		
V/C Ratio(X)	0.74	0.33	1.05	0.30	0.50	1.10	1.10			0.49		
Avail Cap(c_a), veh/h	463	1310	584	663	2004	894	291			291		
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.82	0.82	0.82	0.27	0.27	0.27	1.00			1.00		
Uniform Delay (d), s/veh	44.7	32.0	43.7	21.3	12.1	3.9	41.5			37.6		
Incr Delay (d2), s/veh	3.0	0.5	47.3	0.1	0.2	51.2	82.7			1.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	6.5	5.3	23.3	3.2	6.1	17.2	13.8			3.3		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	32.5	91.0	21.4	12.3	55.1	124.2			38.9		
LnGrp LOS	D	C	F	C	B	F	F			D		
Approach Vol, veh/h		1278			2180							
Approach Delay, s/veh		63.4			32.5							
Approach LOS		E			C							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	80.7	40.3	19.0		20.4	60.6	19.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	35.8	14.5		24.5	24.8	10.2
Max Q Clear Time (g_c+I1), s	10.2	40.3	19.0		15.5	27.3	9.6
Green Ext Time (p_c), s	0.2	0.0	0.0		0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.3
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	437	484	273	953	21	467	153	87	19	325	298
Future Volume (veh/h)	82	437	484	273	953	21	467	153	87	19	325	298
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	90	480	532	300	1047	23	513	168	96	21	357	327
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	906	404	291	1061	23	480	770	418	214	701	313
Arrive On Green	0.13	0.26	0.26	0.17	0.31	0.31	0.28	0.36	0.36	0.13	0.20	0.20
Sat Flow, veh/h	1714	3420	1525	1714	3421	75	1714	2139	1162	1714	3420	1525
Grp Volume(v), veh/h	90	480	532	300	523	547	513	133	131	21	357	327
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1786	1714	1710	1591	1714	1710	1525
Q Serve(g_s), s	4.8	12.0	13.2	17.0	30.4	30.4	28.0	5.4	5.8	1.1	9.3	20.5
Cycle Q Clear(g_c), s	4.8	12.0	13.2	17.0	30.4	30.4	28.0	5.4	5.8	1.1	9.3	20.5
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	214	906	404	291	530	554	480	616	573	214	701	313
V/C Ratio(X)	0.42	0.53	1.32	1.03	0.99	0.99	1.07	0.22	0.23	0.10	0.51	1.05
Avail Cap(c_a), veh/h	214	906	404	291	530	554	480	616	573	214	701	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	31.4	9.1	41.5	34.3	34.3	36.0	22.2	22.3	38.8	35.3	39.8
Incr Delay (d2), s/veh	0.9	1.6	154.4	60.5	36.1	35.2	60.1	0.8	0.9	0.2	2.6	63.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.1	21.3	12.0	17.6	18.2	19.4	2.3	2.3	0.5	4.1	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	33.0	163.4	102.0	70.4	69.5	96.1	23.0	23.2	39.0	37.9	103.1
LnGrp LOS	D	C	F	F	E	E	F	C	C	D	D	F
Approach Vol, veh/h		1102			1370			777			705	
Approach Delay, s/veh		96.6			77.0			71.3			68.2	
Approach LOS		F			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	28.5	30.0	22.5	14.5	33.0	14.5	38.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	4.5	24.0	25.5	18.0	10.0	28.5	10.0	33.5
Max Q Clear Time (g_c+I1), s	19.0	15.2	30.0	22.5	6.8	32.4	3.1	7.8
Green Ext Time (p_c), s	0.0	3.6	0.0	0.0	0.0	0.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	79.8
HCM 6th LOS	E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	90	82	532	38	37	946
Future Volume (veh/h)	90	82	532	38	37	946
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	100	91	591	42	41	1051
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	236	210	2255	160	722	2796
Arrive On Green	0.14	0.14	0.47	0.47	0.10	0.82
Sat Flow, veh/h	1714	1525	3329	230	1714	3510
Grp Volume(v), veh/h	100	91	312	321	41	1051
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1759	1714	1710
Q Serve(g_s), s	4.8	4.9	10.0	10.0	0.4	7.3
Cycle Q Clear(g_c), s	4.8	4.9	10.0	10.0	0.4	7.3
Prop In Lane	1.00	1.00		0.13	1.00	
Lane Grp Cap(c), veh/h	236	210	1191	1225	722	2796
V/C Ratio(X)	0.42	0.43	0.26	0.26	0.06	0.38
Avail Cap(c_a), veh/h	533	475	1191	1225	838	2796
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.92	0.92	0.43	0.43
Uniform Delay (d), s/veh	35.5	35.6	9.9	10.0	2.4	2.2
Incr Delay (d2), s/veh	1.2	1.4	0.5	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.9	4.0	4.1	0.1	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.7	37.0	10.4	10.4	2.4	2.3
LnGrp LOS	D	D	B	B	A	A
Approach Vol, veh/h	191		633			1092
Approach Delay, s/veh	36.8		10.4			2.3
Approach LOS	D		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.9	64.7			75.6	14.4
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	12.5	38.5			55.5	25.5
Max Q Clear Time (g_c+I1), s	12.4	12.0			9.3	6.9
Green Ext Time (p_c), s	0.0	4.1			10.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1	43	143	5	48	13	556	60	53	909	18
Future Volume (veh/h)	15	1	43	143	5	48	13	556	60	53	909	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	18	1	52	172	6	58	16	670	72	64	1095	22
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	237	4	203	244	20	195	594	1246	134	625	1375	28
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.08	0.13	0.13	0.47	0.80	0.80
Sat Flow, veh/h	1714	29	1501	1714	145	1402	1714	3115	334	1714	3429	69
Grp Volume(v), veh/h	18	0	53	172	0	64	16	367	375	64	546	571
Grp Sat Flow(s),veh/h/ln	1714	0	1530	1714	0	1548	1714	1710	1740	1714	1710	1788
Q Serve(g_s), s	0.8	0.0	2.8	8.6	0.0	3.3	0.0	18.1	18.1	0.0	15.7	15.7
Cycle Q Clear(g_c), s	0.8	0.0	2.8	8.6	0.0	3.3	0.0	18.1	18.1	0.0	15.7	15.7
Prop In Lane	1.00		0.98	1.00		0.91	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	237	0	207	244	0	215	594	684	696	625	686	717
V/C Ratio(X)	0.08	0.00	0.26	0.71	0.00	0.30	0.03	0.54	0.54	0.10	0.80	0.80
Avail Cap(c_a), veh/h	240	0	350	244	0	358	594	684	696	625	686	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.84	0.84	0.84	0.93	0.93	0.93
Uniform Delay (d), s/veh	33.8	0.0	34.9	36.8	0.0	34.8	16.5	31.3	31.3	10.8	6.9	6.9
Incr Delay (d2), s/veh	0.1	0.0	0.6	8.9	0.0	0.8	0.0	2.5	2.5	0.1	8.7	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.1	4.1	0.0	1.3	0.2	8.7	8.8	0.5	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	0.0	35.5	45.7	0.0	35.6	16.6	33.8	33.8	10.8	15.6	15.2
LnGrp LOS	C	A	D	D	A	D	B	C	C	B	B	B
Approach Vol, veh/h		71			236			758			1181	
Approach Delay, s/veh		35.1			43.0			33.4			15.2	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	38.0	14.8	14.2	22.9	38.1	14.5	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	33.5	10.3	18.1	10.0	33.6	10.1	18.3
Max Q Clear Time (g_c+I1), s	12.0	20.1	10.6	4.8	2.0	17.7	2.8	5.3
Green Ext Time (p_c), s	0.1	3.9	0.0	0.2	0.0	6.8	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	427	193	158	795	184	172	422	118	120	520	55
Future Volume (veh/h)	73	427	193	158	795	184	172	422	118	120	520	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	79	464	210	172	864	200	187	459	128	130	565	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	229	1107	494	506	1170	522	508	948	423	492	1230	129
Arrive On Green	0.13	0.32	0.32	0.15	0.34	0.34	0.15	0.28	0.28	0.15	0.27	0.27
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4516	474
Grp Volume(v), veh/h	79	464	210	172	864	200	187	459	128	130	408	217
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1715
Q Serve(g_s), s	3.4	8.6	8.7	3.7	18.0	8.0	4.1	9.1	5.3	2.8	8.4	8.5
Cycle Q Clear(g_c), s	3.4	8.6	8.7	3.7	18.0	8.0	4.1	9.1	5.3	2.8	8.4	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	229	1107	494	506	1170	522	508	948	423	492	892	467
V/C Ratio(X)	0.34	0.42	0.43	0.34	0.74	0.38	0.37	0.48	0.30	0.26	0.46	0.46
Avail Cap(c_a), veh/h	276	1440	642	535	1440	642	535	948	423	535	892	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	21.4	21.4	30.6	23.4	20.1	30.7	24.4	23.0	30.5	24.4	24.5
Incr Delay (d2), s/veh	0.9	0.3	0.6	0.4	1.6	0.5	0.4	1.8	1.8	0.3	1.7	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.3	3.1	1.5	7.1	2.8	1.6	3.8	2.1	1.1	3.3	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	21.6	22.0	31.0	25.0	20.6	31.2	26.1	24.9	30.8	26.1	27.8
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		753			1236			774			755	
Approach Delay, s/veh		22.9			25.1			27.1			27.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	28.1	14.3	24.0	12.8	29.6	14.0	24.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	31.5	10.5	19.5	10.5	31.5	10.5	19.5
Max Q Clear Time (g_c+I1), s	5.7	10.7	6.1	10.5	5.4	20.0	4.8	11.1
Green Ext Time (p_c), s	0.2	3.8	0.2	2.7	0.1	5.2	0.2	2.2

Intersection Summary	
HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	425	159	364	786	10	223	33	196	29	18	7
Future Volume (veh/h)	26	425	159	364	786	10	223	33	196	29	18	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	31	506	189	433	936	12	353	0	168	35	21	8
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	150	931	415	606	1268	16	785	0	627	390	283	108
Arrive On Green	0.09	0.27	0.27	0.36	0.73	0.73	0.23	0.00	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1714	3420	1525	3326	3458	44	3429	0	1525	1714	1242	473
Grp Volume(v), veh/h	31	506	189	433	463	485	353	0	168	35	0	29
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1792	1714	0	1525	1714	0	1715
Q Serve(g_s), s	1.5	11.4	9.3	10.1	14.2	14.2	8.0	0.0	0.0	1.4	0.0	1.2
Cycle Q Clear(g_c), s	1.5	11.4	9.3	10.1	14.2	14.2	8.0	0.0	0.0	1.4	0.0	1.2
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	150	931	415	606	627	657	785	0	627	390	0	391
V/C Ratio(X)	0.21	0.54	0.46	0.71	0.74	0.74	0.45	0.00	0.27	0.09	0.00	0.07
Avail Cap(c_a), veh/h	238	931	415	606	627	657	785	0	627	390	0	391
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	28.0	27.2	26.6	9.5	9.5	29.8	0.0	17.5	27.4	0.0	27.3
Incr Delay (d2), s/veh	0.6	2.2	3.4	4.0	4.6	4.4	1.8	0.0	1.0	0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	4.8	3.7	3.6	3.6	3.8	3.4	0.0	2.4	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	30.1	30.6	30.6	14.1	13.9	31.7	0.0	18.6	27.8	0.0	27.7
LnGrp LOS	D	C	C	C	B	B	C	A	B	C	A	C
Approach Vol, veh/h		726			1381			521			64	
Approach Delay, s/veh		30.6			19.2			27.4			27.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.4	26.5		22.5	9.9	35.0		22.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.9	22.0		18.0	10.0	25.9		18.1
Max Q Clear Time (g_c+I1), s	12.1	13.4		3.4	3.5	16.2		10.0
Green Ext Time (p_c), s	0.3	2.7		0.1	0.0	4.2		1.3

Intersection Summary		
HCM 6th Ctrl Delay		24.1
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.1

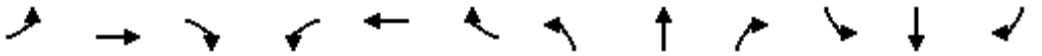
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	649	1140	10	0	15
Future Vol, veh/h	0	649	1140	10	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	683	1200	11	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	606
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	*625
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*625
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	625
HCM Lane V/C Ratio	-	-	-	0.025
HCM Control Delay (s)	-	-	-	10.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	411	52	130	708	120	105	366	105	149	588	319
Future Volume (veh/h)	112	411	52	130	708	120	105	366	105	149	588	319
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	129	472	60	149	814	138	121	421	121	171	676	367
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	259	1168	521	234	1117	498	229	749	213	255	642	348
Arrive On Green	0.30	0.68	0.68	0.14	0.33	0.33	0.13	0.28	0.28	0.05	0.10	0.10
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2627	748	1714	2140	1161
Grp Volume(v), veh/h	129	472	60	149	814	138	121	273	269	171	540	503
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1665	1714	1710	1591
Q Serve(g_s), s	5.6	5.4	0.8	7.4	18.9	3.8	5.9	12.2	12.4	8.8	27.0	27.0
Cycle Q Clear(g_c), s	5.6	5.4	0.8	7.4	18.9	3.8	5.9	12.2	12.4	8.8	27.0	27.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.73
Lane Grp Cap(c), veh/h	259	1168	521	234	1117	498	229	487	475	255	513	477
V/C Ratio(X)	0.50	0.40	0.12	0.64	0.73	0.28	0.53	0.56	0.57	0.67	1.05	1.05
Avail Cap(c_a), veh/h	259	1168	521	274	1117	498	240	487	475	350	513	477
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	28.6	10.3	4.0	36.8	26.8	8.9	36.4	27.4	27.4	40.6	40.5	40.5
Incr Delay (d2), s/veh	1.5	1.0	0.4	3.8	4.2	1.4	1.9	4.6	4.9	2.6	51.3	52.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.8	0.5	3.3	8.1	2.2	2.6	5.5	5.5	4.1	19.6	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	11.3	4.4	40.5	31.0	10.3	38.3	32.0	32.3	43.2	91.9	93.4
LnGrp LOS	C	B	A	D	C	B	D	C	C	D	F	F
Approach Vol, veh/h		661			1101			663			1214	
Approach Delay, s/veh		14.4			29.7			33.3			85.7	
Approach LOS		B			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	32.7	14.0	29.0	15.6	31.4	15.4	27.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.9	25.5	10.1	24.5	10.5	26.9	15.9	18.7
Max Q Clear Time (g_c+I1), s	9.4	7.4	7.9	29.0	7.6	20.9	10.8	14.4
Green Ext Time (p_c), s	0.1	3.1	0.1	0.0	0.1	3.0	0.2	1.3

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	29	63	117	61	29	52	396	92	30	448	24
Future Volume (veh/h)	24	29	63	117	61	29	52	396	92	30	448	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	26	31	67	124	65	31	55	421	98	32	477	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	279	101	218	273	229	109	190	1073	248	593	2057	112
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.13	0.13	0.69	1.00	1.00
Sat Flow, veh/h	1320	507	1096	1318	1152	549	1714	2759	637	1714	3298	179
Grp Volume(v), veh/h	26	0	98	124	0	96	55	260	259	32	247	256
Grp Sat Flow(s),veh/h/ln	1320	0	1603	1318	0	1701	1714	1710	1685	1714	1710	1768
Q Serve(g_s), s	1.5	0.0	4.7	8.0	0.0	4.3	2.8	12.5	12.7	0.5	0.0	0.0
Cycle Q Clear(g_c), s	5.8	0.0	4.7	12.7	0.0	4.3	2.8	12.5	12.7	0.5	0.0	0.0
Prop In Lane	1.00		0.68	1.00		0.32	1.00		0.38	1.00		0.10
Lane Grp Cap(c), veh/h	279	0	319	273	0	338	190	665	655	593	1067	1103
V/C Ratio(X)	0.09	0.00	0.31	0.45	0.00	0.28	0.29	0.39	0.40	0.05	0.23	0.23
Avail Cap(c_a), veh/h	471	0	552	465	0	586	305	665	655	593	1067	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.97	0.97	0.97	0.78	0.78	0.78
Uniform Delay (d), s/veh	33.1	0.0	30.8	36.2	0.0	30.6	39.9	29.4	29.5	9.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.5	1.2	0.0	0.5	0.8	1.7	1.7	0.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.8	2.6	0.0	1.8	1.2	6.0	6.0	0.2	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	0.0	31.3	37.4	0.0	31.1	40.7	31.1	31.2	9.2	0.4	0.4
LnGrp LOS	C	A	C	D	A	C	D	C	C	A	A	A
Approach Vol, veh/h		124			220			574			535	
Approach Delay, s/veh		31.7			34.6			32.1			0.9	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.1	37.0		19.9	12.0	58.1		19.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	15.5	32.5		28.5	13.5	34.5		28.5				
Max Q Clear Time (g_c+I1), s	2.5	14.7		7.8	4.8	2.0		14.7				
Green Ext Time (p_c), s	0.0	3.0		0.5	0.1	3.3		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		21.0
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	100	64	184	290	67	75	482	122	32	589	31
Future Volume (veh/h)	26	100	64	184	290	67	75	482	122	32	589	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	28	106	68	196	309	71	80	513	130	34	627	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	293	314	266	467	411	349	552	1736	774	157	914	48
Arrive On Green	0.08	0.17	0.17	0.14	0.23	0.23	0.32	0.51	0.51	0.18	0.55	0.55
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3305	174
Grp Volume(v), veh/h	28	106	68	196	309	71	80	513	130	34	324	336
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1769
Q Serve(g_s), s	1.1	4.7	1.7	7.7	14.4	3.4	3.0	7.8	4.1	1.5	12.3	12.3
Cycle Q Clear(g_c), s	1.1	4.7	1.7	7.7	14.4	3.4	3.0	7.8	4.1	1.5	12.3	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	293	314	266	467	411	349	552	1736	774	157	473	489
V/C Ratio(X)	0.10	0.34	0.26	0.42	0.75	0.20	0.14	0.30	0.17	0.22	0.69	0.69
Avail Cap(c_a), veh/h	388	638	541	471	640	542	552	1736	774	238	473	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	25.7	32.6	7.7	22.8	32.3	28.1	21.7	12.8	11.9	34.0	17.3	17.3
Incr Delay (d2), s/veh	0.1	0.6	0.5	0.6	2.8	0.3	0.1	0.4	0.5	0.7	7.6	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.1	1.3	3.1	6.4	1.2	1.2	3.0	1.4	0.6	4.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	33.2	8.2	23.4	35.1	28.4	21.8	13.3	12.4	34.7	24.9	24.7
LnGrp LOS	C	C	A	C	D	C	C	B	B	C	C	C
Approach Vol, veh/h		202			576			723			694	
Approach Delay, s/veh		23.8			30.3			14.1			25.3	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	47.7	14.4	17.7	31.0	26.9	9.5	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	22.5	10.1	29.4	10.1	22.4	10.0	29.5
Max Q Clear Time (g_c+I1), s	3.5	9.8	9.7	6.7	5.0	14.3	3.1	16.4
Green Ext Time (p_c), s	0.0	3.2	0.0	0.7	0.1	2.5	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	348	228	143	611	53	251	823	94	36	636	91
Future Volume (veh/h)	111	348	228	143	611	53	251	823	94	36	636	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	126	395	259	162	694	60	285	935	107	41	723	103
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	355	855	381	435	865	386	372	1902	217	170	1338	189
Arrive On Green	0.13	0.25	0.25	0.14	0.25	0.25	0.07	0.14	0.14	0.10	0.31	0.31
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4474	510	1714	4351	614
Grp Volume(v), veh/h	126	395	259	162	694	60	285	684	358	41	543	283
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1708	1714	1638	1689
Q Serve(g_s), s	4.4	8.8	13.8	5.7	17.1	2.8	14.7	17.3	17.4	2.0	12.4	12.6
Cycle Q Clear(g_c), s	4.4	8.8	13.8	5.7	17.1	2.8	14.7	17.3	17.4	2.0	12.4	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.36
Lane Grp Cap(c), veh/h	355	855	381	435	865	386	372	1393	726	170	1007	519
V/C Ratio(X)	0.35	0.46	0.68	0.37	0.80	0.16	0.77	0.49	0.49	0.24	0.54	0.55
Avail Cap(c_a), veh/h	363	912	407	438	912	407	440	1393	726	238	1007	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	28.6	30.5	19.1	31.5	26.2	39.5	29.7	29.7	37.4	25.9	25.9
Incr Delay (d2), s/veh	0.6	0.4	4.2	0.5	5.0	0.2	5.6	1.0	2.0	0.7	2.1	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.6	5.4	2.3	7.5	1.0	7.3	7.7	8.3	0.9	5.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	29.0	34.7	19.6	36.5	26.3	45.1	30.7	31.7	38.2	27.9	30.0
LnGrp LOS	C	C	C	B	D	C	D	C	C	D	C	C
Approach Vol, veh/h		780			916			1327			867	
Approach Delay, s/veh		29.6			32.9			34.1			29.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	40.3	14.3	24.5	21.5	29.7	14.1	24.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	30.5	10.0	21.5	20.6	19.9	10.0	21.5
Max Q Clear Time (g_c+I1), s	4.4	19.4	7.7	15.8	16.7	14.6	6.4	19.1
Green Ext Time (p_c), s	0.0	5.2	0.1	1.8	0.3	2.5	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	128	102	208	180	78	171	1101	132	72	889	34
Future Volume (veh/h)	30	128	102	208	180	78	171	1101	132	72	889	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	33	142	113	231	200	87	190	1223	147	80	988	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	300	475	616	461	440	184	881	1660	199	866	1791	69
Arrive On Green	0.09	0.14	0.14	0.14	0.19	0.19	0.26	0.37	0.37	0.52	0.74	0.74
Sat Flow, veh/h	3326	3420	1525	3326	2348	985	3326	4446	534	3326	4856	187
Grp Volume(v), veh/h	33	142	113	231	144	143	190	901	469	80	666	360
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1623	1663	1638	1704	1663	1638	1766
Q Serve(g_s), s	0.8	3.4	1.0	5.8	6.7	7.1	4.0	21.4	21.4	1.1	8.1	8.1
Cycle Q Clear(g_c), s	0.8	3.4	1.0	5.8	6.7	7.1	4.0	21.4	21.4	1.1	8.1	8.1
Prop In Lane	1.00		1.00	1.00		0.61	1.00		0.31	1.00		0.11
Lane Grp Cap(c), veh/h	300	475	616	461	320	304	881	1223	636	866	1208	652
V/C Ratio(X)	0.11	0.30	0.18	0.50	0.45	0.47	0.22	0.74	0.74	0.09	0.55	0.55
Avail Cap(c_a), veh/h	466	790	756	554	441	418	881	1223	636	866	1208	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.82	0.82	0.82
Uniform Delay (d), s/veh	37.6	34.8	7.3	35.9	32.5	32.6	25.8	24.4	24.4	16.2	8.5	8.5
Incr Delay (d2), s/veh	0.2	0.3	0.1	0.8	1.0	1.1	0.1	3.7	6.9	0.0	1.5	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	0.8	2.4	2.8	2.8	1.6	8.6	9.5	0.4	2.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	35.2	7.4	36.7	33.4	33.7	25.9	28.1	31.3	16.3	10.0	11.3
LnGrp LOS	D	D	A	D	C	C	C	C	C	B	A	B
Approach Vol, veh/h		288			518			1560			1106	
Approach Delay, s/veh		24.6			35.0			28.8			10.9	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	35.6	14.5	14.5	25.8	35.2	10.1	18.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	31.1	12.5	18.3	10.5	30.7	10.1	20.7
Max Q Clear Time (g_c+I1), s	13.1	23.4	7.8	5.4	6.0	10.1	2.8	9.1
Green Ext Time (p_c), s	0.1	5.0	0.3	1.0	0.2	7.0	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	341	3	395	424	1080	0	0	772	407
Future Volume (veh/h)	0	0	0	341	3	395	424	1080	0	0	772	407
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				520	0	280	466	1187	0	0	848	447
Peak Hour Factor				0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				886	0	394	683	3355	0	0	2774	683
Arrive On Green				0.26	0.00	0.26	0.21	0.68	0.00	0.00	0.45	0.45
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				520	0	280	466	1187	0	0	848	447
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				9.0	0.0	11.3	8.8	6.9	0.0	0.0	6.0	15.6
Cycle Q Clear(g_c), s				9.0	0.0	11.3	8.8	6.9	0.0	0.0	6.0	15.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				886	0	394	683	3355	0	0	2774	683
V/C Ratio(X)				0.59	0.00	0.71	0.68	0.35	0.00	0.00	0.31	0.65
Avail Cap(c_a), veh/h				1109	0	494	831	3355	0	0	2774	683
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	0.91	0.91
Uniform Delay (d), s/veh				22.0	0.0	22.9	25.0	4.5	0.0	0.0	12.0	14.7
Incr Delay (d2), s/veh				0.6	0.0	3.5	1.6	0.3	0.0	0.0	0.3	4.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.5	0.0	4.2	3.4	1.7	0.0	0.0	1.9	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.7	0.0	26.4	26.6	4.8	0.0	0.0	12.3	19.1
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					800			1653			1295	
Approach Delay, s/veh					24.0			10.9			14.6	
Approach LOS					C			B			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	48.4		16.0	32.5		19.6
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	39.0		14.5	20.0		19.5
Max Q Clear Time (g_c+I1), s	8.9		10.8	17.6		13.3
Green Ext Time (p_c), s	10.3		0.7	1.7		1.7

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	3	282	0	0	0	0	1128	556	271	829	0
Future Volume (veh/h)	358	3	282	0	0	0	0	1128	556	271	829	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	387	0	303				0	1213	598	291	891	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	850	0	378				0	3096	763	617	3478	0
Arrive On Green	0.25	0.00	0.25				0.00	0.50	0.50	0.19	0.71	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	387	0	303				0	1213	598	291	891	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	8.6	0.0	16.8				0.0	11.0	29.0	7.0	5.8	0.0
Cycle Q Clear(g_c), s	8.6	0.0	16.8				0.0	11.0	29.0	7.0	5.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	850	0	378				0	3096	763	617	3478	0
V/C Ratio(X)	0.46	0.00	0.80				0.00	0.39	0.78	0.47	0.26	0.00
Avail Cap(c_a), veh/h	952	0	424				0	3096	763	617	3478	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	28.7	0.0	31.8				0.0	14.0	18.5	32.7	4.7	0.0
Incr Delay (d2), s/veh	0.4	0.0	9.6				0.0	0.4	7.9	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	7.0				0.0	3.7	11.1	2.8	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	41.4				0.0	14.4	26.4	33.2	4.9	0.0
LnGrp LOS	C	A	D				A	B	C	C	A	A
Approach Vol, veh/h		690						1811			1182	
Approach Delay, s/veh		34.5						18.3			11.8	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.7	47.0		24.3		65.7						
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5						
Max Green Setting (Gmax), s	11.5	42.5		22.5		58.5						
Max Q Clear Time (g_c+I1), s	19.0	31.0		18.8		7.8						
Green Ext Time (p_c), s	0.3	7.8		1.0		7.8						

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

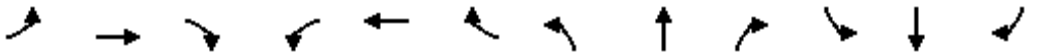
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	649	1145	10	0	15
Future Vol, veh/h	0	649	1145	10	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	683	1205	11	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	608
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	444
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	444
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	444
HCM Lane V/C Ratio	-	-	-	0.036
HCM Control Delay (s)	-	-	-	13.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	0	7	6	1	2	19	670	4	3	726	360
Future Volume (veh/h)	196	0	7	6	1	2	19	670	4	3	726	360
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	222	0	5	7	1	2	21	753	4	3	816	404
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	475	0	211	62	9	18	125	2387	13	61	2213	987
Arrive On Green	0.14	0.00	0.14	0.05	0.05	0.05	0.07	0.68	0.68	0.04	0.65	0.65
Sat Flow, veh/h	3429	0	1525	1176	168	336	1714	3488	19	1714	3420	1525
Grp Volume(v), veh/h	222	0	5	10	0	0	21	369	388	3	816	404
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1681	0	0	1714	1710	1797	1714	1710	1525
Q Serve(g_s), s	5.4	0.0	0.3	0.5	0.0	0.0	1.0	7.8	7.8	0.2	10.0	11.4
Cycle Q Clear(g_c), s	5.4	0.0	0.3	0.5	0.0	0.0	1.0	7.8	7.8	0.2	10.0	11.4
Prop In Lane	1.00		1.00	0.70		0.20	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	475	0	211	88	0	0	125	1170	1230	61	2213	987
V/C Ratio(X)	0.47	0.00	0.02	0.11	0.00	0.00	0.17	0.32	0.32	0.05	0.37	0.41
Avail Cap(c_a), veh/h	781	0	347	383	0	0	238	1170	1230	238	2213	987
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	35.7	0.0	33.5	40.7	0.0	0.0	39.1	5.7	5.7	41.9	7.4	7.6
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.6	0.0	0.0	0.6	0.7	0.7	0.2	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.1	0.2	0.0	0.0	0.5	2.6	2.7	0.1	3.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	0.0	33.6	41.2	0.0	0.0	39.8	6.4	6.4	42.1	7.7	8.6
LnGrp LOS	D	A	C	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		227			10			778			1223	
Approach Delay, s/veh		36.4			41.2			7.3			8.1	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	63.6		14.5	8.6	60.2		6.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.0	26.0		18.0	10.0	26.0		18.0				
Max Q Clear Time (g_c+I1), s	2.2	9.8		7.4	3.0	13.4		2.5				
Green Ext Time (p_c), s	0.0	4.3		0.5	0.0	5.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		10.8	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	804	205	628	582	171	224	212	816	168	123	48
Future Volume (veh/h)	59	804	205	628	582	171	224	212	816	168	123	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	60	820	209	641	594	174	229	216	833	171	126	49
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	323	923	412	1316	1803	804	434	337	829	302	455	169
Arrive On Green	0.10	0.27	0.27	0.60	0.88	0.88	0.11	0.19	0.19	0.11	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	1714	1800	1525	1714	2439	908
Grp Volume(v), veh/h	60	820	209	641	594	174	229	216	833	171	87	88
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1714	1800	1525	1714	1710	1637
Q Serve(g_s), s	2.9	25.3	9.3	6.3	3.2	1.9	11.8	12.2	14.3	8.5	4.8	5.1
Cycle Q Clear(g_c), s	2.9	25.3	9.3	6.3	3.2	1.9	11.8	12.2	14.3	8.5	4.8	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	323	923	412	1316	1803	804	434	337	829	302	319	305
V/C Ratio(X)	0.19	0.89	0.51	0.49	0.33	0.22	0.53	0.64	1.00	0.57	0.27	0.29
Avail Cap(c_a), veh/h	348	923	412	1316	1803	804	434	337	829	302	319	305
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	38.6	18.1	15.0	3.3	3.2	31.1	41.3	9.9	30.9	38.4	38.5
Incr Delay (d2), s/veh	0.3	12.4	4.4	0.0	0.0	0.1	1.1	8.3	31.1	2.5	2.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.1	3.8	3.6	0.9	0.5	5.0	6.2	16.7	3.7	2.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	51.0	22.6	15.0	3.3	3.3	32.2	49.6	41.0	33.4	40.5	40.9
LnGrp LOS	C	D	C	B	A	A	C	D	F	C	D	D
Approach Vol, veh/h		1089			1409			1278			346	
Approach Delay, s/veh		44.4			8.6			40.9			37.1	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.2	31.7	14.6	22.5	12.9	60.0	14.5	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	36.7	27.2	10.1	18.0	10.0	53.9	10.0	18.1
Max Q Clear Time (g_c+I1), s	8.3	27.3	13.8	7.1	4.9	5.2	10.5	16.3
Green Ext Time (p_c), s	2.5	0.0	0.0	0.6	0.0	5.4	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	922	611	139	486	448	228	0	1037	229	0	658
Future Volume (veh/h)	244	922	611	139	486	448	228	0	1037	229	0	658
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	0	1800	1800	0	1800
Adj Flow Rate, veh/h	260	981	650	148	517	477	243	0	1103	244	0	700
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	903	2231	995	195	818	365	308	0	0	308	0	0
Arrive On Green	0.53	0.65	0.65	0.11	0.24	0.24	0.18	0.00	0.02	0.18	0.00	0.02
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	243		1714	244	
Grp Volume(v), veh/h	260	981	650	148	517	477	243	51.1		244	56.4	
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	D		1714	E	
Q Serve(g_s), s	9.3	15.4	28.4	9.2	14.9	17.3	14.9			15.0		
Cycle Q Clear(g_c), s	9.3	15.4	28.4	9.2	14.9	17.3	14.9			15.0		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	903	2231	995	195	818	365	308			308		
V/C Ratio(X)	0.29	0.44	0.65	0.76	0.63	1.31	0.79			0.79		
Avail Cap(c_a), veh/h	903	2231	995	195	818	365	396			308		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.34	0.34	0.34	0.70	0.70	0.70	1.00			1.00		
Uniform Delay (d), s/veh	14.5	9.3	11.6	47.3	37.5	19.3	43.1			43.2		
Incr Delay (d2), s/veh	0.1	0.2	1.2	11.5	2.6	151.9	8.0			13.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	3.6	5.4	9.1	4.5	6.5	21.3	7.0			7.4		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	9.5	12.7	58.8	40.1	171.2	51.1			56.4		
LnGrp LOS	B	A	B	E	D	F	D			E		
Approach Vol, veh/h		1891			1142							
Approach Delay, s/veh		11.3			97.3							
Approach LOS		B			F							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	14.5	73.7	21.8		59.9	28.3	21.8
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	29.9	22.9		16.1	23.8	12.6
Max Q Clear Time (g_c+I1), s	11.2	30.4	16.9		11.3	19.3	17.0
Green Ext Time (p_c), s	0.0	0.0	0.4		0.3	2.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	1068	595	166	458	50	388	483	260	26	238	132
Future Volume (veh/h)	293	1068	595	166	458	50	388	483	260	26	238	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	299	1090	607	169	467	51	396	493	265	27	243	135
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	381	1241	553	203	806	88	445	724	387	188	637	284
Arrive On Green	0.22	0.36	0.36	0.12	0.26	0.26	0.35	0.45	0.45	0.11	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	1714	3111	338	1714	2151	1151	1714	3420	1525
Grp Volume(v), veh/h	299	1090	607	169	256	262	396	391	367	27	243	135
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1739	1714	1710	1593	1714	1710	1525
Q Serve(g_s), s	18.1	32.8	39.9	10.6	14.3	14.5	24.0	20.0	20.2	1.6	6.8	8.7
Cycle Q Clear(g_c), s	18.1	32.8	39.9	10.6	14.3	14.5	24.0	20.0	20.2	1.6	6.8	8.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	381	1241	553	203	443	451	445	575	536	188	637	284
V/C Ratio(X)	0.79	0.88	1.10	0.83	0.58	0.58	0.89	0.68	0.68	0.14	0.38	0.47
Avail Cap(c_a), veh/h	381	1241	553	203	443	451	452	575	536	195	637	284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	32.8	35.0	47.4	35.5	35.6	34.5	25.7	25.7	44.3	39.2	39.9
Incr Delay (d2), s/veh	1.0	0.9	46.8	24.6	5.4	5.4	16.6	5.5	5.9	0.3	1.7	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	13.4	21.6	5.9	6.6	6.8	11.3	8.2	7.8	0.7	3.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	33.7	81.8	72.0	40.9	41.0	51.1	31.2	31.7	44.6	40.9	45.5
LnGrp LOS	D	C	F	E	D	D	D	C	C	D	D	D
Approach Vol, veh/h		1996			687			1154			405	
Approach Delay, s/veh		49.5			48.6			38.2			42.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	41.9	30.6	22.5	26.4	30.5	14.1	39.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	37.4	26.5	18.0	21.5	26.0	10.0	34.5
Max Q Clear Time (g_c+I1), s	12.6	41.9	26.0	10.7	20.1	16.5	3.6	22.2
Green Ext Time (p_c), s	0.0	0.0	0.1	1.1	0.1	2.2	0.0	4.0

Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	57	59	1084	169	108	789	
Future Volume (veh/h)	57	59	1084	169	108	789	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No		No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	
Adj Flow Rate, veh/h	58	60	1106	172	110	805	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	191	170	1807	280	701	2915	
Arrive On Green	0.11	0.11	1.00	1.00	0.45	1.00	
Sat Flow, veh/h	1714	1525	3057	460	1714	3510	
Grp Volume(v), veh/h	58	60	636	642	110	805	
Grp Sat Flow(s),veh/h/ln	1714	1525	1710	1717	1714	1710	
Q Serve(g_s), s	3.4	4.0	0.0	0.0	0.0	0.0	
Cycle Q Clear(g_c), s	3.4	4.0	0.0	0.0	0.0	0.0	
Prop In Lane	1.00	1.00		0.27	1.00		
Lane Grp Cap(c), veh/h	191	170	1042	1046	701	2915	
V/C Ratio(X)	0.30	0.35	0.61	0.61	0.16	0.28	
Avail Cap(c_a), veh/h	358	319	1042	1046	701	2915	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	0.78	0.78	0.52	0.52	
Uniform Delay (d), s/veh	45.0	45.2	0.0	0.0	2.0	0.0	
Incr Delay (d2), s/veh	0.9	1.3	2.1	2.1	0.1	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.5	1.6	0.6	0.6	0.3	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	45.9	46.5	2.1	2.1	2.1	0.1	
LnGrp LOS	D	D	A	A	A	A	
Approach Vol, veh/h	118		1278			915	
Approach Delay, s/veh	46.2		2.1			0.4	
Approach LOS	D		A			A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.8	69.0				95.8	14.2
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	11.5	64.5				80.5	20.5
Max Q Clear Time (g_c+I1), s	12.0	2.0				2.0	6.0
Green Ext Time (p_c), s	0.2	12.9				7.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	3.7
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	6	17	107	0	68	15	1122	185	91	781	19
Future Volume (veh/h)	15	6	17	107	0	68	15	1122	185	91	781	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	15	6	18	110	0	70	15	1157	191	94	805	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	184	44	131	189	0	173	319	1368	225	509	2217	55
Arrive On Green	0.11	0.11	0.11	0.11	0.00	0.11	0.06	0.47	0.47	0.16	0.44	0.44
Sat Flow, veh/h	1714	396	1189	1714	0	1525	1714	2940	483	1714	3410	85
Grp Volume(v), veh/h	15	0	24	110	0	70	15	671	677	94	404	421
Grp Sat Flow(s),veh/h/ln	1714	0	1586	1714	0	1525	1714	1710	1713	1714	1710	1785
Q Serve(g_s), s	0.9	0.0	1.5	6.7	0.0	4.7	0.5	38.0	38.4	0.0	17.4	17.4
Cycle Q Clear(g_c), s	0.9	0.0	1.5	6.7	0.0	4.7	0.5	38.0	38.4	0.0	17.4	17.4
Prop In Lane	1.00		0.75	1.00		1.00	1.00		0.28	1.00		0.05
Lane Grp Cap(c), veh/h	184	0	175	189	0	173	319	796	797	509	1112	1161
V/C Ratio(X)	0.08	0.00	0.14	0.58	0.00	0.40	0.05	0.84	0.85	0.18	0.36	0.36
Avail Cap(c_a), veh/h	268	0	303	268	0	291	419	796	797	509	1112	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.36	0.36	0.36	0.97	0.97	0.97
Uniform Delay (d), s/veh	44.2	0.0	44.2	46.5	0.0	45.3	17.6	25.9	26.0	33.6	15.8	15.8
Incr Delay (d2), s/veh	0.2	0.0	0.4	2.8	0.0	1.5	0.0	4.1	4.3	0.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	3.0	0.0	1.8	0.2	15.7	16.0	2.1	7.6	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	0.0	44.5	49.3	0.0	46.8	17.6	30.0	30.3	33.8	16.7	16.6
LnGrp LOS	D	A	D	D	A	D	B	C	C	C	B	B
Approach Vol, veh/h		39			180			1363			919	
Approach Delay, s/veh		44.5			48.3			30.0			18.4	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.5	53.2	14.2	14.1	8.2	73.5	13.8	14.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	48.7	14.7	18.5	10.1	48.7	14.7	18.5
Max Q Clear Time (g_c+I1), s	12.0	40.4	8.7	3.5	2.5	19.4	2.9	6.7
Green Ext Time (p_c), s	0.1	5.4	0.1	0.0	0.0	5.8	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	1023	238	174	628	182	235	866	185	210	566	109
Future Volume (veh/h)	87	1023	238	174	628	182	235	866	185	210	566	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	90	1055	245	179	647	188	242	893	191	216	584	112
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	239	1115	497	513	1165	520	519	902	402	518	1093	206
Arrive On Green	0.14	0.33	0.33	0.15	0.34	0.34	0.16	0.26	0.26	0.16	0.26	0.26
Sat Flow, veh/h	1714	3420	1525	3326	3420	1525	3326	3420	1525	3326	4152	783
Grp Volume(v), veh/h	90	1055	245	179	647	188	242	893	191	216	459	237
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1525	1663	1710	1525	1663	1638	1659
Q Serve(g_s), s	3.8	24.0	10.3	3.8	12.3	7.4	5.3	20.8	8.4	4.7	9.6	9.8
Cycle Q Clear(g_c), s	3.8	24.0	10.3	3.8	12.3	7.4	5.3	20.8	8.4	4.7	9.6	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	239	1115	497	513	1165	520	519	902	402	518	862	437
V/C Ratio(X)	0.38	0.95	0.49	0.35	0.56	0.36	0.47	0.99	0.47	0.42	0.53	0.54
Avail Cap(c_a), veh/h	269	1115	497	521	1165	520	521	902	402	521	862	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	26.2	21.6	30.1	21.4	19.8	30.6	29.3	24.7	30.4	25.2	25.3
Incr Delay (d2), s/veh	1.0	15.8	0.8	0.4	0.6	0.4	0.7	27.7	4.0	0.5	2.3	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	11.6	3.6	1.5	4.8	2.6	2.1	11.6	3.4	1.9	3.9	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	42.0	22.3	30.5	22.0	20.2	31.3	56.9	28.7	30.9	27.5	30.1
LnGrp LOS	C	D	C	C	C	C	C	E	C	C	C	C
Approach Vol, veh/h		1390			1014			1326			912	
Approach Delay, s/veh		37.9			23.2			48.2			29.0	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	28.0	14.5	23.0	13.1	29.2	14.4	23.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	23.5	10.0	18.5	10.0	23.5	10.0	18.5
Max Q Clear Time (g_c+I1), s	5.8	26.0	7.3	11.8	5.8	14.3	6.7	22.8
Green Ext Time (p_c), s	0.2	0.0	0.2	2.5	0.1	3.4	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1062	253	325	666	13	211	41	553	20	13	10
Future Volume (veh/h)	30	1062	253	325	666	13	211	41	553	20	13	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	32	1118	266	342	701	14	162	0	675	21	14	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	462	1284	573	490	867	17	374	0	1115	319	174	137
Arrive On Green	0.27	0.38	0.38	0.29	0.51	0.51	0.22	0.00	0.22	0.19	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	3326	3429	68	1714	0	3051	1714	934	734
Grp Volume(v), veh/h	32	1118	266	342	349	366	162	0	675	21	0	25
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1663	1710	1788	1714	0	1525	1714	0	1668
Q Serve(g_s), s	1.5	33.4	14.5	10.0	18.8	18.8	9.0	0.0	3.6	1.1	0.0	1.4
Cycle Q Clear(g_c), s	1.5	33.4	14.5	10.0	18.8	18.8	9.0	0.0	3.6	1.1	0.0	1.4
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	462	1284	573	490	433	452	374	0	1115	319	0	311
V/C Ratio(X)	0.07	0.87	0.46	0.70	0.81	0.81	0.43	0.00	0.61	0.07	0.00	0.08
Avail Cap(c_a), veh/h	462	1284	573	490	700	731	374	0	1115	319	0	311
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	0.89	0.00	0.89	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	31.9	26.0	36.6	24.9	24.9	37.1	0.0	28.4	36.9	0.0	37.0
Incr Delay (d2), s/veh	0.0	4.5	1.4	4.3	3.6	3.5	3.2	0.0	2.2	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	14.2	5.4	3.9	5.9	6.2	4.1	0.0	7.5	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	36.3	27.4	41.0	28.6	28.4	40.4	0.0	30.6	37.3	0.0	37.5
LnGrp LOS	C	D	C	D	C	C	D	A	C	D	A	D
Approach Vol, veh/h		1416			1057			837			46	
Approach Delay, s/veh		34.5			32.5			32.5			37.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.2	43.3		22.5	31.7	29.8		26.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.7	38.8		18.0	10.0	42.5		21.5
Max Q Clear Time (g_c+I1), s	12.0	35.4		3.4	3.5	20.8		11.0
Green Ext Time (p_c), s	0.2	2.5		0.1	0.0	4.5		2.7

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

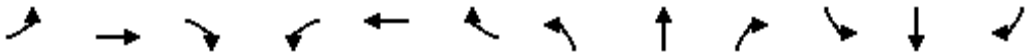
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1635	997	13	0	10
Future Vol, veh/h	0	1635	997	13	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1721	1049	14	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	532
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	*681
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*681
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	681
HCM Lane V/C Ratio	-	-	-	0.015
HCM Control Delay (s)	-	-	-	10.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	1067	104	129	672	175	134	727	176	182	534	191
Future Volume (veh/h)	350	1067	104	129	672	175	134	727	176	182	534	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	354	1078	105	130	679	177	135	734	178	184	539	193
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	377	1281	571	196	920	410	196	793	192	253	799	285
Arrive On Green	0.44	0.75	0.75	0.11	0.27	0.27	0.11	0.29	0.29	0.05	0.11	0.11
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	2729	662	1714	2470	881
Grp Volume(v), veh/h	354	1078	105	130	679	177	135	460	452	184	373	359
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1710	1681	1714	1710	1641
Q Serve(g_s), s	21.7	23.5	2.2	8.0	19.9	7.2	8.3	28.7	28.7	11.6	23.1	23.2
Cycle Q Clear(g_c), s	21.7	23.5	2.2	8.0	19.9	7.2	8.3	28.7	28.7	11.6	23.1	23.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.54
Lane Grp Cap(c), veh/h	377	1281	571	196	920	410	196	497	489	253	553	531
V/C Ratio(X)	0.94	0.84	0.18	0.66	0.74	0.43	0.69	0.92	0.93	0.73	0.67	0.68
Avail Cap(c_a), veh/h	377	1281	571	196	920	410	196	497	489	293	553	531
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	30.1	11.6	8.9	46.7	36.7	15.7	46.8	37.8	37.8	50.1	43.5	43.6
Incr Delay (d2), s/veh	31.1	6.8	0.7	8.0	5.3	3.3	9.6	25.4	25.8	7.1	6.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	5.2	0.8	3.8	8.9	2.9	4.1	15.3	15.1	5.9	11.5	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	18.4	9.6	54.7	41.9	18.9	56.4	63.3	63.6	57.2	49.6	50.0
LnGrp LOS	E	B	A	D	D	B	E	E	E	E	D	D
Approach Vol, veh/h		1537			986			1047			916	
Approach Delay, s/veh		27.6			39.5			62.6			51.3	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	43.2	14.6	37.6	26.2	31.6	18.2	34.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	38.7	10.1	33.1	21.7	27.1	16.3	26.9
Max Q Clear Time (g_c+I1), s	10.0	25.5	10.3	25.2	23.7	21.9	13.6	30.7
Green Ext Time (p_c), s	0.0	6.6	0.0	2.9	0.0	2.3	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	86	64	133	70	39	67	713	140	63	576	37
Future Volume (veh/h)	28	86	64	133	70	39	67	713	140	63	576	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	31	95	70	146	77	43	74	784	154	69	633	41
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	331	242	178	290	273	152	426	1235	243	426	1413	91
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	0.14	0.14	0.25	0.43	0.43
Sat Flow, veh/h	1292	963	709	1240	1085	606	1714	2850	560	1714	3261	211
Grp Volume(v), veh/h	31	0	165	146	0	120	74	470	468	69	332	342
Grp Sat Flow(s),veh/h/ln	1292	0	1672	1240	0	1691	1714	1710	1699	1714	1710	1762
Q Serve(g_s), s	1.8	0.0	7.4	10.0	0.0	5.1	3.6	23.3	23.3	2.8	12.3	12.3
Cycle Q Clear(g_c), s	6.9	0.0	7.4	17.4	0.0	5.1	3.6	23.3	23.3	2.8	12.3	12.3
Prop In Lane	1.00		0.42	1.00		0.36	1.00		0.33	1.00		0.12
Lane Grp Cap(c), veh/h	331	0	420	290	0	425	426	741	736	426	741	764
V/C Ratio(X)	0.09	0.00	0.39	0.50	0.00	0.28	0.17	0.63	0.63	0.16	0.45	0.45
Avail Cap(c_a), veh/h	451	0	576	405	0	582	426	741	736	426	741	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.63	0.63	0.63	0.81	0.81	0.81
Uniform Delay (d), s/veh	29.9	0.0	28.0	35.2	0.0	27.2	32.7	31.9	31.9	26.5	17.9	17.9
Incr Delay (d2), s/veh	0.1	0.0	0.6	1.4	0.0	0.4	0.1	2.6	2.6	0.1	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	3.0	3.1	0.0	2.1	1.5	11.1	11.1	1.2	5.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	28.6	36.5	0.0	27.5	32.8	34.5	34.5	26.6	19.5	19.5
LnGrp LOS	C	A	C	D	A	C	C	C	C	C	B	B
Approach Vol, veh/h		196			266			1012			743	
Approach Delay, s/veh		28.8			32.5			34.4			20.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.4	41.0		24.6	24.4	41.0		24.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	11.5	36.5		28.5	11.5	36.5		28.5
Max Q Clear Time (g_c+I1), s	14.8	25.3		9.4	5.6	14.3		19.4
Green Ext Time (p_c), s	0.1	4.6		0.9	0.1	4.3		0.8

Intersection Summary		
HCM 6th Ctrl Delay	28.9	
HCM 6th LOS	C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	350	76	188	204	61	82	842	204	68	682	39
Future Volume (veh/h)	70	350	76	188	204	61	82	842	204	68	682	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	84	422	92	227	246	73	99	1014	246	82	822	47
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	490	504	427	371	527	447	298	1259	562	214	1049	60
Arrive On Green	0.13	0.28	0.28	0.14	0.29	0.29	0.17	0.37	0.37	0.17	0.42	0.42
Sat Flow, veh/h	1714	1800	1525	1714	1800	1525	1714	3420	1525	1714	3288	188
Grp Volume(v), veh/h	84	422	92	227	246	73	99	1014	246	82	427	442
Grp Sat Flow(s),veh/h/ln	1714	1800	1525	1714	1800	1525	1714	1710	1525	1714	1710	1766
Q Serve(g_s), s	2.8	19.9	2.6	7.8	10.1	3.2	4.6	24.0	10.9	3.8	19.4	19.4
Cycle Q Clear(g_c), s	2.8	19.9	2.6	7.8	10.1	3.2	4.6	24.0	10.9	3.8	19.4	19.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	490	504	427	371	527	447	298	1259	562	214	545	563
V/C Ratio(X)	0.17	0.84	0.22	0.61	0.47	0.16	0.33	0.81	0.44	0.38	0.78	0.78
Avail Cap(c_a), veh/h	513	544	461	392	566	480	298	1259	562	238	545	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	17.2	30.5	9.5	20.0	26.1	23.6	32.6	25.5	21.4	34.5	23.2	23.2
Incr Delay (d2), s/veh	0.2	10.5	0.3	2.6	0.6	0.2	0.6	5.6	2.5	1.0	10.0	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	9.8	1.5	3.2	4.3	1.2	1.9	10.3	4.2	1.6	8.3	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	41.0	9.8	22.6	26.7	23.8	33.2	31.1	23.9	35.5	33.2	32.9
LnGrp LOS	B	D	A	C	C	C	C	C	C	D	C	C
Approach Vol, veh/h		598			546			1359			951	
Approach Delay, s/veh		32.9			24.6			29.9			33.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	35.1	14.5	27.2	17.7	30.7	13.3	28.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	26.2	11.1	24.7	10.0	26.2	10.0	25.8
Max Q Clear Time (g_c+I1), s	5.8	26.0	9.8	21.9	6.6	21.4	4.8	12.1
Green Ext Time (p_c), s	0.1	0.2	0.1	0.8	0.1	2.3	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	892	403	184	416	63	293	791	144	72	1068	176
Future Volume (veh/h)	209	892	403	184	416	63	293	791	144	72	1068	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	225	959	433	198	447	68	315	851	155	77	1148	189
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	470	950	424	317	946	422	324	1487	269	239	1302	214
Arrive On Green	0.14	0.28	0.28	0.14	0.28	0.28	0.06	0.12	0.12	0.14	0.31	0.31
Sat Flow, veh/h	1714	3420	1525	1714	3420	1525	1714	4182	757	1714	4251	700
Grp Volume(v), veh/h	225	959	433	198	447	68	315	666	340	77	885	452
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1525	1714	1638	1664	1714	1638	1674
Q Serve(g_s), s	7.9	25.0	25.0	6.9	9.8	2.0	16.5	17.3	17.4	3.6	23.1	23.1
Cycle Q Clear(g_c), s	7.9	25.0	25.0	6.9	9.8	2.0	16.5	17.3	17.4	3.6	23.1	23.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.42
Lane Grp Cap(c), veh/h	470	950	424	317	946	422	324	1165	592	239	1004	513
V/C Ratio(X)	0.48	1.01	1.02	0.63	0.47	0.16	0.97	0.57	0.58	0.32	0.88	0.88
Avail Cap(c_a), veh/h	511	950	424	318	946	422	324	1165	592	239	1004	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.66	0.66	0.66	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	32.5	32.5	20.9	27.1	11.0	42.0	33.2	33.3	34.9	29.7	29.7
Incr Delay (d2), s/veh	0.8	31.5	49.4	3.8	0.4	0.2	33.6	1.4	2.7	0.8	11.1	19.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	14.1	14.7	3.0	4.0	1.1	10.6	7.7	8.1	1.6	10.3	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	64.0	81.9	24.7	27.5	11.2	75.5	34.6	36.0	35.6	40.7	48.9
LnGrp LOS	B	F	F	C	C	B	E	C	D	D	D	D
Approach Vol, veh/h		1617			713			1321			1414	
Approach Delay, s/veh		62.6			25.1			44.7			43.1	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	34.0	14.4	27.0	19.0	29.6	14.5	26.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	29.5	10.0	22.5	14.5	25.0	12.2	20.3
Max Q Clear Time (g_c+I1), s	15.6	19.4	8.9	27.0	18.5	25.1	9.9	11.8
Green Ext Time (p_c), s	0.0	4.7	0.1	0.0	0.0	0.0	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	418	340	338	298	105	402	1121	243	216	1418	107
Future Volume (veh/h)	132	418	340	338	298	105	402	1121	243	216	1418	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	140	445	362	360	317	112	428	1193	259	230	1509	114
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	531	660	578	511	465	161	618	1722	374	461	1766	133
Arrive On Green	0.16	0.19	0.19	0.15	0.19	0.19	0.06	0.14	0.14	0.18	0.50	0.50
Sat Flow, veh/h	3326	3420	1525	3326	2491	864	3326	4041	877	3326	4661	352
Grp Volume(v), veh/h	140	445	362	360	216	213	428	967	485	230	1061	562
Grp Sat Flow(s),veh/h/ln	1663	1710	1525	1663	1710	1645	1663	1638	1642	1663	1638	1737
Q Serve(g_s), s	3.3	10.9	0.7	9.2	10.6	10.9	11.4	25.3	25.3	5.6	25.4	25.4
Cycle Q Clear(g_c), s	3.3	10.9	0.7	9.2	10.6	10.9	11.4	25.3	25.3	5.6	25.4	25.4
Prop In Lane	1.00		1.00	1.00		0.53	1.00		0.53	1.00		0.20
Lane Grp Cap(c), veh/h	531	660	578	511	320	307	618	1396	700	461	1241	658
V/C Ratio(X)	0.26	0.67	0.63	0.71	0.68	0.69	0.69	0.69	0.69	0.50	0.85	0.85
Avail Cap(c_a), veh/h	531	779	631	525	422	406	618	1396	700	462	1241	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81	0.50	0.50	0.50
Uniform Delay (d), s/veh	33.2	33.7	22.8	36.2	34.0	34.2	39.7	33.1	33.1	33.9	20.2	20.2
Incr Delay (d2), s/veh	0.3	1.8	1.7	4.2	2.7	3.3	2.7	2.3	4.5	0.4	4.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.6	6.3	4.0	4.5	4.6	5.3	11.5	11.9	2.2	8.7	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	35.5	24.5	40.3	36.7	37.5	42.4	35.4	37.6	34.3	24.2	27.4
LnGrp LOS	C	D	C	D	D	D	D	D	D	C	C	C
Approach Vol, veh/h		947			789			1880			1853	
Approach Delay, s/veh		31.0			38.6			37.6			26.4	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	40.4	15.8	19.4	18.7	36.1	16.4	18.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.3	11.7	18.0	10.7	31.6	10.0	19.7
Max Q Clear Time (g_c+I1), s	7.6	27.3	11.2	12.9	13.4	27.4	5.3	12.9
Green Ext Time (p_c), s	0.2	3.7	0.1	2.0	0.0	3.3	0.2	1.4

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	543	2	610	348	1516	0	0	1664	635
Future Volume (veh/h)	0	0	0	543	2	610	348	1516	0	0	1664	635
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1800	1800	1800	1800	1800	0	0	1800	1800
Adj Flow Rate, veh/h				775	0	412	362	1579	0	0	1733	661
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1140	0	507	499	3062	0	0	2791	688
Arrive On Green				0.33	0.00	0.33	0.30	1.00	0.00	0.00	0.90	0.90
Sat Flow, veh/h				3429	0	1525	3326	5076	0	0	6444	1525
Grp Volume(v), veh/h				775	0	412	362	1579	0	0	1733	661
Grp Sat Flow(s),veh/h/ln				1714	0	1525	1663	1638	0	0	1548	1525
Q Serve(g_s), s				17.5	0.0	22.2	8.8	0.0	0.0	0.0	5.6	28.8
Cycle Q Clear(g_c), s				17.5	0.0	22.2	8.8	0.0	0.0	0.0	5.6	28.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1140	0	507	499	3062	0	0	2791	688
V/C Ratio(X)				0.68	0.00	0.81	0.72	0.52	0.00	0.00	0.62	0.96
Avail Cap(c_a), veh/h				1333	0	593	554	3062	0	0	2791	688
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.81	0.81	0.00	0.00	0.55	0.55
Uniform Delay (d), s/veh				25.9	0.0	27.5	29.8	0.0	0.0	0.0	2.7	3.8
Incr Delay (d2), s/veh				1.1	0.0	7.4	3.4	0.5	0.0	0.0	0.6	17.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.1	0.0	8.8	3.2	0.1	0.0	0.0	1.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				27.1	0.0	34.9	33.2	0.5	0.0	0.0	3.3	21.6
LnGrp LOS				C	A	C	C	A	A	A	A	C
Approach Vol, veh/h					1187			1941			2394	
Approach Delay, s/veh					29.8			6.6			8.3	
Approach LOS					C			A			A	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	58.1		15.5	42.6		31.9
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	48.5		12.5	31.5		32.5
Max Q Clear Time (g_c+I1), s	2.0		10.8	30.8		24.2
Green Ext Time (p_c), s	17.9		0.3	0.7		3.2

Intersection Summary		
HCM 6th Ctrl Delay	12.3	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	538	5	381	0	0	0	0	1298	592	670	1567	0
Future Volume (veh/h)	538	5	381	0	0	0	0	1298	592	670	1567	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800				0	1800	1800	1800	1800	0
Adj Flow Rate, veh/h	559	0	393				0	1338	610	691	1615	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	990	0	441				0	2394	590	857	3276	0
Arrive On Green	0.29	0.00	0.29				0.00	0.39	0.39	0.52	1.00	0.00
Sat Flow, veh/h	3429	0	1525				0	6444	1525	3326	5076	0
Grp Volume(v), veh/h	559	0	393				0	1338	610	691	1615	0
Grp Sat Flow(s),veh/h/ln	1714	0	1525				0	1548	1525	1663	1638	0
Q Serve(g_s), s	12.5	0.0	22.2				0.0	15.2	34.8	15.5	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	22.2				0.0	15.2	34.8	15.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	990	0	441				0	2394	590	857	3276	0
V/C Ratio(X)	0.56	0.00	0.89				0.00	0.56	1.03	0.81	0.49	0.00
Avail Cap(c_a), veh/h	990	0	441				0	2394	590	857	3276	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.67	0.67	0.00
Uniform Delay (d), s/veh	27.2	0.0	30.7				0.0	21.6	27.6	19.9	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	19.9				0.0	0.9	46.2	3.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	10.3				0.0	5.5	19.5	4.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	0.0	50.5				0.0	22.5	73.8	23.8	0.4	0.0
LnGrp LOS	C	A	D				A	C	F	C	A	A
Approach Vol, veh/h		952						1948			2306	
Approach Delay, s/veh		37.3						38.6			7.4	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	35.2	36.8	28.0	62.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.7	32.3	23.5	57.5
Max Q Clear Time (g_c+I1), s	17.5	36.8	24.2	2.0
Green Ext Time (p_c), s	0.9	0.0	0.0	19.6

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

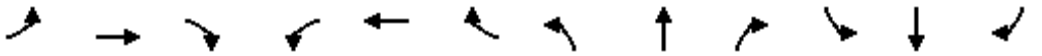
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1635	994	13	0	10
Future Vol, veh/h	0	1635	994	13	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1721	1046	14	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	530
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	499
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	499
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	499
HCM Lane V/C Ratio	-	-	-	0.021
HCM Control Delay (s)	-	-	-	12.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	395	0	33	6	2	1	30	796	7	0	672	217
Future Volume (veh/h)	395	0	33	6	2	1	30	796	7	0	672	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	422	0	23	6	2	1	31	829	7	0	700	226
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	601	0	267	57	19	10	150	2460	21	2	2045	912
Arrive On Green	0.18	0.00	0.18	0.05	0.05	0.05	0.09	0.71	0.71	0.00	0.60	0.60
Sat Flow, veh/h	3429	0	1525	1139	380	190	1714	3475	29	1714	3420	1525
Grp Volume(v), veh/h	422	0	23	9	0	0	31	408	428	0	700	226
Grp Sat Flow(s),veh/h/ln	1714	0	1525	1709	0	0	1714	1710	1795	1714	1710	1525
Q Serve(g_s), s	10.4	0.0	1.1	0.5	0.0	0.0	1.5	8.2	8.2	0.0	9.3	6.3
Cycle Q Clear(g_c), s	10.4	0.0	1.1	0.5	0.0	0.0	1.5	8.2	8.2	0.0	9.3	6.3
Prop In Lane	1.00		1.00	0.67		0.11	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	601	0	267	86	0	0	150	1211	1271	2	2045	912
V/C Ratio(X)	0.70	0.00	0.09	0.10	0.00	0.00	0.21	0.34	0.34	0.00	0.34	0.25
Avail Cap(c_a), veh/h	785	0	349	389	0	0	238	1211	1271	238	2045	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.90	0.90
Uniform Delay (d), s/veh	34.9	0.0	31.1	40.8	0.0	0.0	38.1	5.0	5.0	0.0	9.1	8.5
Incr Delay (d2), s/veh	1.9	0.0	0.1	0.5	0.0	0.0	0.7	0.8	0.7	0.0	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.4	0.2	0.0	0.0	0.7	2.6	2.7	0.0	3.3	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	0.0	31.2	41.3	0.0	0.0	38.8	5.8	5.8	0.0	9.6	9.1
LnGrp LOS	D	A	C	D	A	A	D	A	A	A	A	A
Approach Vol, veh/h		445			9			867			926	
Approach Delay, s/veh		36.5			41.3			7.0			9.4	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	65.7		17.8	9.9	55.8		6.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.0	25.9		18.1	10.0	25.9		18.0				
Max Q Clear Time (g_c+I1), s	0.0	10.2		12.4	3.5	11.3		2.5				
Green Ext Time (p_c), s	0.0	4.8		0.9	0.0	4.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		14.0	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

09/26/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	549	230	1024	791	305	179	113	505	246	195	115
Future Volume (veh/h)	54	549	230	1024	791	305	179	113	505	246	195	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	57	578	242	1078	833	321	188	119	532	259	205	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	280	881	393	1375	1695	756	446	391	863	447	492	278
Arrive On Green	0.10	0.24	0.24	0.55	0.78	0.78	0.12	0.21	0.21	0.14	0.22	0.22
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	1810	1900	1610	1810	2223	1256
Grp Volume(v), veh/h	57	578	242	1078	833	321	188	119	532	259	165	161
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1810	1900	1610	1810	1805	1674
Q Serve(g_s), s	2.5	14.4	9.6	15.7	8.1	6.5	7.8	5.3	6.7	10.7	7.8	8.3
Cycle Q Clear(g_c), s	2.5	14.4	9.6	15.7	8.1	6.5	7.8	5.3	6.7	10.7	7.8	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	280	881	393	1375	1695	756	446	391	863	447	400	371
V/C Ratio(X)	0.20	0.66	0.62	0.78	0.49	0.42	0.42	0.30	0.62	0.58	0.41	0.43
Avail Cap(c_a), veh/h	317	881	393	1375	1695	756	450	391	863	447	400	371
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	34.0	17.3	16.8	6.6	6.4	25.3	33.6	5.6	24.1	33.3	33.5
Incr Delay (d2), s/veh	0.4	3.8	7.1	0.3	0.1	0.2	0.6	1.9	3.1	1.9	3.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.7	4.2	5.9	2.2	1.7	3.4	2.6	3.7	4.7	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	37.8	24.3	17.1	6.7	6.6	25.9	35.5	8.8	26.0	36.5	37.2
LnGrp LOS	C	D	C	B	A	A	C	D	A	C	D	D
Approach Vol, veh/h		877			2232			839			585	
Approach Delay, s/veh		33.6			11.7			16.4			32.0	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	26.4	14.4	24.2	12.4	49.0	16.0	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	21.9	10.2	19.4	10.0	42.4	11.5	18.1
Max Q Clear Time (g_c+I1), s	17.7	16.4	9.8	10.3	4.5	10.1	12.7	8.7
Green Ext Time (p_c), s	3.8	2.3	0.0	1.3	0.0	8.3	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	549	613	184	1036	916	300	0	586	129	0	904
Future Volume (veh/h)	219	549	613	184	1036	916	300	0	586	129	0	904
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	0	1900	1900	0	1900
Adj Flow Rate, veh/h	231	578	645	194	1091	964	316	0	617	136	0	952
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	316	1227	547	796	2185	975	290	0	0	290	0	0
Arrive On Green	0.06	0.11	0.11	0.44	0.61	0.61	0.16	0.00	0.03	0.16	0.00	0.03
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	316		1810	136	
Grp Volume(v), veh/h	231	578	645	194	1091	964	316	121.5		136	39.3	
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	F		1810	D	
Q Serve(g_s), s	12.6	15.0	34.0	6.7	17.1	58.9	16.0			6.8		
Cycle Q Clear(g_c), s	12.6	15.0	34.0	6.7	17.1	58.9	16.0			6.8		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	316	1227	547	796	2185	975	290			290		
V/C Ratio(X)	0.73	0.47	1.18	0.24	0.50	0.99	1.09			0.47		
Avail Cap(c_a), veh/h	470	1227	547	796	2185	975	290			290		
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.77	0.77	0.77	0.36	0.36	0.36	1.00			1.00		
Uniform Delay (d), s/veh	44.8	36.0	44.4	17.6	11.2	19.4	42.0			38.1		
Incr Delay (d2), s/veh	2.5	1.0	94.4	0.1	0.3	14.9	79.5			1.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	6.3	7.4	29.0	2.8	6.4	23.4	13.4			3.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	37.0	138.8	17.6	11.5	34.3	121.5			39.3		
LnGrp LOS	D	D	F	B	B	C	F			D		
Approach Vol, veh/h		1454			2249							
Approach Delay, s/veh		83.8			21.8							
Approach LOS		F			C							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	46.0	36.0	18.0		19.5	62.5	18.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	19.3	31.5	13.5		23.5	27.0	10.0
Max Q Clear Time (g_c+I1), s	19.7	36.0	18.0		14.6	60.9	8.8
Green Ext Time (p_c), s	0.4	0.0	0.0		0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.6
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	459	498	321	1001	30	480	178	142	44	448	313
Future Volume (veh/h)	86	459	498	321	1001	30	480	178	142	44	448	313
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	483	524	338	1054	32	505	187	149	46	472	329
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	884	394	344	1109	34	507	706	532	226	740	330
Arrive On Green	0.13	0.25	0.25	0.19	0.31	0.31	0.28	0.36	0.36	0.13	0.20	0.20
Sat Flow, veh/h	1810	3610	1610	1810	3577	109	1810	1962	1477	1810	3610	1610
Grp Volume(v), veh/h	91	483	524	338	532	554	505	171	165	46	472	329
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1880	1810	1805	1634	1810	1805	1610
Q Serve(g_s), s	4.6	11.7	24.5	18.6	28.8	28.8	27.9	6.7	7.2	2.3	12.0	20.4
Cycle Q Clear(g_c), s	4.6	11.7	24.5	18.6	28.8	28.8	27.9	6.7	7.2	2.3	12.0	20.4
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.90	1.00		1.00
Lane Grp Cap(c), veh/h	226	884	394	344	560	583	507	650	588	226	740	330
V/C Ratio(X)	0.40	0.55	1.33	0.98	0.95	0.95	1.00	0.26	0.28	0.20	0.64	1.00
Avail Cap(c_a), veh/h	226	884	394	344	560	583	507	650	588	226	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	32.9	37.8	40.3	33.7	33.8	36.0	22.6	22.8	39.3	36.4	39.7
Incr Delay (d2), s/veh	0.8	1.6	159.2	43.8	27.6	26.9	38.5	1.0	1.2	0.4	4.2	48.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.2	26.9	12.3	16.6	17.1	17.4	3.0	2.9	1.0	5.6	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	34.5	197.0	84.2	61.3	60.6	74.4	23.6	23.9	39.7	40.5	88.4
LnGrp LOS	D	C	F	F	E	E	E	C	C	D	D	F
Approach Vol, veh/h		1098			1424			841			847	
Approach Delay, s/veh		112.6			66.5			54.2			59.1	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	26.5	30.0	22.5	14.5	33.0	14.5	38.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	22.0	25.5	18.0	10.0	28.5	10.0	33.5
Max Q Clear Time (g_c+I1), s	20.8	26.5	29.9	22.4	6.6	30.8	4.3	9.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	0.0	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	74.6
HCM 6th LOS	E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	121	140	543	40	39	943
Future Volume (veh/h)	121	140	543	40	39	943
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	127	147	572	42	41	993
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	261	232	2354	173	742	2930
Arrive On Green	0.14	0.14	0.46	0.46	0.10	0.81
Sat Flow, veh/h	1810	1610	3505	250	1810	3705
Grp Volume(v), veh/h	127	147	302	312	41	993
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1855	1810	1805
Q Serve(g_s), s	5.8	7.7	9.1	9.2	0.4	6.4
Cycle Q Clear(g_c), s	5.8	7.7	9.1	9.2	0.4	6.4
Prop In Lane	1.00	1.00		0.13	1.00	
Lane Grp Cap(c), veh/h	261	232	1246	1281	742	2930
V/C Ratio(X)	0.49	0.63	0.24	0.24	0.06	0.34
Avail Cap(c_a), veh/h	563	501	1246	1281	865	2930
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.91	0.91	0.42	0.42
Uniform Delay (d), s/veh	35.5	36.3	9.9	10.0	2.4	2.2
Incr Delay (d2), s/veh	1.4	2.9	0.4	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.2	3.7	3.9	0.1	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.9	39.1	10.4	10.4	2.4	2.3
LnGrp LOS	D	D	B	B	A	A
Approach Vol, veh/h	274		614			1034
Approach Delay, s/veh	38.1		10.4			2.3
Approach LOS	D		B			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.9	64.1				75.0	15.0
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	12.5	38.5				55.5	25.5
Max Q Clear Time (g_c+I1), s	12.4	11.2				8.4	9.7
Green Ext Time (p_c), s	0.0	4.0				9.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1	38	150	109	106	43	751	63	66	949	194
Future Volume (veh/h)	15	1	38	150	109	106	43	751	63	66	949	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	16	1	40	158	115	112	45	791	66	69	999	204
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	5	219	247	158	154	598	1349	113	634	1198	244
Arrive On Green	0.10	0.14	0.14	0.14	0.18	0.18	0.16	0.27	0.27	0.47	0.80	0.80
Sat Flow, veh/h	1810	39	1577	1810	884	861	1810	3373	281	1810	2987	609
Grp Volume(v), veh/h	16	0	41	158	0	227	45	423	434	69	603	600
Grp Sat Flow(s),veh/h/ln	1810	0	1616	1810	0	1745	1810	1805	1849	1810	1805	1790
Q Serve(g_s), s	0.7	0.0	2.0	7.4	0.0	11.1	0.0	18.3	18.3	0.0	17.9	18.1
Cycle Q Clear(g_c), s	0.7	0.0	2.0	7.4	0.0	11.1	0.0	18.3	18.3	0.0	17.9	18.1
Prop In Lane	1.00		0.98	1.00		0.49	1.00		0.15	1.00		0.34
Lane Grp Cap(c), veh/h	175	0	224	247	0	312	598	722	740	634	724	718
V/C Ratio(X)	0.09	0.00	0.18	0.64	0.00	0.73	0.08	0.59	0.59	0.11	0.83	0.84
Avail Cap(c_a), veh/h	253	0	370	257	0	403	598	722	740	634	724	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.79	0.79	0.79	0.94	0.94	0.94
Uniform Delay (d), s/veh	37.1	0.0	34.2	36.7	0.0	34.9	17.8	26.5	26.5	10.9	7.1	7.1
Incr Delay (d2), s/veh	0.2	0.0	0.4	4.9	0.0	4.7	0.0	2.7	2.7	0.1	10.2	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.8	3.6	0.0	5.0	0.6	8.8	9.0	0.6	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	0.0	34.6	41.7	0.0	39.5	17.8	29.2	29.2	11.0	17.3	17.6
LnGrp LOS	D	A	C	D	A	D	B	C	C	B	B	B
Approach Vol, veh/h		57			385			902			1272	
Approach Delay, s/veh		35.4			40.4			28.6			17.1	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	38.0	14.3	14.5	23.1	38.1	10.7	18.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	33.5	10.3	18.1	10.0	33.6	10.1	18.3
Max Q Clear Time (g_c+I1), s	12.0	20.3	9.4	4.0	2.0	20.1	2.7	13.1
Green Ext Time (p_c), s	0.1	4.6	0.0	0.1	0.0	6.8	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	592	208	161	824	188	217	481	134	133	546	58
Future Volume (veh/h)	77	592	208	161	824	188	217	481	134	133	546	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	81	623	219	169	867	198	228	506	141	140	575	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	245	1144	510	538	1208	539	545	1009	450	528	1310	137
Arrive On Green	0.14	0.32	0.32	0.15	0.33	0.33	0.16	0.28	0.28	0.15	0.27	0.27
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	3510	3610	1610	3510	4768	500
Grp Volume(v), veh/h	81	623	219	169	867	198	228	506	141	140	415	221
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1755	1805	1610	1755	1729	1810
Q Serve(g_s), s	3.2	11.4	8.6	3.4	16.8	7.5	4.7	9.4	5.5	2.8	7.9	8.1
Cycle Q Clear(g_c), s	3.2	11.4	8.6	3.4	16.8	7.5	4.7	9.4	5.5	2.8	7.9	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	245	1144	510	538	1208	539	545	1009	450	528	950	497
V/C Ratio(X)	0.33	0.54	0.43	0.31	0.72	0.37	0.42	0.50	0.31	0.26	0.44	0.44
Avail Cap(c_a), veh/h	294	1532	683	570	1532	683	570	1009	450	570	950	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	22.6	21.6	30.2	23.3	20.2	30.6	24.2	22.8	30.1	23.9	24.0
Incr Delay (d2), s/veh	0.8	0.4	0.6	0.3	1.2	0.4	0.5	1.8	1.8	0.3	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.7	3.2	1.4	7.0	2.8	2.0	4.1	2.3	1.2	3.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	23.0	22.2	30.5	24.5	20.6	31.1	26.0	24.6	30.4	25.4	26.9
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		923			1234			875			776	
Approach Delay, s/veh		23.6			24.7			27.1			26.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	27.4	14.4	24.0	12.9	28.8	14.1	24.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	31.5	10.5	19.5	10.5	31.5	10.5	19.5
Max Q Clear Time (g_c+I1), s	15.4	13.4	6.7	10.1	5.2	18.8	4.8	11.4
Green Ext Time (p_c), s	0.2	4.8	0.3	2.8	0.1	5.5	0.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C



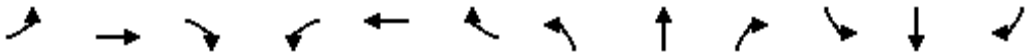
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	533	170	366	810	0	234	0	216	0	0	2
Future Volume (veh/h)	6	533	170	366	810	0	234	0	216	0	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	6	561	179	385	853	0	317	0	151	0	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	983	438	640	1484	0	828	0	662	412	0	367
Arrive On Green	0.04	0.27	0.27	0.24	0.55	0.00	0.23	0.00	0.23	0.00	0.00	0.23
Sat Flow, veh/h	1810	3610	1610	3510	3705	0	3619	0	1610	1810	0	1610
Grp Volume(v), veh/h	6	561	179	385	853	0	317	0	151	0	0	2
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	0	1810	0	1610	1810	0	1610
Q Serve(g_s), s	0.3	12.1	8.2	8.8	14.1	0.0	6.7	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.3	12.1	8.2	8.8	14.1	0.0	6.7	0.0	0.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	983	438	640	1484	0	828	0	662	412	0	367
V/C Ratio(X)	0.08	0.57	0.41	0.60	0.57	0.00	0.38	0.00	0.23	0.00	0.00	0.01
Avail Cap(c_a), veh/h	251	983	438	640	1484	0	828	0	662	412	0	367
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	0.00	0.98	0.00	0.98	0.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	28.2	26.8	31.2	15.2	0.0	29.3	0.0	17.2	0.0	0.0	26.9
Incr Delay (d2), s/veh	0.4	2.2	2.5	1.6	0.5	0.0	1.3	0.0	0.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.4	3.4	3.6	4.9	0.0	3.0	0.0	2.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	30.4	29.3	32.8	15.7	0.0	30.6	0.0	18.0	0.0	0.0	26.9
LnGrp LOS	D	C	C	C	B	A	C	A	B	A	A	C
Approach Vol, veh/h		746			1238			468			2	
Approach Delay, s/veh		30.2			21.0			26.6			26.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	26.5		22.5	5.9	39.0		22.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	3.9	22.0		18.0	10.0	25.9		18.1
Max Q Clear Time (g_c+I1), s	0.8	14.1		2.1	2.3	16.1		8.7
Green Ext Time (p_c), s	0.5	2.7		0.0	0.0	4.1		1.2

Intersection Summary	
HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	465	43	133	728	174	100	414	110	193	627	361
Future Volume (veh/h)	192	465	43	133	728	174	100	414	110	193	627	361
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	202	489	45	140	766	183	105	436	116	203	660	380
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	1123	501	306	1212	541	237	761	201	293	662	381
Arrive On Green	0.05	0.10	0.10	0.17	0.34	0.34	0.13	0.27	0.27	0.05	0.10	0.10
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	2825	745	1810	2207	1270
Grp Volume(v), veh/h	202	489	45	140	766	183	105	277	275	203	540	500
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1766	1810	1805	1671
Q Serve(g_s), s	9.9	11.5	2.3	6.3	16.1	7.7	4.8	11.9	12.1	9.9	26.9	26.9
Cycle Q Clear(g_c), s	9.9	11.5	2.3	6.3	16.1	7.7	4.8	11.9	12.1	9.9	26.9	26.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.76
Lane Grp Cap(c), veh/h	261	1123	501	306	1212	541	237	486	475	293	542	501
V/C Ratio(X)	0.77	0.44	0.09	0.46	0.63	0.34	0.44	0.57	0.58	0.69	1.00	1.00
Avail Cap(c_a), veh/h	261	1123	501	306	1212	541	253	486	475	370	542	501
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	41.4	33.0	28.8	33.7	25.2	22.4	36.1	28.4	28.5	40.4	40.5	40.5
Incr Delay (d2), s/veh	13.3	1.2	0.4	1.1	2.5	1.7	1.3	4.8	5.1	3.2	33.9	35.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.7	0.9	2.8	7.1	3.1	2.2	5.7	5.7	5.0	18.0	16.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	34.2	29.2	34.7	27.7	24.1	37.4	33.2	33.5	43.6	74.4	75.9
LnGrp LOS	D	C	C	C	C	C	D	C	C	D	E	E
Approach Vol, veh/h		736			1089			657			1243	
Approach Delay, s/veh		39.5			28.0			34.0			69.9	
Approach LOS		D			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	30.0	13.8	29.0	15.0	32.2	16.6	26.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.9	25.5	10.1	24.5	10.5	26.9	15.9	18.7
Max Q Clear Time (g_c+I1), s	8.3	13.5	6.8	28.9	11.9	18.1	11.9	14.1
Green Ext Time (p_c), s	0.1	2.7	0.1	0.0	0.0	3.9	0.2	1.4

Intersection Summary	
HCM 6th Ctrl Delay	45.3
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	51	66	123	89	36	55	414	93	73	437	55
Future Volume (veh/h)	25	51	66	123	89	36	55	414	93	73	437	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	26	54	69	129	94	38	58	436	98	77	460	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	275	162	207	278	276	111	204	1141	254	597	1956	245
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.04	0.13	0.13	0.66	1.00	1.00
Sat Flow, veh/h	1278	758	968	1288	1286	520	1810	2933	654	1810	3227	405
Grp Volume(v), veh/h	26	0	123	129	0	132	58	267	267	77	256	262
Grp Sat Flow(s),veh/h/ln	1278	0	1726	1288	0	1806	1810	1805	1782	1810	1805	1827
Q Serve(g_s), s	1.6	0.0	5.4	8.5	0.0	5.6	2.8	12.2	12.4	1.4	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	5.4	13.9	0.0	5.6	2.8	12.2	12.4	1.4	0.0	0.0
Prop In Lane	1.00		0.56	1.00		0.29	1.00		0.37	1.00		0.22
Lane Grp Cap(c), veh/h	275	0	370	278	0	387	204	702	693	597	1094	1108
V/C Ratio(X)	0.09	0.00	0.33	0.46	0.00	0.34	0.28	0.38	0.39	0.13	0.23	0.24
Avail Cap(c_a), veh/h	441	0	594	446	0	622	322	702	693	597	1094	1108
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.97	0.97	0.97	0.84	0.84	0.84
Uniform Delay (d), s/veh	33.0	0.0	29.9	35.8	0.0	30.0	39.8	29.3	29.4	10.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.5	1.2	0.0	0.5	0.7	1.5	1.6	0.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.3	2.7	0.0	2.4	1.3	6.1	6.2	0.6	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	0.0	30.4	37.0	0.0	30.5	40.5	30.8	30.9	10.6	0.4	0.4
LnGrp LOS	C	A	C	D	A	C	D	C	C	B	A	A
Approach Vol, veh/h		149			261			592			595	
Approach Delay, s/veh		30.9			33.7			31.8			1.7	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	37.0		21.3	12.2	56.6		21.3
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	32.5		28.5	13.5	34.5		28.5
Max Q Clear Time (g_c+I1), s	13.4	14.4		9.2	4.8	2.0		15.9
Green Ext Time (p_c), s	0.1	3.1		0.7	0.1	3.4		0.9

Intersection Summary		
HCM 6th Ctrl Delay		20.8
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	132	75	193	437	79	104	463	128	33	587	46
Future Volume (veh/h)	41	132	75	193	437	79	104	463	128	33	587	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	139	79	203	460	83	109	487	135	35	618	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	325	491	416	566	562	476	430	1523	679	168	939	73
Arrive On Green	0.10	0.26	0.26	0.14	0.30	0.30	0.24	0.42	0.42	0.19	0.55	0.55
Sat Flow, veh/h	1810	1900	1610	1810	1900	1610	1810	3610	1610	1810	3394	263
Grp Volume(v), veh/h	43	139	79	203	460	83	109	487	135	35	328	338
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	1900	1610	1810	1805	1610	1810	1805	1853
Q Serve(g_s), s	1.4	5.3	1.9	6.6	20.2	3.4	4.4	8.1	4.8	1.5	11.5	11.5
Cycle Q Clear(g_c), s	1.4	5.3	1.9	6.6	20.2	3.4	4.4	8.1	4.8	1.5	11.5	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	325	491	416	566	562	476	430	1523	679	168	499	513
V/C Ratio(X)	0.13	0.28	0.19	0.36	0.82	0.17	0.25	0.32	0.20	0.21	0.66	0.66
Avail Cap(c_a), veh/h	393	673	571	570	676	573	430	1523	679	251	499	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	20.6	26.7	7.7	17.5	29.5	23.5	27.8	17.4	16.4	33.9	17.1	17.1
Incr Delay (d2), s/veh	0.2	0.3	0.2	0.4	6.7	0.2	0.3	0.6	0.7	0.6	6.4	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	1.3	2.7	10.0	1.3	1.9	3.4	1.8	0.7	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	27.0	7.9	17.9	36.1	23.7	28.1	17.9	17.1	34.5	23.5	23.4
LnGrp LOS	C	C	A	B	D	C	C	B	B	C	C	C
Approach Vol, veh/h		261			746			731			701	
Approach Delay, s/veh		20.2			29.8			19.3			24.0	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	40.0	14.4	25.3	23.4	26.9	11.1	28.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	22.5	10.1	29.4	10.1	22.4	10.0	29.5
Max Q Clear Time (g_c+I1), s	13.5	10.1	8.6	7.3	6.4	13.5	3.4	22.2
Green Ext Time (p_c), s	0.0	3.0	0.1	1.0	0.1	2.7	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	350	239	149	624	80	264	834	160	37	624	140
Future Volume (veh/h)	112	350	239	149	624	80	264	834	160	37	624	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	118	368	252	157	657	84	278	878	168	39	657	147
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	372	851	380	449	864	386	524	1604	305	311	1058	233
Arrive On Green	0.13	0.24	0.24	0.14	0.24	0.24	0.10	0.12	0.12	0.17	0.25	0.25
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	4375	833	1810	4252	937
Grp Volume(v), veh/h	118	368	252	157	657	84	278	693	353	39	533	271
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1729	1750	1810	1729	1731
Q Serve(g_s), s	4.0	7.8	6.3	5.3	15.2	2.4	13.2	17.0	17.1	1.6	12.3	12.6
Cycle Q Clear(g_c), s	4.0	7.8	6.3	5.3	15.2	2.4	13.2	17.0	17.1	1.6	12.3	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		0.54
Lane Grp Cap(c), veh/h	372	851	380	449	864	386	524	1268	642	311	861	431
V/C Ratio(X)	0.32	0.43	0.66	0.35	0.76	0.22	0.53	0.55	0.55	0.13	0.62	0.63
Avail Cap(c_a), veh/h	383	963	429	453	963	429	524	1268	642	311	861	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	29.3	7.5	19.6	31.8	11.3	34.9	32.5	32.6	31.5	30.0	30.1
Incr Delay (d2), s/veh	0.5	0.3	3.2	0.5	3.2	0.3	0.9	1.4	2.9	0.2	3.3	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.4	4.7	2.2	6.9	1.4	6.5	8.1	8.5	0.7	5.4	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	29.6	10.7	20.1	35.0	11.6	35.7	34.0	35.4	31.7	33.3	36.9
LnGrp LOS	C	C	B	C	D	B	D	C	D	C	C	D
Approach Vol, veh/h		738			898			1324			843	
Approach Delay, s/veh		21.8			30.2			34.7			34.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	35.0	14.3	23.2	28.1	24.4	14.0	23.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.0	30.5	10.0	21.5	20.6	19.9	10.0	21.5
Max Q Clear Time (g_c+I1), s	13.6	19.1	7.3	9.8	15.2	14.6	6.0	17.2
Green Ext Time (p_c), s	0.0	5.3	0.1	2.6	0.4	2.4	0.1	1.8

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	134	107	314	212	81	180	1092	144	75	877	35
Future Volume (veh/h)	31	134	107	314	212	81	180	1092	144	75	877	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	33	141	113	331	223	85	189	1149	152	79	923	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	317	501	643	501	493	183	915	1730	229	900	1887	76
Arrive On Green	0.09	0.14	0.14	0.14	0.19	0.19	0.17	0.25	0.25	0.17	0.25	0.25
Sat Flow, veh/h	3510	3610	1610	3510	2579	954	3510	4635	613	3510	5116	205
Grp Volume(v), veh/h	33	141	113	331	154	154	189	857	444	79	623	337
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1755	1805	1728	1755	1729	1790	1755	1729	1863
Q Serve(g_s), s	0.8	3.2	0.0	8.0	6.8	7.1	4.1	20.1	20.1	1.7	13.9	13.9
Cycle Q Clear(g_c), s	0.8	3.2	0.0	8.0	6.8	7.1	4.1	20.1	20.1	1.7	13.9	13.9
Prop In Lane	1.00		1.00	1.00		0.55	1.00		0.34	1.00		0.11
Lane Grp Cap(c), veh/h	317	501	643	501	345	331	915	1291	668	900	1276	687
V/C Ratio(X)	0.10	0.28	0.18	0.66	0.45	0.47	0.21	0.66	0.66	0.09	0.49	0.49
Avail Cap(c_a), veh/h	491	834	792	585	465	446	915	1291	668	900	1276	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.87	0.87	0.87
Uniform Delay (d), s/veh	37.6	34.7	17.4	36.5	32.2	32.3	29.2	28.7	28.7	28.4	26.6	26.6
Incr Delay (d2), s/veh	0.1	0.3	0.1	2.2	0.9	1.0	0.1	2.5	4.8	0.0	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.5	3.5	3.0	3.0	1.8	9.1	9.8	0.7	6.2	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	35.0	17.6	38.7	33.1	33.3	29.3	31.2	33.5	28.5	27.8	28.8
LnGrp LOS	D	D	B	D	C	C	C	C	C	C	C	C
Approach Vol, veh/h		287			639			1490			1039	
Approach Delay, s/veh		28.5			36.1			31.6			28.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.1	35.6	14.8	14.5	25.5	35.2	10.1	19.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.6	31.1	12.5	18.3	10.5	30.7	10.1	20.7
Max Q Clear Time (g_c+I1), s	13.7	22.1	10.0	5.2	6.1	15.9	2.8	9.1
Green Ext Time (p_c), s	0.1	5.5	0.3	1.0	0.2	5.6	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	343	3	398	445	1217	0	0	919	415
Future Volume (veh/h)	0	0	0	343	3	398	445	1217	0	0	919	415
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				502	0	271	468	1281	0	0	967	437
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				831	0	370	1144	3765	0	0	2469	608
Arrive On Green				0.23	0.00	0.23	0.11	0.24	0.00	0.00	0.76	0.76
Sat Flow, veh/h				3619	0	1610	3510	5358	0	0	6802	1610
Grp Volume(v), veh/h				502	0	271	468	1281	0	0	967	437
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1610
Q Serve(g_s), s				11.2	0.0	14.0	11.2	18.4	0.0	0.0	4.6	13.1
Cycle Q Clear(g_c), s				11.2	0.0	14.0	11.2	18.4	0.0	0.0	4.6	13.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				831	0	370	1144	3765	0	0	2469	608
V/C Ratio(X)				0.60	0.00	0.73	0.41	0.34	0.00	0.00	0.39	0.72
Avail Cap(c_a), veh/h				1126	0	501	1144	3765	0	0	2469	608
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	0.91	0.91
Uniform Delay (d), s/veh				31.0	0.0	32.1	32.1	16.4	0.0	0.0	7.4	8.4
Incr Delay (d2), s/veh				0.7	0.0	3.6	0.2	0.2	0.0	0.0	0.4	6.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.9	0.0	5.7	5.3	8.5	0.0	0.0	1.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.7	0.0	35.7	32.3	16.6	0.0	0.0	7.8	15.0
LnGrp LOS				C	A	D	C	B	A	A	A	B
Approach Vol, veh/h					773			1749			1404	
Approach Delay, s/veh					33.1			20.8			10.1	
Approach LOS					C			C			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	67.3		31.3	36.0		22.7
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	55.5		19.5	31.5		25.5
Max Q Clear Time (g_c+I1), s	20.4		13.2	15.1		16.0
Green Ext Time (p_c), s	12.0		1.0	7.9		2.1

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	363	3	296	0	0	0	0	1272	598	281	966	0
Future Volume (veh/h)	363	3	296	0	0	0	0	1272	598	281	966	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	384	0	312				0	1339	629	296	1017	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	883	0	393				0	3268	805	664	3690	0
Arrive On Green	0.24	0.00	0.24				0.00	0.50	0.50	0.38	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	6802	1610	3510	5358	0
Grp Volume(v), veh/h	384	0	312				0	1339	629	296	1017	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1610	1755	1729	0
Q Serve(g_s), s	8.1	0.0	16.4				0.0	11.6	28.8	5.7	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	16.4				0.0	11.6	28.8	5.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	883	0	393				0	3268	805	664	3690	0
V/C Ratio(X)	0.43	0.00	0.79				0.00	0.41	0.78	0.45	0.28	0.00
Avail Cap(c_a), veh/h	1005	0	447				0	3268	805	664	3690	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.92	0.92	0.00
Uniform Delay (d), s/veh	28.8	0.0	31.9				0.0	14.1	18.5	24.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	8.5				0.0	0.4	7.4	0.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	7.1				0.0	4.1	11.6	2.1	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	40.4				0.0	14.5	25.9	24.9	0.2	0.0
LnGrp LOS	C	A	D				A	B	C	C	A	A
Approach Vol, veh/h		696						1968			1313	
Approach Delay, s/veh		34.2						18.2			5.7	
Approach LOS		C						B			A	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	19.0	47.0		24.0		66.0						
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5						
Max Green Setting (Gmax), s	14.5	42.5		22.5		58.5						
Max Q Clear Time (g_c+I1), s	10.7	30.8		18.4		2.0						
Green Ext Time (p_c), s	0.4	8.4		1.1		9.5						

Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	0	22	7	1	2	18	712	5	3	746	424
Future Volume (veh/h)	306	0	22	7	1	2	18	712	5	3	746	424
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	329	0	15	7	1	2	19	749	5	3	785	446
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	522	0	232	65	9	19	126	2495	17	65	2327	1038
Arrive On Green	0.14	0.00	0.14	0.05	0.05	0.05	0.07	0.68	0.68	0.04	0.64	0.64
Sat Flow, veh/h	3619	0	1610	1242	177	355	1810	3676	25	1810	3610	1610
Grp Volume(v), veh/h	329	0	15	10	0	0	19	368	386	3	785	446
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1774	0	0	1810	1805	1896	1810	1805	1610
Q Serve(g_s), s	7.7	0.0	0.7	0.5	0.0	0.0	0.9	7.4	7.4	0.1	8.9	12.3
Cycle Q Clear(g_c), s	7.7	0.0	0.7	0.5	0.0	0.0	0.9	7.4	7.4	0.1	8.9	12.3
Prop In Lane	1.00		1.00	0.70		0.20	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	522	0	232	93	0	0	126	1225	1286	65	2327	1038
V/C Ratio(X)	0.63	0.00	0.06	0.11	0.00	0.00	0.15	0.30	0.30	0.05	0.34	0.43
Avail Cap(c_a), veh/h	824	0	367	404	0	0	251	1225	1286	251	2327	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	36.2	0.0	33.3	40.6	0.0	0.0	39.4	5.8	5.8	41.9	7.3	7.9
Incr Delay (d2), s/veh	1.3	0.0	0.1	0.5	0.0	0.0	0.5	0.6	0.6	0.2	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.3	0.2	0.0	0.0	0.4	2.6	2.7	0.1	3.1	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	33.4	41.1	0.0	0.0	39.9	6.5	6.4	42.1	7.5	8.8
LnGrp LOS	D	A	C	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		344			10			773			1234	
Approach Delay, s/veh		37.3			41.1			7.3			8.1	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	63.1		15.0	8.3	60.0		6.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.0	26.0		18.0	10.0	26.0		18.0
Max Q Clear Time (g_c+I1), s	2.1	9.4		9.7	2.9	14.3		2.5
Green Ext Time (p_c), s	0.0	4.4		0.8	0.0	5.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

09/26/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	844	212	659	913	180	297	222	857	176	128	74
Future Volume (veh/h)	62	844	212	659	913	180	297	222	857	176	128	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	63	861	216	672	932	184	303	227	874	180	131	76
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	325	975	435	1382	1899	847	431	356	875	311	420	229
Arrive On Green	0.10	0.27	0.27	0.71	1.00	1.00	0.11	0.19	0.19	0.11	0.19	0.19
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	1810	1900	1610	1810	2252	1231
Grp Volume(v), veh/h	63	861	216	672	932	184	303	227	874	180	103	104
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1810	1900	1610	1810	1805	1678
Q Serve(g_s), s	2.9	25.2	9.1	3.1	0.0	0.0	12.6	12.1	14.2	8.5	5.4	5.9
Cycle Q Clear(g_c), s	2.9	25.2	9.1	3.1	0.0	0.0	12.6	12.1	14.2	8.5	5.4	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	325	975	435	1382	1899	847	431	356	875	311	336	313
V/C Ratio(X)	0.19	0.88	0.50	0.49	0.49	0.22	0.70	0.64	1.00	0.58	0.31	0.33
Avail Cap(c_a), veh/h	349	975	435	1382	1899	847	431	356	875	311	336	313
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	38.5	18.1	10.3	0.0	0.0	33.6	41.3	9.9	30.9	38.6	38.8
Incr Delay (d2), s/veh	0.3	11.5	4.0	0.0	0.1	0.1	4.7	7.9	29.0	2.7	2.4	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	12.5	3.8	2.6	0.0	0.0	1.7	6.4	17.1	3.9	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	50.0	22.1	10.3	0.1	0.1	38.3	49.2	38.9	33.6	41.0	41.6
LnGrp LOS	C	D	C	B	A	A	D	D	D	C	D	D
Approach Vol, veh/h		1140			1788			1404			387	
Approach Delay, s/veh		43.6			3.9			40.4			37.7	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.2	31.7	14.6	22.5	13.0	59.9	14.5	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	36.7	27.2	10.1	18.0	10.0	53.9	10.0	18.1
Max Q Clear Time (g_c+I1), s	5.1	27.2	14.6	7.9	4.9	2.0	10.5	16.2
Green Ext Time (p_c), s	2.6	0.0	0.0	0.8	0.0	9.4	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	968	642	143	876	467	239	0	1083	234	0	691
Future Volume (veh/h)	256	968	642	143	876	467	239	0	1083	234	0	691
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	0	1900	1900	0	1900
Adj Flow Rate, veh/h	269	1019	676	151	922	492	252	0	1140	246	0	727
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	903	2362	1054	206	971	433	321	0	0	321	0	0
Arrive On Green	0.50	0.65	0.65	0.11	0.27	0.27	0.18	0.00	0.02	0.18	0.00	0.02
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	252		1810	246	
Grp Volume(v), veh/h	269	1019	676	151	922	492	252	50.5		246	53.7	
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	D		1810	D	
Q Serve(g_s), s	9.6	15.0	8.7	8.9	27.6	19.1	14.6			14.2		
Cycle Q Clear(g_c), s	9.6	15.0	8.7	8.9	27.6	19.1	14.6			14.2		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	903	2362	1054	206	971	433	321			321		
V/C Ratio(X)	0.30	0.43	0.64	0.73	0.95	1.14	0.79			0.77		
Avail Cap(c_a), veh/h	903	2362	1054	206	971	433	416			321		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.35	0.35	0.35	0.70	0.70	0.70	1.00			1.00		
Uniform Delay (d), s/veh	16.2	9.2	1.1	47.1	39.5	18.0	43.2			43.1		
Incr Delay (d2), s/veh	0.1	0.2	1.1	9.2	14.7	79.6	7.3			10.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	3.9	5.5	6.2	4.5	14.0	16.4	7.2			7.3		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	9.4	2.2	56.3	54.2	97.6	50.5			53.7		
LnGrp LOS	B	A	A	E	D	F	D			D		
Approach Vol, veh/h		1964			1565							
Approach Delay, s/veh		7.8			68.0							
Approach LOS		A			E							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	14.5	74.0	21.5		56.9	31.6	21.5
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	31.6	22.8		14.5	27.1	11.9
Max Q Clear Time (g_c+I1), s	10.9	17.0	16.6		11.6	29.6	16.2
Green Ext Time (p_c), s	0.0	8.7	0.4		0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.7
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	1121	611	204	481	52	400	505	290	35	309	150
Future Volume (veh/h)	308	1121	611	204	481	52	400	505	290	35	309	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	314	1144	623	208	491	53	408	515	296	36	315	153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	401	1329	593	230	900	97	444	703	403	206	673	300
Arrive On Green	0.22	0.37	0.37	0.13	0.27	0.27	0.08	0.11	0.11	0.11	0.19	0.19
Sat Flow, veh/h	1810	3610	1610	1810	3288	354	1810	2210	1267	1810	3610	1610
Grp Volume(v), veh/h	314	1144	623	208	269	275	408	420	391	36	315	153
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1836	1810	1805	1672	1810	1805	1610
Q Serve(g_s), s	18.0	32.2	19.5	12.5	14.0	14.1	24.6	24.8	24.9	2.0	8.6	9.4
Cycle Q Clear(g_c), s	18.0	32.2	19.5	12.5	14.0	14.1	24.6	24.8	24.9	2.0	8.6	9.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	401	1329	593	230	494	502	444	574	532	206	673	300
V/C Ratio(X)	0.78	0.86	1.05	0.90	0.54	0.55	0.92	0.73	0.73	0.18	0.47	0.51
Avail Cap(c_a), veh/h	401	1329	593	230	494	502	444	574	532	206	673	300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	32.1	8.1	47.3	34.1	34.1	49.5	44.7	44.7	44.1	39.9	40.2
Incr Delay (d2), s/veh	0.9	0.7	27.6	34.5	4.3	4.2	20.7	6.6	7.1	0.4	2.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	13.9	10.6	7.8	6.7	6.8	14.5	13.1	12.2	0.9	4.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	32.9	35.7	81.8	38.4	38.4	70.1	51.2	51.9	44.5	42.2	46.3
LnGrp LOS	D	C	F	F	D	D	E	D	D	D	D	D
Approach Vol, veh/h		2081			752			1219			504	
Approach Delay, s/veh		35.0			50.4			57.8			43.6	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	42.5	29.0	22.5	26.4	32.1	14.5	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	38.0	24.5	18.0	21.9	27.6	10.0	32.5
Max Q Clear Time (g_c+I1), s	14.5	34.2	26.6	11.4	20.0	16.1	4.0	26.9
Green Ext Time (p_c), s	0.0	3.0	0.0	1.4	0.2	2.5	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	134	92	1128	207	115	809
Future Volume (veh/h)	134	92	1128	207	115	809
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	137	94	1151	211	117	826
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	213	189	1857	339	692	3054
Arrive On Green	0.12	0.12	1.00	1.00	0.22	0.85
Sat Flow, veh/h	1810	1610	3144	556	1810	3705
Grp Volume(v), veh/h	137	94	679	683	117	826
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1800	1810	1805
Q Serve(g_s), s	8.0	6.0	0.0	0.0	0.0	5.0
Cycle Q Clear(g_c), s	8.0	6.0	0.0	0.0	0.0	5.0
Prop In Lane	1.00	1.00		0.31	1.00	
Lane Grp Cap(c), veh/h	213	189	1099	1096	692	3054
V/C Ratio(X)	0.64	0.50	0.62	0.62	0.17	0.27
Avail Cap(c_a), veh/h	378	337	1099	1096	692	3054
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.61	0.61	0.53	0.53
Uniform Delay (d), s/veh	46.3	45.5	0.0	0.0	3.5	1.7
Incr Delay (d2), s/veh	3.2	2.0	1.6	1.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.5	0.5	0.5	0.6	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.6	47.5	1.6	1.6	3.6	1.8
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	231		1362			943
Approach Delay, s/veh	48.7		1.6			2.0
Approach LOS	D		A			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.1	69.0				95.1	14.9
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	11.5	64.5				80.5	20.5
Max Q Clear Time (g_c+I1), s	12.0	2.0				7.0	10.0
Green Ext Time (p_c), s	0.2	14.6				7.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	72	79	142	0	190	2	1175	194	188	987	13
Future Volume (veh/h)	154	72	79	142	0	190	2	1175	194	188	987	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	159	74	81	146	0	196	2	1211	200	194	1018	13
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	227	139	152	214	0	258	266	1445	237	414	2238	29
Arrive On Green	0.13	0.17	0.17	0.12	0.00	0.16	0.03	0.47	0.47	0.18	0.61	0.61
Sat Flow, veh/h	1810	829	908	1810	0	1610	1810	3104	510	1810	3650	47
Grp Volume(v), veh/h	159	0	155	146	0	196	2	701	710	194	503	528
Grp Sat Flow(s),veh/h/ln	1810	0	1737	1810	0	1610	1810	1805	1808	1810	1805	1892
Q Serve(g_s), s	9.3	0.0	9.0	8.5	0.0	12.8	0.1	37.4	38.0	4.3	16.5	16.5
Cycle Q Clear(g_c), s	9.3	0.0	9.0	8.5	0.0	12.8	0.1	37.4	38.0	4.3	16.5	16.5
Prop In Lane	1.00		0.52	1.00		1.00	1.00		0.28	1.00		0.02
Lane Grp Cap(c), veh/h	227	0	291	214	0	258	266	840	842	414	1107	1160
V/C Ratio(X)	0.70	0.00	0.53	0.68	0.00	0.76	0.01	0.83	0.84	0.47	0.45	0.45
Avail Cap(c_a), veh/h	283	0	332	283	0	307	423	840	842	414	1107	1160
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.33	0.33	0.33	0.96	0.96	0.96
Uniform Delay (d), s/veh	46.1	0.0	41.8	46.5	0.0	44.1	17.3	25.7	25.9	37.4	11.4	11.4
Incr Delay (d2), s/veh	5.6	0.0	1.5	4.2	0.0	8.7	0.0	3.4	3.6	0.8	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	4.0	4.1	0.0	5.7	0.0	16.2	16.5	4.6	6.6	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	0.0	43.4	50.7	0.0	52.9	17.3	29.1	29.5	38.2	12.7	12.6
LnGrp LOS	D	A	D	D	A	D	B	C	C	D	B	B
Approach Vol, veh/h		314			342			1413			1225	
Approach Delay, s/veh		47.6			52.0			29.3			16.7	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	53.2	15.0	20.4	5.1	69.4	15.8	19.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	48.7	14.7	18.5	10.1	48.7	14.7	18.5
Max Q Clear Time (g_c+I1), s	16.3	40.0	10.5	11.0	2.1	18.5	11.3	14.8
Green Ext Time (p_c), s	0.2	5.8	0.1	0.4	0.0	7.9	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	1061	278	194	751	188	366	909	188	214	599	114
Future Volume (veh/h)	91	1061	278	194	751	188	366	909	188	214	599	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	94	1094	287	200	774	194	377	937	194	221	618	118
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	258	1099	490	551	1152	514	564	1009	450	553	1213	228
Arrive On Green	0.14	0.30	0.30	0.16	0.32	0.32	0.16	0.28	0.28	0.16	0.28	0.28
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	3510	3610	1610	3510	4385	825
Grp Volume(v), veh/h	94	1094	287	200	774	194	377	937	194	221	485	251
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1755	1805	1610	1755	1729	1752
Q Serve(g_s), s	3.7	23.8	11.9	4.0	14.6	7.4	8.0	19.9	7.8	4.5	9.3	9.5
Cycle Q Clear(g_c), s	3.7	23.8	11.9	4.0	14.6	7.4	8.0	19.9	7.8	4.5	9.3	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	258	1099	490	551	1152	514	564	1009	450	553	956	484
V/C Ratio(X)	0.36	1.00	0.59	0.36	0.67	0.38	0.67	0.93	0.43	0.40	0.51	0.52
Avail Cap(c_a), veh/h	287	1099	490	557	1152	514	610	1009	450	610	956	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	27.4	23.2	29.7	23.3	20.8	31.1	27.6	23.3	29.9	24.0	24.1
Incr Delay (d2), s/veh	0.9	26.0	1.8	0.4	1.5	0.5	2.5	15.6	3.0	0.5	1.9	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	13.7	4.5	1.7	6.2	2.7	3.5	10.3	3.2	1.9	3.9	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	53.3	25.0	30.1	24.8	21.2	33.7	43.3	26.3	30.3	25.9	28.0
LnGrp LOS	C	D	C	C	C	C	C	D	C	C	C	C
Approach Vol, veh/h		1475			1168			1508			957	
Approach Delay, s/veh		46.4			25.1			38.7			27.5	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	26.0	14.7	23.8	13.2	27.2	14.4	24.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	21.5	11.2	19.3	10.0	21.5	11.2	19.3
Max Q Clear Time (g_c+I1), s	16.0	25.8	10.0	11.5	5.7	16.6	6.5	21.9
Green Ext Time (p_c), s	0.2	0.0	0.2	2.9	0.1	2.5	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	35.7
HCM 6th LOS	D



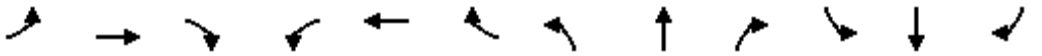
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1115	293	338	689	0	272	0	581	0	0	7
Future Volume (veh/h)	4	1115	293	338	689	0	272	0	581	0	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	4	1174	308	356	725	0	191	0	714	0	0	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	487	1355	605	517	915	0	395	0	1177	337	0	300
Arrive On Green	0.27	0.38	0.38	0.29	0.51	0.00	0.22	0.00	0.22	0.00	0.00	0.19
Sat Flow, veh/h	1810	3610	1610	3510	3705	0	1810	0	3220	1810	0	1610
Grp Volume(v), veh/h	4	1174	308	356	725	0	191	0	714	0	0	7
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	0	1810	0	1610	1810	0	1610
Q Serve(g_s), s	0.2	33.1	16.2	9.9	18.2	0.0	10.1	0.0	3.7	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.2	33.1	16.2	9.9	18.2	0.0	10.1	0.0	3.7	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	1355	605	517	915	0	395	0	1177	337	0	300
V/C Ratio(X)	0.01	0.87	0.51	0.69	0.79	0.00	0.48	0.00	0.61	0.00	0.00	0.02
Avail Cap(c_a), veh/h	487	1355	605	517	1477	0	395	0	1177	337	0	300
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.45	0.45	1.00	1.00	0.00	0.90	0.00	0.90	0.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	31.8	26.5	36.6	24.7	0.0	37.6	0.0	28.5	0.0	0.0	36.6
Incr Delay (d2), s/veh	0.0	3.6	1.4	3.8	1.6	0.0	3.8	0.0	2.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	14.8	6.4	4.0	5.8	0.0	4.9	0.0	7.9	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	35.4	27.9	40.4	26.3	0.0	41.4	0.0	30.6	0.0	0.0	36.7
LnGrp LOS	C	D	C	D	C	A	D	A	C	A	A	D
Approach Vol, veh/h		1486			1081			905			7	
Approach Delay, s/veh		33.9			30.9			32.8			36.7	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.2	43.3		22.5	31.6	29.9		26.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.7	38.8		18.0	10.0	42.5		21.5
Max Q Clear Time (g_c+I1), s	11.9	35.1		2.4	2.2	20.2		12.1
Green Ext Time (p_c), s	0.3	2.7		0.0	0.0	5.2		2.7

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	364	1110	102	155	686	196	127	757	185	279	738	251
Future Volume (veh/h)	364	1110	102	155	686	196	127	757	185	279	738	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	368	1121	103	157	693	198	128	765	187	282	745	254
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	398	1352	603	207	971	433	207	769	188	309	855	292
Arrive On Green	0.44	0.75	0.75	0.11	0.27	0.27	0.11	0.27	0.27	0.06	0.11	0.11
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	2876	703	1810	2642	901
Grp Volume(v), veh/h	368	1121	103	157	693	198	128	480	472	282	509	490
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1773	1810	1805	1738
Q Serve(g_s), s	21.1	22.6	2.0	9.3	19.1	7.4	7.4	29.2	29.2	17.1	30.5	30.5
Cycle Q Clear(g_c), s	21.1	22.6	2.0	9.3	19.1	7.4	7.4	29.2	29.2	17.1	30.5	30.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		0.52
Lane Grp Cap(c), veh/h	398	1352	603	207	971	433	207	482	474	309	584	562
V/C Ratio(X)	0.92	0.83	0.17	0.76	0.71	0.46	0.62	1.00	1.00	0.91	0.87	0.87
Avail Cap(c_a), veh/h	398	1352	603	207	971	433	207	482	474	309	584	562
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	29.9	11.5	8.9	47.2	36.4	14.3	46.4	40.2	40.2	51.1	46.9	46.9
Incr Delay (d2), s/veh	27.1	6.0	0.6	14.8	4.5	3.4	5.4	39.8	40.2	27.1	14.6	15.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	5.3	0.8	5.0	8.9	3.1	3.6	18.1	17.8	10.6	17.2	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	17.5	9.5	62.0	40.8	17.8	51.8	80.1	80.4	78.2	61.5	62.0
LnGrp LOS	E	B	A	E	D	B	D	F	F	E	E	E
Approach Vol, veh/h		1592			1048			1080			1281	
Approach Delay, s/veh		26.1			39.6			76.9			65.4	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	43.2	14.6	37.6	26.2	31.6	20.8	31.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	38.7	10.1	33.1	21.7	27.1	16.3	26.9
Max Q Clear Time (g_c+I1), s	11.3	24.6	9.4	32.5	23.1	21.1	19.1	31.2
Green Ext Time (p_c), s	0.0	7.1	0.0	0.4	0.0	2.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	132	67	140	93	73	70	706	147	79	656	47
Future Volume (veh/h)	68	132	67	140	93	73	70	706	147	79	656	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	72	139	71	147	98	77	74	743	155	83	691	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	316	323	165	290	269	211	411	1222	255	451	1482	105
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.08	0.14	0.14	0.25	0.43	0.43
Sat Flow, veh/h	1229	1185	606	1190	986	775	1810	2973	620	1810	3419	242
Grp Volume(v), veh/h	72	0	210	147	0	175	74	451	447	83	365	375
Grp Sat Flow(s),veh/h/ln	1229	0	1791	1190	0	1761	1810	1805	1788	1810	1805	1856
Q Serve(g_s), s	4.5	0.0	8.7	10.4	0.0	7.2	3.5	21.2	21.2	3.2	12.9	12.9
Cycle Q Clear(g_c), s	11.7	0.0	8.7	19.1	0.0	7.2	3.5	21.2	21.2	3.2	12.9	12.9
Prop In Lane	1.00		0.34	1.00		0.44	1.00		0.35	1.00		0.13
Lane Grp Cap(c), veh/h	316	0	488	290	0	480	411	742	735	451	782	804
V/C Ratio(X)	0.23	0.00	0.43	0.51	0.00	0.36	0.18	0.61	0.61	0.18	0.47	0.47
Avail Cap(c_a), veh/h	405	0	617	375	0	606	411	742	735	451	782	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.73	0.73	0.73	0.79	0.79	0.79
Uniform Delay (d), s/veh	31.2	0.0	27.0	34.8	0.0	26.4	33.8	32.1	32.1	26.6	18.1	18.1
Incr Delay (d2), s/veh	0.4	0.0	0.6	1.4	0.0	0.5	0.2	2.7	2.7	0.2	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	3.7	3.1	0.0	3.0	1.5	10.7	10.6	1.4	5.5	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	0.0	27.6	36.2	0.0	26.9	33.9	34.8	34.8	26.7	19.7	19.7
LnGrp LOS	C	A	C	D	A	C	C	C	C	C	B	B
Approach Vol, veh/h		282			322			972			823	
Approach Delay, s/veh		28.6			31.2			34.7			20.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.5	39.0		26.5	22.5	41.0		26.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.5	34.5		28.5	11.5	36.5		28.5
Max Q Clear Time (g_c+I1), s	15.2	23.2		13.7	5.5	14.9		21.1
Green Ext Time (p_c), s	0.1	4.4		1.2	0.1	4.7		0.9

Intersection Summary		
HCM 6th Ctrl Delay	28.6	
HCM 6th LOS	C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	439	121	252	342	77	86	843	214	70	709	55
Future Volume (veh/h)	146	439	121	252	342	77	86	843	214	70	709	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	154	462	127	265	360	81	91	887	225	74	746	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	454	545	462	393	563	478	288	1043	465	342	1082	84
Arrive On Green	0.14	0.29	0.29	0.15	0.30	0.30	0.16	0.29	0.29	0.25	0.42	0.42
Sat Flow, veh/h	1810	1900	1610	1810	1900	1610	1810	3610	1610	1810	3394	264
Grp Volume(v), veh/h	154	462	127	265	360	81	91	887	225	74	397	407
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	1900	1610	1810	1805	1610	1810	1805	1853
Q Serve(g_s), s	4.8	20.6	3.5	8.6	14.8	2.0	4.0	20.8	6.8	2.9	16.1	16.1
Cycle Q Clear(g_c), s	4.8	20.6	3.5	8.6	14.8	2.0	4.0	20.8	6.8	2.9	16.1	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	454	545	462	393	563	478	288	1043	465	342	576	591
V/C Ratio(X)	0.34	0.85	0.27	0.67	0.64	0.17	0.32	0.85	0.48	0.22	0.69	0.69
Avail Cap(c_a), veh/h	459	574	487	402	597	506	288	1043	465	342	576	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	17.6	30.2	10.1	19.9	27.5	8.1	33.5	30.2	11.3	28.4	22.3	22.3
Incr Delay (d2), s/veh	0.4	10.9	0.3	4.3	2.1	0.2	0.6	8.7	3.6	0.3	6.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	10.8	2.0	3.9	6.9	1.2	1.8	10.0	4.1	1.3	6.9	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	41.1	10.4	24.1	29.6	8.3	34.1	38.9	14.9	28.7	28.3	28.2
LnGrp LOS	B	D	B	C	C	A	C	D	B	C	C	C
Approach Vol, veh/h		743			706			1203			878	
Approach Delay, s/veh		31.1			25.1			34.0			28.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	28.0	15.1	27.8	16.3	30.7	14.3	28.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.7	23.5	11.1	24.7	10.0	26.2	10.0	25.8
Max Q Clear Time (g_c+I1), s	14.9	22.8	10.6	22.6	6.0	18.1	6.8	16.8
Green Ext Time (p_c), s	0.1	0.4	0.0	0.7	0.1	3.2	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	937	423	188	523	65	308	841	164	92	1183	187
Future Volume (veh/h)	211	937	423	188	523	65	308	841	164	92	1183	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	222	986	445	198	551	68	324	885	173	97	1245	197
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	451	1003	447	332	1001	447	342	1065	207	454	1383	219
Arrive On Green	0.14	0.28	0.28	0.14	0.28	0.28	0.06	0.08	0.08	0.25	0.31	0.31
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	4358	848	1810	4515	714
Grp Volume(v), veh/h	222	986	445	198	551	68	324	701	357	97	954	488
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1729	1747	1810	1729	1771
Q Serve(g_s), s	7.3	24.4	24.8	6.5	11.7	1.5	16.1	18.0	18.1	3.8	23.8	23.8
Cycle Q Clear(g_c), s	7.3	24.4	24.8	6.5	11.7	1.5	16.1	18.0	18.1	3.8	23.8	23.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		0.40
Lane Grp Cap(c), veh/h	451	1003	447	332	1001	447	342	845	427	454	1059	543
V/C Ratio(X)	0.49	0.98	0.99	0.60	0.55	0.15	0.95	0.83	0.83	0.21	0.90	0.90
Avail Cap(c_a), veh/h	496	1003	447	334	1001	447	342	845	427	454	1059	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	32.3	32.4	20.7	27.7	6.5	41.8	39.5	39.6	26.7	29.9	29.9
Incr Delay (d2), s/veh	0.8	24.3	41.2	2.8	0.6	0.2	27.5	6.5	12.4	0.2	12.1	20.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	13.7	14.4	2.9	5.0	1.1	10.4	9.0	9.9	1.7	11.3	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	56.6	73.6	23.6	28.4	6.7	69.3	46.0	52.0	26.9	42.0	50.4
LnGrp LOS	B	E	E	C	C	A	E	D	D	C	D	D
Approach Vol, veh/h		1653			817			1382			1539	
Approach Delay, s/veh		56.2			25.4			53.0			43.7	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	24.0	14.4	27.0	19.0	29.6	14.5	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	20.0	19.5	10.0	22.5	14.5	25.0	12.2	20.3
Max Q Clear Time (g_c+I1), s	15.8	20.1	8.5	26.8	18.1	25.8	9.3	13.7
Green Ext Time (p_c), s	0.2	0.0	0.1	0.0	0.0	0.0	0.2	2.1

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	439	357	457	326	109	422	1132	263	226	1469	111
Future Volume (veh/h)	138	439	357	457	326	109	422	1132	263	226	1469	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	145	462	376	481	343	115	444	1192	277	238	1546	117
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	566	694	603	554	503	166	640	1777	413	487	1864	141
Arrive On Green	0.16	0.19	0.19	0.16	0.19	0.19	0.06	0.14	0.14	0.18	0.50	0.50
Sat Flow, veh/h	3510	3610	1610	3510	2667	880	3510	4205	977	3510	4919	372
Grp Volume(v), veh/h	145	462	376	481	230	228	444	980	489	238	1087	576
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1755	1805	1742	1755	1729	1724	1755	1729	1833
Q Serve(g_s), s	3.3	10.7	0.7	12.0	10.7	11.0	11.2	24.2	24.2	5.5	24.1	24.1
Cycle Q Clear(g_c), s	3.3	10.7	0.7	12.0	10.7	11.0	11.2	24.2	24.2	5.5	24.1	24.1
Prop In Lane	1.00		1.00	1.00		0.51	1.00		0.57	1.00		0.20
Lane Grp Cap(c), veh/h	566	694	603	554	341	329	640	1461	729	487	1310	695
V/C Ratio(X)	0.26	0.67	0.62	0.87	0.68	0.69	0.69	0.67	0.67	0.49	0.83	0.83
Avail Cap(c_a), veh/h	566	822	660	554	445	430	640	1461	729	488	1310	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83	0.47	0.47	0.47
Uniform Delay (d), s/veh	33.0	33.7	23.0	37.0	33.9	34.1	39.8	32.8	32.8	33.8	19.8	19.9
Incr Delay (d2), s/veh	0.2	1.6	1.6	13.8	2.6	3.2	2.7	2.1	4.1	0.4	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.7	6.5	6.1	4.8	4.8	5.5	11.5	11.9	2.3	8.5	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	35.3	24.6	50.8	36.6	37.2	42.5	34.8	36.9	34.2	22.9	25.4
LnGrp LOS	C	D	C	D	D	D	D	C	D	C	C	C
Approach Vol, veh/h		983			939			1913			1901	
Approach Delay, s/veh		30.9			44.0			37.1			25.1	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	40.0	16.2	19.3	18.4	36.1	16.5	19.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.3	11.7	18.0	10.7	31.6	10.0	19.7
Max Q Clear Time (g_c+I1), s	7.5	26.2	14.0	12.7	13.2	26.1	5.3	13.0
Green Ext Time (p_c), s	0.2	4.4	0.0	2.1	0.0	4.3	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	556	2	620	365	1530	0	0	1848	657
Future Volume (veh/h)	0	0	0	556	2	620	365	1530	0	0	1848	657
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				791	0	420	380	1594	0	0	1925	684
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1172	0	522	526	3276	0	0	3004	740
Arrive On Green				0.32	0.00	0.32	0.30	1.00	0.00	0.00	0.92	0.92
Sat Flow, veh/h				3619	0	1610	3510	5358	0	0	6802	1610
Grp Volume(v), veh/h				791	0	420	380	1594	0	0	1925	684
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1610
Q Serve(g_s), s				17.0	0.0	21.5	8.7	0.0	0.0	0.0	5.2	20.5
Cycle Q Clear(g_c), s				17.0	0.0	21.5	8.7	0.0	0.0	0.0	5.2	20.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1172	0	522	526	3276	0	0	3004	740
V/C Ratio(X)				0.67	0.00	0.81	0.72	0.49	0.00	0.00	0.64	0.92
Avail Cap(c_a), veh/h				1367	0	608	585	3276	0	0	3004	740
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.81	0.81	0.00	0.00	0.52	0.52
Uniform Delay (d), s/veh				26.3	0.0	27.8	29.8	0.0	0.0	0.0	2.2	2.8
Incr Delay (d2), s/veh				1.1	0.0	6.8	3.2	0.4	0.0	0.0	0.6	11.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.3	0.0	9.0	3.4	0.1	0.0	0.0	0.9	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				27.4	0.0	34.6	33.0	0.4	0.0	0.0	2.7	14.3
LnGrp LOS				C	A	C	C	A	A	A	A	B
Approach Vol, veh/h					1211			1974			2609	
Approach Delay, s/veh					29.9			6.7			5.8	
Approach LOS					C			A			A	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	58.8		15.5	43.4		31.2
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	49.5		12.5	32.5		31.5
Max Q Clear Time (g_c+I1), s	2.0		10.7	22.5		23.5
Green Ext Time (p_c), s	18.3		0.3	8.8		3.2

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	549	5	400	0	0	0	0	1387	622	691	1801	0
Future Volume (veh/h)	549	5	400	0	0	0	0	1387	622	691	1801	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	570	0	412				0	1430	641	712	1857	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	1046	0	465				0	2527	623	905	3458	0
Arrive On Green	0.29	0.00	0.29				0.00	0.39	0.39	0.52	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	6802	1610	3510	5358	0
Grp Volume(v), veh/h	570	0	412				0	1430	641	712	1857	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1610	1755	1729	0
Q Serve(g_s), s	12.0	0.0	22.0				0.0	15.5	34.8	14.9	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	22.0				0.0	15.5	34.8	14.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1046	0	465				0	2527	623	905	3458	0
V/C Ratio(X)	0.55	0.00	0.89				0.00	0.57	1.03	0.79	0.54	0.00
Avail Cap(c_a), veh/h	1046	0	465				0	2527	623	905	3458	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.65	0.65	0.00
Uniform Delay (d), s/veh	27.0	0.0	30.6				0.0	21.7	27.6	19.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	18.2				0.0	0.9	43.8	3.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	10.6				0.0	5.9	20.2	4.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	0.0	48.8				0.0	22.6	71.4	22.9	0.4	0.0
LnGrp LOS	C	A	D				A	C	F	C	A	A
Approach Vol, veh/h		982						2071			2569	
Approach Delay, s/veh		36.5						37.7			6.6	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	35.2	36.8	28.0	62.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.7	32.3	23.5	57.5
Max Q Clear Time (g_c+I1), s	16.9	36.8	24.0	2.0
Green Ext Time (p_c), s	1.1	0.0	0.0	24.9

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	0	50	6	3	1	73	834	7	0	701	350
Future Volume (veh/h)	413	0	50	6	3	1	73	834	7	0	701	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	446	0	35	6	3	1	76	869	7	0	730	365
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	646	0	287	57	28	9	221	2578	21	2	2015	899
Arrive On Green	0.18	0.00	0.18	0.05	0.05	0.05	0.12	0.70	0.70	0.00	0.56	0.56
Sat Flow, veh/h	3619	0	1610	1088	544	181	1810	3670	30	1810	3610	1610
Grp Volume(v), veh/h	446	0	35	10	0	0	76	427	449	0	730	365
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1813	0	0	1810	1805	1895	1810	1805	1610
Q Serve(g_s), s	10.4	0.0	1.6	0.5	0.0	0.0	3.5	8.3	8.3	0.0	10.1	11.7
Cycle Q Clear(g_c), s	10.4	0.0	1.6	0.5	0.0	0.0	3.5	8.3	8.3	0.0	10.1	11.7
Prop In Lane	1.00		1.00	0.60		0.10	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	646	0	287	95	0	0	221	1268	1331	2	2015	899
V/C Ratio(X)	0.69	0.00	0.12	0.11	0.00	0.00	0.34	0.34	0.34	0.00	0.36	0.41
Avail Cap(c_a), veh/h	925	0	411	483	0	0	251	1268	1331	251	2015	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.90	0.90
Uniform Delay (d), s/veh	34.6	0.0	31.0	40.6	0.0	0.0	36.2	5.2	5.2	0.0	11.0	11.4
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.5	0.0	0.0	0.9	0.7	0.7	0.0	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	0.6	0.2	0.0	0.0	1.6	2.8	2.9	0.0	3.9	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	31.2	41.1	0.0	0.0	37.1	5.9	5.9	0.0	11.5	12.6
LnGrp LOS	D	A	C	D	A	A	D	A	A	A	B	B
Approach Vol, veh/h		481			10			952			1095	
Approach Delay, s/veh		35.6			41.1			8.4			11.8	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	65.2		18.1	13.0	52.2		6.7
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	10.0	20.0		20.5	10.0	20.0		21.5
Max Q Clear Time (g_c+I1), s	10.0	10.3		12.4	5.5	13.7		2.5
Green Ext Time (p_c), s	0.0	3.9		1.2	0.1	3.3		0.0

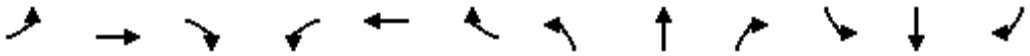
Intersection Summary		
HCM 6th Ctrl Delay	15.2	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

11/15/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	549	232	1024	791	305	181	114	505	246	196	115
Future Volume (veh/h)	54	549	232	1024	791	305	181	114	505	246	196	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	57	578	244	1078	833	321	191	120	532	259	206	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	280	881	393	1374	1695	756	445	391	863	446	493	277
Arrive On Green	0.10	0.24	0.24	0.55	0.78	0.78	0.12	0.21	0.21	0.14	0.22	0.22
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	1810	1900	1610	1810	2227	1253
Grp Volume(v), veh/h	57	578	244	1078	833	321	191	120	532	259	165	162
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1810	1900	1610	1810	1805	1675
Q Serve(g_s), s	2.5	14.4	9.7	15.7	8.1	6.5	7.9	5.4	6.7	10.7	7.8	8.3
Cycle Q Clear(g_c), s	2.5	14.4	9.7	15.7	8.1	6.5	7.9	5.4	6.7	10.7	7.8	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	280	881	393	1374	1695	756	445	391	863	446	400	371
V/C Ratio(X)	0.20	0.66	0.62	0.78	0.49	0.42	0.43	0.31	0.62	0.58	0.41	0.44
Avail Cap(c_a), veh/h	317	881	393	1374	1695	756	450	391	863	446	400	371
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	34.0	17.3	16.8	6.6	6.4	25.3	33.6	5.6	24.1	33.4	33.5
Incr Delay (d2), s/veh	0.4	3.8	7.2	0.3	0.1	0.2	0.6	1.9	3.1	1.9	3.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.7	4.3	5.9	2.2	1.7	3.4	2.7	3.7	4.7	3.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	37.8	24.5	17.1	6.7	6.6	26.0	35.6	8.8	26.0	36.5	37.2
LnGrp LOS	C	D	C	B	A	A	C	D	A	C	D	D
Approach Vol, veh/h		879			2232			843			586	
Approach Delay, s/veh		33.6			11.7			16.5			32.1	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	26.4	14.5	24.1	12.4	49.0	16.0	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	21.9	10.2	19.4	10.0	42.4	11.5	18.1
Max Q Clear Time (g_c+I1), s	17.7	16.4	9.9	10.3	4.5	10.1	12.7	8.7
Green Ext Time (p_c), s	3.8	2.3	0.0	1.3	0.0	8.3	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	549	613	189	1036	921	300	0	591	134	0	904
Future Volume (veh/h)	219	549	613	189	1036	921	300	0	591	134	0	904
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	0	1900	1900	0	1900
Adj Flow Rate, veh/h	231	578	645	199	1091	969	316	0	622	141	0	952
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	316	1227	547	796	2185	975	290	0	0	290	0	0
Arrive On Green	0.06	0.11	0.11	0.44	0.61	0.61	0.16	0.00	0.03	0.16	0.00	0.03
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	316		1810	141	
Grp Volume(v), veh/h	231	578	645	199	1091	969	316	121.5		141	39.5	
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	F		1810	D	
Q Serve(g_s), s	12.6	15.0	34.0	6.9	17.1	59.6	16.0			7.1		
Cycle Q Clear(g_c), s	12.6	15.0	34.0	6.9	17.1	59.6	16.0			7.1		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	316	1227	547	796	2185	975	290			290		
V/C Ratio(X)	0.73	0.47	1.18	0.25	0.50	0.99	1.09			0.49		
Avail Cap(c_a), veh/h	470	1227	547	796	2185	975	290			290		
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.77	0.77	0.77	0.34	0.34	0.34	1.00			1.00		
Uniform Delay (d), s/veh	44.8	36.0	44.4	17.6	11.2	19.6	42.0			38.3		
Incr Delay (d2), s/veh	2.5	1.0	94.4	0.1	0.3	15.5	79.5			1.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	6.3	7.4	29.0	2.8	6.4	23.8	13.4			3.2		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	37.0	138.8	17.7	11.4	35.1	121.5			39.5		
LnGrp LOS	D	D	F	B	B	D	F			D		
Approach Vol, veh/h		1454			2259							
Approach Delay, s/veh		83.8			22.1							
Approach LOS		F			C							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	46.0	36.0	18.0		19.5	62.5	18.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	19.3	31.5	13.5		23.5	27.0	10.0
Max Q Clear Time (g_c+I1), s	19.3	36.0	18.0		14.6	61.6	9.1
Green Ext Time (p_c), s	0.4	0.0	0.0		0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.7
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	459	508	323	1001	30	490	181	144	44	451	313
Future Volume (veh/h)	86	459	508	323	1001	30	490	181	144	44	451	313
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	483	535	340	1054	32	516	191	152	46	475	329
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	866	386	344	1091	33	516	716	539	226	740	330
Arrive On Green	0.13	0.24	0.24	0.19	0.31	0.31	0.28	0.37	0.37	0.13	0.20	0.20
Sat Flow, veh/h	1810	3610	1610	1810	3577	109	1810	1962	1477	1810	3610	1610
Grp Volume(v), veh/h	91	483	535	340	532	554	516	175	168	46	475	329
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1880	1810	1805	1634	1810	1805	1610
Q Serve(g_s), s	4.6	11.7	24.0	18.7	29.0	29.0	28.5	6.8	7.3	2.3	12.0	20.4
Cycle Q Clear(g_c), s	4.6	11.7	24.0	18.7	29.0	29.0	28.5	6.8	7.3	2.3	12.0	20.4
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.90	1.00		1.00
Lane Grp Cap(c), veh/h	226	866	386	344	551	574	516	659	596	226	740	330
V/C Ratio(X)	0.40	0.56	1.38	0.99	0.97	0.97	1.00	0.27	0.28	0.20	0.64	1.00
Avail Cap(c_a), veh/h	226	866	386	344	551	574	516	659	596	226	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	1.00	1.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	33.3	38.0	40.4	34.2	34.2	35.8	22.3	22.5	39.3	36.4	39.7
Incr Delay (d2), s/veh	0.8	1.7	183.4	45.4	30.8	30.1	39.2	1.0	1.1	0.4	4.2	48.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.3	29.0	12.5	17.1	17.7	17.8	3.0	3.0	1.0	5.7	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	35.1	221.4	85.8	65.1	64.4	74.9	23.3	23.6	39.7	40.6	88.4
LnGrp LOS	D	D	F	F	E	E	F	C	C	D	D	F
Approach Vol, veh/h		1109			1426			859			850	
Approach Delay, s/veh		125.5			69.7			54.4			59.1	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.0	30.5	22.5	14.5	32.5	14.5	38.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	21.5	26.0	18.0	10.0	28.0	10.0	34.0
Max Q Clear Time (g_c+I1), s	20.7	26.0	30.5	22.4	6.6	31.0	4.3	9.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	0.0	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	79.1
HCM 6th LOS	E



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	121	140	558	40	39	958
Future Volume (veh/h)	121	140	558	40	39	958
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	127	147	587	42	41	1008
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	261	232	2359	169	704	2930
Arrive On Green	0.14	0.14	0.23	0.23	0.10	0.81
Sat Flow, veh/h	1810	1610	3512	244	1810	3705
Grp Volume(v), veh/h	127	147	310	319	41	1008
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1856	1810	1805
Q Serve(g_s), s	5.8	7.7	12.6	12.7	0.4	6.6
Cycle Q Clear(g_c), s	5.8	7.7	12.6	12.7	0.4	6.6
Prop In Lane	1.00	1.00		0.13	1.00	
Lane Grp Cap(c), veh/h	261	232	1246	1281	704	2930
V/C Ratio(X)	0.49	0.63	0.25	0.25	0.06	0.34
Avail Cap(c_a), veh/h	563	501	1246	1281	826	2930
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.90	0.90	0.39	0.39
Uniform Delay (d), s/veh	35.5	36.3	15.6	15.7	2.9	2.2
Incr Delay (d2), s/veh	1.4	2.9	0.4	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.2	6.2	6.4	0.1	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.9	39.1	16.1	16.1	2.9	2.3
LnGrp LOS	D	D	B	B	A	A
Approach Vol, veh/h	274		629			1049
Approach Delay, s/veh	38.1		16.1			2.4
Approach LOS	D		B			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.9	64.1				75.0	15.0
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	12.5	38.5				55.5	25.5
Max Q Clear Time (g_c+I1), s	12.4	14.7				8.6	9.7
Green Ext Time (p_c), s	0.0	4.0				9.4	0.7

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1	48	150	109	106	53	756	63	66	954	204
Future Volume (veh/h)	25	1	48	150	109	106	53	756	63	66	954	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	26	1	51	158	115	112	56	796	66	69	1004	215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	175	4	220	247	158	154	518	1743	144	465	1187	254
Arrive On Green	0.10	0.14	0.14	0.14	0.18	0.18	0.47	1.00	1.00	0.08	0.27	0.27
Sat Flow, veh/h	1810	31	1584	1810	884	861	1810	3375	280	1810	2959	632
Grp Volume(v), veh/h	26	0	52	158	0	227	56	426	436	69	612	607
Grp Sat Flow(s),veh/h/ln	1810	0	1615	1810	0	1745	1810	1805	1850	1810	1805	1786
Q Serve(g_s), s	1.2	0.0	2.6	7.4	0.0	11.1	0.0	0.0	0.0	2.2	28.8	29.0
Cycle Q Clear(g_c), s	1.2	0.0	2.6	7.4	0.0	11.1	0.0	0.0	0.0	2.2	28.8	29.0
Prop In Lane	1.00		0.98	1.00		0.49	1.00		0.15	1.00		0.35
Lane Grp Cap(c), veh/h	175	0	224	247	0	312	518	932	955	465	724	716
V/C Ratio(X)	0.15	0.00	0.23	0.64	0.00	0.73	0.11	0.46	0.46	0.15	0.84	0.85
Avail Cap(c_a), veh/h	253	0	370	257	0	403	518	932	955	583	724	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.82	0.82	0.82	0.94	0.94	0.94
Uniform Delay (d), s/veh	37.3	0.0	34.5	36.7	0.0	34.9	18.0	0.0	0.0	17.6	30.3	30.3
Incr Delay (d2), s/veh	0.4	0.0	0.5	4.9	0.0	4.7	0.1	1.3	1.3	0.1	11.0	11.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.0	3.6	0.0	5.0	0.6	0.3	0.3	0.9	15.1	15.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	0.0	35.0	41.7	0.0	39.5	18.1	1.3	1.3	17.7	41.2	41.6
LnGrp LOS	D	A	D	D	A	D	B	A	A	B	D	D
Approach Vol, veh/h		78			385			918			1288	
Approach Delay, s/veh		35.9			40.4			2.3			40.1	
Approach LOS		D			D			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	48.5	14.3	14.5	23.1	38.1	10.7	18.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.1	29.5	10.3	18.1	10.0	33.6	10.1	18.3
Max Q Clear Time (g_c+I1), s	4.2	2.0	9.4	4.6	2.0	31.0	3.2	13.1
Green Ext Time (p_c), s	0.1	6.1	0.0	0.1	0.1	1.8	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	602	208	166	834	193	217	481	139	138	546	58
Future Volume (veh/h)	77	602	208	166	834	193	217	481	139	138	546	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	81	634	219	175	878	203	228	506	146	145	575	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	244	1152	514	537	1217	543	543	1003	447	529	1305	137
Arrive On Green	0.14	0.32	0.32	0.15	0.34	0.34	0.15	0.28	0.28	0.15	0.27	0.27
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	3510	3610	1610	3510	4768	500
Grp Volume(v), veh/h	81	634	219	175	878	203	228	506	146	145	415	221
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1755	1805	1610	1755	1729	1810
Q Serve(g_s), s	3.3	11.7	8.6	3.6	17.1	7.7	4.7	9.5	5.8	2.9	8.0	8.1
Cycle Q Clear(g_c), s	3.3	11.7	8.6	3.6	17.1	7.7	4.7	9.5	5.8	2.9	8.0	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	244	1152	514	537	1217	543	543	1003	447	529	946	495
V/C Ratio(X)	0.33	0.55	0.43	0.33	0.72	0.37	0.42	0.50	0.33	0.27	0.44	0.45
Avail Cap(c_a), veh/h	293	1527	681	568	1527	681	568	1003	447	568	946	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	22.6	21.6	30.4	23.3	20.2	30.7	24.4	23.1	30.3	24.1	24.2
Incr Delay (d2), s/veh	0.8	0.4	0.6	0.3	1.3	0.4	0.5	1.8	1.9	0.3	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.8	3.2	1.5	7.1	2.8	2.0	4.1	2.4	1.2	3.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	23.0	22.1	30.7	24.6	20.6	31.2	26.2	25.0	30.5	25.6	27.0
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		934			1256			880			781	
Approach Delay, s/veh		23.6			24.8			27.3			26.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	27.7	14.4	24.0	12.9	29.1	14.1	24.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	31.5	10.5	19.5	10.5	31.5	10.5	19.5
Max Q Clear Time (g_c+I1), s	5.6	13.7	6.7	10.1	5.3	19.1	4.9	11.5
Green Ext Time (p_c), s	0.2	4.9	0.3	2.8	0.1	5.5	0.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	533	170	381	825	10	234	33	216	29	18	7
Future Volume (veh/h)	26	533	170	381	825	10	234	33	216	29	18	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	561	179	401	868	11	331	0	163	31	19	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	149	1047	467	577	1358	17	828	0	633	412	302	111
Arrive On Green	0.08	0.29	0.29	0.11	0.25	0.25	0.23	0.00	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3610	1610	3510	3650	46	3619	0	1610	1810	1324	488
Grp Volume(v), veh/h	27	561	179	401	429	450	331	0	163	31	0	26
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1892	1810	0	1610	1810	0	1812
Q Serve(g_s), s	1.3	11.8	8.0	9.9	19.1	19.1	7.0	0.0	6.1	1.2	0.0	1.0
Cycle Q Clear(g_c), s	1.3	11.8	8.0	9.9	19.1	19.1	7.0	0.0	6.1	1.2	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	149	1047	467	577	672	704	828	0	633	412	0	413
V/C Ratio(X)	0.18	0.54	0.38	0.69	0.64	0.64	0.40	0.00	0.26	0.08	0.00	0.06
Avail Cap(c_a), veh/h	251	1047	467	659	672	704	828	0	633	412	0	413
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	26.9	25.5	37.9	28.4	28.4	29.5	0.0	18.4	27.3	0.0	27.2
Incr Delay (d2), s/veh	0.5	1.8	2.1	2.7	2.0	1.9	1.4	0.0	1.0	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.2	3.3	4.6	9.0	9.4	3.1	0.0	2.4	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.0	28.6	27.7	40.5	30.4	30.3	30.8	0.0	19.4	27.7	0.0	27.5
LnGrp LOS	D	C	C	D	C	C	C	A	B	C	A	C
Approach Vol, veh/h		767			1280			494			57	
Approach Delay, s/veh		28.8			33.6			27.1			27.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	28.1		22.5	9.4	35.5		22.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	14.4	21.5		18.0	10.0	25.9		18.1
Max Q Clear Time (g_c+I1), s	11.9	13.8		3.2	3.3	21.1		9.0
Green Ext Time (p_c), s	0.4	2.7		0.1	0.0	2.3		1.3

Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.1

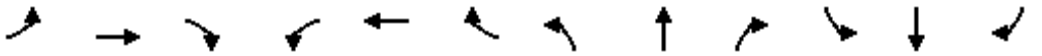
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	680	1196	10	0	15
Future Vol, veh/h	0	680	1196	10	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	716	1259	11	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	635
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	*590
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*590
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	590
HCM Lane V/C Ratio	-	-	-	0.027
HCM Control Delay (s)	-	-	-	11.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	480	53	133	743	179	110	419	110	198	632	366
Future Volume (veh/h)	197	480	53	133	743	179	110	419	110	198	632	366
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	207	505	56	140	782	188	116	441	116	208	665	385
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	443	1238	552	245	842	376	240	699	182	337	661	382
Arrive On Green	0.33	0.46	0.46	0.14	0.23	0.23	0.13	0.25	0.25	0.06	0.10	0.10
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	2833	739	1810	2202	1274
Grp Volume(v), veh/h	207	505	56	140	782	188	116	280	277	208	545	505
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1767	1810	1805	1671
Q Serve(g_s), s	8.2	8.4	1.8	6.5	19.1	9.1	5.3	12.4	12.6	10.1	27.0	27.0
Cycle Q Clear(g_c), s	8.2	8.4	1.8	6.5	19.1	9.1	5.3	12.4	12.6	10.1	27.0	27.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.76
Lane Grp Cap(c), veh/h	443	1238	552	245	842	376	240	445	436	337	542	501
V/C Ratio(X)	0.47	0.41	0.10	0.57	0.93	0.50	0.48	0.63	0.64	0.62	1.01	1.01
Avail Cap(c_a), veh/h	443	1238	552	290	842	376	273	445	436	370	542	501
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	25.7	18.4	16.6	36.4	33.8	29.9	36.2	30.2	30.3	39.1	40.5	40.5
Incr Delay (d2), s/veh	0.8	1.0	0.4	2.1	17.8	4.7	1.5	6.6	6.9	2.0	35.4	36.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.4	0.7	3.0	10.2	4.0	2.4	6.1	6.1	5.0	18.3	17.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	19.4	16.9	38.5	51.6	34.6	37.7	36.8	37.2	41.1	75.9	77.4
LnGrp LOS	C	B	B	D	D	C	D	D	D	D	F	F
Approach Vol, veh/h		768			1110			673			1258	
Approach Delay, s/veh		21.1			47.1			37.1			70.8	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	32.9	13.9	29.0	24.1	23.0	18.7	24.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.9	24.5	11.1	24.5	17.9	18.5	15.9	19.7
Max Q Clear Time (g_c+I1), s	8.5	10.4	7.3	29.0	10.2	21.1	12.1	14.6
Green Ext Time (p_c), s	0.1	3.0	0.1	0.0	0.3	0.0	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	47.9
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	51	66	123	89	36	55	447	93	73	469	55
Future Volume (veh/h)	25	51	66	123	89	36	55	447	93	73	469	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	26	54	69	129	94	38	58	471	98	77	494	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	275	162	207	278	276	111	204	1158	240	597	1974	231
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.04	0.13	0.13	0.66	1.00	1.00
Sat Flow, veh/h	1278	758	968	1288	1286	520	1810	2978	616	1810	3256	381
Grp Volume(v), veh/h	26	0	123	129	0	132	58	284	285	77	273	279
Grp Sat Flow(s),veh/h/ln	1278	0	1726	1288	0	1806	1810	1805	1789	1810	1805	1831
Q Serve(g_s), s	1.6	0.0	5.4	8.5	0.0	5.6	2.8	13.0	13.2	1.4	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	5.4	13.9	0.0	5.6	2.8	13.0	13.2	1.4	0.0	0.0
Prop In Lane	1.00		0.56	1.00		0.29	1.00		0.34	1.00		0.21
Lane Grp Cap(c), veh/h	275	0	370	278	0	387	204	702	696	597	1094	1110
V/C Ratio(X)	0.09	0.00	0.33	0.46	0.00	0.34	0.28	0.41	0.41	0.13	0.25	0.25
Avail Cap(c_a), veh/h	441	0	594	446	0	622	322	702	696	597	1094	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.97	0.97	0.97	0.84	0.84	0.84
Uniform Delay (d), s/veh	33.0	0.0	29.9	35.8	0.0	30.0	39.8	29.7	29.7	10.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.5	1.2	0.0	0.5	0.7	1.7	1.7	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.3	2.7	0.0	2.4	1.3	6.6	6.6	0.6	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	0.0	30.4	37.0	0.0	30.5	40.5	31.3	31.4	10.6	0.5	0.5
LnGrp LOS	C	A	C	D	A	C	D	C	C	B	A	A
Approach Vol, veh/h		149			261			627			629	
Approach Delay, s/veh		30.9			33.7			32.2			1.7	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	37.0		21.3	12.2	56.6		21.3
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	15.5	32.5		28.5	13.5	34.5		28.5
Max Q Clear Time (g_c+I1), s	13.4	15.2		9.2	4.8	2.0		15.9
Green Ext Time (p_c), s	0.1	3.3		0.7	0.1	3.7		0.9

Intersection Summary		
HCM 6th Ctrl Delay		20.8
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	132	75	193	437	80	104	494	128	34	617	47
Future Volume (veh/h)	42	132	75	193	437	80	104	494	128	34	617	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	44	139	79	203	460	84	109	520	135	36	649	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	326	493	418	568	562	476	429	1515	676	170	941	71
Arrive On Green	0.10	0.26	0.26	0.14	0.30	0.30	0.24	0.42	0.42	0.19	0.55	0.55
Sat Flow, veh/h	1810	1900	1610	1810	1900	1610	1810	3610	1610	1810	3402	257
Grp Volume(v), veh/h	44	139	79	203	460	84	109	520	135	36	344	354
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	1900	1610	1810	1805	1610	1810	1805	1854
Q Serve(g_s), s	1.4	5.3	1.9	6.6	20.2	3.5	4.4	8.8	4.8	1.5	12.4	12.4
Cycle Q Clear(g_c), s	1.4	5.3	1.9	6.6	20.2	3.5	4.4	8.8	4.8	1.5	12.4	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	326	493	418	568	562	476	429	1515	676	170	499	513
V/C Ratio(X)	0.13	0.28	0.19	0.36	0.82	0.18	0.25	0.34	0.20	0.21	0.69	0.69
Avail Cap(c_a), veh/h	393	673	571	571	676	573	429	1515	676	251	499	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	20.5	26.6	7.7	17.4	29.5	23.5	27.9	17.7	16.5	33.8	17.3	17.3
Incr Delay (d2), s/veh	0.2	0.3	0.2	0.4	6.7	0.2	0.3	0.6	0.7	0.6	7.3	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	1.3	2.7	10.0	1.3	1.9	3.7	1.8	0.7	4.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.7	26.9	7.9	17.8	36.1	23.7	28.2	18.3	17.2	34.3	24.6	24.5
LnGrp LOS	C	C	A	B	D	C	C	B	B	C	C	C
Approach Vol, veh/h		262			747			764			734	
Approach Delay, s/veh		20.2			29.8			19.5			25.0	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	39.8	14.4	25.3	23.3	26.9	11.2	28.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	22.5	10.1	29.4	10.1	22.4	10.0	29.5
Max Q Clear Time (g_c+I1), s	3.5	10.8	8.6	7.3	6.4	14.4	3.4	22.2
Green Ext Time (p_c), s	0.0	3.1	0.1	1.0	0.1	2.7	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	350	239	149	624	81	264	863	160	38	652	141
Future Volume (veh/h)	113	350	239	149	624	81	264	863	160	38	652	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	119	368	252	157	657	85	278	908	168	40	686	148
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	321	778	347	373	864	386	472	1938	357	177	1189	253
Arrive On Green	0.13	0.22	0.22	0.16	0.24	0.24	0.09	0.15	0.15	0.10	0.28	0.28
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	4401	811	1810	4282	912
Grp Volume(v), veh/h	119	368	252	157	657	85	278	713	363	40	552	282
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1729	1754	1810	1729	1736
Q Serve(g_s), s	5.0	8.0	13.1	2.4	15.2	3.8	13.3	17.0	17.1	1.8	12.4	12.6
Cycle Q Clear(g_c), s	5.0	8.0	13.1	2.4	15.2	3.8	13.3	17.0	17.1	1.8	12.4	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.53
Lane Grp Cap(c), veh/h	321	778	347	373	864	386	472	1523	773	177	961	482
V/C Ratio(X)	0.37	0.47	0.73	0.42	0.76	0.22	0.59	0.47	0.47	0.23	0.57	0.58
Avail Cap(c_a), veh/h	331	963	429	373	963	429	472	1523	773	251	961	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	30.8	32.8	32.3	31.8	27.5	36.5	28.8	28.8	37.4	27.9	28.0
Incr Delay (d2), s/veh	0.7	0.4	4.7	0.8	3.2	0.3	1.5	0.8	1.6	0.6	2.5	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.5	5.4	3.0	6.9	1.5	6.6	8.0	8.3	0.8	5.3	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	31.3	37.5	33.0	35.0	27.8	38.0	29.6	30.4	38.1	30.4	33.1
LnGrp LOS	C	C	D	C	D	C	D	C	C	D	C	C
Approach Vol, veh/h		739			899			1354			874	
Approach Delay, s/veh		33.3			34.0			31.5			31.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	41.6	16.1	21.4	25.5	27.0	14.0	23.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	30.5	10.0	21.5	18.0	22.5	10.0	21.5
Max Q Clear Time (g_c+I1), s	13.8	19.1	4.4	15.1	15.3	14.6	7.0	17.2
Green Ext Time (p_c), s	0.0	5.5	0.2	1.8	0.2	3.3	0.1	1.8

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	134	107	314	212	82	180	1119	144	76	903	36
Future Volume (veh/h)	32	134	107	314	212	82	180	1119	144	76	903	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	34	141	113	331	223	86	189	1178	152	80	951	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	321	501	643	501	489	183	915	1343	173	1196	1888	75
Arrive On Green	0.09	0.14	0.14	0.14	0.19	0.19	0.09	0.10	0.10	0.68	0.74	0.74
Sat Flow, veh/h	3510	3610	1610	3510	2570	962	3510	4650	600	3510	5117	204
Grp Volume(v), veh/h	34	141	113	331	155	154	189	876	454	80	642	347
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1755	1805	1727	1755	1729	1792	1755	1729	1863
Q Serve(g_s), s	0.8	3.2	0.0	8.0	6.8	7.2	4.5	22.5	22.5	0.7	7.0	7.0
Cycle Q Clear(g_c), s	0.8	3.2	0.0	8.0	6.8	7.2	4.5	22.5	22.5	0.7	7.0	7.0
Prop In Lane	1.00		1.00	1.00		0.56	1.00		0.33	1.00		0.11
Lane Grp Cap(c), veh/h	321	501	643	501	343	328	915	999	518	1196	1276	687
V/C Ratio(X)	0.11	0.28	0.18	0.66	0.45	0.47	0.21	0.88	0.88	0.07	0.50	0.50
Avail Cap(c_a), veh/h	491	834	792	585	465	445	915	999	518	1196	1276	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.85	0.85	0.85
Uniform Delay (d), s/veh	37.5	34.7	17.4	36.5	32.3	32.4	32.5	39.1	39.1	9.6	8.4	8.4
Incr Delay (d2), s/veh	0.1	0.3	0.1	2.2	0.9	1.0	0.1	10.1	17.5	0.0	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.5	3.5	3.0	3.0	2.0	11.8	13.3	0.3	2.1	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	35.0	17.6	38.7	33.2	33.5	32.6	49.2	56.7	9.6	9.6	10.6
LnGrp LOS	D	D	B	D	C	C	C	D	E	A	A	B
Approach Vol, veh/h		288			640			1519			1069	
Approach Delay, s/veh		28.5			36.1			49.4			9.9	
Approach LOS		C			D			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	28.0	14.8	14.5	25.5	35.2	10.2	19.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.7	23.5	12.5	18.3	10.5	30.7	10.1	20.7
Max Q Clear Time (g_c+I1), s	2.7	24.5	10.0	5.2	6.5	9.0	2.8	9.2
Green Ext Time (p_c), s	0.2	0.0	0.3	1.0	0.2	6.9	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	343	3	414	445	1229	0	0	935	427
Future Volume (veh/h)	0	0	0	343	3	414	445	1229	0	0	935	427
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				510	0	279	468	1294	0	0	984	449
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				848	0	377	1128	3742	0	0	2469	608
Arrive On Green				0.23	0.00	0.23	0.11	0.24	0.00	0.00	0.76	0.76
Sat Flow, veh/h				3619	0	1610	3510	5358	0	0	6802	1610
Grp Volume(v), veh/h				510	0	279	468	1294	0	0	984	449
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1610
Q Serve(g_s), s				11.3	0.0	14.4	11.2	18.6	0.0	0.0	4.7	13.9
Cycle Q Clear(g_c), s				11.3	0.0	14.4	11.2	18.6	0.0	0.0	4.7	13.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				848	0	377	1128	3742	0	0	2469	608
V/C Ratio(X)				0.60	0.00	0.74	0.41	0.35	0.00	0.00	0.40	0.74
Avail Cap(c_a), veh/h				1126	0	501	1128	3742	0	0	2469	608
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	0.90	0.90
Uniform Delay (d), s/veh				30.7	0.0	31.9	32.3	16.7	0.0	0.0	7.4	8.5
Incr Delay (d2), s/veh				0.7	0.0	4.0	0.2	0.2	0.0	0.0	0.4	7.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.9	0.0	5.9	5.3	8.6	0.0	0.0	1.4	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.4	0.0	35.9	32.5	16.9	0.0	0.0	7.9	15.6
LnGrp LOS				C	A	D	C	B	A	A	A	B
Approach Vol, veh/h					789			1762			1433	
Approach Delay, s/veh					33.0			21.0			10.3	
Approach LOS					C			C			B	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	66.9		30.9	36.0		23.1
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	55.5		19.5	31.5		25.5
Max Q Clear Time (g_c+I1), s	20.6		13.2	15.9		16.4
Green Ext Time (p_c), s	12.2		1.0	7.8		2.1

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	3	296	0	0	0	0	1272	598	297	966	0
Future Volume (veh/h)	375	3	296	0	0	0	0	1272	598	297	966	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	397	0	312				0	1339	629	313	1017	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	884	0	393				0	3268	805	663	3689	0
Arrive On Green	0.24	0.00	0.24				0.00	0.50	0.50	0.38	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	6802	1610	3510	5358	0
Grp Volume(v), veh/h	397	0	312				0	1339	629	313	1017	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1610	1755	1729	0
Q Serve(g_s), s	8.4	0.0	16.3				0.0	11.6	28.8	6.1	0.0	0.0
Cycle Q Clear(g_c), s	8.4	0.0	16.3				0.0	11.6	28.8	6.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	884	0	393				0	3268	805	663	3689	0
V/C Ratio(X)	0.45	0.00	0.79				0.00	0.41	0.78	0.47	0.28	0.00
Avail Cap(c_a), veh/h	1005	0	447				0	3268	805	663	3689	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.92	0.92	0.00
Uniform Delay (d), s/veh	28.9	0.0	31.9				0.0	14.1	18.5	24.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	8.5				0.0	0.4	7.4	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	7.1				0.0	4.1	11.6	2.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	40.3				0.0	14.5	25.9	25.1	0.2	0.0
LnGrp LOS	C	A	D				A	B	C	C	A	A
Approach Vol, veh/h		709						1968			1330	
Approach Delay, s/veh		34.1						18.2			6.0	
Approach LOS		C						B			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	19.0	47.0	24.0	66.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.5	42.5	22.5	58.5
Max Q Clear Time (g_c+I1), s	10.1	30.8	18.3	2.0
Green Ext Time (p_c), s	0.4	8.4	1.1	9.5

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

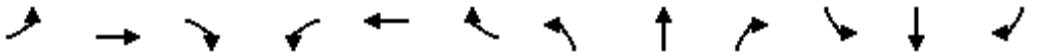
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	680	1201	10	0	15
Future Vol, veh/h	0	680	1201	10	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	716	1264	11	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	638
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	424
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	424
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	424
HCM Lane V/C Ratio	-	-	-	0.037
HCM Control Delay (s)	-	-	-	13.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	0	24	7	1	2	20	715	5	3	749	424
Future Volume (veh/h)	306	0	24	7	1	2	20	715	5	3	749	424
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	330	0	17	7	1	2	21	753	5	3	788	446
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	524	0	233	65	9	19	132	2493	17	65	2313	1032
Arrive On Green	0.14	0.00	0.14	0.05	0.05	0.05	0.07	0.68	0.68	0.04	0.64	0.64
Sat Flow, veh/h	3619	0	1610	1242	177	355	1810	3676	24	1810	3610	1610
Grp Volume(v), veh/h	330	0	17	10	0	0	21	370	388	3	788	446
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1774	0	0	1810	1805	1896	1810	1805	1610
Q Serve(g_s), s	7.7	0.0	0.8	0.5	0.0	0.0	1.0	7.5	7.5	0.1	9.0	12.4
Cycle Q Clear(g_c), s	7.7	0.0	0.8	0.5	0.0	0.0	1.0	7.5	7.5	0.1	9.0	12.4
Prop In Lane	1.00		1.00	0.70		0.20	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	524	0	233	93	0	0	132	1224	1285	65	2313	1032
V/C Ratio(X)	0.63	0.00	0.07	0.11	0.00	0.00	0.16	0.30	0.30	0.05	0.34	0.43
Avail Cap(c_a), veh/h	844	0	376	532	0	0	251	1224	1285	251	2313	1032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	36.2	0.0	33.3	40.6	0.0	0.0	39.1	5.9	5.9	41.9	7.4	8.0
Incr Delay (d2), s/veh	1.2	0.0	0.1	0.5	0.0	0.0	0.6	0.6	0.6	0.2	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.3	0.2	0.0	0.0	0.5	2.6	2.7	0.1	3.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	33.4	41.1	0.0	0.0	39.7	6.5	6.5	42.1	7.7	9.0
LnGrp LOS	D	A	C	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h		347			10			779			1237	
Approach Delay, s/veh		37.3			41.1			7.4			8.2	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	63.0		15.0	8.6	59.7		6.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.0	19.0		18.5	10.0	19.0		24.5				
Max Q Clear Time (g_c+I1), s	2.1	9.5		9.7	3.0	14.4		2.5				
Green Ext Time (p_c), s	0.0	3.3		0.8	0.0	2.8		0.0				

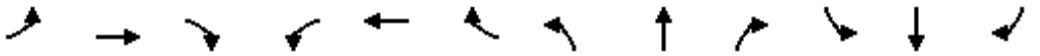
Intersection Summary			
HCM 6th Ctrl Delay		12.3	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
1: Monte Vista Ave & Baseline Rd

11/15/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	844	215	659	913	180	298	223	857	176	129	74
Future Volume (veh/h)	62	844	215	659	913	180	298	223	857	176	129	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	63	861	219	672	932	184	304	228	874	180	132	76
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	325	975	435	1382	1899	847	431	356	875	311	421	228
Arrive On Green	0.10	0.27	0.27	0.71	1.00	1.00	0.11	0.19	0.19	0.11	0.19	0.19
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	1810	1900	1610	1810	2259	1226
Grp Volume(v), veh/h	63	861	219	672	932	184	304	228	874	180	104	104
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1810	1900	1610	1810	1805	1679
Q Serve(g_s), s	2.9	25.2	9.2	3.1	0.0	0.0	12.6	12.2	14.2	8.5	5.5	5.9
Cycle Q Clear(g_c), s	2.9	25.2	9.2	3.1	0.0	0.0	12.6	12.2	14.2	8.5	5.5	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	325	975	435	1382	1899	847	431	356	875	311	336	313
V/C Ratio(X)	0.19	0.88	0.50	0.49	0.49	0.22	0.71	0.64	1.00	0.58	0.31	0.33
Avail Cap(c_a), veh/h	349	975	435	1382	1899	847	431	356	875	311	336	313
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	38.5	18.1	10.3	0.0	0.0	33.6	41.3	9.9	30.9	38.6	38.8
Incr Delay (d2), s/veh	0.3	11.5	4.1	0.0	0.1	0.1	4.8	7.9	28.8	2.7	2.4	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	12.5	3.9	2.6	0.0	0.0	1.7	6.5	17.0	3.9	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	50.0	22.3	10.3	0.1	0.1	38.4	49.2	38.7	33.6	41.0	41.7
LnGrp LOS	C	D	C	B	A	A	D	D	D	C	D	D
Approach Vol, veh/h		1143			1788			1406			388	
Approach Delay, s/veh		43.6			3.9			40.4			37.8	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.2	31.7	14.6	22.5	13.0	59.9	14.5	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	36.7	27.2	10.1	18.0	10.0	53.9	10.0	18.1
Max Q Clear Time (g_c+I1), s	5.1	27.2	14.6	7.9	4.9	2.0	10.5	16.2
Green Ext Time (p_c), s	2.6	0.0	0.0	0.8	0.0	9.4	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	968	642	146	876	470	239	0	1089	240	0	691
Future Volume (veh/h)	256	968	642	146	876	470	239	0	1089	240	0	691
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	0	1900	1900	0	1900
Adj Flow Rate, veh/h	269	1019	676	154	922	495	252	0	1146	253	0	727
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	906	2362	1054	206	965	430	321	0	0	321	0	0
Arrive On Green	0.50	0.65	0.65	0.11	0.27	0.27	0.18	0.00	0.02	0.18	0.00	0.02
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	252		1810	253	
Grp Volume(v), veh/h	269	1019	676	154	922	495	252	50.4		253	55.6	
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	D		1810	E	
Q Serve(g_s), s	9.6	15.0	27.5	9.1	27.6	29.4	14.6			14.7		
Cycle Q Clear(g_c), s	9.6	15.0	27.5	9.1	27.6	29.4	14.6			14.7		
Prop In Lane	1.00		1.00	1.00		1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	906	2362	1054	206	965	430	321			321		
V/C Ratio(X)	0.30	0.43	0.64	0.75	0.96	1.15	0.78			0.79		
Avail Cap(c_a), veh/h	906	2362	1054	206	965	430	418			321		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00		
Upstream Filter(I)	0.35	0.35	0.35	0.70	0.70	0.70	1.00			1.00		
Uniform Delay (d), s/veh	16.1	9.2	11.3	47.2	39.7	40.3	43.2			43.3		
Incr Delay (d2), s/veh	0.1	0.2	1.1	10.2	15.7	85.4	7.2			12.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
%ile BackOfQ(50%),veh/ln	3.9	5.5	9.2	4.7	14.2	21.7	7.2			7.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	9.4	12.4	57.4	55.4	125.7	50.4			55.6		
LnGrp LOS	B	A	B	E	E	F	D			E		
Approach Vol, veh/h		1964			1571							
Approach Delay, s/veh		11.3			77.7							
Approach LOS		B			E							

Timer - Assigned Phs	1	2	3		5	6	7
Phs Duration (G+Y+Rc), s	14.5	74.0	21.5		57.1	31.4	21.5
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	31.0	22.9		14.1	26.9	12.5
Max Q Clear Time (g_c+I1), s	11.1	29.5	16.6		11.6	31.4	16.7
Green Ext Time (p_c), s	0.0	1.2	0.4		0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	1121	624	207	481	52	407	507	291	35	313	150
Future Volume (veh/h)	308	1121	624	207	481	52	407	507	291	35	313	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	314	1144	637	211	491	53	415	517	297	36	319	153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	404	1290	575	233	864	93	461	727	417	203	673	300
Arrive On Green	0.22	0.36	0.36	0.13	0.26	0.26	0.43	0.55	0.55	0.11	0.19	0.19
Sat Flow, veh/h	1810	3610	1610	1810	3288	354	1810	2210	1267	1810	3610	1610
Grp Volume(v), veh/h	314	1144	637	211	269	275	415	422	392	36	319	153
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1836	1810	1805	1672	1810	1805	1610
Q Serve(g_s), s	17.9	32.8	39.3	12.6	14.2	14.3	23.5	19.0	19.1	2.0	8.7	9.4
Cycle Q Clear(g_c), s	17.9	32.8	39.3	12.6	14.2	14.3	23.5	19.0	19.1	2.0	8.7	9.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	404	1290	575	233	474	482	461	594	550	203	673	300
V/C Ratio(X)	0.78	0.89	1.11	0.90	0.57	0.57	0.90	0.71	0.71	0.18	0.47	0.51
Avail Cap(c_a), veh/h	404	1290	575	233	474	482	464	594	550	206	673	300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	33.3	35.3	47.2	35.1	35.2	30.3	20.9	20.9	44.2	39.9	40.2
Incr Delay (d2), s/veh	0.9	1.0	51.0	34.6	4.8	4.8	17.2	5.8	6.3	0.4	2.4	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	14.2	23.1	7.9	6.8	7.0	10.8	7.1	6.7	0.9	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	34.2	86.4	81.8	40.0	40.0	47.5	26.7	27.2	44.7	42.3	46.3
LnGrp LOS	D	C	F	F	D	D	D	C	C	D	D	D
Approach Vol, veh/h		2095			755			1229			508	
Approach Delay, s/veh		51.1			51.7			33.9			43.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	41.3	30.0	22.5	26.6	30.9	14.3	38.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	36.8	25.7	18.0	21.9	26.4	10.0	33.7
Max Q Clear Time (g_c+I1), s	14.6	41.3	25.5	11.4	19.9	16.3	4.0	21.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.2	2.4	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	134	92	1138	207	115	828
Future Volume (veh/h)	134	92	1138	207	115	828
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	137	94	1161	211	117	845
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	213	189	1860	336	690	3054
Arrive On Green	0.12	0.12	1.00	1.00	0.44	1.00
Sat Flow, veh/h	1810	1610	3149	552	1810	3705
Grp Volume(v), veh/h	137	94	684	688	117	845
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1801	1810	1805
Q Serve(g_s), s	8.0	6.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.0	6.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.31	1.00	
Lane Grp Cap(c), veh/h	213	189	1099	1097	690	3054
V/C Ratio(X)	0.64	0.50	0.62	0.63	0.17	0.28
Avail Cap(c_a), veh/h	378	337	1099	1097	690	3054
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.60	0.60	0.48	0.48
Uniform Delay (d), s/veh	46.3	45.5	0.0	0.0	2.3	0.0
Incr Delay (d2), s/veh	3.2	2.0	1.6	1.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.5	0.5	0.5	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.6	47.5	1.6	1.6	2.3	0.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	231		1372			962
Approach Delay, s/veh	48.7		1.6			0.4
Approach LOS	D		A			A

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.1	69.0				95.1	14.9
Change Period (Y+Rc), s	4.5	4.5				4.5	4.5
Max Green Setting (Gmax), s	11.5	64.5				80.5	20.5
Max Q Clear Time (g_c+I1), s	12.0	2.0				2.0	10.0
Green Ext Time (p_c), s	0.2	14.8				7.5	0.5

Intersection Summary	
HCM 6th Ctrl Delay	5.4
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	72	86	142	0	190	15	1178	194	188	993	26
Future Volume (veh/h)	161	72	86	142	0	190	15	1178	194	188	993	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	166	74	89	146	0	196	15	1214	200	194	1024	27
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	234	135	162	214	0	258	289	1445	237	407	2089	55
Arrive On Green	0.13	0.17	0.17	0.12	0.00	0.16	0.06	0.47	0.47	0.17	0.58	0.58
Sat Flow, veh/h	1810	785	945	1810	0	1610	1810	3105	509	1810	3593	95
Grp Volume(v), veh/h	166	0	163	146	0	196	15	703	711	194	514	537
Grp Sat Flow(s),veh/h/ln	1810	0	1730	1810	0	1610	1810	1805	1808	1810	1805	1883
Q Serve(g_s), s	9.7	0.0	9.5	8.5	0.0	12.8	0.5	37.5	38.1	4.4	18.4	18.4
Cycle Q Clear(g_c), s	9.7	0.0	9.5	8.5	0.0	12.8	0.5	37.5	38.1	4.4	18.4	18.4
Prop In Lane	1.00		0.55	1.00		1.00	1.00		0.28	1.00		0.05
Lane Grp Cap(c), veh/h	234	0	297	214	0	258	289	840	842	407	1049	1095
V/C Ratio(X)	0.71	0.00	0.55	0.68	0.00	0.76	0.05	0.84	0.84	0.48	0.49	0.49
Avail Cap(c_a), veh/h	283	0	330	283	0	307	395	840	842	407	1049	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.31	0.31	0.31	0.96	0.96	0.96
Uniform Delay (d), s/veh	45.9	0.0	41.7	46.5	0.0	44.1	17.8	25.7	25.9	37.8	13.5	13.5
Incr Delay (d2), s/veh	6.3	0.0	1.6	4.2	0.0	8.7	0.0	3.3	3.4	0.8	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	4.2	4.1	0.0	5.7	0.2	16.2	16.5	4.6	7.6	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	43.3	50.7	0.0	52.9	17.8	29.0	29.3	38.6	15.1	15.0
LnGrp LOS	D	A	D	D	A	D	B	C	C	D	B	B
Approach Vol, veh/h		329			342			1429			1245	
Approach Delay, s/veh		47.8			52.0			29.0			18.7	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	53.2	15.0	20.9	8.2	65.9	16.2	19.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	48.7	14.7	18.5	10.1	48.7	14.7	18.5
Max Q Clear Time (g_c+I1), s	6.4	40.1	10.5	11.5	2.5	20.4	11.7	14.8
Green Ext Time (p_c), s	0.2	5.7	0.1	0.4	0.0	8.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	1074	278	197	758	191	366	909	194	220	599	114
Future Volume (veh/h)	91	1074	278	197	758	191	366	909	194	220	599	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	94	1107	287	203	781	197	377	937	200	227	618	118
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	261	1096	489	561	1152	514	567	983	439	564	1190	224
Arrive On Green	0.14	0.30	0.30	0.16	0.32	0.32	0.16	0.27	0.27	0.16	0.27	0.27
Sat Flow, veh/h	1810	3610	1610	3510	3610	1610	3510	3610	1610	3510	4385	825
Grp Volume(v), veh/h	94	1107	287	203	781	197	377	937	200	227	485	251
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1610	1755	1805	1610	1755	1729	1752
Q Serve(g_s), s	3.6	23.5	11.7	4.0	14.5	7.3	7.8	19.7	8.0	4.5	9.2	9.4
Cycle Q Clear(g_c), s	3.6	23.5	11.7	4.0	14.5	7.3	7.8	19.7	8.0	4.5	9.2	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	261	1096	489	561	1152	514	567	983	439	564	939	475
V/C Ratio(X)	0.36	1.01	0.59	0.36	0.68	0.38	0.66	0.95	0.46	0.40	0.52	0.53
Avail Cap(c_a), veh/h	292	1096	489	681	1213	541	567	983	439	567	939	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	26.9	22.8	29.0	22.9	20.4	30.5	27.7	23.4	29.1	23.9	24.0
Incr Delay (d2), s/veh	0.8	29.6	1.8	0.4	1.4	0.5	2.9	19.4	3.4	0.5	2.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	14.0	4.5	1.7	6.1	2.7	3.4	10.7	3.3	1.9	3.9	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	56.5	24.6	29.4	24.3	20.9	33.4	47.0	26.8	29.6	25.9	28.1
LnGrp LOS	C	F	C	C	C	C	C	D	C	C	C	C
Approach Vol, veh/h		1488			1181			1514			963	
Approach Delay, s/veh		48.7			24.6			41.0			27.4	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	25.5	14.5	23.0	13.2	26.7	14.4	23.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	21.0	10.0	18.5	10.0	23.5	10.0	18.5
Max Q Clear Time (g_c+I1), s	16.0	25.5	9.8	11.4	5.6	16.5	6.5	21.7
Green Ext Time (p_c), s	0.3	0.0	0.0	2.7	0.1	3.3	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1115	293	348	699	13	272	41	581	20	13	10
Future Volume (veh/h)	30	1115	293	348	699	13	272	41	581	20	13	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	32	1174	308	366	736	14	205	0	727	21	14	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	487	1355	605	517	918	17	395	0	1177	337	184	144
Arrive On Green	0.27	0.38	0.38	0.29	0.51	0.51	0.22	0.00	0.22	0.19	0.19	0.19
Sat Flow, veh/h	1810	3610	1610	3510	3624	69	1810	0	3220	1810	986	775
Grp Volume(v), veh/h	32	1174	308	366	367	383	205	0	727	21	0	25
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1755	1805	1888	1810	0	1610	1810	0	1761
Q Serve(g_s), s	1.4	33.1	16.2	10.2	18.6	18.6	11.0	0.0	4.2	1.1	0.0	1.3
Cycle Q Clear(g_c), s	1.4	33.1	16.2	10.2	18.6	18.6	11.0	0.0	4.2	1.1	0.0	1.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	487	1355	605	517	457	478	395	0	1177	337	0	328
V/C Ratio(X)	0.07	0.87	0.51	0.71	0.80	0.80	0.52	0.00	0.62	0.06	0.00	0.08
Avail Cap(c_a), veh/h	487	1355	605	517	738	772	395	0	1177	337	0	328
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.46	1.00	1.00	1.00	0.89	0.00	0.89	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	31.8	26.5	36.7	24.8	24.8	37.9	0.0	28.6	36.8	0.0	36.9
Incr Delay (d2), s/veh	0.0	3.7	1.4	4.4	3.3	3.2	4.3	0.0	2.2	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	14.8	6.4	4.2	6.2	6.4	5.3	0.0	8.1	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	35.5	27.9	41.1	28.1	28.0	42.2	0.0	30.8	37.2	0.0	37.4
LnGrp LOS	C	D	C	D	C	C	D	A	C	D	A	D
Approach Vol, veh/h		1514			1116			932			46	
Approach Delay, s/veh		33.9			32.4			33.3			37.3	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.2	43.3		22.5	31.6	29.9		26.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.7	38.8		18.0	10.0	42.5		21.5
Max Q Clear Time (g_c+I1), s	12.2	35.1		3.3	3.4	20.6		13.0
Green Ext Time (p_c), s	0.2	2.7		0.1	0.0	4.8		2.7

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

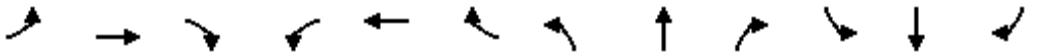
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Traffic Vol, veh/h	0	1716	1046	13	0	10
Future Vol, veh/h	0	1716	1046	13	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1806	1101	14	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	558
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	*652
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*652
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	652
HCM Lane V/C Ratio	-	-	-	0.016
HCM Control Delay (s)	-	-	-	10.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	367	1120	109	155	705	202	140	763	185	282	741	257
Future Volume (veh/h)	367	1120	109	155	705	202	140	763	185	282	741	257
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	371	1131	110	157	712	204	141	771	187	285	748	260
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	398	1352	603	207	971	433	207	770	187	309	850	296
Arrive On Green	0.44	0.75	0.75	0.11	0.27	0.27	0.11	0.27	0.27	0.06	0.11	0.11
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	2881	699	1810	2627	913
Grp Volume(v), veh/h	371	1131	110	157	712	204	141	483	475	285	514	494
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1774	1810	1805	1736
Q Serve(g_s), s	21.4	23.2	2.2	9.3	19.8	7.6	8.2	29.4	29.4	17.2	30.9	30.9
Cycle Q Clear(g_c), s	21.4	23.2	2.2	9.3	19.8	7.6	8.2	29.4	29.4	17.2	30.9	30.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.53
Lane Grp Cap(c), veh/h	398	1352	603	207	971	433	207	482	474	309	584	562
V/C Ratio(X)	0.93	0.84	0.18	0.76	0.73	0.47	0.68	1.00	1.00	0.92	0.88	0.88
Avail Cap(c_a), veh/h	398	1352	603	207	971	433	207	482	474	309	584	562
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	30.0	11.5	8.9	47.2	36.6	14.4	46.8	40.3	40.3	51.2	47.0	47.0
Incr Delay (d2), s/veh	28.6	6.3	0.7	14.8	4.9	3.6	8.7	41.3	41.7	28.5	15.1	15.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	5.4	0.8	5.0	9.3	3.2	4.2	18.4	18.1	10.8	17.4	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.6	17.8	9.6	62.0	41.5	18.0	55.5	81.6	82.0	79.7	62.1	62.7
LnGrp LOS	E	B	A	E	D	B	E	F	F	E	E	E
Approach Vol, veh/h		1612			1073			1099			1293	
Approach Delay, s/veh		26.6			40.0			78.4			66.2	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	43.2	14.6	37.6	26.2	31.6	20.8	31.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.1	38.7	10.1	33.1	21.7	27.1	16.3	26.9
Max Q Clear Time (g_c+I1), s	11.3	25.2	10.2	32.9	23.4	21.8	19.2	31.4
Green Ext Time (p_c), s	0.0	7.0	0.0	0.1	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	132	67	140	93	73	70	747	147	79	679	47
Future Volume (veh/h)	68	132	67	140	93	73	70	747	147	79	679	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	72	139	71	147	98	77	74	786	155	83	715	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	316	323	165	290	269	211	411	1236	244	451	1485	102
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.08	0.14	0.14	0.25	0.43	0.43
Sat Flow, veh/h	1229	1185	606	1190	986	775	1810	3006	593	1810	3428	235
Grp Volume(v), veh/h	72	0	210	147	0	175	74	472	469	83	376	388
Grp Sat Flow(s),veh/h/ln	1229	0	1791	1190	0	1761	1810	1805	1793	1810	1805	1858
Q Serve(g_s), s	4.5	0.0	8.7	10.4	0.0	7.2	3.5	22.3	22.3	3.2	13.4	13.5
Cycle Q Clear(g_c), s	11.7	0.0	8.7	19.1	0.0	7.2	3.5	22.3	22.3	3.2	13.4	13.5
Prop In Lane	1.00		0.34	1.00		0.44	1.00		0.33	1.00		0.13
Lane Grp Cap(c), veh/h	316	0	488	290	0	480	411	742	737	451	782	805
V/C Ratio(X)	0.23	0.00	0.43	0.51	0.00	0.36	0.18	0.64	0.64	0.18	0.48	0.48
Avail Cap(c_a), veh/h	405	0	617	375	0	606	411	742	737	451	782	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.74	0.74	0.74	0.80	0.80	0.80
Uniform Delay (d), s/veh	31.2	0.0	27.0	34.8	0.0	26.4	33.8	32.5	32.5	26.6	18.3	18.3
Incr Delay (d2), s/veh	0.4	0.0	0.6	1.4	0.0	0.5	0.2	3.1	3.1	0.2	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	3.7	3.1	0.0	3.0	1.5	11.3	11.2	1.4	5.7	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	0.0	27.6	36.2	0.0	26.9	33.9	35.6	35.6	26.7	20.0	19.9
LnGrp LOS	C	A	C	D	A	C	C	D	D	C	B	B
Approach Vol, veh/h		282			322			1015			847	
Approach Delay, s/veh		28.6			31.2			35.5			20.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.5	39.0		26.5	22.5	41.0		26.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	13.5	34.5		28.5	11.5	36.5		28.5
Max Q Clear Time (g_c+I1), s	15.2	24.3		13.7	5.5	15.5		21.1
Green Ext Time (p_c), s	0.1	4.4		1.2	0.1	4.9		0.9

Intersection Summary		
HCM 6th Ctrl Delay	29.0	
HCM 6th LOS	C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	439	121	252	342	78	86	882	214	71	731	56
Future Volume (veh/h)	147	439	121	252	342	78	86	882	214	71	731	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	155	462	127	265	360	82	91	928	225	75	769	59
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	454	545	462	393	563	477	362	1286	574	220	944	72
Arrive On Green	0.14	0.29	0.29	0.15	0.30	0.30	0.20	0.36	0.36	0.16	0.37	0.37
Sat Flow, veh/h	1810	1900	1610	1810	1900	1610	1810	3610	1610	1810	3398	261
Grp Volume(v), veh/h	155	462	127	265	360	82	91	928	225	75	408	420
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	1900	1610	1810	1805	1610	1810	1805	1853
Q Serve(g_s), s	4.9	20.6	3.2	8.6	14.8	3.4	3.8	20.0	9.4	3.3	18.4	18.4
Cycle Q Clear(g_c), s	4.9	20.6	3.2	8.6	14.8	3.4	3.8	20.0	9.4	3.3	18.4	18.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	454	545	462	393	563	477	362	1286	574	220	501	515
V/C Ratio(X)	0.34	0.85	0.27	0.67	0.64	0.17	0.25	0.72	0.39	0.34	0.81	0.82
Avail Cap(c_a), veh/h	458	574	487	402	597	506	362	1286	574	251	501	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	17.6	30.2	8.3	19.9	27.5	23.5	30.3	25.1	21.7	34.5	26.3	26.3
Incr Delay (d2), s/veh	0.4	10.9	0.3	4.3	2.1	0.2	0.4	3.5	2.0	0.8	12.4	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	10.8	2.0	3.9	6.9	1.3	1.7	8.9	3.8	1.5	8.7	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	41.1	8.6	24.1	29.6	23.6	30.7	28.6	23.7	35.3	38.7	38.4
LnGrp LOS	B	D	A	C	C	C	C	C	C	D	D	D
Approach Vol, veh/h		744			707			1244			903	
Approach Delay, s/veh		30.8			26.9			27.9			38.3	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	34.1	15.1	27.8	20.0	27.0	14.3	28.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	26.2	11.1	24.7	13.7	22.5	10.0	25.8
Max Q Clear Time (g_c+I1), s	15.3	22.0	10.6	22.6	5.8	20.4	6.9	16.8
Green Ext Time (p_c), s	0.1	2.6	0.0	0.7	0.1	1.1	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	937	423	188	523	66	308	877	164	93	1204	188
Future Volume (veh/h)	212	937	423	188	523	66	308	877	164	93	1204	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	223	986	445	198	551	69	324	923	173	98	1267	198
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	451	1003	447	331	767	342	342	1561	291	251	1382	216
Arrive On Green	0.20	0.28	0.28	0.14	0.21	0.21	0.06	0.12	0.12	0.14	0.31	0.31
Sat Flow, veh/h	1810	3610	1610	1810	3610	1610	1810	4391	820	1810	4524	707
Grp Volume(v), veh/h	223	986	445	198	551	69	324	726	370	98	968	497
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1729	1752	1810	1729	1773
Q Serve(g_s), s	5.5	24.4	24.8	8.7	12.8	3.2	16.1	17.9	18.0	4.4	24.3	24.3
Cycle Q Clear(g_c), s	5.5	24.4	24.8	8.7	12.8	3.2	16.1	17.9	18.0	4.4	24.3	24.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		0.40
Lane Grp Cap(c), veh/h	451	1003	447	331	767	342	342	1230	623	251	1057	542
V/C Ratio(X)	0.49	0.98	0.99	0.60	0.72	0.20	0.95	0.59	0.59	0.39	0.92	0.92
Avail Cap(c_a), veh/h	451	1003	447	331	915	408	342	1230	623	251	1057	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	32.3	32.4	31.6	32.9	29.2	41.8	33.5	33.5	35.3	30.1	30.1
Incr Delay (d2), s/veh	0.8	24.3	41.2	2.9	2.2	0.3	26.7	1.4	2.7	1.0	13.7	22.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	13.7	14.4	4.0	5.7	1.2	10.3	8.5	8.9	2.0	11.7	13.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	56.6	73.6	34.5	35.1	29.4	68.5	34.9	36.3	36.3	43.9	52.9
LnGrp LOS	C	E	E	C	D	C	E	C	D	D	D	D
Approach Vol, veh/h		1654			818			1420			1563	
Approach Delay, s/veh		57.7			34.5			42.9			46.2	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	34.0	14.5	27.0	19.0	29.5	20.4	21.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	29.5	10.0	22.5	14.5	25.0	12.2	20.3
Max Q Clear Time (g_c+I1), s	16.4	20.0	10.7	26.8	18.1	26.3	7.5	14.8
Green Ext Time (p_c), s	0.1	4.9	0.0	0.0	0.0	0.0	0.3	1.9

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	439	357	457	326	110	422	1166	263	227	1488	112
Future Volume (veh/h)	139	439	357	457	326	110	422	1166	263	227	1488	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	146	462	376	481	343	116	444	1227	277	239	1566	118
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	565	694	603	554	503	167	640	1788	404	487	1864	140
Arrive On Green	0.16	0.19	0.19	0.16	0.19	0.19	0.06	0.14	0.14	0.18	0.50	0.50
Sat Flow, veh/h	3510	3610	1610	3510	2660	885	3510	4231	955	3510	4921	371
Grp Volume(v), veh/h	146	462	376	481	231	228	444	1003	501	239	1100	584
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1755	1805	1741	1755	1729	1728	1755	1729	1833
Q Serve(g_s), s	3.3	10.7	0.7	12.0	10.7	11.0	11.2	24.8	24.8	5.5	24.6	24.7
Cycle Q Clear(g_c), s	3.3	10.7	0.7	12.0	10.7	11.0	11.2	24.8	24.8	5.5	24.6	24.7
Prop In Lane	1.00		1.00	1.00		0.51	1.00		0.55	1.00		0.20
Lane Grp Cap(c), veh/h	565	694	603	554	341	329	640	1461	730	487	1310	695
V/C Ratio(X)	0.26	0.67	0.62	0.87	0.68	0.69	0.69	0.69	0.69	0.49	0.84	0.84
Avail Cap(c_a), veh/h	565	822	660	554	445	429	640	1461	730	488	1310	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82	0.45	0.45	0.45
Uniform Delay (d), s/veh	33.1	33.7	23.0	37.0	33.9	34.1	39.8	33.0	33.1	33.9	20.0	20.0
Incr Delay (d2), s/veh	0.2	1.6	1.6	13.8	2.7	3.2	2.7	2.2	4.3	0.3	3.1	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.7	6.5	6.1	4.9	4.9	5.5	11.8	12.3	2.3	8.7	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	35.3	24.6	50.8	36.6	37.2	42.5	35.2	37.3	34.2	23.1	25.7
LnGrp LOS	C	D	C	D	D	D	D	D	D	C	C	C
Approach Vol, veh/h		984			940			1948			1923	
Approach Delay, s/veh		30.9			44.0			37.4			25.2	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	40.0	16.2	19.3	18.4	36.1	16.5	19.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.0	32.3	11.7	18.0	10.7	31.6	10.0	19.7
Max Q Clear Time (g_c+I1), s	7.5	26.8	14.0	12.7	13.2	26.7	5.3	13.0
Green Ext Time (p_c), s	0.2	4.1	0.0	2.1	0.0	3.9	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	556	2	640	365	1545	0	0	1860	666
Future Volume (veh/h)	0	0	0	556	2	640	365	1545	0	0	1860	666
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				801	0	431	380	1609	0	0	1938	694
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1207	0	537	549	3227	0	0	2898	714
Arrive On Green				0.33	0.00	0.33	0.31	1.00	0.00	0.00	0.89	0.89
Sat Flow, veh/h				3619	0	1610	3510	5358	0	0	6802	1610
Grp Volume(v), veh/h				801	0	431	380	1609	0	0	1938	694
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1729	0	0	1634	1610
Q Serve(g_s), s				17.1	0.0	21.9	8.5	0.0	0.0	0.0	7.4	31.8
Cycle Q Clear(g_c), s				17.1	0.0	21.9	8.5	0.0	0.0	0.0	7.4	31.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1207	0	537	549	3227	0	0	2898	714
V/C Ratio(X)				0.66	0.00	0.80	0.69	0.50	0.00	0.00	0.67	0.97
Avail Cap(c_a), veh/h				1448	0	644	936	3227	0	0	2898	714
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	1.00	0.80	0.80	0.00	0.00	0.51	0.51
Uniform Delay (d), s/veh				25.7	0.0	27.3	29.0	0.0	0.0	0.0	3.3	4.6
Incr Delay (d2), s/veh				0.9	0.0	6.1	1.3	0.4	0.0	0.0	0.6	18.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.2	0.0	9.0	3.2	0.1	0.0	0.0	1.3	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.5	0.0	33.4	30.3	0.4	0.0	0.0	3.9	22.9
LnGrp LOS				C	A	C	C	A	A	A	A	C
Approach Vol, veh/h					1232			1989			2632	
Approach Delay, s/veh					29.0			6.1			8.9	
Approach LOS					C			A			A	

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	58.0		16.1	41.9		32.0
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5
Max Green Setting (Gmax), s	47.5		21.5	21.5		33.5
Max Q Clear Time (g_c+I1), s	2.0		10.5	33.8		23.9
Green Ext Time (p_c), s	18.3		1.0	0.0		3.6

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	564	5	400	0	0	0	0	1387	622	703	1801	0
Future Volume (veh/h)	564	5	400	0	0	0	0	1387	622	703	1801	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	585	0	412				0	1430	641	725	1857	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	1046	0	465				0	2469	608	936	3458	0
Arrive On Green	0.29	0.00	0.29				0.00	0.38	0.38	0.53	1.00	0.00
Sat Flow, veh/h	3619	0	1610				0	6802	1610	3510	5358	0
Grp Volume(v), veh/h	585	0	412				0	1430	641	725	1857	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1634	1610	1755	1729	0
Q Serve(g_s), s	12.3	0.0	22.0				0.0	15.7	34.0	14.8	0.0	0.0
Cycle Q Clear(g_c), s	12.3	0.0	22.0				0.0	15.7	34.0	14.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1046	0	465				0	2469	608	936	3458	0
V/C Ratio(X)	0.56	0.00	0.89				0.00	0.58	1.05	0.77	0.54	0.00
Avail Cap(c_a), veh/h	1046	0	465				0	2469	608	936	3458	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.55	0.55	0.00
Uniform Delay (d), s/veh	27.1	0.0	30.6				0.0	22.3	28.0	18.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	18.2				0.0	1.0	51.5	2.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	10.6				0.0	6.0	21.1	4.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	0.0	48.8				0.0	23.3	79.5	21.1	0.3	0.0
LnGrp LOS	C	A	D				A	C	F	C	A	A
Approach Vol, veh/h		997						2071			2582	
Approach Delay, s/veh		36.5						40.7			6.2	
Approach LOS		D						D			A	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	36.0	36.0	28.0	62.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	31.5	31.5	23.5	57.5
Max Q Clear Time (g_c+I1), s	16.8	36.0	24.0	2.0
Green Ext Time (p_c), s	1.3	0.0	0.0	24.9

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

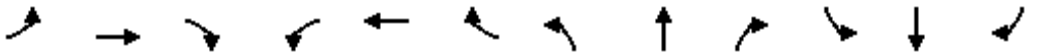
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1716	1043	13	0	10
Future Vol, veh/h	0	1716	1043	13	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	1806	1098	14	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	556
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	480
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	480
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	480
HCM Lane V/C Ratio	-	-	-	0.022
HCM Control Delay (s)	-	-	-	12.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	0	53	6	3	1	74	836	7	0	705	350
Future Volume (veh/h)	413	0	53	6	3	1	74	836	7	0	705	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	447	0	37	6	3	1	77	871	7	0	734	365
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	647	0	288	57	28	9	222	2577	21	2	2012	897
Arrive On Green	0.18	0.00	0.18	0.05	0.05	0.05	0.12	0.70	0.70	0.00	0.56	0.56
Sat Flow, veh/h	3619	0	1610	1088	544	181	1810	3670	29	1810	3610	1610
Grp Volume(v), veh/h	447	0	37	10	0	0	77	428	450	0	734	365
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1813	0	0	1810	1805	1895	1810	1805	1610
Q Serve(g_s), s	10.4	0.0	1.7	0.5	0.0	0.0	3.5	8.3	8.3	0.0	10.2	11.7
Cycle Q Clear(g_c), s	10.4	0.0	1.7	0.5	0.0	0.0	3.5	8.3	8.3	0.0	10.2	11.7
Prop In Lane	1.00		1.00	0.60		0.10	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	647	0	288	95	0	0	222	1268	1330	2	2012	897
V/C Ratio(X)	0.69	0.00	0.13	0.11	0.00	0.00	0.35	0.34	0.34	0.00	0.36	0.41
Avail Cap(c_a), veh/h	925	0	411	483	0	0	251	1268	1330	251	2012	897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.90	0.90
Uniform Delay (d), s/veh	34.6	0.0	31.1	40.6	0.0	0.0	36.2	5.2	5.2	0.0	11.1	11.4
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.5	0.0	0.0	0.9	0.7	0.7	0.0	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	0.7	0.2	0.0	0.0	1.6	2.8	3.0	0.0	3.9	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	31.3	41.1	0.0	0.0	37.1	6.0	5.9	0.0	11.5	12.6
LnGrp LOS	D	A	C	D	A	A	D	A	A	A	B	B
Approach Vol, veh/h		484			10			955			1099	
Approach Delay, s/veh		35.6			41.1			8.5			11.9	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	65.2		18.1	13.0	52.2		6.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.0	20.0		20.5	10.0	20.0		21.5				
Max Q Clear Time (g_c+I1), s	0.0	10.3		12.4	5.5	13.7		2.5				
Green Ext Time (p_c), s	0.0	3.9		1.2	0.1	3.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		15.2	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
3: Benson Ave & Baseline Rd/16th St

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	437	484	273	953	21	467	153	87	19	325	298
Future Volume (veh/h)	82	437	484	273	953	21	467	153	87	19	325	298
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	90	480	532	300	1047	23	513	168	96	21	357	327
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	200	1094	488	317	1328	29	720	226	129	351	701	313
Arrive On Green	0.12	0.32	0.32	0.19	0.39	0.39	0.28	0.28	0.28	0.20	0.20	0.20
Sat Flow, veh/h	1714	3420	1525	1714	3421	75	3429	1075	614	1714	3420	1525
Grp Volume(v), veh/h	90	480	532	300	523	547	513	0	264	21	357	327
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1786	1714	0	1689	1714	1710	1525
Q Serve(g_s), s	4.9	11.1	32.0	17.3	27.0	27.0	13.5	0.0	14.2	1.0	9.3	20.5
Cycle Q Clear(g_c), s	4.9	11.1	32.0	17.3	27.0	27.0	13.5	0.0	14.2	1.0	9.3	20.5
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	200	1094	488	317	664	694	720	0	355	351	701	313
V/C Ratio(X)	0.45	0.44	1.09	0.95	0.79	0.79	0.71	0.00	0.74	0.06	0.51	1.05
Avail Cap(c_a), veh/h	214	1094	488	317	664	694	720	0	355	351	701	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	0.97	0.00	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	26.9	34.0	40.3	27.0	27.0	33.3	0.0	33.6	32.0	35.3	39.8
Incr Delay (d2), s/veh	1.1	0.9	61.4	36.4	9.2	8.8	5.8	0.0	12.9	0.3	2.6	63.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.6	19.8	10.4	12.3	12.8	5.7	0.0	6.7	0.4	4.1	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	27.8	95.4	76.7	36.2	35.8	39.1	0.0	46.5	32.3	37.9	103.1
LnGrp LOS	D	C	F	E	D	D	D	A	D	C	D	F
Approach Vol, veh/h		1102			1370			777			705	
Approach Delay, s/veh		61.6			44.9			41.6			68.0	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.5	34.0		22.5	13.7	40.8		23.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	16.0	29.5		18.0	10.0	35.5		18.5				
Max Q Clear Time (g_c+I1), s	19.3	34.0		22.5	6.9	29.0		16.2				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.6		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		53.0	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
3: Benson Ave & Baseline Rd/16th St

11/15/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	1068	595	166	458	50	388	483	260	26	238	132
Future Volume (veh/h)	293	1068	595	166	458	50	388	483	260	26	238	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adj Flow Rate, veh/h	299	1090	607	169	467	51	385	509	265	27	243	135
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	380	1272	567	196	823	90	436	568	295	319	637	284
Arrive On Green	0.22	0.37	0.37	0.11	0.26	0.26	0.34	0.34	0.34	0.19	0.19	0.19
Sat Flow, veh/h	1714	3420	1525	1714	3111	338	1714	2233	1158	1714	3420	1525
Grp Volume(v), veh/h	299	1090	607	169	256	262	385	410	364	27	243	135
Grp Sat Flow(s),veh/h/ln	1714	1710	1525	1714	1710	1739	1714	1800	1592	1714	1710	1525
Q Serve(g_s), s	18.1	32.3	40.9	10.7	14.2	14.4	23.3	23.8	23.9	1.4	6.8	8.7
Cycle Q Clear(g_c), s	18.1	32.3	40.9	10.7	14.2	14.4	23.3	23.8	23.9	1.4	6.8	8.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	380	1272	567	196	452	460	436	458	405	319	637	284
V/C Ratio(X)	0.79	0.86	1.07	0.86	0.57	0.57	0.88	0.89	0.90	0.08	0.38	0.47
Avail Cap(c_a), veh/h	380	1272	567	196	452	460	436	458	405	319	637	284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	31.9	34.5	47.8	35.0	35.0	34.8	35.0	35.0	37.0	39.2	39.9
Incr Delay (d2), s/veh	1.0	0.8	35.5	29.9	5.0	5.1	19.3	19.9	22.5	0.5	1.7	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	13.2	20.3	6.2	6.5	6.7	11.3	12.2	11.1	0.6	3.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	32.6	70.0	77.8	40.0	40.1	54.1	54.9	57.5	37.5	40.9	45.5
LnGrp LOS	D	C	F	E	D	D	D	D	E	D	D	D
Approach Vol, veh/h		1996			687			1159			405	
Approach Delay, s/veh		45.3			49.3			55.5			42.2	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.6	42.9		22.5	26.4	31.1		30.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.1	38.4		18.0	21.9	26.6		25.5				
Max Q Clear Time (g_c+I1), s	12.7	42.9		10.7	20.1	16.4		25.9				
Green Ext Time (p_c), s	0.0	0.0		1.2	0.2	2.3		0.0				

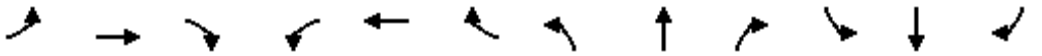
Intersection Summary			
HCM 6th Ctrl Delay		48.4	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
3: Benson Ave & Baseline Rd/16th St

11/15/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	459	508	323	1001	30	490	181	144	44	451	313
Future Volume (veh/h)	86	459	508	323	1001	30	490	181	144	44	451	313
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	483	535	340	1054	32	543	154	152	46	475	329
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	226	1065	475	380	1359	41	760	184	182	371	740	330
Arrive On Green	0.13	0.29	0.29	0.21	0.38	0.38	0.21	0.21	0.21	0.20	0.20	0.20
Sat Flow, veh/h	1810	3610	1610	1810	3577	109	3619	878	866	1810	3610	1610
Grp Volume(v), veh/h	91	483	535	340	532	554	543	0	306	46	475	329
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1880	1810	0	1744	1810	1805	1610
Q Serve(g_s), s	4.6	10.9	29.5	18.3	25.9	25.9	13.9	0.0	16.8	2.1	12.0	20.4
Cycle Q Clear(g_c), s	4.6	10.9	29.5	18.3	25.9	25.9	13.9	0.0	16.8	2.1	12.0	20.4
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	226	1065	475	380	686	715	760	0	366	371	740	330
V/C Ratio(X)	0.40	0.45	1.13	0.89	0.78	0.78	0.71	0.00	0.84	0.12	0.64	1.00
Avail Cap(c_a), veh/h	226	1065	475	380	686	715	760	0	366	371	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	1.00	1.00	1.00	0.97	0.00	0.97	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	28.7	35.3	38.4	27.2	27.3	36.7	0.0	37.8	32.4	36.4	39.7
Incr Delay (d2), s/veh	0.8	0.9	74.0	22.7	8.4	8.1	5.5	0.0	19.2	0.7	4.2	48.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.8	21.0	10.4	12.4	12.9	6.7	0.0	9.0	1.0	5.7	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	29.6	109.2	61.1	35.6	35.3	42.2	0.0	57.1	33.1	40.6	88.4
LnGrp LOS	D	C	F	E	D	D	D	A	E	C	D	F
Approach Vol, veh/h		1109			1426			849			850	
Approach Delay, s/veh		69.0			41.6			47.6			58.7	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	31.5		22.5	14.5	40.0		23.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.5	27.0		18.0	10.0	35.5		18.5				
Max Q Clear Time (g_c+I1), s	20.3	31.5		22.4	6.6	27.9		18.8				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	4.1		0.0				

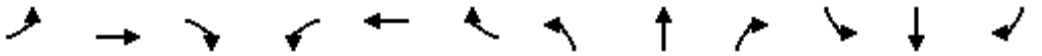
Intersection Summary			
HCM 6th Ctrl Delay		53.4	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
3: Benson Ave & Baseline Rd/16th St

11/15/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	1121	624	207	481	52	407	507	291	35	313	150
Future Volume (veh/h)	308	1121	624	207	481	52	407	507	291	35	313	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	314	1144	637	211	491	53	410	524	297	36	319	153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	401	1349	602	220	900	97	444	559	316	337	673	300
Arrive On Green	0.22	0.37	0.37	0.12	0.27	0.27	0.33	0.33	0.33	0.19	0.19	0.19
Sat Flow, veh/h	1810	3610	1610	1810	3288	354	1810	2279	1289	1810	3610	1610
Grp Volume(v), veh/h	314	1144	637	211	269	275	410	437	384	36	319	153
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1836	1810	1900	1668	1810	1805	1610
Q Serve(g_s), s	18.0	32.0	41.1	12.8	14.0	14.1	24.0	24.5	24.6	1.8	8.7	9.4
Cycle Q Clear(g_c), s	18.0	32.0	41.1	12.8	14.0	14.1	24.0	24.5	24.6	1.8	8.7	9.4
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.77	1.00		1.00
Lane Grp Cap(c), veh/h	401	1349	602	220	494	502	444	466	409	337	673	300
V/C Ratio(X)	0.78	0.85	1.06	0.96	0.54	0.55	0.92	0.94	0.94	0.11	0.47	0.51
Avail Cap(c_a), veh/h	401	1349	602	220	494	502	444	466	409	337	673	300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	31.6	34.5	48.0	34.1	34.1	36.0	36.2	36.2	37.1	39.9	40.2
Incr Delay (d2), s/veh	0.9	0.7	30.7	48.5	4.3	4.2	23.5	24.7	27.4	0.6	2.4	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	13.7	20.7	8.7	6.7	6.8	12.7	13.7	12.4	0.9	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	32.3	65.1	96.5	38.4	38.4	59.5	60.9	63.7	37.8	42.3	46.3
LnGrp LOS	D	C	F	F	D	D	E	E	E	D	D	D
Approach Vol, veh/h		2095			755			1231			508	
Approach Delay, s/veh		43.6			54.6			61.3			43.2	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.4	43.1		22.5	26.4	32.1		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	10.9	38.6		18.0	21.9	27.6		24.5				
Max Q Clear Time (g_c+I1), s	14.8	43.1		11.4	20.0	16.1		26.6				
Green Ext Time (p_c), s	0.0	0.0		1.5	0.2	2.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		50.1	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX H-2

Trip Generation for Retail Development

translutions
the transportation solutions company...

memorandum

DATE: November 10, 2019

TO: Kimley Horn

FROM: Sandipan Bhattacharjee

SUBJECT: Bridge Upland – Trip Generation for Retail Development

This memo analyzes the number of trips that would be generated for the proposed Foothill Boulevard warehouse project if the same building were developed for retail uses. The proposed project is located on the northeast corner of Central Avenue and Foothill Boulevard in the City of Upland in San Bernardino County. The project includes 276,825 square feet of gross leasable area.

Trip generation for a retail use is based on trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation (10th Edition) and are based on Land Use 820 - "Shopping Center". Retail uses will typically draw some of its trips from the adjacent street traffic, so that some of the project trips are not actually "new" trips to the adjacent circulation system. These trips are referred to as "pass-by" trips. Pass-by trips are trips that are on the roadway immediately adjacent to the retail center which make intermediate stops on the way from an origin to a primary trip destination without route diversion. Pass-by trips for Land Use 820 - "Shopping Center" were calculated using rates from ITE *Trip Generation Handbook* (3rd Edition). Since the ITE Trip Generation Handbook does not have data on daily pass by trips, daily pass by trips are calculated based on the ITE Trip Generation Handbook 2nd Edition which shows the daily pass by rate to be 10 percent less than the p.m. peak hour rate. No pass by reductions have been taken for the a.m. peak hour. Table A shows the trip generation for the retail alternative. As shown in Table A below, a retail building the same size as the proposed project is anticipated to generate 260 trips in the a.m. peak hour, 696 trips in the p.m. peak hour, and 7,941 daily trips.

Table A - Project Trip Generation

Land Use	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Daily
Retail								
Trip Generation Rates[1]		0.58	0.36	0.94	1.83	1.98	3.81	37.75
Trip Generation	276.825 TSF	161	99	260	506	549	1,055	10,450
Pass-By Trips[2]	0/34%/24%	0	0	0	(180)	(179)	(359)	(2,508)
Net Trip Generation		161	99	260	326	370	696	7,942

1 Trip generation rates based on Land Use 820 - "Shopping Center" from ITE *Trip Generation* (10th Edition).

2 Pass-By rates based on Land Use 820 - "Shopping Center" from ITE *Trip Generation Handbook* (3rd Edition). Pass-By rates for the p.m. peak hour, and daily traffic. Daily pass-by rates have been assumed to be 10% less than the p.m. peak hour pass-by rate.

The Traffic Impact Analysis (TIA) for the proposed project forecasts 198 a.m. peak hour trips, 198 p.m. peak hour trips, and 2,483 daily trips. Table B compares the trips from the proposed warehouse use with the retail use. As shown in Table B, a retail use for the same size building would generate 62 trips more than the proposed warehouse project in the a.m. peak hour, 498 trips more than the project in the p.m. peak hour, and 5,459 more daily trips than the project.

Table B – Trip Generation Comparison

Land Use	A.M. Peak Hour	P.M. Peak Hour	Daily
Retail	260	696	7,942
Warehouse	198	198	2,483
Difference in Trip Generation (Retail – Warehouse)	**62**	**498**	**5,459**

The proposed project is anticipated to generate 50 daily truck trips. While the ITE Trip Generation Manual does not have any data related to truck trips from retail uses, the California Emissions Estimator Model (CalEEMod) states that approximately 3.9 percent of trips from retail uses are from trucks. Therefore, a retail building the same size as the proposed project is anticipated to generate approximately 310 daily truck trips. Therefore, the retail building would generate 260 more truck trips per day than the proposed project.