DRAFT
ENVIRONMENTAL IMPACT REPORT (EIR No. 628)
FOR THE
BREA BOULEVARD CORRIDOR IMPROVEMENT PROJECT
SCH #2017051005

VOLUME 4 OF 4
(Appendices)

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Project name:
Brea Boulevard Corridor Improvement Project

Project ref:
AECOM JN 60663742

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From:
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Date:
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Technical Memorandum

Subject: Brea Boulevard Corridor Improvement Project, Energy Impact Analysis

1. Introduction

The purpose of this memorandum is to summarize the potential environmental effects related to the use of energy required by the Brea Boulevard Corridor Improvement Project (Project) consistent with Appendix G of the CEQA Guidelines, which focuses on whether the Project's use of energy would be wasteful, inefficient, or unnecessary, and whether the Project would conflict with a plan for renewable energy or energy efficiency.

Energy Impact Analysis for the Brea Boulevard Corridor Improvement Project

As detailed in Section 3.0 (Project Description) of the Draft EIR, the Project objectives include:

- Improve Brea Boulevard to be consistent with the designated Primary Arterial Highway classification per the MPAH;
- Replace three functionally obsolete bridges over Brea Creek with bridges that meet current design standards;
- Increase flood conveyance of Brea Creek under the three bridges;
- Enhance safe wildlife movement across the roadway within the project corridor;
- Improve roadway to meet current design standards;
- Redesign the Brea Boulevard/Tonner Canyon Road;
- Minimize impacts to the surrounding habitat and wildlife; and
- Minimize impacts to above/underground utilities.

1.1. Construction-Related Energy Use

Implementation of the Project would increase energy consumption for the duration of construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). Construction-related energy consumption is quantified in this technical memorandum.

1.2. Operational Energy Use

As described in more detail in the Transportation Impact Analysis (AECOM 2022a), the Project is strictly a transportation project, and it does not include any changes in land use for areas adjacent to the corridor or for any other areas. There are no major development proposals or zoning changes contemplated along the corridor and traffic levels from the types of existing land uses in this area are not expected to be substantially affected by the Project. As a parallel roadway, some motorists are likely using Brea Boulevard to bypass the State Route 57 (SR-57) under existing conditions. However, with the implementation of this Project it is expected that the Project conditions will not change substantially and the majority of these motorists, and traffic within the corridor in general, will be primarily local in nature (i.e., having starting points or destinations in the northern Brea area and general vicinity). While the Project would widen a segment of Brea Boulevard from two lanes to four lanes, this widening would only occur on a relatively short segment (approximately 1.5 miles). This corridor improvement within unincorporated Orange County does not affect throughput on Brea Boulevard further north within Brea Canyon (i.e., within Los Angeles County), where an increase in capacity could increase the regional attractiveness of the roadway as an alternative to SR-57; and it only extends as far south as Canyondale Drive, where the widened cross-section would match the existing four-lane cross-section of Brea Boulevard. With several existing/redesigned (and one new) signalized intersections concentrated at the southern end in the City of Brea, the Project would also not be expected to result in substantial travel time reduction relative to SR-57 for non-local motorists. As such, the majority of traffic along the affected segment of Brea Boulevard is expected to continue to be primarily local in nature, and the potential for substantial diversion of regional traffic from parallel arterials or highways as a result of the Project is expected to be minimal and would not be substantial. Furthermore, the vehicle miles traveled (VMT) analysis shows that overall VMT within Orange County would decrease with the Project (approximately 0.23 percent lower with the Project), and the level of service analysis shows that intersections (and segments) along Brea Boulevard would see improvements in level of service and delay, which is inclusive of modeled forecast growth (i.e., approximately 1 percent increase per year over 2019 traffic volumes). Thus, this analysis qualitatively evaluates operational energy demand.

2. Energy Background and Regulatory Framework

2.1. Energy Background

In 2019, California generated a total of 277,704 gigawatt-hours[1] of electricity, of which approximately 200,475 gigawatt-hours were generated in-state (CEC 2020a). The total non-residential and residential electricity consumption for Orange County in 2019 was estimated to be approximately 19,460 gigawatt-hours (CEC 2020b).

[1] Gigawatt hour (GWh) is a unit of energy equal to 1000 Megawatt hours, or 1 million kilowatt-hours (1 kilowatt-hour is equal to 3,412 British thermal units (EIA 2021a).

Total natural gas consumption in 2018 in California was estimated to be 2,207 trillion British thermal units (Btu) (EIA 2020a)[2]. The total non-residential and residential natural gas consumption for Orange County in 2018 was estimated to be approximately 575 million therms[3] (CEC 2020c).

Electric and natural gas services in the project area are provided by Southern California Edison (SCE) and Southern California Gas Company (SoCalGas), respectively. SCE serves approximately 15 million people in a 50,000 square-mile area, within central, coastal, and southern California, including Orange County (Edison International 2019). In 2018, SCE's primary power sources are eligible renewables (36 percent), large hydroelectric (4 percent), natural gas (17 percent), nuclear (6 percent), and unspecified sources of power (37 percent) (CEC 2019). SoCalGas is the nation's largest natural gas distribution utility, delivering energy to 21.8 million consumers across 24,000 square miles. Most of the natural gas used in California - more than 90 percent - is produced out of state from basins in Texas and New Mexico and stored at various storage facilities in Southern California (SoCalGas 2021).

2.2. Energy Use for Transportation

Transportation is the largest energy-consuming sector in California, accounting for approximately 39 percent of all energy use in the state (EIA 2020b). More motor vehicles are registered in California than in any other state, and commute times in California are among the longest in the country (EIA 2020c). Types of transportation fuel have diversified in California and elsewhere. Historically gasoline and diesel fuel accounted for nearly all demand; now, however, numerous options are available, including ethanol, natural gas, electricity, and hydrogen. Despite advancements in alternative fuels and clean-vehicle technologies, gasoline and diesel remain the primary fuels used for transportation in California, with 15.1 billion gallons of gasoline and 4.2 billion gallons of diesel consumed in 2015 (CEC 2020d, 2020e).

2.3. Regulatory Framework

The federal, state, and local regulatory background of energy plans, policies, regulations, and laws is presented below. Generally, these plans, policies, regulations, and laws do not directly apply to the Project, but are presented to provide context to the regulatory framework.

2.3.1. Federal Plans, Policies, Regulations, and Laws

Energy Policy and Conservation Act of 1975

The Energy Policy and Conservation Act of 1975 established the first fuel economy standards for on-road motor vehicles sold in the United States. The National Highway Traffic and Safety Administration (NHTSA) is responsible for establishing standards for vehicles and revising the existing standards. The Energy Policy and Conservation Act of 1975 also established the Corporate Average Fuel Economy (CAFE) program, which was created to determine vehicle manufacturers' compliance with the fuel

[2] A British thermal unit (Btu) is a measure of the heat content of fuels or energy sources. It is the quantity of heat required to raise the temperature of one pound of liquid water by 1 degree Fahrenheit at the temperature that water has its greatest density (approximately 39 degrees Fahrenheit) (EIA 2021a).
[3] One therm equals 100,000 Btu, or 0.10 million Btu (EIA 2021b).

economy standards. The U.S. Environmental Protection Agency (EPA) administers the testing program that generates the fuel economy data.

National Energy Act of 1978

The National Energy Act of 1978 includes the Public Utility Regulatory Policies Act (Public Law 95-617), Energy Tax Act (Public Law 95-318), National Energy Conservation Policy Act (Public Law 95-619), Power Plant and Industrial Fuel Use Act (Public Law 95-620), and Natural Gas Policy Act (Public Law 95-621).

The intent of the National Energy Act was to promote greater use of renewable energy, provide residential consumers with energy conservation audits to encourage slower growth of electricity demand, and promote fuel efficiency. The Public Utility Regulatory Policies Act created a market for nonutility electric power producers to permit independent power producers to connect to their lines and to pay for the electricity that was delivered.

The Energy Tax Act promoted fuel efficiency and renewable energy through taxes and tax credits. The National Energy Conservation Policy Act required utilities to provide residential consumers with energy conservation audits and other services to encourage slower growth of electricity demand.

Energy Policy Acts of 1992 and 2005

The Energy Policy Act of 1992 was enacted to reduce dependence on imported petroleum and improve air quality by addressing all aspects of energy supply and demand, including alternative fuels, renewable energy, and energy efficiency. This law requires certain federal, state, and local government and private vehicle fleets to purchase alternative fuel vehicles. The act also defines “alternative fuels” to include fuels such as ethanol, natural gas, propane, hydrogen, electricity, and biodiesel.

The Energy Policy Act of 2005 was enacted on August 8, 2005. This law set federal energy management requirements for energy-efficient product procurement, energy savings performance contracts, building performance standards, renewable energy requirements, and use of alternative fuels. The Energy Policy Act of 2005 also amends existing regulations, including fuel economy testing procedures.

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act was enacted to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the federal government’s energy performance; and increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy. The Energy Independence and Security Act included the first increase in fuel economy standards for passenger cars since 1975. The act also included a new energy grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs.

Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards

On May 7, 2010, the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and CAFE Standards* were published in the *Federal Register*. Phase 1 of the emissions standards required that model

year 2012–2016 vehicles meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO_2) per mile, which is equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements.

On August 28, 2012, the U.S. Department of Transportation and EPA issued a joint final rulemaking requiring additional federal GHG and fuel economy standards for Phase 2 of the emissions standards for model year 2017–2025 passenger cars and light-duty trucks. The standards would require these vehicles to meet an estimated combined average emissions level of 163 grams of CO_2 per mile in model year 2025, which is equivalent to 54.5 miles per gallon if the improvements were made solely through fuel efficiency. However, on April 2, 2018, EPA issued a midterm evaluation final determination that found that the model year 2022–2025 emissions standards are not appropriate and should be revised. This midterm evaluation is not a final agency action; rather, this determination led to the initiation of rulemaking of the Safer Affordable Fuel Efficient (SAFE) Vehicle Rule. However, in December 2021, NHTSA repealed the SAFE Vehicle Rule: Part One, and on March 31, 2022, NHTSA finalized the CAFE Standards for model year 2024-2026 passenger cars and light-duty trucks. The final rule establishes standards that would require an industry-wide fleet average of approximately 49 miles per gallon for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024 and 2025, and 10 percent annually for model year 2026.

Executive Order 13834

Executive Order (EO) 13834, signed on May 17, 2018, directs federal agencies to manage their buildings, vehicles, and overall operations to optimize energy and environmental performance, reduce waste, and cut costs. EO 13834 includes requirements for federal agencies including but not limited to reducing building energy use annually and implementing cost-saving energy efficiency measures, ensure new construction and major renovations conform to building efficiency requirements and sustainable design principles, and meet statutory requirements for renewable energy and electricity consumption.

Safer Affordable Fuel Efficient Vehicle Rule

On March 31, 2020, the NHTSA and EPA finalized the Safer Affordable Fuel Efficient (SAFE) Vehicle Rule for Model Years 2021-2026 (SAFE Rule). The SAFE Rule revokes California's authority and vehicle waiver to set its own emissions standards and set zero emission vehicle mandates in California for passenger cars and light trucks and establishes new standards covering model years 2021 through 2026. The final rule will increase stringency of CO_2 emissions standards by 1.5 percent each year through model year 2026, as compared with the CO_2 standards issued in 2012, which would have required increases of about 5 percent per year (NHTSA 2020). On January 20, 2021, President Biden signed an Executive Order directing consideration of labor unions, States, and industry views to propose suspension, revision, or rescindment of the SAFE Vehicles Rule (The White House 2021). On December 21, 2021, the NHTSA published its CAFE Preemption rule, which finalized its repeal of the 2019 SAFE Rule Part One.

Renewable Fuel Standard Program

Created by the Energy Policy Act of 2005, which amended the Clean Air Act, the Renewable Fuel Standard Program established requirements to replace certain volumes of petroleum-based fuels with renewable fuels. The four renewable fuel types accepted as part of the Renewable Fuel Standard Program are biomass-based diesel, cellulosic biofuel, advanced biofuel, and total renewable fuel. The 2007 Energy

Independence and Security Act expanded the program and its requirements to include long-term goals of using 36 billion gallons of renewable fuels and extending annual renewable-fuel volume requirements to year 2022. “Obligated parties” such as refiners and importers of gasoline or diesel fuel must meet specific blending requirements for the four renewable fuel types. EPA implements the program in consultation with U.S. Departments of Agriculture and Energy. The obligated parties are required to demonstrate their compliance with the Renewable Fuel Standard Program.

2.3.2. State Plans, Policies, Regulations, and Laws

Senate Bills 1078 and 107, Executive Orders S-14-08 and S-21-09, and Senate Bills 350 and 100

Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Executive Order S-14-08 expanded the state’s Renewables Portfolio Standard to 33 percent renewable power by 2020. Executive Order S-21-09 directs the California Air Resources Board, under its AB 32 authority, to enact regulations to help the state meet its Renewables Portfolio Standard goal of 33 percent renewable energy by 2020.

The 33 percent-by-2020 goal and requirements were codified in April 2011 with SB X1-2. This new Renewables Portfolio Standard applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. SB 350 (2015) increased the renewable-source requirement to 50 percent by 2030. This was followed by SB 100 in 2018, which further increased the Renewables Portfolio Standard to 60 percent by 2030 and added the requirement that all state’s electricity come from carbon-free resources by 2045. These requirements reduce the carbon content of electricity generation and would reduce GHG emissions associated with both existing and new development.

2.3.3. Local Plans, Policies, Regulations, and Ordinances

Southern California Association of Governments

On September 23, 2020, the Southern California Association of Governments (SCAG) adopted Connect SoCal, the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS). As a plan with the goal of accelerating the region’s progress toward transportation and air quality, programs within the RTP/SCS focus on shifting travel to active transportation modes, reducing traffic congestion and making travel more efficient. The sustainable themes include measures to reduce VMT, relieving vehicular congestion, and maximizing the safety and mobility of people and goods. Connect SoCal includes strategies aimed at reducing congestion and VMT, thereby reducing overall fuel use associated with transportation (SCAG 2020).

County of Orange

Waste & Recycling's Construction & Demolition (C&D) Program

The County of Orange implemented a Waste & Recycling's Construction & Demolition (C&D) Program, which requires a 65% diversion requirement associated with applicable construction and demolition

projects. Applicants can achieve diversion through reuse, recycling, and/or composting of construction and demolition materials at County-approved facilities or use of a County Franchised Waste Hauler.

General Plan

The County of Orange General Plan includes a Resources Element, which includes an Energy Resources Component to maximize the conservation and wise use of energy resources in all residences, businesses, public institutions, and industries in Orange County. The Energy Resources Component includes a transportation policy to provide incentives for transportation system management programs and support regional public transportation programs that reduce energy consumption (County of Orange 2012).

City of Brea

In 2012, the City of Brea completed its 2012 Sustainability Plan: Leadership in Energy Efficiency. The 2012 Sustainability Plan presents resource efficiency goals, matched with policies and implementation steps to save energy, water, and other resources, while aligning the City of Brea for AB 32 compliance (City of Brea 2012).

3. Energy Impact Analysis

Based on Appendix G of the State CEQA Guidelines, the Project would have a significant energy impact if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The analysis evaluated the Project's impacts related to energy in accordance with Appendix F of the CEQA Guidelines (Energy Conservation). Specifically, this analysis evaluates the project's energy requirements and its energy use efficiencies during construction and operation of the Project, the degree to which the Project complies with existing energy standards, the effect of the Project on energy resources, and the Project's projected transportation energy use requirements.

3.1. Methodology

This section describes the approach used to prepare the analysis of the potential effects of the Project related to energy.

3.1.1. Construction-Related Energy Consumption

The evaluation of potential energy impacts and energy demand was calculated based on the California Emissions Estimator Model (CalEEMod), Version 2016.3.2 and energy consumption data and assumptions pertaining to the Project. The Project would require transportation energy for the use of off-road construction equipment, worker trips, deliveries, and other purposes. Estimates of future transportation energy demand depend on a variety of factors, such as fuel prices, vehicle technologies and prices, regulatory requirements, and consumer demand and preferences.

Energy demand estimates associated with construction of the Project uses construction-related VMT and greenhouse gas (GHG) emissions estimates developed to support the air quality and GHG emissions technical study (See the Air Quality and GHG Emissions Technical Report, for further discussion of construction assumptions, CalEEMod, and GHG emissions [AECOM 2022b].)

3.1.2. Operational Energy Consumption

As described in more detail in the Transportation Impact Analysis (AECOM 2022a), the Project is strictly a transportation project and it does not include any changes in land use for areas adjacent to the corridor or for any other areas. There are no major development proposals or zoning changes contemplated along the corridor and traffic levels from the types of existing land uses in this area are not expected to be substantially affected by the Project. The VMT analysis shows that overall VMT within Orange County would decrease with the Project (approximately 0.23 percent lower), and the level of service analysis shows that intersections (and segments) along Brea Boulevard would see improvements in level of service and delay; thereby reducing idling activity and the associated fuel consumption. Therefore, energy associated with fuel consumption is anticipated to be similar or less than existing conditions and is analyzed qualitatively.

4. Impact Analysis

4.1. Impact ENE-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Energy efficiency is a possible indicator of environmental impacts. The actual adverse physical environmental effects of energy use and the efficiency of energy use (e.g., the use of energy for transportation leads to air pollutant emissions) are detailed in the Air Quality and GHG Technical Report (AECOM 2022b).

Construction-Related Energy Consumption

Implementing the Project would increase energy consumption during construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). The primary energy demands during construction would be associated with construction equipment and vehicle fueling for on-road and off-road vehicles. Energy in the form of fuel and electricity would be consumed by construction vehicles and equipment operating on-site, haul trucks moving equipment and materials to and from the site, and construction workers driving to and from the site.

Table 1 presents the total fuel consumption anticipated for proposed construction activities. The information in these tables is based on the CalEEMod emissions calculations for proposed construction activities and application of the U.S. Energy Information Administration's CO_2 emissions coefficients (EIA 2016) to estimate fuel consumption for construction activities.

During the anticipated 5-year construction period, the Project would require a total of approximately 653,627 gallons of diesel and 41,315 gallons of gasoline. When amortized over an assumed project lifetime of 30 years, fuel consumption would equal approximately 21,788 gallons of diesel and 1,377 gallons of gasoline per year. It should be noted that the analysis considers a conservative equipment usage

scenario in which all equipment associated with the various subphases, as described in Section 6.1 of the Air Quality and GHG Technical Report, is assumed to be simultaneously in use. It is more likely; however, that construction equipment will be used intermittently and vary by construction activity and phase, as is typical for this type of construction. Thus, the construction-related emissions and associated energy consumption shown in Table 1 are conservative. Generally, bridges and roadways today are designed to a 75-year lifespan under the American Association of State Highway and Transportation Officials design manuals; thus, amortization over a 30-year project lifetime is also conservative. Table 2 presents the annual energy consumption as a result of the fuel used during construction.

Table 1: Construction Fuel Consumption, Total and Amortized over 30 Years

Source	MT CO_2e[a]	Fuel Type	Factor (MT CO_2/ Gallon)[b]	Gallons/Phase
Off-Road Equipment	6,233	Diesel	0.01016	613,459
Haul Trucks	236	Diesel	0.01016	23,186
Vendor Trucks	173	Diesel	0.01016	16,983
Worker Vehicles	367	Gasoline	0.008887	41,315
		Total Gallons	**Diesel**	**653,627**
			Gasoline	**41,315**
		Amortized Demands (over 30 years)	**Diesel**	**21,788**
			Gasoline	**1,377**

Notes:
CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; MT = metric tons
Assumed amortization period is 30 years, based on the typically assumed project lifetime. Air districts in California (e.g., Sacramento Metropolitan Air Quality Management District 2020, South Coast Air Quality Management District 2008, San Luis Obispo County Air Pollution Control District 2012) recommend amortizing GHG emissions from construction activities over a project's operational lifetime.
Sources: [a]Modeled by AECOM in 2021, [b]EIA 2016

Table 2. Summary of Construction-Related Energy Requirements

Phase	Energy Requirement[a]	Unit	Annual Energy Consumption (MMBtu)[b]
Construction *(amortized over 30 years)*			
Diesel	21,788	gallons/year	3,009
Gasoline	1,377	gallons/year	172
Total			**3,181**

Notes:
MMBtu = million British thermal units
Totals may not add due to rounding.
Sources: [a]Estimated by AECOM in 2021, [b]EIA 2016

As shown in Table 2, the annual energy consumption associated with construction of the Project (including transportation fuel use by off-road equipment, worker vehicle trips, and material delivery trips) would be approximately 3,181 million British thermal units (MMBtu). The Project does not include unusual characteristics that would necessitate the use of less energy-efficient construction equipment than at comparable construction sites, although, as noted previously, the assumptions used for this analysis and the analysis presented in the Air Quality and GHG Technical Report are conservative, and would tend to overestimate impacts. In addition, the Project would be required to comply with the County of Orange Construction & Demolition Program which has a 65 percent diversion requirement. Therefore, it is expected that fuel consumption associated with construction of the Project would not be any more inefficient, wasteful, or unnecessary than fuel consumption at other construction sites in the region.

Operational Energy Consumption

As described previously, there are no anticipated traffic increases or increases in VMT associated with Project improvements. The Project is strictly a transportation project, and it does not include any changes in land use for areas adjacent to the corridor or for any other areas. There are no major development proposals or zoning changes contemplated along the corridor and traffic levels from the types of existing land uses in this area are not expected to be substantially affected by the Project. As a parallel roadway, some motorists are likely using Brea Boulevard to bypass the SR-57 under existing conditions. However, with the implementation of this Project it is expected that the Project conditions will not change substantially and the majority of these motorists, and traffic within the corridor in general, will be primarily local in nature (i.e., having starting points or destinations in the northern Brea area and general vicinity). While the Project would widen a segment of Brea Boulevard from two lanes to four lanes, this widening would only occur on a relatively short segment (approximately 1.5 miles). This corridor improvement within unincorporated Orange County does not affect throughput on Brea Boulevard further north within Brea Canyon (i.e., within Los Angeles County), where an increase in capacity could increase the regional attractiveness of the roadway as an alternative to SR-57; and it only extends as far south as Canyondale Drive, where the widened cross-section would match the existing four-lane cross-section of Brea Boulevard. With several existing/redesigned (and one new) signalized intersections concentrated at the southern end in the City of Brea, the Project would also not be expected to result in substantial travel time reduction relative to SR-57 for non-local motorists. As such, the majority of traffic along the affected segment of Brea Boulevard is expected to continue to be primarily local in nature, and the potential for substantial diversion of regional traffic from parallel arterials or highways as a result of the Project is expected to be minimal and would not be substantial. Furthermore, the VMT analysis shows that overall VMT within Orange County would decrease with the Project, and the level of service analysis shows that intersections (and segments) along Brea Boulevard would see improvements in level of service and delay; thereby reducing idling activity and the associated fuel consumption.

Therefore, implementation of the Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. This impact would be less than significant.

4.2. Impact ENE-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

As discussed in the Air Quality and GHG Technical Report, the 2017 California Air Resources Board (ARB) Climate Change Scoping Plan identifies the transportation sustainability sector to be a key area for

fossil fuel consumption reduction strategies. ARB calls for reducing VMT and congestion throughout California, and this Project is intended to help in reducing congestion (ARB 2017). In addition, consistent with the County of Orange General Plan Transportation Policy (4) included in the Energy Resources Component, the Project would result in a regional reduction in VMT and improve transportation system efficiency along the corridor by improving traffic flow and reducing the associated energy consumption.

Additionally, the SCAG RTP/SCS is a plan that integrates land use and transportation planning and uses in an effort to guide the region in sustainable growth. The sustainable themes include measures to reduce VMT, relieving vehicular congestion, and maximizing the safety and mobility of people and goods. Project objectives include improving the roadway and replacing three functionally obsolete bridges over Brea Creek with bridges that meet current design standards, which is consistent with the SCAG RTP/SCS. The Project is included in the Transportation System Project List (ORA170001) for the SCAG RTP/SCS. As such, the Project would also be consistent with the energy conservation strategies in the SCAG RTP/SCS. Therefore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant.

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Attachment A

Construction Energy Requirement Summary

Brea Boulevard Corridor Improvement Project - Construction Energy Requirement Summary			
Phase	Energy Requirement	Unit	Annual Energy Consumption (MMBtu)
Diesel	21,788	Gallons/yr	3,009
Gasoline	1,377	Gallons/yr	172
Total Construction Energy Requirement			3,181

Notes:

Totals may not add due to rounding.

Source: Modeled by AECOM in 2021 (see detailed outputs in the AQ-GHG Tech Report)

Conversion Factors		
Category	Amount	Units
kWh per Btu	3,412	Btu/kWh
Diesel (heat content) [1]	5.8	MMBtu/barrel
Motor Gasoline [2]	5.25	MMBtu/barrel
Natural Gas [3]	0.1	MMBtu/therm
Propane [4]	0.0913	MMBtu/gallon
Kerosene [5]	0.135	MMBtu/gallon
Wood [6]	20	MMBtu/cord
Gallons per Barrel	42	gallons/barrel

Sources:	
[1]	https://www.theclimateregistry.org/wp-content/uploads/2020/04/The-Climate-Registry-2020-Default-Emission-Factor-Document.pdf
[2]	https://www.theclimateregistry.org/wp-content/uploads/2020/04/The-Climate-Registry-2020-Default-Emission-Factor-Document.pdf
[3]	https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
[4]	https://www.eia.gov/environment/emissions/co2_vol_mass.php
[5]	https://www.eia.gov/environment/emissions/co2_vol_mass.php
[6]	https://www.eia.gov/energyexplained/index.cfm?page=about_btu

Brea Boulevard Corridor Improvement Project: Construction Fuel Consumption, Total and Amortized over 30 Years				
Source	MT CO_2e [a]	Fuel Type	Factor (MT CO_2/gallon) [b]	Gallons/year
Off-Road Equipment	6,233	Diesel	0.01016	613,459
Hauling	236	Diesel	0.01016	23,186
Vendor	173	Diesel	0.01016	16,983
Worker	367	Gas	0.008887	41,315
Total Gallons			Diesel	653,627
			Gasoline	41,315
Amortized Demands (over 30 years)			Diesel	21,788
			Gasoline	1,377

Sources:

[a] Modeled by AECOM in 2021;

[b] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Notes:

Assumed amortization period conservatively assumed to be 30 years.

APPENDIX L
HAZARDOUS MATERIALS ASSESSMENT

OC PublicWorks
Integrity, Accountability, Service, Trust
Shane L. Silsby, Director

Memorandum

DATE: January 16, 2020

TO: Raymond J. Rivera, Senior Land Surveyor, Right of Way

FROM: Manager, North OC Watershed Management Area

SUBJECT: Hazardous Materials Assessment for the Brea Canyon Road Widening Project, City of Brea and Unincorporated Orange County, CA; ROW I.D. No. 2013-033

Attached, please find a copy of the Hazardous Materials Assessment (HMA) for the Brea Canyon Road Widening Project in Unincorporated Orange County/Brea. OC Environmental Resources (ER) prepared this HMA in response to a request dated August 19, 2019 from Right of Way Services. ER understands the purpose of the road easements is to widen a section of Brea Canyon Road from Canyondale Drive to 400' easterly of the State Route 57 Freeway onramp on Brea Canyon Road (herein referred to as the Property).

The scope of work completed for this HMA included 1) a review of historical documents; 2) a regulatory agency database search; 3) a property inspection and area reconnaissance; and 4) interview activities including a review of a User Questionnaire. The following presents the findings of the HMA:

- The review of historical documents, which included historical topographic maps, aerial photographs, city directories, and fire insurance maps, did not identify recognized environmental conditions (RECs) associated with the Property or its adjoining sites.
- The Property was not identified on the regulatory database search, however, the search did identify 100 mapped sites within a one-mile radius of the Property. Based on further investigation into the nature of these listings, each of the 100 sites is considered to have a low potential for impacting the Property. No orphan sites with poor or inadequate mapping information were listed in the database search. No RECs were identified for the Property based on a review of the regulatory database search.
- The Property inspection and area reconnaissance did not identify RECs associated with the Property or adjoining areas.
- Due to the nature of the Property no on-site contacts were available for interview purposes. Transfer Disclosure Statement (TDS) documents were not available at the time of preparation of the HMA report. The review of the User Questionnaire did not identify RECs associated with the Property.

A significant amount of petroleum production has been identified for portions of the Property, Property adjacent, and the surrounding area. In addition, oil and tar seeps, which are likely to be naturally occurring crude oil, have been reported in the general area. As a result of these conditions, the possibility exists to encounter impacted (stained and/or odiferous) soils during construction activities for portions of the Property. ER recommends that the project contractor have a contingency plan in place

should impacted subsurface soils or liquid seeps be encountered during construction activities related to the widening of Brea Canyon Road. Any stained soils encountered should be characterized for petroleum-based residues prior to offsite disposal at an appropriate site.

Based on the results of this investigation, no evidence of environmental degradation to the Property resulting from hazardous materials contamination was identified. Therefore, ER recommends that Property acquisition proceed. Upon receipt of a Transfer Disclosure Statement from the Property owner, ER will evaluate the new information and confirm or modify this recommendation prior to final acquisition.

This HMA will be valid for a period of 18 months, through June 2021. Questions regarding this HMA should be directed to Matt Tucker at (714) 955-0669.

Chris Crompton

MT: HMA: EQ160005R; TG 709 B5, B4, C4, D4, E4 & E3

Attachment: Hazardous Materials Assessment

COUNTY OF ORANGE

HAZARDOUS MATERIALS ASSESSMENT

FOR

BREA CANYON ROAD WIDENING PROJECT

TONNER CANYON

IN THE CITY OF BREA AND UNINCORPORATED ORANGE COUNTY

JANUARY 8, 2020

Prepared By:

OC Public Works

OC Environmental Resources

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HAZARDOUS MATERIALS ASSESSMENT
FOR THE
BREA CANYON ROAD WIDENING PROJECT
TONNER CANYON, UNINCORPORATED ORANGE COUNTY/BREA

1.0 INTRODUCTION

This Hazardous Materials Assessment (HMA) has been prepared on behalf of Real Estate Services who propose to acquire a road easement and temporary construction easements (TCE) along an approximately 1.5 mile section of Brea Canyon Road located between Canyondale Drive and approximately 400' easterly of the State Route 57 onramp (herein referred to as the Property), in Tonner Canyon. OC Environmental Resources (ER) understands that the purpose of the easements is to widen Brea Canyon Road.

The objective of this HMA is to provide information regarding the environmental conditions and potential environmental liabilities associated with the Property. The methods used in conducting this assessment are consistent with professional practices for All Appropriate Inquiry (AAI; 40 CFR Part 312) in conducting HMAs. Personnel from ER conducted the HMA.

2.0 SCOPE OF WORK

This HMA was authorized by Raymond J. Rivera, Manager of Right of Way Services, in a memorandum to Chris Crompton, dated August 19, 2019, under ROWE I.D. No. 2013-033.

Standard Practice for Environmental Site Assessment: Phase 1 Environmental Site Assessment Process ASTM E 1527-13 was used as a guide for terminology and procedures in performing the HMA. The goal of the HMA is to identify any recognized environmental conditions (RECs) which indicate the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; or 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 HMA process is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

To assess the potential environmental conditions and hazards associated with the Property, the following activities were performed:

1. Records review including:

    a) Historical aerial photographs and topographic maps to ascertain prior land use information;
    b) Available city directories and fire insurance maps;
    c) A regulatory agency database report containing sites within a one-mile search radius of the Property that are either known to be contaminated or registered as using hazardous materials/waste. The database report is evaluated to assess potential environmental impacts from these sites to the Property.

2. Reconnaissance of the Property and its vicinity to evaluate land use, environmental conditions, and potential environmental degradation which may negatively impact the Property.

3. Interviews with personnel familiar with the Property.

4. Evaluation of the findings and preparation of the HMA report.

3.0 PROPERTY DESCRIPTION

The Property consists of an approximately 1.5 mile portion of Brea Canyon Road as indicated by the bold red line on the first attached map (in Appendix A). The easement acquisitions are located along Brea Canyon Road between Canyondale Drive and approximately 400' easterly of the State Route 57 onramp, in Tonner Canyon, Brea, and unicorporated Orange County. The Property consists of open space, residential land use, sidewalks, paved roads, and dirt lots adjacent to Brea Canyon Road. Property location maps are presented in **Appendix A**.

3.1 Topography

The Property lies at an elevation of approximately 500 feet above mean sea level (msl) at the north end of the Property (near the southbound State Route 57 onramp) and 400 feet above msl at the south end of the Property near Canyon Country Road. Regionally, the area is marked by hills, reflective of the dominant land mass in the area, the Puente Hills, with a slight downward gradient to the southwest. Topographic maps of the Property are available in **Appendix B**.

3.2 Environmental Setting

The Property is surrounded by an area primarily consisting of open space, oil production, residential land use, and commercial land use. Photographs of the Property and surrounding area are presented in **Appendix C**.

3.3 Hydrogeology

Site specific hydrogeology data was unavailable for the Property. In such cases, local topography and surface water flows can be used to approximate the direction of groundwater flow in the vicinity of the Property. Based on this information, groundwater flow direction is likely toward the south-southwest following surface water.

3.4 Zoning and Building Information

Based on a review of the City of Brea's zoning map, a portion of the Property within the City of Brea is zoned for use as a road. Based on a review of the County of Orange zoning map, portions of the Property within County of Orange unincorporated areas are zoned for Oil Production.

3.5 Potable Water Source

The Property itself is not tied to the municipal water system; however, adjoining properties are served by the City of Brea.

3.6 Storm Drain and Sanitary Sewer Systems

The Property is located in the San Gabriel River-Coyote Creek Watershed. Drainage from the Property flows west and south towards Brea Creek Channel (A02). The Property itself is not connected to the sanitary sewer system however the surrounding community is served by the Yorba Linda Water District.

4.0 PROPERTY HISTORY

The history of the Property and adjoining sites was developed from a review of United States Geological Survey (USGS) quadrangles and aerial photographs. In addition, historical city directories and fire insurance maps were researched to supplement the document review. Property history was evaluated to provide insight into past land use practices and to obtain information regarding the environmental condition of the Property.

4.1 USGS Topographic Quadrangles and Historical Aerial Photographs

Land use history for the Property was derived from a review of USGS topographical maps and aerial photographs covering a 123-year period running from 1896 through 2018. The following table provides a summary of the Property history based on available USGS maps and historical aerial photographs:

1896, 1901, 1912, 1922, and 1932			
Property	Notable Observations of Adjoining and Immediately Surrounding Properties		Notable Observations of the Surrounding Area
	Direction	Observation	
The Property appears to be undeveloped land and developed as a road.	North	Undeveloped land	The surrounding area consists of undeveloped land and sparsely located crude oil tanks.
	East	Undeveloped land	
	South	Undeveloped land	
	West	Undeveloped land	
1944 and 1953 (aerial)			
Property	Notable Observations of Adjoining and Immediately Surrounding Properties		Notable Observations of the Surrounding Area
	Direction	Observation	
The Property appears to be undeveloped land and developed as a road.	North	Oil production	The surrounding area consists primarily of oil production and undeveloped land. A reservoir appears south of the Property.
	East	Undeveloped land	
	South	Oil production	
	West	Undeveloped land	
1963 (aerial), 1965, and 1972 (aerial)			
Property	Notable Observations of Adjoining and Immediately Surrounding Properties		Notable Observations of the Surrounding Area
	Direction	Observation	
The Property appears to be undeveloped open space, developed as a road, and developed for oil production use.	North	Oil production	The surrounding area consists primarily of oil well production and undeveloped land. Residential land use appears west of the Property. Freeway (SR57) appears.
	East	Undeveloped land	
	South	Oil production	
	West	Oil production	
1975, 1980 (aerial), and 1982			
Property	Notable Observations of Adjoining and Immediately Surrounding Properties		Notable Observations of the Surrounding Area
	Direction	Observation	
The Property appears to be developed as a road and for oil production. Undeveloped portions remain open space.	North	Oil production and open space	The surrounding area consists of oil production, open space, and residential land use.
	East	Oil production	
	South	Residential land use, open land use	
	West	Open space, oil production, and residential land use	
1995 (aerial) and 2005 (aerial)			
Property	Notable Observations of Adjoining and Immediately Surrounding Properties		Notable Observations of the Surrounding Area
	Direction	Observation	
The Property appears to be developed as a road and for oil production. Undeveloped portions remain open space.	North	Oil production and open space	The surrounding area consists of oil production, open space, and residential land use.
	East	Open lot	
	South	Residential land use	
	West	Oil production, open space, and residential land use	

2015, 2016 (aerial), and 2018 (aerial)			
Property	Notable Observations of Adjoining and Immediately Surrounding Properties		Notable Observations of the Surrounding Area
	Direction	Observation	
The Property appears to be developed as a road and for oil production. Undeveloped portions remain open space.	North	Open space, oil production	The surrounding area consists primarily of oil production, residential land use, and open space.
	East	Open space, oil production	
	South	Residential land use	
	West	Open space, oil production, and residential land use	

No RECs were identified for the Property upon review of historical topographic maps and aerial photographs. Copies of the topographic maps and aerial photographs are available in **Appendix B**.

4.2 City Directories

City Directory listings provided by Environmental Record Search (ERS) for the years 1964, 1970, 1975, 1980, 1987, 1990, 1995, 2000, 2004, and 2008 identified no businesses associated with the Property itself. Based on these findings, no RECs were identified for the Property in the review of the City Directory listings.

A copy of the ERS City Directory search is included in **Appendix E**.

4.3 Fire Insurance Maps

ERS conducted a search of their in-house collection of historical fire insurance maps for the Property however no fire insurance maps were available for the Property. Coverage was available for the city of Yorba Linda however it did not extend to the Property.

Associated documentation is included in **Appendix E**.

5.0 INVESTIGATION ACTIVITIES

Investigative activities included a review of regulatory agency records for the study area, a visit to the Property, a reconnaissance of the surrounding vicinity, and interview activities. A summary of these activities is presented below.

5.1 Review of Regulatory Agency Database Report

A *RecCheck* report prepared by ERS dated August 31, 2019 containing regulatory agency database listings was reviewed as part of the HMA investigation. The ERS report catalogs known sites containing environmental concerns around the Property and is included as **Appendix E**.

The ERS report searches regulatory agency databases for sites within an ASTM-designated search radius around the target property (generally within one mile). This search covers federal, state and local regulatory registers of contaminated sites, Superfund sites, leaking underground storage tanks (LUSTs), landfills, military reservations, contaminated surface and subsurface waters, hazardous waste generators and other databases of potential environmental concerns.

The ERS database search does not involve an exhaustive review of all available government records. Additionally, these database listings are subject to inaccuracies and incompleteness. The listing of a site does not necessarily indicate that an environmental concern exists. Generally, the regulatory status of the facility will be indicated with each listing.

Evaluating the potential impact(s) a listed site may have on the subject property involves classifying the listing into one of two categories: low potential for impacting the Property or potential for impacting the Property. The following criteria are used for site categorization:

- Low potential for impacting the Property:

> Sites are categorized as having a low potential for impacting the Property if they are too distant to have an environmental impact (greater than ¼-mile from the Property); have been remediated to the satisfaction of the lead regulatory agency; are listed as requiring no further action; or are listed solely as a hazardous waste generator. Sites having a low potential for impacting the Property are not studied further.

- Potential for impacting the Property:

> Sites are categorized as having a potential for impacting the Property if they are listed on the National Priority List (NPL); are violators on the RCRA treatment/storage/disposal facilities database; and/or do not meet the previous definition. Sites having a potential for impacting the Property are evaluated further by reviewing available regulatory agency records and contacting regulatory agency personnel.

A total of 100 mapped sites mapped sites (consolidated from 228 listings) were identified within a one mile radius of the Property, including six mapped site occurring on the Property. One of the mapped sites located on the subject property was listed on the State of California's Leaking Underground Storage Tank (LUST) Closed database. The LUST-Closed database contains an inventory of reported leaking underground storage tank incidents which can be further researched on the State Water Resources Control Board's GeoTracker website. Upon further investigation, Champion Chemicals, Inc., reported a heating/fuel oil detection in August 1987 for soil only. Subsequently, case closure was granted by the Santa Ana Regional Water Quality Control Board (SARWQCB) on August 3, 1987. Based on the regulatory status of this site, soil only designation, and natural

degradation of hydrocarbon contamination, this former LUST site has a low potential for impacting the Property.

In addition to Champion Chemicals, Inc., three mapped sites were listed on the State of California's LUST-Closed database that were located within 0.25 miles of the Property. Upon further investigation, each of the listed LUST-Closed sites was found to have received regulatory closure from either the SARWQCB or local regulatory agency. These sites were researched further and discussed below.

Mobil #18-KAZ, located approximately 0.14 miles south of the Property, removed one underground storage tank (UST) in 1987. Upon removal of the UST, hydrocarbon impacted soil and groundwater was detected beneath the site. Further delineation of subsurface impacts resulted in the removal of approximately 12,000 pounds of hydrocarbons in soil vapor. Direction of groundwater flow was predominantly to the southwest, away from the Property. Groundwater monitoring at the time of case closure had shown that hydrocarbons in the groundwater samples collected from the well adjacent to the former tank area have consistently remained low and have not been detected in a monitoring well downgradient. Subsequently, case closure was granted by the SARWQCB on November 14, 2003. Based on the regulatory status of this site, direction of groundwater flow to the southwest, and natural degradation of hydrocarbon contamination, this former LUST site has a low potential for impacting the Property.

UNOCAL #0713, located approximately 0.17 miles south of the Property, discovered a significant concentration of organic vapors in soil gas samples on July 9, 1998. Contaminated soil (10.3 tons) was removed and treated offsite. The case was deemed to be soil only. Subsequent to the removal of the contaminated soil, case closure was granted by the OC Health Care Agency on March 14, 2000. Based on the regulatory status of this site, soil only designation, and direction of groundwater flow, this former LUST site has a low potential for impacting the Property.

Exxon Service Station #3336, located approximately 0.17 miles south of the Property, discovered a gasoline discharge via a pipe on August 11, 1986. The release was stopped the same day. Direction of groundwater flow was predominantly to the southwest, away from the Property. An assessment was conducted on February 3, 1987, and subsequent case closure was granted by the SARWQCB on September 24, 1987. Based on the regulatory status of this site, and direction of groundwater flow, this former LUST site has a low potential for impacting the Property.

Fifty-seven California Oil and Gas Wells (OGW-CA) were detected within 0.25 miles of the Property in the database search; seven of these wells were reported as active. Active wells, when properly maintained and operated, are considered to have a low potential for impacting the Property. The remaining wells identified on the database search report as either, pulled, plugged, or idle, are considered to have a low potential for impacting the Property.

The remaining mapped sites identified in the ERS regulatory database search were found to have a low potential for impacting the Property based on their being listed solely as a small quantity generator of hazardous waste, respective regulatory status, distance, and/or location down gradient from the Property.

The ERS report did not identify any orphan listings with poor or inadequate mapping information in the regulatory database search. No RECs were identified for the Property during the review of the regulatory agency database report prepared by ERS.

5.2 Property Inspection

An inspection of the Property was conducted on August 28, 2019, and January 8, 2020, by ER to observe existing conditions and activities that may have resulted in Property contamination. Potential issues of environmental liability associated with the Property are illicit disposal of hazardous waste; off-site contamination that may impact the Property; and land use activities resulting in contamination of the Property.

Prior uncontrolled land usage/activities and illicit disposal of hazardous waste have the potential for impacting the Property. Evidence of uncontrolled land usage/activities includes, but is not limited to, abandoned water wells, cisterns, debris, soil mounds, ground depressions, surface impoundments, aboveground structures other than buildings, and electrical transformers. The search for evidence of illicit disposal of hazardous waste includes, but is not limited to, stained soils, stressed vegetation, dead wildlife, chemical odors, and the presence of containers (pails and drums).

The Property inspection involved a walking reconnaissance of the Property. These areas included undeveloped open space along Brea Canyon Road, segments of the shoulder along Brea Canyon Road, an entrance way to a corporate yard for an oil company, portions of a residential area land use near Canyon Country Road, and a portion of a hospital near Canyondale Drive. Signs of illicit disposal and environmental impact, such as stained soils or stressed vegetation, were not observed during the site visit. No RECs were noted for the Property during the site reconnaissance. Property photographs can be seen in **Appendix C**.

5.3 Area Reconnaissance

The purpose of the area reconnaissance was to identify potential off-site environmental conditions on nearby sites that may impact the subject property. Some specific items that are looked for are undocumented storage tanks, dry cleaning operations, cemeteries, old/abandoned structures, embankments, heavy equipment, monitoring wells, mines/quarries, gas/oil wells and the mismanagement of chemicals, pesticides, and herbicides. Mismanagement of chemicals includes improper chemical storage and chemical releases. Evidence includes surface staining, stressed vegetation, and emanating odors.

On August 28, 2019, ER conducted an area reconnaissance within approximately one-quarter mile of the Property. The area surrounding the Property consists primarily of open land use, oil well production, a freeway and residential land use. No evidence of mismanagement or improper handling of chemicals was noted during the area reconnaissance. No RECs were identified for the Property as a result of the area reconnaissance.

In addition, oil and tar seeps, which are likely to be naturally occurring crude oil, have been reported in the general area. In the early 1990s, studies were conducted by ER on reported oil droplet discharges, which confirmed sources as natural seepages. While prevalent in the area, tar seeps are infrequent and highly localized. It should be noted, ASTM E1527-13 *Naturally-Occurring Substances Exclusion* applies to releases of a substance from a location where the substance is naturally found; this exclusion would apply to oil and tar seeps occurring on or adjacent to the Property. Upon further research via the United States Geological Survey's oil and gas seep map index, five seeps are identified within 0.25 miles of the Property. No seeps were observed to have impacted the Property at the time of the area reconnaissance. Based on this information, tar seeps are considered to have a low potential for impacting the Property.

Also of note, findings of the aerial images review indicate that portions of the adjacent properties have been used for decades to produce and store crude oil and other petroleum products. As a result, there is a potential that undocumented wells, pipelines and other related appurtenances may be unexpectedly encountered during future construction or excavation activities on the Property. Although not considered a REC for the Property, these findings can be applied to the assessment for this Property.

Photographs of the surrounding properties can be seen in **Appendix C**.

5.4 Interview Activities and Transfer Disclosure Statement Review

On September 10, 2019, Austin Morgan, OC Project Management, provided general information regarding the Property for the completion of the User Questionnaire. Based on this submittal, OC Environmental Resources has compiled the following information to meet ASTM and All Appropriate Inquiry (AAI) requirements related to the following issues:

- **Environmental Cleanup Liens:** No known environmental cleanup liens are associated with the Property.
- **Activity and Land Use Limitations:** No known activity or land use limitations from environmental contamination issues were identified for the Property.
- **Specialized Knowledge of the Property:** The County has no specialized knowledge of the Property other than its current use.
- **Relationship of the Purchase Price to the Fair Market Value:** The purchase price represents the fair market value of the Property.
- **Commonly Known or Reasonably Ascertainable Information:** Oil production

and public roadway were listed as a known past use of the Property. Oil was listed as a chemical once present on the Property. Oil was listed as a known spill to have taken place on the Property.

- **The Degree of Obviousness of the Presence of Contamination:** Naturally occurring oil seepage was listed. While prevalent in the area, tar seeps are infrequent and highly localized. In the event of an oil seep, oil seeps would be captured under ASTM E1527-13 *Naturally-Occurring Substance Exclusion* (where the release occurs from a location where the substance is naturally found). Based on this information, tar seeps are considered to have a low potential for impacting the Property.

A copy of the User Questionnaire can be found in **Appendix D**.

Due to the nature of the Property, no on-site contacts were available for interview purposes. Transfer Disclosure Statement (TDS) documention to be provided by the property owners was not available at the time of preparation of this HMA. Upon receipt, TDS documents should be forwarded to ER for review. No other interview activities were conducted for purposes of this HMA.

6.0 FINDINGS

The following presents the findings of the HMA:

- The Property consists of a surrounding portion of an approximately 1.5 mile segment of Brea Canyon Road in Tonner Canyon between Canyondale Drive and approximately 400' westerly of the State Route 57 onramp, in the City of Brea and County of Orange Unincorporated (Section 3).

- The review of historical documents, which included historical topographic maps, aerial photographs, city directories, and fire insurance maps, did not identify RECs associated with the subject property or its adjoining sites (Section 4).

- The Property was not identified on the regulatory database search conducted by ERS however the search did identify 100 mapped sites within a one mile radius of the Property. Based on further investigation, each of these sites was found to have a low potential for impacting the Property. No orphan sites with poor or inadequate mapping information were provided in the database search. No RECs were identified for the Property during the review of the regulatory agency database report prepared by ERS (Section 5).

- The Property inspection and area reconnaissance did not identify RECs associated with the Property or its adjoining sites, however, a significant amount of petroleum production has been identified for the sounding area. In addition, oil and tar seeps, which are likely to be naturally occurring crude oil, have been reported in the general area (Section 5).

- No RECs were identified for the Property during the review of the User Questionnaire. No interviews were conducted as part of this HMA. TDS documents were not available at the time of preparation of this report. Upon their receipt, TDS documents should be forwarded to OC Environmental Resources for review (Section 5).

7.0 OPINIONS

A significant amount of naturally occurring subsurface crude oil has been identified for portions of the Property, Property adjacent, and surrounding area. The possibility exists to encounter impacted (stained and/or odiferous) soils during construction activities for portions of the Property. ER recommends the project contractor have a contingency plan in place should impacted subsurface soils or liquid seeps be encountered during construction activities related to the widening of Brea Canyon Road. Any stained soils encountered should be characterized for petroleum-based residues prior to offsite disposal at an appropriate site.

The information collected as part of this investigation provides a detailed history of the Property usage. No RECs were found relevant to the proposed acquisition. No significant data gaps or deviations from the ASTM Standard were identified as part of the HMA investigation that would prevent the identification of RECs on or around the Property.

8.0 CONCLUSIONS

ER has performed a HMA in conformance with the scope and limitations of ASTM Practice E 1527-13 for the subject property. Based on the above information, the document review, database research, and field reconnaissance conducted as part of this HMA, no evidence of environmental degradation to the property from hazardous materials contamination has been identified.

9.0 QUALIFICATIONS OF THE ENVIRONMENTAL PROFESSIONAL

This HMA was completed under the direction of Mr. James Fortuna, an environmental professional with OC Public Works/OC Environmental Resources. Mr. Fortuna certifies the following:

"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' and

"I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

James Fortuna

10.0 DOCUMENT LIMITATIONS

The County of Orange has performed this hazardous materials assessment in accordance with current professional standards for investigations of this type. The conclusions presented in this report are based on the information collected during the study, the present understanding of the site conditions, and professional judgment.

Please note, subsurface and hazardous waste/toxic substance conditions may vary from those tested in the laboratory, documented in historical documents or encountered at the location where visual inspections, borings, soundings, test pits, surveys, or other exploration were made by the County of Orange. The interpretations and recommendations of the County of Orange are based solely on such information. Findings of this investigation are based on the data provided by others and carry no warranty, expressed or implied, as a result of the usage of such data.

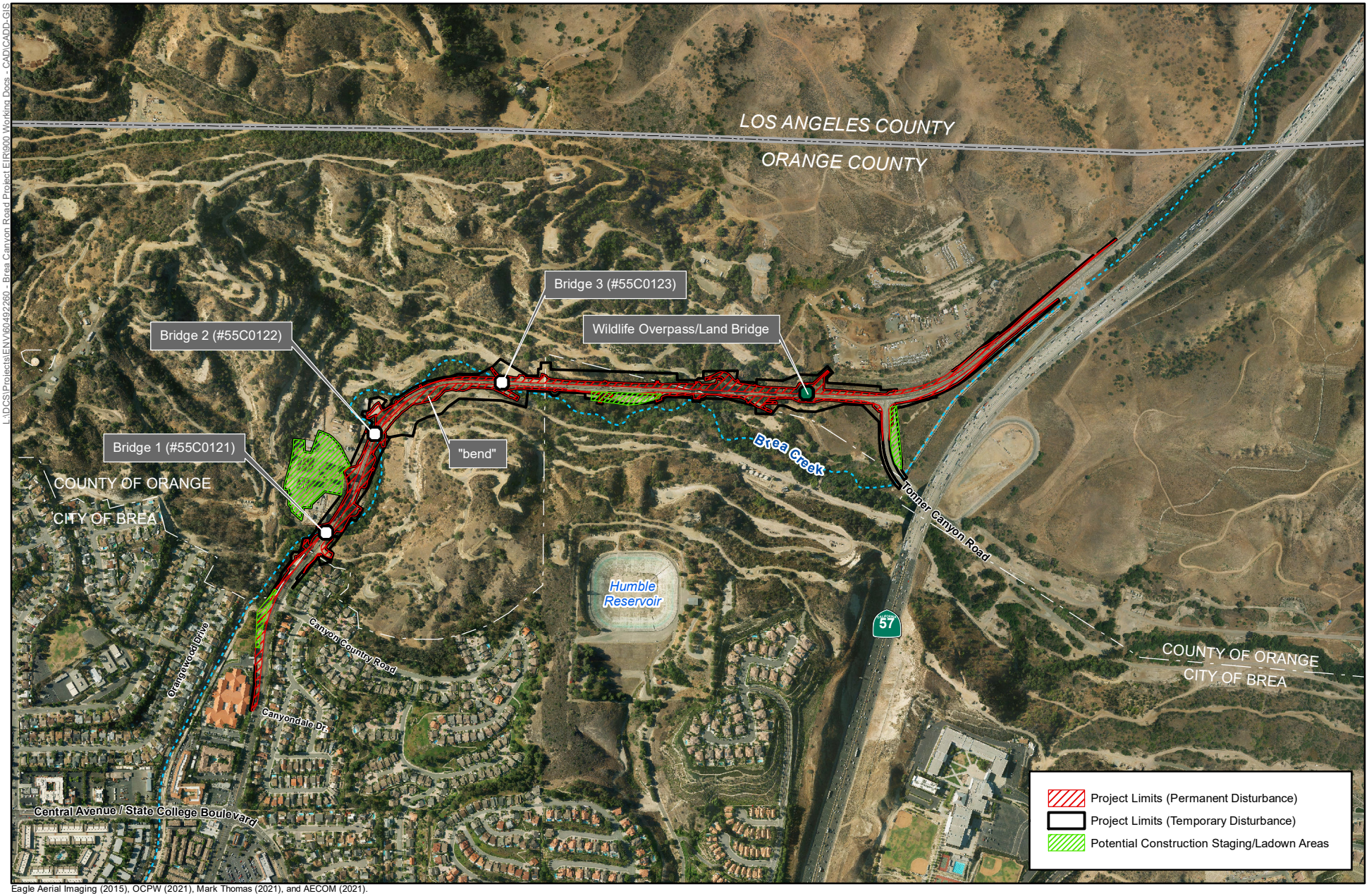
It is possible that future investigations may reveal additional data or variations of the current data, which may require the current conclusions and recommendations to be re-evaluated. If chemical analyses have been performed for specific parameters, it should be noted that additional chemical constituents not searched for during the current study may be present in soils and/or groundwater at the site.

As a result, the County of Orange makes no warranty, either express or implied, as to its findings, opinions, recommendations, specifications, or professional advice except that they were promulgated after being prepared in accordance with generally accepted standards of care and diligence normally practiced in this field.

The information in this report is relevant to the date of the site work and should not be relied on to represent conditions at any later date. Facts, conditions, and acceptable risk factors change with time; accordingly, this report should be viewed within this context.

APPENDIX A

Property Location Maps



Eagle Aerial Imaging (2015), OCPW (2021), Mark Thomas (2021), and AECOM (2021).

Scale 1 : 12,000
1" = 1,000 feet

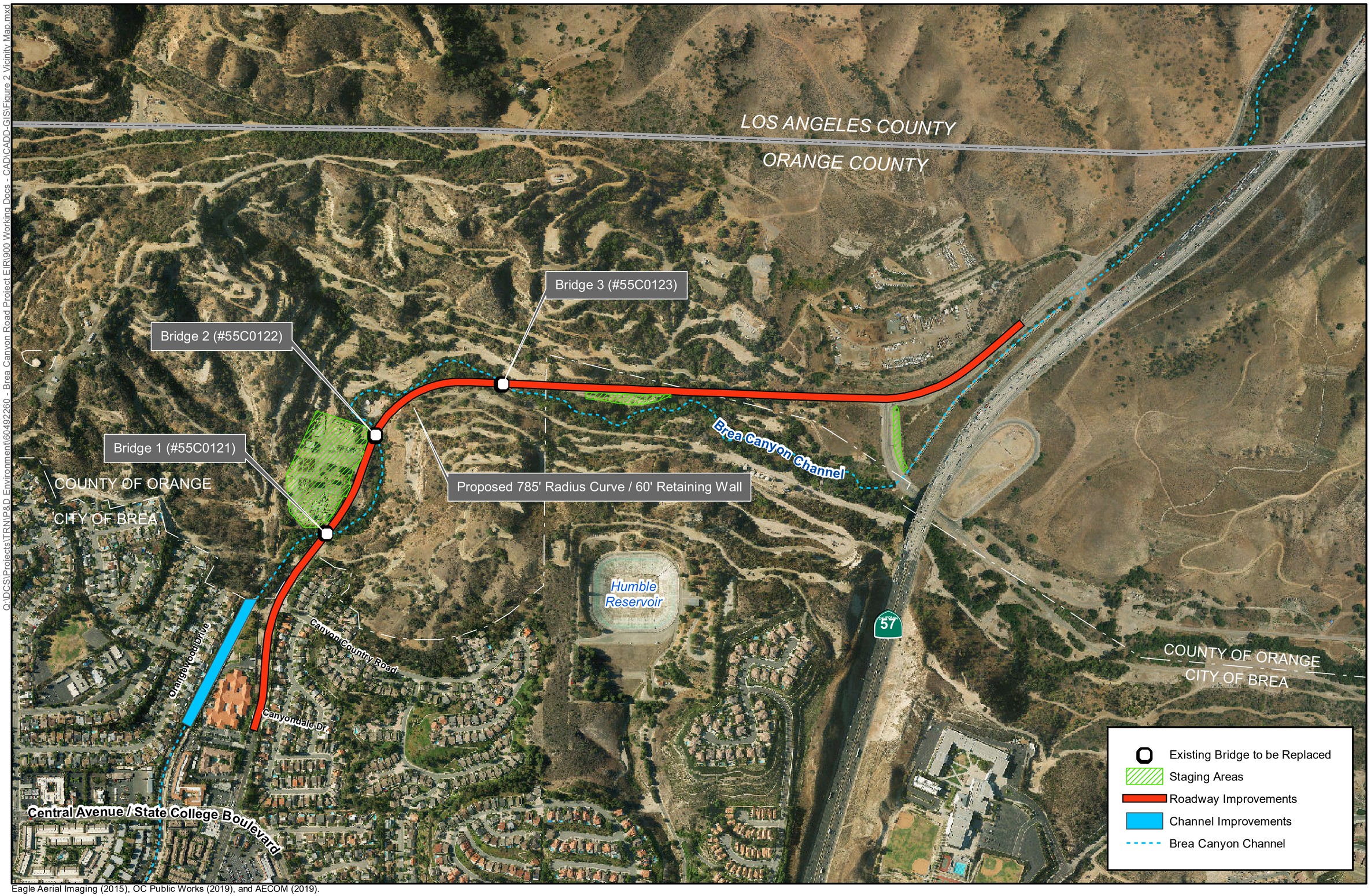
0 500 1,000 2,000 3,000 Feet

Figure 3
Proposed Project

Brea Boulevard Corridor Improvement Project

Updated Figure added on 1/19/2021 after the completion of the HMA.

Q:\DCS\Projects\TRN\P&D Environment\604922260 - Brea Canyon Road Project EIR\900 Working Docs - CAD\CADD-GIS\Figure 2 Vicinity Map.mxd



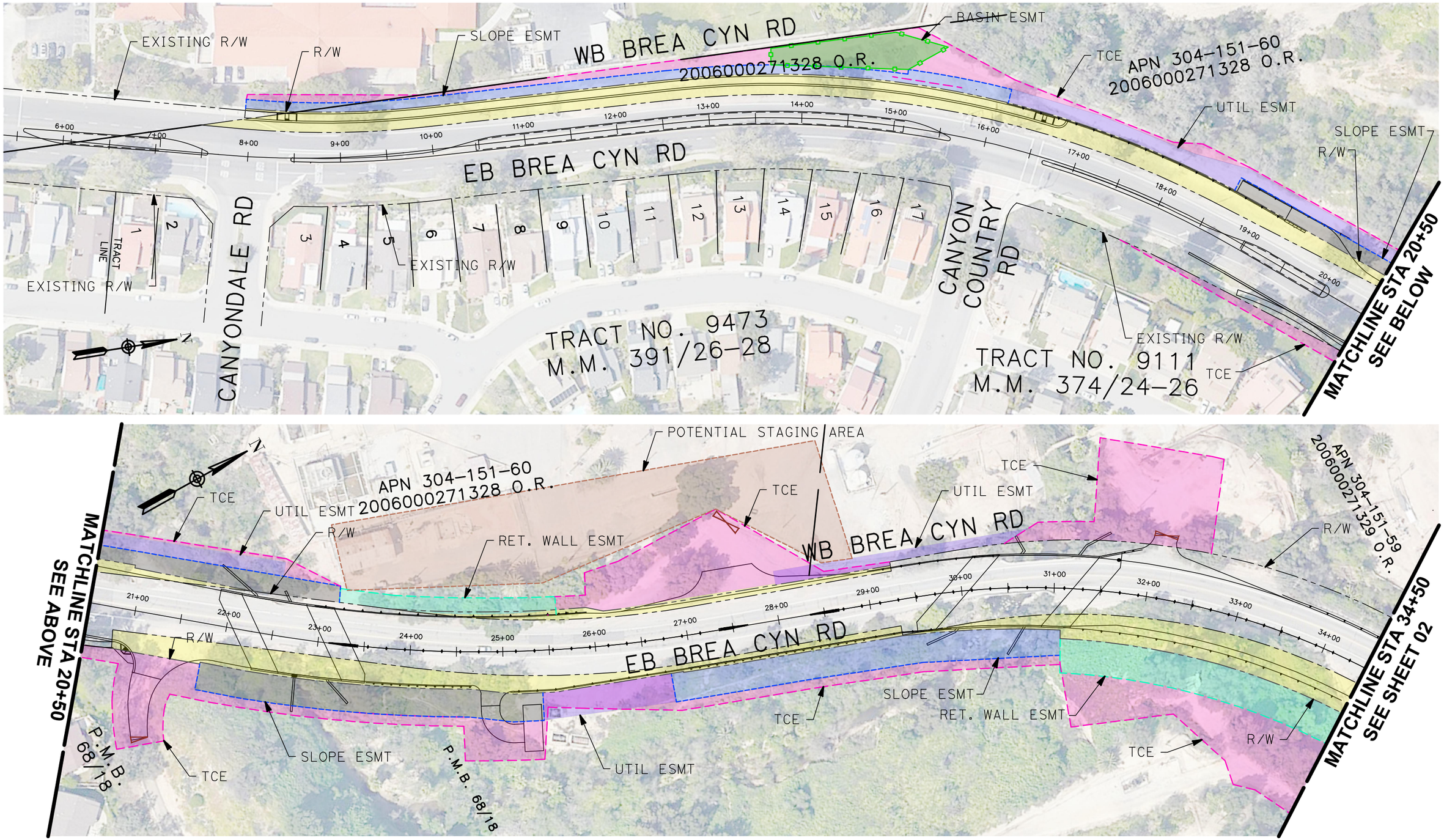
Eagle Aerial Imaging (2015), OC Public Works (2019), and AECOM (2019).

Scale 1 : 12,000
1" = 1,000 feet

0 500 1,000 2,000 3,000 Feet

Figure 3
Proposed Project

Brea Boulevard/Brea Canyon Road Widening Project



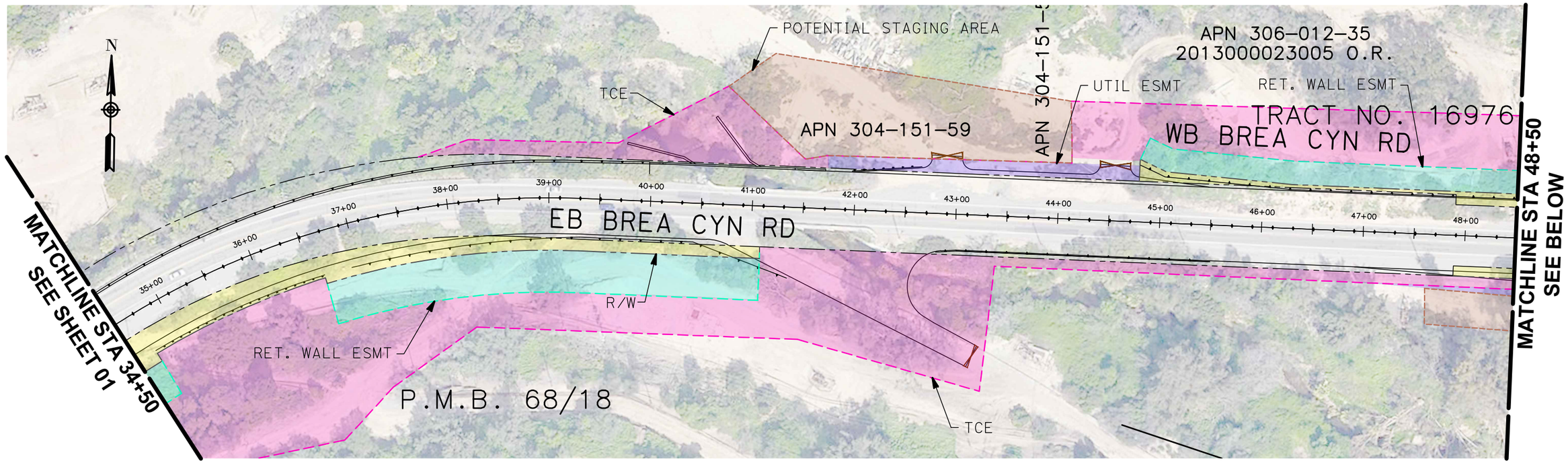
MARK THOMAS

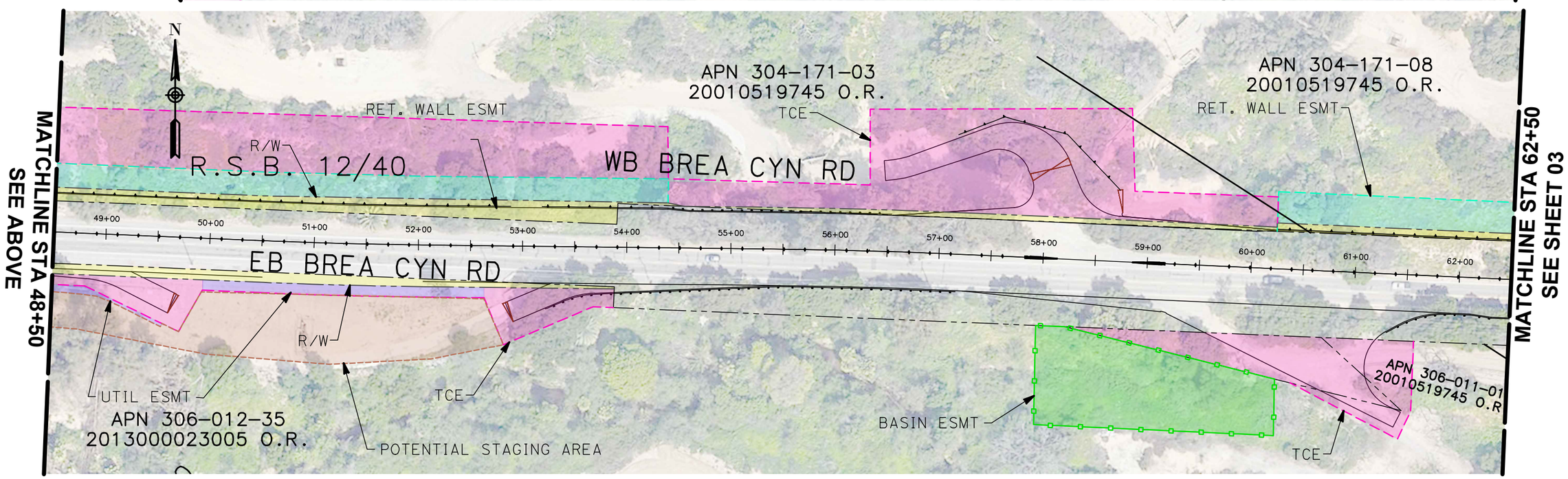
SCALE: 1"=100'

SHEET 1 OF 3

PROJECT RIGHT-OF-WAY AND EASEMENT IMPACTS EXHIBIT

Brea Cyn/Brea Blvd Widening
April 3, 2019





MARK THOMAS

100 50 0

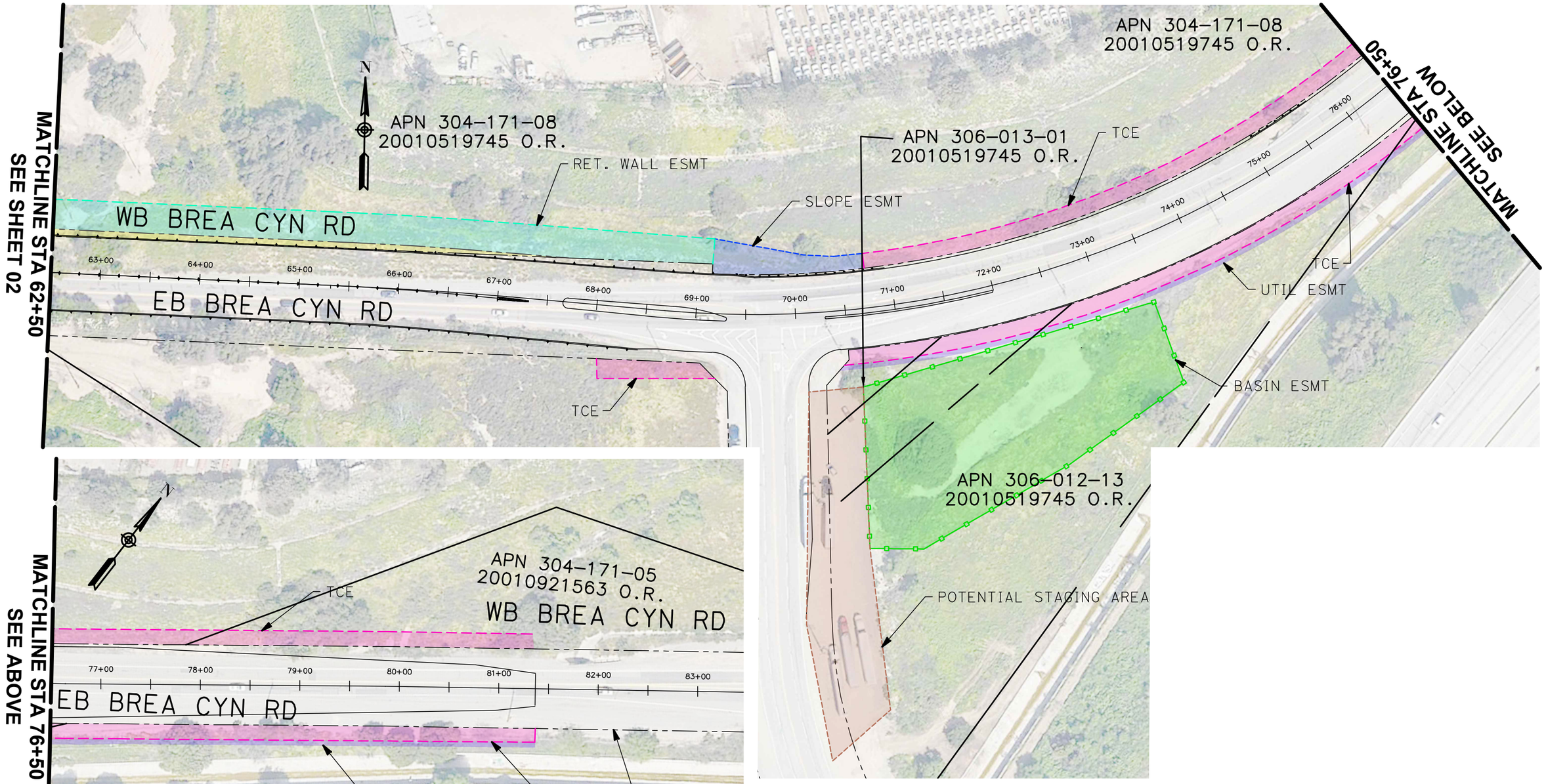
SCALE: 1"=100'

SHEET 2 OF 3

PROJECT RIGHT-OF-WAY AND EASEMENT IMPACTS EXHIBIT

Brea Cyn/Brea Blvd Widening

April 3, 2019



MARK THOMAS

100 50 0

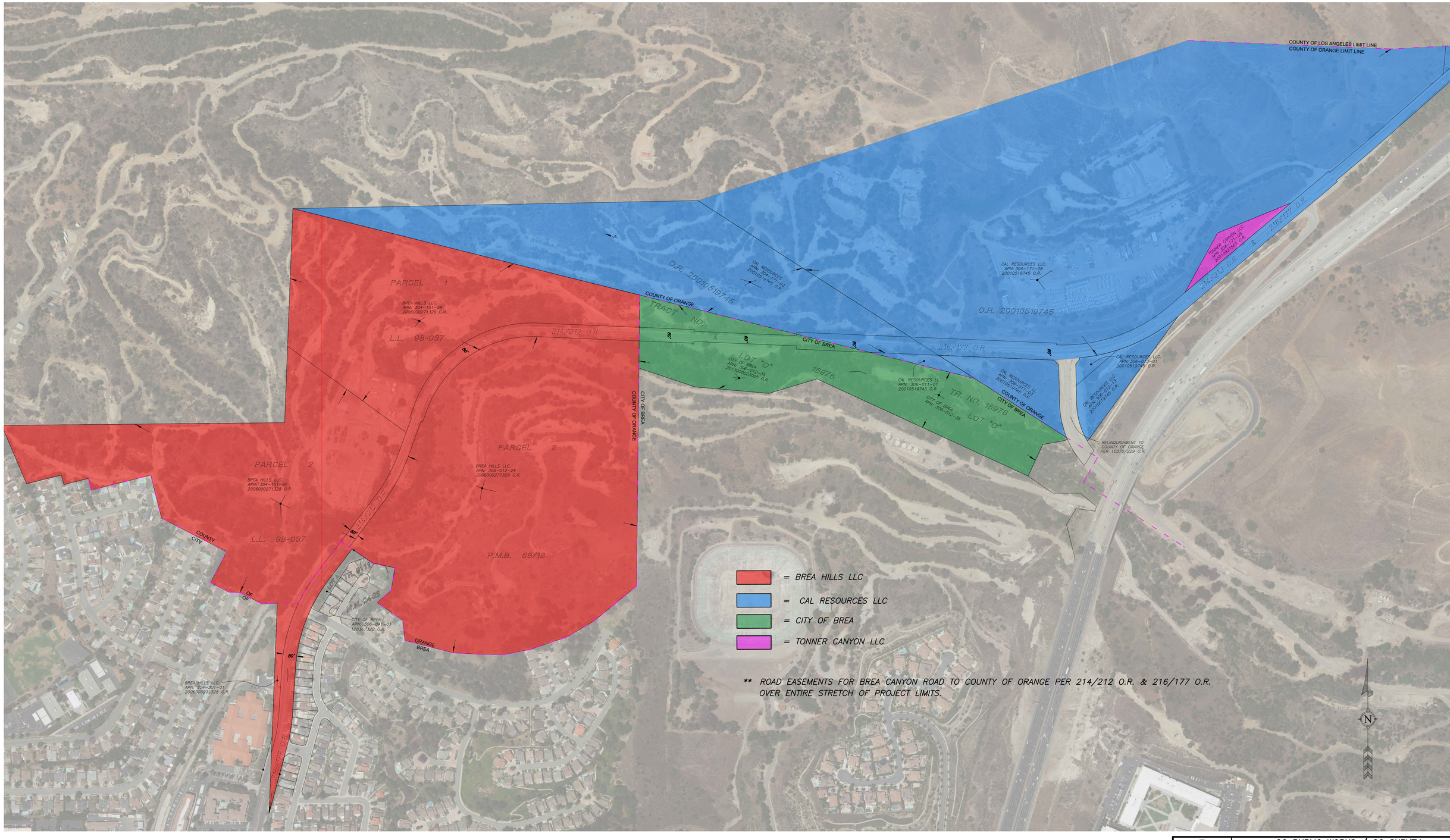
SCALE: 1"=100'

SHEET 3 OF 3

PROJECT RIGHT-OF-WAY AND EASEMENT IMPACTS EXHIBIT

Brea Cyn/Brea Blvd Widening
April 3, 2019

DATE TIME FILE



THIS MAP WAS PREPARED FOR THE COUNTY OF ORANGE, PUBLIC WORKS RIGHT OF WAY SERVICES SECTION FOR INTERNAL COUNTY PURPOSES ONLY. AS SUCH, THE COUNTY DISCLAIMS ANY AND ALL LIABILITY OF ANY KIND OR NATURE ARISING OUT OF OR RELATING TO THIS MAP OR TO THE ACCURACY OF ANY MEASUREMENTS, DEPICTIONS, RECORDING OR OTHER LEGAL DATA, DESCRIPTIONS OR ANY OTHER INFORMATION WHICH IS EITHER INDICATED ON SAID MAP OR MAY BE DERIVED FROM THE MAP. FOR CURRENT INFORMATION REGARDING THIS MAP, CONTACT THE PUBLIC WORKS RIGHT OF WAY SERVICES SECTION DIRECTLY.

OC PUBLIC WORKS / OC SURVEY

PREPARED BY:

RIGHT-OF-WAY SERVICES

BREA CANYON ROAD WIDENING OWNERSHIP EXHIBIT RIN 2013-033

PREPARED	CHECKED	SCALE	DATE
J.V.	R.R.	1' = 250'	10/15/18

APPENDIX B

Topographic Maps and Aerial Photographs

ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

Aerial Photo & Topographic Map Research

REPORT RESULTS

Report Results for:

Megan Black
UltraSystems Environmental
16431 Scientific Way
Irvine, CA 92618
2104713281 AOTO
September 5, 2019

Site Information:

Break Canyon Road Widening Project
Brea Canyon Road
Brea, CA 92821

ENVIRONMENTAL RECORD SEARCH

Subject Site:

Client's Project #: **UEI Project #5897**
Address: **Brea Canyon Road**
City, State Zip: **Brea, CA 92821**

ERS Order #:

2104713281 AOTO

Prepared For:

Name: **Megan Black**
Company: **UltraSystems Environmental**
Address: **16431 Scientific Way**
City, State Zip: **Irvine, CA 92618**

Date:

September 5, 2019

Prepared By:

Name: **Pushpam**
Phone #: **(714) 669-8096 Ext. 1003**

Enclosed are the results of our…..

Aerial Photograph and Topographic Map Research

Thank you for selecting ***Environmental Record Search***!

To aid you in locating your site on the imagery provided, we have placed a box over/surrounding your site.

Note: *This box is not representative of your site's boundaries. It is simply a tool to assist you with the location of your site within the image. The box has been placed in the same location on each image to help you locate your site easily from year to year. If you have any problems locating your site, please call us. We are here to help.*

Aerial photo years available:

2018	2016	2005	1995	1980
1972	1963	1953		

This report includes the following USGS Topographic Map Series:

Quadrangle Name	Series	Original Scale	Contour Interval (ft)	Years
LA HABRA	7.5 Minute	1:24,000	20	2015, 1982, 1975, 1965
YORBA LINDA	7.5 Minute	1:24,000	20	2015, 1982, 1975, 1965
LA BREA	7.5 Minute	1:24,000	5 and 25	1932
ANAHEIM	15 Minute	1:62,500	25	1944, 1932, 1922, 1912, 1901, 1896

All terms, conditions, and limitations normally associated with work contracted by **ERS** and presented or associated with aerial photography are in effect at all times. This letter summary, all its information, and content have been derived from and rely upon the reviewed aerial photographs. **ERS's** research has only been based on these images; **ERS** did not perform any type of independent investigation of any type, including as to the accuracy and/or completeness of the information derived or otherwise obtained from the secondary source or sources.

Historical Aerial Photo
Year 2018

Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281

Historical Aerial Photo
Year 2016

Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281

Historical Aerial Photo
Year 2005

Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281

Historical Aerial Photo
Year 1980

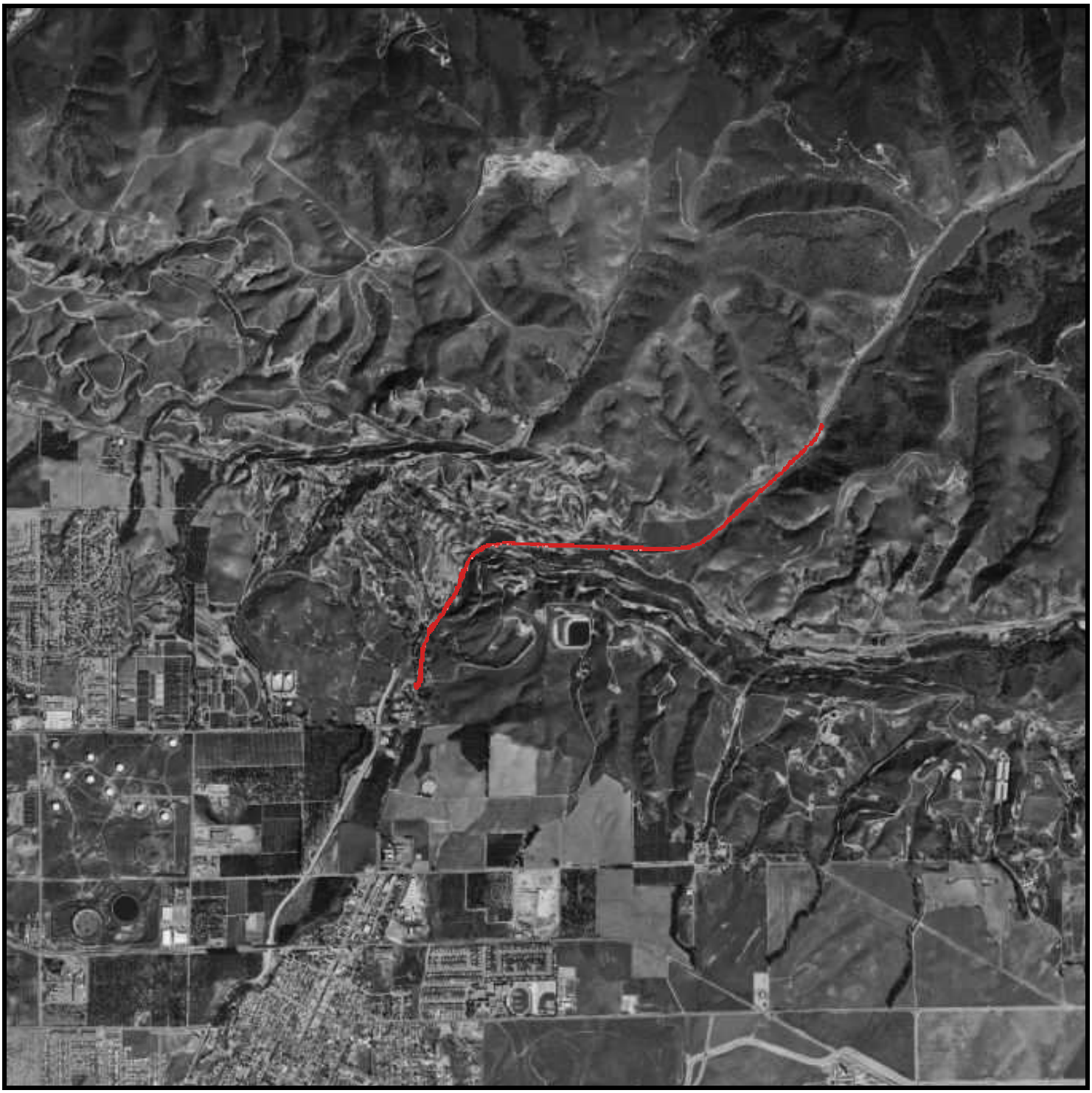
Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281

Historical Aerial Photo
Year 1972

Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Aerial Photo
Year 1963

Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281

Historical Aerial Photo
Year 1953

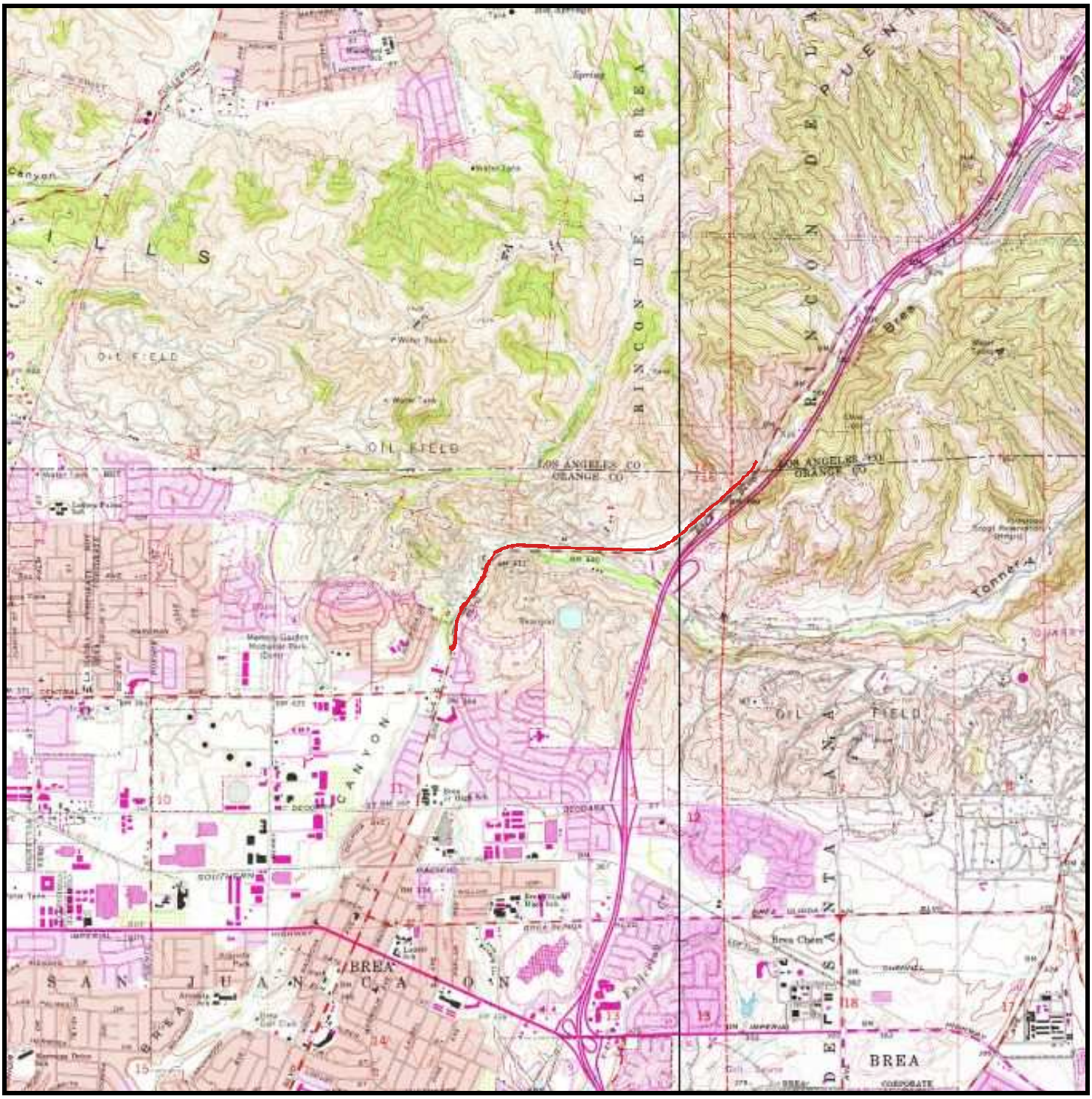
Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281

Historical Topographic Map
Year 2015

Brea Canyon Road
Brea, CA

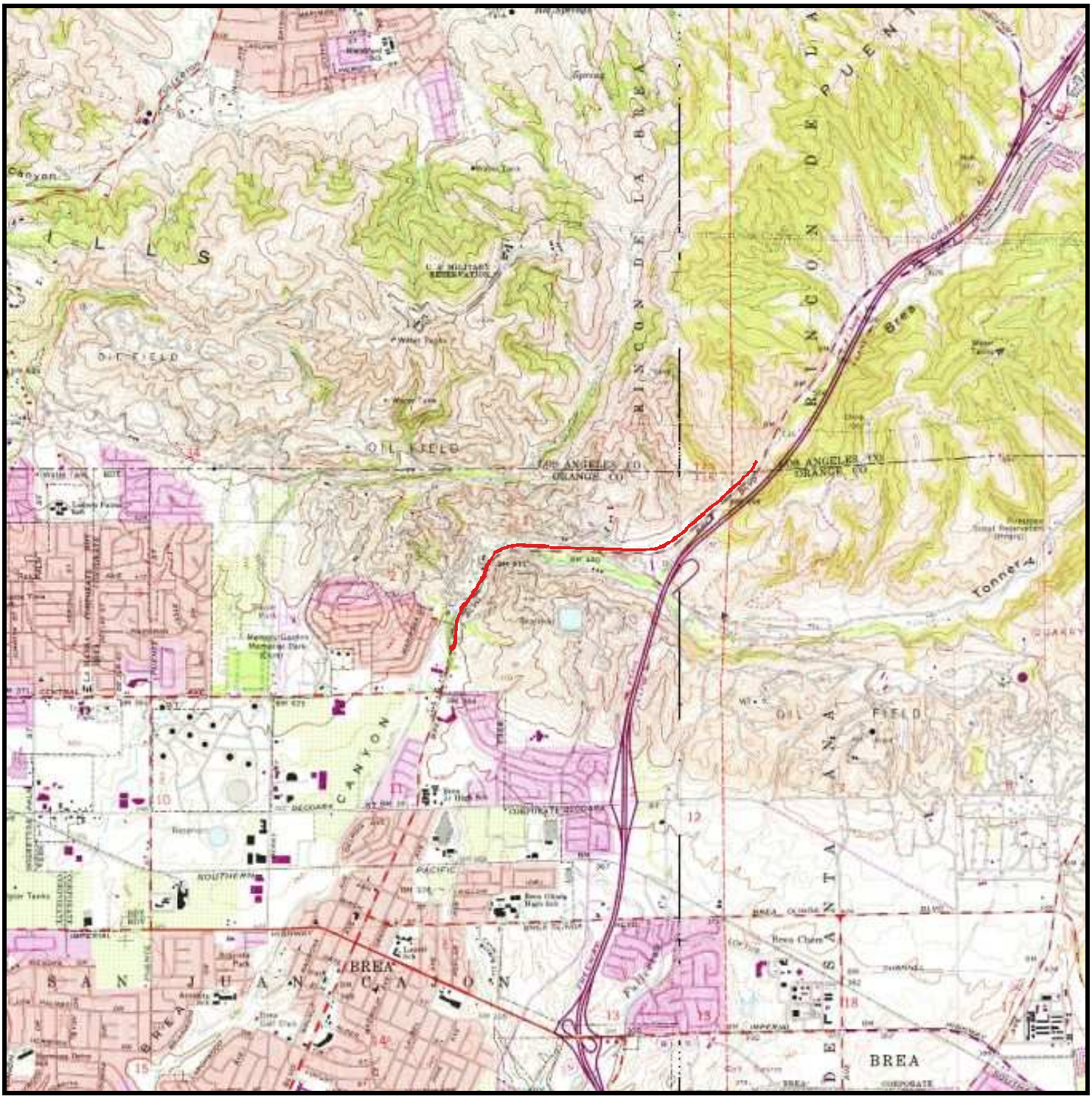
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1982

Brea Canyon Road
Brea, CA

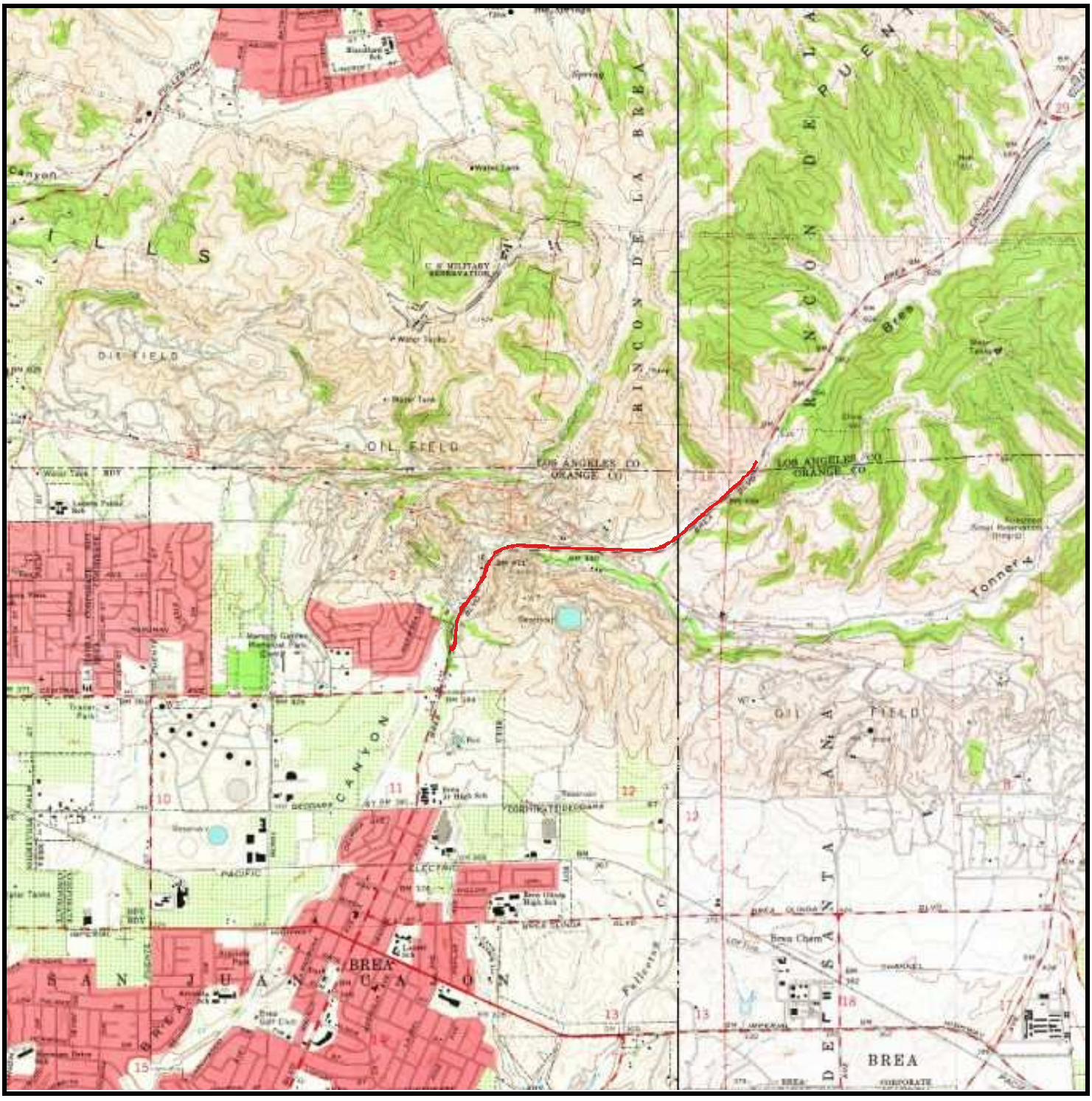
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1975

Brea Canyon Road
Brea, CA

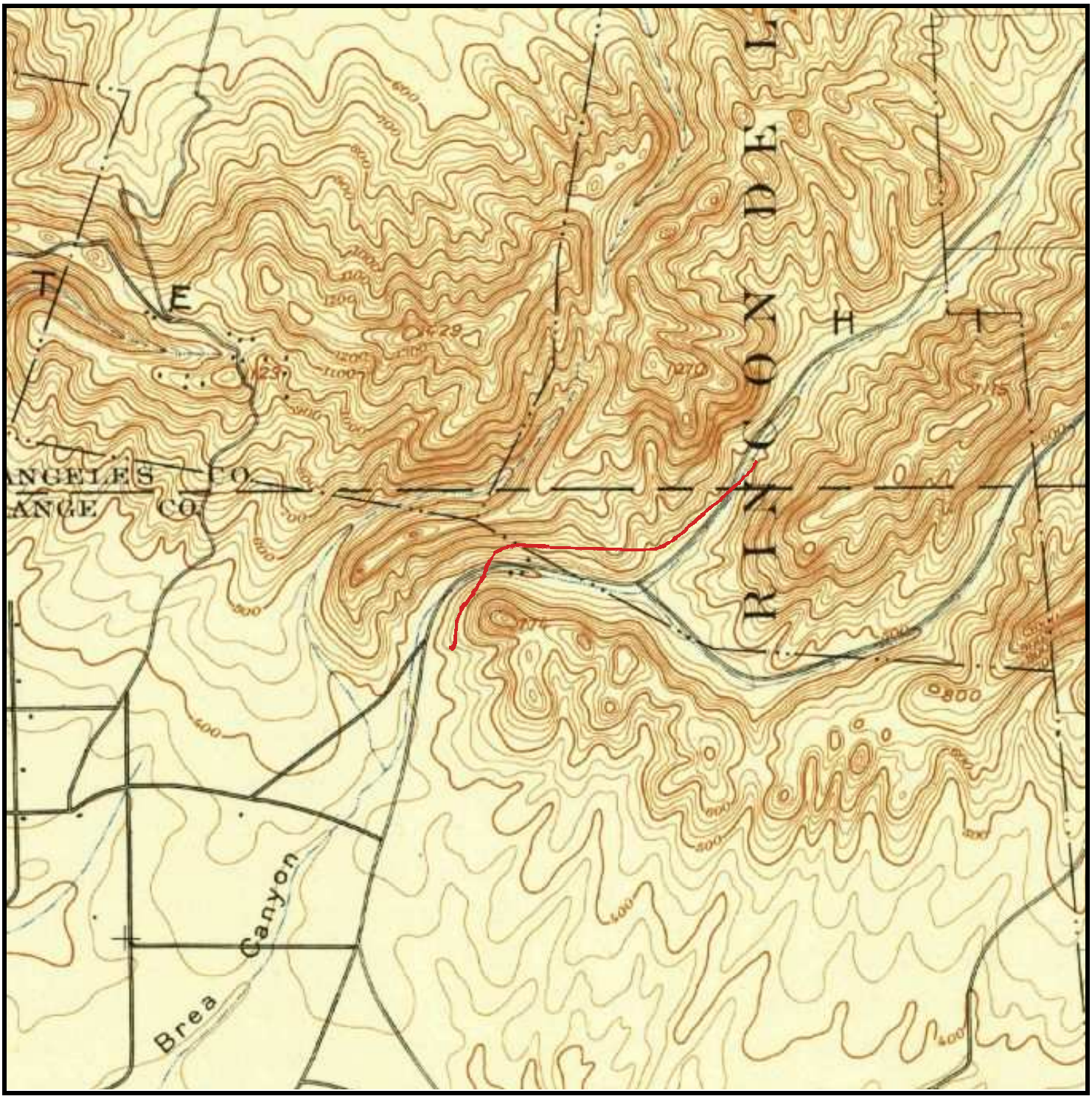
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1965

Brea Canyon Road
Brea, CA

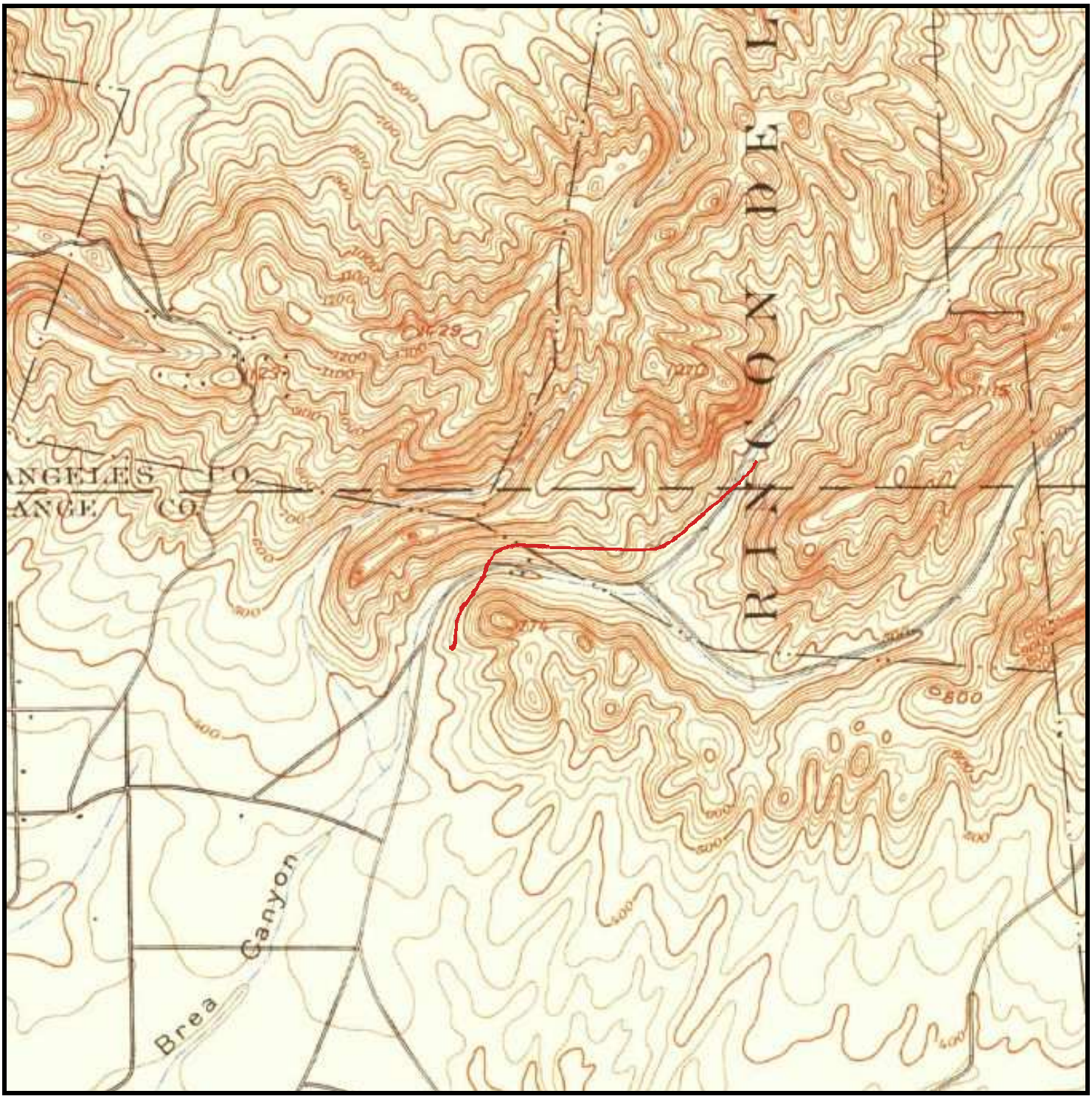
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1944

Brea Canyon Road
Brea, CA

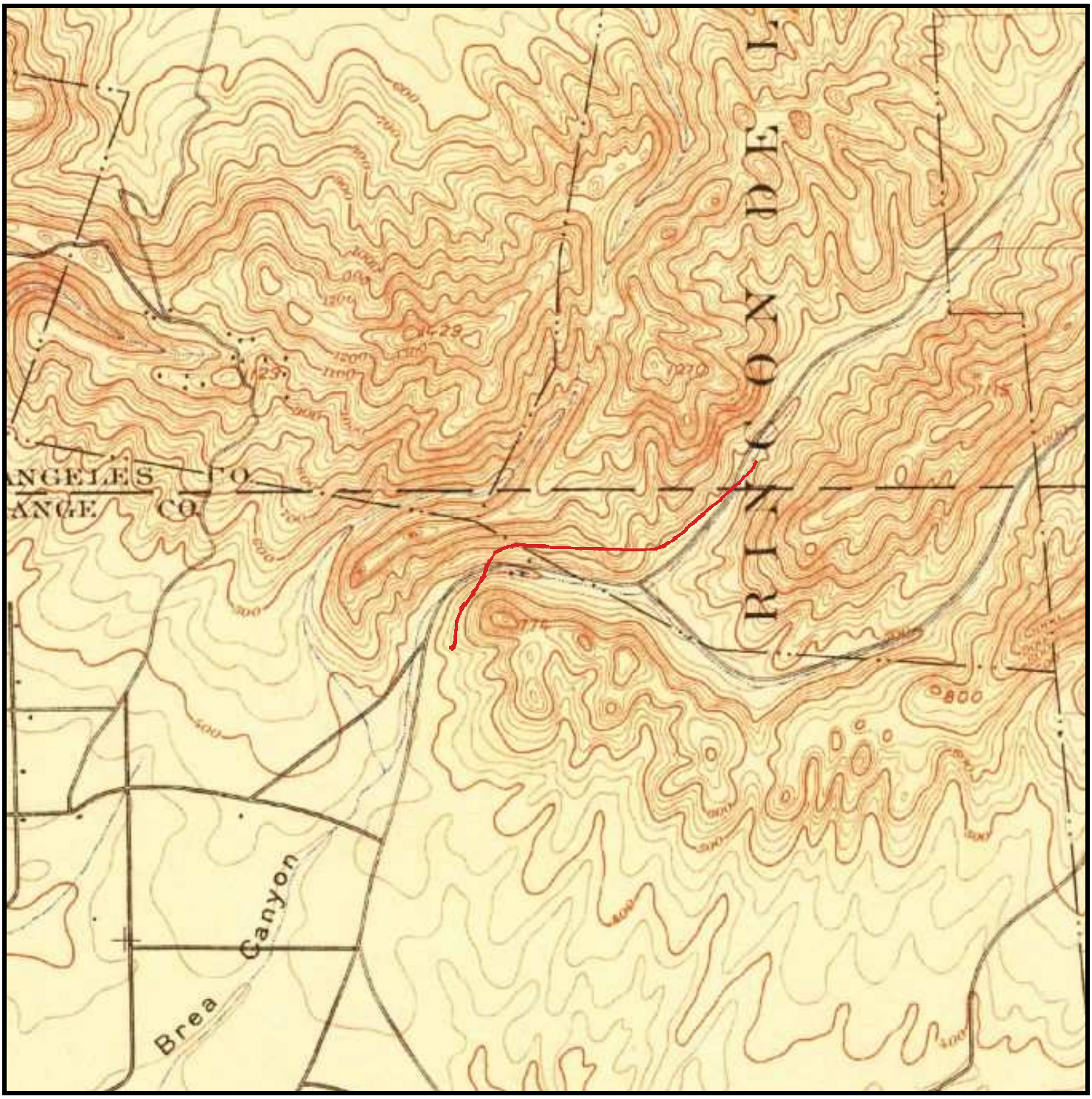
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1932

Brea Canyon Road
Brea, CA

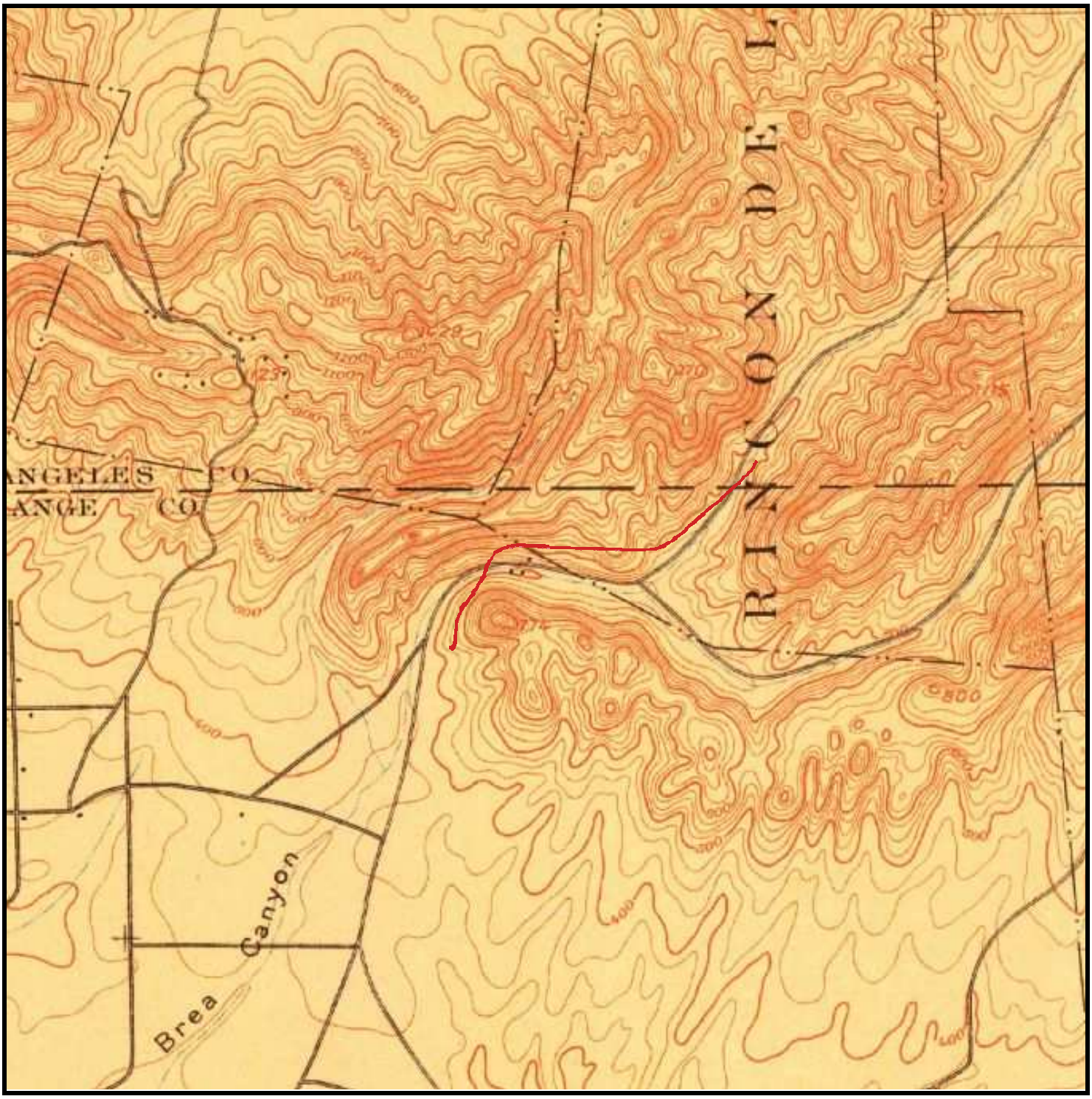
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1922

Brea Canyon Road
Brea, CA

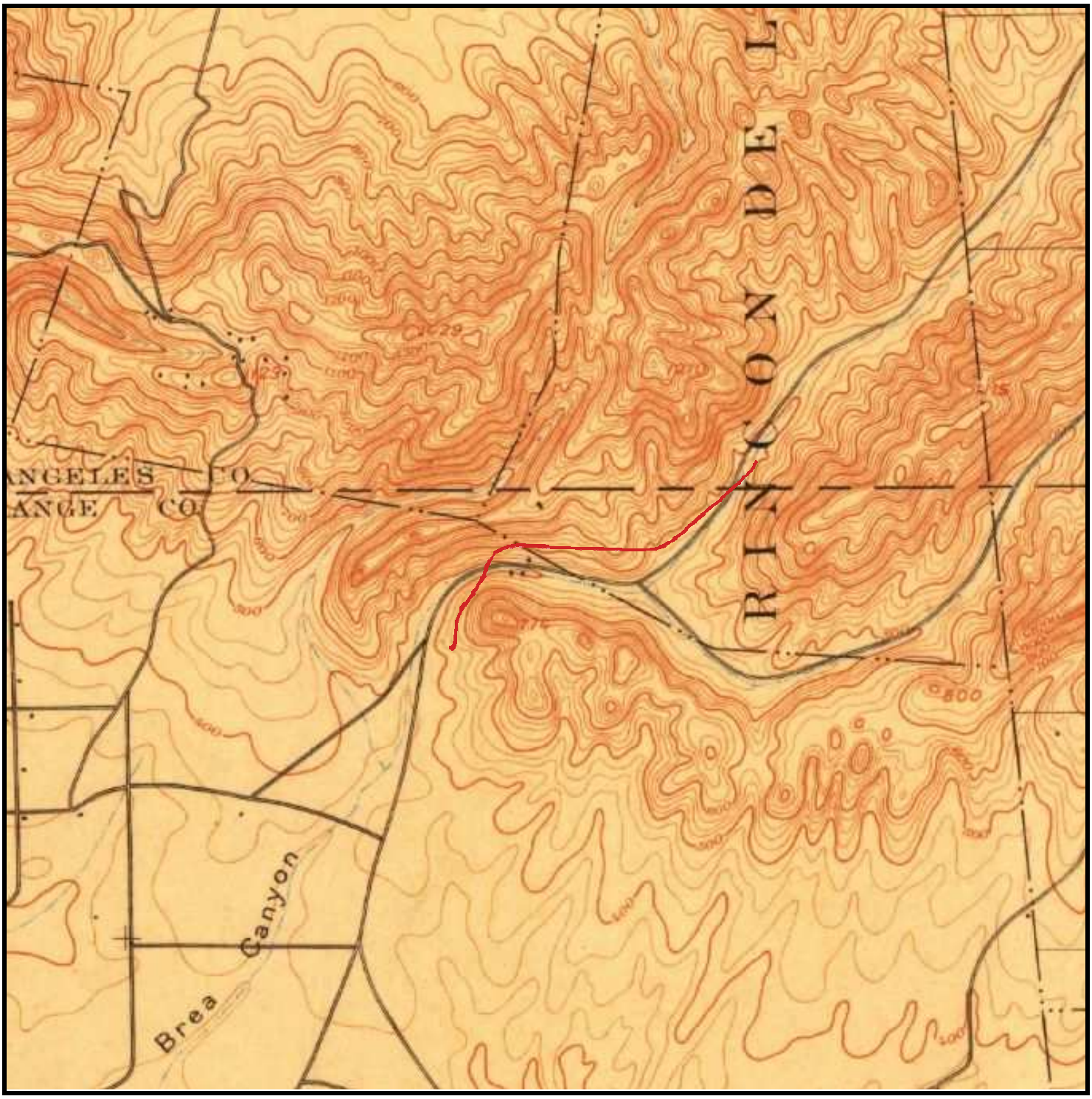
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1912

Brea Canyon Road
Brea, CA

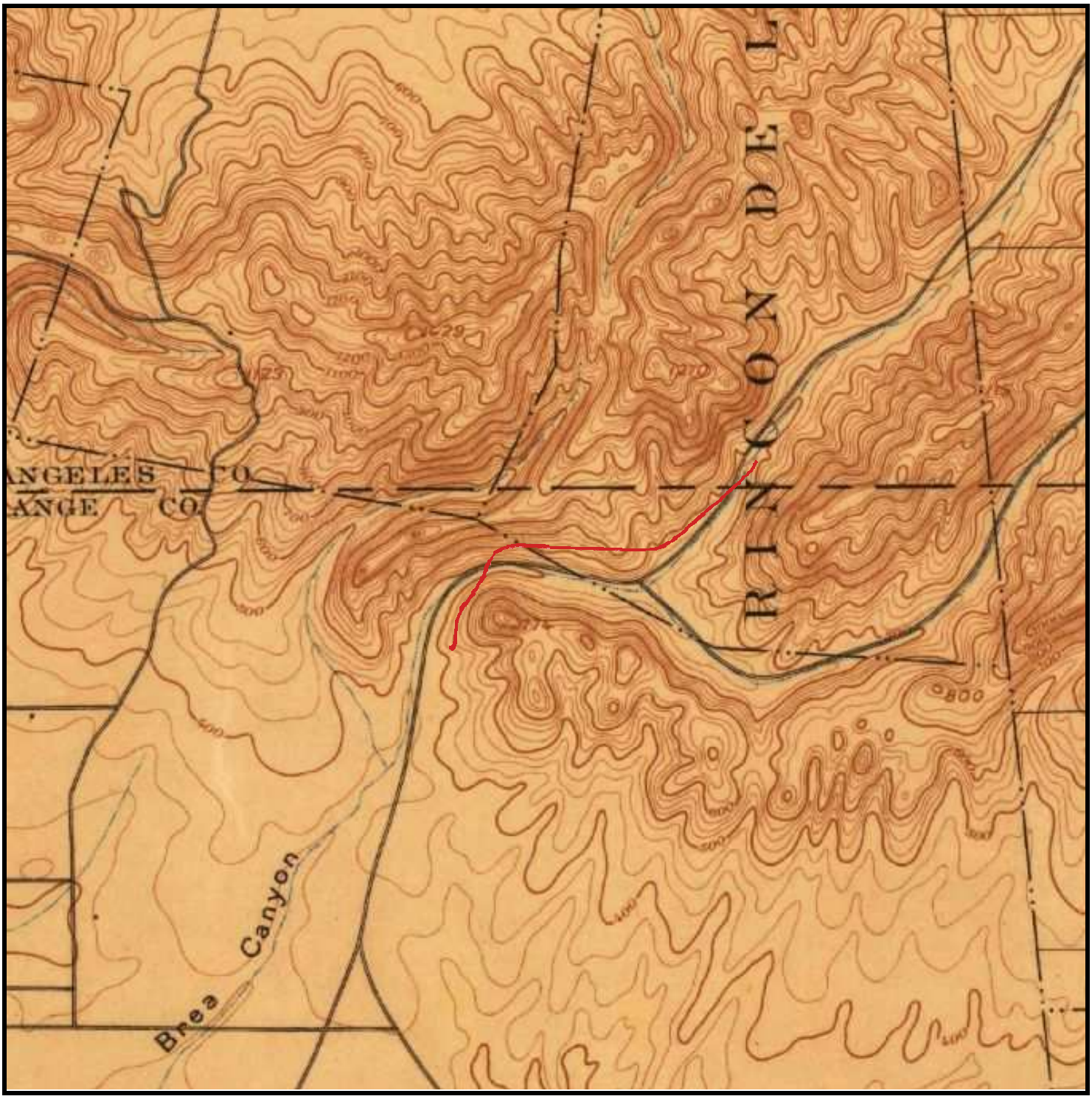
Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1901

Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281



Historical Topographic Map
Year 1896

Brea Canyon Road
Brea, CA

Target Site: 33.940773, -117.885451 Job #: 2104713281

APPENDIX C

Property Photographs

View of Property (east side of road), from west boundary Brea Canyon Road and Canyondale Drive; facing northeast.

View of Property adjacent (west side of road), oil facility; facing northwest.

View of Property (south side of road), Brea Canyon Road; facing east.

View of Property adjacent (foreground) and Property (background, road), Brea Canyon Road; facing west.

View of Property, dirt lot, Brea Canyon Road at Tonner Canyon Road; facing north.

View of Property adjacent, Brea Canyon Road, near east boundary; facing south.

APPENDIX D

User Questionnaire

USER SPECIFIC 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 (County Project Manager)* must provide the following information (if available) to the *environmental professional (Environmental Resources)*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

(1.) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).
Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law?
No

(2.) Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).
Are you aware of any Activity and/or Land Use Limitations (AUL's), such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?
No

(3.) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).
As the *user* of this *ESA* do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?
No

(4.) Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).
Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?
We will offer a fair market value of the property.

(5.) Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30).
Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example, as *user*,

(a.) Do you know the past uses of the *property*? – oil field and old public roadway

(b.) Do you know of specific chemicals that are present or once were present at the *property*?– oil

(c.) Do you know of spills or other chemical releases that have taken place at the *property*?– possibly oil

(d.) Do you know of any environmental cleanups that have taken place at the *property*? - No

(6.) The degree of obviousness of the presence of likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

As the *user* of this *ESA*, based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

– potential oil is spill near the line

In addition, certain information should be collected, if available, and provided to the e*nvironmental professional* selected to conduct the Phase I. This information is intended to assist the *environmental professional* but is not necessarily required to qualify for one of the *LLPs*. The information includes:

(a) the reason why the Phase I is required,

– Geotechnical investigation, purchase of the properties and roadway widening construction.

(b) the type of *property* and type of *property* transaction, for example, sale, purchase, exchange, etc.,

– properties will be purchase in fee.

(c) the complete and correct address for the *property* (a map or other documentation showing *property* location and boundaries is helpful),

– various properties. APN: 304-151-60, 304-301-01, 306-012-24, 304-151-59, 306-012-35, 304-171-03, 306-011-01, 304-171-08, 306-011-03, 306-013-01, 306-012-13, and 304-171-05.

(d) the scope of services desired for the Phase I (including whether any parties to the *property* transaction may have a required standard scope of services on whether any considerations beyond the requirements of Practice E 1527 are to be considered),

(e) identification of all parties who will rely on the Phase I *report*,

– Orange County, City of Brea, Caltrans, property owners, and County contractors' AECOM, Leighton Groups, etc...

(f) identification of current and former site contact(s) and how these contact(s) can be reached,

– Aera Energy LLC:

Attn: Michael Klancher

Technical Consultant/Project Manager
Environmental Engineering / Development
714.924.1003 (telephone)
MJKlancher@aeraenergy.com

Brea Hills LLC:
William J. Houston
c/o: Alameda Land Company Inc.
2411 Santa Clara Avenue, Suite 20
Alameda, CA 94501
510.769.6080 (telephone)
510.769.6088 (facsimile)
bjhcpa@juno.com (e-mail)

Tenant: Bridge Energy, LLC:
Attn: Scott Schulte
2000 Tonner Canyon Road
Brea, CA 92821
714.257.1606 (telephone)
714.257.1615 (facsimile)
sschulte@bridgeenergyllc.com

(g) any special terms and conditions which must be agreed upon by the *environmental professional*, and
No

(h) any other knowledge or experience with the *property* that may be pertinent to the *environmental professional* (for example, copies of any available prior *environmental site assessment reports*, documents, correspondence, etc., concerning the *property* and its environmental condition).
No

QUESTIONNAIRE COMPLETED BY: ___Austin Morgan_____

DATE: ____9/10/2019_____

APPENDIX E

Agency Database Reports

ERS
ENVIRONMENTAL RECORD SEARCH

ERS
ENVIRONMENTAL RECORD SEARCH
"The Intelligent Choice"

RecCheck Corridor Report Results

The Standard for ASTM/AAI Radius Searches
(One Mile Environmental Records Search, Exceeds ASTM 1527/1528 and EPA All Appropriate Inquiry)

REPORT RESULTS

Site Location:

Brea Canyon Road
Brea, CA 92821
(N 33-56-27, W 117-52-57) NAD83

Client:

UltraSystems Environmental

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EXECUTIVE SUMMARY

INFORMATION ON THE REQUESTED LOCATION

Site Address:	Brea Canyon Road Brea, CA 92821
Client Project Name/Number:	Break Canyon Road Widening Project UEI Project #5897
Coordinates:	N 33-56-27, W 117-52-57 (NAD 83) 33.9408317282846, -117.882470263082
Date of Report	August 31, 2019
ERS Project Number:	2104713281
Subject Site Listed on the following lists:	Multiple Agency Lists
Subject Site Listed as Map ID#:	Multiple Map IDs
USGS 7.5 Minute Quad Map:	La Habra (2015-03-10)
Subject Site Located within a Potential Area of Concern:	No
Township, Section and Range:	Township: 03S Range: 10W Section: 01 Baseline: San Bernardino
Site Elevation: (feet above or below (-) mean sea level)	Approximately 442 ft near the center of the area.
Flood Zone: (FEMA Q3 Digital Data)	Panel: 06059C0034J, Effective Date: 12/3/2009 Zone X - Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
Fire Insurance Map Coverage:	Coverage May Exist in Brea. Years: 1915, 1920, 1926, 1933. Sources: ERS; California State Univ., Northridge ; UC, Los Angeles ; California State Univ., Northridge,Stanford Univ. ;
Radon Information:	EPA Radon Zone: 3 (Predicted avg for county: < 2 pCi/L)For zip code 92821: Number of tests per zip code: 14 Number of tests where radon is > 4 pCi/L: 1 Percentage of test where radon is > 4 pCi/L: 7.14% Other Information: Not Reported
Search Radius Expansion Size: (In Miles)	0

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Soil Type: **(USDA Soil Survey Geographic Database) (SSURGO)**	Mocho loam, 2 to 9 percent slopes, warm MAAT, MLRA 19 Map Unit Type: Consociation Hydric: No Drainage Class: Well drained General Information: Fine-loamy, mixed, superactive, thermic Fluventic Haploxerolls
Zip Codes Searched for "Un-Mappable" Sites:	Not Researched
Occurrence Count:	228

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SUMMARY OF OCCURRENCES

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
1 Maps: 1, 4	889574 Brea Canyon Oil Co.	1531 Brea Canyon Unincorporated county area	CHMIRS-CA	Listed	Subject Site	N/A
2 Maps: 1, 4	226905 CHAMPION CHEMICALS, INC.	1280 BREA CANYON RD BREA	CRSP-CA	Listed	Subject Site	N/A
2 Maps: 1, 4	T0605901435 CHAMPION CHEMICALS, INC.	1280 BREA CANYON RD BREA	ENF-CA	Listed	Subject Site	N/A
2 Maps: 1, 4	110066328405 CHAMPION CHEMICALSNA INC.	1280 BREA CANYON RD BREA	FRS-US	Listed	Subject Site	N/A
2 Maps: 1, 4	8B2F5B4-T0605901435 CHAMPION CHEMICALS, INC.	1280 BREA CANYON RD BREA	Hist-CA	No Longer Listed	Subject Site	N/A
2 Maps: 1, 4	A2FA9C00-T0605901435 CHAMPION CHEMICALS, INC.	1280 BREA CANYON RD BREA	Hist-CA	No Longer Listed	Subject Site	N/A
2 Maps: 1, 4	74AA9E4-T0605901435 CHAMPION CHEMICALS, INC.	1280 BREA CANYON RD BREA	Hist-CA	No Longer Listed	Subject Site	N/A
2 Maps: 1, 4	T0605901435 "CHAMPION CHEMICALS, INC."	1280 BREA CANYON RD BREA	Hist-CA	Name Changed	Subject Site	N/A
3 Maps: 1, 4	56882 BREA CANYON OIL	1531 BREA CANYON RD BREA	Hist-FINDS-US	Listed	Subject Site	N/A
4 Maps: 1, 4	1206519 CHAMPION CHEMICALS, INC.	1280 BREA CANYON ROAD BREA	Hist-LUSTIS-CA	Listed	Subject Site	N/A
4 Maps: 1, 4	1206519 CHAMPION CHEMICALS INC.	1280 BREA CANYON ROAD BREA	Hist-Regional-UST-CA	Listed	Subject Site	N/A
5 Maps: 1, 4	CAL000089001 BREA CANYON OIL CO INC	1531 BREA CANYON RD BREA	HWIS-CA	Listed	Subject Site	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
6 Maps: 1, 4	T0605901435 CHAMPION CHEMICALS, INC.	1280 BREA CANYON RD BREA	LUST-Closed-CA	Completed - Case Closed	Subject Site	N/A
7 Maps: 1, 4	110002418189 BREA CANON OIL CO	13000 BREA BLVD BREA	FRS-US	Listed	< 0.01 S	N/A
8 Maps: 1, 4	413786 TREECO ARBORIST MAINTENANCE SERVICE	1281 1/2 BREA CANYON RD BREA	AST-CRSP-CA	Listed	< 0.01 NW	N/A
8 Maps: 1, 4	10482787 AT&T Mobility - TONNER CANYON (11704)	1281 1/2 Brea Canyon Rd Brea	CERS-CA	Listed	< 0.01 NW	N/A
8 Maps: 1, 4	10547377 TREECO ARBORIST MAINTENANCE SERVICE	1281 1/2 BREA CANYON RD BREA	CERS-CA	Listed	< 0.01 NW	N/A
8 Maps: 1, 4	FA0037365-ORG TREECO ARBORIST MAINTENANCE SERVICE	1281 1/2 BREA CANYON RD Brea	County-AST-CA	Listed	< 0.01 NW	N/A
8 Maps: 1, 4	413786 TREECO ARBORIST MAINTENANCE SERVICE	1281 1/2 BREA CANYON RD BREA	CRSP-CA	Listed	< 0.01 NW	N/A
8 Maps: 1, 4	CAL000401695 TREECO ARBORIST	1281 1/2 BREA CANYON RD BREA	RCRA-NON-US	Listed	< 0.01 NW	N/A
9 Maps: 1, 4	126828-SC TREECO ARBORIST, INC.	1281 BREA CANYON 1/2 RD BREA	AIR-DIST-CA	Listed	< 0.01 NW	N/A
10 Maps: 1, 4	10579909 T-MOBILE WEST CORPORATION IE04084A	1273 BREA CANYON RD BREA	CERS-CA	Listed	< 0.01 NW	N/A
11 Maps: 1, 4	05907205 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.01 NW	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
12 Maps: 1, 4	152055-SC LINN WESTERN OPERATING INC	15000 TONNER CANYON RD BREA	AIR-DIST-CA	Listed	0.01 S	N/A
12 Maps: 1, 4	148229-SC BLACKSAND BREA LLC	15000 TONNER CANYON RD BREA	AIR-DIST-CA	Listed	0.01 S	N/A
12 Maps: 1, 4	64355-SC BREA CANON OIL CO	15000 TONNER CANYON RD BREA	AIR-DIST-CA	Listed	0.01 S	N/A
12 Maps: 1, 4	156198-SC LINN WESTERN OPERATING INC	15000 TONNER CANYON RD BREA	AIR-DIST-CA	Listed	0.01 S	N/A
12 Maps: 1, 4	RO0000704-ORG TONNER CANYON PROPERTY	15000 TONNER CANYON RD BREA	County-Others-CA	Listed	0.01 S	N/A
12 Maps: 1, 4	RO0000704-ORG TONNER CANYON PROPERTY	15000 TONNER CANYON RD BREA	Hist-CA	Address Changed	0.01 S	N/A
12 Maps: 1, 4	RO0000704-ORG TONNER CANYON PROPERTY	15000 TONNER CANYON RD BREA	Hist-CA	Address Changed	0.01 S	N/A
13 Maps: 1, 4	05907217 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.01 S	N/A
14 Maps: 1, 4	05907224 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.01 N	N/A
15 Maps: 1, 4	05907716 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.01 N	N/A
16 Maps: 1, 4	05906660 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.01 N	N/A
17 Maps: 1, 4	05907672 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 S	N/A
18 Maps: 1, 4	05907260 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 N	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
19 Maps: 1, 4	05907228 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 N	N/A
20 Maps: 1, 4	05907240 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.02 S	N/A
20 Maps: 1, 4	05907240 Brea-Olinda	Not Reported by Agency	UIC-CA	Active	0.02 S	N/A
21 Maps: 1, 4	05907322 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 SE	N/A
22 Maps: 1, 4	270657 Union Oil Company of CA 1112 Pipeline Removal	Not Reported by Agency	CRSP-CA	Listed	0.02 NW	N/A
23 Maps: 1, 4	05906753 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 S	N/A
23 Maps: 1, 4	05906753 Brea-Olinda	Not Reported by Agency	UIC-CA	Idle	0.02 S	N/A
24 Maps: 1, 4	05906659 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 N	N/A
25 Maps: 1, 4	05907221 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.02 N	N/A
26 Maps: 1, 4	05906657 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 N	N/A
27 Maps: 1, 4	05907201 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 NW	N/A
28 Maps: 1, 4	05907712 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 N	N/A
29 Maps: 1, 4	05907216 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.02 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
30 Maps: 1, 4	05907213 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.03 N	N/A
31 Maps: 1, 4	05907262 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.03 S	N/A
32 Maps: 1, 4	05907236 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.03 N	N/A
33 Maps: 1, 4	05906776 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.03 N	N/A
33 Maps: 1, 4	05906776 Brea-Olinda	Not Reported by Agency	UIC-CA	Idle	0.03 N	N/A
34 Maps: 1, 4	05906864 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.03 S	N/A
35 Maps: 1, 4	05906966 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.03 S	N/A
36 Maps: 1, 4	05906666 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.03 N	N/A
36 Maps: 1, 4	05906666 Brea-Olinda	Not Reported by Agency	UIC-CA	Idle	0.03 N	N/A
37 Maps: 1, 4	05907212 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.03 N	N/A
38 Maps: 1, 4	05907215 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.03 N	N/A
39 Maps: 1, 4	05907241 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.03 N	N/A
40 Maps: 1, 4	05907230 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.03 NW	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
40 Maps: 1, 4	05907230 Brea-Olinda	Not Reported by Agency	UIC-CA	Idle	0.03 NW	N/A
41 Maps: 1, 4	05907267 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.04 N	N/A
42 Maps: 1, 4	129983-SC KINDRED HOSPITAL - BREA	875 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.04 NW	N/A
42 Maps: 1, 4	49292-SC CPC BREA CANYON HOSPITAL	875 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.04 NW	N/A
42 Maps: 1, 4	10559263 KINDRED HOSPITAL- BREA	875 N BREA BLVD BREA	CERS-CA	Listed	0.04 NW	N/A
42 Maps: 1, 4	420587 KINDRED HOSPITAL- BREA	875 N BREA BLVD BREA	CRSP-CA	Listed	0.04 NW	N/A
42 Maps: 1, 4	5708780 CPC BREA CANYON HOSPITAL	875 N BREA BL BREA	Hist-FINDS-US	Listed	0.04 NW	N/A
42 Maps: 1, 4	CAL000299109 KINDRED HOSPITAL-BREA	875 N BREA BLVD BREA	HWIS-CA	Listed	0.04 NW	N/A
42 Maps: 1, 4	CAL000137637 VENCOR	875 N BREA BLVD BREA	HWIS-CA	Listed	0.04 NW	N/A
43 Maps: 1, 4	05906656 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.04 N	N/A
44 Maps: 1, 4	05906774 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.04 N	N/A
44 Maps: 1, 4	05906774 Brea-Olinda	Not Reported by Agency	UIC-CA	Idle	0.04 N	N/A
45 Maps: 1, 4	05907253 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.04 SE	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
46 Maps: 1, 4	05907202 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.04 NW	N/A
47 Maps: 1, 4	05907319 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.04 S	N/A
48 Maps: 1, 4	05920869 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.05 N	N/A
48 Maps: 1, 4	05920869 Brea-Olinda	Not Reported by Agency	UIC-CA	Active	0.05 N	N/A
49 Maps: 1, 4	05907222 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.05 N	N/A
50 Maps: 1, 4	05907714 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.05 S	N/A
51 Maps: 1, 4	05906867 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.05 S	N/A
52 Maps: 1, 4	05907305 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.05 S	N/A
53 Maps: 1, 4	05907243 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.05 SE	N/A
54 Maps: 1, 4	05907246 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.05 N	N/A
55 Maps: 1, 4	05906658 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.05 N	N/A
56 Maps: 1, 4	05907188 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.05 NW	N/A
57 Maps: 1, 4	05906653 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.05 N	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
58 Maps: 1, 4	242292 CAL RESOURCES OIL LEASES	BREA BOULEVARD BREA	CRSP-CA	Listed	0.05 SE	N/A
58 Maps: 1, 4	205686 BREA, CITY OF	BREA BOULEVARD S BREA	CRSP-CA	Listed	0.05 SE	N/A
58 Maps: 1, 4	SLT8R0573941 CAL RESOURCES OIL LEASES	BREA BOULEVARD BREA	SLIC-Closed-CA	Completed - Case Closed	0.05 SE	N/A
58 Maps: 1, 4	SLT8R2083986 BREA, CITY OF	BREA BOULEVARD S BREA	SLIC-Closed-CA	Completed - Case Closed	0.05 SE	N/A
59 Maps: 1, 4	05906651 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.05 N	N/A
60 Maps: 1, 4	05906752 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.05 S	N/A
61 Maps: 1, 4	05907307 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.06 S	N/A
62 Maps: 1, 4	CAC002902376 ALBERT JOU	1170 ORANGEWOOD DR BREA	HWIS-CA	Listed	0.06 W	N/A
63 Maps: 1, 4	05906762 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.06 N	N/A
64 Maps: 1, 4	05907242 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.06 NW	N/A
65 Maps: 1, 4	3568 Amps Engineering	1212 Grand Cyn Brea	Hist-Manufacturing	Listed	0.06 SE	N/A
66 Maps: 1, 4	05907261 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.06 NW	N/A
67 Maps: 1, 4	05907323 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.06 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
68 Maps: 1, 4	69196 003S010W02Q001S	Not Reported by Agency	USGS-Waterwells-US	Listed	0.06 SW	N/A
69 Maps: 1, 4	05907717 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.06 S	N/A
70 Maps: 1, 4	05907245 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.06 N	N/A
71 Maps: 1, 4	05907306 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.06 S	N/A
72 Maps: 1, 4	05907248 Site Name Not Reported	Not Reported by Agency	OGW-CA	Active	0.06 NW	N/A
73 Maps: 1, 4	05907235 Site Name Not Reported	Not Reported by Agency	OGW-CA	Idle	0.06 N	N/A
74 Maps: 1, 4	05906661 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.06 N	N/A
75 Maps: 1, 4	05906655 Site Name Not Reported	Not Reported by Agency	OGW-CA	Plugged	0.06 N	N/A
76 Maps: 1, 4	137525-SC PACIFIC TERMINALS LLC	17001 TONNER CANYON RD BREA	AIR-DIST-CA	Listed	0.12 S	N/A
76 Maps: 1, 4	3996837 TONNER PUMP STATION	17001 TONNER CANYON RD. BREA	Hist-AST-CA	Listed	0.12 S	N/A
77 Maps: 1, 4	RO0003541-ORG RAILS TO TRAILS PROJECT SITE	ONE N BREA BLVD BREA	County-Others-CA	Listed	0.12 S	N/A
78 Maps: 1, 4	127048-SC BREA WOODS APARTMENTS	195 W CENTRAL AVE BREA	AIR-DIST-CA	Listed	0.12 SW	N/A
79 Maps: 1, 4	SC AQMD-SC-152054 LINN WESTERN OPERATING INC	1531 BREA CANYON RD BREA	Air-CA	Listed	0.13 NW	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
79 Maps: 1, 4	148228-SC BLACKSAND BREA LLC	1531 BREA CANYON RD BREA	AIR-DIST-CA	Listed	0.13 NW	N/A
79 Maps: 1, 4	10340-SC BREA CANYON OIL CO INC	1531 BREA CANYON RD BREA	AIR-DIST-CA	Listed	0.13 NW	N/A
79 Maps: 1, 4	152054-SC LINN WESTERN OPERATING INC	1531 BREA CANYON RD BREA	AIR-DIST-CA	Listed	0.13 NW	N/A
79 Maps: 1, 4	RO0000700-ORG BREA CANYON OIL FLD	1531 BREA CANYON RD BREA	County-Others-CA	Listed	0.13 NW	N/A
79 Maps: 1, 4	455501 BREA CANYON OIL CO INC	1531 BREA CANYON RD BREA	CRSP-CA	Listed	0.13 NW	N/A
79 Maps: 1, 4	477653 LINN WESTERN OPERATING INC	1531 BREA CANYON RD BREA	CRSP-CA	Listed	0.13 NW	N/A
80 Maps: 1, 4	SC AQMD-SC-74595 FLEETWOOD CLEANERS	101 W CENTRAL AVE SUITE E BREA	Air-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	74595-SC FLEETWOOD CLEANERS	101 W CENTRAL AVE SUITE E BREA	AIR-DIST-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	10537696 FLEETWOOD CLEANERS	101 W CENTRAL AVE BREA	CERS-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	13171 Fleetwood Cleaners	101 W Central Ave # E Brea	Cleaners-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	FA0025778-ORG FLEETWOOD CLEANERS	101 W CENTRAL AVE BREA	County-Others-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	413334 FLEETWOOD CLEANERS	101 W CENTRAL AVE BREA	CRSP-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	468207 FLEETWOOD CLEANERS	101 W CENTRAL AVE SUITE E BREA	CRSP-CA	Listed	0.14 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
80 Maps: 1, 4	246197 MOBIL #18-KAZ	101 W CENTRAL AVE BREA	CRSP-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	CAL000030757 FLEETWOOD CLEANERS	101 W CENTRAL AVE STE E BREA	DryCleaners-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	T0605900724 MOBIL #18-KAZ	101 W CENTRAL AVE BREA	ENF-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	302067-PD FLEETWOOD CLEANERS	101 W CENTRAL AVE # E BREA	Hist-Cleaners	Listed	0.14 S	N/A
80 Maps: 1, 4	75037 Fleetwood Cleaners	101 W Central Ave Ste E Brea	Hist-Cleaners	Listed	0.14 S	N/A
80 Maps: 1, 4	1589547 MOBIL SS #18-KAZ	101 CENTRAL AVENUE, WEST BREA	Hist-LUSTIS-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	1589547 MOBIL S S #18-KAZ	101 CENTRAL AVENUE WEST BREA	Hist-Regional-UST-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	261657 RONALD J PIATTONI	101 W CENTRAL BREA	Hist-UST-CA	Listed	0.14 S	N/A
80 Maps: 1, 4	T0605900724 MOBIL #18-KAZ	101 W CENTRAL AVE BREA	LUST-Closed-CA	Completed - Case Closed	0.14 S	N/A
80 Maps: 1, 4	CAL000030757 FLEETWOOD CLEANERS	101 W CENTRAL AVE STE E BREA	RCRA-NON-US	Listed	0.14 S	N/A
81 Maps: 1, 4	220305 The Tracks at Brea - Freeway Site	200 State College Boulevard BREA	BF-US	Listed	0.15 S	N/A
82 Maps: 1, 4	67105-SC LA VIE EN ROSE	240 STATE COLLEGE BLVD BREA	AIR-DIST-CA	Listed	0.16 S	N/A
83 Maps: 1, 4	112010-SC TOSCO CORP, JAFAR RADFAR SITE #30340	745 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.17 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
83 Maps: 1, 4	62150-SC UNION DLR, J RADFAR #000713	745 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.17 S	N/A
83 Maps: 1, 4	10513603 JEFFS UNOCAL/TOSCO S S #30340	745 N BREA BLVD BREA	CERS-CA	Listed	0.17 S	N/A
83 Maps: 1, 4	RO0002165-ORG UNOCAL #0713	745 N BREA BLVD BREA	County-LUST-Closed-CA	Closed	0.17 S	N/A
83 Maps: 1, 4	243056 UNOCAL #0713	745 BREA BREA	CRSP-CA	Listed	0.17 S	N/A
83 Maps: 1, 4	7250299 JEFFS UNOCAL/TOSCO S S #30340	745 N BREA BLVD BREA	Hist-Regional-UST-CA	Listed	0.17 S	N/A
83 Maps: 1, 4	7850321 76 STATION # 0713	745 BREA BOULEVARD NORTH BREA	Hist-Regional-UST-CA	Listed	0.17 S	N/A
83 Maps: 1, 4	211089 JEFFS UNOCAL/TOSCO S S #30340	745 N BREA BREA	Hist-Service Stations	Listed	0.17 S	N/A
83 Maps: 1, 4	27645-PD JEFFS UNICAL	745 N BREA BLVD BREA	Hist-Service Stations	Listed	0.17 S	N/A
83 Maps: 1, 4	272641 UNION OIL SERVICE STATION 071	745 N BREA BLVD BREA	Hist-UST-CA	Listed	0.17 S	N/A
83 Maps: 1, 4	267512 STATION 0713	745 N BREA BLVD BREA	Hist-UST-CA	Listed	0.17 S	N/A
83 Maps: 1, 4	CAD983670654 JEFFS UNOCAL	745 N BREA BLVD BREA	RCRA-SQG-US	Listed	0.17 S	N/A
84 Maps: 1, 4	10190737 UNITED #009	798 N Brea Blvd Brea	CERS-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	FA0024069-ORG UNITED #009	798 N BREA BLVD BREA	County-Others-CA	Listed	0.17 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
84 Maps: 1, 4	FA0024069-ORG UNITED #009	798 N BREA BLVD BREA	County-UST-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	78958 UNITED #009	798 N BREA BLVD BREA	CRSP-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	238726 EXXON SERVICE STATION #3336	798 N BREA BLVD BREA	CRSP-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	933097 EXXON SERVICE STATION #3336	798 BREA BOULEVARD, NORTH BREA	Hist-LUSTIS-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	933097 EXXON SERVICE STATION #3336	798 BREA BOULEVARD NORTH BREA	Hist-Regional-UST-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	152175 Apro 009	798 N Brea Blvd Brea	Hist-Service Stations	Listed	0.17 S	N/A
84 Maps: 1, 4	133209 UNITED OIL	798 N BREA BLVD Brea	Hist-Service Stations	Listed	0.17 S	N/A
84 Maps: 1, 4	211070 ARCO #9	798 N BREA BLVD ANAHEIM	Hist-Service Stations	Listed	0.17 S	N/A
84 Maps: 1, 4	229585 EXXON SERVICE STATION	798 N BREA ELVD BREA	Hist-UST-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	T0605900106 EXXON SERVICE STATION #3336	798 N BREA BLVD BREA	LUST-Closed-CA	Completed - Case Closed	0.17 S	N/A
84 Maps: 1, 4	CAL000398708 APRO LLC DBA UNITED OIL 9	798 N BREA BLVD BREA	RCRA-NON-US	Listed	0.17 S	N/A
84 Maps: 1, 4	141830 UNITED #009	798 N Brea Blvd Brea	UST-CA	Listed	0.17 S	N/A
84 Maps: 1, 4	78958 UNITED #009	798 N BREA BLVD BREA	UST-CRSP-CA	Listed	0.17 S	N/A

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85 Maps: 1, 4	RO0000361-ORG K L LTD CLEANERS	790 N BREA BLVD BREA	County-Others-CA	Listed	0.18 S	N/A
85 Maps: 1, 4	253159 K&L CLEANERS	790 BREA BOULEVARD N BREA	CRSP-CA	Listed	0.18 S	N/A
85 Maps: 1, 4	CAD982437733 K L LTD CLEANERS	790 N BREA BLVD BREA	DryCleaners-CA	Listed	0.18 S	N/A
85 Maps: 1, 4	CAL000021712 KL LTD CLEANERS	790 N BREA BLVD BREA	DryCleaners-CA	Listed	0.18 S	N/A
85 Maps: 1, 4	1282000 K&L CLEANERS	790 BREA BLVD. N. BREA	Hist-Regional-SLIC-CA	Listed	0.18 S	N/A
85 Maps: 1, 4	CAD982437733 K L LTD CLEANERS	790 N BREA BLVD BREA	RCRA-SQG-US	Listed	0.18 S	N/A
85 Maps: 1, 4	SLT8R1474066 K&L CLEANERS	790 BREA BOULEVARD N BREA	SLIC-Closed-CA	Completed - Case Closed	0.18 S	N/A
86 Maps: 1, 4	211098 THE CAPITAL GROUP	135 W STATE COLLEGE BREA	Hist-Service Stations	Listed	0.18 S	N/A
87 Maps: 1, 4	116373-SC SAI CLEANERS	788 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.19 S	N/A
87 Maps: 1, 4	20366 S A I Cleaners	788 N Brea Blvd Brea	Cleaners-CA	Listed	0.19 S	N/A
87 Maps: 1, 4	12767 Express 3 Cleaners	788 N Brea Blvd Brea	Cleaners-CA	Listed	0.19 S	N/A
87 Maps: 1, 4	CAD983663402 SAI CLEANERS	788 N BREA BLVD BREA	DryCleaners-CA	Listed	0.19 S	N/A
87 Maps: 1, 4	75034 Sai Cleaners	788 N Brea Blvd Brea	Hist-Cleaners	Listed	0.19 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
87 Maps: 1, 4	CAD983663402 SAI CLEANERS	788 N BREA BLVD BREA	RCRA-SQG-US	Listed	0.19 S	N/A
88 Maps: 1, 4	154562-SC LINN OPERATING, INC	2000 TONNER CANYON RD BREA	AIR-DIST-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	5922 Site Name Not Reported	2000 TONNER CANYON RD BREA	AST-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	412971 Bridge Energy LLC	2000 TONNER CANYON RD BREA	AST-CRSP-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	10559335 LINN OPERATING INC	2000 TONNER CANYON RD BREA	CERS-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	FA0049538-ORG BRIDGE ENERGY LLC	2000 TONNER CANYON RD Brea	County-AST-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	8 30I026227-ORG Brea	2000 Tonner Canyon Rd Brea	County-Others-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	FA0049538-ORG BRIDGE ENERGY LLC	2000 TONNER CANYON RD BREA	County-Others-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	455492 Brea	2000 TONNER CANYON RD BREA	CRSP-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	455592 Bridge Energy LLC	2000 TONNER CANYON ROAD BREA	CRSP-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	412971 Bridge Energy LLC	2000 TONNER CANYON RD BREA	CRSP-CA	Listed	0.19 S	N/A
88 Maps: 1, 4	CAL000430847 BRIDGE ENERGY LLC BREA FACILITY	2000 TONNER CANYON RD BREA	RCRA-NON-US	Listed	0.19 S	N/A
89 Maps: 1, 4	156489-SC VONS A SAFEWAY CO.	780 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.2 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
89 Maps: 1, 4	10173671 2326 Vons A Safeway Company	780 N Brea Blvd Brea	CERS-CA	Listed	0.2 S	N/A
89 Maps: 1, 4	FA0058613-ORG VONS A SAFEWAY COMPANY	780 N BREA BLVD BREA	County-Others-CA	Listed	0.2 S	N/A
89 Maps: 1, 4	47668 2326 Vons A Safeway Company	780 N BREA BLVD BREA	CRSP-CA	Listed	0.2 S	N/A
89 Maps: 1, 4	CAL000442500 VONS STORE #2326	780 N BREA BLVD BREA	RCRA-NON-US	Listed	0.2 S	N/A
89 Maps: 1, 4	CAL000353893 VONS STORE #2326	780 N BREA BLVD BREA	RCRA-NON-US	Listed	0.2 S	N/A
90 Maps: 1, 4	CAC002998085 BRIAN DINI	943 ORANGEWOOD DRIVE BREA	RCRA-NON-US	Listed	0.21 W	N/A
91 Maps: 1, 4	71381-SC NIETO & SONS TRUCKING INC	1281 BREA CANYON RD BREA	AIR-DIST-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	5517 Site Name Not Reported	1281 BREA CANYON RD BREA	AST-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	412993 NIETO & SONS TRUCKING INC	1281 BREA CANYON RD BREA	AST-CRSP-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	10165101 VERIZON WIRELESS (TONNER CANYON)	1281 BREA CANYON RD BREA	CERS-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	10539427 NIETO & SONS TRUCKING INC	1281 BREA CANYON RD BREA	CERS-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	FA0027341-ORG NIETO & SONS TRUCKING INC	1281 BREA CANYON RD Brea	County-AST-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	FA0027341-ORG NIETO & SONS TRUCKING INC	1281 BREA CANYON RD BREA	County-Others-CA	Listed	0.22 N	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
91 Maps: 1, 4	418962 Verizon Wireless: Tonner Canyon	1281 BREA CANYON ROAD BREA	CRSP-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	412993 NIETO & SONS TRUCKING INC	1281 BREA CANYON RD BREA	CRSP-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	220829 CHAMPION CHEMICALS INC	1281 BREA CANYON ROAD BREA	Hist-UST-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	503 NIETO & SONS TRUCKING INC	1281 BREA CANYON ROAD BREA	HWT-CA	Listed	0.22 N	N/A
91 Maps: 1, 4	CAD981164668 BROOKER ASSC INC	1281 N BREA CANYON RD BREA	RCRA-NON-US	Listed	0.22 N	N/A
91 Maps: 1, 4	CAL000170841 NIETO AND SONS TRUCKING, INC.	1281 BREA CANYON RD BREA	RCRA-NON-US	Listed	0.22 N	N/A
91 Maps: 1, 4	CAT080015860 CHAMPION CHEMS INC	1281 BREA CYN RD BREA	RCRA-NON-US	Listed	0.22 N	N/A
91 Maps: 1, 4	CAT080016116 NIETO AND SONS TRUCKING INC	1281 BREA CANYON ROAD BREA	RCRA-SQG-US	Listed	0.22 N	N/A
92 Maps: 1, 4	10443217 AT&T Mobility - BREA CANYON CENTER (25791)	724 N Brea Blvd Brea	CERS-CA	Listed	0.22 S	N/A
93 Maps: 1, 4	300813-PD EXPRESS 3 CLEANERS	719 N BREA BLVD BREA	Hist-Cleaners	Listed	0.23 S	N/A
94 Maps: 1, 4	37974 LEE BENT TREE & LANDSCAPING INC	927 ORANGEWOOD DR BREA	DPR-CA	Listed	0.24 W	N/A
95 Maps: 1, 4	CAC002972910 ELIZABETH KIDWELL	799 DRIFTWOOD AVE BREA	RCRA-NON-US	Listed	0.24 SE	N/A
96 Maps: 1, 4	137464-SC RILEY'S WOOD PIT BARBEQUE, T SMITH DBA	720 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.25 S	N/A

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MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
96 Maps: 1, 4	65995-SC LOVE'S WOODPIT BBQ	720 N BREA BLVD BREA	AIR-DIST-CA	Listed	0.25 S	N/A
97 Maps: 1, 4	RO0002277-ORG GKN RENTAL YARD	707 N BREA BLVD BREA	County-LUST-Closed-CA	Closed	0.26 S	N/A
97 Maps: 1, 4	T0605901904 GKN RENTAL YARD	707 BREA BREA	LUST-Closed-CA	Completed - Case Closed	0.26 S	N/A
98 Maps: 1, 4	T0605900508 THRIFTY OIL #302	718 BREA BREA	LUST-Closed-CA	Completed - Case Closed	0.26 S	N/A
99 Maps: 1, 4	T0605900054 BREA MAINTENANCE STATION	13571 E CENTRAL AVE BREA	LUST-Closed-CA	Completed - Case Closed	0.27 SW	N/A
99 Maps: 1, 4	30-AB-0452 Cal Trans Brea Maintenance Station LVTO	13571 Central Ave. Brea	SWIS-CA	Listed	0.27 SW	N/A
99 Maps: 1, 4	6464 CAL TRANS BREA MAINTENANCE STATION LVTO	13571 CENTRAL AVE. BREA	SWLF-US	Listed	0.27 SW	N/A
100 Maps: 1, 4	RO0001415-ORG ALRON OIL	365 W CENTRAL AVE BREA	County-LUST-Open-CA	Open	0.39 W	N/A
100 Maps: 1, 4	T0605901967 Site Name Not Reported	365 CENTRAL AVE W BREA	Hist-UST-Cleanup-CA	Listed	0.39 W	N/A
100 Maps: 1, 4	T0605901967 ALRON OIL	365 CENTRAL BREA	LUST-Closed-CA	Completed - Case Closed	0.39 W	N/A

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POTENTIAL AREAS OF CONCERN/CONTAMINATION SUMMARY

DATABASE SEARCHED	SUBJECT SITE WITHIN POTENTIAL AREA OF CONCERN	AREAS FOUND WITHIN 1-MILE RADIUS
NPL-R9-US	No	0
MethaneLF-CA	No	0
LA-LF-CA	No	0
Military-Bases-US	No	0
SGV-Deep-Plumes-CA	No	0
SGV-Shallow-Plumes-Puente-Valley-CA	No	0
SGV-Shallow-Plumes-CA	No	0

DATABASE OCCURRENCE SUMMARY

HIGH RISK* OCCURRENCES IDENTIFIED IN REQUESTED SEARCH RADIUS		
DATABASE SEARCHED	DISTANCE SEARCHED (MILES)	HIGH RISK OCCURRENCES FOUND
CERCLIS-US	0.5	0
CorAct-Open-CA	0.5	0
County-LUST-Open-CA	0.5	1
County-SLIC-Open-CA	0.5	0
Eval-Hist-Active-CA	0.5	0
Hist-UST-Cleanup-CA	0.5	1
LUST-Open-CA	0.5	0
Military-Active-CA	1	0
NPL-US	1	0
Proposed-NPL-US	1	0
Response-CA	1	0
SAA-Agreements-US	1	0
School-Active-CA	0.5	0
SLIC-Open-CA	0.5	0
State-Response-Active-CA	1	0
Superfund-Active-CA	1	0
Tribal-LUST-Open-Reg9	0.5	0
VCP-Active-CA	0.5	0

* For the purposes of this report, “high risk” occurrences are those that have known contamination and have not received a “case closed” or “no further action” status from the agency that maintains the records.

ASTM/AAI STANDARD RECORD SOURCES SUMMARY				
STANDARD ENVIRONMENTAL RECORD SOURCES	ASTM MIN. SEARCH DIST. / ERS SEARCH DIST. (MILES)	ERS DATABASE NAME	TOTAL LISTINGS	MAP ID #’S
Federal NPL site list	1.0 / 1.0	NPL-US	0	None Listed
		Proposed-NPL-US	0	None Listed

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Federal Delisted NPL site list	0.5 / 1.0	Delisted-NPL-US	0	None Listed
Federal CERCLIS list	0.5 / 0.5	CERCLIS-US	0	None Listed
Federal CERCLIS NFRAP site list	0.5 / 0.5	CERCLIS-Archived-US	0	None Listed
Federal RCRA CORRACTS facilities list	1.0 / 1.0	RCRA-COR-US	0	None Listed
Federal RCRA non-CORRACTS TSD facilities list	0.5 / 0.5	RCRA-TSDF-US	0	None Listed
Federal RCRA generators list	Property and adjoining properties / 0.25	RCRA-CESQG-US	0	None Listed
		RCRA-LQG-US	0	None Listed
		RCRA-NON-US	11	8, 80, 84, 88, 89, 89, 90, 91, 91, 91, 95
		RCRA-SQG-US	4	83, 85, 87, 91
Federal Inst/Eng control registries	Property Only / 0.25	Controls-RCRA-US	0	None Listed
		Controls-US	0	None Listed
		Hist-US-EC	0	None Listed
		Hist-US-IC	0	None Listed
		LIENS-US	0	None Listed
Federal ERNS list	Property Only / 0.0625	ERNS-US	0	None Listed
State and Tribal-Equivalent NPL	1.0 / 1.0	Response-CA	0	None Listed
		State-Response-Active-CA	0	None Listed
		State-Response-NFA-CA	0	None Listed
		State-Response-Other-CA	0	None Listed
State and Tribal-Equivalent CERCLIS	0.5 / 0.5	Superfund-Active-CA	0	None Listed
		Superfund-NFA-CA	0	None Listed
		Superfund-Other-CA	0	None Listed
State and Tribal landfill and/or solid waste disposal sites	0.5 / 0.5	County-SWF-CA	0	None Listed
		Debris-US	0	None Listed
		Hist-Dumps-US	0	None Listed
		Land-Disposal-CA	0	None Listed
		SWIS-CA	1	99
		SWLF-US	1	99
		Tribal-ODI-US	0	None Listed
State and Tribal Leaking Storage Tank Lists	0.5 / 0.5	County-LUST-CA	0	None Listed
		County-LUST-Closed-CA	2	83, 97
		County-LUST-Open-CA	1	100
		Hist-UST-Cleanup-CA	1	100
		LUST-Closed-CA	7	6, 80, 84, 97,

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				98, 99, 100
		LUST-Open-CA	0	None Listed
		Tribal-LUST-Closed-Reg9	0	None Listed
		Tribal-LUST-Open-Reg9	0	None Listed
State and Tribal Registered Storage Tank Lists	Property and adjoining properties / 0.25	AST-CA	2	88, 91
		AST-CRSP-CA	3	8, 88, 91
		City-AST-CA	0	None Listed
		City-UST-CA	0	None Listed
		County-AST-CA	3	8, 88, 91
		County-UST-CA	1	84
		FEMA-UST-US	0	None Listed
		Hist-UST-CA	5	80, 83, 83, 84, 91
		Tribal-UST-Reg9	0	None Listed
		UST-Abandoned-CA	0	None Listed
		UST-CA	1	84
		UST-Closed-CA	0	None Listed
		USTComp-CA	0	None Listed
		UST-CRSP-CA	1	84
		UST-Priority-CA	0	None Listed
		UST-Proposed-CA	0	None Listed
State and Tribal Inst/Eng Control Registries	Property Only / 0.5	Controls-CA	0	None Listed
		Deed-CA	0	None Listed
		Hist-Controls-CA	0	None Listed
		HWMP-Controls-CA	0	None Listed
		Liens-CA	0	None Listed
State and Tribal Voluntary Cleanup Sites	0.5 / 0.5	Military-Active-CA	0	None Listed
		Military-NFA-CA	0	None Listed
		Military-Other-CA	0	None Listed
		School-Active-CA	0	None Listed
		School-NFA-CA	0	None Listed
		School-Other-CA	0	None Listed
		Tribal-VCP-US	0	None Listed
		VCP-Active-CA	0	None Listed
		VCP-NFA-CA	0	None Listed
		VCP-Other-CA	0	None Listed
State and Tribal Brownfield Sites	0.5 / 0.5	BF-MOA-CA	0	None Listed
		BF-Tribal-US	0	None Listed

FEDERAL ASTM/AAI DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL

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FEDERAL ASTM/AAI DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
BF-Tribal-US	0.5	0	0	0	0	-	0
BF-US	0.5	0	1	0	0	-	1
CERCLIS-Archived-US	0.5	0	0	0	0	-	0
CERCLIS-US	0.5	0	0	0	0	-	0
Controls-RCRA-US	0.5	0	0	0	0	-	0
Controls-US	0.5	0	0	0	0	-	0
Debris-US	0.5	0	0	0	0	-	0
Delisted-NPL-US	1	0	0	0	0	0	0
ERNS-US	0.0625	0	0	-	-	-	0
FEMA-UST-US	0.25	0	0	0	-	-	0
FTTS-ENF-US	0.25	0	0	0	-	-	0
Hist-Dumps-US	0.5	0	0	0	0	-	0
Hist-US-EC	0.5	0	0	0	0	-	0
Hist-US-IC	0.5	0	0	0	0	-	0
HMIS-US	0.0625	0	0	-	-	-	0
LIENS-US	0.0625	0	0	-	-	-	0
NPL-US	1	0	0	0	0	0	0
PADS-US	0.0625	0	0	-	-	-	0
PCB-US	0.25	0	0	0	-	-	0
Proposed-NPL-US	1	0	0	0	0	0	0
RCRA-CESQG-US	0.25	0	0	0	-	-	0
RCRA-COR-US	1	0	0	0	0	0	0
RCRA-LQG-US	0.25	0	0	0	-	-	0
RCRA-NON-US	0.25	0	2	9	-	-	11
RCRA-SQG-US	0.25	0	0	4	-	-	4
RCRA-TSDF-US	0.5	0	0	0	0	-	0
SAA-Agreements-US	1	0	0	0	0	0	0
SWLF-US	0.5	0	0	1	0	-	1
Tribal-LUST-Closed-Reg9	0.5	0	0	0	0	-	0
Tribal-LUST-Open-Reg9	0.5	0	0	0	0	-	0
Tribal-ODI-US	0.5	0	0	0	0	-	0
Tribal-UST-Reg9	0.25	0	0	0	-	-	0
Tribal-VCP-US	0.5	0	0	0	0	-	0

STATE ASTM/AAI DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
AST-CA	0.25	0	0	2	-	-	2
AST-CRSP-CA	0.25	0	1	2	-	-	3
BF-MOA-CA	0.5	0	0	0	0	-	0
BZ-HazWaste-CA	0.5	0	0	0	0	-	0
CERS-CA	0.25	0	5	7	-	-	12
CHMIRS-CA	0.0625	1	0	-	-	-	1
City-AST-CA	0.25	0	0	0	-	-	0
City-CUPA-CA	0.25	0	0	0	-	-	0
City-Others-CA	0.25	0	0	0	-	-	0
City-UST-CA	0.25	0	0	0	-	-	0
Controls-CA	0.5	0	0	0	0	-	0
CorAct-Closed-CA	0.5	0	0	0	0	-	0
CorAct-Open-CA	0.5	0	0	0	0	-	0
CorAct-Other-CA	0.5	0	0	0	0	-	0
CORTESE-CA	0.25	0	0	0	-	-	0
County-AST-CA	0.25	0	1	2	-	-	3

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STATE ASTM/AAI DATABASES							
DATABASE SEARCHED	**DISTANCE SEARCHED**	**SUBJECT SITE**	**0.125 MILES**	**0.25 MILES**	**0.5 MILES**	**1.0 MILES**	**TOTAL**
County-Hist-CA	0.25	0	0	0	-	-	0
County-LUST-CA	0.5	0	0	0	0	-	0
County-LUST-Closed-CA	0.5	0	0	2	0	-	2
County-LUST-Open-CA	0.5	0	0	0	1	-	1
County-Others-CA	0.25	0	4	6	-	-	10
County-SLIC-Closed-CA	0.25	0	0	0	-	-	0
County-SLIC-Open-CA	0.5	0	0	0	0	-	0
County-SML-CA	0.5	0	0	0	0	-	0
County-SWF-CA	0.5	0	0	0	0	-	0
County-UST-CA	0.25	0	0	1	-	-	1
CRSP-CA	0.25	1	10	10	-	-	21
CUPA-CA	0.25	0	0	0	-	-	0
Deed-CA	0.5	0	0	0	0	-	0
ENF-CA	0.25	1	1	0	-	-	2
ENF-SMARTS-CA	0.25	0	0	0	-	-	0
ENF-Wastewater-CA	0.25	0	0	0	-	-	0
Eval-Hist-Active-CA	0.5	0	0	0	0	-	0
Eval-Hist-NFA-CA	0.5	0	0	0	0	-	0
Eval-Hist-Other-CA	0.5	0	0	0	0	-	0
HazWaste-CA	0.25	0	0	0	-	-	0
Hist-Controls-CA	0.5	0	0	0	0	-	0
Hist-Cort-CA	0.25	0	0	0	-	-	0
HIST-R4-CA	0.25	0	0	0	-	-	0
HIST-SLIC-CV-CLOSED-CA	0.5	0	0	0	0	-	0
HIST-SLIC-CV-OPEN-CA	0.5	0	0	0	0	-	0
Hist-UST-CA	0.25	0	1	4	-	-	5
Hist-UST-Cleanup-CA	0.5	0	0	0	1	-	1
Hist-WIP-Active-CA	0.5	0	0	0	0	-	0
Hist-WIP-Backlog-CA	0.5	0	0	0	0	-	0
Hist-WIP-Historical-CA	0.5	0	0	0	0	-	0
HWIS-CA	0.0625	1	3	-	-	-	4
HWMP-Controls-CA	0.5	0	0	0	0	-	0
ICE-CA	0.25	0	0	0	-	-	0
Land-Disposal-CA	0.5	0	0	0	0	-	0
Liens-CA	0.0625	0	0	-	-	-	0
LUST-Closed-CA	0.5	1	1	4	1	-	7
LUST-Open-CA	0.5	0	0	0	0	-	0
Manifest2-RI	0.0625	0	0	-	-	-	0
Military-Active-CA	1	0	0	0	0	0	0
Military-NFA-CA	0.5	0	0	0	0	-	0
Military-Other-CA	1	0	0	0	0	0	0
PR-MOA-CA	0.25	0	0	0	-	-	0
Response-CA	1	0	0	0	0	0	0
School-Active-CA	0.5	0	0	0	0	-	0
School-NFA-CA	0.5	0	0	0	0	-	0
School-Other-CA	0.5	0	0	0	0	-	0
SLIC-Closed-CA	0.5	0	2	1	0	-	3
SLIC-Open-CA	0.5	0	0	0	0	-	0
SML-CA	0.5	0	0	0	0	-	0
State-Response-Active-CA	1	0	0	0	0	0	0
State-Response-NFA-CA	0.5	0	0	0	0	-	0
State-Response-Other-CA	0.5	0	0	0	0	-	0
Superfund-Active-CA	1	0	0	0	0	0	0
Superfund-NFA-CA	1	0	0	0	0	0	0
Superfund-Other-CA	1	0	0	0	0	0	0

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STATE ASTM/AAI DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
SWIS-CA	0.5	0	0	1	0	-	1
SWRCY-CA	0.5	0	0	0	0	-	0
UST-Abandoned-CA	0.25	0	0	0	-	-	0
UST-CA	0.25	0	0	1	-	-	1
UST-Closed-CA	0.25	0	0	0	-	-	0
USTComp-CA	0.25	0	0	0	-	-	0
UST-CRSP-CA	0.25	0	0	1	-	-	1
UST-Priority-CA	0.5	0	0	0	0	-	0
UST-Proposed-CA	0.25	0	0	0	-	-	0
VCP-Active-CA	0.5	0	0	0	0	-	0
VCP-NFA-CA	0.5	0	0	0	0	-	0
VCP-Other-CA	0.5	0	0	0	0	-	0

SUPPLEMENTAL DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
Air-CA	0.25	0	2	0	-	-	2
AIR-DIST-CA	0.25	0	13	9	-	-	22
BioFuel-US	0.25	0	0	0	-	-	0
CAF-CA	0.25	0	0	0	-	-	0
CDL-CA	0.0625	0	0	-	-	-	0
CDL-US	0.0625	0	0	-	-	-	0
CHWF-CA	0.5	0	0	0	0	-	0
Cleaners-CA	0.25	0	1	2	-	-	3
Coal-Ash-Dams-US	0.5	0	0	0	0	-	0
County-BI-CA	0.25	0	0	0	-	-	0
Dams-CA	0.25	0	0	0	-	-	0
DPR-CA	0.25	0	0	1	-	-	1
DryCleaners-CA	0.25	0	1	3	-	-	4
EGRID-US	0.5	0	0	0	0	-	0
EPA-Watch-List-US	0.25	0	0	0	-	-	0
FA-HW-CA	0.0625	0	0	-	-	-	0
FA-HW-US	0.0625	0	0	-	-	-	0
FA-SWF-CA	0.0625	0	0	-	-	-	0
FRS-US	0.0625	1	1	-	-	-	2
FTTS-INSP-US	0.0625	0	0	-	-	-	0
FUDS-US	1	0	0	0	0	0	0
FUSRAP-US	0.25	0	0	0	-	-	0
Haulers-CA	0.0625	0	0	-	-	-	0
Hist-AFS2-US	0.25	0	0	0	-	-	0
Hist-AFS-US	0.25	0	0	0	-	-	0
Hist-AST-CA	0.25	0	1	0	-	-	1
Hist-AWS-CA	0.25	0	0	0	-	-	0
Hist-CA	0.0625	4	2	-	-	-	6
Hist-CalFID-CA	0.25	0	0	0	-	-	0
Hist-CALSITES-CA	0.25	0	0	0	-	-	0
Hist-CERCLIS-NFRAP-US	0.25	0	0	0	-	-	0
Hist-CERCLIS-US	0.25	0	0	0	-	-	0
Hist-City-UST-CA	0.25	0	0	0	-	-	0
Hist-Deed-CA	0.25	0	0	0	-	-	0
Hist-DTG-CA	0.25	0	0	0	-	-	0
Hist-ERNS-US	0.0625	0	0	-	-	-	0
Hist-FIFRA-US	0.25	0	0	0	-	-	0

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SUPPLEMENTAL DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
Hist-FINDS-US	0.0625	1	1	-	-	-	2
Hist-HWS-CA	0.25	0	0	0	-	-	0
Hist-LUSTIS-CA	0.25	1	1	1	-	-	3
HIST-MLTS-US	0.25	0	0	0	-	-	0
HIST-MTBE-CA	0.25	0	0	0	-	-	0
Hist-NPL-US	0.25	0	0	0	-	-	0
Hist-Orange-County-LF-CA	0.25	0	0	0	-	-	0
Historical-CA	0.5	0	0	0	0	-	0
Hist-Prop65-CA	0.25	0	0	0	-	-	0
Hist-RCRIS-US	0.25	0	0	0	-	-	0
Hist-Regional-LUST-CA	0.25	0	0	0	-	-	0
Hist-Regional-Other-CA	0.25	0	0	0	-	-	0
Hist-Regional-SLIC-CA	0.25	0	0	1	-	-	1
Hist-Regional-Spills-CA	0.25	0	0	0	-	-	0
Hist-Regional-SWLF-CA	0.25	0	0	0	-	-	0
Hist-Regional-UST-CA	0.25	1	1	3	-	-	5
Hist-SCL-CA	0.25	0	0	0	-	-	0
Hist-SWIS-CA	0.25	0	0	0	-	-	0
Hist-ToxicPits-CA	0.25	0	0	0	-	-	0
Hist-TRIS-US	0.25	0	0	0	-	-	0
Hist-US	0.0625	0	0	-	-	-	0
Hist-USGS-WaterWells-CA	0.0625	0	0	-	-	-	0
Hist-USTReg-CA	0.25	0	0	0	-	-	0
Hist-WaterWells-US	0.0625	0	0	-	-	-	0
Hist-WMUDS-CA	0.25	0	0	0	-	-	0
HWT-CA	0.25	0	0	1	-	-	1
ICIS-Air-US	0.0625	0	0	-	-	-	0
ICIS-FEC-US	0.0625	0	0	-	-	-	0
ICIS-NPDES-US	0.0625	0	0	-	-	-	0
LA-Waste-Haulers-CA	0.0625	0	0	-	-	-	0
Lead-Smelter-2-US	0.25	0	0	0	-	-	0
Lead-US	0.25	0	0	0	-	-	0
LMOP-US	0.5	0	0	0	0	-	0
Mines2-CA	0.0625	0	0	-	-	-	0
Mines-CA	0.0625	0	0	-	-	-	0
Mines-CDMG-CA	0.0625	0	0	-	-	-	0
MINES-US	0.0625	0	0	-	-	-	0
MLTS-US	0.0625	0	0	-	-	-	0
Mortgage-CA	0.25	0	0	0	-	-	0
MRDS-US	0.25	0	0	0	-	-	0
MWMP-CA	0.25	0	0	0	-	-	0
NCI-CA	0.25	0	0	0	-	-	0
NEI-LF-CA	0.25	0	0	0	-	-	0
NPDES-CA	0.0625	0	0	-	-	-	0
NPDES-SW-CA	0.0625	0	0	-	-	-	0
OGM-CA	0.0625	0	0	-	-	-	0
OGW-CA	0.0625	0	58	-	-	-	58
OSCF-CA	0.5	0	0	0	0	-	0
PCS-US	0.25	0	0	0	-	-	0
Perch1-CA	0.25	0	0	0	-	-	0
Perch2-CA	0.25	0	0	0	-	-	0
Project-CA	0.25	0	0	0	-	-	0
RADINFO-US	0.0625	0	0	-	-	-	0
RFG-Lab-US	0.25	0	0	0	-	-	0
RMP-US	0.0625	0	0	-	-	-	0

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SUPPLEMENTAL DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
ROD-US	0.5	0	0	0	0	-	0
SDWIS-US	0.25	0	0	0	-	-	0
SP-CA	0.25	0	0	0	-	-	0
Spills-SSO-CA	0.25	0	0	0	-	-	0
SSTS-US	0.0625	0	0	-	-	-	0
TierPer-CA	0.25	0	0	0	-	-	0
TOMS-CA	0.0625	0	0	-	-	-	0
Tribal-Air-US	0.25	0	0	0	-	-	0
TRIS2000-US	0.0625	0	0	-	-	-	0
TRIS2010-US	0.0625	0	0	-	-	-	0
TRIS80-US	0.0625	0	0	-	-	-	0
TRIS90-US	0.0625	0	0	-	-	-	0
TSCA-US	0.0625	0	0	-	-	-	0
UIC2-CA	0.0625	0	0	-	-	-	0
UIC-CA	0.0625	0	7	-	-	-	7
UMTRA-US	0.0625	0	0	-	-	-	0
USGS-Waterwells-US	0.0625	0	1	-	-	-	1
Vapor-Intrusions-US	0.5	0	0	0	0	-	0
WDR-CA	0.25	0	0	0	-	-	0

PROPRIETARY HISTORIC DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
Hist-Agriculture	0.0625	0	0	-	-	-	0
Hist-Auto Dealers	0.0625	0	0	-	-	-	0
Hist-Auto Repair	0.25	0	0	0	-	-	0
Hist-Chemical Manufacturing	0.0625	0	0	-	-	-	0
Hist-Chemical-Storage	0.0625	0	0	-	-	-	0
Hist-Cleaners	0.25	0	2	2	-	-	4
Hist-Convenience	0.0625	0	0	-	-	-	0
Hist-Disposal-Recycle	0.0625	0	0	-	-	-	0
Hist-Food-Processors	0.0625	0	0	-	-	-	0
Hist-Gun-Ranges	0.0625	0	0	-	-	-	0
Hist-Machine Shop	0.0625	0	0	-	-	-	0
Hist-Manufacturing	0.0625	0	1	-	-	-	1
Hist-Metal Plating	0.0625	0	0	-	-	-	0
Hist-Mining	0.0625	0	0	-	-	-	0
Hist-Mortuaries	0.0625	0	0	-	-	-	0
Hist-Oil-Gas	0.0625	0	0	-	-	-	0
Hist-OilGas-Refiners	0.0625	0	0	-	-	-	0
Hist-Other	0.0625	0	0	-	-	-	0
Hist-Paint-Stores	0.0625	0	0	-	-	-	0
Hist-Petroleum	0.0625	0	0	-	-	-	0
Hist-Post-Offices	0.0625	0	0	-	-	-	0
Hist-Printers	0.0625	0	0	-	-	-	0
Hist-Rental	0.0625	0	0	-	-	-	0
Hist-RV-Dealers	0.0625	0	0	-	-	-	0
Hist-Salvage	0.0625	0	0	-	-	-	0
Hist-Service Stations	0.25	0	0	6	-	-	6
Hist-Steel-Metals	0.0625	0	0	-	-	-	0
Hist-Textile	0.0625	0	0	-	-	-	0
Hist-Transportation	0.0625	0	0	-	-	-	0
Hist-Trucking	0.0625	0	0	-	-	-	0

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PROPRIETARY HISTORIC DATABASES							
DATABASE SEARCHED	**DISTANCE SEARCHED**	**SUBJECT SITE**	**0.125 MILES**	**0.25 MILES**	**0.5 MILES**	**1.0 MILES**	**TOTAL**
Hist-Vehicle-Parts	0.0625	0	0	-	-	-	0
Hist-Vehicle-Washing	0.0625	0	0	-	-	-	0

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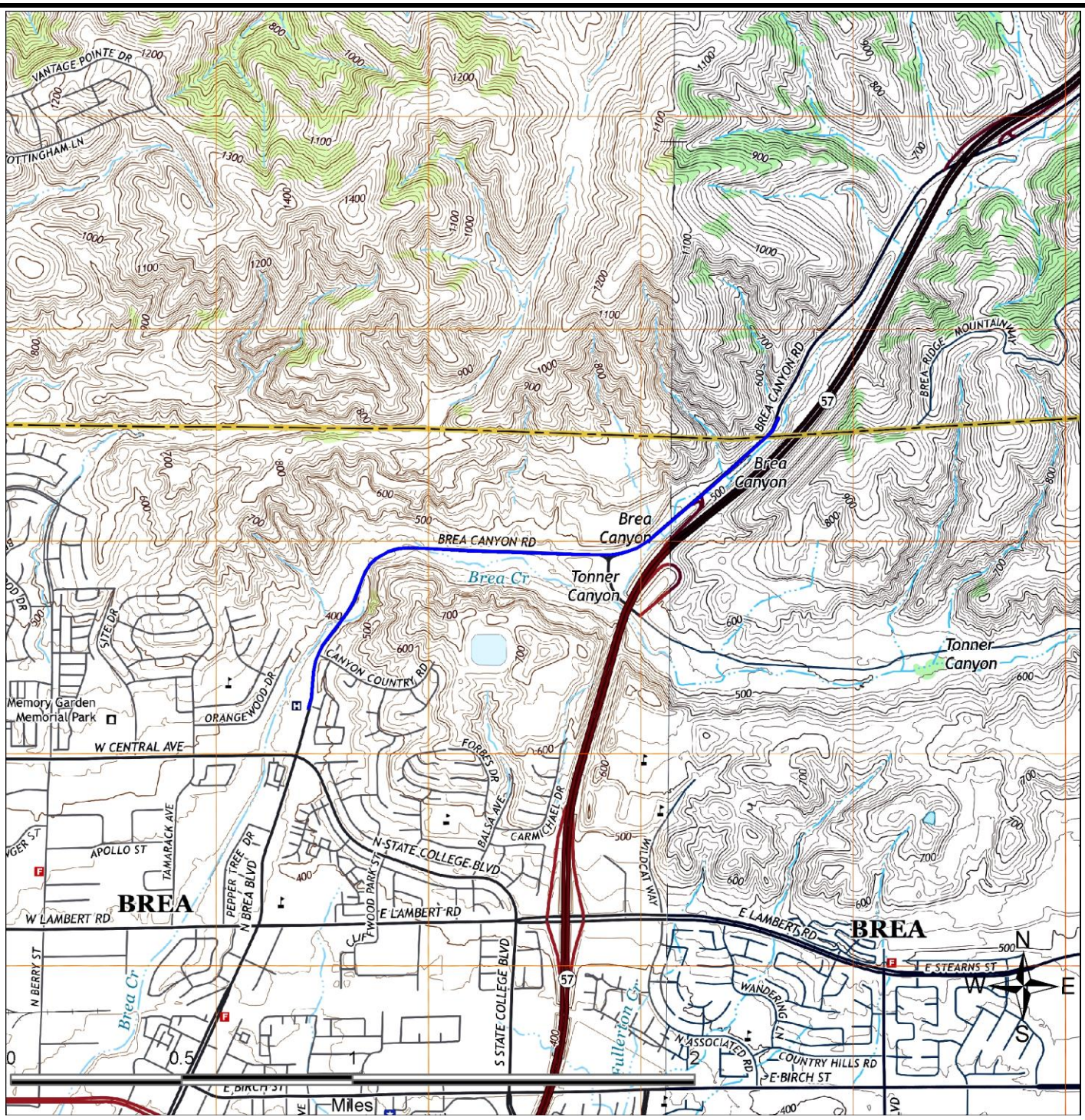

SITE LOCATION TOPOGRAPHIC MAP

U.S. Geological Survey. La Habra (2015-03-10) Quadrangle, 7.5 Minute Series

UltraSystems Environmental	Brea Canyon Road Brea, CA 92821	FIGURE:	1
		JOB:	UEI Project #5897
		DATE:	8/31/2019

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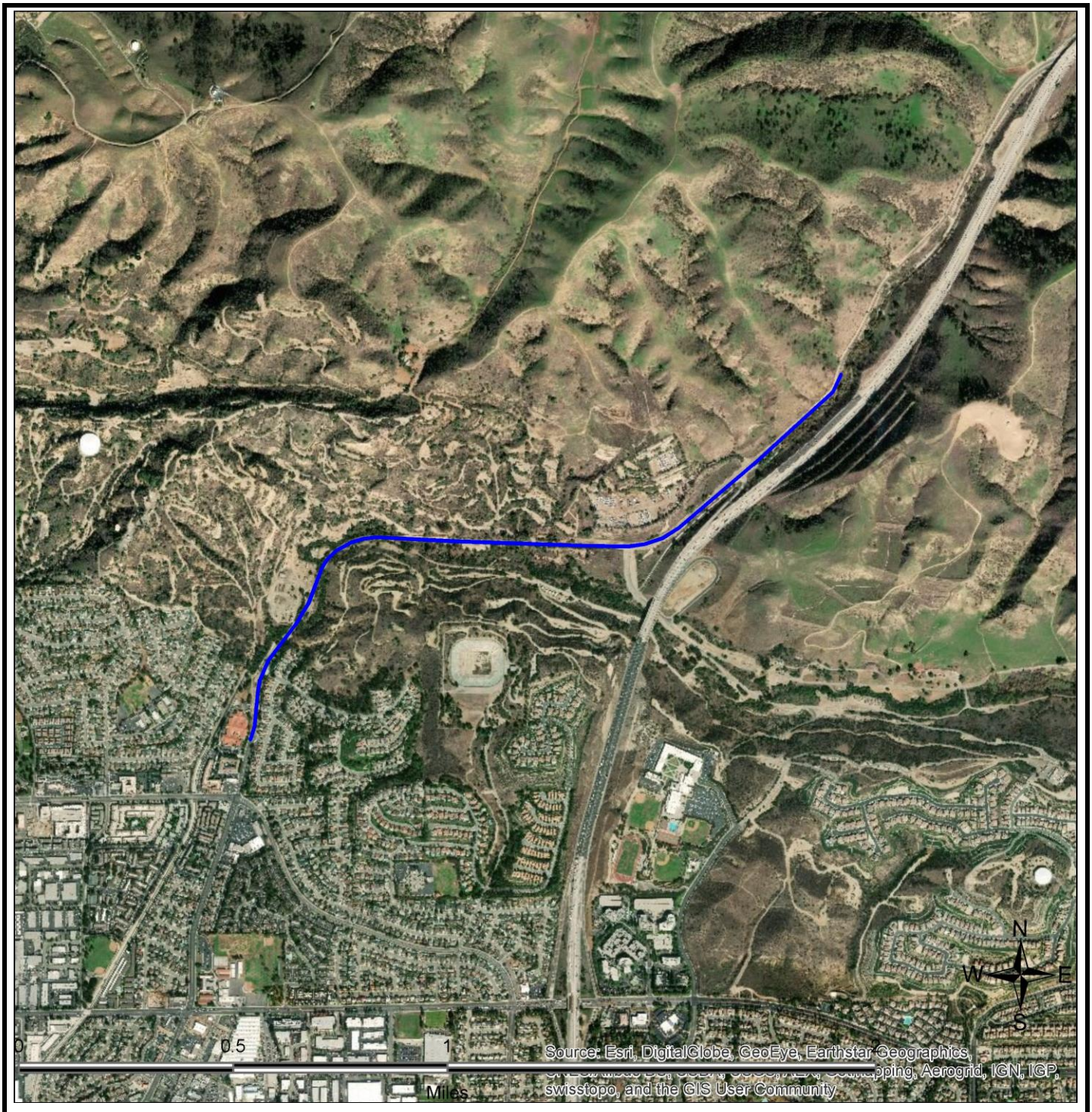

SITE LOCATION MAP

UltraSystems Environmental	Brea Canyon Road Brea, CA 92821	FIGURE: 2 JOB: UEI Project #5897 DATE: 8/31/2019

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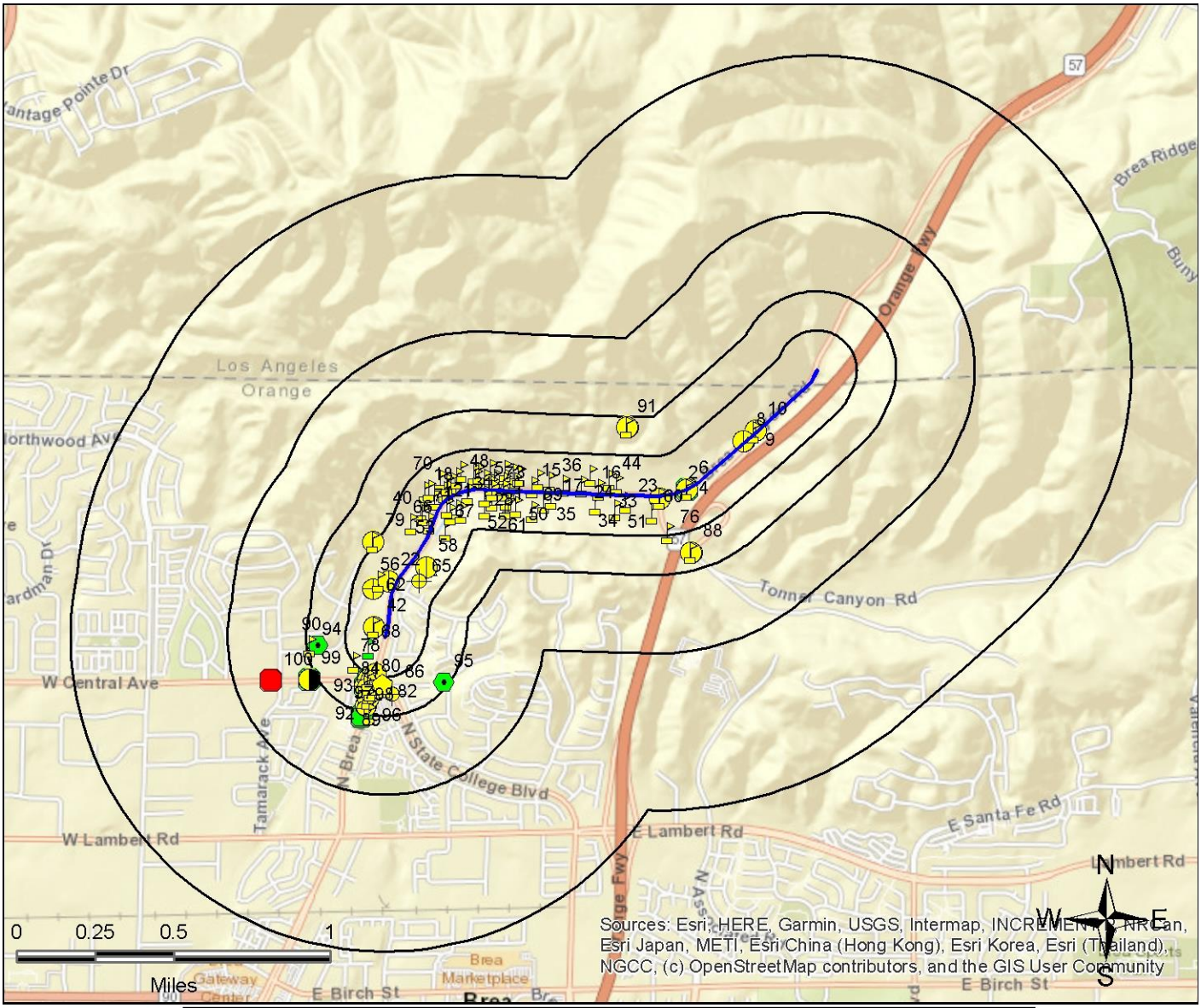
1-MILE RADIUS STREET MAP W/OCCURRENCES (MAP1)



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.

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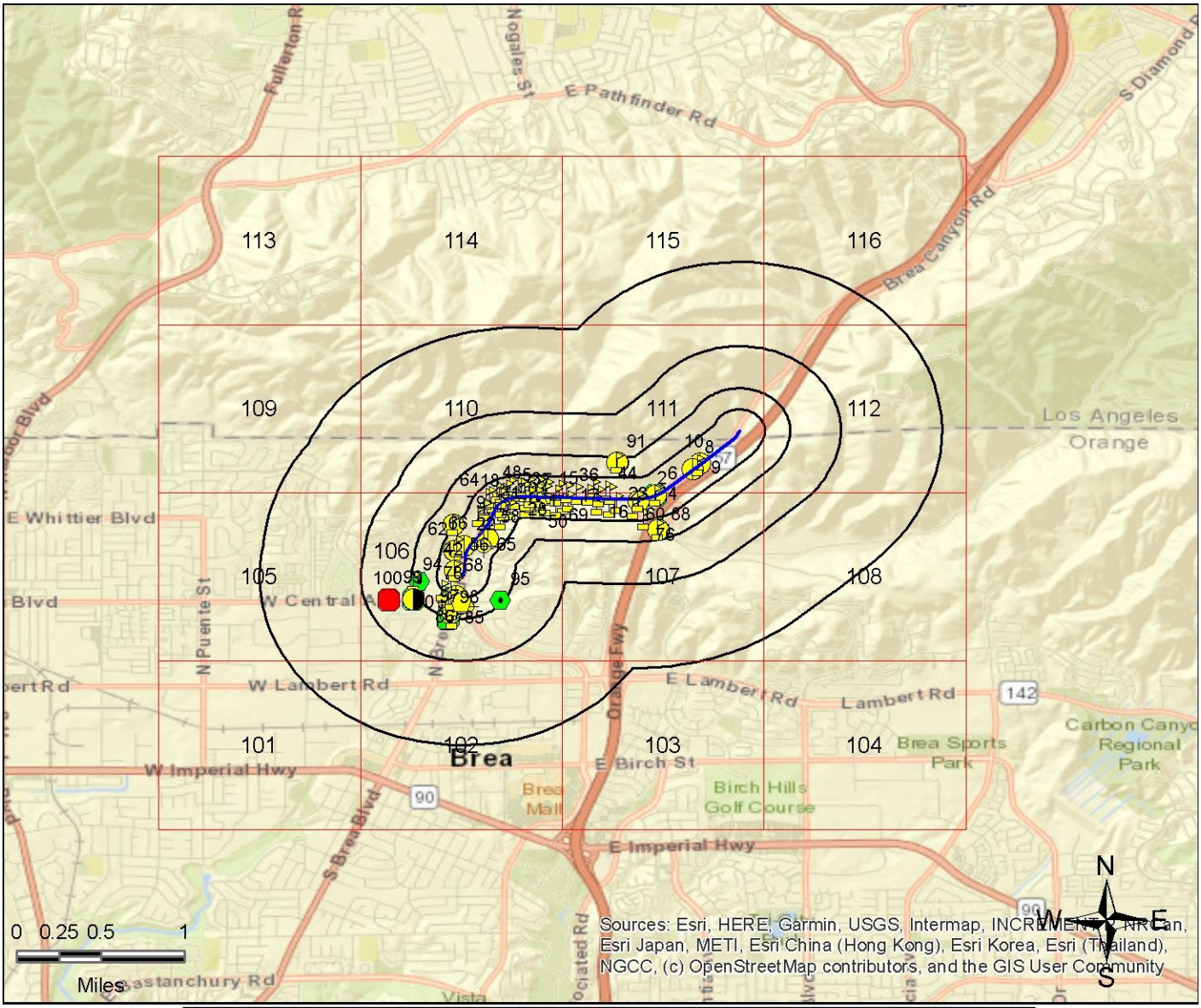
GRID LAYOUT MAP KEY



Legend

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- Federal Delisted NPL
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- Federal CERCLIS NFRAP
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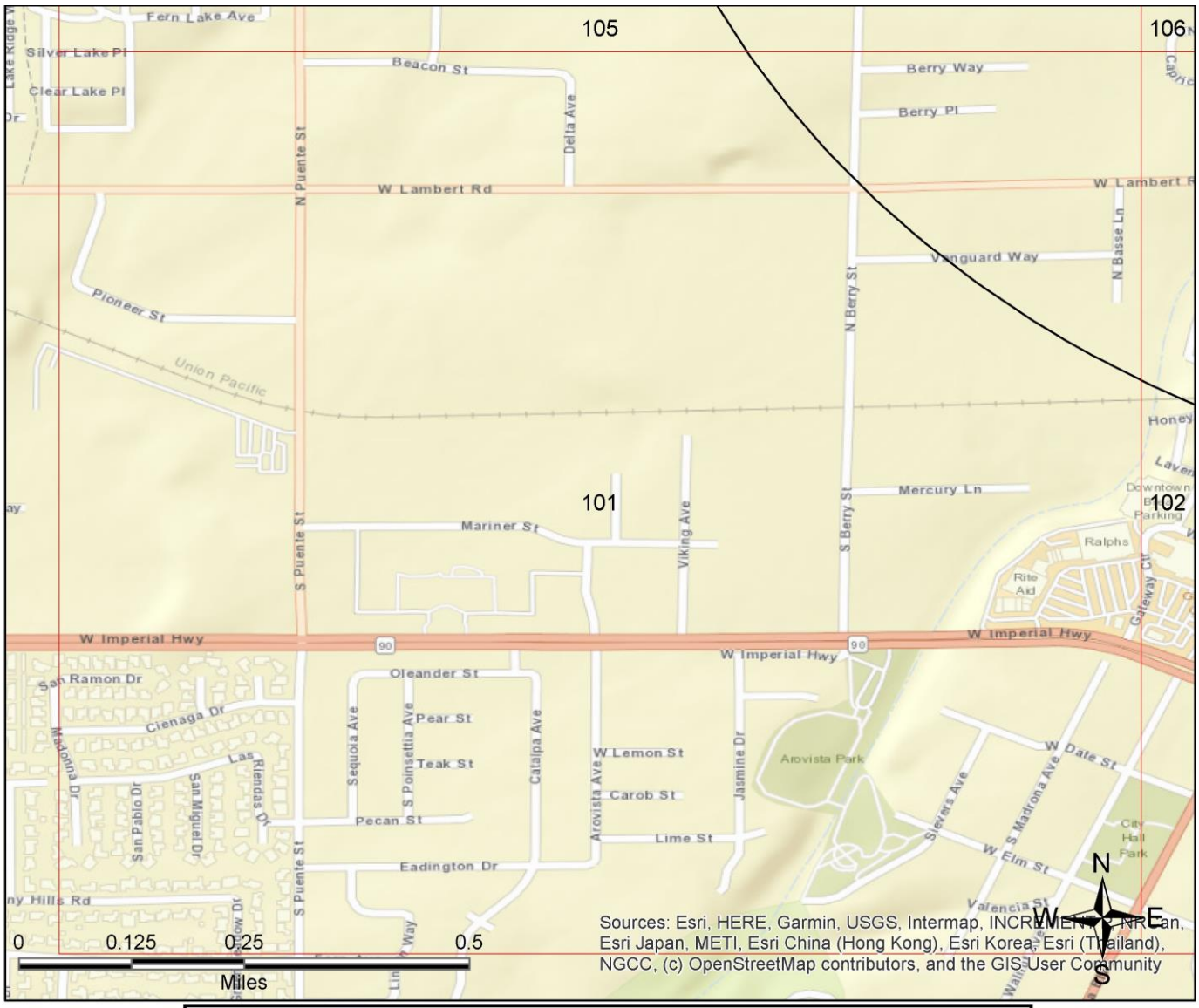
GRID MAP 101



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
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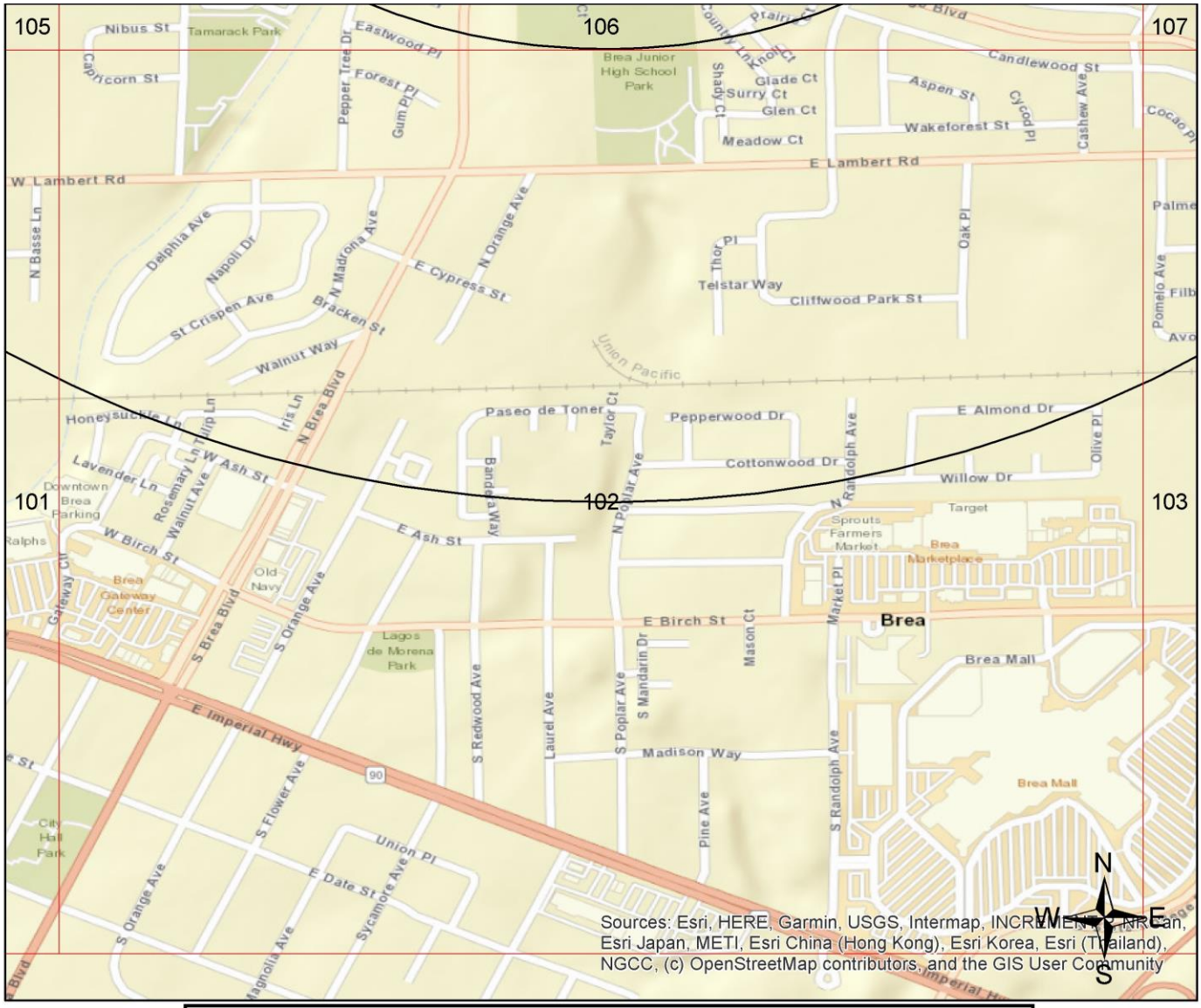
GRID MAP 102



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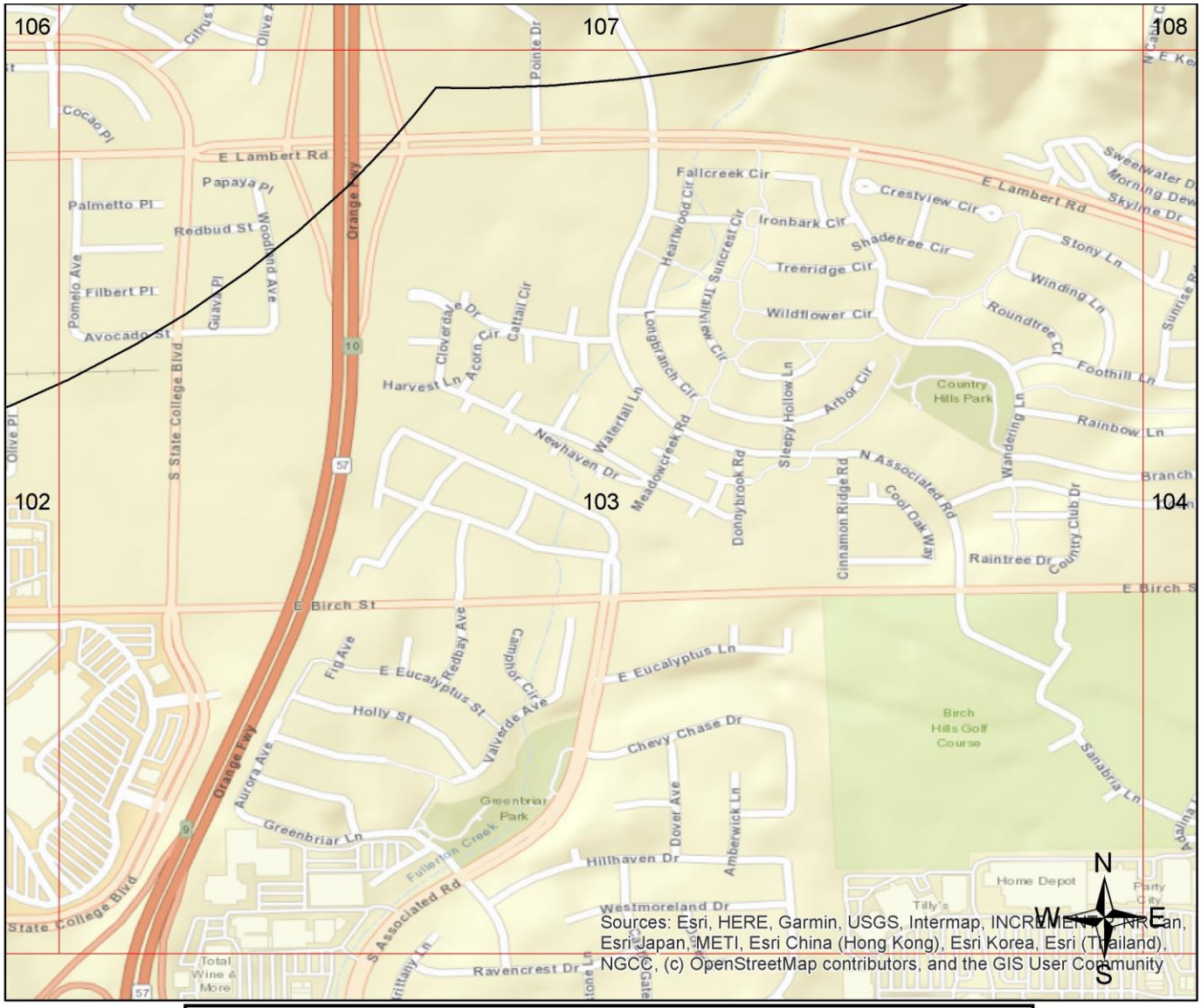
GRID MAP 103



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
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- State/Tribal Brownfield
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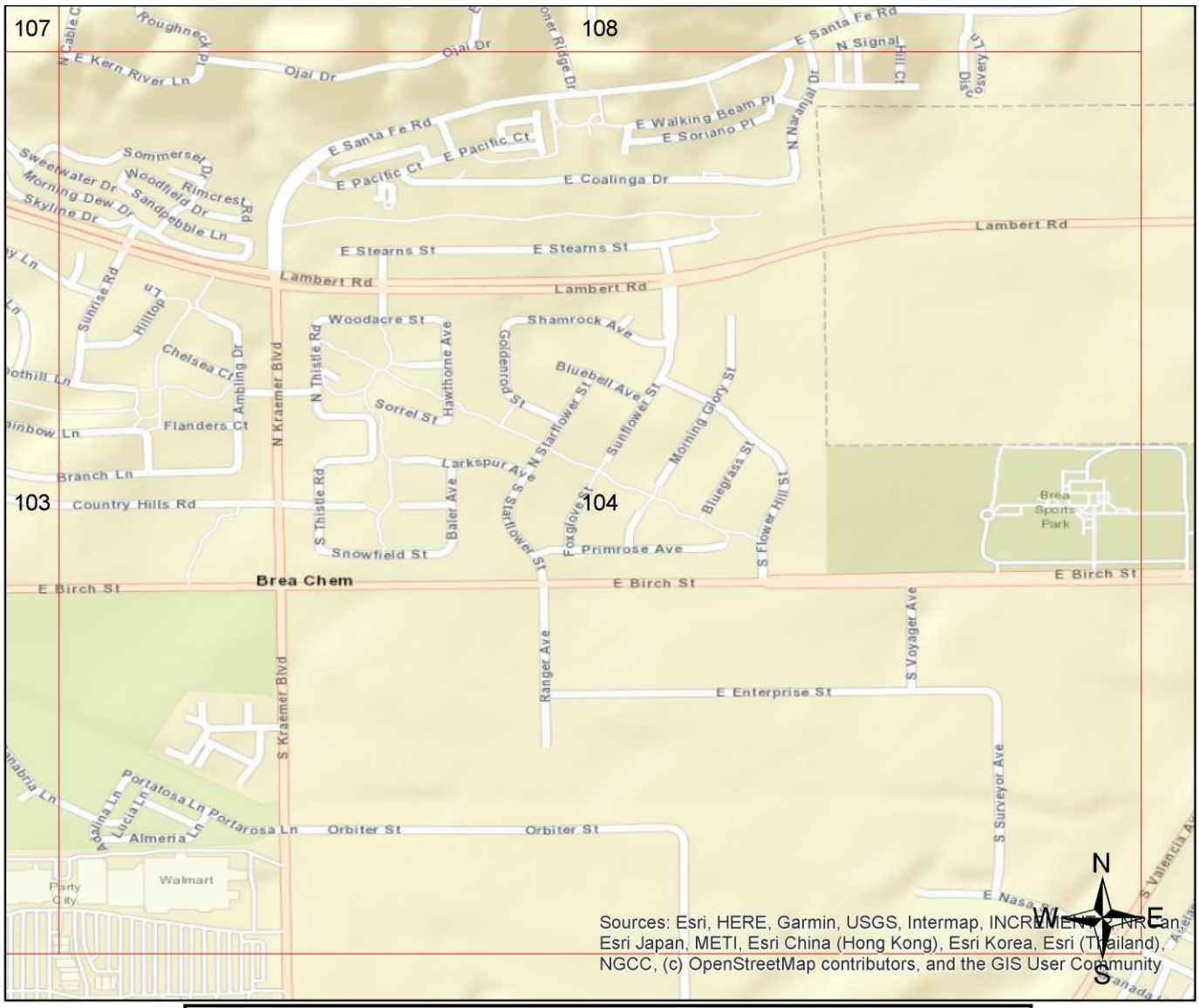
GRID MAP 104



Legend

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- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
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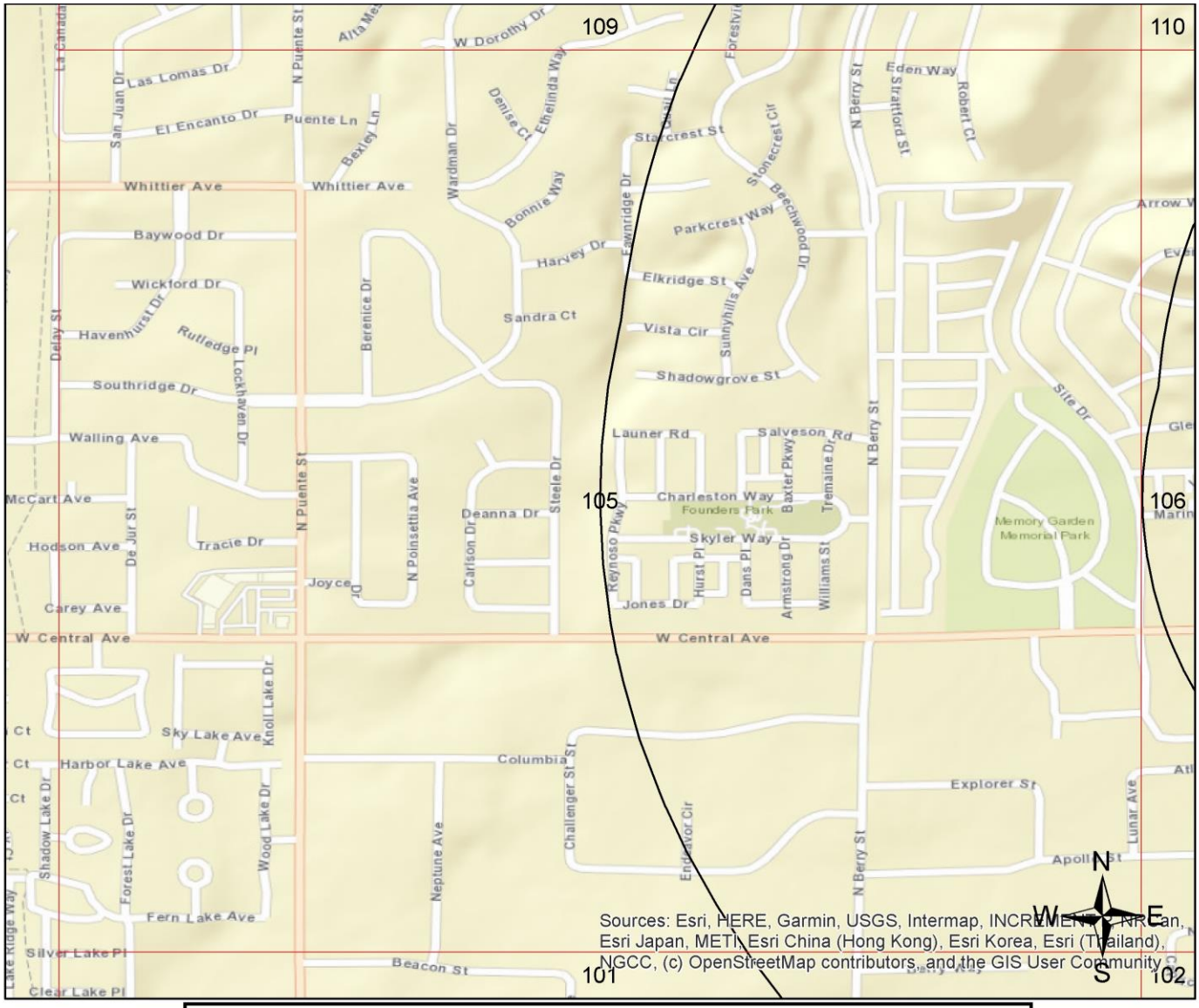
GRID MAP 105



Legend

Federal NPL	Federal RCRA non-CORRACTS TSD	Federal Emergency Release Reports	State/Tribal UST	ERS Supplemental Govt Sources
Federal Delisted NPL	Federal RCRA Generators	Emergency Release Reports	State/Tribal Brownfield	ERS Exclusive Historic Sources
Federal CERCLIS	Federal UST	State/Tribal NPL	State/Tribal Inst/Eng Controls	
Federal CERCLIS NFRAP	Federal Inst/Eng Controls	State/Tribal CERCLIS Equivalent	State/Tribal Landfill/Solid Waste	
Federal LUST	Federal Brownfield	State/Tribal LUST	State/Tribal RCRA Equivalent	
Federal RCRA CORRACTS	Federal ERNS	State/Tribal Voluntary Cleanup Sites	State/Tribal ASTM Other	

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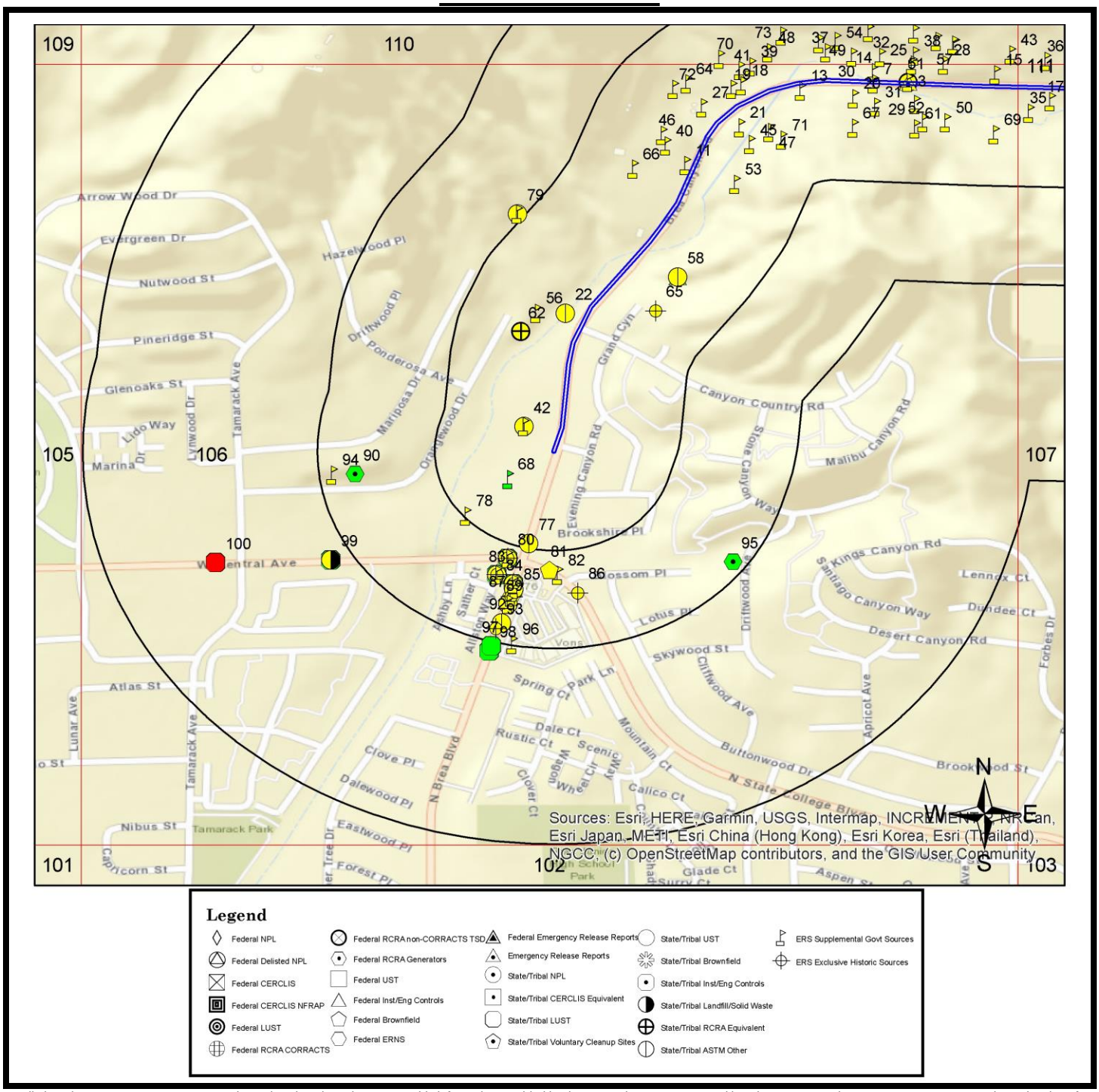
GRID MAP 106



All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.

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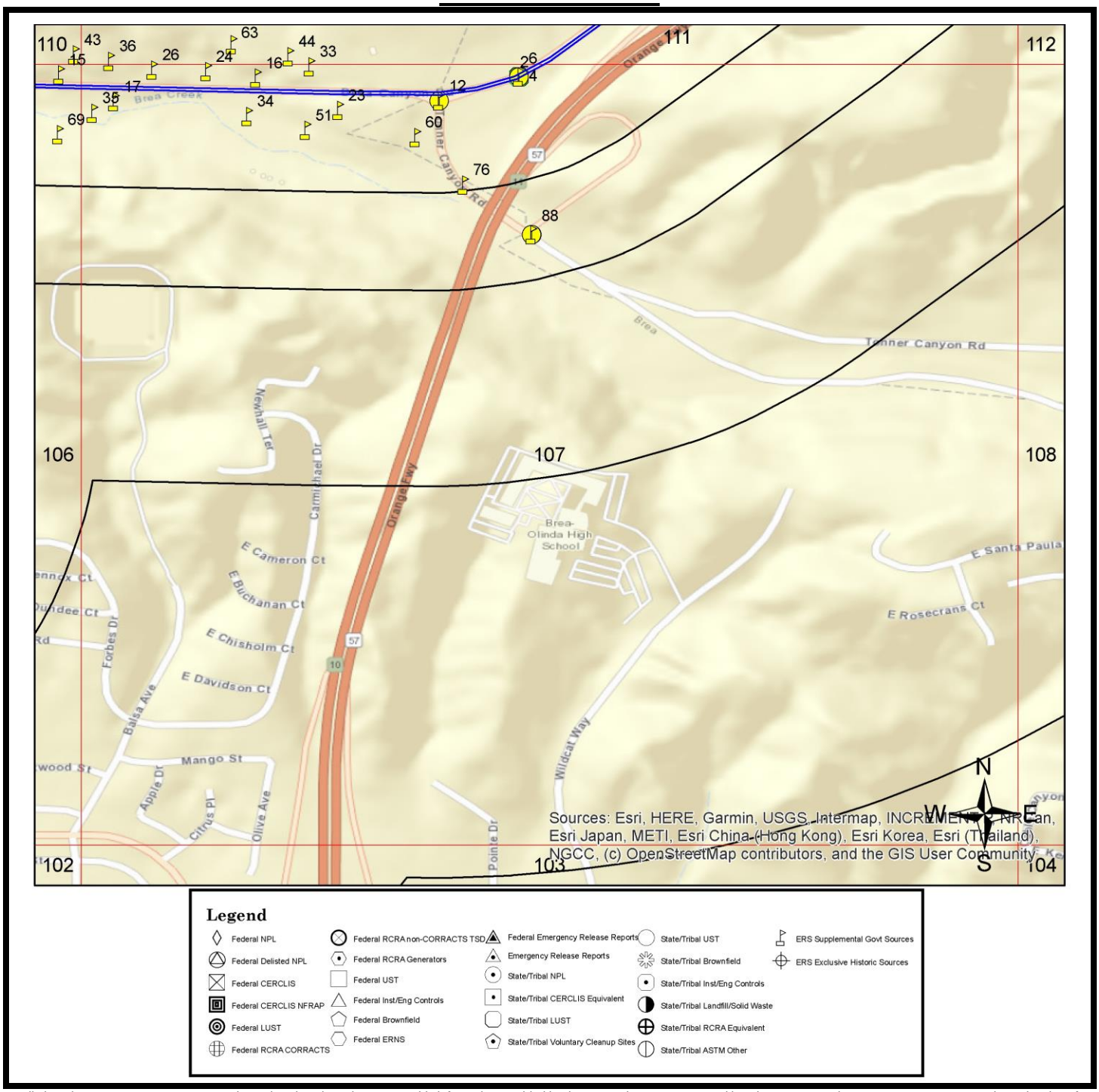
GRID MAP 107



All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.

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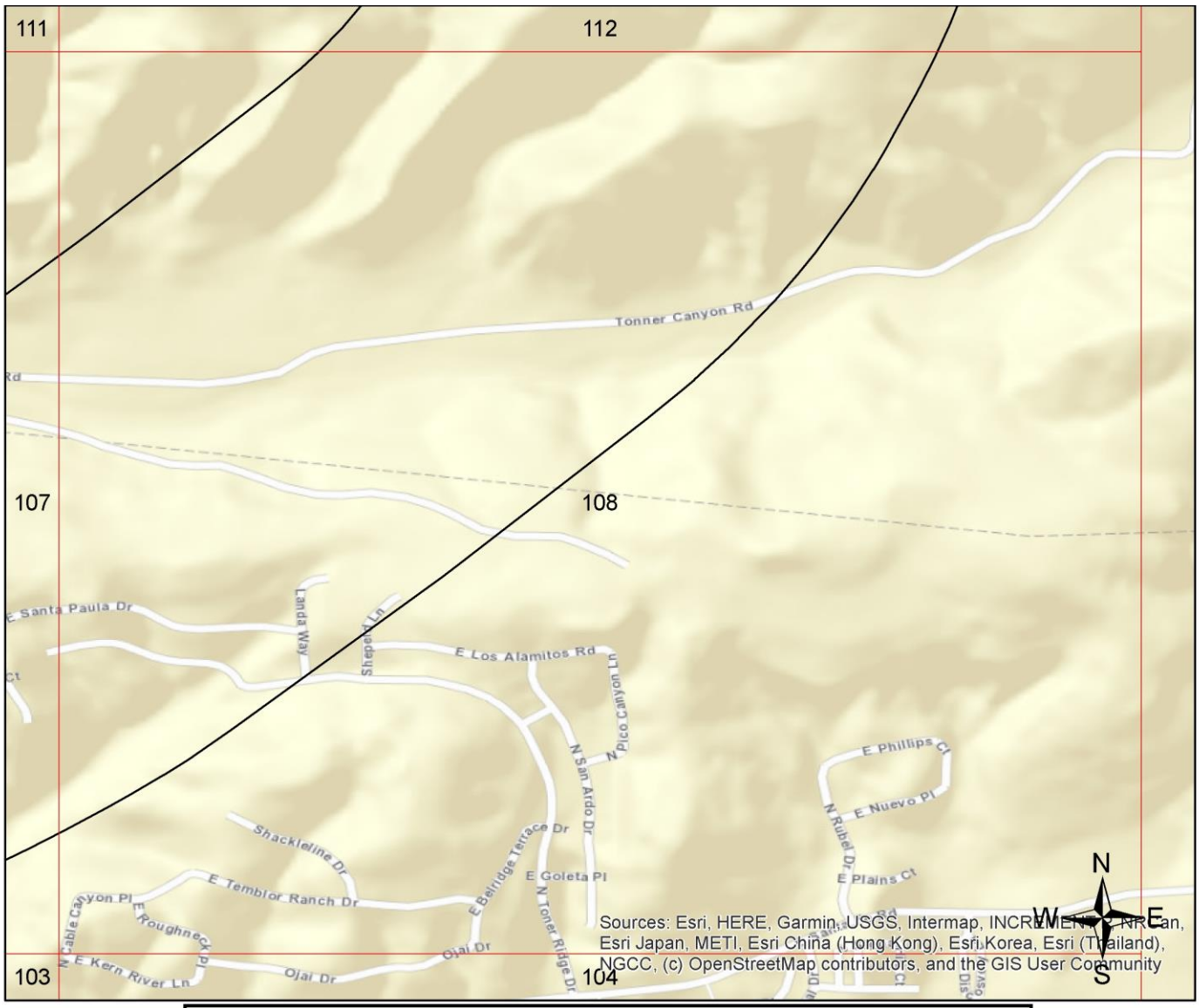
GRID MAP 108



Legend

Federal NPL	Federal RCRA non-CORRACTS TSD	Federal Emergency Release Reports	State/Tribal UST	ERS Supplemental Govt Sources
Federal Delisted NPL	Federal RCRA Generators	Emergency Release Reports	State/Tribal Brownfield	ERS Exclusive Historic Sources
Federal CERCLIS	Federal UST	State/Tribal NPL	State/Tribal Inst/Eng Controls	
Federal CERCLIS NFRAP	Federal Inst/Eng Controls	State/Tribal CERCLIS Equivalent	State/Tribal Landfill/Solid Waste	
Federal LUST	Federal Brownfield	State/Tribal LUST	State/Tribal RCRA Equivalent	
Federal RCRA CORRACTS	Federal ERNS	State/Tribal Voluntary Cleanup Sites	State/Tribal ASTM Other	

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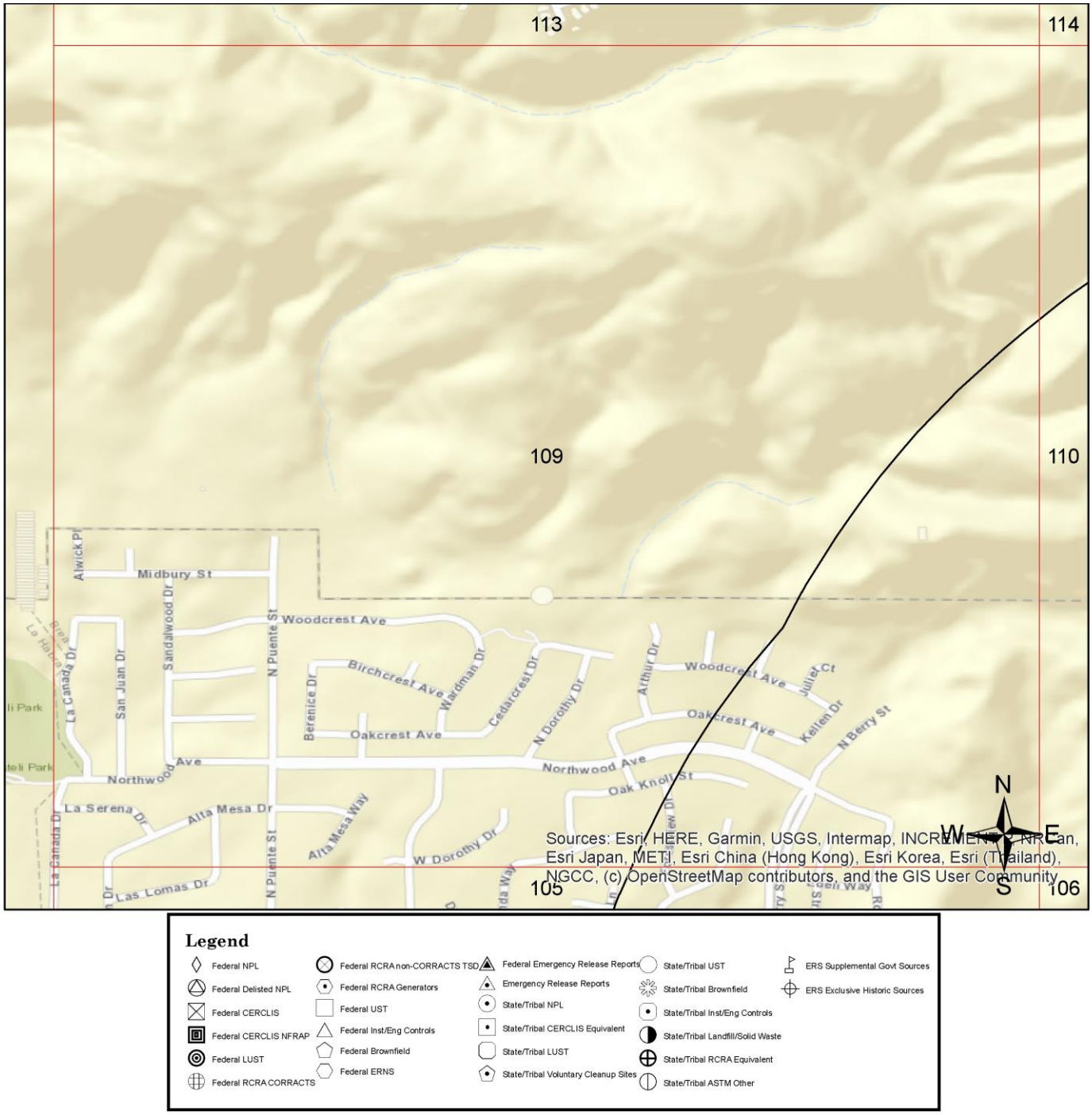
GRID MAP 109



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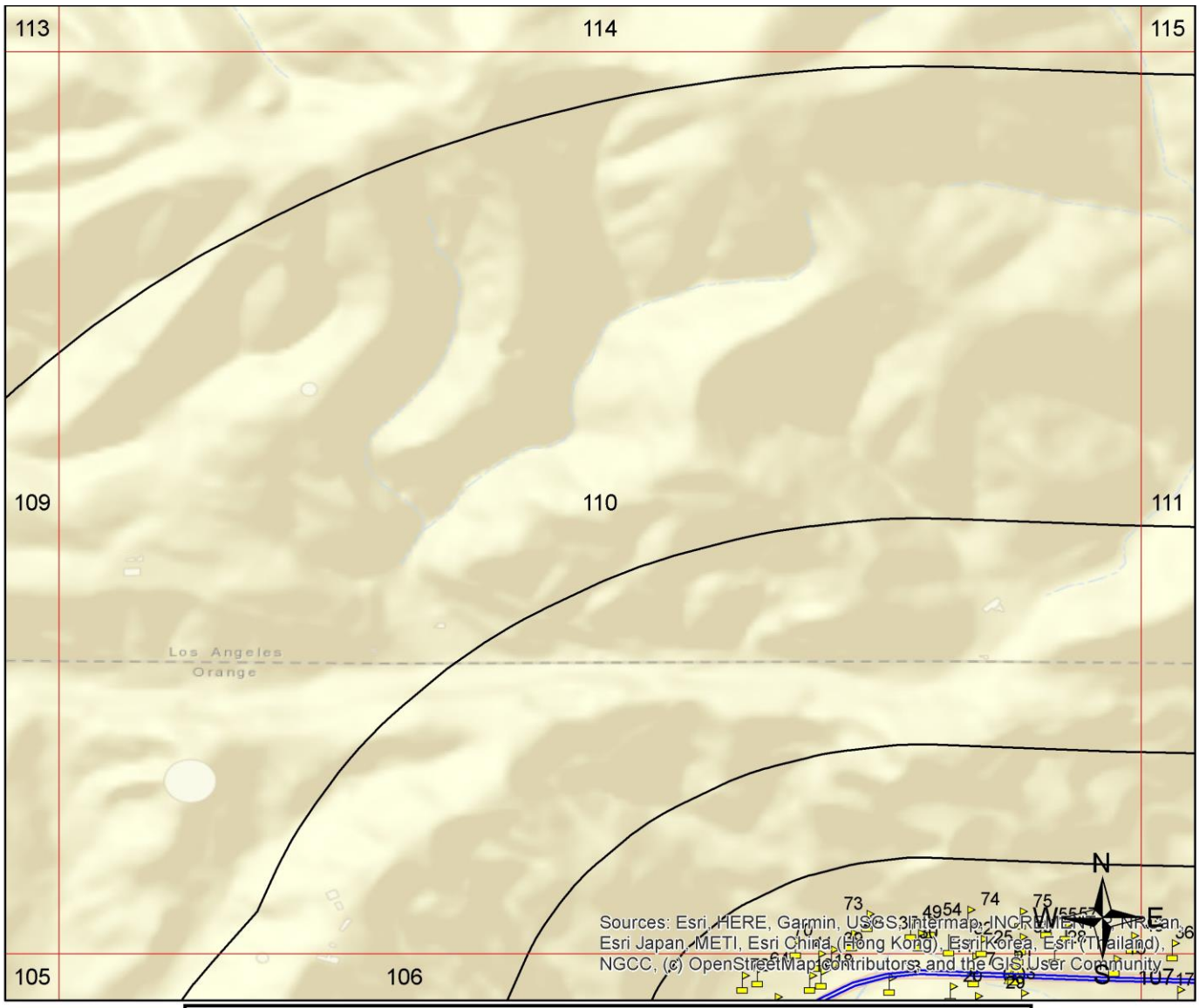
GRID MAP 110



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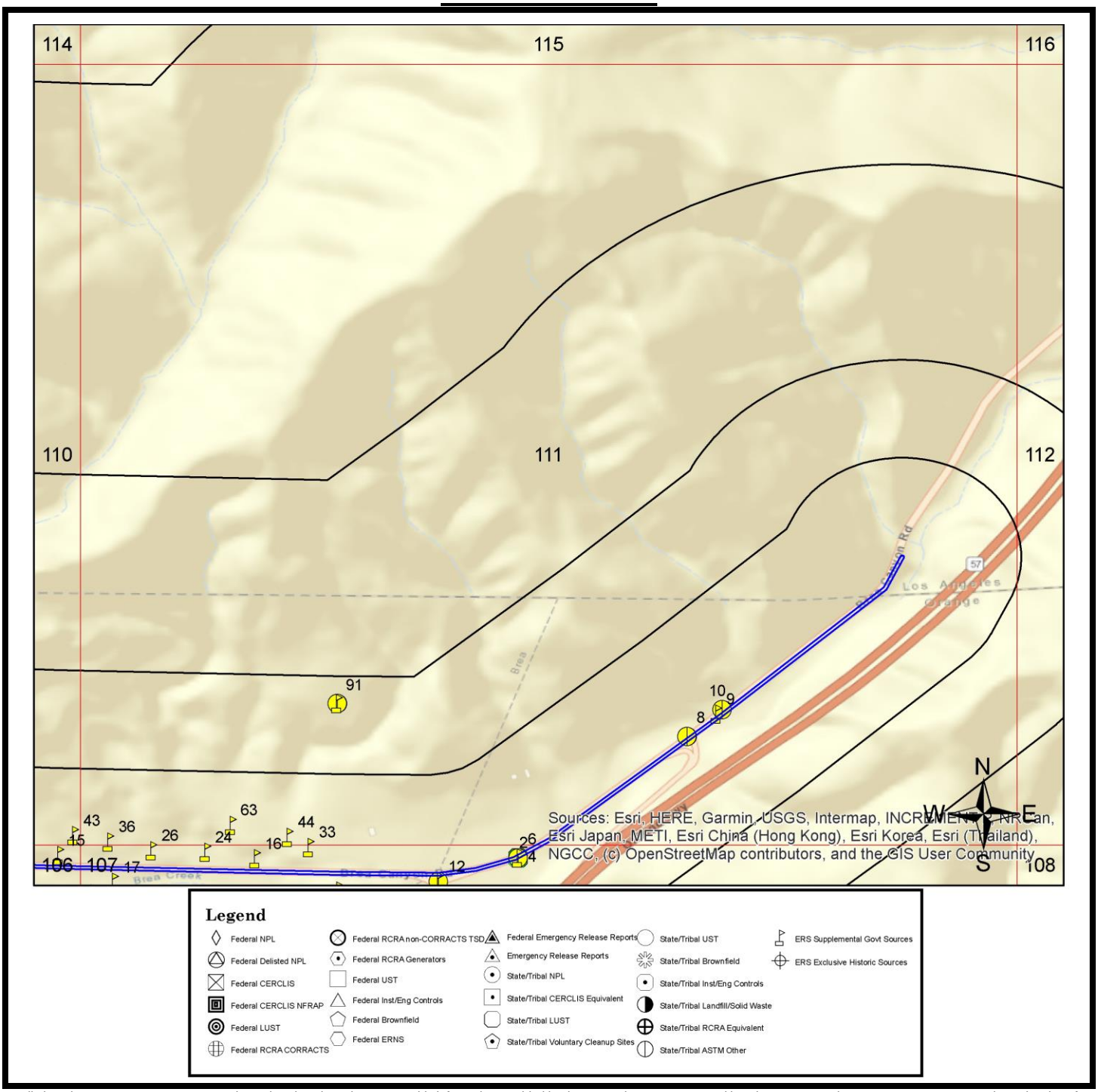
GRID MAP 111



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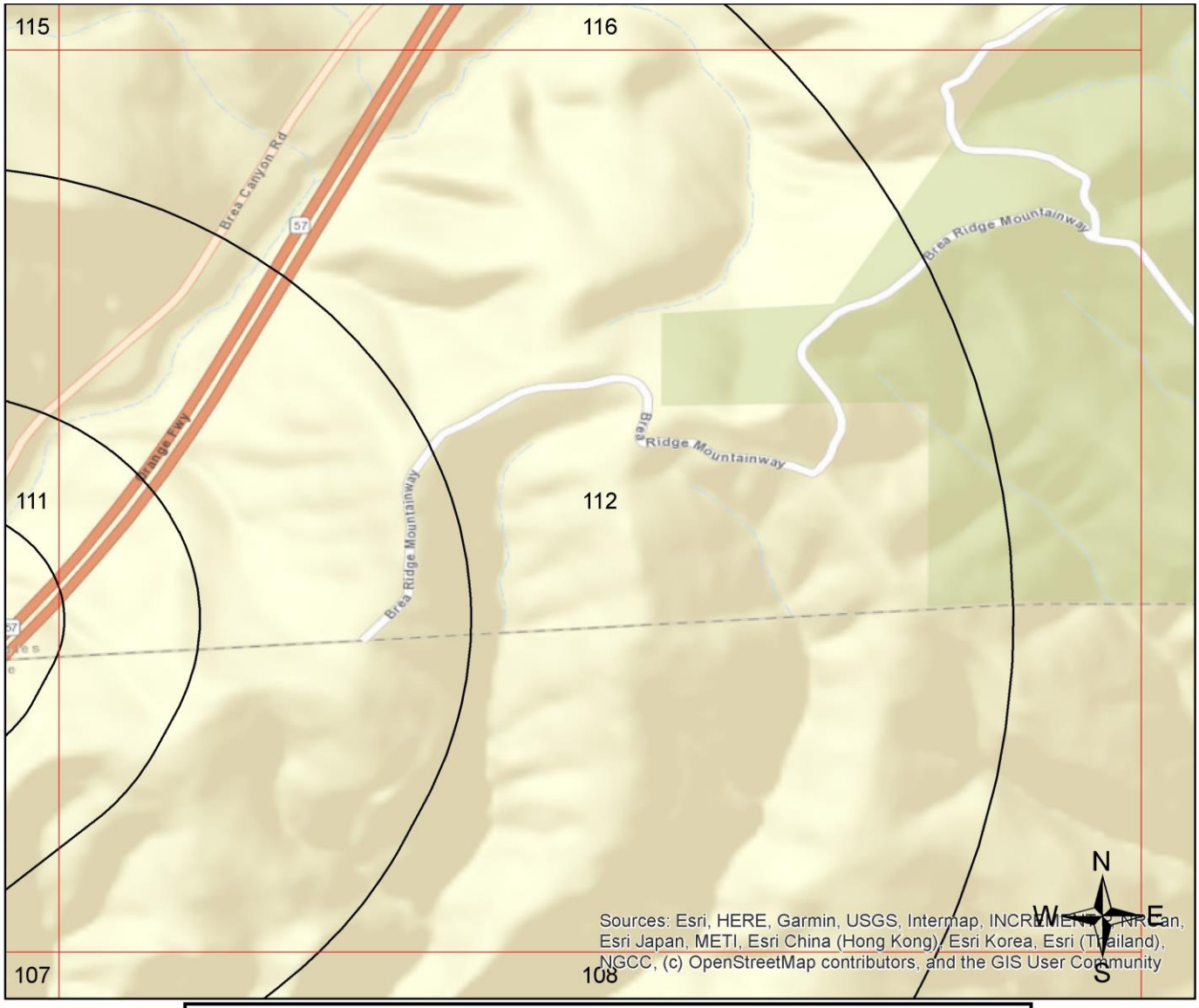
GRID MAP 112



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

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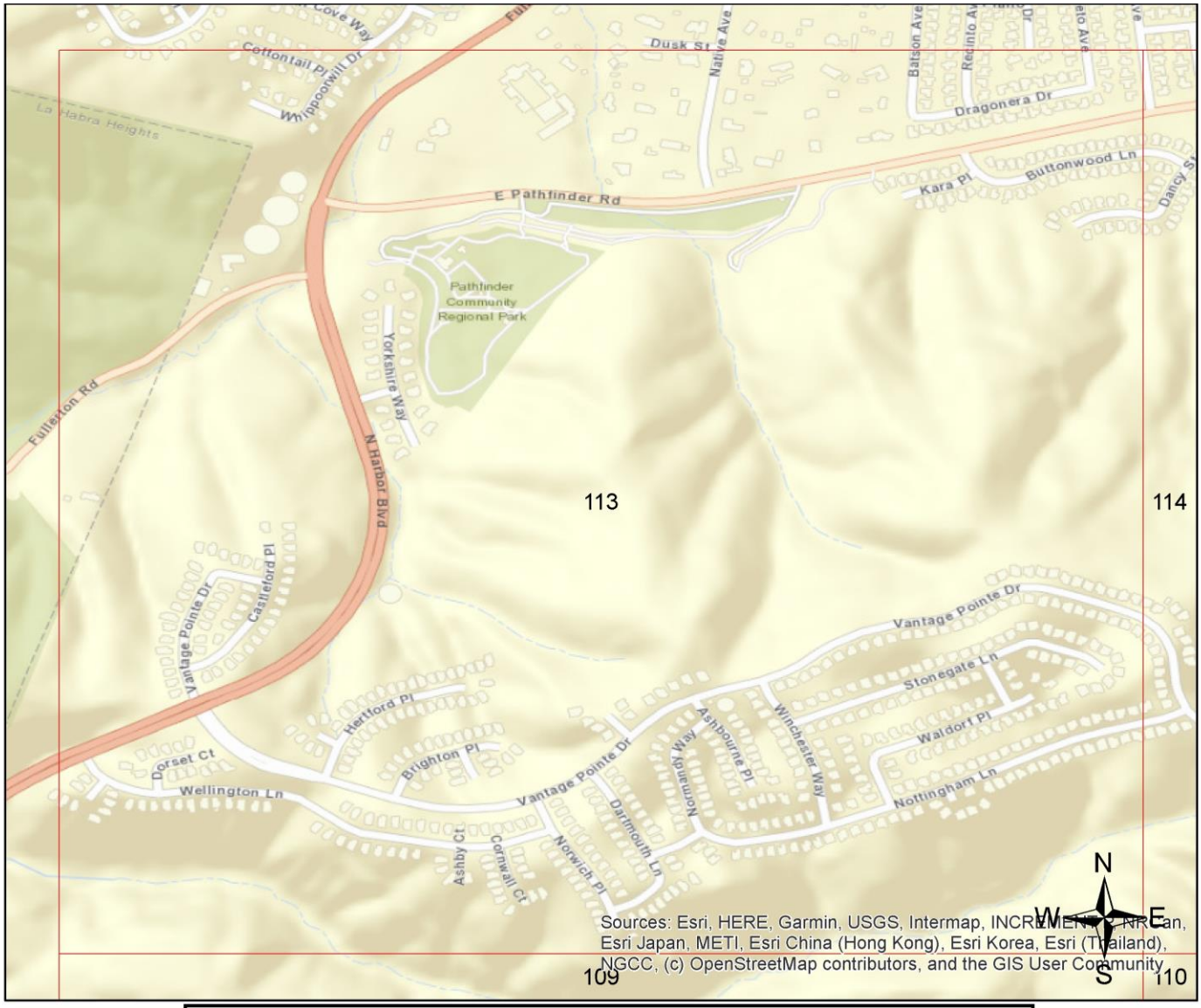
GRID MAP 113



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
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- State/Tribal Brownfield
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GRID MAP 114

Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
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- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
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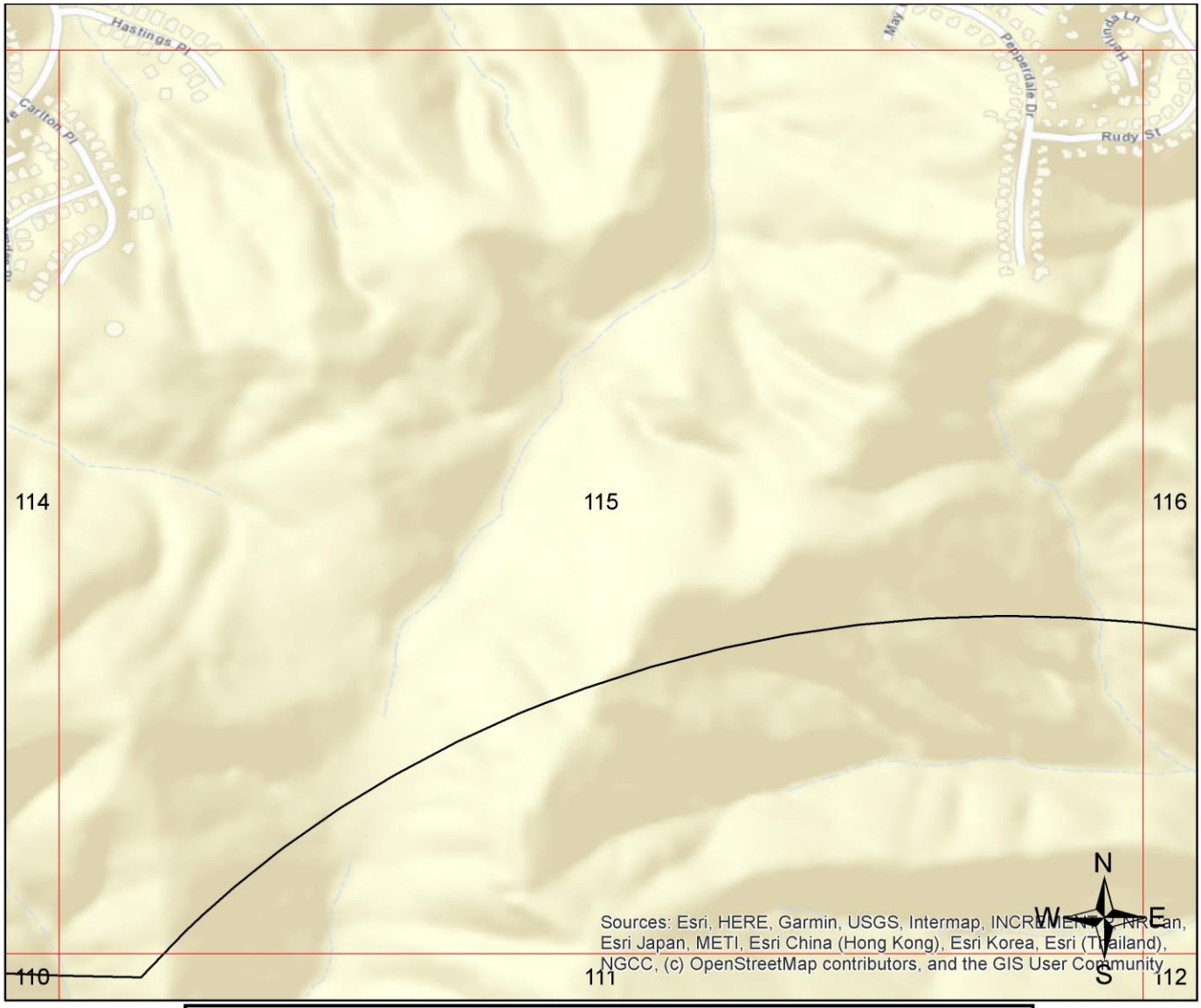
GRID MAP 115



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
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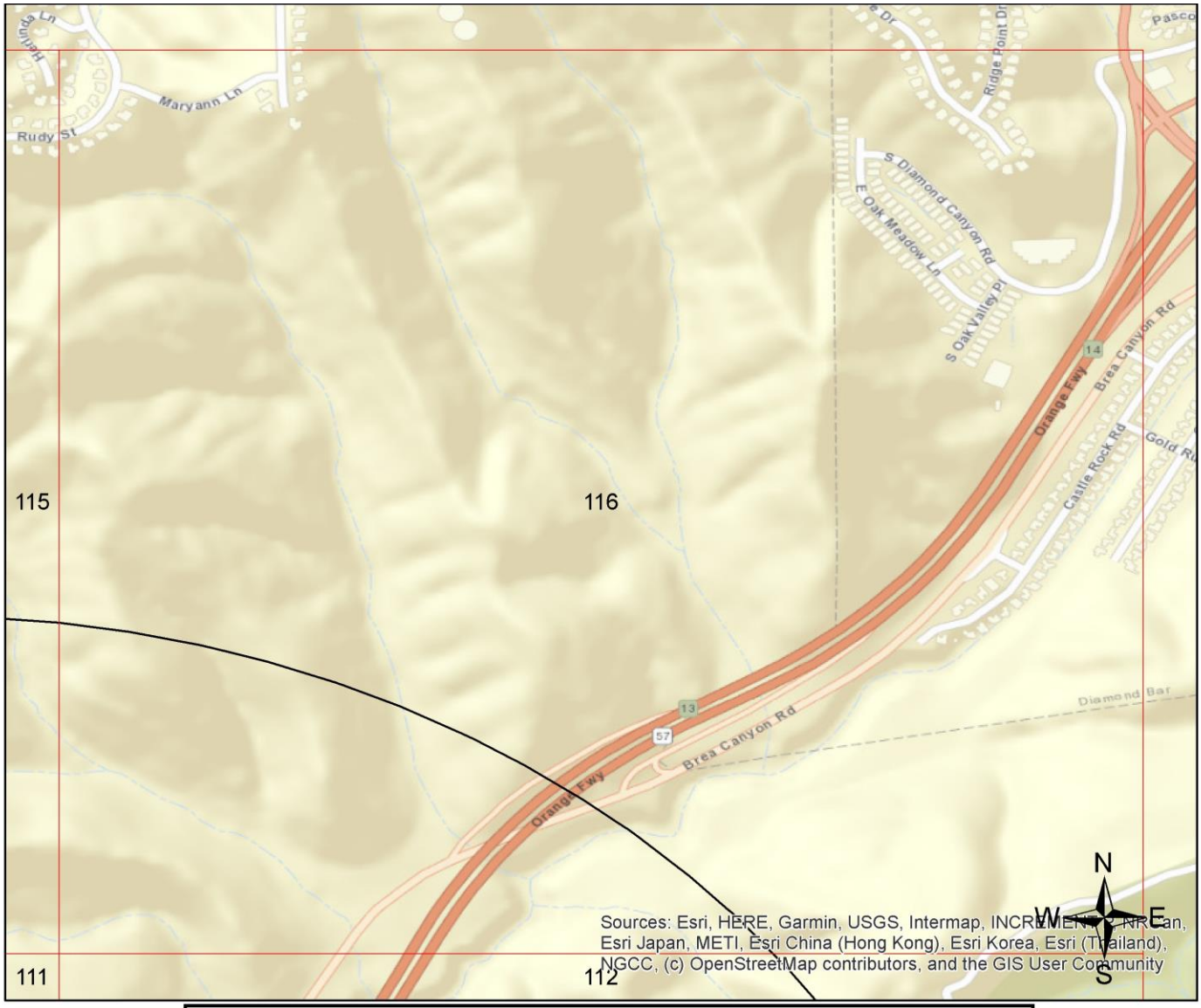
GRID MAP 116



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
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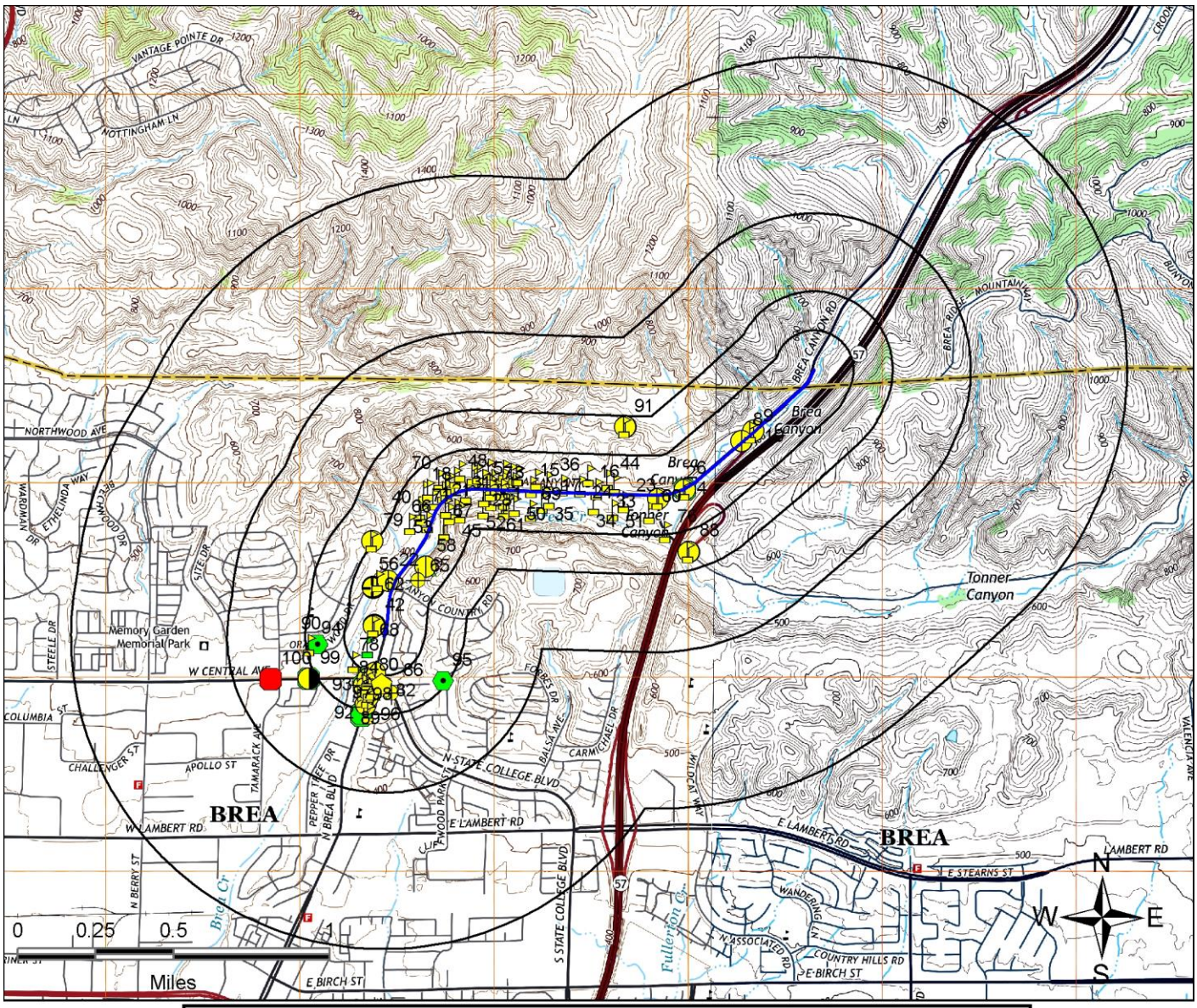
1-MILE TOPOGRAPHIC MAP W/OCCURRENCES (MAP4)



Legend

Federal NPL	Federal RCRA non-CORRACTS TSD	Federal Emergency Release Reports	State/Tribal UST	ERS Supplemental Govt Sources
Federal Delisted NPL	Federal RCRA Generators	Emergency Release Reports	State/Tribal Brownfield	ERS Exclusive Historic Sources
Federal CERCLIS	Federal UST	State/Tribal NPL	State/Tribal Inst/Eng Controls	
Federal CERCLIS NFRAP	Federal Inst/Eng Controls	State/Tribal CERCLIS Equivalent	State/Tribal Landfill/Solid Waste	
Federal LUST	Federal Brownfield	State/Tribal LUST	State/Tribal RCRA Equivalent	
Federal RCRA CORRACTS	Federal ERNS	State/Tribal Voluntary Cleanup Sites	State/Tribal ASTM Other	

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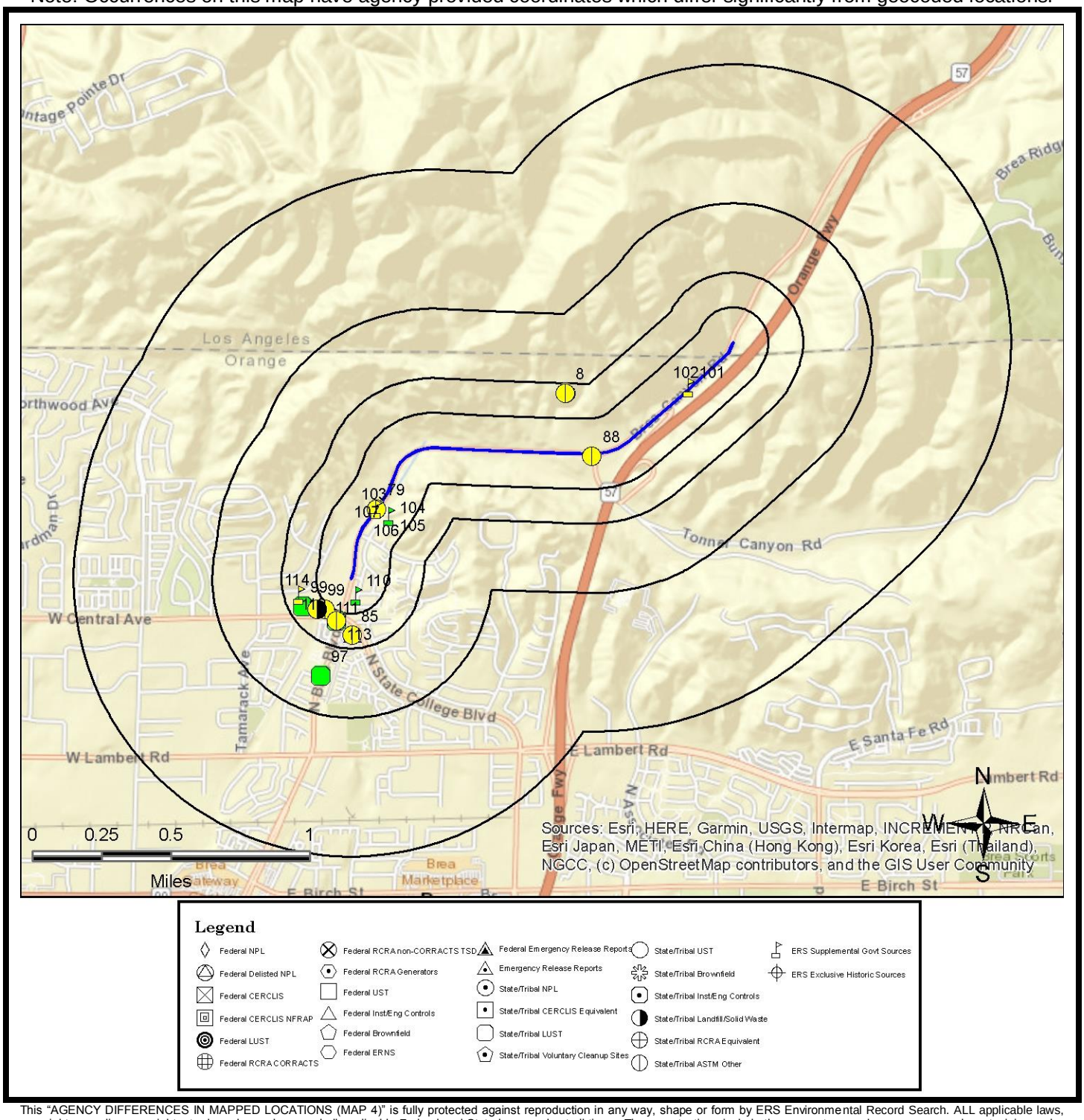
AGENCY DIFFERENCES IN MAPPED LOCATIONS (MAP5)

Note: Occurrences on this map have agency provided coordinates which differ significantly from geocoded locations.



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SUMMARY OF AGENCY DIFFERENCES

MAP ID	ID / SITE NAME	ADDRESS / DATABASE	AGENCY COORDINATES	DISTANCE (MILES)	DIRECTION
8	413786 TREECO ARBORIST MAINTENANCE SERVICE	1281 1/2 BREA CANYON RD AST-CRSP-CA	-117.88002, 33.94394	0.22	N
8	10547377 TREECO ARBORIST MAINTENANCE SERVICE	1281 1/2 BREA CANYON RD CERS-CA	-117.88002, 33.94394	0.22	N
8	413786 TREECO ARBORIST MAINTENANCE SERVICE	1281 1/2 BREA CANYON RD CRSP-CA	-117.88002, 33.94394	0.22	N
79	455501 BREA CANYON OIL CO INC	1531 BREA CANYON RD CRSP-CA	-117.89179, 33.93778	0	SE
85	253159 K&L CLEANERS	790 BREA BOULEVARD N CRSP-CA	-117.89327, 33.93119	0.2	S
85	SLT8R1474066 K&L CLEANERS	790 BREA BOULEVARD N SLIC-Closed-CA	-117.89327, 33.93119	0.2	S
88	8 30I026227-ORG Brea	2000 Tonner Canyon Rd County-Others-CA	-117.87831, 33.94065	0.01	S
97	T0605901904 GKN RENTAL YARD	707 BREA LUST-Closed-CA	-117.89522, 33.92902	0.37	S
99	T0605900054 BREA MAINTENANCE STATION	13571 E CENTRAL AVE LUST-Closed-CA	-117.89636, 33.93267	0.2	SW
99	30-AB-0452 Cal Trans Brea Maintenance Station LVTO	13571 Central Ave. SWIS-CA	-117.89548, 33.9325	0.16	SW
101	110006469197 BROOKER ASSC INC	1281 N BREA CANYON RD FRS-US	-117.87225, 33.94426	0	N/A
102	110009555962 CHAMPION CHEMS INC	1281 BREA CYN RD FRS-US	-117.87225, 33.94426	0	N/A
102	110009555971 NIETO AND SONS TRUCKING INC	1281 BREA CANYON ROAD FRS-US	-117.87225, 33.94426	0	N/A

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MAP ID	ID / SITE NAME	ADDRESS / DATABASE	AGENCY COORDINATES	DISTANCE (MILES)	DIRECTION
103	110001186528 BREA CANYON OIL CO INC	1531 BREA CANYON RD FRS-US	-117.89179, 33.93778	0	SE
104	44D2D052-SLT8R2083986 BREA, CITY OF	BREA BOULEVARD S Hist-CA	-117.891, 33.9374	0.05	SE
105	44D2D052-SLT8R0573941 CAL RESOURCES OIL LEASES	BREA BOULEVARD Hist-CA	-117.891, 33.9374	0.05	SE
106	1BC320E2-SLT8R2083986 BREA, CITY OF	BREA BOULEVARD S Hist-CA	-117.891, 33.9374	0.05	SE
107	1BC320E2-SLT8R0573941 CAL RESOURCES OIL LEASES	BREA BOULEVARD Hist-CA	-117.891, 33.9374	0.05	SE
108	C1366D37-SLT8R2083986 BREA, CITY OF	BREA BOULEVARD S Hist-CA	-117.891, 33.9374	0.05	SE
109	C1366D37-SLT8R0573941 CAL RESOURCES OIL LEASES	BREA BOULEVARD Hist-CA	-117.891, 33.9374	0.05	SE
110	564636 UNOCAL #0713	745 N BREA BLVD Hist-CA	-117.89302, 33.93326	0.06	S
111	507332 Cal Trans Brea Maintenance Station LVTO	13571 CENTRAL AVE. CRSP-CA	-117.895, 33.9325	0.14	SW
112	T0605902161 UNOCAL #0713	745 BREA ENF-CA	-117.89427, 33.93193	0.16	S
113	T0605902161 UNOCAL #0713	745 BREA LUST-Closed-CA	-117.89427, 33.93193	0.16	S
114	9280 Bomar Chem-Dry	543 S Brea Blvd Cleaners-CA	-117.89663, 33.93327	0.19	W

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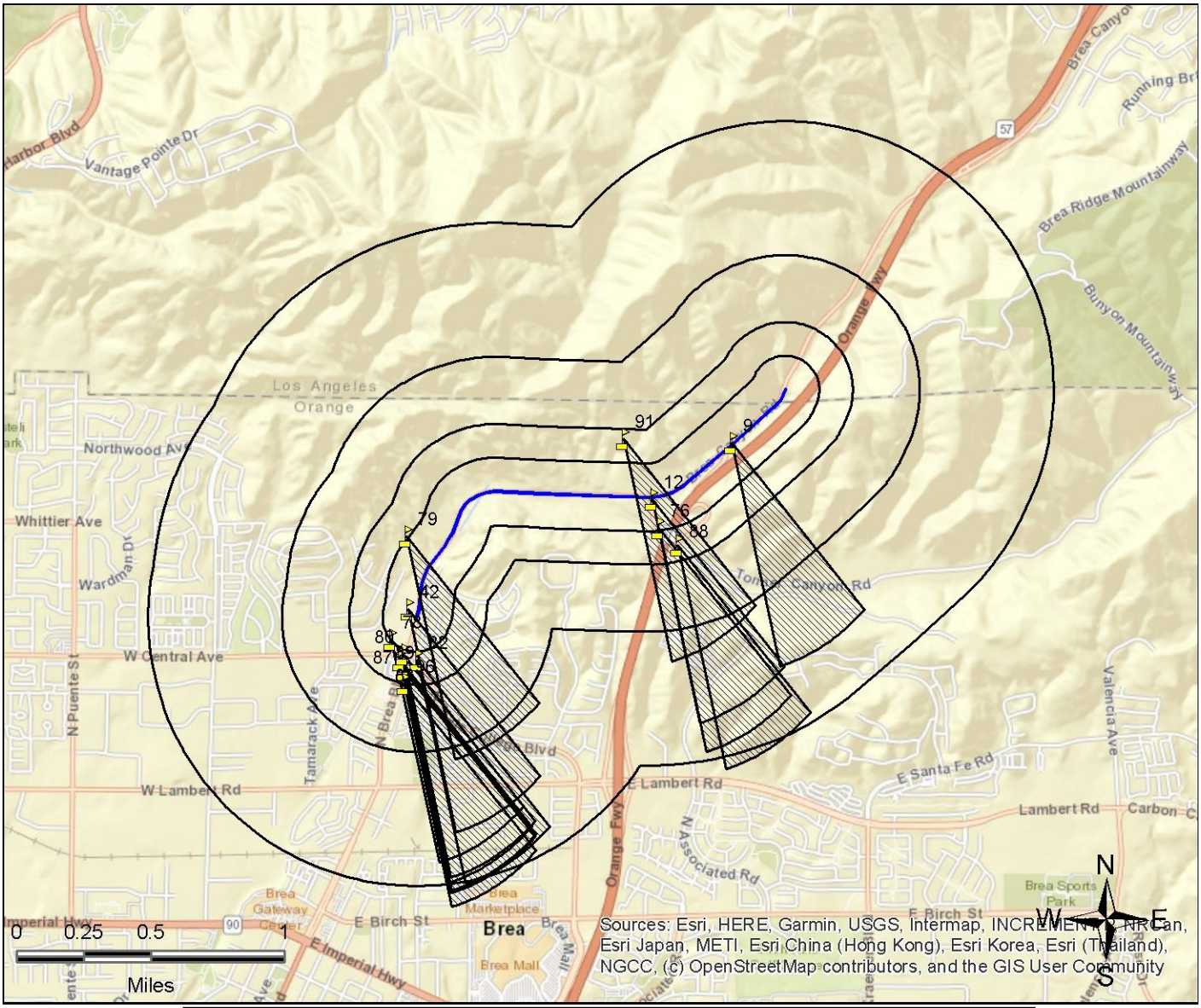
MAPPED AIR PERMITS WITH POTENTIAL DISPERSION (MAP6)

Note: Occurrences on this map are reported in Air Quality databases. Potential air plumes are drawn in the direction of the prevailing wind.



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency/source. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. Potential air dispersion plumes are depicted to graphically show the direction contaminates may travel based on prevailing wind data and provide a visual screening tool only. Actual direction will vary especially by season. Depending on the actual contaminate, amount released, and other variables, the distance from the source the contaminate may travel can and will vary. Interpretation and review of all the actual relevant data by an environmental professional is recommended before making any decisions, conclusions or otherwise based on the map depictions, air data, and potential air dispersion plumes.

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LISTED OCCURRENCE DETAILS

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CHMIRS-CA	Listed	Subject Site	432 ft	1

SITE NAME	MAPS	ID
Brea Canyon Oil Co.	1, 4	889574

ADDRESS	CITY	ZIP
1531 Brea Canyon	Unincorporated county area	92821

DETAILS

Control#: 00-1406
Notified Date: 3/25/2000 7:32:04 AM
Agency: Brea Canyon Oil Co.
1# Substance: Produced Water
1# Quantity: Not Reported
1# Measure: Not Reported
1# Type: Not Reported
1# Other: Not Reported
1# Pipeline: Not Reported
1# Vessel >= 300 Tons: Not Reported
2# Substance: Not Reported
2# Quantity: Not Reported
2# Measure: Not Reported
2# Type: Not Reported
2# Other: Not Reported
2# Pipeline: Not Reported
2# Vessel >= 300 Tons: Not Reported
3# Substance: Not Reported
3# Quantity: Not Reported
3# Measure: Not Reported
3# Type: Not Reported
3# Other: Not Reported
3# Pipeline: Not Reported
3# Vessel >= 300 Tons: Not Reported
Description: A pump on a storage tank failed causing an overflow into storm drain and then into Brea Creek.
Contained: Yes
Water?: Yes
More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	Subject Site	465 ft	2

SITE NAME	MAPS	ID
CHAMPION CHEMICALS, INC.	1, 4	226905

ADDRESS	CITY	ZIP
1280 BREA CANYON RD	BREA	92621

DETAILS

Site Regulated Program Information
Site ID: 226905
Site EI ID: T0605901435
Agency Provided Latitude: 33.922864
Agency Provided Longitude: -117.894703

Program Description: Leaking Underground Storage Tank Cleanup Site

Evaluation Information
: Not Reported
:Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
ENF-CA	Listed	Subject Site	465 ft	2

SITE NAME	MAPS	ID
CHAMPION CHEMICALS, INC.	1, 4	T0605901435

ADDRESS	CITY	ZIP
1280 BREA CANYON RD	BREA	92621

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DETAILS
Global ID: T0605901435 County: Orange Site History: Not Reported Case Type: LUST Cleanup Site Status: Completed - Case Closed Lead Agency: SANTA ANA RWQCB (REGION 8) Case Worker: VJB Local Agency: Not Reported RB Case Number: 083001927T Loc Case Number: Not Reported File Location: Not Reported Potential Contaminants of Concern: Heating Oil / Fuel Oil Potential Media Affected: Soil How Discovered: Not Reported How Discovered Description: Not Reported Stop Method: Not Reported Stop Method Description: Not Reported Action Date: 1987-08-03 Action Type: ENFORCEMENT Action: Closure/No Further Action Letter

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
FRS-US	Listed	Subject Site	465 ft	2
SITE NAME			**MAPS**	**ID**
CHAMPION CHEMICALSNA INC.			1, 4	110066328405
ADDRESS			**CITY**	**ZIP**
1280 BREA CANYON RD			BREA	92621
DETAILS				
FRS Facility Detail Report URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110066328405 Create Date: 14-OCT-2015 11:00:48 Program System: CA-ENVIROVIEW Interest Type(s): STATE MASTER				

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	No Longer Listed	Subject Site	465 ft	2

SITE NAME	MAPS	ID
CHAMPION CHEMICALS, INC.	1, 4	8B2F5B4-T0605901435

ADDRESS	CITY	ZIP
1280 BREA CANYON RD	BREA	92621

DETAILS

Original Database: ENF-CA
Last Agency Status: Listed
Archive Date: 05/29/2015
COUNTY: Orange
SITE_HISTORY: Not Reported
CASE_TYPE: LUST Cleanup Site
STATUS: Completed - Case Closed
LEAD_AGENCY: SANTA ANA RWQCB (REGION 8)
CASEWORKER: VJB
LOCAL_AGENCY: Not Reported
RB_CASE_NUMBER: 083001927T
LOC_CASE_NUMBER: Not Reported
FILE_LOCATION: Not Reported
POTENTIAL_CONTAMINANTS_OF_CONCERN: Heating Oil / Fuel Oil
POTENTIAL_MEDIA_AFFECTED: Soil
ACTION_TYPE: ENFORCEMENT
Action Date: 8/3/1987
ACTION: Closure/No Further Action Letter

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	No Longer Listed	Subject Site	465 ft	2

SITE NAME	MAPS	ID
CHAMPION CHEMICALS, INC.	1, 4	A2FA9C00-T0605901435

ADDRESS	CITY	ZIP
1280 BREA CANYON RD	BREA	92621

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DETAILS
No Additional Details Found

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	No Longer Listed	Subject Site	465 ft	2
SITE NAME			**MAPS**	**ID**
CHAMPION CHEMICALS, INC.			1, 4	74AA9E4-T0605901435
ADDRESS			**CITY**	**ZIP**
1280 BREA CANYON RD			BREA	92621
DETAILS				
No Additional Details Found				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	Name Changed	Subject Site	465 ft	2
SITE NAME			**MAPS**	**ID**
"CHAMPION CHEMICALS, INC."			1, 4	T0605901435
ADDRESS			**CITY**	**ZIP**
1280 BREA CANYON RD			BREA	92621

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DETAILS
Original Database: ENF-CA Last Agency Status: Listed Archive Date: 09/30/15 Name Changed-COUNTY: Orange SITE_HISTORY: Not Reported CASE_TYPE: LUST Cleanup Site STATUS: Completed - Case Closed LEAD_AGENCY: SANTA ANA RWQCB (REGION 8) CASEWORKER: VJB LOCAL_AGENCY: Not Reported RB_CASE_NUMBER: 083001927T LOC_CASE_NUMBER: Not Reported FILE_LOCATION: Not Reported POTENTIAL_CONTAMINANTS_OF_CONCERN: Heating Oil / Fuel Oil POTENTIAL_MEDIA_AFFECTED: Soil ACTION_TYPE: ENFORCEMENT Action Date: 8/3/1987 ACTION: Closure/No Further Action Letter

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-FINDS-US	Listed	Subject Site	432 ft	3
SITE NAME			**MAPS**	**ID**
BREA CANYON OIL			1, 4	56882
ADDRESS			**CITY**	**ZIP**
1531 BREA CANYON RD			BREA	000000000
DETAILS				
Reported Date: 1998				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-LUSTIS-CA	Listed	Subject Site	465 ft	4
SITE NAME			**MAPS**	**ID**
CHAMPION CHEMICALS, INC.			1, 4	1206519
ADDRESS			**CITY**	**ZIP**
1280 BREA CANYON ROAD			BREA	92621

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DETAILS
Reported Date: 1998

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-UST-CA	Listed	Subject Site	465 ft	4
SITE NAME			**MAPS**	**ID**
CHAMPION CHEMICALS INC.			1, 4	1206519
ADDRESS			**CITY**	**ZIP**
1280 BREA CANYON ROAD			BREA	
DETAILS				
Reported Date: 1998 List: Region #8-Santa Ana Regional Underground Tank Database List Agency: Regional Water Quality Control Board, Region #8				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
HWIS-CA	Listed	Subject Site	432 ft	5
SITE NAME			**MAPS**	**ID**
BREA CANYON OIL CO INC			1, 4	CAL000089001
ADDRESS			**CITY**	**ZIP**
1531 BREA CANYON RD			BREA	926210000

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DETAILS
EPA ID: CAL000089001 Facility County: 30 Mailing Street: 23903 NORMANDIE AVE Mailing City: HARBOR CITY Mailing State: CA Mailing Zip: 907100000 Contact Name: ROBERT EDDY Contact Phone: 3103264002 Year: 2004 TONS: 8.428 TSD EPA ID: CAT000646117 Category Code: 352 Category Description: Other organic solids Method Description: LANDFILL Year: 2004 TONS: 8.428 TSD EPA ID: CAT000646117 Category Code: 352 Category Description: Other organic solids Method Description: DISPOSAL, LAND FILL Year: 2001 TONS: 1.5 TSD EPA ID: CAT000646117 Category Code: 611 More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	Completed - Case Closed	Subject Site	465 ft	6
SITE NAME			**MAPS**	**ID**
CHAMPION CHEMICALS, INC.			1, 4	T0605901435
ADDRESS			**CITY**	**ZIP**
1280 BREA CANYON RD			BREA	92621

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DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901435
Global ID: T0605901435
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 8/3/1987
CUF Case: NO
Lead Agency: SANTA ANA RWQCB (REGION 8)
Case Worker: VJB
Local Agency: Not Reported
RB Case Number: 083001927T
Loc Case Number: Not Reported
File Location: Not Reported
Potential Contaminants of Concern: Heating Oil / Fuel Oil
Potential Media Affected: Soil
Site History: Not Reported
Begin Date: 8/3/1987
How Discovered: Not Reported
How Discovered Description: Not Reported
Stop Method: Not Reported
Stop Method Description: Not Reported
Agency Provided Latitude: 33.9228637
Agency Provided Longitude: -117.8947037

Regulatory Activities Details
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
FRS-US	Listed	< 0.01 miles S	429 ft	7
SITE NAME			**MAPS**	**ID**
BREA CANON OIL CO			1, 4	110002418189
ADDRESS			**CITY**	**ZIP**
13000 BREA BLVD			BREA	92821

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DETAILS
FRS Facility Detail Report URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002418189 Create Date: 01-MAR-2000 00:00:00 Update Date: 01-JUN-2017 17:15:34 Program System: EIS Interest Type(s): HAZARDOUS AIR POLLUTANT MAJOR

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AST-CRSP-CA	Listed	< 0.01 miles NW	486 ft	**8**
SITE NAME			**MAPS**	**ID**
TREECO ARBORIST MAINTENANCE SERVICE			1, 4	413786
ADDRESS			**CITY**	**ZIP**
1281 1/2 BREA CANYON RD			BREA	92821

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DETAILS

Site Regulated Program Information
Site ID: 413786
Site EI ID: 10547377
Agency Provided Latitude: 33.94394
Agency Provided Longitude: -117.88002

Program Description: Aboveground Petroleum Storage

Evaluation Information
Evaluation Date: 9/6/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): On site to conduct a routine hazardous material and business emergency plan inspection. Consent to enter, inspect and take any necessary pictures was given by the President, Wes Brooker. Walked the site with Mr. Brooker and observed the hazardous material storage areas throughout the Landscape Maintenance facility and the following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: - Used Oil = 75 gallons - Diesel = 500 gallons - Red-dye Diesel = 500 gallons - Fertilizers Business emergency plan was maintained on-site. Assisted with the Annual CERS inventory update and the submittal was approved on CERS. Emergency response equipment was present on-site and serviced. Annual employee training records were not available for review. A violation was issued for the incomplete training records. ? The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 9/6/2017
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): On site to conduct a routine above ground storage tank inspection. Consent to enter, inspect and take any necessary pictures was given by the President, Wes Brooker. The petroleum products above 55 gallons that exceed the total aggregate capacity are : ? - Red-Dye Diesel = 500 gallons (tank) - Diesel = 500 gallons (tank) - Used oil = 75 gallons - Gasoline = 1000 gallons (tank) ? Spill response material and emergency response equipment were present on-site. ? A Tier I Qualified Spill Prevention Control and Countermeasure (SPCC) was prepared by Mr. Brooker on October 2012 and it was renewed today 9/6/2017. ? No SPCC related training was being performed to educate employees on spill prevention and countermeasure procedures. ? An SPCC inspection was being conducted on a monthly basis by the Operator on-site, Dan Brooker. The records were available for review. ? The perimeter of the facility was secured. ? Please contact Shruthi Sill at ssill@ochca.com with [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: APSA
Evaluation Source: CERS
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	< 0.01 miles NW	486 ft	8

SITE NAME	MAPS	ID
AT&T Mobility - TONNER CANYON (11704)	1, 4	10482787

ADDRESS	CITY	ZIP
1281 1/2 Brea Canyon Rd	Brea	92821

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DETAILS

General Program & Facility Information
CERS ID: 10482787
Facility ID: Not Reported
Facility Regulator Key ID: Not Reported
Organization Code: 90129634
Business/Organization Name: AT&T Mobility
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Letter
Count of Business' CERS User Accounts: 65
Facility Count for Business: 3434
Last Submittal Date (any element): 4/16/2015 2:48:41 PM
Count of Submitted Elements: 4
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: Not Reported
Property Owner Name: NEW CINGULAR WIRELESS PCS, LLC DBA AT&T MOBILITY
Property Owner Phone Number: 9258238954
Property Owner Mailing Address: P.O. BOX 5095, ROOM 3E000
Property Owner Mailing City: SAN RAMON
Property Owner Mailing State: CA
Property Owner Mailing Zip Code: 94583
Property Owner Mailing Country: United States

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	< 0.01 miles NW	486 ft	**8**
SITE NAME			**MAPS**	**ID**
TREECO ARBORIST MAINTENANCE SERVICE			1, 4	10547377
ADDRESS			**CITY**	**ZIP**
1281 1/2 BREA CANYON RD			BREA	92821

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DETAILS

General Program & Facility Information
CERS ID: 10547377
Facility ID: FA0037365
Facility Regulator Key ID: FA0037365
Organization Code: 90490870
Business/Organization Name: TREECO ARBORIST MAINTENANCE SERVICE
Multiple Jurisdictional Business? (Y/N): No
Business Origin: EDT
Count of Business' CERS User Accounts: 0
Facility Count for Business: 1
Last Submittal Date (any element): 11/30/2016 1:12:09 PM
Count of Submitted Elements: 6
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 0
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-AST-CA	Listed	< 0.01 miles NW	486 ft	**8**
SITE NAME			**MAPS**	**ID**
TREECO ARBORIST MAINTENANCE SERVICE			1, 4	FA0037365-ORG
ADDRESS			**CITY**	**ZIP**
1281 1/2 BREA CANYON RD			Brea	92821

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DETAILS
Responsible Agency: Orange County Environmental Health County: Orange Facility ID: FA0037365 Care Of: TODD BROOKER Report Date: Not Reported

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	< 0.01 miles NW	486 ft	8
SITE NAME			**MAPS**	**ID**
TREECO ARBORIST MAINTENANCE SERVICE			1, 4	413786
ADDRESS			**CITY**	**ZIP**
1281 1/2 BREA CANYON RD			BREA	92821

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DETAILS
Site Regulated Program Information Site ID: 413786 Site EI ID: 10547377 Agency Provided Latitude: 33.94394 Agency Provided Longitude: -117.88002 Program Description: Aboveground Petroleum Storage Program Description: Chemical Storage Facilities Program Description: Hazardous Waste Generator Evaluation Information Evaluation Date: 9/6/2017 Violations Found? (Y/N): Yes Evaluation General Type: Compliance Evaluation Inspection Evaluation Type: Routine done by local agency Evaluation Note(s): On site to conduct a routine hazardous material and business emergency plan inspection. Consent to enter, inspect and take any necessary pictures was given by the President, Wes Brooker. Walked the site with Mr. Brooker and observed the hazardous material storage areas throughout the Landscape Maintenance facility and the following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: - Used Oil = 75 gallons - Diesel = 500 gallons - Red-dye Diesel = 500 gallons - Fertilizers Business emergency plan was maintained on-site. Assisted with the Annual CERS inventory update and the submittal was approved on CERS. Emergency response equipment was present on-site and serviced. Annual employee training records were not available for review. A violation was issued for the incomplete training records. ? The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are [Truncated] Evaluation Division: Orange County Environmental Health Evaluation Program: HMRRP Evaluation Source: CERS Evaluation Date: 9/6/2017 Violations Found? (Y/N): Yes Evaluation General Type: Compliance Evaluation Inspection Evaluation Type: Routine done by local agency More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	< 0.01 miles NW	486 ft	8
SITE NAME			**MAPS**	**ID**
TREECO ARBORIST			1, 4	CAL000401695
ADDRESS			**CITY**	**ZIP**
1281 1/2 BREA CANYON RD			BREA	92821

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DETAILS
Additional details may be found online using the following link: http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAL000401695&pgm_sys_acrnm_in=RCRAINFO Source Type: Implementer Generator Status Universe: N Generator Status: Non-Generator NAICS1: LANDSCAPING SERVICES Active Site Indicator: H---- Owner Name: TREECO ARBORIST INC Operator Name: LAURA BROOKER/OWNER In Handler Universes: Y In a Universe: Y Short Term Generator: N Importer Activity: N Mixed Waste Generator: N Transporter Activity: Y Transfer Facility: N Recycler Activity: N Onsite Burner Exemption: N Furnace Exemption: N Underground Injection Activity: N Receives Waste From Off-site: N Universal Waste: N Universal Waste Destination Facility: Y Used Oil Universe: NNNNNNN Federal Universal Waste: N Active Site Federally Regulated TSDF: ------ More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	< 0.01 miles NW	491 ft	9

SITE NAME	MAPS	ID
TREECO ARBORIST, INC.	1, 4	126828-SC

ADDRESS	CITY	ZIP
1281 BREA CANYON 1/2 RD	BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=126828 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 126828 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 12 Location Zip Code Extension: Not Reported Facility Representative First Name: TODD Facility Representative Last Name: BROOKER Location Area Code: 714 Location Phone Number: 9905553 Location Phone Extension: Not Reported Mailing Address: 729 OAK KNOLL ST Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: 714 Mailing Phone Number: 9905553 Mailing Phone Extension: Not Reported Mailing Representative First Name: TODD Mailing Representative Last Name: BROOKER More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	< 0.01 miles NW	492 ft	10
SITE NAME			**MAPS**	**ID**
T-MOBILE WEST CORPORATION IE04084A			1, 4	10579909
ADDRESS			**CITY**	**ZIP**
1273 BREA CANYON RD			BREA	92821

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DETAILS

General Program & Facility Information
CERS ID: 10579909
Facility ID: FA0061523
Facility Regulator Key ID: FA0061523
Organization Code: 90128011
Business/Organization Name: T-Mobile West Corporation
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Business
Count of Business' CERS User Accounts: 9
Facility Count for Business: 3045
Last Submittal Date (any element): 3/2/2015 3:59:22 PM
Count of Submitted Elements: 4
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 0
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.01 miles NW	410 ft	11
SITE NAME			MAPS	ID
Not Reported by Agency			1, 4	05907205
ADDRESS			CITY	ZIP
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907205 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907205#close API Number: 05907205 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 411.879 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.01 miles S	462 ft	12
SITE NAME			**MAPS**	**ID**
LINN WESTERN OPERATING INC			1, 4	152055-SC
ADDRESS			**CITY**	**ZIP**
15000 TONNER CANYON RD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=152055 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 152055 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: KELLY Facility Representative Last Name: ROBERTS Location Area Code: 714 Location Phone Number: 2571613 Location Phone Extension: Not Reported Mailing Address: 2000 TONNER CANYON RD Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: 714 Mailing Phone Number: 2571613 Mailing Phone Extension: Not Reported Mailing Representative First Name: KELLY Mailing Representative Last Name: ROBERTS More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.01 miles S	462 ft	12
SITE NAME			**MAPS**	**ID**
BLACKSAND BREA LLC			1, 4	148229-SC
ADDRESS			**CITY**	**ZIP**
15000 TONNER CANYON RD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=148229 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 148229 County Code: OR County: Orange Facility Status Code: S Facility Status: SOLD Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: BRYCE L Facility Representative Last Name: TENOLD Location Area Code: 714 Location Phone Number: 2571613 Location Phone Extension: Not Reported Mailing Address: 2000 TONNER CANYON RD Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: 714 Mailing Phone Number: 2571613 Mailing Phone Extension: Not Reported Mailing Representative First Name: BRYCE L Mailing Representative Last Name: TENOLD More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.01 miles S	462 ft	12
SITE NAME			**MAPS**	**ID**
BREA CANON OIL CO			1, 4	64355-SC
ADDRESS			**CITY**	**ZIP**
15000 TONNER CANYON RD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=64355 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 64355 County Code: OR County: Orange Facility Status Code: S Facility Status: SOLD Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: TIMOTHY Facility Representative Last Name: BURCH Location Area Code: 310 Location Phone Number: 3264002 Location Phone Extension: Not Reported Mailing Address: 500 N KRAEMER BLVD BLDG B/BRYEE TENOLD Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: 310 Mailing Phone Number: 3264002 Mailing Phone Extension: Not Reported Mailing Representative First Name: TIMOTHY Mailing Representative Last Name: BURCH More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.01 miles S	462 ft	12
SITE NAME			**MAPS**	**ID**
LINN WESTERN OPERATING INC			1, 4	156198-SC
ADDRESS			**CITY**	**ZIP**
15000 TONNER CANYON RD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=156198 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 156198 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: KELLY Facility Representative Last Name: ROBERTS Location Area Code: 713 Location Phone Number: 4588719 Location Phone Extension: Not Reported Mailing Address: 2000 TONNER CAYNON RD Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: 713 Mailing Phone Number: 4588719 Mailing Phone Extension: Not Reported Mailing Representative First Name: KELLY Mailing Representative Last Name: ROBERTS More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.01 miles S	462 ft	12
SITE NAME			**MAPS**	**ID**
TONNER CANYON PROPERTY			1, 4	RO0000704-ORG
ADDRESS			**CITY**	**ZIP**
15000 TONNER CANYON RD			BREA	92821

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DETAILS
County: Orange Type: Industrial Site Cleanups Case ID: 99IC003 Record ID: RO0000704 Released Substance(s: FUEL WASTE WASTE (OR SLOP) OIL Status Description: CLOSED Case Closed Date: 6/22/2005 Type of Closure: Voluntary Cleanup Program Termination

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	Address Changed	0.01 miles S	462 ft	12
SITE NAME			**MAPS**	**ID**
TONNER CANYON PROPERTY			1, 4	RO0000704-ORG
ADDRESS			**CITY**	**ZIP**
15000 TONNER CANYON RD			BREA	92821

DETAILS
Original Database: County-Others-CA Last Agency Status: Listed Archive Date: 01/15/17 Address Changed-County: Orange Type: Industrial Site Cleanups Case ID: 99IC003 Record ID: RO0000704 Released Substance(s): FUEL WASTE, WASTE (OR SLOP) OIL Status Description: CLOSED Case Closed Date: 6/22/2005 Type of Closure: Voluntary Cleanup Program Termination

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	Address Changed	0.01 miles S	462 ft	12

SITE NAME	MAPS	ID
TONNER CANYON PROPERTY	1, 4	RO0000704-ORG

ADDRESS	CITY	ZIP
15000 TONNER CANYON RD	BREA	92821

DETAILS

Original Database: County-Others-CA
Last Agency Status: Listed
Archive Date: 09/02/16
Address Changed-County: Orange
Type: Industrial Site Cleanups
Case ID: 99IC003
Record ID: RO0000704
Address2: Not Reported
Released Substance(s): FUEL WASTE, WASTE (OR SLOP) OIL
Current Status: CLOSED
Current Status Date: 6/22/2005
Type of Closure: Voluntary Cleanup Program Termination

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.01 miles S	425 ft	13

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907217

ADDRESS	CITY	ZIP
Not Reported by Agency		

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907217 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907217#close API Number: 05907217 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 425.293 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.01 miles N	427 ft	14
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907224
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907224 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907224#close API Number: 05907224 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 435.759 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.01 miles N	465 ft	15
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907716
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907716 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907716#close API Number: 05907716 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Stearns District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 469.363 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.01 miles N	447 ft	16
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906660
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906660 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906660#close API Number: 05906660 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Fisher District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 445.591 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles S	436 ft	17
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907672
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907672 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907672#close API Number: 05907672 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Stearns District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: Not Reported Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles N	408 ft	18
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907260
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907260 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907260#close API Number: 05907260 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 412.535 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles N	407 ft	19
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907228
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907228 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907228#close API Number: 05907228 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 400.832 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.02 miles S	452 ft	20
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907240
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907240 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907240#close API Number: 05907240 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 448.742 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UIC-CA	Active	0.02 miles S	452 ft	20
SITE NAME			MAPS	ID
Brea-Olinda			1, 4	05907240
ADDRESS			CITY	ZIP
Not Reported by Agency				

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DETAILS

Well Information
Mapper URL:
https://maps.conservation.ca.gov/doggr/wellfinder/#close Go to URL and search by API Number:
API Numbers: 05907240
BLM Well: N
Dry Hole: N
GIS Source: Global Positioning
County Name: Orange
Operator Name: Linn Operating, Inc.
Operator Co: L2025
Lease Name: Brea
Well Number: "Brea" 58
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 448.742
Agency Provided Latitude: 33.940675919
Agency Provided Longitude: -117.887815265
EPA Well: N
Well Depth: 0
Abandonment Date: Not Reported
SPUD Date: Not Reported
Completion Date: Not Reported
Direction Drilled: N
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles SE	485 ft	21
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907322
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907322 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907322#close API Number: 05907322 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 488.294 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.02 miles NW	376 ft	22
SITE NAME			**MAPS**	**ID**
Union Oil Company of CA 1112 Pipeline Removal			1, 4	270657
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Site Regulated Program Information Site ID: 270657 Site EI ID: 798707 Agency Provided Latitude: 33.9367 Agency Provided Longitude: -117.893173 Program Description: Wetlands - Fill and Dredge Material Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles S	484 ft	23
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906753
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906753 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906753#close API Number: 05906753 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Menchego District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: Not Reported Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UIC-CA	Idle	0.02 miles S	484 ft	23
SITE NAME			MAPS	ID
Brea-Olinda			1, 4	05906753
ADDRESS			CITY	ZIP
Not Reported by Agency				

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DETAILS

Well Information
Mapper URL:
https://maps.conservation.ca.gov/doggr/wellfinder/#close Go to URL and search by API Number:
API Numbers: 05906753
BLM Well: N
Dry Hole: N
GIS Source: Heads Up Digitized
County Name: Orange
Operator Name: Linn Operating, Inc.
Operator Co: L2025
Lease Name: Menchego
Well Number: "Menchego" 3
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Agency Provided Latitude: 33.940457
Agency Provided Longitude: -117.880013
EPA Well: N
Well Depth: 0
Abandonment Date: Not Reported
SPUD Date: Not Reported
Completion Date: Not Reported
Direction Drilled: Y
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles N	444 ft	24
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906659
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906659 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906659#close API Number: 05906659 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Fisher District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 446.008 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.02 miles N	446 ft	25
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907221
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907221 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907221#close API Number: 05907221 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 439.371 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles N	460 ft	26
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906657
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906657 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906657#close API Number: 05906657 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Fisher District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 459.979 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles NW	408 ft	27
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907201
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907201 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907201#close API Number: 05907201 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 413.895 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles N	461 ft	28
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907712
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907712 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907712#close API Number: 05907712 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Stearns District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 461.537 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.02 miles S	423 ft	29
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907216
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907216 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907216#close API Number: 05907216 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 438.514 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.03 miles N	430 ft	30
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907213
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907213 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907213#close API Number: 05907213 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6100 Operator Name: Brea Canon Oil Co. Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 433.207 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.03 miles S	451 ft	**31**
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907262
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907262 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907262#close API Number: 05907262 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 458.145 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.03 miles N	432 ft	32
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907236
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907236 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907236#close API Number: 05907236 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B4737 Operator Name: Blacksand Energy, Inc. Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 451.842 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.03 miles N	487 ft	**33**
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906776
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906776 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906776#close API Number: 05906776 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Menchego District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 490.366 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UIC-CA	Idle	0.03 miles N	487 ft	33
SITE NAME			MAPS	ID
Brea-Olinda			1, 4	05906776
ADDRESS			CITY	ZIP
Not Reported by Agency				

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DETAILS

Well Information
Mapper URL:
https://maps.conservation.ca.gov/doggr/wellfinder/#close Go to URL and search by API Number:
API Numbers: 05906776
BLM Well: N
Dry Hole: N
GIS Source: Global Positioning
County Name: Orange
Operator Name: Linn Operating, Inc.
Operator Co: L2025
Lease Name: Menchego
Well Number: "Menchego" 27
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 490.366
Agency Provided Latitude: 33.941268686
Agency Provided Longitude: -117.880535576
EPA Well: N
Well Depth: 0
Abandonment Date: Not Reported
SPUD Date: Not Reported
Completion Date: Not Reported
Direction Drilled: N
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.03 miles S	438 ft	**34**
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906864
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906864 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906864#close API Number: 05906864 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Stearns District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 431.84 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.03 miles S	428 ft	35
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906966
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906966 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906966#close API Number: 05906966 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: U0200 Operator Name: Union Oil Company of California Lease Name: Stearns District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: Not Reported Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.03 miles N	479 ft	36
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906666
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906666 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906666#close API Number: 05906666 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Fisher District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 480.606 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UIC-CA	Idle	0.03 miles N	479 ft	36
SITE NAME			**MAPS**	**ID**
Brea-Olinda			1, 4	05906666
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS

Well Information
Mapper URL:
https://maps.conservation.ca.gov/doggr/wellfinder/#close Go to URL and search by API Number:
API Numbers: 05906666
BLM Well: N
Dry Hole: N
GIS Source: Global Positioning
County Name: Orange
Operator Name: Linn Operating, Inc.
Operator Co: L2025
Lease Name: Fisher
Well Number: "Fisher" 17
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 480.606
Agency Provided Latitude: 33.941374811
Agency Provided Longitude: -117.884260187
EPA Well: N
Well Depth: 0
Abandonment Date: Not Reported
SPUD Date: Not Reported
Completion Date: Not Reported
Direction Drilled: N
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.03 miles N	424 ft	**37**
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907212
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907212 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907212#close API Number: 05907212 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6100 Operator Name: Brea Canon Oil Co. Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 417.418 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.03 miles N	446 ft	38
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907215
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907215 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907215#close API Number: 05907215 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6100 Operator Name: Brea Canon Oil Co. Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: Not Reported Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.03 miles N	419 ft	39
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907241
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907241 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907241#close API Number: 05907241 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 417.198 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.03 miles NW	418 ft	40
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907230
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907230 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907230#close API Number: 05907230 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 12KB Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UIC-CA	Idle	0.03 miles NW	418 ft	40
SITE NAME			**MAPS**	**ID**
Brea-Olinda			1, 4	05907230
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS

Well Information
Mapper URL:
https://maps.conservation.ca.gov/doggr/wellfinder/#close Go to URL and search by API Number:
API Numbers: 05907230
BLM Well: N
Dry Hole: N
GIS Source: Global Positioning
County Name: Orange
Operator Name: Linn Operating, Inc.
Operator Co: L2025
Lease Name: Brea
Well Number: "Brea" 48
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: KB +12AG
Agency Provided Latitude: 33.939798207
Agency Provided Longitude: -117.891296197
EPA Well: N
Well Depth: 0
Abandonment Date: Not Reported
SPUD Date: Not Reported
Completion Date: Not Reported
Direction Drilled: Y
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.04 miles N	419 ft	41
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907267
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907267 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907267#close API Number: 05907267 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 413.618 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.04 miles NW	387 ft	42
SITE NAME			**MAPS**	**ID**
KINDRED HOSPITAL - BREA			1, 4	129983-SC
ADDRESS			**CITY**	**ZIP**
875 N BREA BLVD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=129983 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 129983 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: ALLEN Facility Representative Last Name: FAGALI Location Area Code: 714 Location Phone Number: 5296842 Location Phone Extension: Not Reported Mailing Address: 875 N BREA BLVD Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: 714 Mailing Phone Number: 5296842 Mailing Phone Extension: Not Reported Mailing Representative First Name: ALLEN Mailing Representative Last Name: FAGALI More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.04 miles NW	387 ft	42
SITE NAME			**MAPS**	**ID**
CPC BREA CANYON HOSPITAL			1, 4	49292-SC
ADDRESS			**CITY**	**ZIP**
875 N BREA BLVD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=49292 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 49292 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: Not Reported Facility Representative Last Name: Not Reported Location Area Code: Not Reported Location Phone Number: Not Reported Location Phone Extension: Not Reported Mailing Address: 875 N BREA BLVD Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: Not Reported Mailing Phone Number: Not Reported Mailing Phone Extension: Not Reported Mailing Representative First Name: Not Reported Mailing Representative Last Name: Not Reported More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.04 miles NW	387 ft	42
SITE NAME			**MAPS**	**ID**
KINDRED HOSPITAL- BREA			1, 4	10559263
ADDRESS			**CITY**	**ZIP**
875 N BREA BLVD			BREA	92821

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DETAILS

General Program & Facility Information
CERS ID: 10559263
Facility ID: FA0049301
Facility Regulator Key ID: FA0049301
Organization Code: 90509206
Business/Organization Name: KINDRED HOSPITAL- BREA
Multiple Jurisdictional Business? (Y/N): No
Business Origin: EDT
Count of Business' CERS User Accounts: 3
Facility Count for Business: 1
Last Submittal Date (any element): Not Reported
Count of Submitted Elements: 0
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: Not Reported
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.04 miles NW	387 ft	42
SITE NAME			**MAPS**	**ID**
KINDRED HOSPITAL- BREA			1, 4	420587
ADDRESS			**CITY**	**ZIP**
875 N BREA BLVD			BREA	92821

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DETAILS

Site Regulated Program Information
Site ID: 420587
Site EI ID: 10559263
Agency Provided Latitude: 33.934597
Agency Provided Longitude: -117.893936

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 4/4/2017
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): A routine hazardous waste inspection was conducted this date. Access to the facility was provided by Jodi Montoya, EVS Manager, and Victor, Engineering. Hazardous waste observed onsite included: - RCRA pharmaceutical waste - Universal waste Municipal dumpster area does not appear to contain any hazardous waste. Perimeter of facility inspected - did not observe any indication of a hazardous waste release. Hazardous Waste Emergency Response in the Business Emergency Plan. Employees that manage hazardous waste are given jobsite training. Reviewed consolidated manifests and manifests for all hazardous waste streams. Please keep onsite all hazardous waste disposal receipts/manifests for three years.
Evaluation Division: Orange County Environmental Health
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 4/20/2016
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): An off-site, follow-up inspection was conducted this date (4/20/16). The items noted below are in reference to an onsite inspection of your facility conducted on 4/7/16. OUTSTANDING VIOLATIONS ? 4/20/16 NONE CORRECTED VIOLATIONS ? 4/20/16 I400 - The container of RCRA pharmaceutical waste observed in the Intermediate Storage Area has been labeled with the required information.
Evaluation Division: Orange County Environmental Health
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-FINDS-US	Listed	0.04 miles NW	387 ft	42
SITE NAME			**MAPS**	**ID**
CPC BREA CANYON HOSPITAL			1, 4	5708780
ADDRESS			**CITY**	**ZIP**
875 N BREA BL			BREA	92621

DETAILS

Reported Date: 1998

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
HWIS-CA	Listed	0.04 miles NW	387 ft	42

SITE NAME	MAPS	ID
KINDRED HOSPITAL-BREA	1, 4	CAL000299109

ADDRESS	CITY	ZIP
875 N BREA BLVD	BREA	928212606

DETAILS

EPA ID: CAL000299109
Facility County: 30
Mailing Street: 875 N BREA BLVD
Mailing City: BREA
Mailing State: CA
Mailing Zip: 928212606
Contact Name: DANIEL HUNT
Contact Phone: 7145296842

Year: 2014
TONS: 0.042
TSD EPA ID: CAT080013352
Category Code: 134
Category Description: Aqueous solution with total organic residues less than 10 percent
Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT

Year: 2013
TONS: 0.126
TSD EPA ID: CAT080013352
Category Code: 134
Category Description: Aqueous solution with total organic residues less than 10 percent
Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT

Year: 2011
TONS: 0.019
TSD EPA ID: CAD028409019
Category Code: 221

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
HWIS-CA	Listed	0.04 miles NW	387 ft	42

SITE NAME	MAPS	ID
VENCOR	1, 4	CAL000137637

ADDRESS	CITY	ZIP
875 N BREA BLVD	BREA	926210000

DETAILS

EPA ID: CAL000137637
Facility County: 30
Mailing Street: 875 N BREA BLVD
Mailing City: BREA
Mailing State: CA
Mailing Zip: 928212606
Contact Name: THC ORANGE COUNTY
Contact Phone: 0000000000

Year: 2017
TONS: 0.064
TSD EPA ID: ARD069748192
Category Code: 311
Category Description: Pharmaceutical waste
Method Description: INCINERATION--THERMAL DESTRUCTION OTHER THAN USE AS A FUEL

Year: 2016
TONS: 0.392
TSD EPA ID: ARD069748192
Category Code: 311
Category Description: Pharmaceutical waste
Method Description: INCINERATION--THERMAL DESTRUCTION OTHER THAN USE AS A FUEL

Year: 2015
TONS: 0.408
TSD EPA ID: ARD069748192
Category Code: 311

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.04 miles N	486 ft	43

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05906656

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05906656
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906656#close
API Number: 05906656
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Fisher
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 483.101
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.04 miles N	487 ft	44

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05906774

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05906774
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906774#close
API Number: 05906774
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Menchego
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 485.844
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UIC-CA	Idle	0.04 miles N	487 ft	44

SITE NAME	MAPS	ID
Brea-Olinda	1, 4	05906774

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Well Information
Mapper URL:
https://maps.conservation.ca.gov/doggr/wellfinder/#close Go to URL and search by API Number:
API Numbers: 05906774
BLM Well: N
Dry Hole: N
GIS Source: Global Positioning
County Name: Orange
Operator Name: Linn Operating, Inc.
Operator Co: L2025
Lease Name: Menchego
Well Number: "Menchego" 25
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 485.844
Agency Provided Latitude: 33.941464674
Agency Provided Longitude: -117.880927512
EPA Well: N
Well Depth: 0
Abandonment Date: Not Reported
SPUD Date: Not Reported
Completion Date: Not Reported
Direction Drilled: Y

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.04 miles SE	506 ft	45

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907253

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907253
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907253#close
API Number: 05907253
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 506.515
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.04 miles NW	423 ft	46

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907202

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907202
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907202#close
API Number: 05907202
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6100
Operator Name: Brea Canon Oil Co.
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.04 miles S	528 ft	47

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907319

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907319
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907319#close
API Number: 05907319
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.05 miles N	419 ft	48

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05920869

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05920869
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05920869#close
API Number: 05920869
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 415.69
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UIC-CA	Active	0.05 miles N	419 ft	48

SITE NAME	MAPS	ID
Brea-Olinda	1, 4	05920869

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Well Information
Mapper URL:
https://maps.conservation.ca.gov/doggr/wellfinder/#close Go to URL and search by API Number:
API Numbers: 05920869
BLM Well: N
Dry Hole: N
GIS Source: Global Positioning
County Name: Orange
Operator Name: Linn Operating, Inc.
Operator Co: L2025
Lease Name: Brea
Well Number: "Brea" 87
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 415.69
Agency Provided Latitude: 33.941526256
Agency Provided Longitude: -117.889412587
EPA Well: N
Well Depth: 0
Abandonment Date: Not Reported
SPUD Date: Not Reported
Completion Date: Not Reported
Direction Drilled: Y

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.05 miles N	422 ft	49

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907222

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907222
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907222#close
API Number: 05907222
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B4737
Operator Name: Blacksand Energy, Inc.
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.05 miles S	439 ft	50

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907714

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907714
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907714#close
API Number: 05907714
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: U0200
Operator Name: Union Oil Company of California
Lease Name: Stearns
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.05 miles S	440 ft	51

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05906867

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05906867
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906867#close
API Number: 05906867
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Stearns
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.05 miles S	448 ft	52

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907305

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907305
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907305#close
API Number: 05907305
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.05 miles SE	464 ft	53

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907243

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907243
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907243#close
API Number: 05907243
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6100
Operator Name: Brea Canon Oil Co.
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.05 miles N	427 ft	54

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907246

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907246
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907246#close
API Number: 05907246
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 441.104
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.05 miles N	491 ft	55

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05906658

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05906658
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906658#close
API Number: 05906658
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Fisher
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 492.088
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.05 miles NW	385 ft	56

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907188

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907188
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907188#close
API Number: 05907188
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Ernie
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.05 miles N	491 ft	57

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05906653

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05906653
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906653#close
API Number: 05906653
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Fisher
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 491.713
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.05 miles SE	449 ft	58

SITE NAME	MAPS	ID
CAL RESOURCES OIL LEASES	1, 4	242292

ADDRESS	CITY	ZIP
BREA BOULEVARD	BREA	

DETAILS

Site Regulated Program Information
Site ID: 242292
Site EI ID: SLT8R0573941
Agency Provided Latitude: 33.937371
Agency Provided Longitude: -117.891089

Program Description: Cleanup Program Site

Evaluation Information
: Not Reported
:Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.05 miles SE	449 ft	58

SITE NAME	MAPS	ID
BREA, CITY OF	1, 4	205686

ADDRESS	CITY	ZIP
BREA BOULEVARD S	BREA	

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DETAILS
Site Regulated Program Information Site ID: 205686 Site EI ID: SLT8R2083986 Agency Provided Latitude: 33.937371 Agency Provided Longitude: -117.891089 Program Description: Cleanup Program Site Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SLIC-Closed-CA	Completed - Case Closed	0.05 miles SE	449 ft	58
SITE NAME			**MAPS**	**ID**
CAL RESOURCES OIL LEASES			1, 4	SLT8R0573941
ADDRESS			**CITY**	**ZIP**
BREA BOULEVARD			BREA	

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DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SLT8R0573941
Global ID: SLT8R0573941
Case Type: Cleanup Program Site
Status: Completed - Case Closed
Status Date: 7/15/2010
CUF Case: NO
Lead Agency: SANTA ANA RWQCB (REGION 8)
Case Worker: Not Reported
Local Agency: Not Reported
RB Case Number: SLT8R057
Loc Case Number: Not Reported
File Location: Regional Board Warehouse
Potential Contaminants of Concern: Not Reported
Potential Media Affected: Not Reported
Site History: Not Reported
Begin Date: Not Reported
How Discovered: * GOV
How Discovered Description: Not Reported
Stop Method: Not Reported
Stop Method Description: Not Reported
Agency Provided Latitude: 33.937371
Agency Provided Longitude: -117.891089

Regulatory Activities Details
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SLIC-Closed-CA	Completed - Case Closed	0.05 miles SE	449 ft	58
SITE NAME			**MAPS**	**ID**
BREA, CITY OF			1, 4	SLT8R2083986
ADDRESS			**CITY**	**ZIP**
BREA BOULEVARD S			BREA	

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DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SLT8R2083986
Global ID: SLT8R2083986
Case Type: Cleanup Program Site
Status: Completed - Case Closed
Status Date: 3/29/1995
CUF Case: NO
Lead Agency: SANTA ANA RWQCB (REGION 8)
Case Worker: Not Reported
Local Agency: Not Reported
RB Case Number: SLT8R208
Loc Case Number: Not Reported
File Location: Not Reported
Potential Contaminants of Concern: Not Reported
Potential Media Affected: Not Reported
Site History: Not Reported
Begin Date: Not Reported
How Discovered: Not Reported
How Discovered Description: Not Reported
Stop Method: Not Reported
Stop Method Description: Not Reported
Agency Provided Latitude: 33.937371
Agency Provided Longitude: -117.891089

Regulatory Activities Details
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.05 miles N	490 ft	**59**
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906651
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906651 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906651#close API Number: 05906651 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Fisher District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: Not Reported Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.05 miles S	460 ft	60
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906752
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906752 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906752#close API Number: 05906752 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Menchego District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: Not Reported Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.06 miles S	476 ft	61
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907307
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907307 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907307#close API Number: 05907307 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: Not Reported Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
HWIS-CA	Listed	0.06 miles W	401 ft	62
SITE NAME			**MAPS**	**ID**
ALBERT JOU			1, 4	CAC002902376
ADDRESS			**CITY**	**ZIP**
1170 ORANGEWOOD DR			BREA	92821

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DETAILS
EPA ID: CAC002902376 Facility County: 30 Mailing Street: 1170 ORANGEWOOD DR Mailing City: BREA Mailing State: CA Mailing Zip: 92821 Contact Name: ALBERT JOU Contact Phone: 8184378731 Year: 2017 TONS: 0.23 TSD EPA ID: CAD009007626 Category Code: 151 Category Description: Asbestos containing waste Method Description: LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.06 miles N	485 ft	63
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05906762
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05906762 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906762#close API Number: 05906762 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Menchego District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 1 Township: 03S Range: 10W Base Meridian: SB Elevation: 480.561 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.06 miles NW	404 ft	64
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	05907242
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency				

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DETAILS
Oil and Gas Well Information URL: https://secure.conservation.ca.gov/WellSearch/Details?api=05907242 Map URL: https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907242#close API Number: 05907242 Is EPA Well? (Y/N): N Is BLM Interest? (Y/N): N Dry Hole: N Operator Code: B6136 Operator Name: Bridge Energy LLC Lease Name: Brea District: Southern County: Orange Field Name: Brea-Olinda Area Name: Any Area Section: 2 Township: 03S Range: 10W Base Meridian: SB Elevation: 400.658 Total Well Depth: 0 ReDrill in Feet: 0 RedCanFlag: Not Reported Location Description: Not Reported Comment(s): Not Reported Confidential Well? (Y/N): N More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Manufacturing	Listed	0.06 miles SE	424 ft	65
SITE NAME			**MAPS**	**ID**
Amps Engineering			1, 4	3568
ADDRESS			**CITY**	**ZIP**
1212 Grand Cyn			Brea	92821
DETAILS				
Site Added: 1/1/2013				

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.06 miles NW	423 ft	66

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907261

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907261
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907261#close
API Number: 05907261
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 420.623
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.06 miles S	523 ft	67

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907323

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907323
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907323#close
API Number: 05907323
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6100
Operator Name: Brea Canon Oil Co.
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
USGS-Waterwells-US	Listed	0.06 miles SW	386 ft	68

SITE NAME	MAPS	ID
003S010W02Q001S	1, 4	69196

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Note: This is an ERS assigned ID.
Agency Code: USGS
Site ID Number: 335601117533601
Site Type Code: GW
County Code: 59
District Code: 6
State Code: 6
Country Code: US
Land Net Location Description: SWSES02T03SR10WS
Altitude of Gage/Land Surface: 373.5
Map Name: LA HABRA
Scale of Map: 24000
Method Altitude Determined: M
Altitude Accuracy: 10
Altitude Datum: NGVD29
Hydrologic Unit Code: 18070106
Flags for Type of Data Collected: NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Flags for Instruments at Site: NNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Mean Greenwich Time Offset: PST
Local Standard Time Flag: Y
Data Reliability Code: C
Data-Other GW Files: YYYYNYNN
National Aquifer Code: N100CACSTL
Project Number: 479300200
Real-Time Data Flag: 0
Peak-Streamflow Data Count: 0
Water-Quality Data Count: 0

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.06 miles S	438 ft	69

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907717

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907717
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907717#close
API Number: 05907717
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: U0200
Operator Name: Union Oil Company of California
Lease Name: Stearns
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: Not Reported
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.06 miles N	424 ft	70

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907245

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907245
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907245#close
API Number: 05907245
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 423.664
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.06 miles S	538 ft	71

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907306

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907306
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907306#close
API Number: 05907306
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 546.247
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Active	0.06 miles NW	403 ft	72

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907248

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907248
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907248#close
API Number: 05907248
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 482.496
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Idle	0.06 miles N	438 ft	73

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05907235

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05907235
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05907235#close
API Number: 05907235
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Brea
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 2
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 441.347
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.06 miles N	463 ft	74

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05906661

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05906661
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906661#close
API Number: 05906661
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Fisher
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 463.606
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
OGW-CA	Plugged	0.06 miles N	488 ft	75

SITE NAME	MAPS	ID
Not Reported by Agency	1, 4	05906655

ADDRESS	CITY	ZIP
Not Reported by Agency		

DETAILS

Oil and Gas Well Information
URL:
https://secure.conservation.ca.gov/WellSearch/Details?api=05906655
Map URL:
https://maps.conservation.ca.gov/doggr/wellfinder/?api=05906655#close
API Number: 05906655
Is EPA Well? (Y/N): N
Is BLM Interest? (Y/N): N
Dry Hole: N
Operator Code: B6136
Operator Name: Bridge Energy LLC
Lease Name: Fisher
District: Southern
County: Orange
Field Name: Brea-Olinda
Area Name: Any Area
Section: 1
Township: 03S
Range: 10W
Base Meridian: SB
Elevation: 490.727
Total Well Depth: 0
ReDrill in Feet: 0
RedCanFlag: Not Reported
Location Description: Not Reported
Comment(s): Not Reported
Confidential Well? (Y/N): N

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.12 miles S	461 ft	76

SITE NAME	MAPS	ID
PACIFIC TERMINALS LLC	1, 4	137525-SC

ADDRESS	CITY	ZIP
17001 TONNER CANYON RD	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=137525
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 137525
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: MARK
Facility Representative Last Name: REESE
Location Area Code: 562
Location Phone Number: 7282358
Location Phone Extension: Not Reported
Mailing Address: 5900 CHERRY AVE
Mailing City: LONG BEACH
Mailing State: CA
Mailing Zip Code: 90805
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 562
Mailing Phone Number: 7282358
Mailing Phone Extension: Not Reported
Mailing Representative First Name: MARK
Mailing Representative Last Name: REESE

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-AST-CA	Listed	0.12 miles S	461 ft	76
SITE NAME			**MAPS**	**ID**
TONNER PUMP STATION			1, 4	3996837
ADDRESS			**CITY**	**ZIP**
17001 TONNER CANYON RD.			BREA	93041
DETAILS				
Reported Date: 1998				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.12 miles S	385 ft	77
SITE NAME			**MAPS**	**ID**
RAILS TO TRAILS PROJECT SITE			1, 4	RO0003541-ORG
ADDRESS			**CITY**	**ZIP**
ONE N BREA BLVD			BREA	92821
DETAILS				
County: Orange Type: Industrial Site Cleanups Case ID: 10IC002 Record ID: RO0003541 Released Substance(s: Not Reported Status Description: OPEN Case Closed Date: Not Reported Type of Closure: Not Reported				

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.12 miles SW	380 ft	78

SITE NAME	MAPS	ID
BREA WOODS APARTMENTS	1, 4	127048-SC

ADDRESS	CITY	ZIP
195 W CENTRAL AVE	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=127048
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 127048
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: MICHAEL
Facility Representative Last Name: STEFANI
Location Area Code: 714
Location Phone Number: 2558011
Location Phone Extension: Not Reported
Mailing Address: 195 W CENTRAL AVE
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92821
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 2558011
Mailing Phone Extension: Not Reported
Mailing Representative First Name: MICHAEL
Mailing Representative Last Name: STEFANI

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Air-CA	Listed	0.13 miles NW	444 ft	79

SITE NAME	MAPS	ID
LINN WESTERN OPERATING INC	1, 4	SC AQMD-SC-152054

ADDRESS	CITY	ZIP
1531 BREA CANYON RD	BREA	92821

DETAILS

Toxic Facility Information
Agency ID Desc: The first portion is the Air Quality District, the second portion is the County, the last is the Facility ID
Facility ID: 152054
Database Year: 2015
Air Basin: SC
County Code: 30
District Code: SC
District: SOUTH COAST AQMD
Facility SIC Code: 1311
COID: ORA
Prioritization Thresholds: Not Reported
Health Risk Assessment (HRA): 1.14
Non-Cancer Chronic Hazard Index: 0.12
Non-Cancer Acute Hazard Index: Not Reported
CHAPIS: Not Reported
CERR Code: Not Reported

Pollutant Information
TOG - Total Organic Gases (Tons/Yr): 2.48922076139122
ROG - Reactive Organic Gases (Tons/Yr): 1.47732145
CO - Carbon Monoxide (Tons/Yr): 0.010047
NOx - Oxides of Nitrogen (Tons/Yr): 0.0002601
SOx - Oxides of Sulfur (Tons/Yr): 0.000013515
PM - Particulate Matter (Tons/Yr): 0.000016575
PM - Particulate Matter - 10 Micrometers or Smaller (Tons/Yr): 0.000015912

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.13 miles NW	444 ft	79

SITE NAME	MAPS	ID
BLACKSAND BREA LLC	1, 4	148228-SC

ADDRESS	CITY	ZIP
1531 BREA CANYON RD	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=148228
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 148228
County Code: OR
County: Orange
Facility Status Code: S
Facility Status: SOLD
Number of Employees: 24
Location Zip Code Extension: 2626
Facility Representative First Name: BRYCE L
Facility Representative Last Name: TENOLD
Location Area Code: 714
Location Phone Number: 2571613
Location Phone Extension: Not Reported
Mailing Address: 500 N KRAEMER BLVD BLDG #B
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92821
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 2571613
Mailing Phone Extension: Not Reported
Mailing Representative First Name: BRYCE L
Mailing Representative Last Name: TENOLD

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.13 miles NW	444 ft	79

SITE NAME	MAPS	ID
BREA CANYON OIL CO INC	1, 4	10340-SC

ADDRESS	CITY	ZIP
1531 BREA CANYON RD	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=10340
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 10340
County Code: OR
County: Orange
Facility Status Code: S
Facility Status: SOLD
Number of Employees: 24
Location Zip Code Extension: 2626
Facility Representative First Name: TIMOTHY
Facility Representative Last Name: BURCH
Location Area Code: 310
Location Phone Number: 3264002
Location Phone Extension: Not Reported
Mailing Address: 500 N KRAEMER BLVD BLDG B/BRYCE TENOLD
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92821
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 310
Mailing Phone Number: 3264002
Mailing Phone Extension: Not Reported
Mailing Representative First Name: TIMOTHY
Mailing Representative Last Name: BURCH

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.13 miles NW	444 ft	79

SITE NAME	MAPS	ID
LINN WESTERN OPERATING INC	1, 4	152054-SC

ADDRESS	CITY	ZIP
1531 BREA CANYON RD	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=152054
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 152054
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 24
Location Zip Code Extension: 2626
Facility Representative First Name: KELLY
Facility Representative Last Name: ROBERTS
Location Area Code: 714
Location Phone Number: 2571613
Location Phone Extension: Not Reported
Mailing Address: 2000 TONNER CANYON RD
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92821
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 2571613
Mailing Phone Extension: Not Reported
Mailing Representative First Name: KELLY
Mailing Representative Last Name: ROBERTS

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.13 miles NW	444 ft	79

SITE NAME	MAPS	ID
BREA CANYON OIL FLD	1, 4	RO0000700-ORG

ADDRESS	CITY	ZIP
1531 BREA CANYON RD	BREA	92821

DETAILS

County: Orange
Type: Industrial Site Cleanups
Case ID: 99IC026
Record ID: RO0000700
Released Substance(s: WASTE (OR SLOP) OIL
ORGANIC COMPOUNDS
HEAVY METAL WASTE -
NON-PLATING
POLYCHLORINATED
BIPHENYLS
Status Description: CLOSED
Case Closed Date: 8/5/2013
Type of Closure: Voluntary
Cleanup Program
Termination

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.13 miles NW	444 ft	79

SITE NAME	MAPS	ID
BREA CANYON OIL CO INC	1, 4	455501

ADDRESS	CITY	ZIP
1531 BREA CANYON RD	BREA	92821-2626

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DETAILS
Site Regulated Program Information Site ID: 455501 Site EI ID: 110001186528 Agency Provided Latitude: 33.93778 Agency Provided Longitude: -117.89179 Program Description: US EPA Air Emission Inventory System (EIS) Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.13 miles NW	444 ft	79
SITE NAME			**MAPS**	**ID**
LINN WESTERN OPERATING INC			1, 4	477653
ADDRESS			**CITY**	**ZIP**
1531 BREA CANYON RD			BREA	92821

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DETAILS
Site Regulated Program Information Site ID: 477653 Site EI ID: 110058327582 Agency Provided Latitude: 33.93854 Agency Provided Longitude: -117.89406 Program Description: US EPA Air Emission Inventory System (EIS) Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Air-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
FLEETWOOD CLEANERS			1, 4	SC AQMD-SC-74595
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE SUITE E			BREA	92821

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DETAILS
Toxic Facility Information Agency ID Desc: The first portion is the Air Quality District, the second portion is the County, the last is the Facility ID Facility ID: 74595 Database Year: 2015 Air Basin: SC County Code: 30 District Code: SC District: SOUTH COAST AQMD Facility SIC Code: 7216 COID: ORA Prioritization Thresholds: Not Reported Health Risk Assessment (HRA): Not Reported Non-Cancer Chronic Hazard Index: Not Reported Non-Cancer Acute Hazard Index: Not Reported CHAPIS: Not Reported CERR Code: Not Reported Pollutant Information TOG - Total Organic Gases (Tons/Yr): 4.61363636363636E-03 ROG - Reactive Organic Gases (Tons/Yr): 0.00203 CO - Carbon Monoxide (Tons/Yr): 0.0310036 NOx - Oxides of Nitrogen (Tons/Yr): 0.03690905 SOx - Oxides of Sulfur (Tons/Yr): 0.000221455 PM - Particulate Matter (Tons/Yr): 0.00280509 PM - Particulate Matter - 10 Micrometers or Smaller (Tons/Yr): 0.00280509 More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
FLEETWOOD CLEANERS			1, 4	74595-SC
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE SUITE E			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=74595 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 74595 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 6 Location Zip Code Extension: Not Reported Facility Representative First Name: GLEN Facility Representative Last Name: SHELTON Location Area Code: 714 Location Phone Number: 2551611 Location Phone Extension: Not Reported Mailing Address: 101 W CENTRAL #E Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: 714 Mailing Phone Number: 2551611 Mailing Phone Extension: Not Reported Mailing Representative First Name: GLEN Mailing Representative Last Name: SHELTON More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.14 miles S	382 ft	**80**
SITE NAME			**MAPS**	**ID**
FLEETWOOD CLEANERS			1, 4	10537696
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE			BREA	92821

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DETAILS

General Program & Facility Information
CERS ID: 10537696
Facility ID: FA0025778
Facility Regulator Key ID: FA0025778
Organization Code: 90476320
Business/Organization Name: FLEETWOOD CLEANERS
Multiple Jurisdictional Business? (Y/N): No
Business Origin: EDT
Count of Business' CERS User Accounts: 0
Facility Count for Business: 1
Last Submittal Date (any element): 11/30/2016 10:29:31 AM
Count of Submitted Elements: 3
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 3
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Cleaners-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
Fleetwood Cleaners			1, 4	13171
ADDRESS			**CITY**	**ZIP**
101 W Central Ave # E			Brea	92821

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DETAILS

Facility and Program Information
County: Orange
Executive First Name: Not Reported
Executive Last Name: Not Reported
Professional Title: Not Reported
Executive Title: Not Reported
Executive Gender: Not Reported
ZIP Four: 3364
Carrier Route: C022
Delivery Point Barcode: 778
Metro Area: LA-Long Bch, CA
Neighborhood: Not Reported
Phone Number Combined: (714) 255-1611
Fax Number Combined: 0
Toll Free Number Combined: 0
Website: Not Reported
Company Description: Not Reported
Primary SIC Code: 721201
Primary SIC Description: Cleaners
Primary SIC Ad Size: Regular
Primary SIC Year Appeared: 2014
SIC Code 1: 721201
SIC Code 1 Description: Cleaners
SIC Code 1 Ad Size: Not Reported
SIC Code 1 Year Appeared: Not Reported
SIC Code 2: Not Reported
SIC Code 2 Description: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
FLEETWOOD CLEANERS			1, 4	FA0025778-ORG
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE			BREA	92821

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DETAILS
County: Orange Responsible Agency: Orange County Environmental Health Type of Listing: Hazardous Waste Facilities Facility ID: FA0025778 Date Run: 7/13/2018 5:50 PM

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
FLEETWOOD CLEANERS			1, 4	413334
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE			BREA	92821

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DETAILS
Site Regulated Program Information Site ID: 413334 Site EI ID: 10537696 Agency Provided Latitude: 33.932552 Agency Provided Longitude: -117.894226 Program Description: Chemical Storage Facilities Program Description: Hazardous Waste Generator Evaluation Information Evaluation Date: 3/25/2016 Violations Found? (Y/N): No Evaluation General Type: Compliance Evaluation Inspection Evaluation Type: Routine done by local agency Evaluation Note(s): INSPECTOR COMMENTS: On-site for a routine inspection. Met with Glen Shelton thais date. Verified the map and inventory. Training needs to be completed annually. The 2016 E Submit disclosure has been submitted and accepted. Evaluation Division: Orange County Environmental Health Evaluation Program: HMRRP Evaluation Source: CERS Evaluation Date: 3/25/2016 Violations Found? (Y/N): No Evaluation General Type: Other/Unknown Evaluation Type: Other, not routine, done by local agency Evaluation Note(s): Reviewed and accepted the 2016 HMBP disclosure. Evaluation Division: Orange County Environmental Health More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.14 miles S	382 ft	80

SITE NAME	MAPS	ID
FLEETWOOD CLEANERS	1, 4	468207

ADDRESS	CITY	ZIP
101 W CENTRAL AVE SUITE E	BREA	92821-3364

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DETAILS
Site Regulated Program Information Site ID: 468207 Site EI ID: 110038013486 Agency Provided Latitude: 33.93215 Agency Provided Longitude: -117.89424 Program Description: US EPA Air Emission Inventory System (EIS) Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
MOBIL #18-KAZ			1, 4	246197
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE			BREA	92621

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DETAILS
Site Regulated Program Information Site ID: 246197 Site EI ID: T0605900724 Agency Provided Latitude: 33.932192 Agency Provided Longitude: -117.89391 Program Description: Leaking Underground Storage Tank Cleanup Site Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
DryCleaners-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
FLEETWOOD CLEANERS			1, 4	CAL000030757
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE STE E			BREA	926210000

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DETAILS

EPA ID: CAL000030757
Create Date: 5/16/1990
Facility Act Ind: Y
Inact Date: Not Reported
Facility Street2: Not Reported
County: Orange
Latitude: 33.726622
Longitude: -117.771403
Mailing Name: Not Reported
Facility Mailing Address: 101 W CENTRAL AVE STE E
Facility Mailing Address 2: Not Reported
Facility Mailing City: BREA
Facility Mailing State: CA
Facility Mailing Zip Code: 928213364
Region Code: 4
Owner Name: GLEN SHELTON
Owner Address: 101 W CENTRAL AVE STE E
Owner Address2: Not Reported
Owner City: BREA
Owner State: CA
Owner Zip Code: 928213364
Owner Phone Number: 7142551611
Owner Fax Number: 0000000000
Contact Name: GLEN SHELTON
Contact Address: 101 W CENTRAL AVE STE E
Contact Address2: Not Reported
Contact City: BREA
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
ENF-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
MOBIL #18-KAZ			1, 4	T0605900724
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE			BREA	92621

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DETAILS

Global ID: T0605900724
County: Orange
Site History: Not Reported
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Lead Agency: SANTA ANA RWQCB (REGION 8)
Case Worker: RS
Local Agency: ORANGE COUNTY LOP
RB Case Number: 083000911T
Loc Case Number: Not Reported
File Location: Not Reported
Potential Contaminants of Concern: Gasoline
Potential Media Affected: Soil
How Discovered: Not Reported
How Discovered Description: Not Reported
Stop Method: Not Reported
Stop Method Description: Not Reported
Action Date: 2003-11-14
Action Type: ENFORCEMENT
Action: Closure/No Further Action Letter

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Cleaners	Listed	0.14 miles S	382 ft	**80**

SITE NAME	MAPS	ID
FLEETWOOD CLEANERS	1, 4	302067-PD

ADDRESS	CITY	ZIP
101 W CENTRAL AVE # E	BREA	92821-3364

DETAILS

Listing Year: 1997
SIC Category: CLEANERS
SIC Code: 721201

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Cleaners	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
Fleetwood Cleaners			1, 4	75037
ADDRESS			**CITY**	**ZIP**
101 W Central Ave Ste E			Brea	
DETAILS				
Site Added: 1/1/2013				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-LUSTIS-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
MOBIL SS #18-KAZ			1, 4	1589547
ADDRESS			**CITY**	**ZIP**
101 CENTRAL AVENUE, WEST			BREA	92621
DETAILS				
Reported Date: 1998				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-UST-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
MOBIL S S #18-KAZ			1, 4	1589547
ADDRESS			**CITY**	**ZIP**
101 CENTRAL AVENUE WEST			BREA	

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DETAILS
Reported Date: 1998 List: Region #8-Santa Ana Regional Underground Tank Database List Agency: Regional Water Quality Control Board, Region #8

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-UST-CA	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
RONALD J PIATTONI			1, 4	261657
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL			BREA	92621
DETAILS				
Note: ID has been assigned by ERS Tank Details: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002EBC3.pdf				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	Completed - Case Closed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
MOBIL #18-KAZ			1, 4	T0605900724
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE			BREA	92621

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DETAILS
Sites Details URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900724 Global ID: T0605900724 Case Type: LUST Cleanup Site Status: Completed - Case Closed Status Date: 6/27/1988 CUF Case: NO Lead Agency: SANTA ANA RWQCB (REGION 8) Case Worker: RS Local Agency: ORANGE COUNTY LOP RB Case Number: 083000911T Loc Case Number: Not Reported File Location: Not Reported Potential Contaminants of Concern: Gasoline Potential Media Affected: Soil Site History: Not Reported Begin Date: 12/17/1986 How Discovered: Not Reported How Discovered Description: Not Reported Stop Method: Not Reported Stop Method Description: Not Reported Agency Provided Latitude: 33.9321916 Agency Provided Longitude: -117.8939108 Regulatory Activities Details More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.14 miles S	382 ft	80
SITE NAME			**MAPS**	**ID**
FLEETWOOD CLEANERS			1, 4	CAL000030757
ADDRESS			**CITY**	**ZIP**
101 W CENTRAL AVE STE E			BREA	92621

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DETAILS
Additional details may be found online using the following link: http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAL000030757&pgm_sys_acrnm_in=RCRAINFO Source Type: Implementer Generator Status Universe: N Generator Status: Non-Generator NAICS1: DRYCLEANING AND LAUNDRY SERVICES (EXCEPT COIN-OPERATED) Active Site Indicator: H---- Owner Name: GLEN SHELTON Operator Name: GLEN SHELTON In Handler Universes: Y In a Universe: Y Short Term Generator: N Importer Activity: N Mixed Waste Generator: N Transporter Activity: Y Transfer Facility: N Recycler Activity: N Onsite Burner Exemption: N Furnace Exemption: N Underground Injection Activity: N Receives Waste From Off-site: N Universal Waste: N Universal Waste Destination Facility: Y Used Oil Universe: NNNNNNN Federal Universal Waste: N Active Site Federally Regulated TSDF: ------ More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
BF-US	Listed	0.15 miles S	385 ft	81

SITE NAME	MAPS	ID
The Tracks at Brea - Freeway Site	1, 4	220305

ADDRESS	CITY	ZIP
200 State College Boulevard	BREA	92821

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DETAILS
ACRES Property ID: 220305 Type of Funding: Hazardous Local Property Number(s): Not Reported Ownership Entity: Government Current Owner: City of Brea Did Ownership Change: N SFLLP fact into the ownership: Not Reported Property Latitude: 33.92130245 Property Longitude: -117.881437094 Horizontal Collection Method: Address Matching-House Number Source Map Scale: Not Reported Reference Point: Entrance Point of a Facility or Station Horizontal Reference Datum: North American Datum of 1983 Description/History: Property was purchased from Chevron Land Development. Was abandoned railroad right-of-way. The Pacific Electric Railway stopped in Brea on its way between Los Angeles and Yorba Linda, serving oil field workers and their families The passenger line was discontinued in 1938 and from that time on, the rail corridor was used for transportation of goods until as recently as 2007. Past Use: Greenspace (arces): 2.8 Past Use: Residential (arces): Not Reported Past Use: Commercial (arces): Not Reported Past Use: Industrial (arces): Not Reported Past Use: Multistory (arces): Not Reported Future Use: Multistory (arces): Not Reported Cleanup Required: Y Cntmnt Fnd-Ctrl Sbstncs: Not Reported Cntmnt Fnd-Petroleum: Y Cntmnt Fnd-Asbestos: Not Reported Cntmnt Fnd-Lead: Not Reported Cntmnt Fnd-PAHs: Not Reported Cntmnt Fnd-PCBs: Not Reported More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.16 miles S	387 ft	82
SITE NAME			**MAPS**	**ID**
LA VIE EN ROSE			1, 4	67105-SC
ADDRESS			**CITY**	**ZIP**
240 STATE COLLEGE BLVD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=67105 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 67105 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: Not Reported Facility Representative Last Name: Not Reported Location Area Code: Not Reported Location Phone Number: Not Reported Location Phone Extension: Not Reported Mailing Address: 240 STATE COLLEGE BLVD Mailing City: BREA Mailing State: CA Mailing Zip Code: 92821 Mailing Zip Code Extension: Not Reported Mailing Area Code: Not Reported Mailing Phone Number: Not Reported Mailing Phone Extension: Not Reported Mailing Representative First Name: Not Reported Mailing Representative Last Name: Not Reported More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
TOSCO CORP, JAFAR RADFAR SITE #30340			1, 4	112010-SC
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=112010 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 112010 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: JAFAR Facility Representative Last Name: RADFAR Location Area Code: 714 Location Phone Number: 5295370 Location Phone Extension: Not Reported Mailing Address: 600 N DAIRY ASHFORD, TR 1032B ATTN: LICENSE & PERMITS Mailing City: HOUSTON Mailing State: TX Mailing Zip Code: 77079 Mailing Zip Code Extension: 1175 Mailing Area Code: 714 Mailing Phone Number: 5295370 Mailing Phone Extension: Not Reported Mailing Representative First Name: JAFAR Mailing Representative Last Name: RADFAR More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
UNION DLR, J RADFAR #000713			1, 4	62150-SC
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92621

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DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=62150
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 62150
County Code: OR
County: Orange
Facility Status Code: S
Facility Status: SOLD
Number of Employees: 2
Location Zip Code Extension: 3335
Facility Representative First Name: JAFAR
Facility Representative Last Name: RADFAR
Location Area Code: 714
Location Phone Number: 5295370
Location Phone Extension: Not Reported
Mailing Address: P O BOX 2390 ENV COMPLIANCE
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92622
Mailing Zip Code Extension: 2390
Mailing Area Code: 714
Mailing Phone Number: 5295370
Mailing Phone Extension: Not Reported
Mailing Representative First Name: JAFAR
Mailing Representative Last Name: RADFAR

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.17 miles S	381 ft	**83**
SITE NAME			**MAPS**	**ID**
JEFFS UNOCAL/TOSCO S S #30340			1, 4	10513603
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92821

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DETAILS

General Program & Facility Information
CERS ID: 10513603
Facility ID: FA0024374
Facility Regulator Key ID: FA0024374
Organization Code: 90439714
Business/Organization Name: JEFFS UNOCAL/TOSCO S S #30340
Multiple Jurisdictional Business? (Y/N): No
Business Origin: EDT
Count of Business' CERS User Accounts: 0
Facility Count for Business: 1
Last Submittal Date (any element): Not Reported
Count of Submitted Elements: 0
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: Not Reported
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
UNOCAL #0713			1, 4	RO0002165-ORG
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92621

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DETAILS
County: Orange Record ID: RO0002165 Case ID: 98UT045 Case Closed Date: 3/14/2000 Type of Closure: Closure certification issued Status: Not Reported Case Type Code: S Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.17 miles S	381 ft	83

SITE NAME	MAPS	ID
UNOCAL #0713	1, 4	243056

ADDRESS	CITY	ZIP
745 BREA	BREA	92621

DETAILS
Site Regulated Program Information Site ID: 243056 Site EI ID: T0605902161 Agency Provided Latitude: 33.931931 Agency Provided Longitude: -117.894265 Program Description: Leaking Underground Storage Tank Cleanup Site Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-UST-CA	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
JEFFS UNOCAL/TOSCO S S #30340			1, 4	7250299
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	
DETAILS				
Reported Date: 1998 List: Orange County Underground Tank Facilities Agency: Orange County Health Care Agency				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-UST-CA	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
76 STATION # 0713			1, 4	7850321
ADDRESS			**CITY**	**ZIP**
745 BREA BOULEVARD NORTH			BREA	
DETAILS				
Reported Date: 1998 List: Region #8-Santa Ana Regional Underground Tank Database List Agency: Regional Water Quality Control Board, Region #8				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Service Stations	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
JEFFS UNOCAL/TOSCO S S #30340			1, 4	211089
ADDRESS			**CITY**	**ZIP**
745 N BREA			BREA	92621

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DETAILS
AS OF DATE: 1/3/2002 SITE TYPE: RETAIL TANK TYPE: UST COUNTY: ORANGE

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Service Stations	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
JEFFS UNICAL			1, 4	27645-PD
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92821-3335
DETAILS				
Listing Year: 1997 SIC Category: SERVICE STATIONS-GASOLINE & OIL SIC Code: 554101				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-UST-CA	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
UNION OIL SERVICE STATION 071			1, 4	272641
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92621
DETAILS				
Note: ID has been assigned by ERS Tank Details: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002D612.pdf				

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-UST-CA	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
STATION 0713			1, 4	267512
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92621
DETAILS				
Note: ID has been assigned by ERS Tank Details: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002D655.pdf				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.17 miles S	381 ft	83
SITE NAME			**MAPS**	**ID**
JEFFS UNOCAL			1, 4	CAD983670654
ADDRESS			**CITY**	**ZIP**
745 N BREA BLVD			BREA	92821

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DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAD983670654&pgm_sys_acrnm_in=RCRAINFO

Source Type: Notification
Generator Status Universe: SQG
Generator Status: Small Quantity Generator
NAICS1: GASOLINE STATIONS
Active Site Indicator: H----
Owner Name: JEFF RADFAR
In Handler Universes: Y
In a Universe: Y
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: N
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------
Active Site Converter TSDF: ------
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
UNITED #009	1, 4	10190737

ADDRESS	CITY	ZIP
798 N Brea Blvd	Brea	92821

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DETAILS

General Program & Facility Information
CERS ID: 10190737
Facility ID: Not Reported
Facility Regulator Key ID: Not Reported
Organization Code: 90161914
Business/Organization Name: APRO, LLC
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Business
Count of Business' CERS User Accounts: 9
Facility Count for Business: 229
Last Submittal Date (any element): 12/23/2016 6:47:06 AM
Count of Submitted Elements: 66
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): 319-170-01
Number of Employees: Not Reported
Property Owner Name: ARCP UO PORTFOLIO V, LP
Property Owner Phone Number: 602-778-6223
Property Owner Mailing Address: 2325 E. Camelback Rd, Ste 1200
Property Owner Mailing City: Phoenix
Property Owner Mailing State: AZ
Property Owner Mailing Zip Code: 85016
Property Owner Mailing Country: United States

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.17 miles S	383 ft	84
SITE NAME			**MAPS**	**ID**
UNITED #009			1, 4	FA0024069-ORG
ADDRESS			**CITY**	**ZIP**
798 N BREA BLVD			BREA	92821

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DETAILS
County: Orange Responsible Agency: Orange County Environmental Health Type of Listing: Hazardous Waste Facilities Facility ID: FA0024069 Date Run: 7/13/2018 5:50 PM

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-UST-CA	Listed	0.17 miles S	383 ft	84
SITE NAME			**MAPS**	**ID**
UNITED #009			1, 4	FA0024069-ORG
ADDRESS			**CITY**	**ZIP**
798 N BREA BLVD			BREA	92821

DETAILS
County: Orange Responsible Agency: Orange County, Environmental Health Division Facility ID: FA0024069 Record ID: Not Reported Released Substance(s): Not Reported Current Status: Not Reported Current Status Date: Not Reported Type of Closure: Not Reported Agency Provided Longitude: Not Reported Agency Provided Latitude: Not Reported

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.17 miles S	383 ft	84
SITE NAME			**MAPS**	**ID**
UNITED #009			1, 4	78958
ADDRESS			**CITY**	**ZIP**
798 N BREA BLVD			BREA	92821

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DETAILS

Site Regulated Program Information
Site ID: 78958
Site EI ID: 10190737
Agency Provided Latitude: 33.931641
Agency Provided Longitude: -117.8937

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Program Description: Underground Storage Tank

Evaluation Information
Evaluation Date: 2/8/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): The purpose of this visit is to conduct a routine Hazardous Materials Disclosure inspection. Met with Brenda Martinez. During the inspection the following was observed: Reviewed list of chemicals stored onsite and online. Reviewed training records onsite and online. The facility representative onsite stated that staff are trained at least yearly on emergency response procedures and hazardous waste management. The operator is also aware that new staff must be trained on emergency response within six months of employment and then yearly after that. Reviewed Business Emergency Plan / Plot Plan online. Completely reviewed and approved online CUPA form submittal on California Environmental Reporting System (CERS) The details of this report were discussed with Brenda Martinez. A copy of this report will be emailed and mailed to the facility.
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 2/8/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
EXXON SERVICE STATION #3336	1, 4	238726

ADDRESS	CITY	ZIP
798 N BREA BLVD	BREA	92621

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DETAILS
Site Regulated Program Information Site ID: 238726 Site EI ID: T0605900106 Agency Provided Latitude: 33.931973 Agency Provided Longitude: -117.893777 Program Description: Leaking Underground Storage Tank Cleanup Site Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-LUSTIS-CA	Listed	0.17 miles S	383 ft	**84**
SITE NAME			**MAPS**	**ID**
EXXON SERVICE STATION #3336			1, 4	933097
ADDRESS			**CITY**	**ZIP**
798 BREA BOULEVARD, NORTH			BREA	92621
DETAILS				
Reported Date: 1998				

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-UST-CA	Listed	0.17 miles S	383 ft	84
SITE NAME			**MAPS**	**ID**
EXXON SERVICE STATION #3336			1, 4	933097
ADDRESS			**CITY**	**ZIP**
798 BREA BOULEVARD NORTH			BREA	
DETAILS				
Reported Date: 1998 List: Region #8-Santa Ana Regional Underground Tank Database List Agency: Regional Water Quality Control Board, Region #8				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Service Stations	Listed	0.17 miles S	383 ft	84
SITE NAME			**MAPS**	**ID**
Apro 009			1, 4	152175
ADDRESS			**CITY**	**ZIP**
798 N Brea Blvd			Brea	92821
DETAILS				
Site Added: 1/1/2013				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Service Stations	Listed	0.17 miles S	383 ft	84
SITE NAME			**MAPS**	**ID**
UNITED OIL			1, 4	133209
ADDRESS			**CITY**	**ZIP**
798 N BREA BLVD			Brea	92821

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DETAILS
Sic Code: 5541 Desc: Service Stations/Vehicle Fueling Site Added: 2/2010

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Service Stations	Listed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
ARCO #9	1, 4	211070

ADDRESS	CITY	ZIP
798 N BREA BLVD	ANAHEIM	92821

DETAILS
AS OF DATE: 1/3/2002 SITE TYPE: RETAIL TANK TYPE: UST COUNTY: ORANGE

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-UST-CA	Listed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
EXXON SERVICE STATION	1, 4	229585

ADDRESS	CITY	ZIP
798 N BREA ELVD	BREA	92621

DETAILS
Note: ID has been assigned by ERS Tank Details: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002E8E8.pdf

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	Completed - Case Closed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
EXXON SERVICE STATION #3336	1, 4	T0605900106

ADDRESS	CITY	ZIP
798 N BREA BLVD	BREA	92621

DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900106
Global ID: T0605900106
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 9/24/1987
CUF Case: NO
Lead Agency: SANTA ANA RWQCB (REGION 8)
Case Worker: CAB
Local Agency: Not Reported
RB Case Number: 083000141T
Loc Case Number: Not Reported
File Location: Not Reported
Potential Contaminants of Concern: Gasoline
Potential Media Affected: Aquifer used for drinking water supply
Site History: Not Reported
Begin Date: 8/11/1986
How Discovered: Other Means
How Discovered Description: Not Reported
Stop Method: Not Reported
Stop Method Description: Not Reported
Agency Provided Latitude: 33.9319726
Agency Provided Longitude: -117.8937778

Regulatory Activities Details
More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
APRO LLC DBA UNITED OIL 9	1, 4	CAL000398708

ADDRESS	CITY	ZIP
798 N BREA BLVD	BREA	92821

DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAL000398708&pgm_sys_acrnm_in=RCRAINFO

Source Type: Implementer
Generator Status Universe: N
Generator Status: Non-Generator
NAICS1: OTHER GASOLINE STATIONS
Active Site Indicator: H----
Owner Name: APRO LLC
Operator Name: TOM ROBINS
In Handler Universes: Y
In a Universe: Y
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: Y
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: Y
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UST-CA	Listed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
UNITED #009	1, 4	141830

ADDRESS	CITY	ZIP
798 N Brea Blvd	Brea	92821

DETAILS

More Information on Site? Go to Following Link:
http://geotracker.waterboards.ca.gov/search.asp
CERSID: 10190737
Global ID: FA0024069
COUNTY: Orange
Permitting Agency: Orange County Environmental Health
Agency Provided Latitude: 33.93164
Agency Provided Longitude: -117.8937
PROJECT TYPE: Not Reported
RB Case Number: Not Reported
LOC Case Number: Not Reported
Case Worker: Not Reported
MTBE DATE: Not Reported
GW CONC (PPB): Not Reported
MATRIX: Not Reported

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
UST-CRSP-CA	Listed	0.17 miles S	383 ft	84

SITE NAME	MAPS	ID
UNITED #009	1, 4	78958

ADDRESS	CITY	ZIP
798 N BREA BLVD	BREA	92821

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DETAILS

Site Regulated Program Information
Site ID: 78958
Site EI ID: 10190737
Agency Provided Latitude: 33.931641
Agency Provided Longitude: -117.8937

Program Description: Underground Storage Tank

Evaluation Information
Evaluation Date: 2/8/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): The purpose of this visit is to conduct a routine Hazardous Materials Disclosure inspection. Met with Brenda Martinez. During the inspection the following was observed: Reviewed list of chemicals stored onsite and online. Reviewed training records onsite and online. The facility representative onsite stated that staff are trained at least yearly on emergency response procedures and hazardous waste management. The operator is also aware that new staff must be trained on emergency response within six months of employment and then yearly after that. Reviewed Business Emergency Plan / Plot Plan online. Completely reviewed and approved online CUPA form submittal on California Environmental Reporting System (CERS) The details of this report were discussed with Brenda Martinez. A copy of this report will be emailed and mailed to the facility.
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 2/8/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Onsite with Brenda Martinez to witness the underground storage tank(UST) annual monitor certification and conduct a routine UST inspection. Ramon Sanchez with Petrotechs is the contractor handling the monitoring certification. Mr. Sanchez presented his Veeter Root, VMI and ICC certification, all are current. During the inspection the following was observed: 1. All sumps were clear of debris and water. Test boots on product secondary lines in piping sumps were pulled back and open, and all the sensors were located in lowest points in sumps. The compliance binder and the California Environmental Reporting System (CERS) database contained the following documents: 1. Leak response plan; 2. Maintenance log and daily monitoring log; 3. Monitoring Procedure; 4. Certificate of Financial Responsibility; 5. Designated Operator; 6. Monthly Inspection Checklist; 7. Yearly training; 8. Monitoring System Certification from the previous year; 9. Secondary Containment [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: UST
Evaluation Source: CERS
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.18 miles S	383 ft	85
SITE NAME			**MAPS**	**ID**
K L LTD CLEANERS			1, 4	RO0000361-ORG
ADDRESS			**CITY**	**ZIP**
790 N BREA BLVD			BREA	92621

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DETAILS
County: Orange Type: Industrial Site Cleanups Case ID: 92IC016 Record ID: RO0000361 Released Substance(s: PERCHLOROETHYLENE Status Description: CLOSED Case Closed Date: 10/29/1992 Type of Closure: Closed pre 1994, file review required to determine closure type

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.18 miles S	383 ft	85
SITE NAME			**MAPS**	**ID**
K&L CLEANERS			1, 4	253159
ADDRESS			**CITY**	**ZIP**
790 BREA BOULEVARD N			BREA	

DETAILS
Site Regulated Program Information Site ID: 253159 Site EI ID: SLT8R1474066 Agency Provided Latitude: 33.931188 Agency Provided Longitude: -117.893272 Program Description: Cleanup Program Site Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
DryCleaners-CA	Listed	0.18 miles S	383 ft	85

SITE NAME	MAPS	ID
K L LTD CLEANERS	1, 4	CAD982437733

ADDRESS	CITY	ZIP
790 N BREA BLVD	BREA	926210000

DETAILS

EPA ID: CAD982437733
Create Date: 3/20/1991
Facility Act Ind: N
Inact Date: 6/30/1998
Facility Street2: Not Reported
County: Orange
Latitude: 33.931214
Longitude: -117.894098
Mailing Name: Not Reported
Facility Mailing Address: 790 N BREA BLVD
Facility Mailing Address 2: Not Reported
Facility Mailing City: BREA
Facility Mailing State: CA
Facility Mailing Zip Code: 928213334
Region Code: 4
Owner Name: DANIEL AGUILAR
Owner Address: 790 BREA BLVD
Owner Address2: Not Reported
Owner City: BREA
Owner State: CA
Owner Zip Code: 926210000
Owner Phone Number: 7145297378
Owner Fax Number: Not Reported
Contact Name: DAN AGUILAR
Contact Address: INACT PER NONDELIVERABLE VQ98 NK
Contact Address2: Not Reported
Contact City: BREA

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
DryCleaners-CA	Listed	0.18 miles S	383 ft	85

SITE NAME	MAPS	ID
KL LTD CLEANERS	1, 4	CAL000021712

ADDRESS	CITY	ZIP
790 N BREA BLVD	BREA	926210000

DETAILS

EPA ID: CAL000021712
Create Date: 11/14/1989
Facility Act Ind: N
Inact Date: 6/30/1998
Facility Street2: Not Reported
County: Orange
Latitude: 33.69634
Longitude: -117.892279
Mailing Name: Not Reported
Facility Mailing Address: 790 N BREA BLVD
Facility Mailing Address 2: Not Reported
Facility Mailing City: BREA
Facility Mailing State: CA
Facility Mailing Zip Code: 928213334
Region Code: 4
Owner Name: AGUILAR DANIEL CHAPA
Owner Address: --
Owner Address2: Not Reported
Owner City: --
Owner State: 99
Owner Zip Code: --
Owner Phone Number: 0000000000
Owner Fax Number: Not Reported
Contact Name: --
Contact Address: INACT PER NONDELIVERABLE VQ98 NK
Contact Address2: Not Reported
Contact City: --

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-SLIC-CA	Listed	0.18 miles S	383 ft	85
SITE NAME			MAPS	ID
K&L CLEANERS			1, 4	1282000
ADDRESS			CITY	ZIP
790 BREA BLVD. N.			BREA	
DETAILS				
Reported Date: 1998 List: Region #8-SLIC List Agency: Regional Water Quality Control Board, Region #8				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.18 miles S	383 ft	85
SITE NAME			MAPS	ID
K L LTD CLEANERS			1, 4	CAD982437733
ADDRESS			CITY	ZIP
790 N BREA BLVD			BREA	92821

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DETAILS
Additional details may be found online using the following link: http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAD982437733&pgm_sys_acrnm_in=RCRAINFO Source Type: Notification Generator Status Universe: SQG Generator Status: Small Quantity Generator Active Site Indicator: H---- Owner Name: DANIEL AGUILAR Operator Name: NOT REQUIRED In Handler Universes: Y In a Universe: Y Short Term Generator: N Importer Activity: N Mixed Waste Generator: N Transporter Activity: N Transfer Facility: N Recycler Activity: N Onsite Burner Exemption: N Furnace Exemption: N Underground Injection Activity: N Receives Waste From Off-site: N Universal Waste: N Universal Waste Destination Facility: N Used Oil Universe: NNNNNNN Federal Universal Waste: N Active Site Federally Regulated TSDF: ------ Active Site Converter TSDF: ------ More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SLIC-Closed-CA	Completed - Case Closed	0.18 miles S	383 ft	85
SITE NAME			**MAPS**	**ID**
K&L CLEANERS			1, 4	SLT8R1474066
ADDRESS			**CITY**	**ZIP**
790 BREA BOULEVARD N			BREA	

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DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SLT8R1474066
Global ID: SLT8R1474066
Case Type: Cleanup Program Site
Status: Completed - Case Closed
Status Date: 10/29/1992
CUF Case: NO
Lead Agency: SANTA ANA RWQCB (REGION 8)
Case Worker: Not Reported
Local Agency: Not Reported
RB Case Number: Not Reported
Loc Case Number: 92IC016
File Location: Local Agency
Potential Contaminants of Concern: Tetrachloroethylene (PCE)
Potential Media Affected: Soil
Site History: Not Reported
Begin Date: Not Reported
How Discovered: Not Reported
How Discovered Description: Not Reported
Stop Method: Not Reported
Stop Method Description: Not Reported
Agency Provided Latitude: 33.931188
Agency Provided Longitude: -117.893272

Regulatory Activities Details
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Service Stations	Listed	0.18 miles S	393 ft	86
SITE NAME			**MAPS**	**ID**
THE CAPITAL GROUP			1, 4	211098
ADDRESS			**CITY**	**ZIP**
135 W STATE COLLEGE			BREA	92621

DETAILS

AS OF DATE: 1/3/2002
SITE TYPE: PRIVATE
TANK TYPE: UST
COUNTY: ORANGE

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.19 miles S	382 ft	87

SITE NAME	MAPS	ID
SAI CLEANERS	1, 4	116373-SC

ADDRESS	CITY	ZIP
788 N BREA BLVD	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=116373
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 116373
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: AJAY
Facility Representative Last Name: PATEL
Location Area Code: 714
Location Phone Number: 2559751
Location Phone Extension: Not Reported
Mailing Address: 788 N BREA BLVD
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92821
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 2559751
Mailing Phone Extension: Not Reported
Mailing Representative First Name: AJAY
Mailing Representative Last Name: PATEL

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Cleaners-CA	Listed	0.19 miles S	382 ft	87

SITE NAME	MAPS	ID
S A I Cleaners	1, 4	20366

ADDRESS	CITY	ZIP
788 N Brea Blvd	Brea	92821

DETAILS

Facility and Program Information
County: Orange
Executive First Name: Pritiben
Executive Last Name: Patel
Professional Title: Not Reported
Executive Title: Owner
Executive Gender: Male
ZIP Four: 3334
Carrier Route: C026
Delivery Point Barcode: 889
Metro Area: LA-Long Bch, CA
Neighborhood: Not Reported
Phone Number Combined: (714) 255-9751
Fax Number Combined: 0
Toll Free Number Combined: 0
Website: Not Reported
Company Description: Not Reported
Primary SIC Code: 721201
Primary SIC Description: Cleaners
Primary SIC Ad Size: Bold
Primary SIC Year Appeared: 1998
SIC Code 1: 721201
SIC Code 1 Description: Cleaners
SIC Code 1 Ad Size: Not Reported
SIC Code 1 Year Appeared: Not Reported
SIC Code 2: 734902
SIC Code 2 Description: Janitor Service

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Cleaners-CA	Listed	0.19 miles S	382 ft	87

SITE NAME	MAPS	ID
Express 3 Cleaners	1, 4	12767

ADDRESS	CITY	ZIP
788 N Brea Blvd	Brea	92821

DETAILS

Facility and Program Information
County: Orange
Executive First Name: Not Reported
Executive Last Name: Not Reported
Professional Title: Not Reported
Executive Title: Not Reported
Executive Gender: Not Reported
ZIP Four: 3334
Carrier Route: C026
Delivery Point Barcode: 889
Metro Area: LA-Long Bch, CA
Neighborhood: Not Reported
Phone Number Combined: (714) 256-4570
Fax Number Combined: 0
Toll Free Number Combined: 0
Website: Not Reported
Company Description: Not Reported
Primary SIC Code: 721201
Primary SIC Description: Cleaners
Primary SIC Ad Size: Regular
Primary SIC Year Appeared: 2014
SIC Code 1: 721201
SIC Code 1 Description: Cleaners
SIC Code 1 Ad Size: Not Reported
SIC Code 1 Year Appeared: Not Reported
SIC Code 2: Not Reported
SIC Code 2 Description: Not Reported
More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
DryCleaners-CA	Listed	0.19 miles S	382 ft	87

SITE NAME	MAPS	ID
SAI CLEANERS	1, 4	CAD983663402

ADDRESS	CITY	ZIP
788 N BREA BLVD	BREA	906210000

DETAILS

EPA ID: CAD983663402
Create Date: 3/30/1993
Facility Act Ind: N
Inact Date: 6/30/2009
Facility Street2: Not Reported
County: Orange
Latitude: 0
Longitude: 0
Mailing Name: Not Reported
Facility Mailing Address: 788 N BREA BLVD
Facility Mailing Address 2: Not Reported
Facility Mailing City: BREA
Facility Mailing State: CA
Facility Mailing Zip Code: 928213334
Region Code: 9
Owner Name: AJAY PATEL
Owner Address: 788 N BREA BLVD
Owner Address2: Not Reported
Owner City: BREA
Owner State: CA
Owner Zip Code: 928213334
Owner Phone Number: 7142559751
Owner Fax Number: Not Reported
Contact Name: AJAY PATEL - OWNER
Contact Address: 788 N BREA BLVD
Contact Address2: Not Reported
Contact City: BREA

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Cleaners	Listed	0.19 miles S	382 ft	87
SITE NAME			**MAPS**	**ID**
Sai Cleaners			1, 4	75034
ADDRESS			**CITY**	**ZIP**
788 N Brea Blvd			Brea	
DETAILS				
Site Added: 1/1/2013				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.19 miles S	382 ft	87
SITE NAME			**MAPS**	**ID**
SAI CLEANERS			1, 4	CAD983663402
ADDRESS			**CITY**	**ZIP**
788 N BREA BLVD			BREA	92821

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DETAILS
Additional details may be found online using the following link: http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAD983663402&pgm_sys_acrnm_in=RCRAINFO Source Type: Notification Generator Status Universe: SQG Generator Status: Small Quantity Generator Active Site Indicator: H---- Owner Name: AJAY PATEL In Handler Universes: Y In a Universe: Y Short Term Generator: N Importer Activity: N Mixed Waste Generator: N Transporter Activity: N Transfer Facility: N Recycler Activity: N Onsite Burner Exemption: N Furnace Exemption: N Underground Injection Activity: N Receives Waste From Off-site: N Universal Waste: N Universal Waste Destination Facility: N Used Oil Universe: NNNNNNN Federal Universal Waste: N Active Site Federally Regulated TSDF: ------ Active Site Converter TSDF: ------ Active Site State Regulated TSDF: ------ More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
LINN OPERATING, INC	1, 4	154562-SC

ADDRESS	CITY	ZIP
2000 TONNER CANYON RD	BREA	92821

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DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=154562
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 154562
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 200
Location Zip Code Extension: Not Reported
Facility Representative First Name: KELLY
Facility Representative Last Name: ROBERTS
Location Area Code: 714
Location Phone Number: 2571613
Location Phone Extension: Not Reported
Mailing Address: 2000 TONNER CANYON RD
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92821
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 2571613
Mailing Phone Extension: Not Reported
Mailing Representative First Name: KELLY
Mailing Representative Last Name: ROBERTS

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AST-CA	Listed	0.19 miles S	462 ft	88
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	5922
ADDRESS			**CITY**	**ZIP**
2000 TONNER CANYON RD			BREA	92821

DETAILS

County: Orange
CUPA Office County: Orange
Owner Name: LINN WESTERN OPERATING INC
Total Gallons: 50000

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AST-CRSP-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
Bridge Energy LLC	1, 4	412971

ADDRESS	CITY	ZIP
2000 TONNER CANYON RD	BREA	92821

DETAILS

Site Regulated Program Information
Site ID: 412971
Site EI ID: 10559335
Agency Provided Latitude: 33.938133
Agency Provided Longitude: -117.876371

Program Description: Aboveground Petroleum Storage

Evaluation Information
Evaluation Date: 6/30/2016
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): Follow up complaint. The root cause of the fire has been investigated by the facility. The placement of the motors for the lube oil process have been moved away from the totes regulated under APSA to prevent this type of fire in the future. Close Complaint
Evaluation Division: Orange County Environmental Health
Evaluation Program: APSA
Evaluation Source: CERS

Evaluation Date: 5/3/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): INSPECTOR COMMENTS: On-site for a CalARP routine inspection. Met with Vince VanDelden of Linn Western and is the contact for the facility. This is a Program Level 3 facility. The updated RMP was completed in July 2015 and certified on 07/16/15 on the EPA Web-Site and the CalARP Certification was signed on 06/23/15. The RMP was reviewed this date as part of the inspection. --Registration: Was updated on the EPA web site in April 2015 as part of the 2015 RMP. -- Executive Summary: The Executive Summary was reviewed this date and appears complete. -- The Hazard Assessment: The Hazard assessment was completed in July 2014. The 2014 WCS is 1.4 miles and the 2014 ACS is 0.2 miles. The map showing the affected area of the 2014 WCS (1.4 miles) was reviewed. The estimated residential population within distance to the endpoint from the 2014 WCS showed that 383 residents would fall within the toxic endpoint. -- Process Safety Information: The safety information [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: CalARP
Evaluation Source: CERS

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
LINN OPERATING INC	1, 4	10559335

ADDRESS	CITY	ZIP
2000 TONNER CANYON RD	BREA	92821

DETAILS

General Program & Facility Information
CERS ID: 10559335
Facility ID: FA0049538
Facility Regulator Key ID: FA0049538
Organization Code: 90509314
Business/Organization Name: LINN OPERATING INC
Multiple Jurisdictional Business? (Y/N): No
Business Origin: EDT
Count of Business' CERS User Accounts: 2
Facility Count for Business: 1
Last Submittal Date (any element): 11/23/2016 10:12:21 AM
Count of Submitted Elements: 14
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 20
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-AST-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
BRIDGE ENERGY LLC	1, 4	FA0049538-ORG

ADDRESS	CITY	ZIP
2000 TONNER CANYON RD	Brea	92821

DETAILS

Responsible Agency: Orange County Environmental Health
County: Orange
Facility ID: FA0049538
Care Of: Not Reported
Report Date: Not Reported

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
Brea	1, 4	8 30I026227-ORG

ADDRESS	CITY	ZIP
2000 Tonner Canyon Rd	Brea	92821

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DETAILS
Industrial Permit Information County: Orange Type: Industrial General Permits GIS Mapper URL: http://app102283.giscloud.com/ URL Instructions: Go to URL, under search, enter industrial and Select Industrial General Permits Mapper. WD ID: 8 30I026227 Application ID: 457368 Permit Type: Industrial Status: Active Status Date: 10/22/2015 Owner/Operator Name: LINN Operating Inc Owner/Operator Address: 5201 Truxtun Avenue Owner/Operator City: Bakersfield Owner/Operator State: California Owner/Operator Zip: 93309 Country: United States Agency Provided Longitude: -117.8783089 Agency Provided Latitude: 33.940648 B Type Inspections from 2009-2014 : Not Reported

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
BRIDGE ENERGY LLC	1, 4	FA0049538-ORG

ADDRESS	CITY	ZIP
2000 TONNER CANYON RD	BREA	92821

DETAILS
County: Orange Responsible Agency: Orange County Environmental Health Type of Listing: Hazardous Waste Facilities Facility ID: FA0049538 Date Run: 7/13/2018 5:50 PM

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
Brea	1, 4	455492

ADDRESS	CITY	ZIP
2000 TONNER CANYON RD	BREA	92821

DETAILS

Site Regulated Program Information
Site ID: 455492
Site EI ID: 836890
Agency Provided Latitude: 33.936946
Agency Provided Longitude: -117.859573

Program Description: Industrial Facility Storm Water

Evaluation Information
: Not Reported
:Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.19 miles S	462 ft	88

SITE NAME	MAPS	ID
Bridge Energy LLC	1, 4	455592

ADDRESS	CITY	ZIP
2000 TONNER CANYON ROAD	BREA	92821

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DETAILS
Site Regulated Program Information Site ID: 455592 Site EI ID: 857948 Agency Provided Latitude: 33.936946 Agency Provided Longitude: -117.859573 Program Description: Industrial Facility Storm Water Evaluation Information : Not Reported :Violation Information : Not Reported :Enforcement Information : Not Reported :Chemical Information : Not Reported :Coordinate Information : Not Reported :

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.19 miles S	462 ft	88
SITE NAME			**MAPS**	**ID**
Bridge Energy LLC			1, 4	412971
ADDRESS			**CITY**	**ZIP**
2000 TONNER CANYON RD			BREA	92821

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DETAILS
Site Regulated Program Information Site ID: 412971 Site EI ID: 10559335 Agency Provided Latitude: 33.938133 Agency Provided Longitude: -117.876371 Program Description: Aboveground Petroleum Storage Program Description: Chemical Storage Facilities Program Description: Hazardous Chemical Management Program Description: Hazardous Waste Generator Evaluation Information Evaluation Date: 6/30/2016 Violations Found? (Y/N): No Evaluation General Type: Other/Unknown Evaluation Type: Other, not routine, done by local agency Evaluation Note(s): Follow up complaint. The root cause of the fire has been investigated by the facility. The placement of the motors for the lube oil process have been moved away from the totes regulated under APSA to prevent this type of fire in the future. Close Complaint Evaluation Division: Orange County Environmental Health Evaluation Program: APSA Evaluation Source: CERS Evaluation Date: 5/3/2016 Violations Found? (Y/N): No More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.19 miles S	462 ft	88
SITE NAME			**MAPS**	**ID**
BRIDGE ENERGY LLC BREA FACILITY			1, 4	CAL000430847
ADDRESS			**CITY**	**ZIP**
2000 TONNER CANYON RD			BREA	92821

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DETAILS
Additional details may be found online using the following link: http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAL000430847&pgm_sys_acrnm_in=RCRAINFO Source Type: Implementer Generator Status Universe: N Generator Status: Non-Generator NAICS1: PETROLEUM REFINERIES Active Site Indicator: H---- Owner Name: BRIDGE ENERGY LLC Operator Name: VINCE VANDELDEN In Handler Universes: Y In a Universe: Y Short Term Generator: N Importer Activity: N Mixed Waste Generator: N Transporter Activity: Y Transfer Facility: N Recycler Activity: N Onsite Burner Exemption: N Furnace Exemption: N Underground Injection Activity: N Receives Waste From Off-site: N Universal Waste: N Universal Waste Destination Facility: Y Used Oil Universe: NNNNNNN Federal Universal Waste: N Active Site Federally Regulated TSDF: ------ More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.2 miles S	382 ft	89

SITE NAME	MAPS	ID
VONS A SAFEWAY CO.	1, 4	156489-SC

ADDRESS	CITY	ZIP
780 N BREA BLVD	BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=156489 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 156489 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: MIKE Facility Representative Last Name: CLIATT Location Area Code: 626 Location Phone Number: 8216192 Location Phone Extension: Not Reported Mailing Address: 618 MICHILLINDA AVE Mailing City: ARCADIA Mailing State: CA Mailing Zip Code: 91007 Mailing Zip Code Extension: Not Reported Mailing Area Code: 626 Mailing Phone Number: 8216192 Mailing Phone Extension: Not Reported Mailing Representative First Name: MIKE Mailing Representative Last Name: CLIATT More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.2 miles S	382 ft	89
SITE NAME			**MAPS**	**ID**
2326 Vons A Safeway Company			1, 4	10173671
ADDRESS			**CITY**	**ZIP**
780 N Brea Blvd			Brea	92821

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DETAILS

General Program & Facility Information
CERS ID: 10173671
Facility ID: Not Reported
Facility Regulator Key ID: Not Reported
Organization Code: 90139684
Business/Organization Name: Vons A Safeway Company
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Letter
Count of Business' CERS User Accounts: 2
Facility Count for Business: 233
Last Submittal Date (any element): 3/22/2016 11:15:00 AM
Count of Submitted Elements: 32
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: Not Reported
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.2 miles S	382 ft	89
SITE NAME			**MAPS**	**ID**
VONS A SAFEWAY COMPANY			1, 4	FA0058613-ORG
ADDRESS			**CITY**	**ZIP**
780 N BREA BLVD			BREA	92821

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DETAILS
County: Orange Responsible Agency: Orange County Environmental Health Type of Listing: Hazardous Waste Facilities Facility ID: FA0058613 Date Run: 7/13/2018 5:50 PM

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.2 miles S	382 ft	89
SITE NAME			**MAPS**	**ID**
2326 Vons A Safeway Company			1, 4	47668
ADDRESS			**CITY**	**ZIP**
780 N BREA BLVD			BREA	92821

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DETAILS

Site Regulated Program Information
Site ID: 47668
Site EI ID: 10173671
Agency Provided Latitude: 33.931252
Agency Provided Longitude: -117.894229

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 1/16/2018
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): The hazardous materials found here include: - R-22 refrigerants throughout the freezer unit. Please contact Shruthi Sill at ssill@ochca.com with regards to any questions.
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 3/3/2017
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Vons: On site to conduct a routine hazardous waste inspection. Consent to enter, inspect and take any necessary photos was given by the Store Manager, Tom Snyder. Ms. Synder confirmed that there were 40 employees present at the site. The hazardous waste found here: - Toxic waste (consumer products) All containers of hazardous waste were covered and labeled properly. Accumulation start dates were added on containers prior to adding waste. Mr. Snyder was educated on hazardous waste labeling requirements and EMPTY containers standards. Manifests were available and were reviewed and waste is being picked up by Stericycle. Walked the perimeter of the site, and there were no hazardous waste spills or discharges observed during this inspection. Emergency response information was posted inside the lunch area. The common dumpster outside the shop was checked and it was empty. The weekly inspections are done by the Receiving Clerk and the Store [Truncated]
Evaluation Division: Orange County Environmental Health

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.2 miles S	382 ft	89

SITE NAME	MAPS	ID
VONS STORE #2326	1, 4	CAL000442500

ADDRESS	CITY	ZIP
780 N BREA BLVD	BREA	92821

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DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAL000442500&pgm_sys_acrnm_in=RCRAINFO

Source Type: Implementer
Generator Status Universe: N
Generator Status: Non-Generator
NAICS1: OTHER DIRECT SELLING ESTABLISHMENTS
Active Site Indicator: H----
Owner Name: THE VONS COMPANIES
Operator Name: SHARON SANGER
In Handler Universes: Y
In a Universe: Y
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: Y
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: Y
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.2 miles S	382 ft	89

SITE NAME	MAPS	ID
VONS STORE #2326	1, 4	CAL000353893

ADDRESS	CITY	ZIP
780 N BREA BLVD	BREA	92821

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DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAL000353893&pgm_sys_acrnm_in=RCRAINFO

Source Type: Implementer
Generator Status Universe: N
Generator Status: Non-Generator
NAICS1: WAREHOUSE CLUBS AND SUPERCENTERS
Active Site Indicator: H----
Owner Name: ALBERTSONS COMPANIES
Operator Name: SHARON SANGER
In Handler Universes: Y
In a Universe: Y
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: Y
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: Y
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.21 miles W	391 ft	90

SITE NAME	MAPS	ID
BRIAN DINI	1, 4	CAC002998085

ADDRESS	CITY	ZIP
943 ORANGEWOOD DRIVE	BREA	92821

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DETAILS
Additional details may be found online using the following link: http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAC002998085&pgm_sys_acrnm_in=RCRAINFO Source Type: Implementer Generator Status Universe: N Generator Status: Non-Generator NAICS1: ALL OTHER WASTE MANAGEMENT SERVICES Active Site Indicator: ----- Owner Name: BRIAN DINI Operator Name: BRIAN DINI In Handler Universes: N In a Universe: N Short Term Generator: N Importer Activity: N Mixed Waste Generator: N Transporter Activity: N Transfer Facility: N Recycler Activity: N Onsite Burner Exemption: N Furnace Exemption: N Underground Injection Activity: N Receives Waste From Off-site: N Universal Waste: N Universal Waste Destination Facility: Y Used Oil Universe: NNNNNNN Federal Universal Waste: N Active Site Federally Regulated TSDF: ------ More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO & SONS TRUCKING INC	1, 4	71381-SC

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	BREA	92821

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DETAILS
District: South Coast AQMD Compliance URL: http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=71381 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 71381 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 26 Location Zip Code Extension: Not Reported Facility Representative First Name: STEPHEN P Facility Representative Last Name: NIETO Location Area Code: 714 Location Phone Number: 9906855 Location Phone Extension: Not Reported Mailing Address: P O BOX 760 Mailing City: YORBA LINDA Mailing State: CA Mailing Zip Code: 92885 Mailing Zip Code Extension: Not Reported Mailing Area Code: 714 Mailing Phone Number: 9906855 Mailing Phone Extension: Not Reported Mailing Representative First Name: STEPHEN P Mailing Representative Last Name: NIETO More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AST-CA	Listed	0.22 miles N	612 ft	**91**
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	5517
ADDRESS			**CITY**	**ZIP**
1281 BREA CANYON RD			BREA	92821
DETAILS				
County: Orange CUPA Office County: Orange Owner Name: NIETO & SONS TRUCKING INC Total Gallons: 1320				

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AST-CRSP-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO & SONS TRUCKING INC	1, 4	412993

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	BREA	92821

DETAILS

Site Regulated Program Information
Site ID: 412993
Site EI ID: 10539427
Agency Provided Latitude: 33.943939
Agency Provided Longitude: -117.88002

Program Description: Aboveground Petroleum Storage

Evaluation Information
Evaluation Date: 12/2/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): On site to conduct a routine hazardous material and business emergency plan inspection. Consent to enter, inspect and take any necessary pictures was given by Dave Nieto at 10:40 am. Walked the site with Mr. Nieto and observed the hazardous material storage areas throughout the truck shop and repair area and the following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: - Diesel = 6000 gallons - Motor oil = 800 gallons - ATF = 100 gallons - DEF = 250 gallons - Oxygen = 600 CF - Acetylene = 650 CF - Used Oil = 1250 gallons Business emergency plan was accessible and present on-site. Emergency response equipment was present on-site and serviced. Annual employee training records were available for review and training was completed in May 2016. The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are above disclosure thresholds. If there is a change [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 12/2/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): On site to conduct a routine hazardous waste inspection. Consent to enter, inspect and take any necessary pictures was given by the Vice-President, Dave Nieto at 10:40 am. The hazardous waste found here: - Used Oil = 1250 gallons (two tanks) - Used oil filters = 200 items - Parts washer = 15 gallons The used oil filter drums did not have an accumulation start date and the used oil tank completely faded hazardous waste label. A blue poly drum was observed during the inspection, and per Mr. Nieto it is pressure wash water and not a waste. Manifests were available and were reviewed, and waste was being picked up by Asbury. Walked the perimeter of the site, and there were no hazardous waste spills or discharges observed during this inspection. Weekly inspections are performed by the Mechanic per Mr. Nieto. Emergency response information was posted near the entrance to the office. The dumpster was checked and there was no hazardous waste. Annual [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: HW
Evaluation Source: CERS

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
VERIZON WIRELESS (TONNER CANYON)	1, 4	10165101

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	BREA	92821

DETAILS

General Program & Facility Information
CERS ID: 10165101
Facility ID: Not Reported
Facility Regulator Key ID: Not Reported
Organization Code: 90130042
Business/Organization Name: Verizon Wireless [Southern California]
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Letter
Count of Business' CERS User Accounts: 7
Facility Count for Business: 2778
Last Submittal Date (any element): 10/17/2016 10:29:11 AM
Count of Submitted Elements: 8
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 0
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO & SONS TRUCKING INC	1, 4	10539427

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	BREA	92821

DETAILS

General Program & Facility Information
CERS ID: 10539427
Facility ID: FA0027341
Facility Regulator Key ID: FA0027341
Organization Code: 90478912
Business/Organization Name: NIETO & SONS TRUCKING INC
Multiple Jurisdictional Business? (Y/N): No
Business Origin: EDT
Count of Business' CERS User Accounts: 1
Facility Count for Business: 1
Last Submittal Date (any element): 11/23/2016 3:19:11 PM
Count of Submitted Elements: 6
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 10
Property Owner Name: Not Reported
Property Owner Phone Number: Not Reported
Property Owner Mailing Address: Not Reported
Property Owner Mailing City: Not Reported
Property Owner Mailing State: Not Reported
Property Owner Mailing Zip Code: Not Reported
Property Owner Mailing Country: Not Reported
More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-AST-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO & SONS TRUCKING INC	1, 4	FA0027341-ORG

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	Brea	92821

DETAILS

Responsible Agency: Orange County Environmental Health
County: Orange
Facility ID: FA0027341
Care Of: NIETO AND SONS TRUCKING INC
Report Date: Not Reported

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO & SONS TRUCKING INC	1, 4	FA0027341-ORG

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	BREA	92821

DETAILS

County: Orange
Responsible Agency: Orange County Environmental Health
Type of Listing: Hazardous Waste Facilities
Facility ID: FA0027341
Date Run: 7/13/2018 5:50 PM

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
Verizon Wireless: Tonner Canyon	1, 4	418962

ADDRESS	CITY	ZIP
1281 BREA CANYON ROAD	BREA	92821

DETAILS

Site Regulated Program Information
Site ID: 418962
Site EI ID: 10165101
Agency Provided Latitude: 33.94394
Agency Provided Longitude: -117.88002

Program Description: Chemical Storage Facilities

Evaluation Information
Evaluation Date: 5/16/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Onsite to conduct a routine hazardous material business emergency plan HMBEP inspection. Consent to inspect and take photos if necessary was granted by the technician, Jerry Lash. No photos were taken on this date. The following were observed: 2 x 24 back-up battery cells (Unigy II) CERS submittal dated 2/17/16 was verified during this inspection. Facility Information: ACCEPTED, Emergency Response and Training Plans: ACCEPTED Hazardous Materials Inventory: NOT ACCEPTED. Please revise Annotated Site Map #1 to show the storm channel inlet adjacent to the wireless site and the location of the ?Fire Water Tank.? A copy of this report will be sent to myrna.allende@verizonwireless.com
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 5/13/2016
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): Not Reported
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO & SONS TRUCKING INC	1, 4	412993

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	BREA	92821

DETAILS

Site Regulated Program Information
Site ID: 412993
Site EI ID: 10539427
Agency Provided Latitude: 33.943939
Agency Provided Longitude: -117.88002

Program Description: Aboveground Petroleum Storage

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 12/2/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): On site to conduct a routine hazardous material and business emergency plan inspection. Consent to enter, inspect and take any necessary pictures was given by Dave Nieto at 10:40 am. Walked the site with Mr. Nieto and observed the hazardous material storage areas throughout the truck shop and repair area and the following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: - Diesel = 6000 gallons - Motor oil = 800 gallons - ATF = 100 gallons - DEF = 250 gallons - Oxygen = 600 CF - Acetylene = 650 CF - Used Oil = 1250 gallons Business emergency plan was accessible and present on-site. Emergency response equipment was present on-site and serviced. Annual employee training records were available for review and training was completed in May 2016. The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are above disclosure thresholds. If there is a change [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 12/2/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-UST-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
CHAMPION CHEMICALS INC	1, 4	220829

ADDRESS	CITY	ZIP
1281 BREA CANYON ROAD	BREA	92621

DETAILS

Note: ID has been assigned by ERS
Tank Details:
http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002E6BE.pdf

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
HWT-CA	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO & SONS TRUCKING INC	1, 4	503

ADDRESS	CITY	ZIP
1281 BREA CANYON ROAD	BREA	92821

DETAILS

URL:
http://hwts.dtsc.ca.gov/hwts_Reports/ReportPages/Report04.aspx?trans=503
Registration Number: 503
Registration Date: 6/16/2018
Expiration Date: 6/30/2019
Last Updated: 6/25/2018
Record Entered: 3/5/1982
Standing Flag: Active
County: ORANGE
Mailing Address: P O BOX 760 YORBA LINDA, CA 92885
Contact: STEPHEN P NIETO
Position: PRES
Contact Number: 7149906855
Owner(s): THOMAS E. NIETO STEPHEN P. NIETO DAVID J. NIETO ANTHONY RUSSELL
EPA ID(s): CAL000170841 CAT080016116

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
BROOKER ASSC INC	1, 4	CAD981164668

ADDRESS	CITY	ZIP
1281 N BREA CANYON RD	BREA	92821

DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAD981164668&pgm_sys_acrnm_in=RCRAINFO

Source Type: Notification
Generator Status Universe: N
Generator Status: Non-Generator
Active Site Indicator: -----
Owner Name: W AND J BROOKER
Operator Name: NOT REQUIRED
In Handler Universes: N
In a Universe: N
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: N
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------
Active Site Converter TSDF: ------

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO AND SONS TRUCKING, INC.	1, 4	CAL000170841

ADDRESS	CITY	ZIP
1281 BREA CANYON RD	BREA	92821

DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAL000170841&pgm_sys_acrnm_in=RCRAINFO

Source Type: Implementer
Generator Status Universe: N
Generator Status: Non-Generator
NAICS1: OTHER WASTE COLLECTION
Active Site Indicator: H----
Owner Name: STEPHEN P NIETO
Operator Name: THOMAS E. NIETO
In Handler Universes: Y
In a Universe: Y
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: Y
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: Y
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
CHAMPION CHEMS INC	1, 4	CAT080015860

ADDRESS	CITY	ZIP
1281 BREA CYN RD	BREA	92821

DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAT080015860&pgm_sys_acrnm_in=RCRAINFO

Source Type: Notification
Generator Status Universe: N
Generator Status: Non-Generator
Active Site Indicator: -----
Owner Name: CHAMPION CHEMICALS INC
Operator Name: NOT REQUIRED
In Handler Universes: N
In a Universe: N
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: N
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------
Active Site Converter TSDF: ------

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.22 miles N	612 ft	91

SITE NAME	MAPS	ID
NIETO AND SONS TRUCKING INC	1, 4	CAT080016116

ADDRESS	CITY	ZIP
1281 BREA CANYON ROAD	BREA	92821

DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAT080016116&pgm_sys_acrnm_in=RCRAINFO

Source Type: Implementer
Generator Status Universe: SQG
Generator Status: Small Quantity Generator
NAICS1: GENERAL FREIGHT TRUCKING, LOCAL
Active Site Indicator: H----
Operator Name: NOT REQUIRED
In Handler Universes: Y
In a Universe: Y
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: N
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------
Active Site Converter TSDF: ------

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.22 miles S	380 ft	92

SITE NAME	MAPS	ID
AT&T Mobility - BREA CANYON CENTER (25791)	1, 4	10443217

ADDRESS	CITY	ZIP
724 N Brea Blvd	Brea	92821

DETAILS

General Program & Facility Information
CERS ID: 10443217
Facility ID: Not Reported
Facility Regulator Key ID: Not Reported
Organization Code: 90129634
Business/Organization Name: AT&T Mobility
Multiple Jurisdictional Business? (Y/N): Yes
Business Origin: Letter
Count of Business' CERS User Accounts: 65
Facility Count for Business: 3434
Last Submittal Date (any element): 5/13/2014 1:03:39 AM
Count of Submitted Elements: 9
Remote Facility? (Y/N): No
Small Quantity Generator Facility? (Y/N): No
Local Facility Grouping: Not Reported

Facility Specific Information
Assessor Parcel Number (APN): Not Reported
Number of Employees: 0
Property Owner Name: New Cingular Wireless PCS, LLC dba AT&T Mobility
Property Owner Phone Number: 214-464-2626
Property Owner Mailing Address: 308 S. Akard St., Room 1708
Property Owner Mailing City: Dallas
Property Owner Mailing State: TX
Property Owner Mailing Zip Code: 75202
Property Owner Mailing Country: United States

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Cleaners	Listed	0.23 miles S	380 ft	**93**
SITE NAME			**MAPS**	**ID**
EXPRESS 3 CLEANERS			1, 4	300813-PD
ADDRESS			**CITY**	**ZIP**
719 N BREA BLVD			BREA	92821-3335
DETAILS				
Listing Year: 1997 SIC Category: CLEANERS SIC Code: 721201				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
DPR-CA	Listed	0.24 miles W	398 ft	**94**
SITE NAME			**MAPS**	**ID**
LEE BENT TREE & LANDSCAPING INC			1, 4	37974
ADDRESS			**CITY**	**ZIP**
927 ORANGEWOOD DR			BREA	92821
DETAILS				
License No: 37974 Type: Maintenance gardener pest control business County: ORANGE Issued or Renewed Date: 1/1/2017 Expiration Date: 12/31/2018				

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.24 miles SE	470 ft	95

SITE NAME	MAPS	ID
ELIZABETH KIDWELL	1, 4	CAC002972910

ADDRESS	CITY	ZIP
799 DRIFTWOOD AVE	BREA	92821

DETAILS

Additional details may be found online using the following link:

http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=CAC002972910&pgm_sys_acrnm_in=RCRAINFO

Source Type: Implementer
Generator Status Universe: N
Generator Status: Non-Generator
NAICS1: ALL OTHER WASTE MANAGEMENT SERVICES
Active Site Indicator: H----
Owner Name: ELIZABETH KIDWELL
Operator Name: ELIZABETH KIDWELL
In Handler Universes: Y
In a Universe: Y
Short Term Generator: N
Importer Activity: N
Mixed Waste Generator: N
Transporter Activity: Y
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Injection Activity: N
Receives Waste From Off-site: N
Universal Waste: N
Universal Waste Destination Facility: Y
Used Oil Universe: NNNNNNN
Federal Universal Waste: N
Active Site Federally Regulated TSDF: ------

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.25 miles S	383 ft	96

SITE NAME	MAPS	ID
RILEY'S WOOD PIT BARBEQUE, T SMITH DBA	1, 4	137464-SC

ADDRESS	CITY	ZIP
720 N BREA BLVD	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=137464
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 137464
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: THOMAS
Facility Representative Last Name: SMITH
Location Area Code: 714
Location Phone Number: 5293914
Location Phone Extension: Not Reported
Mailing Address: 1500 ESPERANZA ST
Mailing City: LOS ANGELES
Mailing State: CA
Mailing Zip Code: 90023
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 5293914
Mailing Phone Extension: Not Reported
Mailing Representative First Name: THOMAS
Mailing Representative Last Name: SMITH

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.25 miles S	383 ft	96

SITE NAME	MAPS	ID
LOVE'S WOODPIT BBQ	1, 4	65995-SC

ADDRESS	CITY	ZIP
720 N BREA BLVD	BREA	92821

DETAILS

District: South Coast AQMD
Compliance URL:
http://www3.aqmd.gov/webappl/fim/prog/novnc.aspx?fac_id=65995
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 65995
County Code: OR
County: Orange
Facility Status Code: S
Facility Status: SOLD
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: V.
Facility Representative Last Name: CHEUNG
Location Area Code: 714
Location Phone Number: 5293914
Location Phone Extension: Not Reported
Mailing Address: 720 N BREA BLVD
Mailing City: BREA
Mailing State: CA
Mailing Zip Code: 92821
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 5293914
Mailing Phone Extension: Not Reported
Mailing Representative First Name: V.
Mailing Representative Last Name: CHEUNG

More Details Link

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.26 miles S	379 ft	97

SITE NAME	MAPS	ID
GKN RENTAL YARD	1, 4	RO0002277-ORG

ADDRESS	CITY	ZIP
707 N BREA BLVD	BREA	92621

DETAILS

County: Orange
Record ID: RO0002277
Case ID: 95UT052

Case Closed Date: 11/7/1995
Type of Closure: Closure certification issued
Status: Not Reported
Case Type Code: S
Released Substance: Diesel fuel oil and additives, Nos.1-D, 2-D, 2-4
Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	Completed - Case Closed	0.26 miles S	379 ft	97

SITE NAME	MAPS	ID
GKN RENTAL YARD	1, 4	T0605901904

ADDRESS	CITY	ZIP
707 BREA	BREA	92621

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DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901904
Global ID: T0605901904
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 11/7/1995
CUF Case: YES
Lead Agency: ORANGE COUNTY LOP
Case Worker: TE
Local Agency: ORANGE COUNTY LOP
RB Case Number: 083002761T
Loc Case Number: 95UT052
File Location: Local Agency
Potential Contaminants of Concern: Diesel, Gasoline
Potential Media Affected: Soil
Site History: Not Reported
Begin Date: 8/15/1995
How Discovered: Tank Closure
How Discovered Description: Not Reported
Stop Method: Close and Remove Tank
Stop Method Description: Not Reported
Agency Provided Latitude: 33.9290243
Agency Provided Longitude: -117.8952234

Regulatory Activities Details
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	Completed - Case Closed	0.26 miles S	379 ft	**98**
SITE NAME			**MAPS**	**ID**
THRIFTY OIL #302			1, 4	T0605900508
ADDRESS			**CITY**	**ZIP**
718 BREA			BREA	92821

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DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900508
Global ID: T0605900508
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 7/21/2006
CUF Case: YES
Lead Agency: ORANGE COUNTY LOP
Case Worker: TE
Local Agency: ORANGE COUNTY LOP
RB Case Number: 083000636T
Loc Case Number: 87UT043
File Location: Local Agency
Potential Contaminants of Concern: Gasoline
Potential Media Affected: Other Groundwater (uses other than drinking water)
Site History: Not Reported
Begin Date: 1/12/1987
How Discovered: Not Reported
How Discovered Description: SITE INVESTIGATION PRIOR TO LEASE AGREEMENT
Stop Method: Close and Replace Tank
Stop Method Description: Not Reported
Agency Provided Latitude: 33.909077
Agency Provided Longitude: -117.9040947

Regulatory Activities Details
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	Completed - Case Closed	0.27 miles SW	385 ft	**99**
SITE NAME			**MAPS**	**ID**
BREA MAINTENANCE STATION			1, 4	T0605900054
ADDRESS			**CITY**	**ZIP**
13571 E CENTRAL AVE			BREA	92621

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DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900054
Global ID: T0605900054
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 9/1/1988
CUF Case: NO
Lead Agency: SANTA ANA RWQCB (REGION 8)
Case Worker: VJB
Local Agency: Not Reported
RB Case Number: 083000069T
Loc Case Number: Not Reported
File Location: Not Reported
Potential Contaminants of Concern: Heating Oil / Fuel Oil
Potential Media Affected: Soil
Site History: Not Reported
Begin Date: 12/15/1986
How Discovered: Not Reported
How Discovered Description: Not Reported
Stop Method: Not Reported
Stop Method Description: Not Reported
Agency Provided Latitude: 33.932668
Agency Provided Longitude: -117.896361

Regulatory Activities Details
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SWIS-CA	Listed	0.27 miles SW	385 ft	99
SITE NAME			**MAPS**	**ID**
Cal Trans Brea Maintenance Station LVTO			1, 4	30-AB-0452
ADDRESS			**CITY**	**ZIP**
13571 Central Ave.			Brea	

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DETAILS
Facility and Operator Information URL: http://www2.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0452/Detail/ SWIS Number: 30-AB-0452 Agency Provided Latitude: 33.9325 Agency Provided Longitude: -117.89548 GIS Source: Map County: Orange Operator: Caltrans Operator Phone Number: 9496611273 Operator Address: Richard Reed Operator City: Orange Operator State: CA Operator Zip: 92865 Land Use Name: Residential Permit Date: 40634 Permit Status: Notification Owner Information Owner Name: State of California Owner Phone Number: 7146853221 Owner Address1: Not Reported Owner Address2: 1808 North Batavia St. Owner City: Orange Owner State: CA Owner Zip: 92865 More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SWLF-US	Listed	0.27 miles SW	385 ft	**99**
SITE NAME			**MAPS**	**ID**
CAL TRANS BREA MAINTENANCE STATION LVTO			1, 4	6464
ADDRESS			**CITY**	**ZIP**
13571 CENTRAL AVE.			BREA	92865

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DETAILS

Website: Not Reported
Facility ID: 6464
Facility Object ID: 331
FRS Registry ID: Not Reported
Permit Number: 30-AB-0452
County FIPS Code: 06059
Facility County: ORANGE
Facility Country: USA
Facility Address 2: Not Reported
Facility Type: TRANSFER - Facility temporarily accepts and transports Muncipal and/or Construction and Demolition wastes, non-hazardous.
Facility Phone Number: (714) 685-3221
Name of Owner: STATE OF CALIFORNIA
NAICS Code: 562111
NAICS Description: WASTE TRANSFER STATIONS, NONHAZARDOUS SOLID
Operational Status: OPEN
Permit Expiration Date: Not Reported
Date Closed: Not Reported
Original Source to Identify Geospatial Location:
http://www.calrecycle.ca.gov/swfacilities/directory/Search.aspx
Date ORNL Accessed the Source: 03/08/2018
Last Date Location was Verified: 2018-03-08T00:00:00.000Z
Collection Method: IMAGERY/OTHER - Best available imagery in conjunction with OS research used to place entity.
Agency Provided Latitude: 33.9328635899999
Agency Provided Longitude: -117.89670689

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Open-CA	Open	0.39 miles W	397 ft	100

SITE NAME	MAPS	ID
ALRON OIL	1, 4	RO0001415-ORG

ADDRESS	CITY	ZIP
365 W CENTRAL AVE	BREA	92821

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DETAILS
County: Orange Record ID: RO0001415 Case ID: 96UT022 Case Closed Date: Not Reported Type of Closure: Not Reported Status: Not Reported Case Type Code: O Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-UST-Cleanup-CA	Listed	0.39 miles W	397 ft	100
SITE NAME			**MAPS**	**ID**
Not Reported by Agency			1, 4	T0605901967
ADDRESS			**CITY**	**ZIP**
365 CENTRAL AVE W			BREA	

DETAILS
UST FUND PRIORITY CLASS: B UST FUND CLAIM NO#: 15155 GEOGRAPHIC AREA (BY REGIONAL BOARD NO#): 8 UST FUND CLAIM_CLOSURE DATE: Not Reported NO# OF FUND RECOMMEDED CLOSURE: 1 SITE LEAD AGENCY: ORANGE COUNTY LOP YEARS CASE HAS BEEN OPENED: 16 YEARS CLAIM HAS RECEIVED FUNDING: 11

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DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	Completed - Case Closed	0.39 miles W	397 ft	100

SITE NAME	MAPS	ID
ALRON OIL	1, 4	T0605901967

ADDRESS	CITY	ZIP
365 CENTRAL	BREA	92821

DETAILS

Sites Details
URL:
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901967
Global ID: T0605901967
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 8/26/2014
CUF Case: YES
Lead Agency: ORANGE COUNTY LOP
Case Worker: JW
Local Agency: ORANGE COUNTY LOP
RB Case Number: 083002869T
Loc Case Number: 96UT022
File Location: Local Agency
Potential Contaminants of Concern: Gasoline
Potential Media Affected: Other Groundwater (uses other than drinking water)
Site History: Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.
Begin Date: 6/25/1996
How Discovered: Tank Closure
How Discovered Description: Not Reported
Stop Method: Close and Replace Tank
Stop Method Description: Not Reported
Agency Provided Latitude: 33.932331114
Agency Provided Longitude: -117.8996771

Regulatory Activities Details
More Details Link

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RECORDS SOURCES SEARCHED

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Air-CA	Air Permits with Emissions	ERS Supplemental Govt Sources	Click Here	2
AIR-DIST-CA	Air Pollution Control District	ERS Supplemental Govt Sources	Click Here	22
AST-CA	Historical Aboveground Storage Tanks	State/Tribal UST	Click Here	2
AST-CRSP-CA	Aboveground Storage Tanks	State/Tribal UST	Click Here	3
BF-MOA-CA	Brownfield MOA Sites (aka Considered Brownfield Sites, SWRCB MOA, Brownfield Memorandum of Agreement)	State/Tribal Brownfield	Click Here	None Found
BF-Tribal-US	Historical Tribal Brownfields	Federal Brownfield	Click Here	None Found
BF-US	Brownfields Sites	Federal Brownfields	Click Here	1
BioFuel-US	Bio Diesel Fuel	ERS Supplemental Govt Sources	Click Here	None Found
BZ-HazWaste-CA	Border Zone or Hazardous Waste Property	State/Tribal ASTM Other Med	Click Here	None Found
CAF-CA	Confined Animal Facilities	ERS Supplemental Govt Sources	Click Here	None Found
CDL-CA	Clandestine Drug Labs	ERS Supplemental Govt Sources	Click Here	None Found
CDL-US	National Clandestine Drug Lab Register	ERS Supplemental Govt Sources	Click Here	None Found
CERCLIS-Archived-US	CERCLIS sites that have been archived	Federal CERCLIS NFRAP	Click Here	None Found
CERCLIS-US	Comprehensive Environmental Response, Compensation, and Liability Information System	Federal CERCLIS	Click Here	None Found
CERS-CA	California Environmental Reporting System (CERS)	State/Tribal ASTM Other Med	Click Here	12
CHMIRS-CA	California Hazardous Material Incident Report System	Emergency Release Reports	Click Here	1
CHWF-CA	Commercial Offsite Hazardous Waste Facilities	ERS Supplemental Govt Sources	Click Here	None Found
City-AST-CA	Underground Storage Tanks	State/Tribal UST	Click Here	None Found
City-CUPA-CA	Certified Unified Program Agency	State/Tribal ASTM Other Med	Click Here	None Found
City-Others-CA	Hazardous Material Facilities	State/Tribal ASTM Other Med	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
City-UST-CA	City Agency Underground Storage Tanks	State/Tribal UST	Click Here	None Found
Cleaners-CA	Cleaners	ERS Supplemental Govt Sources	Click Here	3
Coal-Ash-Dams-US	Coal Ash Contaminated Sites and Hazard Dams	ERS Supplemental Govt Sources	Click Here	None Found
Controls-CA	California sites with Deed Restrictions or other Controls	State/Tribal Inst/Eng Controls	Click Here	None Found
Controls-RCRA-US	RCRA Institutional and Engineering Controls Summary (aka Federal RCRA with Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
Controls-US	US CERCLA Sites with Controls (aka US IC/EC, Institutional/Engineering List Controls, Land Use Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
CorAct-Closed-CA	Corrective Action Sites	State/Tribal ASTM Other Low	Click Here	None Found
CorAct-Open-CA	Corrective Action Sites	State/Tribal ASTM Other High	Click Here	None Found
CorAct-Other-CA	Corrective Action Sites	State/Tribal ASTM Other Low	Click Here	None Found
CORTESE-CA	Cortese Hazardous Waste & Substances Sites List	State/Tribal ASTM Other Med	Click Here	None Found
County-AST-CA	Aboveground Storage Tanks	State/Tribal UST	Click Here	3
County-BI-CA	Business Inventory	ERS Supplemental Govt Sources	Click Here	None Found
County-Hist-CA	Historic Environmental County Listings	State/Tribal ASTM Other Med	Click Here	None Found
County-LUST-CA	County Agency Leaking Underground Storage Tanks	State/Tribal LUST	Click Here	None Found
County-LUST-Closed-CA	County Agency Leaking Underground Storage Tanks, Closed Cases	State/Tribal LUST	Click Here	2
County-LUST-Open-CA	County Agency Leaking Underground Storage Tanks, Open Cases	State/Tribal LUST	Click Here	1
County-Others-CA	Environmental Related Databases	State/Tribal ASTM Other Med	Click Here	10
County-SLIC-Closed-CA	County SLIC Sites	Emergency Release Reports	Click Here	None Found
County-SLIC-Open-CA	County SLIC Sites	Emergency Release Reports	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
County-SML-CA	County Site Mitigation Unit List	State/Tribal ASTM Other Med	Click Here	None Found
County-SWF-CA	County Solid Waste Facilities	State/Tribal Landfill/Solid Waste	Click Here	None Found
County-UST-CA	County Agency Underground Storage Tanks	State/Tribal UST	Click Here	1
CRSP-CA	Cal EPA Regulated Site Portal	State/Tribal ASTM Other Med	Click Here	21
CUPA-CA	Certified Unified Program Agency	State/Tribal ASTM Other Med	Click Here	None Found
Dams-CA	California Dams	ERS Supplemental Govt Sources	Click Here	None Found
Debris-US	Historical Debris Sites	Federal Solid Waste	Click Here	None Found
Deed-CA	Deed Restrictions/Land Use Restrictions	State/Tribal Inst/Eng Controls	Click Here	None Found
Delisted-NPL-US	Delisted NPL Sites	Federal Delisted NPL	Click Here	None Found
DPR-CA	Pesticide Regulation Licenses	ERS Supplemental Govt Sources	Click Here	1
DryCleaners-CA	Dry Cleaner Facilities	ERS Supplemental Govt Sources	Click Here	4
EGRID-US	Emissions & Generation Resource Facilities	ERS Supplemental Govt Sources	Click Here	None Found
ENF-CA	Enforcement Actions Data	State/Tribal ASTM Other Med	Click Here	2
ENF-SMARTS-CA	Storm Water Enforcement Actions	State/Tribal ASTM Other Med	Click Here	None Found
ENF-Wastewater-CA	Wastewater Enforcement Actions	State/Tribal ASTM Other Med	Click Here	None Found
EPA-Watch-List-US	Historical EPA Watch List	ERS Supplemental Govt Sources	Click Here	None Found
ERNS-US	Emergency Response Notification System	Federal ERNS	Click Here	None Found
Eval-Hist-Active-CA	EnviroStor Evaluation History Sites	State/Tribal ASTM Other	Click Here	None Found
Eval-Hist-NFA-CA	EnviroStor Database Evaluation History NFA Sites	State/Tribal ASTM Other	Click Here	None Found
Eval-Hist-Other-CA	EnviroStor Database Evaluation History NFA Sites	State/Tribal ASTM Other	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
FA-HW-CA	Financial Assurance, Hazardous Waste	ERS Supplemental Govt Sources	Click Here	None Found
FA-HW-US	Financial Assurance, Hazardous Waste	ERS Supplemental Govt Sources	Click Here	None Found
FA-SWF-CA	Financial Assurance, Solid Waste Facilities	ERS Supplemental Govt Sources	Click Here	None Found
FEMA-UST-US	Historical FEMA Underground Storage Tanks	Federal UST	Click Here	None Found
FRS-US	Facility Registry Index (FINDS)	ERS Supplemental Govt Sources	Click Here	2
FTTS-ENF-US	Historical FIFRA/TSCA Tracking System (FTTS) Enforcement Actions	Federal ASTM Other	Click Here	None Found
FTTS-INSP-US	Historical FIFRA/TSCA Tracking System (FTTS) Inspections	ERS Supplemental Govt Sources	Click Here	None Found
FUDS-US	Formerly Used Defense Sites	ERS Supplemental Govt Sources	Click Here	None Found
FUSRAP-US	Formerly Utilized Sites Remedial Action Program Sites	ERS Supplemental Govt Sources	Click Here	None Found
Haulers-CA	Registered Waste Tire Haulers Listing	ERS Supplemental Govt Sources	Click Here	None Found
HazWaste-CA	Hazardous Waste Facilities	State/Tribal ASTM Other Med	Click Here	None Found
Hist-AFS2-US	Historical Air Facility System for Clean Air Act stationary sources	ERS Supplemental Govt Sources	Click Here	None Found
Hist-AFS-US	Historical Air Facility System for Clean Air Act stationary sources	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Agriculture	Historical Ranches/Farms, Livestock/Agriculture	ERS Exclusive Historic Sources	Click Here	None Found
Hist-AST-CA	Historical Aboveground Storage Tanks	ERS Supplemental Govt Sources	Click Here	1
Hist-Auto Dealers	Historical Auto and Truck Dealers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Auto Repair	Historical Automotive Repair	ERS Exclusive Historic Sources	Click Here	None Found
Hist-AWS-CA	Historical Annual Workplan Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-CA	Previously Listed California Sites	ERS Supplemental Govt Sources	Click Here	6
Hist-CalFID-CA	Historical Facility Inventory Database	ERS Supplemental Govt Sources	Click Here	None Found
Hist-CALSITES-CA	Historical Calsites Database	ERS Supplemental Govt Sources	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-CERCLIS-NFRAP-US	Historical CERCLIS-NFRAP	ERS Supplemental Govt Sources	Click Here	None Found
Hist-CERCLIS-US	Historical CERCLIS Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Chemical Manufacturing	Historical Manufacturing and Distribution of Chemicals, Gases, and/or Solids	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Chemical-Storage	Historical Chemical/Hazardous Use Storage	ERS Exclusive Historic Sources	Click Here	None Found
Hist-City-UST-CA	Historical Underground Storage Tanks	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Cleaners	Historical Laundry, Cleaners, and Dry Cleaning Services	ERS Exclusive Historic Sources	Click Here	4
Hist-Controls-CA	Historical Restricted Use Sites	State/Tribal Inst/Eng Controls	Click Here	None Found
Hist-Convenience	Historical Convenience Store with Possible Gas	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Cort-CA	Historical Cortese list	State/Tribal ASTM Other Med	Click Here	None Found
Hist-Deed-CA	Historical Deed Restriction Properties	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Disposal-Recycle	Historical Hazardous Disposal/Recycle and Dumps/Waste	ERS Exclusive Historic Sources	Click Here	None Found
Hist-DTG-CA	Depth to Groundwater	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Dumps-US	Historical Dumps Inventory of 1985	Federal Solid Waste	Click Here	None Found
Hist-ERNS-US	Historical Emergency Response Notification System (ERNS)	ERS Supplemental Govt Sources	Click Here	None Found
Hist-FIFRA-US	Historical Case Administration Data from National Compliance Database (Federal Insecticide, Fungicide, and Rodenticide Act)	ERS Supplemental Govt Sources	Click Here	None Found
Hist-FINDS-US	Historical Facility Index System	ERS Supplemental Govt Sources	Click Here	2
Hist-Food-Processors	Historical Food Processing Manufacturers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Gun-Ranges	Historical Gun Ranges/Clubs	ERS Exclusive Historic Sources	Click Here	None Found
Hist-HWS-CA	Historical Cortese List-Hazardous Waste Substance Site List	ERS Supplemental Govt Sources	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-LUSTIS-CA	Historical Lust Information System (LUSTIS)	ERS Supplemental Govt Sources	Click Here	3
Hist-Machine Shop	Historical Machine Shops, Welding, Machine Repair	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Manufacturing	Historical Sources US: Manufacturing	ERS Exclusive Historic Sources	Click Here	1
Hist-Metal Plating	Historical Metal Plating	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Mining	Historical Mining Operations	ERS Exclusive Historic Sources	Click Here	None Found
HIST-MLTS-US	Historical Material Licensing Tracking System	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Mortuaries	Historical Crematories/Mortuaries	ERS Exclusive Historic Sources	Click Here	None Found
HIST-MTBE-CA	Historical Sites With MTBE (Methyl Tertiary-Butyl Ether) Contamination	ERS Supplemental Govt Sources	Click Here	None Found
Hist-NPL-US	Historical National Priority List	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Oil-Gas	Historical Oil and Gas Well Related Facilities	ERS Exclusive Historic Sources	Click Here	None Found
Hist-OilGas-Refiners	Historical Oil/Gas Refiners/Manufacturers/Plants	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Orange-County-LF-CA	Historical Orange County Landfills	ERS Supplemental Govt Sources	Click Here	None Found
Historical-CA	Historical Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Other	Historical Environmental Facilities	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Paint-Stores	Historical Paint Stores	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Petroleum	Historical Petroleum Refining/ Manufacturing/ Chemicals	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Post-Offices	Historical Post Offices	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Printers	Historical Printers and Publishers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Prop65-CA	Historical Prop 65 Sites	ERS Supplemental Govt Sources	Click Here	None Found
HIST-R4-CA	Historical sites	State/Tribal ASTM Other Med	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-RCRIS-US	Historical EPA's Resource Conservation and Recovery Act	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-LUST-CA	Historical Leaking Underground Storage Tanks	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-Other-CA	Historical Toxic Lists, Site Mitigation, and Groundwater Cleanup Program	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-SLIC-CA	Historical Spills and Leak Sites	ERS Supplemental Govt Sources	Click Here	1
Hist-Regional-Spills-CA	Historical Industrial Cleanup Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-SWLF-CA	Historical County Landfills and Transfer Stations	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-UST-CA	Historical Underground Storage Tanks	ERS Supplemental Govt Sources	Click Here	5
Hist-Rental	Historical Rental Equipment & Yards	ERS Exclusive Historic Sources	Click Here	None Found
Hist-RV-Dealers	Historical Trailer and Recreational Vehicle Dealers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Salvage	Historical Vehicle Salvage Yards or Wreckers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-SCL-CA	Historical California Cerclis Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Service Stations	Historical Service Stations/Vehicle Fueling	ERS Exclusive Historic Sources	Click Here	6
HIST-SLIC-CV-CLOSED-CA	Historical Central Valley Spills and Leak Sites	Emergency Release Reports	Click Here	None Found
HIST-SLIC-CV-OPEN-CA	Historical Central Valley Spills and Leak Sites	Emergency Release Reports	Click Here	None Found
Hist-Steel-Metals	Historical Steel Mills/Manufacturers/Foundries/Smelters	ERS Exclusive Historic Sources	Click Here	None Found
Hist-SWIS-CA	Historical Solid Waste Information System (SWIS)	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Textile	Historical Textile Mills/Manufacturers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-ToxicPits-CA	Historical Toxic Pits Cleanup Facilities	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Transportation	Historical Transportation Facilities	ERS Exclusive Historic Sources	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-TRIS-US	Historical Toxic Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Trucking	Historical Trucking, Shipping, Delivery, and/or Storage	ERS Exclusive Historic Sources	Click Here	None Found
Hist-US	Historical Previously Listed Federal Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-US-EC	Historical Engineering Controls Sites (aka US EC, Engineering Controls, Land Use Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
Hist-USGS-WaterWells-CA	Historical Ground Water Site Inventory for California	ERS Supplemental Govt Sources	Click Here	None Found
Hist-US-IC	Historical Sites with Institutional Controls (aka US IC, Institutional Controls, Land Use Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
Hist-UST-CA	Historical Hazardous Substance Storage Infirmation (aka Historical Underground Storage Tanks)	State/Tribal UST	Click Here	5
Hist-UST-Cleanup-CA	Historic UST Cases Recommended for Closure under UST Cleanup Fund 5 Year Review (aka UST Cleanup Fund Cases)	State/Tribal LUST	Click Here	1
Hist-USTReg-CA	Historical Underground Storage Tank Registrations Database	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Vehicle-Parts	Historical Vehicle Parts	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Vehicle-Washing	Historical Vehicle/Truck Washing Facilities	ERS Exclusive Historic Sources	Click Here	None Found
Hist-WaterWells-US	Historical Public Community Water Supply/Well Head Protection Database	ERS Supplemental Govt Sources	Click Here	None Found
Hist-WIP-Active-CA	Historical Well Investigation Program Case List, Active Sites (aka WIP)	State/Tribal ASTM Other Med	Click Here	None Found
Hist-WIP-Backlog-CA	Historical Well Investigation Program Case List, Backlog Sites (aka WIP)	State/Tribal ASTM Other Med	Click Here	None Found
Hist-WIP-Historical-CA	Historical Well Investigation Program Case List, Historical Sites (aka WIP)	State/Tribal ASTM Other Low	Click Here	None Found
Hist-WMUDS-CA	Historical Waste Management Unit Database System	ERS Supplemental Govt Sources	Click Here	None Found
HMIS-US	Hazardous Materials Information System	Federal Emergency Release Reports	Click Here	None Found
HWIS-CA	Hazardous Waste Information Summary	State/Tribal RCRA Equivalent	Click Here	4

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
HWMP-Controls-CA	Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction	State/Tribal Inst/Eng Controls	Click Here	None Found
HWT-CA	Hazardous Waste Transporters	ERS Supplemental Govt Sources	Click Here	1
ICE-CA	Inspection, Compliance, and Enforcement	State/Tribal ASTM Other Med	Click Here	None Found
ICIS-Air-US	Integrated Compliance Information System for Air	ERS Supplemental Govt Sources	Click Here	None Found
ICIS-FEC-US	Integrated Compliance Information System for Federal Enforcement Data	ERS Supplemental Govt Sources	Click Here	None Found
ICIS-NPDES-US	National Pollutant Discharge Elimination System (NPDES)	ERS Supplemental Govt Sources	Click Here	None Found
LA-LF-CA	Los Angeles County Landfills	State/Tribal Solid Waste	Click Here	None Found
Land-Disposal-CA	Geotracker - Land Disposal Sites (aka Landfills, LDS)	State/Tribal Landfill/Solid Waste	Click Here	None Found
LA-Waste-Haulers-CA	Waste Haulers	ERS Supplemental Govt Sources	Click Here	None Found
Lead-Smelter-2-US	Historical Lead Smelter Sites	ERS Supplemental Govt Sources	Click Here	None Found
Lead-US	Lead Smelter Sites	ERS Supplemental Govt Sources	Click Here	None Found
Liens-CA	Environmental Liens	State/Tribal Inst/Eng Controls	Click Here	None Found
LIENS-US	Superfund Liens	Federal Institutional/Engineering Controls	Click Here	None Found
LMOP-US	Landfill Methane Outreach Program	ERS Supplemental Govt Sources	Click Here	None Found
LUST-Closed-CA	Geotracker - Leaking Underground Storage Tanks, Closed Cases	State/Tribal LUST	Click Here	7
LUST-Open-CA	Geotracker - Leaking Underground Storage Tanks, Open Cases	State/Tribal LUST	Click Here	None Found
Manifest2-RI	Hazardous Waste Manifest	State/Tribal RCRA Equivalent	Click Here	None Found
MethaneLF-CA	Methane Producing Landfills	State/Tribal Other	Click Here	None Found
Military-Active-CA	EnviroStor Database Military Active Sites (aka MCS)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
Military-Bases-US	Military Base Boundaries	ERS Supplemental Govt Sources	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Military-NFA-CA	EnviroStor Database Military Active Sites (aka MCS)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
Military-Other-CA	EnviroStor Database Military Active Sites (aka MCS)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
Mines2-CA	California Mines	ERS Supplemental Govt Sources	Click Here	None Found
Mines-CA	Historical Death Valley Mines	ERS Supplemental Govt Sources	Click Here	None Found
Mines-CDMG-CA	California Division of Mines and Geology	ERS Supplemental Govt Sources	Click Here	None Found
MINES-US	Mines Master Index File	ERS Supplemental Govt Sources	Click Here	None Found
MLTS-US	Material Licensing Tracking System	ERS Supplemental Govt Sources	Click Here	None Found
Mortgage-CA	Cal Mortgage Facilities	ERS Supplemental Govt Sources	Click Here	None Found
MRDS-US	Mineral Resources Data System (MRDS)	ERS Supplemental Govt Sources	Click Here	None Found
MWMP-CA	Medical Waste Management Program	ERS Supplemental Govt Sources	Click Here	None Found
NCI-CA	Non-Case Information	ERS Supplemental Govt Sources	Click Here	None Found
NEI-LF-CA	Historical NEI (National Emission Inventory) Landfill Point Sources	ERS Supplemental Govt Sources	Click Here	None Found
NPDES-CA	National Pollutant Discharge Elimination System	ERS Supplemental Govt Sources	Click Here	None Found
NPDES-SW-CA	Notice of Intent Data	ERS Supplemental Govt Sources	Click Here	None Found
NPL-R9-US	NPL Region 9 Site Boundaries	Federal NPL	Click Here	None Found
NPL-US	National Priorities List	Federal NPL	Click Here	None Found
OGM-CA	Oil and Gas Monitoring	ERS Supplemental Govt Sources	Click Here	None Found
OGW-CA	California Oil and Gas Wells	ERS Supplemental Govt Sources	Click Here	58
OSCF-CA	Orphan Site Cleanup Fund	ERS Supplemental Govt Sources	Click Here	None Found
PADS-US	PCB Registration Database System	Federal ASTM Other	Click Here	None Found
PCB-US	PCB Transformers	Federal ASTM Other	Click Here	None Found
PCS-US	Historical Permit Compliance System for Clean Water Act	ERS Supplemental Govt Sources	Click Here	None Found
Perch1-CA	Perchlorate Confirmed Contaminant Sites	ERS Supplemental Govt Sources	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Perch2-CA	Perchlorate Confirmed Contaminant Sites	ERS Supplemental Govt Sources	Click Here	None Found
PR-MOA-CA	Polanco Redevelopment MOA Sites	State/Tribal ASTM Other Med	Click Here	None Found
Project-CA	Project - Multipurpose Site Type	ERS Supplemental Govt Sources	Click Here	None Found
Proposed-NPL-US	Proposed NPL Sites	Federal NPL	Click Here	None Found
RADINFO-US	Radiation Information Database	ERS Supplemental Govt Sources	Click Here	None Found
RCRA-CESQG-US	Resource Conservation and Recovery Act, Conditionally Exempt Small Quantity Generators (aka RCRA CESQG)	Federal RCRA Generators	Click Here	None Found
RCRA-COR-US	Resource Conservation and Recovery Act, - Corrective Actions (aka RCRA CORRACTS)	Federal RCRA CORRACTS	Click Here	None Found
RCRA-LQG-US	Resource Conservation and Recovery Act, Large Quantity Generators (aka RCRA LQG)	Federal RCRA Generators	Click Here	None Found
RCRA-NON-US	Resource Conservation and Recovery Act, Non-Hazardous Generators (aka RCRA Non-Haz, RCRA NonGen, RCRA No longer Regulated)	Federal RCRA Generators	Click Here	11
RCRA-SQG-US	Resource Conservation and Recovery Act, Small Quantity Generators (aka RCRA SQG)	Federal RCRA Generators	Click Here	4
RCRA-TSDF-US	Resource Conservation and Recovery Act -, Treatment, Storage, and Disposal Facilities (aka RCRA TSD, RCRA TSDF)	Federal RCRA non-CORRACTS TSD	Click Here	None Found
Response-CA	State Response Sites and National Priorities List (NPL)	State/Tribal NPL	Click Here	None Found
RFG-Lab-US	Reformulated Gasoline (RFG)	ERS Supplemental Govt Sources	Click Here	None Found
RMP-US	Risk Management Plans	ERS Supplemental Govt Sources	Click Here	None Found
ROD-US	Records of Decision	ERS Supplemental Govt Sources	Click Here	None Found
SAA-Agreements-US	Sites with Superfund Alternative Approach Agreements	Federal ASTM Other	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
School-Active-CA	EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
School-NFA-CA	EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
School-Other-CA	EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
SDWIS-US	Safe Drinking Water Information System	ERS Supplemental Govt Sources	Click Here	None Found
SGV-Deep-Plumes-CA	San Gabriel Valley Deep Plumes	State/Tribal Solid Waste	Click Here	None Found
SGV-Shallow-Plumes-CA	San Gabriel Valley Shallow Plumes	State/Tribal Solid Waste	Click Here	None Found
SGV-Shallow-Plumes-Puente-Valley-CA	Puente Valley Shallow Plumes	State/Tribal Solid Waste	Click Here	None Found
SLIC-Closed-CA	Geotracker - The Spills, Leaks, Investigation & Cleanup (SLIC), Closed Cases	Emergency Release Reports	Click Here	3
SLIC-Open-CA	Geotracker -Spills, Leaks, Investigation & Cleanup (SLIC), Open Cases	Emergency Release Reports	Click Here	None Found
SML-CA	Site Mitigation List	State/Tribal ASTM Other Med	Click Here	None Found
SP-CA	Sampling Points	ERS Supplemental Govt Sources	Click Here	None Found
Spills-SSO-CA	Sanitary Sewer System	ERS Supplemental Govt Sources	Click Here	None Found
SSTS-US	Section 7 Tracking System	ERS Supplemental Govt Sources	Click Here	None Found
State-Response-Active-CA	EnviroStor State Response Active Sites	State/Tribal NPL	Click Here	None Found
State-Response-NFA-CA	EnviroStor State Response NFA Sites	State/Tribal NPL	Click Here	None Found
State-Response-Other-CA	EnviroStor State Response Other Sites	State/Tribal NPL	Click Here	None Found

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Superfund-Active-CA	Envirorstor Superfund Active Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program)	State/Tribal CERCLIS Equivalent	Click Here	None Found
Superfund-NFA-CA	EnviroStor Superfund NFA Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program)	State/Tribal CERCLIS Equivalent	Click Here	None Found
Superfund-Other-CA	EnviroStor Superfund Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program)	State/Tribal CERCLIS Equivalent	Click Here	None Found
SWIS-CA	Solid Waste Information System	State/Tribal Landfill/Solid Waste	Click Here	1
SWLF-US	Solid Waste Facilities	Federal Solid Waste	Click Here	1
SWRCY-CA	Beverage Container Recycler Database	State/Tribal ASTM Other Med	Click Here	None Found
TierPer-CA	Tiered Permits	ERS Supplemental Govt Sources	Click Here	None Found
TOMS-CA	Topographically Occurring Mine Symbols	ERS Supplemental Govt Sources	Click Here	None Found
Tribal-Air-US	Tribal Air Permitted Facilities	ERS Supplemental Govt Sources	Click Here	None Found
Tribal-LUST-Closed-Reg9	Tribal Leaking Underground Storage Tanks, Region 9 (aka Indian Lust)	Federal LUST	Click Here	None Found
Tribal-LUST-Open-Reg9	Tribal Leaking Underground Storage Tanks , Region 9 (aka Indian Lust)	Federal LUST	Click Here	None Found
Tribal-ODI-US	Tribal Open Dump Sites	Federal Solid Waste	Click Here	None Found
Tribal-UST-Reg9	Tribal Underground Storage Tanks (aka Tribal UST)	Federal UST	Click Here	None Found
Tribal-VCP-US	Tribal VCP	Federal Tribal VCP	Click Here	None Found
TRIS2000-US	Historical Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TRIS2010-US	Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TRIS80-US	Historical Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TRIS90-US	Historical Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TSCA-US	Toxics Substance Control Sites	ERS Supplemental Govt Sources	Click Here	None Found
UIC2-CA	Injection Wells	ERS Supplemental Govt Sources	Click Here	None Found
UIC-CA	Underground Injection Control Wells	ERS Supplemental Govt Sources	Click Here	7

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ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
UMTRA-US	Historical Uranium Mill Tailings Remedial Action Sites	ERS Supplemental Govt Sources	Click Here	None Found
USGS-Waterwells-US	Ground Water Site Inventory	ERS Supplemental Govt Sources	Click Here	1
UST-Abandoned-CA	Abandoned UST Initiative (aka Inventory of Abandoned Tank Sites)	State/Tribal UST	Click Here	None Found
UST-CA	Geotracker - Underground Storage Tanks	State/Tribal UST	Click Here	1
UST-Closed-CA	UST Case Closure Review Denials and Approved Orders (aka Closure of Underground Storage Tank (UST) Cases)	State/Tribal UST	Click Here	None Found
USTComp-CA	Previously Abandoned Tanks Now in Compliance (aka Compliance UST)	State/Tribal UST	Click Here	None Found
UST-CRSP-CA	Underground Storage Tanks	State/Tribal UST	Click Here	1
UST-Priority-CA	UST Cleanup Fund Priority List	State/Tribal UST	Click Here	None Found
UST-Proposed-CA	Proposed Closure of UST Cases (aka UST Proposed for Closure)	State/Tribal UST	Click Here	None Found
Vapor-Intrusions-US	Vapor Intrusion Database	ERS Supplemental Govt Sources	Click Here	None Found
VCP-Active-CA	EnviroStor VCP Active Sites	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
VCP-NFA-CA	EnviroStor Database VCP NFA Listing	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
VCP-Other-CA	EnviroStor VCP Other Sites	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
WDR-CA	Waste Discharge Requirements	ERS Supplemental Govt Sources	Click Here	None Found

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UN-MAPPABLE OCCURRENCES

The following occurrences were not mapped primarily due to incomplete or inaccurate address information. All of the following occurrences were determined to share the same zip code as the area searched. General status information is given with each occurrence along with any address information entered by the agency responsible for the list.

ID	Facility Name	Address	Database	Status
No "un-mapped" sites requested.				

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ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

Fire Insurance Map Results

REPORT RESULTS

Report Results for:

Megan Black
UltraSystems Environmental
16431 Scientific Way
Irvine, CA 92618
2104713281 FIM
September 5, 2019

Site Information:

Break Canyon Road Widening Project
Brea Canyon Road
Brea, CA 92821

ENVIRONMENTAL RECORD SEARCH

Subject Site:

Client's Project #: **UEI Project #5897**
Address: **Brea Canyon Road**
City, State Zip: **Brea, CA 92821**

ERS Order #:

2104713281 FIM

Prepared For:

Name: **Megan Black**
Company: **UltraSystems Environmental**
Address: **16431 Scientific Way**
City, State Zip: **Irvine, CA 92618**

Date:

September 5, 2019

Prepared By:

Name: **Phuc Tran**
Phone #: **(714) 669-8096 Ext. 1003**

Years Reviewed:

1915, 1920, 1926, 1933

Historical Fire Insurance Map Search Result:

The review of collections and indexes has determined that no historical fire insurance maps are available within these collections and indexes for the referenced site; therefore they are not available and are considered not "reasonably ascertainable" according to ASTM standards. Environmental Record Search (ERS) certifies that a thorough search of our holdings, various other collections and indexes has been completed.

Note: There was coverage for the city of (Brea) but it did not extend out far enough to reach the subject site.

Thank you for selecting ERS.

Researched by:

Eric Kieselbach

Eric Kieselbach

Certified by Environmental Record Search ERS

ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

City Directory Research

REPORT RESULTS

Report Results for:

Megan Black
UltraSystems Environmental
16431 Scientific Way
Irvine, CA 92618
2104713281 CDA
September 5, 2019

Site Information:

Break Canyon Road Widening Project
Brea Canyon Road
Brea, CA 92821

ENVIRONMENTAL RECORD SEARCH

Subject Site:

Client's Project #: **UEI Project #5897**
Address: **Brea Canyon Road**
City, State Zip: **Brea, CA 92821**

ERS Order #:

2104713281 CDAC

Prepared For:

Name: **Megan Black**
Company: **UltraSystems Environmental**
Address: **16431 Scientific Way**
City, State Zip: **Irvine, CA 92618**

Date:

September 5, 2019

Prepared By:

Name: **Phuc Tran**
Phone #: **(714) 669-8096 Ext. 1003**

Enclosed are the results of our:

City Directory Research

Thank you for selecting ***Environmental Record Search***!

The attached image files represent the findings of our research of the subject site and immediate adjacent sites.

Streets Researched: **(Subject) 1200-1300 S. Brea Canyon Rd.**
(Adjacent 1) 13100-14500 Brea Blvd.
(Adjacent 2) 800-1200 N. Brea Blvd.
(Adjacent 3) 13100-14500 N. Brea Blvd.

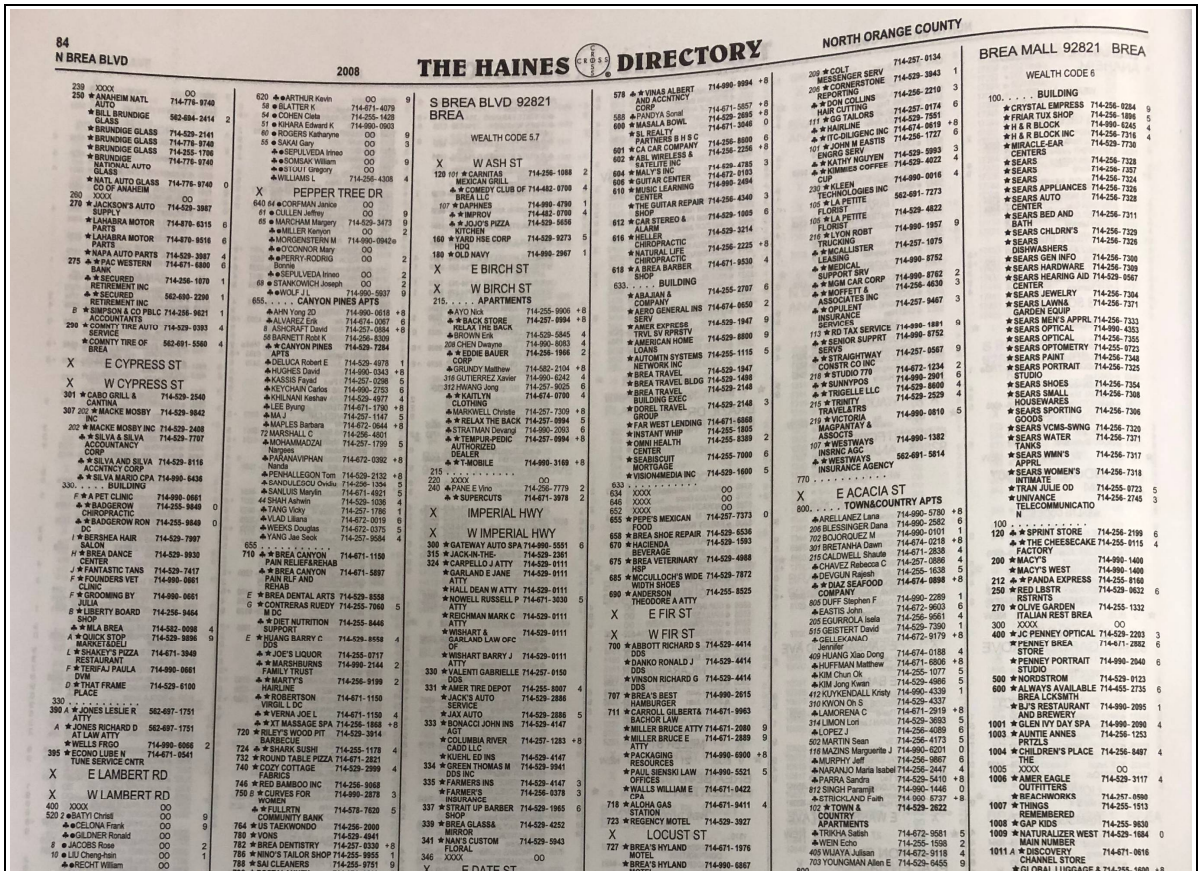
Years researched which did cover your site or adjacent sites:

2008	**2004**	**2000**	**1995**	**1990**
1987	**1980**	**1975**	**1970**	**1964**

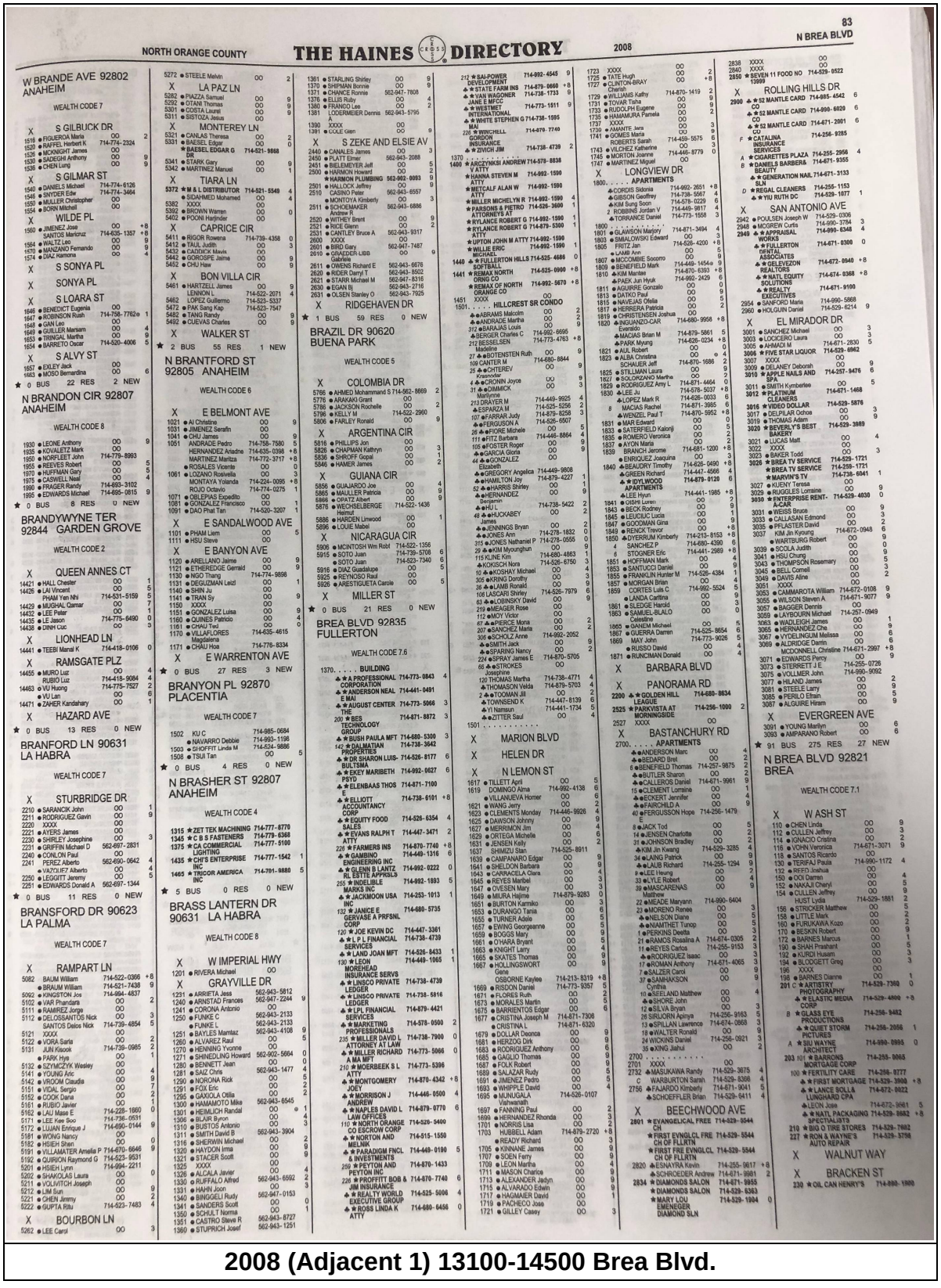
Years researched which did NOT cover your site, adjacent sites, or books not available:

1964-08 No (Subject) 1200-1300 Block of S. Brea Canyon Rd.	**1964-08 No (Adjacent 1) 13100-14500 Block of Brea Blvd.**	**1964 No (Adjacent 2) 800-1200 Block of N. Brea Blvd.**	**1964-08 No (Adjacent 3) 13100-14500 Block of N. Brea Blvd.**	

ERS's research has been limited to the information presented in the reviewed city directories only. All terms, conditions, and limitations normally associated with work contracted by **ERS** and presented or associated with the city directories are in effect at all times. This letter summary, all its information, and content have been derived from and rely upon the reviewed city directories. **ERS's** research has only been based on these books; **ERS** did not perform any type of independent investigation of any type, including as to the accuracy and/or completeness of the information derived or otherwise obtained from the secondary source or sources.



2008 (Subject) 1200-1300 S. Brea Canyon Rd.



2008 (Adjacent 1) 13100-14500 Brea Blvd.

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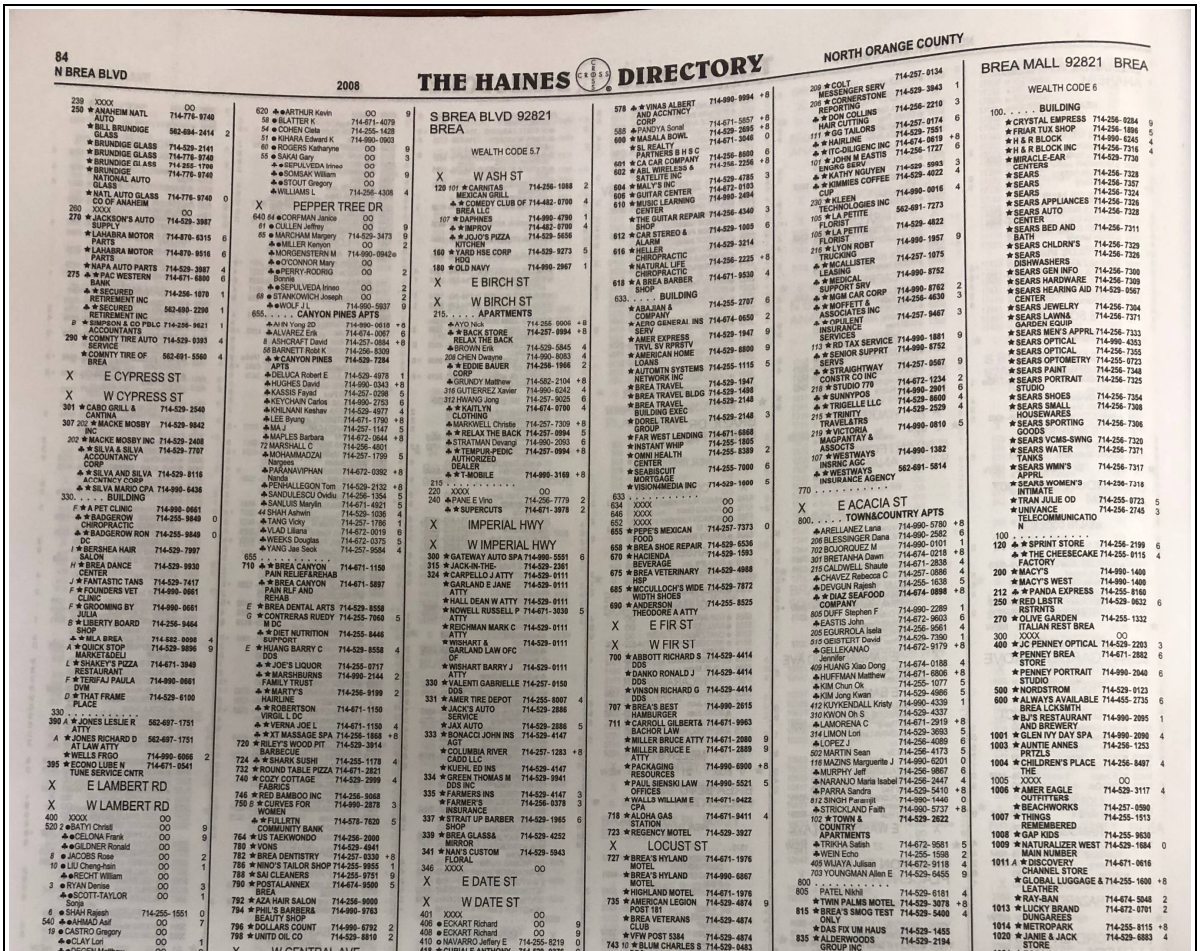

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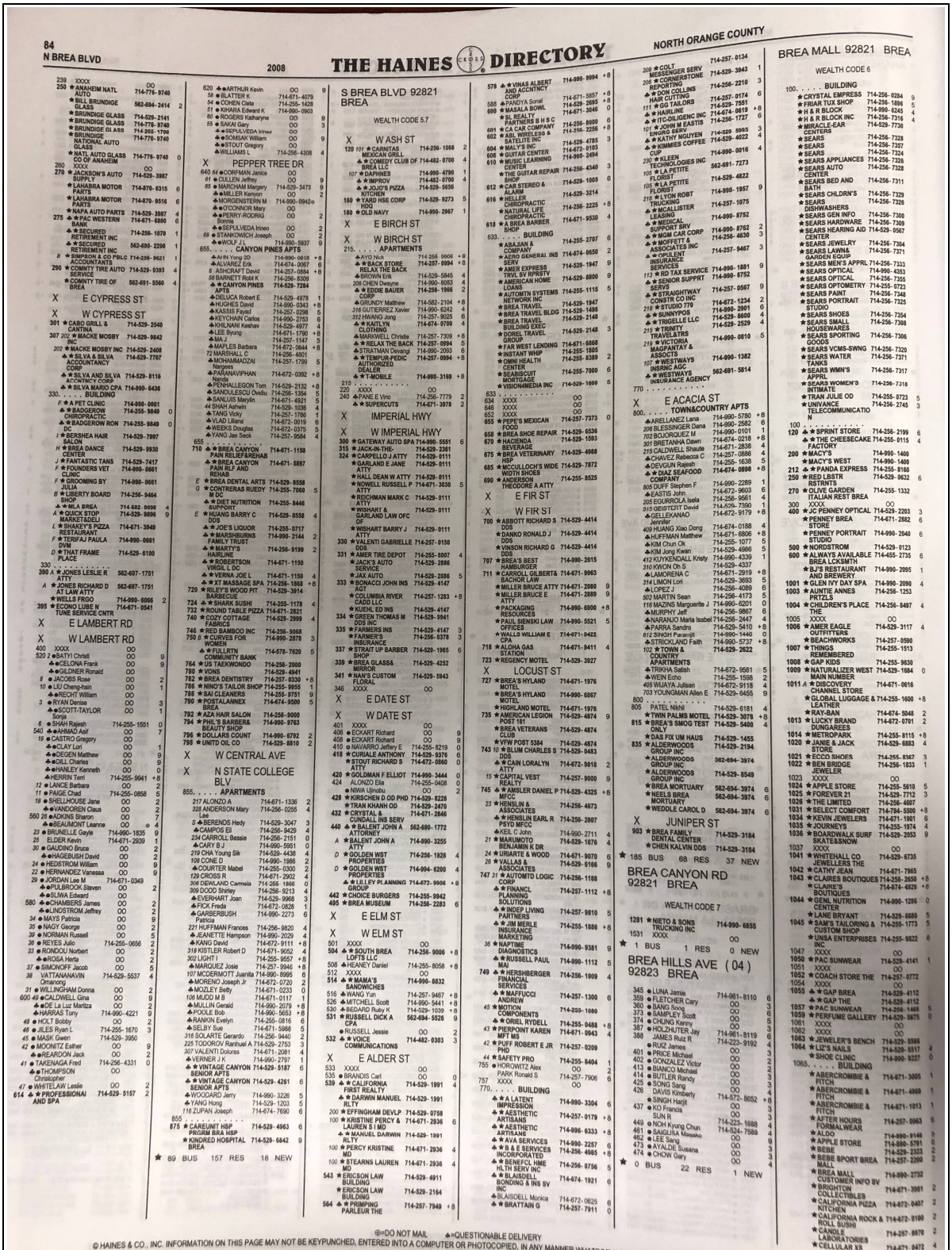

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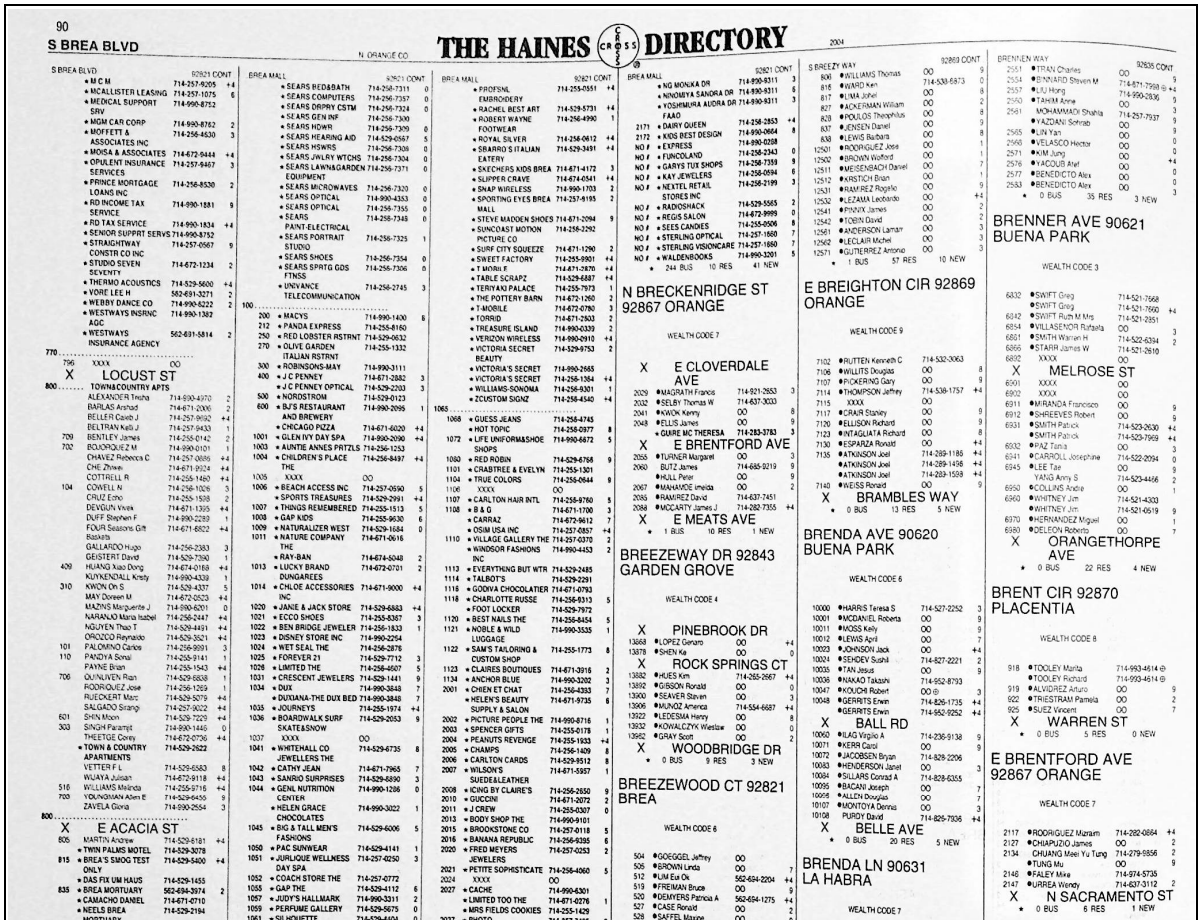
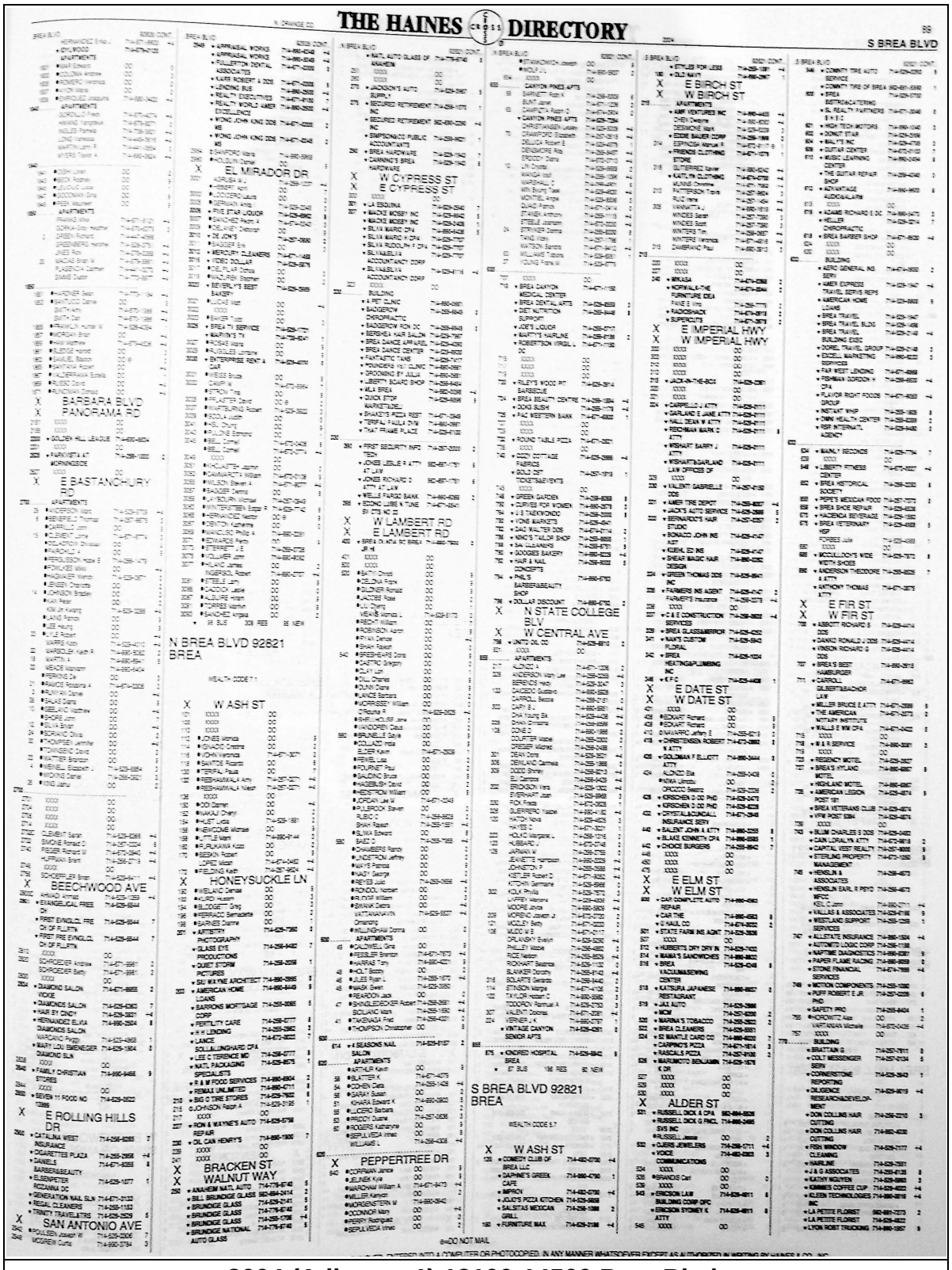


2004 (Subject) 1200-1300 S. Brea Canyon Rd.



2004 (Adjacent 1) 13100-14500 Brea Blvd.

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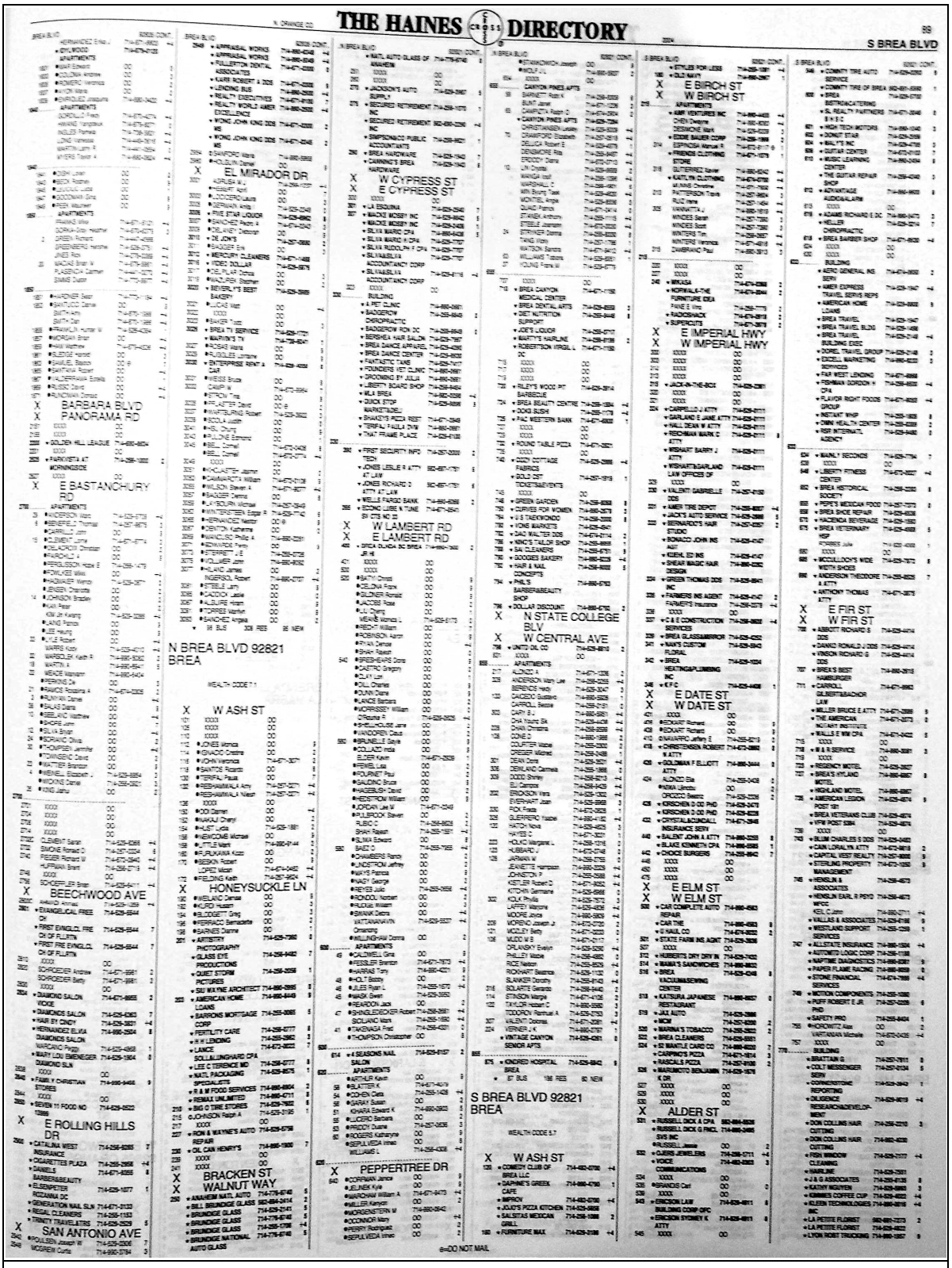

2004 (Adjacent 2) 800-1200 N. Brea Blvd.

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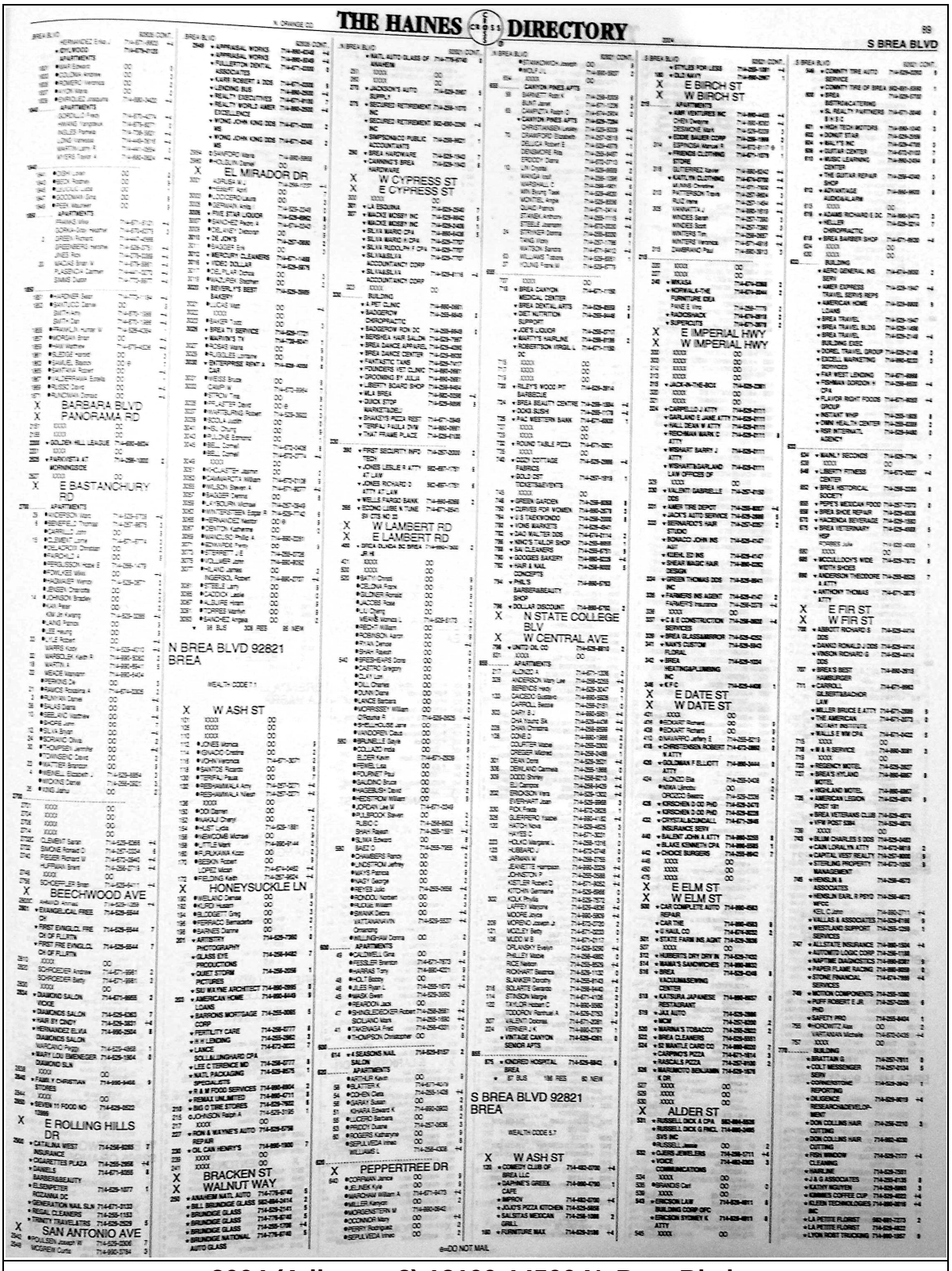

2004 (Adjacent 3) 13100-14500 N. Brea Blvd.

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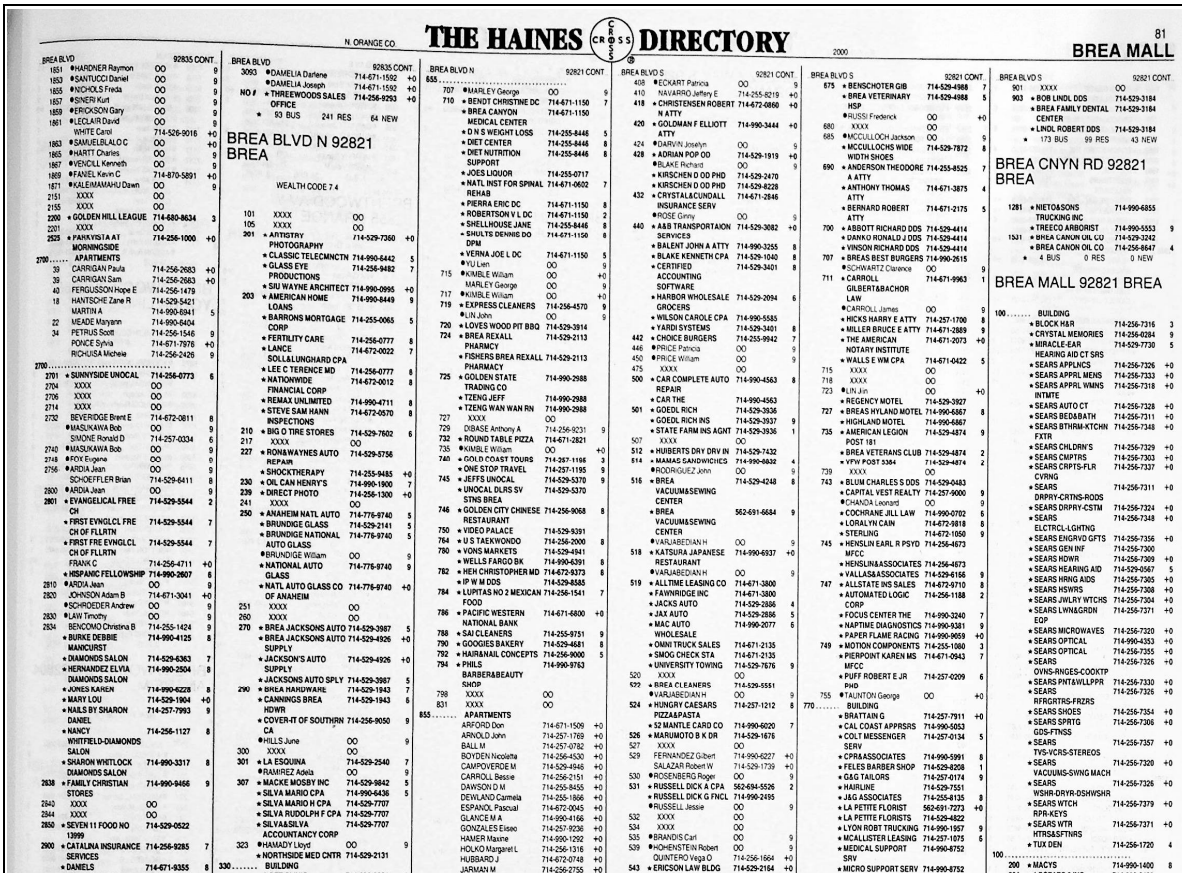

THE HAINES CROSS DIRECTORY

N. ORANGE CO.

2000

81

BREA MALL

BREA BLVD N 92821 CONT.

BREA BLVD S 92821 CONT.

BREA BLVD 92835 CONT.

BREA BLVD N 92821

BREA

WEALTH CODE 7 4

BREA BLVD S 92821

BREA

WEALTH CODE 5 8

BREA CNYN RD 92821

BREA

BREA MALL 92821 BREA

2000 (Adjacent 2) 800-1200 N. Brea Blvd.

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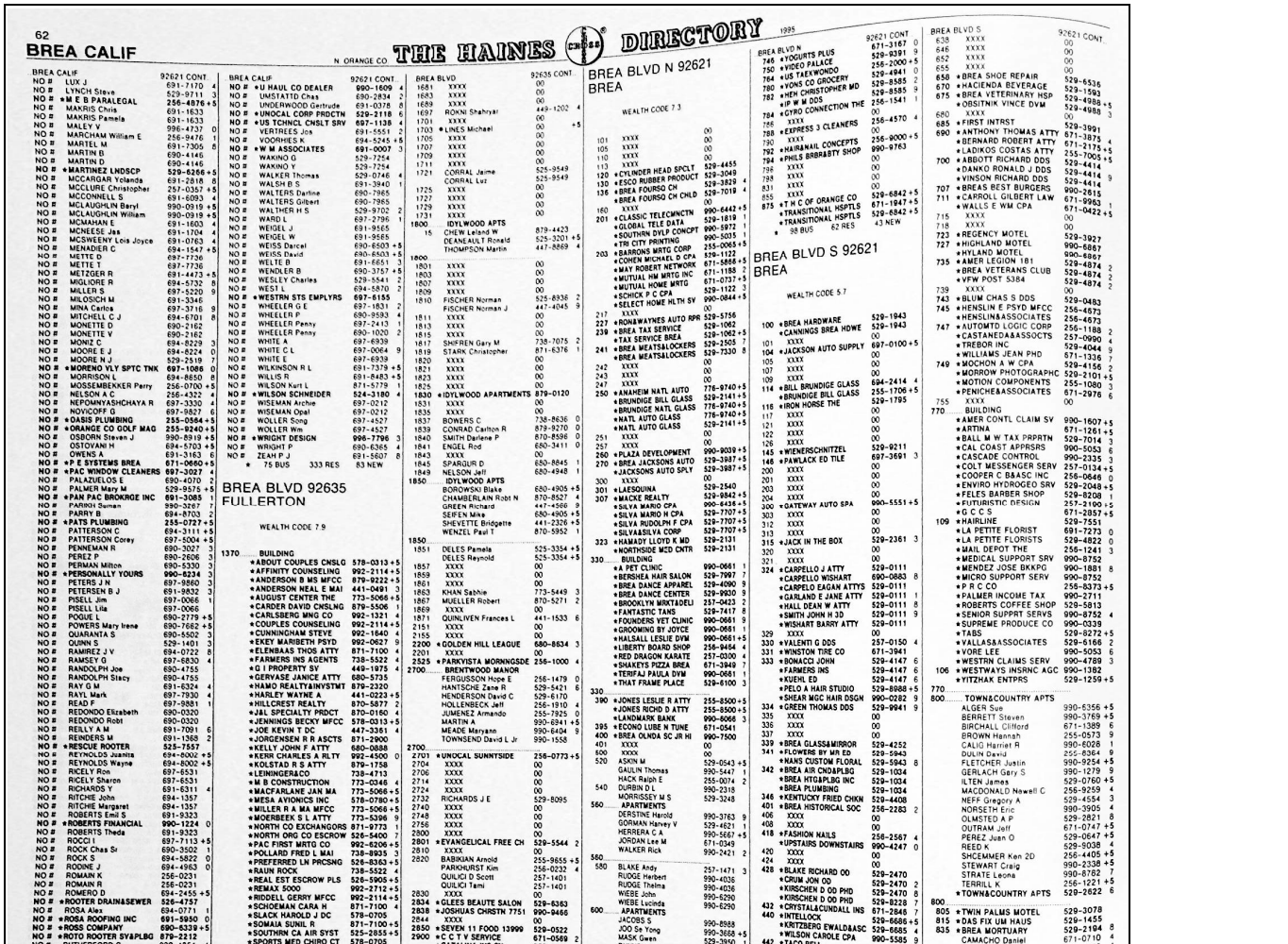

1995 (Adjacent 2) 800-1200 N. Brea Blvd.

BRANTFORD N 92805 CONT..
1151 XXXX 00
1161 PHONG Kien 491-7715 +0
1170 VILLAFLORES Henry 635-4615
VILLAFLORES M 635-4615
1171 CHAU Hoa 776-8334 +0
* 0 BUS 17 RES 2 NEW

BRASHER N (84) 92807 ANAHEIM

1315 *PEASE&CURREN RECVRY 630-8880 7
1345 *C B S FASTENERS 779-6368 4
1375 *C R I 779-1156
*CA CMMRCL LGHTG SPL 777-5100
*CA RETROFIT INC 779-1156
*COMMERCL LGHTNG SPL 569-7537 +0
*COMMERCL LGHTNG SPL 777-5100
*COMMERCL LIGHTG SPL 777-5100
1400 *DATA PRCSNG DESIGN 970-1515
1435 *CA PRINTING SYSTEMS 777-5538 8
*GLOBAL EQUIP IMPORT 779-8529 4
*RAGE OF COLOR INC 779-6227 9
*RYOBI 777-5538 +0
1465 *TORKON FASTENER 777-5003 7
* 14 BUS 0 RES 2 NEW

BRASS LANTERN DR S (88) 90631 LA HABRA

1231 ARRIETA Jess 943-5812 8
1241 SCHILLING David 947-8547 +0
1250 MAYO Lavern A 943-6475
MAYO Wm R 943-6475
1251 YULICH Marjorie J 943-9312 +0
YULICH Paul E 943-9312 +0
1270 BENNETT S E 943-5117 8
1271 HARVEY Kathleen M 943-5521
HARVEY Richard 943-5521
1280 SULLIVAN Donald F 943-6831 8
SULLIVAN Patrick J 943-8345 9
1290 BASILE Frank D 943-5097 8
1300 HAMAMOTO Mike 943-6545 8
1306 BROWN Adrian 943-3936 8
1310 DREJER Marilynn 943-1078
DREJER Robt J 943-1078
*KILGOUR DREJER&ASC 943-7066 8
1311 SMITH David B 943-3904 8
1321 MOCK Douglas J 943-6306 8
1341 QUINN Richard 943-6000 8
1350 SCHULT Ronald D 943-7333 8
1351 CASTRO Steve R 943-8727 8
1360 STUPRICH Josef 943-1251 8
1371 CHANCE Ronnie 947-7808 +0
1376 ELLIS Joseph W 943-1282 8
1380 NODARI A 947-7647 8
NODARI Monica C 947-2577 +0
1381 LODERMEIER Dennis A 943-5795 8
1390 RUFFALO Margaret L 943-8271
RUFFALO Ralph L 943-8271 8
* 1 BUS 29 RES 5 NEW

BRASS LANTERN DR W (88) 90631 LA HABRA

2440 MEZIERE F A 943-6829 8
2450 KAATMANN Barbara 947-8997
KAATMANN John 947-8997 8
2451 WALDEN Richard Sr 943-3903 8
2500 LEWIS Dick 943-6256 8
2510 CASINO Peter 943-6557 8
2511 SCHOEMAKER Andrew R 943-6886 8
2531 CANTLEY Bruce A 943-9317
2601 BIRD Gary 947-7487 8
2610 GRAEDER Helmut 947-8920 8
2611 OWENS Charlotte 943-6676 8
OWENS Richard E 943-6676
2620 RIDER Darryl T 943-8502 8
2621 STARR Michael M 947-8316 8
2630 EGAN Gerald F 943-2716 8
2631 OLSEN Stanley O 943-7925 8
* 0 BUS 16 RES 0 NEW

BRAZIL DR 90620 BUENA PARK

5766 XXXX 00
5776 PRIGMORE Richard D 523-3813
5786 XXXX 00
5796 KELLY M 522-2960
5806 *D T G INC 994-7400 +0
*DARIANA TECHNOLOGY 994-7400 +0
5826 CHAPMAN Russell Jr 670-1164 8
5836 SHROFF Gopal I 670-9099 5
5866 XXXX 00
5876 WECHSELBERGER H 522-1436
5886 HARRIS Jean M 522-3563 2
HARRIS Marvel D 522-3993
5906 MCINTOSH Wm Robt 522-1356 5
5915 XXXX 00
5925 XXXX 00
* 2 BUS 13 RES 2 NEW

BREA, CALIF 92621

NO # *A A A SOLAR INC 256-1333 +0
NO # *A AABCO RESCUE RTR 525-7557 9
NO # *A AMES PLUMBING&HTG 539-2012
NO # *A AMES PLUMBING&HTG 990-2644 +0
NO # *A PRFSNL RESUME SRV 990-6800 8
NO # *ALL AMER PLMBG&HTNG 990-0216 9
NO # *AMWAY PRODCTS DISTB 529-2645 5
NO # ASHCRAFT B W 694-1171 +0
NO # *AUTOMTD OFFICE PRD 694-0114 +0
NO # *AVIS PLBG HTG&AIR 634-4435 4
NO # *B&E PRODUCTS 691-5199 +0
NO # BACK E 697-7637 +0
NO # BAIR John M 694-6278 +0
NO # BAJAJ Surjit S 256-1128 +0
NO # *BALLOONS R US 255-9813 +0
NO # *BANKS R&R MNTNC 529-5180 7
NO # *BANKS ROOTER SERV 529-8322 +0
NO # BARRATT S J 690-9944 +0
NO # BARTLETT Carrie M 691-1246 9
NO # BASLER J 690-2133 8
NO # BELL George 691-6933
NO # BELZER J 694-6212 8
NO # *BENS BOBCAT SERVICE 256-9243 +0
NO # BLACK Kim 694-5370 8
NO # BLAKELEY Greg 690-0578 9
NO # BLAKELEY Lynn 690-0578
NO # BLOCH Jeffrey L 691-8109 8
NO # BLOUGH Wm 694-6524 5
NO # BORKLUND W 255-9822 +0
NO # BOSTROM K 690-6847 +0
NO # BRADSHAW Glenice 691-3700 9
NO # *BRAZIL GEO PLBG HTG 529-7945 3
NO # BROWN C 529-5889 +0
NO # BROWN F A 694-8114 8
NO # BROWN M 529-5889 +0
NO # BURKE L 529-9670 9
NO # CHIDESTER J 697-6716 +0
NO # COLLINS Dennis 690-9765
NO # CONE D L 694-2607
NO # CONE M L 694-2607
NO # CONYERS L 690-9765 9
NO # COOPER J 690-0417 9
NO # *CORPORATE PROPERTY 255-0891 9
NO # CRAM Mike 697-6414 +0
NO # CREAGH J 694-6720 +0
NO # CROWLEY T 697-1917 +0
NO # DALE J 690-3736 4
NO # DAMROW Keith 690-1965 +0

BREA CALIF 92621 CONT..
NO # DAYIAN L 691-6161 +0
NO # DEHAAS C M 694-0126 +0
NO # DELAGARZA Jesus E 691-3759
NO # DELAGARZA Yvonne B 691-3759
NO # DEMKE R 691-2770 8
NO # DICKSON D 697-7448 8
NO # DOWDY Judy 690-9557 9
NO # DOWDY Steve 690-9557
NO # DOWELL Tracy 690-8699 +0
NO # DOYLE M D 694-1592 8
NO # DUBY Sean R 529-5970 7
NO # DYKIER Chelsea 694-3415 +0
NO # *DYNO ROD 990-0584 +0
NO # *DYNO ROD 691-6569 9
NO # EASON Edw 690-8386 9
NO # EDGE Harold V 694-6227 8
NO # ELLIS Dawn 690-8495
NO # ELLIS Richard 690-8495 9
NO # *EXCALIBUR DSTRBTRS 990-0512 9
NO # EYLES G 694-5085
NO # EYLES L 694-5085
NO # FERRELL K 697-0440 +0
NO # *FIRST EVANGELICL CH 529-5544 9
NO # FLYNN Joan M 691-2739 2
NO # FROST Marcia 691-4612 +0
NO # FROST Nigel 691-4612 +0
NO # GAMBOA Randy 697-1339 8
NO # GARVEY P 529-9670 9
NO # GEORGE Dan 694-0728 9
NO # GERARD D J 529-0202 +0
NO # GERSHFELD Mikhail 691-3817 8
NO # GIBBS Danl 697-0258 +0
NO # GOMEZ J 691-6626 +0
NO # GOODSON J 694-8915 5
NO # GORHAM Dennis M 697-0550 5
NO # GORKA D 694-0174 +0
NO # GOUKER A M 697-0257 8
NO # GRACE D N 691-2919 9
NO # HAAS Ralph L 690-3517 4
NO # HACKER Donna 996-1641
NO # HACKER John W 996-1641
NO # HAINES D 529-4943 +0
NO # HATFIELD Michael 691-0277 +0
NO # HAUSE Claude W 697-6019 6
NO # HAWES C 691-4355 8
NO # HEDGES Patricia 697-7355 8
NO # HEISE S 694-8955 8
NO # HENSYEL K 691-8285 +0
NO # *HERTZ PENSKE TRUCK 523-9341 +0
NO # HICKS Clay E 697-6020 +0
NO # HINCKS Jas J 691-0266 +0
NO # HNEDERSON M 694-0905 +0
NO # HOMUTH J 694-8754 +0
NO # HOMUTH K 694-8754 +0
NO # HOWARD H 697-0442 9
NO # HOWINGTON Robt 690-9304 8
NO # HUCK R 690-6868 +0
NO # HUDSON S 690-5099
NO # HUFFMAN K 691-5387 8
NO # HUGHES Wayne 990-5757 +0
NO # HURST Stephen D 691-1442 9
NO # HUTSON P 691-1484 8
NO # *INTELLIGENT TEMPRY 533-8882 9
NO # IRBY H N 694-8742 4
NO # JABLECKI E J 690-3913 5
NO # JABLECKI Stan 690-0493 +0
NO # JAKOSH Robert 690-5678 +0
NO # JEPSEN L 697-0066 5
NO # JONES Chas 697-7959 9
NO # JORGENSEN C 691-9692
NO # JORGENSEN M 691-9692
NO # JUSTICE Richard M 990-9228 +0
NO # *K M F PLASTERING 990-6734 +0
NO # KAUFMAN D 529-0259
NO # KAUFMAN L 529-0259 9
NO # KELLY C A 694-3746 9
NO # KELLY C A 691-3456 9
NO # KERN M J 691-6871 9
NO # KERN Michael 697-1117
NO # KERN Miriam 697-1117 9
NO # KNAPPENBERGER B N 697-5481 5
NO # KOENIGSLIEV L 694-1415 6
NO # KRESLIE A P 691-5515 8
NO # LAWRENCE S 694-3151 +0
NO # LEE Donald D 529-0116 9
NO # LILIENTHAL M A 529-8778 9
NO # LIPUS L 694-1281 +0
NO # LISPI M 690-8716 +0
NO # LOFLAND M 690-7670 +0
NO # *LOVE UNIVERSAL SLS 691-7412 3
NO # MACIAS Bob 690-8465
NO # MACIAS Mitchell 690-8465 9
NO # MALEY V 996-4737 +0
NO # MARTEL M 691-7305 8
NO # MARTINEZ Ray 990-0980 +0
NO # MATRAY K 694-5059 8
NO # MATSUI Takamasa 690-4595 9
NO # MAYS Jeffery A 256-1280 +0
NO # MCCALLUM B J 690-8142 8
NO # MCCARGAR Yolanda 691-2818 8
NO # MCINTYRE Don 691-5901
NO # MCINTYRE Shirley 691-5901 9
NO # MCPEAK M 691-8844 +0
NO # MCPEAK R 690-6188 +0
NO # MENARD N 690-9882 9
NO # MENARD Y 691-6311 9
NO # *METRO SCALE&EQUIP 671-0880 6
NO # MIGLIORE R 694-5732 8
NO # MILLER S 697-5220 9
NO # MILOSICH M 691-3346 5
NO # MINA Carlos 697-3716 9
NO # MITCHELL C J 694-6701 8
NO # MITCHELL Donald PHD 690-3144 5
NO # MONETTE D 690-2162
NO # MONETTE V 690-2162
NO # MONTGOMERY M 990-3295 9
NO # MOORE E J 694-8224 +0
NO # MOORE N J 529-2519 7
NO # *MORENO VLY SEPTC SV 697-1086 +0
NO # MORRISON L 694-6650 8
NO # NELSON J 694-3996 8
NO # NORDQUIST P 694-0658 +0
NO # NOVICOFF G 697-9827 6
NO # OCONNELL Ann 694-1251
NO # OCONNELL John R 694-1251
NO # *ONE PERCENT RE BRKR 694-8970 9
NO # *ORANGE CO SOFTWARE 256-1907 +0
NO # *ORANGE CO TRANSIT 739-1180
NO # OWENS A 691-3163 6
NO # PALAZUELOS E 690-4070 9
NO # PARIKH Suman 990-3267 7
NO # PETERS J N 697-9860 +0
NO # PETERSEN B J 691-9832 +0
NO # PETERSON J K 697-1151 +0
NO # PIPKIN Dorothy 691-6584
NO # PIPKIN Roger 691-6584 9
NO # POWNALL D 691-3413 +0
NO # *R J&J CONSTRUCTION 697-5852 +0
NO # RAMIREZ J V 694-0722 8
NO # *RAPPIT ROOTER 691-6071 9
NO # *RAPPIT ROOTER 691-6569 9
NO # *RED TOP CAB CO 535-5552 +0
NO # *REDDI ROOTER 990-0584 +0
NO # REILLY A M 691-7091 6
NO # *RESCUE ROOTER 525-7557 4
NO # RICELY Ron 697-6531 +0
NO # RICELY Sharon 697-6531 +0
NO # RITCHIE John 694-1357
NO # RITCHIE Margaret 694-1357
NO # ROBERTS Donald 690-1656
NO # ROBERTS Emil S 691-9323
NO # *ROBERTS FINANCIAL 990-1224 +0
NO # ROBERTS Peggy 690-1656
NO # ROBERTS Theda 691-9323
NO # ROCK S 694-5822 +0
NO # RODINE J 694-4963 +0
NO # *ROOTER DRAIN&SEWER 526-4757

BREA CALIF 92621 CONT..
NO # *ROSA ROOFING INC 691-5950 +0
NO # ROSENSTOCK L 690-8300 +0
NO # ROSSONI A 690-5775 9
NO # *ROTO ROOTER SV&PLMG 879-2212
NO # ROUTA Frank A 691-4220 1
NO # RUIZ M 694-3731 +0
NO # RYAN S 690-9615 8
NO # SAGE Kathleen 256-1416 +0
NO # SAIFI Fatemeh 690-2108 9
NO # SCHMIDT John 697-1003 9
NO # *SEARS PHOTO STUDIOS 990-6020 4
NO # SEELBACH Angnes 694-0252 +0
NO # SERRAPICA F 694-6241 8
NO # SERRAPICA Vincent 694-6241
NO # SHAPIRO M 694-6821 6
NO # SHELLEY Karen 694-8516
NO # SHEPPARD A 690-6400 +0
NO # SHIOZAKI Jason 697-0568 +0
NO # SMITH Mary M 529-0602 +0
NO # SOLANO C V 690-5690 +0
NO # *SOUTHRN CA EDISON 871-2100
NO # *SOUTHRN CA GAS 634-0251 9
NO # SPEECE B 694-8617 4
NO # STAMARY Wendy A 690-9067 +0
NO # STARK John M Jr 529-2645
NO # STENEN Norman H 697-7491 5
NO # STEPHEN Lorraine 691-1916 6
NO # STEVENSON David 697-6093 9
NO # STRATTON A R 255-1623 9
NO # SUTTON F E 690-0500 8
NO # SWAN Allen E 691-1781 8
NO # SWISSHELM S 690-6775 9
NO # TAKAHASHI Saburo 990-6277 +0
NO # TERRANCE L 691-7822 8
NO # TERRANCE L 694-6157 9
NO # THACKER James P 255-9813 +0
NO # *THACKER MBL LOCKSHP 255-9813 +0
NO # THOMAS Christine 690-2891 +0
NO # THOMAS Steve 690-2891 +0
NO # THOMAS Steven H 990-0988 +0
NO # *THOR ASSOCIATES 691-0642 9
NO # THORNE Barbara 690-1872 9
NO # TIERNEY D 697-5022 8
NO # TING V C 691-6240 6
NO # TRUEBLOOD E 690-1890 9
NO # TUCKER J 691-0456 9
NO # TURIACE Teri 690-8856 8
NO # UNDERWOOD Gertrude 691-0378 8
NO # *UNOCAL PRDCTN FORMN 529-2118 6
NO # URIAC C R 694-3096 8
NO # VANGORDEN Jan 691-2945
NO # VANGORDEN Lyle 691-2945 9
NO # VERMILLION Dale 694-5945 +0
NO # VERMILLION Jean 694-5945 +0
NO # VILLAGOMEZ P 691-5591 8
NO # WAKINO G 529-7254
NO # WAKINO Y 529-7254 7
NO # WALTERS Darline 690-7965 +0
NO # WALTERS Gilbert 690-7965 +0
NO # WEIGEL J 691-9565
NO # WEIGEL W 691-9565
NO # *WESTRN ST EMPR CNCL 697-6155 4
NO # WETMORE Elizabeth 697-3193
NO # WETMORE Jas E 697-3193 9
NO # WHEATLEY Thos V 990-5422 6
NO # WHEELER G E 697-1831 2
NO # WHITE C L 697-0064 9
NO # WHITTAKER S 694-6464 +0
NO # WILKINSON Timothy 697-4292 +0
NO # WISEMAN Archie 697-0212 +0
NO # WISEMAN Opal 697-0212 +0
NO # WRIGHT M J 694-8166 +0
NO # *YELLOW CAB 255-0900 9
NO # YOUNGBLOOD J 528-9806
NO # YOUNGBLOOD P 528-9806
NO # ZEAH P J 691-5607 8
* 47 BUS 234 RES 98 NEW

BREA BLVD 92635 FULLERTON

1370 ..... BUILDING
*ANDERSON ROBT ATTY 441-0714 8
226 *EGAN MICHAEL ADVR 738-4606
*EKEY MARIBETH PSYD 992-0627 9
240 *ENVIRONMENT CONTROL 870-7500
*ERMES CHARLES ATTY 870-8011
*FOCUS ON MANAGEMENT 680-3700 6
*GERVASE JANICE ATTY 680-5735 4
*GORDON MEYER 773-0333 8
*HAMO REALTY&INVSTMT 879-2320 2
*HILLCREST REALTY 870-5877 +0
*J&L SPECIALTY PRODS 870-0160 8
*JORGENSEN R R ASCTS 871-2900 2
*KELLY JOHN F ATTY 680-0888 4
*KERR CHARLES A RLTY 992-4500 +0
*KOLSTAD R S ATTY 879-1758 2
*LEININGER RICK CPA 738-4713 +0
*LEININGER&CO 738-4713 +0
*M E P ASSOCIATES 870-4800 6
*MEETING PLNNRS CNXN 870-0574 +0
*MILLER ARNOLD 447-8887 8
*MOERBEEK S L ATTY 773-5396 9
*NELSON TERRY ATTY 441-0714 8
*NORTH ORG ESCROW 526-5400 7
*OBORN TRACHTMAN 992-4752 +0
*PERRY GAYLE MA MFCC 525-6679 8
*RALSTON PURINA 879-1150 2
*RALSTON PURINA CO 879-3731 3
*SIGNAL CAPITOL CORP 525-0948 5
*SIMONIAN MICHL DDS 879-7943 5
*SPECTRUM PRSPCTV 992-4594 +0
*STRESS MANAGEMENT 990-1847 7
*SUTHERLAND PHIL PHD 990-1893 2
*T L C SECRETARIAL 870-1244 +0
*TECHNOLOGY STRATEGY 447-8887 8
*TELOS CONSULTING SV 992-6801 9
*VANWAGONER J E MFCC 738-1733 8
*WESTRN MAP CO 525-2315 5
*ZEKS AIR DRIER CORP 447-8490 6
1370 ....
1400 *BOLTON WM ATTY 992-2263 +0
*DAVIDOVCH G 3D ATTY 992-1590 8
*DAVIDOVCH G 3D ATTY 992-0832 +0
*DOLAN WILLIAM ATTY 879-4141 7
*HANNA STEVEN M ATTY 992-1590 7
*METCALF ALAN W ATTY 992-1590 8
*PATTERSON HANNA&ASC 992-1590 7
*PATTERSON S R ATTY 992-1590
*PITTS JOHN H ATTY 879-5300 +0
*PITTS&RYLANCE ATTYS 691-4726 +0
1431 XXXX 00
1440 XXXX 00
1441 *BREA BOARD OF RLTOR 871-1520
*FULLRTN BRD RLTRS 871-1520
*LA HABRA BRD RLTRS 871-1520
*NORTH ORG CO BRD 871-1520
*PLAC BRD OF REALTRS 871-1520
*YORBA LNDA BRD RLTR 871-1520
1451 *EKLS LODGE 1993 871-2993
*ELKS LODGE 1993 870-1993 6
*FULLRTN ELKS LODGE 871-2993 +0
1501 XXXX 00
1600 XXXX 00
1617 CHEUNG C 879-9686 +0
1619 LOSER Jennie P 870-0068 5
1621 GARRISON Robt 680-4601 8
1623 MASICK Todd 526-5158 +0
1627 XXXX 00
1629 XXXX 00
1631 XXXX 00
1637 SHIMIZU Stan 525-8911

BREA BLVD 92635 CONT..
1643 XXXX 00
1645 XXXX 00
1647 XXXX 00
1653 XXXX 00
1657 SANDS Mike 441-0913 9
1659 XXXX 00
1661 BRYAN Frank 879-8005 +0
1663 XXXX 00
1665 NEWMAN M 526-1609 +0
1667 HOLLINGSWORTH Gene 738-1838 9
1669 WOLL Stanley 871-1448 1
1671 XXXX 00
1675 DUCOING Todd 441-2326 9
1677 CRISTINA L 871-6320
1679 ANDRADE Michael 870-0409 7
1681 XXXX 00
1683 XXXX 00
1689 XXXX 00
1691 XXXX 00
1705 HANSON Gary 525-9164 +0
1707 XXXX 00
1711 XXXX 00
1713 ALVARADO Jose Luis 992-0476 +0
1717 XXXX 00
1719 XXXX 00
1721 OSBORNE Ted 441-0181 +0
1727 XXXX 00
1729 XXXX 00
1731 XXXX 00
1733 XXXX 00
1737 SEVEY David E 871-7474 8
1739 JORGENSON Sandra 773-0477 +0
1741 XXXX 00
1743 XXXX 00
1747 ORLANDO Russell 738-5834 +0
REED Fred 738-5834 +0
1755 XXXX 00
1800 ..... IDYLWOOD APTS
15 CHEW Leland W 879-4423
DEARMIN Christopher 870-5405 +0
FIKE S 680-8917 9
JOHNSTON Wm E 870-0898 5
6 MAYO Maurine 871-0875
9 PINNEY Walter H Sr 870-0377
13 ROSS N A 738-0130
11 SAMPSON M O 879-7769
16 VICTORIA Vic 526-7318
1800 ....
1801 *CHOICE PUBLISHING 773-0149 +0
SOMERS Dori J Rev 773-0149 +0
1803 HAVENS Art 680-4335 9
SMIALOWSKI Michele 680-4335 9
1807 XXXX 00
1809 REYNOLDS Scott 525-3519 9
REYNOLDS Terri 525-3519
1810 ..... APARTMENTS
*AUDREY&CO 870-6282 +0
BIRD M E 870-9370 7
FISCHER Norman J 447-4045 9
JOLLEY Michael 526-6092 +0
LAWRENCE Timothy L 879-1194 1
MCCLEARY Lori 526-6825 +0
RAMIREZ Charles 738-5234 6
SILBERMAN Steven 879-5798 8
SWINDELL W 449-0512 +0
1810 ....
1811 XXXX 00
1813 XXXX 00
1817 XXXX 00
1819 HVAUMAKI Matthew 441-1743 +0
1820 MORONESO Martha R 525-9379 +0
VENTRESS Dale 879-1323 7
1821 GIVANS David 525-1622 +0
1823 XXXX 00
1825 XXXX 00
1827 XXXX 00
1829 XXXX 00
1830 *IDYLWOOD APARTMENTS 879-0120
SCHOUW Maren 738-7217 +0
1831 XXXX 00
1835 WASINACK Bill 447-3752
WASINACK Karie 447-3752
1837 BOWERS C 738-8636 +0
1839 CONRAD Carlton R 879-9270 +0
1840 ..... IDYLWOOD APTS
DICKEY Bill 526-4722
DICKEY Cindy 526-4722
HORNING R A 871-7504 9
7 KOLEMAINEN Eino 526-2770
MORONI L 879-7334 9
SMITH Darlene P 870-8596 +0
YOUNG D A 447-1682 7
1840 ....
1841 ENGEL Rod 680-3411 +0
1843 MCCARTY Ernest 738-8429 +0
1845 XXXX 00
1849 XXXX 00
1850 ..... IDYLWOOD APTS
CARLICK Jeff 871-5520 +0
DAIBER Paul G 441-1711 +0
ESCALANTE S 870-5556 +0
GREEN Richard 447-4566 9
HARTSOUGH John 525-3694 9
MCCONNELL C 992-2813
11 SCHWEITZER Robt W 870-1746
WILTSHIRE Monica L 773-4067 9
1850 ....
1857 BURT S 870-1775 7
1859 XXXX 00
1863 XXXX 00
1867 XXXX 00
1869 XXXX 00
1871 QUINLIVEN Frances L 441-1533 6
2151 XXXX 00
2155 XXXX 00
2200 *GOLDEN HL LITTLE LG 738-9658
2201 XXXX 00
2700 ..... BRENTWOOD MANOR
BARAJAS Ben 529-5790 9
CATANZARO Steven R 529-5319 9
COCIU D 671-4023 8
COLE Denise 529-6453 +0
COLE Todd 529-6453 +0
FERGUSSON Hope E 256-1479 +0
HANTSCHE Zane R 529-5421 6
HENDERSON David 529-6170 2
HUNT Julia 256-1838 +0
JOHNSON Bradley S 990-1651 2
JUMENEZ Armando 255-7925 +0
KELLEY R 671-6836 +0
KINKADE Donald 990-3603 9
MEADE Maryann 990-6404 9
POWERS Chas 529-1275 8
REMSKI Derek 529-5937 +0
STEVEN Frances 256-9332 +0
TOWNSEND David L Jr 990-1558 2
TUCKER Phillip 255-1426 9
WORD W 255-7964 +0
2700 ....
2704 XXXX 00
2706 XXXX 00
2714 XXXX 00
2724 XXXX 00
2732 ANDERSON Dawn 256-0592 +0
ANDERSON Mike 256-0592 +0
RICHARDS J E 529-8095 5
WALLIEN Virginia 671-0660 4
2740 LIVESAY Charles 529-2810
LIVESAY Maria 529-2810 9
VARNEY Geo 671-0564
2748 CLARY C 671-6070 +0
CLARY R 671-6070 +0
HOPPER Richard A 990-5029 9
2756 GERDES Linda 529-7955
GERDES Matthew 529-7955
2800 EMENEGER M 671-7825 9
GEIPEL Barry L 256-0425 +0

BREA BLVD 92635 CONT..
GEIPEL Jacqueline R 256-0425 +0
MARSHALL Robert J 990-2657 +0
2801 *EVANGELICAL FREE CH 529-5544 1
SKINNER Lawerence 529-9740 +0
2810 GALINDO Armando 255-9979 +0
HAWKS Roscoe 256-4879 +0
2820 SCHROEDER Andrew Jr 671-9981 8
WALKER John G 671-3852 +0
2830 *VIDEO 20 529-4955 6
2834 *GLEES BEAUTE SALON 529-6363 4
2838 *JOY BELL BOOK STORE 990-9466 2
2844 XXXX 00
2850 *SEVEN 11 FOOD 13999 529-0522
2900 *GENERATION NAIL SLN 671-3133 9
*REGAL CLEANERS 255-1153 9
*WENDIS BRIDAL BOUTQ 529-8579 +0
2901 XXXX 00
2906 XXXX 00
2910 XXXX 00
2916 *JOB BANK EVNGLCL CH 671-1284 7
2920 XXXX 00
2922 XXXX 00
2924 XXXX 00
2928 XXXX 00
2948 LOEB Anthony 529-0074
2949 *ATHELETIC SHOE 671-6004 7
*ATHLETIC XPRESS 671-0820 8
2954 XXXX 00
3001 HEBERT April A 529-6473 7
3003 MILLER Allyn Bud 529-1177 6
3005 XXXX 00
3006 *LIQUOR&MARKET 529-4430 8
3007 SANCHEZ F A 671-1796 5
3009 XXXX 00
3010 *CHIYOMOTO RSTRNT 529-3121 9
3011 BATESOLE Michael 256-1475 +0
BATESOLE Susie 256-1475 +0
3012 *MERCURY CLEANERS 671-1468 2
3016 *VIDEO DOLLAR 529-5876 8
3017 HEFFERNAN M J Jr 671-0117 7
3020 *BEVERLYS BEST BKRY 529-3989 +0
*CAROLES CAKE CREATN 691-2309 +0
3026 *E T C GRAPHICS 529-8997
*ETCETERA ETCETERA 529-8997
*GRILLONE ENTERPRISE 529-9688 8
*IMPRESSIVE SCRN WRK 529-0911 8
3030 *ILLUSIONS NEW VIEW 990-9605 +0
*NEW VIEW PHOTO 990-2919 9
3031 HAMPTON Cathy Anne 990-4770 9
3033 XXXX 00
3035 PFLASTER David A 529-0401 6
3043 SWANSON Jeff T 671-1394 6
3045 LEONARD Jonathan H 529-4173 9
3051 XXXX 00
3057 LITSCHER J 529-9790 6
3059 HERNANDEZ Mike C 255-7934 +0
3063 WINTERSTEEN Edgar 529-7742 7
3067 XXXX 00
3069 MANCUSO Phillip A 990-2281 7
3073 STERRETT J E 255-0726 +0
3075 VOLLMER John 990-9092 7
3085 POTSCH Wade 529-6432 6
3087 MERRELL Diane 990-3511 6
3093 KASE Donald 256-1103 +0
NO # *CHEVRON STATION 529-0255 6
NO # *PETERS J M CO INC 447-3004 8
* 86 BUS 196 RES 71 NEW

BREA BLVD N 92621 BREA

101 *GENIE CARPETS 990-0659 8
*MAGNUM SUPPLY CO 990-0758 +0
105 *BREA AUTO UPHOL 529-1374 +0
*BREA CUSTOM UPHOL 529-6802 4
106 *BABY BARGAIN 671-0547 2
107 *F T S ELECTRIC 671-1036 7
108 *BREA HOTEL 990-6720 9
108½ *BLACK HOLE RECORDS 529-4478 7
110 XXXX 00
113 *SUNBUSTERS GLS TNTG 529-2915 7
115 XXXX 00
116 *ROYAL COACH AUTO 529-6575 2
117 *GUADALAJARA IMPRTS 529-9075
119 XXXX 00
120 *CYLINDER HEAD SPCLT 529-4455
130 *ESCO RUBBER PRODUCT 529-3049
136 XXXX 00
160 XXXX 00
217 *BREA ANIMAL HOSPITL 529-1506
*HILTON FINIS E DVM 529-1506
227 *RON&WAYNES AUTO RPR 529-5756 5
239 *BREA TAX SERVICE 529-1062
*STEPHENS JAN E 529-1062 2
241 *BREA MEATS&LOCKERS 529-2505 7
*BREA MEATS&LOCKERS 529-7330 8
*GARCIA MEATS 255-9928 +0
*READ MEATS&PRVSNS 255-9934 +0
242 XXXX 00
243 XXXX 00
247 ZANDATE Guadalupe 671-7859 8
251 XXXX 00
257 *BREA AUTO RPR 671-1881 2
*BREA TRANSMISSION 255-9830 +0
300 THOMPSON C J 529-9014 8
301 *LAESQUINA 529-2540 2
307 *DAVIDSON INDUSTRIES 529-2828 +0
*DEFT DESIGN INC 990-0400 9
*PAC SECURITY FNCL 990-0515 +0
*PAC SECURITY FNCL 990-5038 +0
323 *HAMADY LLOYD K MD 529-2131
*LEVIT MARK R DPM 529-2131 5
*NORTHSIDE MED CNTR 529-2131
*SABRI MAZIN Q MD 529-2131 8
330 ..... BUILDING
*AMER QLTY DRY CLNG 990-0831 8
*BERSHEA HAIR SALON 529-7997 7
*BREA DANCE APPAREL 529-4090 9
*BREA DANCE CENTER 529-9930 9
*BREA GOLDSMITH 990-2600 9
*CORNER MARKET THE 529-6692 8
*FANTASTIC TANS 529-7417 8
*FOUNDERS VET CLINIC 990-0661 9
*ICE CREAM&YGRT 990-4149 +0
*PET CLINIC A 990-0661 +0
*SHAKEYS PIZZA PARLR 671-3949 7
330 ....
390 *FOUNDERS NATL BANK 990-6066 7
395 *ECONO LUBE 671-0541 2
400 *BREA OLNDA SC 990-7500
401 XXXX 00
500 XXXX 00
520 BURNEY H C 529-5040 2
RUTLEDGE C M 671-7836
RUTLEDGE Denise 671-7836 9
540 DURBIN D L 990-2318 4
MORRISSEY M S 529-3248 2
THORPE G 529-8017 3
560 DERSTINE Harold 990-3763 9
HAUG J 671-1642
HAUG K 671-1642
JORDAN Lee M 671-0349 5
580 CHISICK Mark 990-2187 7
KIHARA Edward K 990-2361 +0
RUDGE Herbert 990-4036
RUDGE Thelma 990-4036
WIEBE John 990-6290
WIEBE Lucinda 990-6290
600 ..... APARTMENTS
JACOBS S 990-8988 4
JACOBS Sandra Lee 671-6931 8
OSTERMANN B J 990-5143 2
REARDON Jack 990-1468 6
SERRANO David 990-0521 9
VANHIEL David E 255-0871 9

BREA BLVD N 92621 CONT..
WELLS P 671-0940 8
600 ....
620 POLLIND Daniel 671-0209 9
640 ..... APARTMENTS
FUCONE C 255-0265 9
MORGENSTERN M 990-0942 +0
OCONNOR M L 990-3118 +0
WARNER Jeff 529-9086 5
WATTS Frank J Jr 529-3330 9
640 ....
654 XXXX 00
655 ..... CANYON PINES APTS
ALLEN Mark W 256-9050 +0
AUSTIN R 529-5703 +0
BACHER Larry 529-1449 9
BARHAM Howard L 255-0757 +0
BEKENDAM Jeffrey 671-4183 7
BERRY Doug 990-8715
BERRY Julie 990-8715 9
BOOKER Eric W 256-9233 +0
BRUMUND Jas 529-2773 7
BYSTRY Steve F 990-1586 5
*CANYON PINES APTS 529-7284
CZECH Alfred 529-9908 7
61 DECEW Dorothy 990-3564
DIETRICH A 529-3070 9
DURANT Tim 529-1116 7
FAVOR V L 990-9488 7
FREISCHLAD Kathy 990-8166 +0
FREISCHLAD Roland 990-8166 +0
GRAVES Dell 671-0164 2
HALPERT Paul J 529-2220 7
HEDEGARD M 529-7304
HORVATH Myrna 671-3044 +0
HORVATH Robert 671-3044 +0
*HYUNDAI PAINTING 671-9958 9
JONES J A 990-4372 9
JONES Robert 990-3445 +0
MARX Geo J 529-6519
MARX Jas A 529-6519
MCLEAN R 671-4154 8
MIERCZYNSKI Doug 990-6926 9
MUSI Lisa 529-4453 9
MUSI Said 529-4453
PATTERSON B I 990-6573
PATTERSON L J 990-6573
ROTH Russell L 990-3829 +0
SAMPOGNA B 671-3126 6
SCHMOLL Elmo 671-1457
SCHMOLL Llith 671-1457
SHAPIRO Leo 990-2999 7
SONG Thomas M 256-9034 +0
STACY William 256-0663 +0
STRICKROTH Leslie 529-1381 +0
SYSE N 990-5909 9
VIRGINIA Marilyn B 990-4686 5
VOGEL J 671-6051 +0
WOOD Richard A 671-1026 7
WU Rong F 671-1981 9
655 ....
707 *A 1 LOUS RENTALAND 691-5666 9
*A 1 LOUS RENTALAND 529-5352 6
710 *BREA CANYON CHIRO 671-1150 +0
*DOMINOS PIZZA 529-7575 8
*FOR YOUR NAILS 2 671-1080 +0
*GUYS&GALS SUN TANNG 255-1122 9
*JOES LIQUOR 255-0717 9
*NUBS TAILORING 529-0874 9
*RMAR COMPUTER SERV 990-5147 +0
*ROBERTSON VIRGIL DC 671-1158 +0
*SHARP KEVIN M DC 671-1150 +0
719 *BECHTLOFF GEORGE 529-9595 3
*STATE FARM INS AGNT 529-9595 7
720 *LOVES WOOD PIT BBQ 529-3914
724 *BREA REXALL PHARMCY 529-2113
*FISHERS BREA PHRMCY 529-2113
725 *GOLDEN ST TRADING 990-2968 8
*TZENG JEFF 990-2968 8
727 *HOUSE OF LIN 671-1464 2
729 XXXX 00
732 *PIZZA GUILD&CO 671-2824 +0
*ROUND TABLE PIZZA 671-2821 5
740 XXXX 00
745 *MICHAELS UNION SERV 529-5370 5
*UNOCAL DLRS SV STA 529-5370
746 *YOGURTS PLUS 671-3167 +0
750 *VIDEO PALACE 529-9391 9
764 *BEER&WINE WAREHOUSE 529-4662 2
780 *VONS GROC 529-4941 +0
782 *IP W M DDS 529-8585 9
784 *P&T GYROS BURGERS 256-1541 +0
786 *ONE STOP TRAVEL 671-9307 +0
790 *K L LTD CLEANERS 529-7378
792 *NAIL CONCEPTS 256-9000 +0
794 *PHILS BARBER 990-9763
796 *QUAKER CITY FED SVG 529-8181 4
798 *BREA SUPER EXXON 990-1048 5
*SMOG CHECK STATION 990-1048 7
831 XXXX 00
855 XXXX 00
875 *BREA HOSP NEURO CTR 529-4963
*BREA HOSP PHARMACY 529-4963
*BREA SC FOR EXCPTNL 529-4963
*EATING DSRDRS PRGRM 529-4963 7
* 89 BUS 91 RES 38 NEW

BREA BLVD S 92621 BREA

100 *BREA HARDWARE 529-1943
*CANNINGS BREA HDWE 529-1943
101 *FRAME PLACE THAT 529-6100 3
*THAT FRAME PLACE 529-6100
*YARN LOFT THE 990-0303 8
104 *BREA JACKSON AUTO 529-3987 3
*JACKSON AUTO SUPPLY 529-3937 7
105 *FUSSY FOX 529-1105
107 *ACORN FINE ART 671-0738 6
108 XXXX 00
109 *GOLDEN WST BUILDING 529-5249 6
110 *ALLEN R J BOBCAT 255-1226 9
*CA CUSTOM PATIOS 529-0604 9
*SUNBELT CONSTR 255-0700 9
111 *BESTLAND INS AGENCY 990-5552 8
*MICHAEL NUSSKRN LTD 990-8809 8
113 *HANLONS DRPRY&UPHOL 529-4751 6
114 *BILL BRUNDAGE GLASS 529-2141
*BRUNDIGE BILL GLASS 529-2141
*NATL AUTO GLASS 529-2141
116 *IRON HORSE THE 529-1795
117 *GUADALAJARA IMPORT 691-7294 6
118 *AWARDS BY RUBI 529-2490 +0
121 XXXX 00
122 *S&S TREE&LNDSCP SPL 529-2201 4
123 *FABRIC CITY 529-2740 +0
126 XXXX 00
128 *PRINTING ETC 990-5151
130 XXXX 00
131 *BREA VACUUM&SEWING 529-4248
*IMPERL JANTRL SPL 529-4879 3
132 *CANYON DRAPERIES 529-2707 9
133 *RODANN ELECT MFG 529-1301
134 XXXX 00
137 *SWEET DOLL SHOPPE 990-0195 9
138 XXXX 00
139 *DEERING JIM PHOTOGH 990-1211 1
141 *BREA BCYCL&LAWNMWR 529-3353 9
143 *ROMANCING THE HOME 529-4551 3
145 *WIENERSCHNITZEL 529-9211 7
146 *PAWLACK ED TILE 529-2364 +0
200 *NORTH CMNTY FREE CH 671-3939 8
201 *ALFRED GOBAR ASCTS 529-9411 8
*GOBAR ALFRED ASCTS 529-9411 8
*INTGRTD RSRCE EQTY 990-8729 8
*REAL EST ECNMCS GRP 671-1081 9
*SHIRREFFS CONSTR 990-9799

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BREA BLVD 92635 CONT.
1853 XXXX 00
1857 BRUT S 870-1775 +7
1859 KOEGEL JOHN R 871-4917
1861 GRABER BILL 879-6926 +7
1863 ANDREWS KEITH W 441-2871 6
1865 XXXX 00
1867 XXXX 00
1869 XXXX 00
1871 QUINLIVEN FRANCES L 441-1533 6
2151 XXXX 00
2155 XXXX 00
2200 *GOLDEN HL LITTLE LG 738-9658 8
2201 *LUCKY COOPER CORRLS 738-9291 8
2700 BRENTWOOD MANOR
ALBERS N J 671-4019 +7
BUTLER JOHN R 529-7637 6
CALBERT STEPHEN 990-9645 2
CALVILLO JAS M 529-9849 2
COCHRAN KEVIN 990-0219 +7
FABRY LAUREN A 671-5865 +7
FERREIRA RICK C 671-1185 6
FULTON THOMAS J 529-7386 +7
GARBARINO DONNA 529-6170 2
GELMAN JOE 671-3993 +7
GELMAN OFRA 671-3993 +7
GUISE STEPHEN H 529-5972 +7
HALKYARD DANL E 990-3241 +7
HANTSCHE ZANE R 529-5421 6
HENDERSON DAVID 529-6170 2
JACOBI CHARLES 3D 529-7517 +7
JOHNSON BRADLEY S 990-1651 2
KAN PETER 529-0603 2
KENNETH SUSAN 671-4151 +7
LAROSA JOS A 529-6612 2
MADRID D 529-6642 +7
MADRID F 529-6642 +7
MALIK EDW JOSEPH 671-5865 +7
MORGENSTERN M 990-0942 2
ROHATSCH FRED A 529-5201 2
STANFIELD G 529-2752 4
TOWNSEND DAVID L JR 990-1558 2
TYLER JAS JR 990-3342 6
VAILLETTE V M 990-6426 5
VANSAUN H E 990-2882 2
WILKINSON ROBT L 990-6409 6
2700 ......
2701 *MANOS UNOCAL 529-5592 6
2704 XXXX 00
2706 XXXX 00
2714 XXXX 00
2724 XXXX 00
2732 KAMINSKI DONALD 990-3605 +7
RICHARDS J E 529-8095 5
WALLIEN VIRGINIA 671-0660 4
2740 FRYDMAN CELIA 990-2462
VARNEY ALICE 671-0564
VARNEY GEO 671-0564 6
2748 BOKELMAN DIANE 671-5825 +7
SMITH JO 671-3806 6
SUITER K R 529-8752
2756 GAVOTTA CLAUDIA 671-0896 +7
INSALACO SALVATORE 671-0194 2
IVERSON DENNIS 990-8180 +7
2800 KRAUS BARB 529-3890 +7
KRAUS KEN 529-3890 +7
PEREZ T A 529-3419 6
2801 *EVANGELICAL FREE CH 529-5544 1
*FIRST EVNGLC CHRCH 529-5544 +7
LULA FRED 529-9740 +7
2810 ASHBY MICHAEL 990-5068 5
COLLINS GRACE 990-0425 6
2820 THOMPSON T 990-9248 6
2830 *VIDEO 20 529-4955 6
2834 *GLEES BEAUTE SALON 529-6363 4
2838 *JOY BELLS BK STR 990-9466 2
2844 XXXX 00
2850 *SEVEN 11 FOOD 13999 529-0522
2900 *J J D FMLY RNCH MKT 990-4918 6
2901 XXXX 00
2904 *FURNITURE DISC WRHS 990-8122 0
2906 XXXX 00
2910 XXXX 00
2916 *JOB BANK EVNGLCL CH 671-1284 +7
2920 XXXX 00
2922 XXXX 00
2924 XXXX 00
2928 XXXX 00
2938 *BASKIN ROBBINS 31 529-0354
*THIRTY ONE BSKN RBN 529-0354 6
2942 XXXX 00
2948 *CHARLES BORDEN&CO 529-6934 +7
LOEB ANTHONY 529-0074
LOEB DUSTY 529-6934 +7
2949 *ATHLETIC SHOE FCTRY 671-6004 +7
2954 XXXX 00
3001 HEBERT RON A 529-6473 +7
3003 MILLER ALLYN BUD 529-1177 6
3005 LANGONE PAUL 529-7505
LANGONE SUZANNE 529-7505 6
3006 *K&T MARKET 529-4430 +7
3007 SANCHEZ F A 671-1796 5
3009 XXXX 00
3011 XXXX 00
3012 *MERCURY CLEANERS 671-1468 2
3016 *VIDEO GO 529-1558 6
3017 HEFFERNAN M J JR 671-0117 +7
3018 *MAIN EVENT THE 990-0677 1
3020 *CAROLES CAKE CREATN 529-3989 1
3022 *FRED VILLARIS STDO 990-1797 +7
*VILLARIS FRED STDO 990-1797 +7
3026 *PROVISION HOUSE 990-4570 2
3030 *COMNTY SYS ASC INC 529-7888 6
3031 PARHAD ROMAN L 529-9470 6
3033 CLOUD RONALD E 529-8911 6
3035 PFLASTER DAVID A 529-0401 6
3039 BROOME JAN 671-0692 +7
BROOME NEIL S 671-0692 +7
3041 COLESTOCK KEITH 671-9059 6
3043 SWANSON JEFF T 671-1394 6
3051 RIEDELL EDWIN H MD 529-4421 +7
3057 LITSCHER J 529-9790 6
3063 WINTERSTEEN EDGAR 529-7742 +7
3067 FOUCHARD DEBBIE K 529-9354 +7
3069 MANCUSO PHILLIP A 990-2281 +7
3073 DODGE NELSON B 990-1453 +7
3075 VOLLMER JOHN 990-9092 +7
3081 TUTTLE FRANK 990-3454 6
3085 POTSCH WADE 529-6432 6
3087 MERRELL DIANE 990-3511 6
3093 RUDDY KENNETH E 990-3297 6
NO # *CHEVRON STN 529-0255 6
* 85 BUS 225 RES 84 NEW

BREA BLVD N 92621 BREA

101 *STEAM GENIE CARPETS 990-0659 +7
105 *BREA CUSTOM UPHOL 529-6802 4
*DECORATING DEN 990-2662 6
106 *BABY BARGAIN 671-0547 2
*BABY BARGAINS 694-4021 6
107 *F T S ELECTRIC 671-1036 +7
108 PETERS DOMINIQUE 671-0685 +7
108½ *BLACK HOLE RECORDS 529-4478 +7
*BREA HOTEL 990-6720 +7
*MOMS SKATE&SERV 529-8854 +7
110 XXXX 00
113 *SUNBUSTERS GLS TNTG 529-2915 +7
115 XXXX 00
116 *ROYAL COACH AUTO 529-6575 2
117 *GUADALAJARA IMPRTS 529-9075 9
119 XXXX 00
120 *CYLINDER HEAD SPCLT 529-4455
130 *ESCO RUBBER PRODUCT 529-3049
136 *CALMAT CO CONROCK 639-6220 1

BREA BLVD N 92621 CONT.
160 XXXX 00
203 *CHRISTIANSON DAVID 529-1122
*COHEN MICHAEL D 529-1122
*COHEN&CHRISTIANSON 529-1122
*GLOBAL TELE DATA 529-1819 +7
*JACK NEAL TILE 529-3999 5
*MACINTYRE JAS CPA 529-1122 6
*MCCALLUM C ATTY 990-3600 +7
*PARSONS RODNEY ATTY 990-3600 5
*RUTTY DISTRIBUTING 671-5922 +7
217 *BREA ANIMAL HOSPITL 529-1506
*HILTON FINIS E DVM 529-1506
227 *RON&WAYNES AUTO RPR 529-5756 5
239 *BREA TAX SERVICE 529-1062
STEPHENS JAN E 529-1062 2
241 *BREA MEATS&LOCKERS 529-2505 +7
242 XXXX 00
243 ALVARADO SALOMON T 990-2411 2
247 XXXX 00
251 GHALANDARZADEH ALI 990-3806 +7
257 *BREA AUTO RPR 671-1881 2
301 *LAESQUINA 529-2540 2
323 *HAMADY LLOYD K MD 529-2131
*LEVIT MARK R DPM 529-2131 5
*NORTHSIDE MED CNTR 529-2131
330 *BERSHEA HAIR SALON 529-7997 +7
*SHAKEYS PIZZA PRLR 671-3949 +7
*VIDEO KING 990-5171 +7
390 *FOUNDERS NATL BANK 990-6066 +7
395 *ECONO LUBE N TUNE 671-0541 2
400 *BREA OLNDA SC 990-7500
401 XXXX 00
500 XXXX 00
520 APARTMENTS
BURNEY H C 529-5040 2
CELONA FRANK 529-6370 3
GROSSMAN SCOTT N 990-2483 4
OLSON DOUG 671-0486 +7
SCULTEURE CARL T 671-1013 5
520 ......
540 APARTMENTS
BIEBER KLARA 529-0178 4
BIRCH S G 671-4135 +7
DURBIN D L 990-2318 4
MORRISSEY M S 529-3248 2
THORPE G 529-8017 3
540 ......
560 APARTMENTS
DAVIS JEFFREY A 671-0437 6
HAUG J 671-1642 6
HAUG K 671-1642
JORDAN LEE M 671-0349 5
LUCKENBILL JOHN G 529-3403 5
RISSER HAL 671-0240
RISSER JEANNETE 671-0240
SCALIA D 529-1556 +7
VANVINDERWESTHUIZ A 529-8140 +7
550 ......
580 APARTMENTS
CHISICK MARK 990-2187 +7
ENLOW S 529-1689 4
RUDGE HERBERT 990-4036 +7
RUDGE THELMA 990-4036 +7
THOMPSON RON 990-6732 6
WAGNER RAY 671-2934 +7
WAGNER VALERIE 671-2934 +7
YOUNG STEVE 529-9598 +7
580 ......
600 APARTMENTS
BREDE S 990-8846 2
HAZARD JIM 990-5007 6
JACOBS S 990-8988 4
KREGER ROBT J 529-1395 6
OSTERMANN B J 990-5143 2
REARDON JACK 990-1468 6
600 ......
620 CARON T 529-2031 4
DELASANTOS C M 529-7089 +7
PAQUETTE T A 671-1467 +7
SWAIM CORALIE M 671-0379 5
640 CAPERTON CLAUDE DR 529-6162 5
REHM RICHARD N 671-1517 2
TINGLEY DEANN 990-5426
TINGLEY ROBT 990-5426
WARNER JEFF 529-9086 6
654 XXXX 00
655 CANYON PINES APTS
ACOCELLA STEVE 529-1091 +7
BAER DAVID M 671-9031 6
BEKENDAM JEFFREY 671-4183 +7
BENOUN D 990-2431 4
BODY KELLY 529-8723 +7
BODY RANDY 529-8723 +7
BRUMUND JAS 529-2773 +7
BYSTRY MARTIN 990-5011 3
BYSTRY STEVE F 990-1986 5
*CANYON PINES APTS 529-7284
CHOUS ROBT 529-6383 5
CUSINO CHARLENE 990-4761 5
CZECH ALFRED 529-9908 +7
61 DECEW DOROTHY 990-3564 9
DONNELLY BRIAN 671-1614 +7
DONNELLY PAT 671-1614 +7
DURANT TIM 529-1116 +7
FAVOR V L 990-9488 +7
FLEMING THOS 671-1596 +7
FOX MARTIN H 529-6173 +7
GILBERT R 990-1856 5
GRAVES DELL 671-0164 2
HALPERT PAUL J 529-2220 +7
HEDEGARD M 529-7304
HENDERSHOT JEFF D 990-4196 6
HERMES CHAS 529-1773
HERMES JULIE 529-1773
HUNTER M B 990-9271 4
HYDE GREG 990-2463 +7
HYDE SHARI 990-2463 +7
51 JAHN WILLIAM C 529-7503
71 KARBE H 990-0306
LANE J 529-7252 +7
MARCHI BEN 529-4386 +7
MARX GEO J 529-6519
MARX JAS A 529-6519
MOFFATT JONATHAN O 990-3565 +7
MOORE DENNIS 529-6416 2
NAFARIYEH BAHRAM 529-8660 6
PATTERSON B I 990-6573
PATTERSON L J 990-6573 5
PRALON NIKKI 529-6048 +7
REINER MARTIN 671-0763 +7
ROSE TINA 529-4375 3
SAMPOGNA B 671-3126 6
SCHMOLL ELMO 671-1457
SCHMOLL LLITH 671-1457
SHAPIRO LEO 990-2999 +7
47 SILLETTO M T 529-1680
SLATER CAROLYN 990-3189 +7
THOMPSON STEVEN M 990-9537 +7
VACEK P L 671-1340 +7
VIRGINIA MARILYN B 990-4686 5
WOOD RICHARD A 671-1026 +7
655 ......
707 *A RENTALAND 529-5352 6
*RENTALAND 529-5352 4
717 *OLENSKIS CSTM UPHL 529-1568
719 *BECHTLOFF GEORGE 529-9595 3
*STATE FARM INS AGNT 529-9595 +7
720 *LOVES WOOD PIT BBQ 529-3914
724 *BREA REXALL PHARMCY 529-2113
*FISHERS BREA PHRMCY 529-2113
725 *JANET FAYES HR STYL 990-3470 9
727 *HOUSE OF LIN 671-1464 2
729 XXXX 00
732 *ROUND TABLE PIZZA 671-2821 5
740 *NORTH ORG OCC GROC 990-0533 4
745 *MICHAELS UNION SERV 529-5370 5
*UNOCAL DLRS SV STA 529-5370

BREA BLVD N 92621 CONT.
750 *FABRIC WAREHOUSE 990-8831 +7
764 *BEER&WINE WAREHOUSE 529-4662 2
780 *SAFEWAY STORES 529-4941
782 *RANCK RAY E DDS 529-8585
784 *ALICIAS 990-4700 1
786 XXXX 00
790 *K L LTD CLEANERS 529-7378
792 *VIDEO PALACE 529-9391 5
794 *PHILS BARBER 990-9763 9
*PHILS BARBER&BTY SH 990-9763
796 *QUAKER CITY FED SVG 529-8181 4
798 *BREA EXXON 990-1048 5
*SMOG CHECK STATION 990-1048 +7
831 XXXX 00
855 XXXX 00
875 *BREA HOSP NEURO CTR 529-4963
*BREA HOSP PHARMACY 529-4963
*EATING DSRDRS PRGRM 529-4963 +7
*HOOVER STEWART B DR 529-4722
NO # FARMER BERT A 990-5744 +7
* 71 BUS 113 RES 58 NEW

BREA BLVD S 92621 BREA

100 *BREA HARDWARE 529-1943
*CANNINGS BREA HDWE 529-1943
101 *FRAME PLACE THAT 529-6100 3
*THAT FRAME PLACE 529-6100 8
*THE YARN LOFT 990-0303 9
104 *BREA JACKSON AUTO 529-3987 3
*JACKSON AUTO SUPPLY 529-3987 +7
105 *FUSSY FOX 529-1105
107 *ACORN FINE ART 671-0738 6
108 *BEARLLY WORN 990-2826 +7
*BREA RFNG&WTRPRFNG 990-1304 6
109 *GOLDEN WST BLDG CO 529-5249 6
111 *NATL VIDEO SUBSCRPT 529-7755 +7
*THATS ENTERTAINMENT 671-1000 2
113 *HANLONS DRPRY&UPHOL 529-4751 6
114 *BILL BRUNDIGE GLASS 694-2414
*BILL NTL AUTO GLASS 529-2141
*BRUNDIGE BILL GLASS 529-2141
*NATL AUTO GLASS 529-2141
116 *IRON HORSE THE 529-1795 8
117 *GUADALAJARA IMPORTS 691-7294 6
*SAMS PLACE 529-9102
118 *SEMLESS JEWELERS 529-2490
120 XXXX 00
121 XXXX 00
122 *S&S TREE&LNDSCP SPL 529-2201 4
123 *JEANNES YARDAGE 529-2740
124 *BREA MOOSE LODGE 671-1039 5
*MOOSE LODGE NO 1268 990-9738 0
124½ MATZENGER MARK 529-3307 +7
ZEIDMAN MICHAEL 990-3370 5
126 XXXX 00
128 *PRINTING ETC 990-5151 9
129 *HAIRCUT NATURALLY 529-6722 3
*HAIRCUT NATURALLY 529-9109 3
130 XXXX 00
131 *BREA VACUUM CLEANER 529-4248 9
*IMPERL JANTRL SPL 529-4879 3
*IMPERL JANTRL SPL 529-4248 0
132 *DRAPERIES BY ROSI 529-2707 6
133 *RODANN ELECT MFG 529-1301
134 XXXX 00
138 XXXX 00
139 *DEERING JIM PHOTOGH 990-1211 1
141 *BREA BCYCL&LAWNMWR 529-3353
*COMNTY ASTNC PATROL 529-6044 1
*SWEET DOLL SHP THE 990-0195 +7
143 *WILSON BRYANT&ASC 990-0123 0
145 *WIENERSCHNITZEL 529-9211 3
146 *FRANK MULLERS TILE 671-3955 6
*H E ENTERPRISES 671-0733 6
*PAWLACK ED TILE 529-2364 +7
200 XXXX 00
201 XXXX 00
203 *D A C PAC 671-0991 +7
*HORIZON CAPITAL 694-2094 9
*KEISERMAN DAN 694-2094
*MOCHON A W ACCNTNCY 529-4156 4
*NATL HERITAGE INDS 694-2094
*NATL HORIZON CORP 694-2094
*PACIFICA DEVELOPMT 694-2094 1
204 XXXX 00
205 *BARNES RALPH E 529-3921
*TRIPP DOUG 529-3921
206 *V F W BREA POST 529-4874
*VFW 5384 529-9112
207 *ALFRED GOBAR ASSOCT 529-9411
*GOBAR ALFRED ASSOCT 529-9411
*INTGRTD RSRC EQUITY 990-8729 +7
*REAL EST ECONOMICS 671-1081 4
210 *BREA STATIONERS 529-1404
212 XXXX 00
214 *MICKEYS AUTO BODY 990-5411 0
*MICKEYS CSTM AUTO 990-3922 3
216 *LITTLE BUT WISE BK 529-7991
217 XXXX 00
218 *BREA CARPETS 990-2223 6
*VIDO FAUDOA TAPE 990-1267 +7
221 *BREA BOAT 990-0413
*BREA BOAT SERV&ACSR 697-8706 0
222 *PAC OIL WORLD 691-1419
*PAC OIL WORLD MAG 990-3033 4
*RIDER JACK M&ASCTS 990-2666 +7
*RIDER JACK M&ASSOC 691-0929
224 *INNOVATED FORMULNS 529-9041 6
*INTE TEL COMMNCTNS 529-2965 +7
227 *ITALIAN EXPRESS 990-5155 +7
*VELTRIS ITLN RSTRNT 990-5155 2
228 XXXX 00
231 XXXX 00
233 XXXX 00
234 *BREA TRAVEL SERVICE 529-1947
235 *BREA FLORIST 529-2747 +7
244 *VEGAS AUTO CARE 529-7717 4
245 XXXX 00
255 *BREA CARWASH 529-0255 3
300 *DICKS SHELL SERVICE 529-9132
303 XXXX 00
312 *BIG O TIRES 529-7602
*BREA TIRES INC 529-7602
313 XXXX 00
320 *BREA FURN&DRAPERIES 990-8944 5
*BREA FURNITURE 671-1502 4
*MOTEL SUPPLY CO 990-8944 +7
321 ENDSLEY L D 529-0667 0
323 KOBERNIK L M 529-2777
324 *ALLRED RICHARD ATTY 529-0111 5
*CARPELLO J ATTY 529-0111
*CARPELO EAGAN ATTY 529-0111
*EAGAN MARC ATTY 529-0111 5
*JOHN H SMITH 3D 529-0111 +7
*WISHART BARRY ATTY 529-0111 5
329 XXXX 00
330 *COHEN ELWOOD DO 529-2168 4
331 *WINSTON TIRE CO 671-3941 5
333 *BONACCI JOHN 529-4147 6
*EKNO JOHN 529-4147 6
*FARMERS INS AGENT 529-4147 6
*KUEHL ED 529-4147 6
*NOW CONSTR CORP 990-3624 +7
*SASSER WAYNE 529-4147 6
334 *FRITCHER E L DR DDS 529-9941
*FRITCHER E L DR INC 529-9941 9
*MUSULAS LYNNE DDS 529-9941 4
335 *CLEAR VIEW PRODUCTS 990-3507 4
336 XXXX 00
337 XXXX 00
339 *BREA GLASS&MIRROR 529-4252
*DIAMOND BAR GLASS 595-0685 1
*J J PAINTING MNTC 529-1077 +7
341 *BOULEVARD FLOWERS 529-5943 2
*FLOWERS BY MR ED 529-5943 3

BREA BLVD S 92621 CONT.
342 *BREA PLUMBING 529-1034 2
*SMITH RAY PLUMBING 694-4357 0
346 *KENTUCKY FRIED CHKN 529-4408 5
401 *AMER COLLEGE OF LAW 671-0153 5
*MEYERS JOHN O ATTY 671-0557 +7
406 XXXX 00
408 XXXX 00
418 *UPSTAIRS DWNSTR BTY 990-4247 8
420 GHEEN G H 529-2072
424 XXXX 00
428 *A&A BOOKKEEPING 529-4993 +7
*BLAKE RICHARD OD 529-2470 8
*KIRSCHEN DAVID OD 529-8228 +7
432 *CRYSTAL&CUNDALL INS 671-2846 +7
440 WILSON CAROL 671-3142 5
*WILSON CAROLE CPA 870-8570 5
442 *TACO BELL 529-9115 8
450 XXXX 00
475 *EMERGENCY AMBULANCE 694-6321 6
*EMERGENCY AMBULNC 990-1331 6
495 XXXX 00
500 *CAR THE 990-1609 4
*U HAUL CO 990-1609 5
501 *GOEDL RICHARD 529-3936
*MENDEZ JOSE BKKPG 990-1881 8
*STATE FARM INS AGNT 529-3936
507 XXXX 00
512 *HUIBERTS DRY DRV IN 529-7432
514 *BREA TROPICAL FLRST 529-3478 9
*GENE XENOS FLORIST 529-3478 5
*XENOS GENE FLORIST 529-3478 5
516 *BREA OFC EQUIP CO 529-5323
518 *DESIGNS BY JURGEN 529-2799 6
*KAI RESTAURANT 990-6937 0
519 *OMNI TRUCK SALES 671-2135 3
*SMOG CHECK STATION 671-2135 +7
520 *ACCUPRESSURE CLINIC 671-5991 +7
*MANUEL DARWIN RLTY 529-1991 6
522 *BREA CLEANERS 529-5551
524 *RED OVEN PIZZA 990-3003 6
A *LEES DENTAL LABORAT 529-5001
526 *MARUMOTO B K DR 529-1676 4
527 *ALLTIME LEASING CO 671-3800 +7
*ALLTIME RENT A CAR 671-3800 +7
*FAWNRIDGE INC 671-3800 +7
MARTIN DAVID 671-6880 +7
*ORANGE APEEL PRNTNG 529-1420 +7
529 *MEDITERRANEAN TILES 990-6644 6
VARGAS ESIQUIO 529-6078 5
530 *MARIONS PRIDE BKRY 529-9003 +7
531 RUSSELL DICK A CPA 990-2495 +7
532 *DOG TAG 990-2321
533 SINGBUSCH ALBERT C 990-2823 0
534 *PURPLE HEART SALOON 529-9100 +7
535 BRANDIS L J 990-4150 3
539 XXXX 00
543 *ADOCLEAN 529-9004 +7
*CONTL MAINTENANCE 671-4181 +7
546 *COMNTY TIRE OF BREA 529-0393 +7
600 *ELECTRNCS R US 990-3065 +7
601 *BREA ORIENTAL GRDN 990-0151 0
602 *WINCHELLS DONUT HSE 990-9720 9
604 *CENTURY CABLE S CAL 529-4918
*CENTURY CABLE SO CA 691-6795
606 *MODEL MARKET 529-7654 +7
610 *SAN D POODLE&PET SH 529-1522
*SANDY POODLE&PET SH 529-1522
612 XXXX 00
615 XXXX 00
616 *FARMERS INS AGENT 529-3525
*PALMER INCOME TAX 990-2711 2
STONE ALMA 529-3525
618 *GABES BARBER SHOP 529-9183
624 *RUG DOCTOR RENTS 529-1324
*SOUTH LAND HARDWARE 529-1324
*SOUTHLAND HARDWARE 529-1324
630 XXXX 00
633 *AMER FRST FED CR UN 990-1171 6
634 *BREA HEIGHTS PHRMCY 529-3901
638 XXXX 00
642 *FEMENIQUE 529-0422 3
646 *KASPRO EDWARD V DC 529-3811 6
652 *HENDRICKS HAIR DSGN 529-2498 9
*NAN KAY HAIR DSGN 529-2498 8
655 XXXX 00
658 *BREA SHOE REPAIR 529-6536
670 *HACIENDA BEVERAGE 529-1593
675 *SPARKS ANIMAL HSPTL 529-4988
*SPARKS LARRY E DVM 529-4988
680 XXXX 00
685 *FIRST INTRST BK 529-3991 2
690 ISSELHARD DAVID E 529-5771 +7
*JONES LESLIE R 529-9402
*JONES RICHARD D 529-9402
*LADIKOS COSTAS 529-9402 +7
*SHAY STERLING JONES 697-1751 3
*SHAY STIRLING JONES 529-9402 3
700 *ABBOTT RICHARD DDS 529-4414
*VINSON RICHARD DDS 529-4414
707 *BREAS BEST BURGERS 990-2615 2
*RENTALAND 691-6666 6
711 XXXX 00
715 XXXX 00
718 XXXX 00
723 *HAYTER TRUCKING 529-0922 +7
*REGENCY MOTEL 529-3927
727 *HYLAND MOTEL 990-6867 5
739 *CHEN DAVID 529-4994 5
*DONAHUE JOHN A MD 529-4994 +7
*GELLER STANLEY J MD 529-4994 +7
*LAMPELL HARVEY DPM 697-9945 1
*MACCALL W C MD 529-4994 +7
*MOREHOUSE MDCL CLNC 529-4994 +7
*MOREHOUSE MED CLNC 697-9945
*MORELLI ROBERT M MD 697-9945
*OFFENBERGER M E MD 529-4994 +7
743 *BLUM CHAS S DDS 529-0483 2
*BRADLEY&ASSOCIATES 671-0759 +7
*CLARIDA ROB CPA 671-0683 +7
*SIERRA CYBERNETICS 990-1212 5
745 *CLARK JOHNSON CO 529-9431 6
*FOR SALE BY OWNER 990-3911 +7
*HARNISCHFEGER CORP 990-5969 6
*PADILLA DEVELOPERS 990-9629 2
*SUNSET REALTORS 990-1733 2
*WESTRN CLAIMS SRV 990-4789 6
747 ADAMS P R 671-5838 +7
*D W KIMMEL CONSTR 990-0101 6
*S&S PRFSNL INS SRVS 671-3917 6
*ST LOUIS LITHO 529-4085 5
*TREBOR INC 529-4044 +7
*WILLIAMS JEAN PHD 671-1336 +7
749 *CASTANEDA&ASSC 990-2171 5
*MEZURECKY A W PHD 879-3010
*MEZURECKY PEGGY CGA 879-3010
*P L T COMPUTERS SYS 671-1202 +7
*PELO A HAIR STUDIO 529-8988 6
*PENICHE&ASSOCIATES 671-2976 6
*ROSE PACKING CO 690-2005 4
*SOLID STRCTR CONSTR 671-1978 6
*WORD DATA PRO 990-2478 6
755 XXXX 00
770 BUILDING
*A B C DESIGNS 529-6834 3
*ADVANCD WATR TRCK 990-8801 6
*AMER BUSNS CENTRES 990-8998 +7
*ANTHONY THOS E ATTY 671-2175 6
*ARLENES TYPING SERV 990-9279 +7
*BREWER JIM REALTY 990-2955 6
*CAL COAST APPRAISER 691-3271 6
*CAL COAST APPRSRS 990-5053 6
*CANINE COMPANIONS 671-0257 6
*CANINE COMPANIONS S 990-5122 +7
*CAREY&THOMAS 529-3695 +7
*GILLETT FELICIA CPA 990-3613 5
109 *HAIRLINE 529-7551
*HARVEY CARL&ASSOC 529-2886 6

BREA BLVD S 92621 CONT.
*HEADLUND GARY B 529-4390 6
*HUME KENT S MFCC 529-2097 1
*JADE OF IDAHO 990-5559 +7
*K 9 COMPANIONS 671-0257 6
*KEHOE JACK J 529-1861 5
*LA PETITE FLORISTS 529-4822 9
*LAPETITE FLORIST 691-7273 8
111 *LAVILLA REALTY 529-1511
*MANSUR WADE A MA 990-4404 6
*MCLANAHAN REALTY 529-6333 6
*P C DIAGNOSTIC CNTR 671-0515 +7
*R C WEBER FRST PROD 671-0888 6
*REAL EST REVOLUTION 529-9898 +7
203 *RIBAL RAYMOND R 529-4991
*RIGBY JAMES CPA 990-3613
*RIGBY&GILLETT CPAS 990-3613
*ROBERTS COFFEE SHOP 529-5813
*ROMACK INC 990-9209 +7
230 *ROSE JOHN D&ASSOCTS 529-9340
*RUNQUIST LISA ATTY 990-5529 6
*SEQUOIA INS AGENCY 529-1921
*SPAETH MANFRED 529-4457 5
*SUPREME PRODUCE CO 990-0339 1
*TECUMSEH CONSTR CO 990-9337 +7
*TOMLINSON ENTPRS 529-1335 0
*VORE LEE 990-5053 6
*VORE LEE H 691-3271 6
*WE CAN HELP 990-9297 +7
*WESTWAYS INS AGENCY 691-5814 9
106 *WESTWAYS INSRNC AGC 990-1382 9
*WHITE AIR SYSTEMS 990-3982 +7
770 ......
800 TOWN&COUNTRY APTS
*ABATE NTRTNL CNSLR 671-1813 6
AHMED MAHMOUD SAYED 990-5117 6
AKAHOFHI HIDEYA 990-3061 6
ALT CAROL 671-4097 +7
ALT TOM 671-4097 +7
BERKLEY LINDA 529-1306 +7
BERKLEY MICHAEL 529-1306 +7
BIRCHALL CLIFFORD 671-1389 6
BRIDGMAN L 529-5302 6
BROWNING CHRIS 671-6895 6
CHANDIK MATTHEW R 990-5917 +7
CLARKE KATI 529-7729 6
COOK T 529-4245 +7
ENDRESEN SUSAN 671-4152 +7
FOLEY JOHN J 529-2021 6
HORNER MARK 529-0898 +7
HUSSEIN HELAL A 990-5101 6
JONES L 529-5302 6
KING JAS LEE 671-5948 +7
MAYCROFT BRIAN 990-8941 6
MELLEN JIM 990-6228 +7
MOSHER K 529-2547 6
PEEL JOHN W JR 990-0140 +7
RIPLEY BRIAN 990-8856 +7
SANTORO DANIEL J 990-0736 +7
SCHMID E 529-1412 +7
SEERY WM 529-3892 +7
SHERMAN GAIL 529-8407 6
SHERMAN ROBT 529-8407
SHIFFREN GARY M 671-0734 6
SIMMONS L 990-3558 +7
SINGER D 990-8174 +7
STARK ALLEN 671-0123 +7
STRATE LEONA 990-8782 +7
SUTHERLAND LOUISE 990-4701 +7
SWANSON STEVEN 990-6500 +7
TARANTINO R 990-1107 6
TAYLOR KATHLEEN 671-1067 6
TERRY RONALD D 671-4128 +7
*TOWN&CNTRY APTS 529-2622 6
VALENCIA SERGIO 990-8814 +7
WAGNER RANDY 990-9351 +7
WHITESCARVER S P 990-3157 +7
WREN ROBT 990-2631 6
800 ......
805 *TWIN PALMS MOTEL 529-3078
815 *DAS FIX UM HAUS 529-1455
835 *BREA MORTUARY 694-3974
*NEEL FUNERAL DIR 529-2194 3
*NEELS BREA MORTRY 529-2194
*NEELS BREA MORTUARY 694-3974
WEDDLE C D 529-3688
*WEDDLE CAROL D 529-2194 +7
901 *WILBUR FLOYD D MD 529-3480
903 *SENSEMAN NED A DDS 529-3184
* 279 BUS 94 RES 88 NEW

BREA CNYN RD 92621 BREA

1281 BUILDING
*BROOKER ASSOC 990-5701 3
*CHAMPION CHEMICALS 529-1163 1
*DRAINAGE SYSTEMS 529-1968 +7
*HILLSIDE SPCLTYS 529-2828 4
*HOLCKS AUTO REFRIG 529-2347 6
*JULIOS WELDING 529-9554 5
*L&J BACKHOE&DMP TRK 990-9602 3
*M T S 990-0865 5
*NIETO&SONS VACUUM 990-6855 0
*OSORIO PEDRO R 671-1312 3
*R T S INC 529-6887 5
*SHY KENNY TRUCKING 990-2921 6
*SIMMONS PLUMBING 990-0185 4
*SKIPS BACKHOE&DUMP 529-6988 4
*SOLID STRCTR CONSTR 671-2195 6
1281 ......
1531 *BREA CANON OIL CO 529-3242
1862 BULOW LEONARD 529-2633
1892 JOHNSON ERNIE 529-3293
* 16 BUS 2 RES 1 NEW

BREA MALL 92621 BREA

100 BUILDING
*ALLSTATE INS CO 990-2941 5
*COLDWELL BKR FNCL 529-4961 5
*DEAN WITTER INC OFC 529-4794 4
*NORTH ORG OCC STORE 990-1355 9
*SEARS 990-6020
*SEARS CATALOG 990-6000 8
*SEARS CATALOG CHECK 990-6020
*SEARS FNCL NETWORK 529-4997
*SEARS FNCL NETWORK 529-4794
*SEARS FNCL NETWORK 529-4961
*SEARS FNCL NETWORK 990-2941 5
*SEARS FNCL NTWRK CT 990-2941
*SEARS FNCL NTWRK CT 529-4961
*SEARS FNCL NTWRK CT 529-4794
*SEARS SAVINGS BANK 529-4997
*SEARS TUXEDO RNTLS 990-6020
*WESTRN ST OPTICAL 990-4353 9
100 ......
200 *BROADWAY DEPT STORE 990-1400 9
*PIEKARSKI MARK J DR 990-2782 0
250 *SEAFOOD BROILER 529-0632 6
300 *GILHOOLYS REST&PUB 990-4202 4
*MAY CO FINE JEWELRY 671-2905 +7
*MAY CO WRLD TRAVEL 990-4101 4
*MAY COMPANY 990-3111 8
400 *ICE CAPADES CHALET 990-4445 8
500 *NORDSTROM 529-0123 0
600 *MAGNOLIAS PEACH 990-4494 4
1000 *CRANDALL JOHN 990-6611 6
1002 *GREAT EXPECTATNS PR 990-6200 3
1005 *FLIPPER FLAPPER 529-8055 8
1008 *UNITD ARTISTS CIN4 990-4021 9
1010 XXXX 00
1012 *HARDY SHOES 990-1144 3
1014 *BREA PETS 990-0702 8
1016 *SHAFFER CARDS 529-9512 8
1018 *HICKORY FARMS OF OH 529-7445 8

BREA MALL 92621 CONT.
1020 *CHESS KING 529-9243 0
1022 *KARLS TOYS HOBBIES 990-2601 8
1026 *FASHION CONSPIRACY 529-3534 8
1028 *JEANS WEST INC 871-3005 +7
1030 *CORNERSTONE GALLERY 990-6636 +7
1036 *RITZ CAMERA CENTERS 671-1962 2
1038 XXXX 00
1040 *G H Q FOR MEN 671-0884 6
1042 *WICKS N STICKS 990-2164 9
1046 *ZALES JEWELERS 990-3292 8
1048 XXXX 00
1050 *HARRIS&FRANK BREA 990-3101 1
1054 *PETRIES 529-1188 8
1058 *KINNEY SHOES BREA 671-0100 3
1060 *CONTEMPO CASUALS 529-9233 8
1063 *LAWSONS JEWELERS 529-7852 8
1064 *TEDS CLOCK EMPORIUM 529-0880 6
1065 *BROOKS FASHIONS 529-4878 5
1068 *MATSUOKA STAN DR 990-9311
*MURATA KENNETH DR 990-9311
*TANIGUCHI SUMIO DR 990-9311 +7
1080 *C PS GRILLE 990-9577 5
*LAREDOS 990-9577 4
1082 *FANFARES 990-4760 +7
1086 *RED EYE INC 990-3512 6
1088 *DAVID JAMES MENS SH 529-2053 5
1089 *LEEDS SHOE STORES 529-9845 8
1091 *HOWARD WESTERN WEA 990-5542 6
1092 *LEAHS FABRIC GLLRY 671-1210 2
1094 *BAKER C H SHOE STR 529-9489 1
1096 *PARKLANE HOSIERY ST 529-9524 8
1098 XXXX 00
1100 *DECK THE WALLS 529-0545 5
1102 *WET SEAL 529-8141 +7
1108 *BIG&TALL MENS FSHN 990-4442 3
1110 *BUFFALO CONNECTION 671-0543 2
1113 *MAGIC RAZOR 529-0104 8
*MAGIC RAZOR NAIL BR 529-1018 9
1114 *GENERAL NUTRITON CT 990-9737 9
1116 *VIDEO CONCEPTS 529-1791 4
1118 *FOOT LOCKER 529-7972 3
1120 *HELEN GRACE CHOCOLT 990-3022 9
1122 *HALL J HERBERT JWLR 529-1278 +7
1124 *SUSIES CASUALS 529-2609 5
1126 *B DALTON BOOKSELLER 990-1403
1128 *WOMANS WORLD SHOP 529-0722 0
1130 *MUSICLAND 529-6125 8
1132 *THOM MCAN SHOE STR 529-9250 8
1134 *MILLERS OUTPST LEVI 990-3202 9
1138 *FOXMOOR CASUALS 990-6991 5
1140 XXXX 00
1142 XXXX 00
1146 *AT OUR HOUSE 990-5996 1
1150 *SANDWICH SH&PIE PLC 529-8001 +7
*THE SANDWICH SHOP 529-8001 +7
1152 *LITTLE FOLK SHOP 671-1536 2
1154 *PRIVATE MOMENTS 990-5808 3
1156 *DALES FOOTWORKS 529-0244 5
1901 XXXX 00
2000 *LERNER SHOP 529-1811 8
2004 *PAC SUNWEAR 529-4141 5
2006 *HOUSE FABRICS MACH 529-6230 6
*HOUSE OF FABRICS 990-3451 1
*SINGER SEWING MACHN 529-6230 6
2008 *PAYLESS SHOESOURCE 671-1323 +7
2010 *OSHMANS SPRTG GOODS 529-9837 1
2014 *CASUAL CORNER 990-4354 9
2016 *BILL GAMBLE MENS WR 990-5031 3
2018 *CHIC ACESSORIES 990-0294 8
2020 *HATFIELD JEWELERS 990-0851 8
2024 *TOY BOX 990-4600 1
2027 *BREA MALL MNGMT OFC 990-2732 6
*NATL UNIFORM SHOPS 990-6672 0
*PEMBROOK MANAGEMEN 990-2732 5
2028 *FREDERICKS OF HLYWD 671-0819 2
2030 *WILSONS HS OF SUEDE 529-3594 0
2032 *MANDARIN GEMS BREA 529-7795 2
2034 *HILANDS TOBCCO LCKR 529-8484 8
2036 *KINDERFOTO 529-4226 8
2038 *JACKIES FASHION CTR 529-9505 9
2040 *COOKS CORNER 529-6282 6
2042 *PABLOS KITCHEN 671-5907 +7
2046 *TERIYAKI HOUSE 990-1003 5
2048 *FAMOUS RAMOS HOT DG 529-0042 8
2050 *CAROUSEL PIZZA 529-2093 8
2052 *CA CRISP 529-6606 +7
2054 *CHINESE KING 990-1224 9
2056 *CORN DOG ON A STICK 529-0918 4
2057 XXXX 00
2058 *FILLING STATION THE 990-3636 2
2059 *TIFFANYS BAKERY 990-9735 9
2060 *HAAGEN DAZS ICE CRM 529-9434 3
2062 *1 POTATO 2 INC 990-8439 3
2063 *NATURALIZER WEST 529-1684 8
2064 *POOR ANDYS CNNMN RL 990-6024 +7
2065 *CARTOON JUNCTION 990-4144 4
2066 *WINE SHOPPE ETC THE 990-9463 4
2068 *MALL MUNCHIES 990-9733 9
2069 *SUNGLASS THE 990-1269 0
*THE SUNGLASS 990-1269 2
2074 XXXX 00
2076 XXXX 00
2078 *WHEREHOUSE THE 990-9727 9
2080 *RADIO SHACK RTL STR 529-5565 4
2082 *HOBBYMAN 990-2252 9
*WALDENBOOKS 990-3201 4
2084 XXXX 00
2086 *VALLEY HALLMARK 990-3311 8
2088 *C V S 990-4151 5
2090 *GAP THE 529-4112 8
2092 *GORDONS JEWELERS 529-8258 8
2094 *FLORSHEIM SHOE SHOP 990-9509 4
2098 *COUNTRY COLLECTION 529-6222 8
2100 *BARRYS STRIDE RITE 529-9991 8
*STRIDE RITE BARRYS 529-9991 8
*STRIDE RITE BOOTERY 529-9991
2102 *CIRCUIT THE 529-2884 8
2104 *KNIFE GALLERY THE 990-0556 9
2106 *PAPPAGALLO SHOES 529-1888 6
2110 *ON THE GO TRAVEL SV 990-1611 0
2112 XXXX 00
2120 *GREAT AMER STRY THE 990-3168 3
*THE GRT AMERCN STRY 990-3168 3
2122 *SANTA ANITA LUGGAGE 529-4995 9
2124 *JOELS 990-3666 9
2126 *MORROWS NUT HOUSE 529-2125 8
2128 *HANOVER SHOE STORE 529-6403 8
2130 *SIZE 5 7 9 SHOPS 529-7579 8
2132 XXXX 00
2134 *SPENCER GIFTS 990-3242 8
2136 *JUDYS 990-6761 9
2139 *JOYCE SELBY SHOES 990-9777 2
2140 *LIMITED THE 990-5818 9
2142 *WOODTOWNE FURN CO 990-4823 0
2144 *MALING SHOES 529-0033 8
2146 XXXX 00
2148 *HANSEL N GRETEL SHP 990-3366 8
2152 *BANK ANTQ RPRDCTNS 671-1364 3
2154 *I NATURAL COSMETICS 529-4265 0
2156 *JAY JACOBS 671-3841 6
2158 *WINDSOR FASHIONS 990-4453 0
2162 *SLAVICS JEWELERS 529-6084 0
NO # *ANATOMY ASYLUM 990-6776 4
NO # *BLOCK H&R 990-6020 6
NO # *GINGISS FORMALWEAR 990-3271 6
NO # *HOLIDAY FITNESS CTR 990-6776 +7
NO # *MOTHERHOOD 529-6063 4
NO # *SIMMONS R ANATOMY 990-6776 4
NO # *VIDEO GALAXY 529-4999 4
NO # *WALDENBOOKS DIST 529-8153 +7
* 172 BUS 14 RES 15 NEW

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BREA

SECTION E 92
BIRCH - BROOKSHIRE

BIRCH E (CONT'D) 92621

1717 (Cont'd)
-K201 Baker Raymond W 990-1932
-K202 Holmes D G 990-1994
-K203 Hardy Donald L 529-0383
-K204 Reynolds E Earl 529-6161
-L102 Ettinger Robt Jr 529-8311
-L106 Middaugh Mike D 990-5710
-L107 Black J 990-4449
-L202 Jones Eddie K 529-7457
-M101 Walden Steve 529-8060
-M102 Hedgecock Richard D ..529-8189
-M104 Petronella Geo 990-2676
-M203 Stewart John & Connie .990-2615
-M204 Gallaway M D 529-9453
-N101 Edes Virginia 529-6177
-N102 Tingley Thos 529-0859
-N104 Fazio Steven L 990-0641
-N106 Padilla Marty 529-1409
-N107 Tiedeman R 529-5743
-N202 Barker Daryl 529-7288
-N205 Hanson David 990-6077
-N207 Oleson Thos W 990-6403
-O103 Blank Bryan & Robin ...529-1315
-O104 Liebschutz Dr A M 990-1993
-O107 St John M W & S 990-5512
-O108 Lynch Eileen 529-3881
-O202 Summers J K 529-4668
-O204 Brown M J 990-2871
-O205 Perkins Mike 990-2894
-P101 Van Patten K L 990-1925
-P102 Mills Bruce 529-4621
-P104 Lawrence Wm John 990-8700
-P202 Simeroth Danl W 990-5017
-Q102 Endlich Fred 529-0253
-Q103 Wilson Greg A 529-8910
-Q203 Nitta Earl H 990-2075
-Q204 Bebernes Debbie & Bill .529-0523
-R101 Titus B J 529-1910
-R103 Feldman S 529-6160
-R201 Castillo Mary H 990-6918
-R202 Heckerman Tim 990-6301
-R203 Minken David S DC 990-0958
-R204 Mason Lona 990-1075
-S103 Brooks Marshall 529-7934
-S105 Eychaner Van 529-2042
-S106 Grabowski L 990-1521
-S202 Sides Jas 990-6329
-S204 Geisert Fred W 529-7736
-S206 De Sylva L 990-1410
-S207 Vontalge Gerald W 529-6559
-S208 McFawn John M 990-3643
-T101 Vermes Maria 990-8828
-T102 Diesel P G 990-0915
-T103 Robertson P K 990-9441
-T104 Koenigshofer J 529-1076
-T105 Bergin Thos 529-0222
-T106 Wolff Michael 529-4696
-T107 Geese Larry 990-8933
-T108 Rasband Robt B 990-6367
-T205 Mayes Dale W 529-1629
-T207 Webster B H 990-0675
-T208 Nesbitt Robt 990-9551
-U101 Wood Cynthia 529-8039
-U103 Hopkins John 990-5515
-U104 Kaplan B 990-9075
-U105 Cannizzaro John D 990-0823
-U106 Rooney Martin D 529-0494
-U201 Sayre Allyn 990-3781
-U202 Franco Albert 990-9510
-U203 Bebernes Pete 990-2466
-U205 Halperin Larry M 990-6294
-U206 Gettinger Peter J 990-3375
-V102 Koenigshofer Frank 990-2342
-V103 Mair Danl 990-1491
-V201 Frakes B K 990-6719
-V202 Macedo Scott & Cyndi .990-9678
-V203 McRae Robin D 529-4609
-W102 Westergaard D M 990-5863
-W103 Ford Michael W & Susan 529-4897
-W201 Martin Reva G 990-1937
-W202 Farrukh Marwan 990-6499
-W204 Boskovich Geo 529-7147
-X102 Culhane Thos C 990-4946
-X103 Niven L J 990-5582
-X104 Haire Brad 990-5421
-X104 Cromer Doug 990-5422
-X107 Joseph M D 529-5159
-X201 Olson Richard G 529-6740
-X203 Morris John R 529-5481
-X207 Castro Roberta L 529-5807
-X208 David Raymond P 529-4743
-Y102 Smith Allen A 990-2645
-Y103 Hart Stephen E 990-8494
-Y104 Figgins D R 990-3654
-Y201 Russo John 529-0874
-Y202 Young Gene 529-8506
-Z104 Ortega Michael A 990-9637
-Z201 Williams F L 990-3969
-Z203 Delunas E E 529-4861
-Z204 Henderson C P 990-9568
-101Q Prist Walter 529-8868
-201Q Beres John G 529-8987
-AA102 Klyce Donald H Sr 990-6353
-AA104 McFadden R A 990-9547
-AA202 Hart Ken 529-8567
-BB102 Porter Sam S 529-2201
-BB103 Booth John 529-6361
-BB104 Fischer Peter 990-2998
-BB106 Bishop Leigh 529-4526
-BB107 Brown M T 529-3105
-BB108 Rock Wm 990-3857
-BB201 Hicks Chuck 529-6890
-BB206 Price N 990-4561
-BB207 Martinez Jose A 990-1354
-BB208 Hartman D J 529-0031
-CC101 Griffith Gary 529-8093
-CC103 Cunningham Jas E 529-2709
-CC104 Morrow Michael A 990-3836
-CC105 Fischer Dave 529-6590
-CC107 Cook J E 529-3310
-CC202 Shelton Danny 529-8227
-CC205 Tudor Gale T 990-3229
-CC207 Jenks E C 529-6461
-DD102 Francesco Albert 990-5435
-DD103 Haltom Rebecca 529-0465
-DD106 Wilkinson Tom N 990-4671
-DD108 Bessho Michikazu 529-8264
-DD202 Butler R 529-6581
-DD204 Radloff Bruce W 990-4544
-DD206 Pecora Anthony J 529-7499
-EE101 Koenigshofer G A 990-3717
-EE102 Olson Melvin A 990-3348
-EE103 Berg D M 990-1725
-EE104 Lee Jas A 990-4127
-EE201 Hamlin Kurt G 529-1982

BIRCH E (CONT'D) 92621

1717 (Cont'd)
-EE202 Rebman Mike 990-1694
-EE203 Martinez Thos 990-3218
-EE204 Emmons Jas E 990-8854
-FF101 Miller Larry J 990-2837
-FF202 O'Connor Pat 990-2216
-FF203 Potts Bill 990-2183
-GG103 Bornstein Irwin B 529-1788
-GG203 Skorheim Timothy P ..990-1267
-HH102 Satterblom Paul R 990-9689
-HH103 Petersen Joe L 990-6397
-HH105 McDuff Jack 529-8092
-HH201 Kelley Addison W 529-4790
-HH202 Moller Tom 529-4769
-HH203 Albericci Dale 529-8200
-HH206 Corral Pat J 990-3825
-II102 Downey Robt 529-0984
-II103 Hampton Jas H 990-5571
-II104 Bartosh Steve & Penny 529-1031
-II202 Hansen Stephanie 990-3998
-II204 McKinniss B L 529-8556
-JJ103 Mohlman David 990-5123
-JJ104 Floto R J 529-3357
-JJ105 Wallin Susan 529-7911
-JJ106 Magnes Harry 529-8861
-JJ107 Wietzke David 990-8427
-JJ202 Lett Tim & Annette ...529-6312
-JJ203 Thornley Wm B IV & Lynn D 990-8869
-JJ205 Hittner Bernard J 990-0725
-JJ206 Creighan John 529-4511
-JJ208 Shryock Jim 529-4276
1919 Holland D C 529-2484
1919 Anderson Robt J Jr 529-2493
1919 Schaich John M 529-2676
1919
-KK2 Haynes Martyn T 990-4414
-KK3 Brown Richard L 529-3560
-KK4 Forry M 529-1178
-KK6 Borsum Robt D 529-2561
-KK8 Durbin D L 990-2318
-KK10 Patterson Kevin W 529-2987
-KK11 Morales J 529-2269
-KK13 Colbert Stephen R 990-0784
-KK16 Lenning Richard A 990-1746
-LL17 Edwards Mike S 529-3776
-LL18 Derdenger John 529-4070
-LL19 Price R 529-6729
-LL23 Enge Michael B 529-8140
-MM25 Wilkie C Scott 990-0245
-MM29 Norton D A 529-3275
-MM32 Sweet Stephen R 529-0755
-MM34 Nishi Martin 529-3083
-MM35 Gile Chas & Kelli 529-0543
-MM36 Davis Michael 529-3744
-MM38 Johnson J 529-3420
-MM40 Smith C 529-2686
-NN45 Mann Jack R 990-0729
-NN46 Blaesing Granite Co 990-3966
-NN48 Funk Robt H 529-8577
-OO50 Dolgovin D 529-2652
-OO55 Orleans Myron 990-5931
-PP58 Blake Paul J Jr 529-4083
-PP60 Davis John K 529-3469
-PP61 Christensen C 529-8050
-PP62 Hunt Glen 529-5327
-OO54 Bridgford Linda R 529-7904
2191 Southern California Gas Company 529-2889
3300 Austin Company The 524-5770

BIRCH W 92621

209 Brown Norman S 529-1041
214 Cook Edw J & Roberta 990-6749
219 Liebhart W O 529-7701
221 Edwards Michael 990-5186
307 Taylor Bruce R & Juvernia .529-2631
308
-B Klein A Lee 529-4092
310½ Crone Brian 529-8192
320 De Loera Ramiro 990-0886

BIRCHCREST AV 92621

960 Gornbein Stuart 529-9802
980 Chacon Richard F 691-3007
990 Daucher Donald A 529-7619
1000 Farris Rod 529-7242
1001 Patow Gerald E 529-8620
1010 Summerfield K M 213 697-6127

BIRCHCREST CIR 92621

1601 Schmachtenberg D E 529-7720
1608 Perr Clarence D 529-8079
1611 Howells John F III 529-6043
1618 Hoffman Ed A 990-3099
1621 Shur Fire Trucking Corp ..691-7996

BLOSSOM PL 92621

230 Mac Arthur David 990-0288
235 Seegar Howard 529-4476
275 Ventrella Frank 529-9069
275 Ventrella Frank 990-3585
301 Grammas Geo T 529-6015
302 Carter Francis E 529-7775
307 Trapasso Dominic J 529-8973
315 LehrBass H Paul 529-8421
316 Hart Edwin G 529-7406
322 Hoyt Robt H 529-8254
329 Edmiston Hugh C 529-6095
330 Coryell Duard S 529-8109
352 Fay Glen E 529-6720
357 Dubay Michael 529-5356

BONITA CANYON WY 92621

512 Schienle Donald R 990-6299
524 Hermann T F 990-3107
572 Vecchio Jas A 529-1817
572 J & S Communications Inc .529-1819
572 J & S Communications 694-4142
584 Christianson Charles W 990-5593
585 Peterson G B 990-5699
596 Hawe Lore A 990-6448

BONNIE WY 92621

906 Poeppel Robt J 529-1837
912 Burke Bob Realtor 694-3000
921 Whitten Michael G 990-9566
928 Stokes Richard 529-6176
929 Gregory Jas E 529-5846
934 Steiner Jas A 213 691-2668
935 Mandarich Bob 529-0793

BRACKEN 92621

112 Reed Alex 529-4268

BRANCH LN 92621

2350 Fletcher Edw W 990-4391
2356 Siglin Donald K 990-6280

BRANCH LN (CONT'D) 92621

2357 Chase Jas Sr 529-6992
2369 Muvadyan Geo B 529-7684
2384 Nottke Louise 990-4859
2396 Sutton Larry 990-4882
2408 Manning N L 990-4835
2419 Ezell Michael J 529-8117
2420 Courtois Gary A 990-4760
2447 Paynter Dave 529-7145
2448 Cathey Arthur R 990-4667
2452 Haroutounian Artavadz ..990-4397
2453 Augustine Irby 990-9036
2464 Schoonover John H 990-4568
2465 Piroutek Gary M DDS 990-6566
2476 Dugan Dennis 990-4937
2484 Niznik Ralph & Joan 990-9369
2514 Goldman Don 990-4959
2515 Ballard Steven G 990-4086
2532 Barlet Frank 990-4909
2533 Grant John E 990-1368
2548 Blankenship Rex 990-4130
2549 Hamm Patricia M 529-3571
2565 Peniche Geo 990-4218
2580 Babaian Varouzh R 990-4243

BREA BL N 92621

101 Graphic Glass 529-0302
107 Brea Custom Upholstery ...529-6802
108½ Brea Hotel 529-9235
108½
-12 Werner Inge 529-5947
112 Lara Jose 990-4394
116 Royal Coach 529-6575
119 Guadalajara Imports Inc ..529-9075
119 Guadalajara Import Inc ...691-7294
120 Cylinder Head's Specialists 529-4455
130 Esco Rubber Products 529-3049
203 VP Construction Inc 529-0229
203 Saez Emilia 529-3402
217 Brea Animal Hospital & Spay Clinic 529-1506
227 Damon's Motorcycle Painting 990-1166
239 Brea Tax Service 529-1062
241 Brea Meats & Lockers 529-2505
243 Esqueda Margarito 529-6194
251 Harris Bruce 529-2953
257 Brea Tire & Tow 529-4801
301 La Esquina 529-2540
323 Northside Medical Center ..529-2131
323 Northside Medical Clinic 714 623-3077
331 Terry's Automotive 529-4522
400 Brea Junior High School 529-2158
640 Sand Dollar Construction Corp 529-9203
640 Sand Dollar Construction ..990-2070
655 Canyon Pines Apartments ..529-7284
655 L & L Carpet Service 990-2125
655 De Cew Dorothy 990-3564
655
-4 Bauer B J 990-0443
-5 Parret Roy 529-8154
-6 Stanley Leonard L 990-1699
-7 Nichols Wesley J 990-1886
-8 Conti Frank 990-4519
-9 Gates Marvin H 529-2091
-11 Ransom Stanley S 529-3231
-13 Mannarelli Emil 529-3590
-20 Burke Danl 990-4884
-22 Machen Clarence W 990-9391
-24 Ciarloni Robt A 990-0634
-25 Heide Miles H 529-0180
-26 Breitengross Robt 529-9099
-27 Balfe Jack 990-8871
-30 Smith Saylor D 990-0974
-31 Miner Ken & Robin 529-8211
-32 Mallee Anna L 990-8481
-34 Wheeler A L 529-0864
-36 Woods Norman 529-8064
-37 Beisser Kenneth T 990-1623
-39 Corey Robt 990-1909
-41 Bennett John Frank 990-0252
-42 Thompson W Alex Mrs 990-3753
-44 Schultz A V 990-1475
-47 Silletto M T 529-1680
-48 Wasserman Norman 990-3510
-50 Pray Frank E 529-3813
-51 Jahn Wm C 529-7503
-52 Rait Gary L 990-8487
-55 Holland Kirk 990-5470
-62 Ebright R Foy 529-1448
-63 Hedegard M 529-7304
-69 Duncan Thos B 990-2554
-70 Davidson Ken A 990-4608
-71 Karbe H 990-0306
-72 Humburg Scott A 990-4896
-73 Hendricks Stephen 990-5157
-74 Telleson Thos Allen 990-4439
-75 Campbell Phil 529-2843
-78 Shields Stephen J 990-1328
-79 Smith Mark F 990-4910
-80 Nelson Richard D 990-1010
-81 Sanders Julieann 529-6444
-82 Nance D 990-6907
-84 Brosterhous Dennis 990-2201
-85 Nilsson Bill & Michelle ...529-8632
-87 Feldman Doug D 990-4971
-90 Young L & L 990-8738
-91 Burcham Clarence A Jr ...990-9268
707 Canyon Equipment Rentals .529-5352
717 Olenski's Custom Upholstering 529-1568
717 Smith Rick 990-4473
719 Green Hills Realty 529-0064
720 Love's Wood Pit Barbecue .529-3914
724 Fisher's Brea Rexall Pharmacy 529-2113
725 Janet Fayes Hair Styling ..990-3470
727 J Z Carpets 529-4205
729
-B Peterson Cori 990-1850
732 Family Fooz-N-Fun Factory 529-4296
734 Feldman's Sports Center ...529-3713
745 Garrett Don Union Oil Service 529-5370
750 Toy City 529-9494
764 B & L Liquor 529-4662
780 Safeway Stores Inc 529-4941
782 Ranck Ray E 529-8585
786 Hannelore's Knits 990-5648
790 K-L Ltd Cleaners 529-7378
792 Quaker City Federal Savings And Loan 529-8181
794 Phil's Barber & Styling Shop 990-9763
796 National Bank Of Whittier .529-3983
798 Dick's Exxon Service 529-4171
798 Exxon Products 529-9215
831 Little Home Dairy Depot ...529-1215
855 Sandy's Casita Restaurant .529-1386
875 Hoover Stewart B Dr 529-4722
875 Brea Hospital Neuro-Psychiatric Center 529-4963

BREA BL S 92621

100 Canning's Brea Hardware ..529-1943
101 Thal Frame Place 529-6100
101 The Yarn Loft 990-0303
104 Jackson Auto Supply 529-3987
105 Fussy Fox 529-1105
107 Hanlon's Drapery & Upholstering 529-4751
108½ Malloy's Gun Shop 529-4443
110 Pawlack Ed Tile 529-2364
111 Ad West Company The 990-4333
113 Pacesetter Building Co 694-1262
114 Bill Brundige National Auto Glass 529-2141
114 Bill Brundige Glass 213 694-2414
116 Iron Horse The 529-1795
116½ Cotta Frank 990-2874
117 Sam's Place 529-9102
118 Semless Jewelers 529-2490
120 W J Coinage 529-2233
123 Jeanne's Yardage 529-2740
124 Moose Lodge Brea No 1268 990-9738
124½
-6 Cairncross John III 990-2660
128 Printing Etc Etc Etc 990-5151
129 Brea Radio 990-0532
132 Second Time Around Shoppe 529-0492
133 Rodann Door Signal Mfg Co 529-1301
133 Brea Vacuum Cleaners 529-4248
133 Tullack Inc 529-4428
134 Calvary Chapel Of Brea 529-3069
135 The Finest Italian Tailor ..990-1840
137 A N R Furnishings 529-0553
141 Brea Bicycle & Lawnmower 529-3353
141 Community Assistance Patrol-Emergency 990-4000
143 Wilson-Bryant & Associates 990-0123
145 Der Wienerschnitzel 529-9211
146 British Car Company 990-2900
146 Brea Leasing 694-6566
200 Brea Paint Co 529-4354
201 Saito-Sullivan Associates Inc Recreation 990-3131
201 Recreation Land Planners Inc 691-2442
203 National Heritage Industries Inc 529-2107
205 Barnes Ralph E 529-3921
206 V F W Brea Post 529-4874
206 Veterans Of Foreign Wars .529-9112
207 Alfred Gobar Associates ...529-9411
210 Brea Stationers 529-1404
214 Mickey's Auto Body 990-5411
216 Little But Wise Book Store The 529-7991
218 Brea Printing 529-7334
220½ Sanchez Maria & Juan ...990-3352
221 Brea Boat 990-0413
222 Pacific Oil World 990-2666
222 Rider Jack M & Associates .990-3033
222 Pacific Oil World 691-1419
222½ Cox Steven P 529-6411
224 George's Barber Shop 529-2292
227 Velturi's Italian Restaurant .990-5155
234 Brea Travel Service 529-1947
235 Brea Florist 529-2747
244 Vega Motors-Miguel G Vega 529-7717
255 Bubble Machine The 529-0255
300 Dick's Shell Service 529-9132
303 Jack-In-The-Box Family Restaurants 529-9179
312 Big O Tires 529-7602
313 Grant E F 529-1063
323 Modern Beauty Shoppe 529-2020
323 Kobernik L M 529-2777
330 Lash John W DO 529-2168
331 Chuck's Tire Store 529-1857
333 McLanahan Realty 529-6333
334 Fritcher E L Dr DDS Inc ...529-9941
335 McDonald Wm F 529-1919
335 Jackson Kenneth R 529-2882
335 DBM Dynamic Building Maintenance 529-8862
335 Sincerely Yours Secretarial Service 990-2090
337 Flowers By Mr Ed 529-5943
339 Brea Glass And Mirror 529-4252
339 Diamond Bar Glass & Mirror
341 C M S Realty 595-0685
342 Smith Ray Plumbing 529-5706
346 Colonel Sanders' Kentucky Fried Chicken 529-1034
401 Brea City Of 529-4408
406 Grewco Jas 529-4951
410½ Nichols M L 529-4239
418 Dazzling Nails 990-3800
418 Upstairs Downstairs 990-0220
420 Gheen G H 990-4247
424 Riley John M 529-2072
428 Blake Richard G Dr 990-2685
432 Dimmick David M Jr 529-2470
442 Taco Bell 990-3188
495 Brea City Of 529-9115
501 Goedl Richard 529-3966
501 Mendez Jose Bookkeeping & Income Tax Service 529-3936
512 Huiberts Dairy Drive In 990-1881
514 Brea Tropicals Florist & Greenhouses 529-7432
516 Brea Ofc Equip Company ...529-3478
518 Kai Restaurant 529-5323
519 Brea Sports Cars 990-6937
519 Brea Imports Inc 529-4913
520 Olinda Realty 990-0801
522 Brea Cleaners 529-1991
524 529-5551
-A Lee's Dental Laboratory
-B Red Oven Pizza 529-5001
526 Prompt Employment Services 990-3003
529 Kelly Louis A 990-9271
529½ Drake Loren & Diana 529-9707
530 Brea Fishing Tackle 990-4470
531 Barr Realty 990-4520
531 Russell Dick A 529-4477
532 Dog Tag 990-2495
533 Singbusch Albert C 990-2321
534 Thru Traffic 990-2823
535 McDaniel Mark S 990-6741
546 Community Tire Of Brea 990-3951
600 Tom's Schwinn Cyclery 529-0393
601 Brea Oriental Garden Center 529-5151
602 Winchell's Donut House 990-0151
604 Century Cable Of So Calif-Cablevision 990-9720
606 Ray's Brea Market 529-4918
610 San-D Poodle & Pet Shop .529-7654
612 50-D Thrift Shoppe 529-1522
616 Stone Russell 529-0447
618 Gabe's Barber Shop 529-3525 529-9183

BREA BL S (CONT'D) 92621

624 South-Land Hardware 529-1324
630 Emergency Ambulance Service 990-1331
630 Home Town Realty 990-2711
630 Emergency Ambulance Service 694-6321
633 Alpha Beta Employees Federal Credit Union 990-1171
634 Brea Heights Pharmacy 529-3901
638 Chief Auto Parts & Supply .990-0391
642 Orange County Of 529-3277
646 Messina Geo R 529-3811
652 Nan Kay Hendricks Hair Design 529-2498
655 Mc Donald's Restaurants 529-9271
658 Brea Shoe Repair 529-6536
670 Hacienda Beverage 529-1593
675 Sparks Animal Hospital 529-4988
685 United California Bank 529-3991
690 Don McBride Realtors 529-1911
690 Rossington Walter Abram DDS 529-3112
690 Porterfield Richard & Associates 529-5101
690 McCoy John D Sales Inc 990-5761
690 McBride Don Realtors .213 697-7651
700 Vinson Richard G 529-4414
707 Carl's Jr Restaurants 529-3781
718 Economy Self Service 529-9162
723 Regency Motel 529-3927
723
-7 Carlson Mary 990-6753
727 Waggener R E 529-2494
735 Corey Jas A 529-7029
739 Offenberger Martin E 529-4994
739 Offenberger Martin E MD ..697-9945
770 Robert's Coffee Shop & Family Restaurant 529-5813
770 Satin Lounge 529-9113
770 County Financial Services .694-1381
770 Cooper Barbara A 697-4858
770
-104 Tomlinson Enterprises ...529-1335
-104 Sea-Lect Marine 529-1664
-105 La Petite Florists 529-4822
-105 La Petite Florist 691-7273
-106 Westways Insurance Agency 990-1382
-108 Transamerica Financial Services 529-9956
-109 Hairline 529-7551
-110 Diana's Boutique Fashions Recycled 990-0975
-111 La Villa Realty 529-1511
-112 Brea Photography 990-1228
-113 Brea Chamber Of Commerce 529-4938
-200 Rodgers & Rigby 990-3613
-203 Ribal Raymond R 529-4991
-204 Castaneda Berg & Associates 990-2171
-211 Sequoia Ins Agency 529-1921
-212 Diet Center 990-8446
-214 Bridwell Co 990-6488
-215 County Financial Services 529-0247
-218 Cohen Michael D Accountancy Corp 529-1122
-218 Realty Management Services 990-9169
-223 Tracy Bert 990-1626
-226 Cooper Barbara A 529-5899
-230 Rose John D & Associates 529-9340
800 Michael Chevrolet 529-1150
800 Michael Chevrolet 990-9000
805 Twin Palms Motel 529-3078
805
-2 Heisler Melvin L 990-4809
-9 Haskins Harold C 990-1861
-21 Mitchel Terry D 990-9514
815 Das Fix Um Haus 529-1455
835 Neel Funeral Directors 529-2194
835 Weddle C D 529-3688
835 Neel Funeral Directors 694-3974
901 Wilbur Floyd D 529-3480
903 Senseman Ned A DDS 529-3184

BREA CANYON RD 92621

1281 Nieto & Sons Corp 990-6855
1531 Brea Canon Oil Co 529-3242
1862 Bulow Leonard 529-2633
1892 Johnson Ernie 529-3293

BREA MALL 92621

100 North Orange County Regional Occupational ...990-1355
100 Western States Optical 990-4353
100 Sears Roebuck And Co 990-6000
100 Sears Roebuck And Co 990-6020
200 Broadway Department Stores
200 Piekarski Mark J Dr 990-1400
400 Ice Capades Chalet 990-2782
500 Nordstrom 990-4445
1000 Roberts Wm Jewelers 529-0123
1005 Flipper Flapper Family Amusement Center 990-6611
1008 Granger Clyde 529-8055
1008 United Artists Mall Cinema 4 529-4034
1012 Hardy Shoe Stores 990-4021
1014 Brea Pets 990-9744
1016 Shaffer Cards Gifts & Collectibles 990-0702
1018 Hickory Farms Of Ohio 529-9512
1020 Chess King 529-7445
1020 Chess King District Office .529-9243
1026 Fashion Conspiracy 529-9596
1028 Jeans West Inc 529-3534
1030 Towne Plaza Gallery 529-5711
1036 House Of Terry 990-8405
1038 Barney's 529-8937
1042 Wicks-N-Sticks 529-4287
1048 Wet Seal Inc The 990-2164
1050 Harris & Frank Inc 529-8141
1054 Petrie's 990-3101
1058 Kinney Shoes 529-1188
1060 Contempo Casuals 529-8575
1063 Lawson's Jewelers 529-9233
1064 Pants Etc 529-7852
1065 Nobby 529-8212
1068 Optometrist The 529-9697
1082 Regal Shoe Shops 990-9311
1086 Pigeons Boutique 529-5974
1088 Carol's Bath & Beddery 529-9241
1089 Leed's Shoe Stores 990-5163
1091 Tops & Trowsers 529-9845
1092 The Bank 529-6452
1094 Baker C H 529-6636
1096 Parklane Hosiery Stores ...529-9219
1098 David James Clothiers ...529-9524
1100 Gould Music 529-2053 529-8761

BREA MALL (CONT'D) 92621

1102 Hotel For Haberdashery The 990-0331
1108 Big & Tall Men's Fashion .990-4442
1110 Brass Bed The 529-1336
1113 Magic Razor 529-0104
1113 Magic Razor Nail Bar 529-1014
1113 Magic Razor 691-1469
1114 General Nutrition Centers .990-9737
1118 Foot Locker 990-9700
1120 Helen Grace Candies And Ice Cream 990-3022
1122 Hall J Herbert Jewelers ...529-1271
1124 Susie's Casuals 529-9145
1126 B Dalton Bookseller 990-1403
1128 Woman's World Shop 529-0722
1130 Musicland 529-6125
1132 Thom McAn Shoe Stores .529-9253
1134 Miller's Outpost For Levi's 990-3202
1138 Foxmoor Casuals 529-9299
1140 Good Looks Beauty Supply 990-3363
1140 Good Looks Nail Bar 990-5905
1142 Creative Corners 529-9311
1150 Salmagundi 529-4720
1156 Jay Jordan Shoes 529-0244
2000 Lerner Shop 529-1511
2004 National Shirt Shops 990-9728
2008 Gallenkamp Shoes 990-9747
2010 House Of Fabrics 990-3451
2012 Jean Marie Body Boutique 529-9544
2014 Casual Corner 990-4354
2016 Bill Gamble's Mens Wear .990-5031
2018 Chic Accessories 990-0254
2020 Hatfield Jewelers 990-0851
2024 Galt Toys Brea 990-4660
2027 Brea Mall 990-2732
2027 National Uniform Shops ..990-6672
2028 The Winning Woman 990-3588
2030 Wilson's House Of Suede Inc 529-3594
2034 Hiland's Tobacco Locker .529-8454
2036 Kinderfoto 529-4226
2038 Jackies Fashion Center ...529-9505
2040 Ms O's Pan Tree 529-6282
2042 Pablo's Kitchen 990-9742
2046 Pier The 990-0054
2048 Famous Ramos Hot Dogs ..529-0042
2050 Carousel Pizza 529-2093
2052 Sultan's Den 990-1781
2054 Chinese King 990-1224
2056 Great Pacific Yogurt Co No 3 990-1847
2057 Skyline West 990-4948
2058 Earl Of Sandwich 990-3636
2059 Tiffany's Bakeries 990-9735
2060 Scooping Station 529-5292
2063 Naturalizer West 529-1684
2064 Bejeweled Of Brea 529-9566
2066 Winchell's Donut House ..990-9713
2068 Mall Munchies 990-9733
2069 Sunglass The 990-1269
2074 California T-Shirts 529-9966
2076 Alltime Inc 990-4545
2078 Wherehouse The 990-9727
2080 Radio Shack-A Division Of Tandy Corp 529-5565
2082 Hobbyman 990-2252
2084 Walden Books 990-3201
2088 C V S 990-4151
2090 Gap The 529-4112
2092 Gordon's Jewelers 529-8258
2094 Florsheim Shoe Shops 990-9711
2098 Country Collection The ...529-6222
2100 Barry's Stride Rite 529-9991
2102 Circuit The 529-2884
2104 Knife Gallery The 990-0556
2112 Kaplan's Deli & Restaurant 990-4044
2120 Cinnamon & Co 990-2736
2122 Santa Anita Luggage & Handbags 529-4995
2124 Joel's 990-3666
2126 Morrow's Nut House 529-2125
2128 Hanover Shoe Store 529-6403
2130 Size 5-7-9 Shops 529-7579
2132 Accent Music 990-4551
2136 Judy's 990-6761
2139 Joyce Selby Shoes 990-9777
2140 Limited The 990-5818
2142 Woodtowne 990-4623
2144 Maling Shoes 529-0033
2146 Pal's Vacuum Sewing Centers 529-8431
2148 Hansel-N-Gretel Children Shops 990-3366
2152 Cafe Beignet 529-8203
2152 Cafe Beignet 990-9756
2154 i Natural Cosmetics 529-4265
2156 Gene's 529-3695
2158 Windsor Fashions 990-4453
2162 Slavick's Jewelers 529-6084

BRIARWOOD DR 92621

501 Greene Noel 990-5641
502 Butler G A 529-9374
512 Luton Roger 529-8051
518 Allen Chas 529-8733
525 Nyberg M A 529-2668
526 Hargett Bill R 529-5319
526 Hargett Bill R 529-6315
531 Ribal Raymond R 529-1657
532 Lakin LeRoy 529-1605
609 Davenport Edw 529-1741
612 Shutt Sidney G 990-3614
618 Lamkin Noel 529-8031
619 Mastro John 529-7929
624 Thornburgh Wm D 990-1817
633 Morgan Ronald 990-9582
636 Rand Donald F 529-5042
641 Omiya Henry 990-6626
648 Hoskins Kelley W 990-6288
653 Saunders Myrta 529-6191
654 Hansen Louis E 529-3737

BRITTANY LN 92621

430 Still Raymond W 990-1486
439 Haas Richard 529-6021
439 Haas Richard 990-2320
455 Cuccia Nick 990-0523
461 Martinez Albert 529-6621
463 Fisher S 529-6024
473 Slattery Wallace D 990-2713
481 Spangle R E 990-4849
489 Peckenpaugh Jim T 529-2674

BROOKSHIRE PL 92621

202 Pendleton Geo D 990-3746
224 Solomon Michael 990-2380
225 Dolton Thos 990-1535
232 Hammack Dan B 990-6986
233 Oglesby Kenneth D 990-4729

1980 (Adjacent 2) 800-1200 N. Brea Blvd.

ACACIA E 92621

121
-B Robarge Barbara A 529-4030
-D Izaguirre Mercedes 529-8849
125
-A Fath Paul Henry 529-2027
-B Powell C 529-7418
-C Schnell C R 529-2419
131
-B Szpara Jo Ann 529-7000
-C Maturino Rudy 529-9700
-D Furst Nancy 529-3382
137
-A Dwinell Karen 990-2378
-B Hamilton P 529-0359
-C Lemons Chas D Jr 529-6000
-D Frakes Randy 529-0141
201
-B Shahan W I 529-3419
205
-B Hill S K 529-4663
-D Ouillette Paul J 990-0875
211
-A Flanders Geo E 529-7684
-B Herring Dawn G 529-5083
-C Johnny's Oil Heating & Dewaxing 529-4245
-D Madding Michael E 529-0519
250
-101 Kidder Chester M 990-0955
-102 Lee Roger 529-3399
-103 Ferguson Glenn 529-5485
-104 Nunn Buck M 529-9089
-106 Waggener K E 529-3132
-108 Wilhite Clifford 529-0435
-109 Favor V L 529-0849
-201 Siefkes Siegfried H 529-8465
-202 Neumann B 529-5725
-203 Kayashima Lance 529-2255
-204 Jackson Jos E 529-0672
-205 Lilley D A 529-2920
-206 Wilson Robt L 529-1634
-207 Baker Paul E 529-7798
-208 Sprungl L M 529-5544
-208 Sprungl Cliff 990-0794

ACACIA W 92621

407 Swain Paul 990-0235
410 Ham Wm E 529-2328
411 Zappala Ralph M 529-7281
414 Swanson Edw R 529-2910
418 Higginson Clyde M 529-2930
419 Forness Jas A 529-1586
431 Holcomb John 529-3685
435 Mabey Robt 529-0037
436 Sanchez Arnold C 529-7526
440 Zervantian John 529-3376

ALDER 92621

111 Brea Insurance Agency 529-8222
111 Brea Realty 990-0111
111 Engineering Design Service 990-0566
111 Brea Insurance Agency 213 697-2617
113 Magic Scissors 529-1601
115 Yarn World 529-1090
131 Pot-Belly Pizza House 529-6616
201 Matlock Harlen C 529-6626
221 Benavides Jesse 529-5515
226 Morris Robt R 529-2542
301 Buell Anne M 529-1026
308 Hunt Leo G 529-2958
314 Burt Jesse L 529-1340
321 Kleeman Ozzie 529-3696
326 Ray Willard L 529-1561
333 Kitch Allen 529-1271
339 Castro Armando M 529-2698
408 Maestrejuan Terry 529-0686
409 Gordon Peter 529-3496
415 Pitts Clyde C 529-3526
416 Peery M B 529-3510
500 Miller G E 529-3431
509 Caves Geraldine L 529-7494
516 Richardson David L 529-1556
517 Barton Ralph R 529-3517
524 Neverka Henry 529-3193
525 Jackson Wayne R 529-0825
601 McCall Harold S 529-1794
602 Edgerton Ron 529-1840
709 Paragon Pool Service 529-8153
715 King Glenn E 529-3649
802 Carlson Kenneth C 529-4046
806 Fox Donald 529-2497
810 Hurst Forrest 529-2350
814 Ries Robt H 529-7198
817 Neal Glenda 529-5929
818 Pene Aubin 529-3784
821 Bradford Juanita 529-6782
825 Hornbuckle D S 529-3677
830 Hartunian V A 529-3595
834 Sheld S W 529-3888

ALMOND DR 92621

823 Slate Walter L 529-4567
834 McKinney Thos C 529-0729
839 Buffum Joan L 529-1412
850 Jones Nora 529-3608
851 Reckin E A 529-0316
906 Feathers Jas D 529-3689
907 Bowland Chas K 529-4031
910 Durbin J N 529-3174
914 Swenson Richard 529-1468
915 Hillard Keith L 529-1133
918 Hester Orva L 529-1729
919 Waller Arnold 529-2207
922 Beatty Rex 529-7349
923 Whited Edgar L 529-2697
927 Schweigert H C 529-1575
931 Nadler Ralph E 529-4778
935 Cole Glenn G 529-3406

AMBERWICK CIR 92621

222 Hilton Stanley R 529-5796
242 Yarborough Bruce N 529-0724

AMBERWICK LN 92621

311 Shaklee Corp 529-8382
312 Suwa Masaharu 529-2258
323 Price Jerry M 990-0940
334 Jarminski Stanley J 529-6509
344 Benzing Wm 529-0627
351 Bruno Nick 213 694-2995
354 Musterer Roy H 529-0186
361 Maris Wayne D 529-9413
385 Dunn Steven W 529-3396

APPLE DR 92621

651 Fisher Robt 213 691-4783
652 Mason Jos 529-6499
665 Howe Steven C 529-6421

APRICOT AV 92621

450 Carriero La Nelle 529-3060
465 Hagan Dennis 529-3031
475 Creighan John 529-6992
480 Hinshaw Orville H Jr 529-9360
485 Murray Bill 529-6953
495 Jarvis Wade 529-2427
495 Polysar Inc 213 694-2531
505 Venegas Bernard M 529-6876
515 Jones Eugene L 529-4177
525 McGuire L Ken 529-6569
535 Dalby Construction Co 529-4530
535 Dalby Robt D 529-6790
627 Roberts Emil S 529-6116
637 Christensen R L 529-8076
647 Digert John O 529-8209
650 Fanning William E Elementary School 529-3908

AROVISTA AV 92621

321
-A Presto Market 529-6074
-B Patricia's Coiffuers 529-1488
-D Copy Boy Printing 529-1895
-E Feles Barber Shop 529-8208
-F Branyan R H DC 529-3093
325 Dyke John N 529-3658
329 Dyck A F 529-1677
332 Lind Robt E 529-3546
333 Davis Dennis O 529-2770
337 Emerson L D 529-2543
401 Francis Gene L 529-1092
405 Richey Terry E 529-9339
409 Strain G H 529-2324
415 Sweet Daryl G 529-3385
419 Bender Clyde 529-3692
427 Riley Jas D 529-1583
431 Anderson Fred D 529-2712
439 Houston Richard Y Sr 529-3777

ARROW WOOD DR 92621

1133 Lewis R H 529-1103
1159 Kraus Louis 529-5031
1215 Reno Bruce A 529-7085
1245 Lozano Vincent 529-9817
1255 Orosz Paul 529-1037
1257 Schwinn Wilbert J 529-7226
1260 Mattes Geo W 529-5117
1261 Seaman Ralph E 529-0773
1265 Harris Roy L 529-5664
1270 Carman Timothy V 529-8487
1270 Timothy P Carman 213 694-1524
1280 Bedwell Dale 529-4703
1285 Lee Chong M 990-1239
1295 Gordon Michael 529-1460
1301 Matthews John A 529-2006
1305 DeGarmo Donald E 529-8938
1310 Zamora Frank 529-9698
1315 Pelloni John Jr 529-6631
1325 Nyenhuis Donald M 529-0766
1327 Engels Frank W 213 691-5526
1330 Naus Carl 529-9716
1335 Ulrich Edgar O 990-0210
1340 Griffiths Richard J 529-6437
1345 Pinkston Wm B 990-0156
1345 Pinkston Wm Bruce 694-3247
1350 Cooper Saml 529-1897
1390 Smith Jas W 529-6107
1395 Sebastian Robt A 529-8286
1435 Wilson John R 529-2450
1440 Lewis Ronald E 529-4347
1450 Allen Thos W 529-8237
1460 Ward Robt S 529-5571
1465 Weaver B A 213 691-1938
1475 Rhodes Jas 529-9611
1490 Tenay Michael 990-0736
1500 Semar Jos E 990-0048

ASH E 92621

107 Brea Chamber Of Commerce 529-4938
120 Ken Jones Construction Corp 529-1939
120 T & D Construction Corp 529-2412
214 Larsen Kristan J 990-0412
215 Casa Brea Inn 529-9187
215
-1 Hutchens L 529-6255
-2 Crowder M M 529-7648
-4 Zdansky A 529-3198
-6 Simon Chas W 529-1782
-MGR Gagon Evan E 529-6071
219 Rutledge Ross B 529-8384
221
-A Hathaway David B 529-4227
-B Fellows Mark S 990-0083
-E Jensen Norman 529-6965
-H Page Paul E 529-1629
329 Yriarte A 529-1294
339 Cary's TV 529-8436
407 Alvarado Jose Luis 529-3324
601 Lavin Miguel E 529-0756
604 Bohn Richard 529-0523
604 Bohn Richard 529-0869
608 Woodraska Robt K 529-5530
609 Porter Martin W 529-3427
615 Henderson Donald E 529-2972
616 Williams Larry 990-0390
620 Loza Robt L 529-4130
623 Bartholomew Greg E 529-7405
624 Marshall Lawrence 529-0563
627 Aragon Robt 529-8890
632 Boyum Jack 529-5417
635 Jenkins Albert D 529-3442
636 Shepherd Yvonne 529-8019
639 Smith S Art 529-1459
640 Quinliven Dennis 529-3611
643 Simons Donald R 529-5935
644 Swenson Geo 529-3356
648 Garfield Reed 529-4438
651 Hitchcock Marie W 529-8459
655 Manous Herb 529-7837

ASH W 92621

111 Brea Medical Clinic 529-3904
Harrington Earl G 529-3350
121 Jones Welding Shop 529-5760
205 Sanders Kathleen 529-8061
205 Miller Jas M 529-1153
209 Quigley Peter 529-7606
215 Womack S Dawn 529-8700
219 Dominguez Joe II 990-1498
219 Loyer Clifford

ASPEN 92621

555 O'Connor T J 529-3550
556 Hollenbeck J L 529-0447
556 Hollenbeck Leo E 213 691-2329
562 Crockett John D 990-1397
563 Von Voigt Frederick C 529-5653
567 Baker Leland Glen 529-1687
568 Sandy John H 529-6639

ASPEN (CONT'D) 92621

587 Sheffield Vicki 990-1526
591 Primanti Stanley L 529-8926
595 Breen Alan L 529-1161

ASSOCIATED RD 92621

United States Government 529-2532
3251 Tarbell-Realtors 529-1972
3255 State Farm Insurance Companies 529-2166
3255 State Farm Insurance Companies 990-0141
3255 Manning Bill 990-2166
3257 Imperial Beauty Salon 529-9936
3259 7-Eleven Food Stores 529-7419

AVOCADO 92621

805 Van Valkenburg Lee F 529-9309
810 Mellott Francis E 529-3816
815 Myers Jack A 529-6370
820 Ruthledge Jas 529-3738
825 La Scala Salvatore 529-5187
830 Lara F B 529-4371
835 Fleming Robt 529-5679
845 Champagne Roland 990-0827
850 Sherwood Max A 529-4713
860 Shrock Vern F Mrs 529-3070
916 Russo M J 529-3260
942 Space Allen P 529-1288

BALSA AV 92621

511 Billman Larry 529-0149
519 Ball Debbie 529-9768
520 Tanzmeister Alfred 529-5149
535 Brittsan R 529-0603
545 Wallin Dean A 529-1024
555 Feste Martin D 529-1878
610 McGowan Jas L 529-1591
620 Kennedy Jack Albert 990-1909
630 Morrell Lee C 529-9509
640 Trinka Jerry B 529-6068
650 Tave Evelyn G 529-2851
660 Claussen Earl R 529-3196
661 Mullins Gary D 529-4075
670 Buckley D L 529-4112
1651 Metropolitan Water District Of Southern 529-2077
1651 Moody Robt L 529-5016
1671 Macias Mike 529-4078

BERRY N 92621

200 Rucker Control Systems Off Shore Div 529-0191
200 Rucker Shaffer 529-2134
200 Shaffer Employees Federal Credit Union 529-9051
200 Rucker Shaffer 626-6481
201 Ameron 529-1951
400 Honetreat Company 529-2488
430 Contura Inc 529-3932
436 Sears Roebuck Service & Parts Depts 529-4975
555 Brea City Of 529-2111
585 Union Oil Company Of California 529-3120
585 Union Oil Company Of California 529-7300
650 Philpott Geo M Co Inc 529-2188

BERRY S 92621

111 Leffingwell Chemical Co 529-3973
221 Russell Coil Co 529-1935
233 Rapid Cool Inc 529-1731
285 Durkee Florence 529-7661

BERRY WY 92621

423 Consolidate Aero Structors Corp 529-1998
428 Macro A Division Of Macrodyne Industries 529-1931
428 Macro Mfg Co 694-3704

BIRCH E 92621

115 Joseph Messina G 529-0441
115 Messina Geo R 529-3811
115 Messina Geo R 529-6990
115 Messina Geo J 529-6990
120 Brea Feed & Tack 529-4814
124 Scarlett Laurie 529-4284
126 Wurst Gordon 529-2643
200 S & G Mkt 529-2672
201 Ryan M A 529-1776
203 Beard Matthew D 529-4879
204 Jackson Minnie 529-2280
210 Bailey L 529-3815
211 Welti Mick 529-2894
212 Lorraine Beauty Shop 529-3110
217 Assembly Of God Church First Brea 529-5038
307 Sokol Geo C 529-8563
311 Kelly Stephen M 529-1495
315 Phillips Leonard A 529-3190
323 Beyers Jim 529-7078
327 Isaacs W L 529-2083
331 Van Der Vliet Henry J 529-1738
400 Ken's Home Maintenance 529-5522
404 Baker Conn 529-2473
411 Dyer Wm M 529-2931
414 Howe John 529-0944
415 Shaffer Glenn 529-3422
419 Charlton G S 529-3227
507 Farber Alva E 529-2521
509 North Russell 529-9387
601
-A Wall Damon T 529-6846
-B Gomez Katherine R 529-5689
-C Barron Howard 990-0807
-D Williams H 529-2896
-E Kirk Kevin 529-8746
-G Pedicone Terry 529-1246
-H Pallatto R Mrs 529-1322
-K Mathis Dock A 529-7696
-M Williams Margaret Mrs 529-3477
-O Brewster E 529-4686
613
-A Abboud Chas 990-0139
-B Farrar M E 529-1070
-F Behnke Heinz 990-0673
-H Jasbon Benjamin 529-1448
-J Birch Terrace Apartments 529-4057
617
-D Patel Novin 529-8499
-F Lee Robt E 529-0865
-H Abate Antonio 529-4273
622 Bradley Russell H 529-5297
623
-A Stanley W C 529-4328
-B Bella Joe 529-9935
-C Rosales Guadalupe 529-0602
-E Crayk Larry 529-6304

BIRCH E (CONT'D) 92621

624 Cisneros Cruz 529-6064
629
-1 Smedley Hansel W 529-4003
-3 Grosenheider Leroy L 990-0411
-4 Morrison S K 529-1365
-5 Ramirez Jose T 529-7882
-6 Miller David W 990-0694
633
-2 Kim Chu Hyon 529-4351
641
-1 Serna I 529-7938
647
-A Paccassi Susan K 529-0792
-C Wagner Rose Mary 529-8389
-D Bergstrom Ronald D 529-6842
-E Sharp Mabel Mrs 529-5975
651
-A Heldebrant Norval A 529-4688
-D Hamilton Paul E 529-3599
-E Schmitt John A 990-1288
655
-B Schenk Louise 529-0343
-D Hose Jon 990-0132
661
-A Caley Christopher 529-6898
-B VanBeenen Larry J 529-3866
-D Filaseta Leonard 529-0365
-E Dysart Jonathan 990-0160
665
-E Boyer C J 529-7780
669
-A Hanna Melvin A 529-6701
-D Serna Joe A 529-0344
-E Highwood Robt J 529-6036
740 Horan Barney R 529-2728
750 Leavell C H & Co Field Phone 990-0791
898 Homart Development Co 529-8455
900 C H Leavell & Co 990-0311
905 Brea-Olinda Unified School District 529-3951
1717 Kennedy & Hause-Birchwood 529-1669
2191 Southern California Gas Company 529-2889

BIRCH LN 92621

320 Green Jas L 529-7909

BIRCH W 92621

209 Brown Norman S 529-1041
214 Knight Richard C 529-0167
219 Brown David M 529-7701
220 Mays Mamie 529-3069
307 Taylor Bruce R 529-2631
308
-A Braun Linda D 529-8981
-B Vasilia Richard 529-1054
314 Landa Sam 529-2933
314½ Ruggiero S 529-2620

BIRCHCREST AV 92621

960 Gornbein Stuart 529-9802
990 Daucher Donald A 529-7619
1000 Farris Rod 529-7242
1001 Patow Gerald E 529-8620
1010 Summerfield K M 213 697-6127
1011 Simpson Phillip J 529-5844

BIRCHCREST CIR 92621

1608 Perr Clarence D 529-8079
1611 Dandrea R P 213 691-2504
1618 Warn Geo R 529-1400
1618 Warn Rodney D 529-7074
1621 Glocondo Frank L 529-5237

BLOSSOM PL 92621

215 Munoz J R 529-5034
230 Coffin Thelma P 529-7247
235 Villagomez Armand 529-9422
260 Yates Glenn 529-0103
275 Ventrella Frank 213 691-7334
301 Grammas Geo T 529-6015
302 Carter Francis E 529-7775
307 Tripp G 529-8973
315 LehrBass H Paul 529-8421
316 Thomas David H 529-1427
321 Henderson Alex D 529-5885
322 Hoyt Robt H 529-8254
329 Edmiston Hugh C 529-6095
330 Coryell Duard S 529-8109
337 Patterson M Dale 529-4836
352 Fay Glen E 529-6720
357 Dubay Michael 529-5356

BONNIE WY 92621

901 Landfield David J 697-3973
906 Poeppel Robt J 529-1837
912 Burke Bob Realtor 694-3000
921 Albers F G 529-0982
929 Gregory Jas E 529-5846
934 Steiner Jas A 213 691-2668
935 Mandarich Bob 529-0793

BRACKEN 92621

112 Reed Alex 529-4268

BREA BL N 92621

101 Ernie's Mens Wear 529-2421
104 Charlie's Antique Clocks 529-7525
107 Brea Custom Upholstery 529-6802
108½ Brea Hotel 529-9108
108½
-7 Pena Selespino 529-6505
110 Patchen-Gay Antiques & Designs 529-7667
112 Collectors Gift Shop 529-4291
115 Brea Auto Airconditioning & Electrical 529-2282
115 Brea Welding 529-6450
116 Royal Coach 529-6575
130 Esco Rubber Products 529-3049
200 Plastic Container Corp 529-2177
203 Thomas Julie 529-1104
217 Brea Animal Hospital 529-1506
227 Ace Machine 529-4445
239 Brea Tax Service 529-1062
241 Brea Frozen Foods & Lockers Inc 529-2505
251 Rankin Shirley 529-4310
257 Brea Tire & Tow 529-4801
301 La Esquina 529-2540
307 Jackson Wm E MD 529-3006
323 Northside Medical Clinic 529-2131
400 Brea Junior High School 529-2158
655 Canyon Pines Apartments 529-7284
655
-2 Jacobs Richard P 990-1519

BREA BL N (CONT'D) 92621

655 (Cont'd)
-3 Sweeney Harold J 990-2139
-4 Laing Kenneth O 529-5768
-6 Abbott D 529-6970
-7 McPhee L L 529-1562
-8 Stewart Alvin 529-7436
-9 Sohl Carroll C 529-8575
-11 Ransom Stanley S 529-3231
-12 Schmidt John A 529-8029
-13 Jackson E L 529-1409
-14 Woodrum Chas P 529-2523
-15 Richardson Donald L 529-5542
-19 Starkey Kenneth 990-2068
-20 Lybrand Wm T 529-2750
-21 Hedegard M 529-7304
-22 Ristow Mike 529-0539
-24 Pruitt Doug L 529-0384
-25 Brown Harry D 529-6801
-26 Breitengross Robt 529-9099
-28 Marshall Trudy 529-4498
-30 Furlong Jas E 990-1208
-33 Buchanan Michael 529-2485
-36 Woods Norman 529-8064
-38 Bias K R 990-0363
-40 Klyver Albert 990-2419
-41 Laurie Angelo 529-1851
-43 Bruno Corene 529-4079
-44 Johnston Leslie J 529-8817
-46 Stehle Walter A 529-4776
-47 Spencer Larry 529-7389
-49 Goldstein Beatrice 529-8513
-50 Pray Frank E 529-3813
-51 Baker B F 529-6915
-52 Layne Stephen L 529-3539
-54 Salata Jas A 529-8571
-56 Capestro David 691-3502
-58 Canning Ken 529-6485
-61 Tackett Roxanne 529-5466
-63 Stephenson Thos L 529-0538
-64 Ortman Ernest 529-1106
-66 Gabriel C 529-1644
-69 Aiduss J 529-3045
-70 Case Jeffery A 529-0183
-72 Scholz Leslie 529-9048
-75 MacInnis Reid 529-4599
-76 Lovelady Ronald E 529-7340
-78 Rumley Buddy 529-6176
-82 Szewczyk Patricia 529-2671
-84 Walker Jim 529-7925
-86 Armitage J 529-8322
-88 Siebol Kathleen 990-0825
-90 Sharp Paul 529-5744
-91 Barnes Larry 529-4266
-92 Tyree V 529-4375
707 Canyon Equipment Rentals 529-5352
717 Olenski's Custom Upholstering 529-1568
720 Love's Wood Pit Barbecue 529-3914
724 Fisher's Brea Pharmacy 529-2113
725½ Lawson Mike 529-5927
745 Garrett Don Union Oil Service 529-5370
750 Toy City 529-9494
764 B & B Liquor 529-4662
782 Ranck Ray E 529-8585
784 Joe's Italian Deli 529-5201
790 K-L Ltd Cleaners 529-7378
792 Quaker City Federal Savings And Loan 529-8181
796 National Bank Of Whittier 529-3983
798 Dick's Exxon Service 529-4171
798 Exxon Company U S A 529-9215
831 Little Home Dairy Depot 529-1215
875 Hoover Stewart B Dr 529-4722
875 Brea Hospital Pharmacy 529-4963
875 Brea Hospital Neuro-Psychiatric Center 529-4963

BREA BL S 92621

100 Canning's Brea Hardware 529-1943
101 United States Government 529-3000
104 Jackson Auto Supply 529-3987
104 Jackson's Auto Supply 213 697-0100
105 That Frame Place 529-6100
107 Hanlon's Drapery & Upholstering 529-4751
109 W J Coinage 529-2233
110 Pawlack Ed Tile 529-2364
113 Pacesetter Building Co 529-1993
114 Bill Brundige National Auto Glass 529-2141
114 Bill Brundige Glass 213 694-2414
116½ Ledbetter Kit 529-8090
117 Sam's Place 529-9102
118 Semless Jewelers 529-2490
122 El's Bookery & Boutique 529-4484
123 Jeanne's Yardage 529-2740
126 Betke's Auction Gallery 990-2051
132 Good Times Parlor 529-9109
133 Rodann Door Signal Mfg Co 529-1301
133 Brea Vacuum Cleaners 529-4248
133 Floor Machine Co 529-5085
133 Imperial Janitor Supply 529-5085
134 Shepherd Community Church 529-4432
139 National Academy Of Performing Arts 529-6411
141 Brea Bicycle Shop 529-3353
143 Mitchell C E Construction Co 529-0711
145 Der Wienerschnitzel 529-9211
200 Cottage Crafts 529-8373
201 Kobata Roger K & Associates 529-2181
203 Pacifica Development Corp 529-2107
203 Horizon Building Corporation 213 694-2094
204 American Legion Brea Post 181 529-0315
205 Barnes Ralph E 529-3921
206 Veterans Of Foreign Wars Brea Post 5384 529-9112
207 Alfred Gobar Associates 529-9411
210 Brea Stationers 529-1404
216 Little But Wise Book Store The 529-7991
218 JRM Printing 529-7334
218
-B Brea Fire Extinguisher Service 990-0401
223 The Imperial Inn 529-9155
224 George's Barber Shop 529-2292
228 Grove Nila 529-8365
231 Phillip's Garage & Tire 529-1857
231 Phillips Garage 529-2555
234 Brea Travel Service 529-1947
235 Brea Florist 529-2747
244 Vega Motors-Miguel G Vega 529-7717
255 Brea Car Wash The 529-0255
300 Harry's Shell Service 529-9132
303 Jack-In-The-Box Family Restaurants 529-9179
312 Tastee Freeze Of Brea 529-9288
313 Grant E F 529-1063

BREA

SECTION E 85
ACACIA - BREA

BREA BL S (CONT'D) 92621

319 Smith Philip E 529-6845
321 Woodard M J 529-5556
323 Modern Beauty Shoppe 529-2020
324 King Wm D 529-3448
329 Hitching Post Auto Sales 529-8861
330 Newlin W S MD 529-2168
330 Fritcher Ernest L Dr 529-9941
330 Tanner Henry S 529-9941
333 McLanahan Realty 529-6333
334 Blake Richard G Dr 529-2470
335 Siefkes Siegfried H 529-1918
335 Markman Jas L 529-2515
335 Whelan Martin E Jr Inc 529-2515
337 Helen Davies NSID Interior Designs 529-3066
337 Flowers By Mr Ed 529-5943
339 Brea Glass And Mirror 529-4252
339 Brea Air Conditioning & Refrigeration 990-1331
341 Brea Color Center 529-8686
342 Smith Ray Plumbing 529-1034
346 Colonel Sanders' Kentucky Fried Chicken 529-4408
401 Brea City Of 529-4951
406 Grewco Jas 529-4239
410 Whittington Richard 529-6819
418 Tran Ry H 529-5357
420 Gheen G H 529-2072
432 Brown Joe A 529-9685
440½ Burnette Randall J 529-8930
442 Taco Bell No 931 529-9115
495 Brea City Of 529-3966
500 Chuck's Service Center 529-4040
501 Goedl Richard 529-3936
501 Mendez Jose Bookkeeping & Income Tax Service 990-1881
507 Cooper Sharon 529-3055
512 Hulberts Dairy Drive In 529-7432
514
-A Kung Fu Karate 529-9224
-B Bob Davis TV Service 529-1502
516 Brea Ofc Equip Company 529-5323
518 Plum Court Chinese Restaurant 529-9688
518
-B Brea Tropicals Florist & Greenhouses 529-3478
519 Brea Sports Cars 529-4913
519 Brea Imports Inc 990-0801
520 Olinda Realty 529-1991
522 Brea Cleaners 529-5551
524
-A Lee's Dental Laboratory 529-5001
-B Genie Hair Fashions 529-8448
526 Beneficial Finance Co Of Brea 529-1903
527
-B Brea Lock & Key 990-1010
530 Easy Does It Washateria 529-6491
531 Harvell Bertha M 529-0593
534 Thru Traffic 529-9294
546 Community Tire Of Brea 529-0393
600 Tom's Schwinn Cyclery 529-5151
601 Adachi's Garden Center 990-0151
602 Winchell's Donut House 529-4011
604 Century Cable Of So Calif-Cablevision 529-4918
606 Ray's Brea Market 529-7654
610 San-D Poodle & Pet Shop 529-1522
610 Space Age Chemicals 529-1563
612 Cottage Bakery 529-9333
616 Stone Russell 529-3525
618 Gabe's Barber Shop 529-9183
624 Rug Doctor Rents 529-1324
624 South-Land Hardware 529-1324
630 End Of Track 529-4474
634 Brea Heights Pharmacy 529-3901
638 Chief Auto Supply 990-0391
642 Orange County Of 529-3277
652 Al-Luette Coiffures 529-2498
655 Mc Donald's Restaurants 529-9271
658 Brea Shoe Repair 529-6536
670 Rod's Hacienda Beverage 529-1593
675 Sparks Animal Hospital 529-4988
685 United California Bank 529-3991
690 McBride Don Realtors 529-1911
690 Rossington Walter Abram DDS 529-3112
690 McBride Don Realtors 213 697-7651
700 Abbott Richard S 529-4414
700 Vinson Richard G 529-4414
707 Carl's Jr Restaurants 529-3781
715 Guillen Octaviano 529-5701
718 Economy Self Service 529-9162
723 Regency Motel 529-3927
727 Waggener R E 529-2494
735 Chambers Lee 529-4032
739 Jones Paul D 529-4994
743 Brown Dorien E 529-2288
749 Reddy Margaret 529-2409
770 Southern California Investment Brokers 529-0400
770 Cohen Michael D 529-1122
770 H & R Security Inc 529-5448
770 Robert's Coffee Shop & Family Restaurant 529-5813
770 Rose John D & Associates 529-9340
770 Brea-Olinda Friends Church 990-0211
770 Southern California Investment Brokers 691-5442
770 County Financial Services 694-1381
770
-101 Seven Seventy Club 529-9113
-105 La Petite Florist & Gifts 529-4822
-107 Mochon A W 529-4156
-108 Pacific Finance 529-9956
-109 Hairline 529-7551
-111 MJB Realty Inc 529-3948
-112 Green Larry B Photography 529-4095
-113 Pros The 529-2911
-203 Ribal Raymond R 529-4991
-210 Condominium Management Company 529-4921
-211 Sequoia Ins Agency 529-1921
-213 McBride Co The 529-1111
-215 County Financial Services 529-0247
-221 Personalized Keypunch 529-0420
-225 Pesci Raymond R & Co 529-2211
800 Estey Mike Chevrolet 529-1150
800 Estey Mike Chevrolet 529-4981
805 Twin Palms Motel 529-3078
805
-4 Klein Larry 529-5979

1975 (Adjacent 2) 800-1200 N. Brea Blvd.

BREA

SECTION F — 74
ACACIA - BUTTONWOOD

ACACIA E 92621

121
-B Robarge Barbara A 529-4030
131
-A Miller Jas E 529-1147
-B Popovich Geo W 529-4786
-C Fehr Theodore 529-8117
137
-A Hamilton Rose 529-7629
-B Kozumplik D 529-5868
-D Wohlgemuth Carl W 529-8130
137C Delnay Richard 529-4795
201
-B Phillips Damon C 529-8558
-C Fisher Mark R Jr 529-8630
205
-B Clark Cheryl 529-7392
211
-A Rias Louis Y 529-7988
-C Garvin W M 529-6230

ACACIA W 92621

410 Ham Wm E 529-2328
411 Klenke Virgil B Jr 529-4857
414 Swanson Edw R 529-2910
418 Higginson Clyde M 529-2930
419 Thompson Loren D 529-2885
431 Holcomb John 529-3685
435 Mills Gene R 529-7655
436 Sanchez Arnold C 529-7526
440 Zervantian John 529-3376

ALDER 92621

111 Brea Insurance Agency ..213 697-2617
111 Big D Realty 529-2164
111 Divelcon Inc 529-3916
111 Brea Insurance Agency 529-8222
113 Marconett's Magic Scissors ..529-1601
131 Pot-Belly Pizza House 529-6616
200 Dines Leonard E 529-3539
201 Matlock Harlen C 529-6626
208 Stassi Geo Jr 529-6270
215 Toon Milton 529-4891
220 Hughes Valden R 529-3055
221 Dawson Art 529-5471
226 Morris Robt R 529-2542
301 Buell B E 529-1026
308 Hunt Leo G 529-2958
309 West Carl 529-1872
314 Burt Jesse L 529-1340
315 Mackay Jean 529-2070
320 Garrison Wilbur R 529-3248
321 Kleeman Ozzie 529-3696
326 Ray Willard L 529-1561
339 Castro Armando M 529-2698
408 Hanks Howard W 529-2750
409 Gordon Jas B 529-3496
415 Hobbs Nina A 529-2813
416 Peery M B 529-3510
424 Ruther Jack 529-2745
500 Miller G E 529-3431
508 Baker Bill J 529-2926
516 Richardson David L 529-1556
517 Barton Ralph R 529-3517
524 Neverka Henry 529-3193
525 Anselm Jake Jos 529-8807
601 McCall Harold S 529-1794
602 Spaulding John R 529-1518
715 King Glenn E 529-3649
716 Speer Harry D 529-2486
802 Carlson Kenneth C 529-4046
806 Fox Donald 529-2497
810 Hurst Forrest 529-2350
814 Barlow Virgil E 529-4253
817 Bacon L S 529-2779
818 Pene Aubin 529-3784
821 Bradford Juanita 529-6782
822 Connely Glen 529-3091
825 Hornbuckle D S 529-3677
830 Hartunian V A 529-3595
834 Sheld S W 529-3888

ALMOND DR 92621

819 Ervin Richard 529-6773
823 James Opal 529-5701
826 Swedenborg R P 529-2630
830 Bibbee Loyd 529-5017
831 Smiley Bob E 529-1237
839 Buffum Richard B 529-1412
842 James Lon 529-1098
843 Senn T McCluer 529-4320
850 Jones Nora 529-3608
903 Mc Coy Jas 529-2788
906 Feathers J D 529-3689
907 Bowland Chas K 529-4031
910 Durbin J N 529-3174
911 Wiedeman Roy C 529-3627
915 Hillard Keith L 529-1133
918 Hester Orva L 529-1729
919 Waller Arnold 529-2207
922 Keeley Virgil K 529-2423
923 Whited Edgar L 529-3637
927 Schweigert H C 529-1575
931 Slinde Geo J 529-5686
935 Cole Glenn G 529-3406

APPLE DR 92621

621 Butler G A 529-9374
635 Fisher Hans 529-8155
651 Fisher Robt W 529-4213
666 Warner Glenn L 529-6739
677 Thorpe Wm C 529-6347

APRICOT AV 92621

450 Carriero Victor 529-3060
465 Hagan Dennis 529-6874
475 Creighan John 529-6992
480 Hinshaw Orville H Jr 529-9360
485 Murray Bill 529-6953
495 Nunes Richard V 529-8864
505 Venegas Bernard M 529-6876
515 Jones Eugene L 213 697-3662
515 Jones Eugene L 529-4177
535 Dalby Construction Co 529-4530
535 Dalby Robt D 529-6790
647 Digert John O 529-8209

AROVISTA AV 92621

321
-E Don's Barber Shop 529-1585
321A Price's Market 529-9163
321B Plaza Beauty Salon 529-1488
321C Shirley's Cleaners & Laundry 529-2222
321F Branyan R H DC 529-3093
325 Dyke John N 529-3658
328 Holtman Leslie D 529-3601
329 Dyck A F 529-1677
332 Lind Robt E 529-3546
333 Davis Dennis O 529-2770
337 Emerson L D 529-2543
401 Francis Gene L 529-1092
405 Brooker Wm K 529-7847
409 Strain G H 529-2324
419 Bender Clyde 529-3692
427 Riley Jas D 529-1583
431 Anderson Fred D 529-2712
439 Houston Richard Y Sr 529-3777

ARROW WOOD DR 92621

1101 Attix Reginald G 529-6875
1133 Lewis R H 529-1103
1159 Kraus Louis 529-5031
1213 Muckelvane Houston 529-4619
1225 Clifton M S 529-5366
1240 Gasser Loren W 529-6967
1255 Schick Geo B 529-7697
1257 Smith Glenn C 529-6494
1259 Miller Douglas A 529-8829
1260 Mattes Geo W 529-5117
1265 Harris Roy L 529-5664
1275 Brown Stephen 529-6762
1280 Simonian R Sam 529-4574
1285 McMurtrie Clifford 529-6674
1295 Cor August E 529-6968
1315 Pelloni John Jr 529-6631
1325 Langston Jas G 529-8471
1327 Engels Frank W 213 691-5526
1330 Mason Chas E 529-5790
1340 Griffiths Richard J 529-6437
1345 Edgerton Geo F 213 697-7141
1345 Edgerton Geo F 529-5730
1350 Cooper Saml 529-1897
1390 Smith Jacki 529-3554
1390 Smith Jas W 529-6107

ASH E 92621

107 Williams Brian M 529-5994
120 Ken Jones Construction Corp .529-1939
212 Podrasky Frank 529-7062
214 Watkins S L 529-8382
215 Lassila Arthur Z 529-6565
215 Casa Brea Inn 529-9187
215
-1 Garlick Flossie C 529-8881
-2 Kinney Elizabeth 529-9093
-6 Welch Donald G 529-5444
219 Masi Jas 529-8769
221
-A Snyder Donald R 529-7150
-E Simon Chas W 529-8714
-F Wollaston John 529-6180
-H Page Paul E 529-1629
327 Taylor Stables The 529-9272
329 Yriarte A 529-1294
339 Rhoades Max 529-5205
411 Lanners Linda L 529-6470
601 Olson Edw A 529-6402
604 Fisk David M 529-9316
608 Woodraska Robt K 529-5530
609 Blokzyl Leonard 529-8469
615 Alexander Archie D 529-8424
620 Ortiz Fidel J 529-5522
624 Simmons Dave E 529-2803
631 Mohon Purvis W 529-3200
632 Boyum Jack 529-5417
635 Jenkins Albert D 529-3442
636 Shepherd Yvonne 529-8019
639 Smith S Art 529-1459
640 Quinliven Dennis 529-3611
643 Briegel Arlo 529-4333
644 Swenson Geo 529-3356
648 Garfield Reed 529-4438
651 Hitchcock Marie W 529-8459
655 Manous Herb 529-7837
659 Trzcinski Richard S 529-8782

ASH W 92621

111 Brea Medical Clinic
Harrington Earl G 529-3904
207 Durbin Florence E 529-7739
211 Hansen Theresa 529-4466
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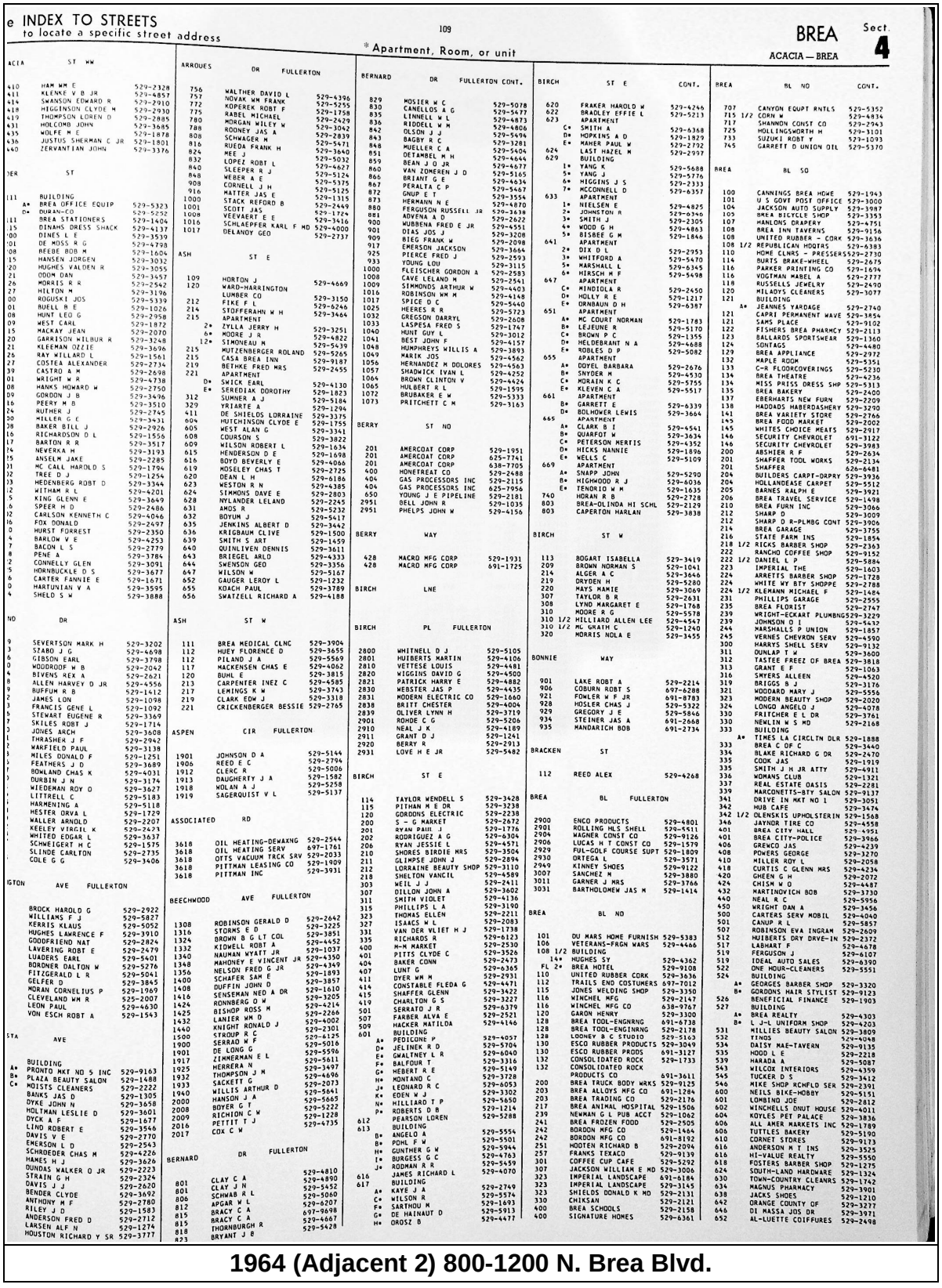

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1932 THOMPSON J M 529-3497
1933 SACKETT G 529-4696
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2016 PETTIT T J 529-1228
2017 COX C W 529-4735

BERNARD DR FULLERTON

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529-5428

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CLAY J N
SCHWAB R L
APGAR W L
BRACY C A
BRACY C A
THORNBURGH R
BRYANT J B

801
805
806
812
815
815
818
823

BERNARD DR FULLERTON CONT.

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873 HERMANN N E 529-4870
880 FERGUSON RUSSELL JR 529-3638
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900 WUBBENA FRED E JR 529-4551
901 DIAS JOS J 529-3208
909 BIEG FRANK W 529-2098
917 EMERSON JACKSON 529-3664
925 PIERCE FRED J 529-2593
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201 AMERCOAT CORP 638-7705
400 HONETREAT CO 529-2488
404 GAS PROCESSORS INC 529-2115
404 GAS PROCESSORS INC 625-7956
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2951 BELL JOHN R 529-1035
2951 PHELPS JOHN W 529-4156

BERRY WAY

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428 MACRO MFG CORP 691-1725

BIRCH LNE

BIRCH PL FULLERTON

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2820 WIGGINS DAVID G 529-4500
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617 BUILDING
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3+ SMITH J 529-2305
4+ WOOD G H 529-4863
5+ BISBEE G M 529-1846
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3+ WHITFORD A 529-5470
5+ MARSHALL L 529-6345
6+ HIRSCH M F 529-5498
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E+ ORNBAUN D H 529-6387
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D+ BOLHOWER LEWIS 529-3664
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310 1/2 MC MAHAN C 529-1240
320 MORRIS NOLA E 529-3455

BONNIE WAY

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906 COBURN ROBT S 697-6288
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929 GREGORY J E 529-5846
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935 MANDARICH BOB 691-2734

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2906 LUCAS H T CONST CO 529-1579
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2930 ORTEGA J 529-3571
2949 KINNEY SHOES 529-1122
3007 SANCHEZ M 529-3880
3011 GARNER J MRS 529-3766
3031 BARTHOLOMEW JAS M 529-1414

BREA BL ND

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1A+ HUGHES SY 529-4362
FL 2+ BREA HOTEL 529-9108
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301 COFFEE CUP CAFE 529-5292
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330 CHIKSAN 529-2121
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BREA BL SO

100 CANNINGS BREA HOME 529-1943
101 U S GOVT POST OFFICE 529-3000
104 JACKSON AUTO SUPPLY 529-3987
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323 MODERN BEAUTY SHOP 529-2020
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642 ORANGE COUNTY OF 529-3277
646 DI MASSA JOS DR 529-3971
652 AL-LUETTE COIFFURES 529-2498

1964 (Adjacent 2) 800-1200 N. Brea Blvd.

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APPENDIX M
FINAL DESIGN HYDRAULIC STUDY

FINAL DESIGN HYDRAULIC STUDY

BREA CANYON BLVD. BRIDGES AT BREA CANYON CREEK

Existing Bridge Numbers 55C0121, 55C0122, 55C0123

Proposed Bridge Numbers 55C0729, 55C0730, 55C0731

ORANGE COUNTY, CALIFORNIA

AVILA & ASSOCIATES

Final Design Hydraulic Study

BREA CANYON BLVD. BRIDGE AT BREA CANYON CREEK

Orange County, California

Existing Bridge # 55C0121, 55C0122, 55C0123

Proposed Bridge # 55C0729, 55C0730, 55C0731

OCTOBER 8, 2021

PREPARED FOR:

MARK THOMAS AND ORANGE COUNTY PUBLIC WORKS

Prepared by:

AVILA AND ASSOCIATES
CONSULTING ENGINEERS, INC.

Catherine M.C. Avila, P.E

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EXECUTIVE SUMMARY

This report was prepared for the Brea Blvd Corridor Improvement Project. The street name is Brea Boulevard; however, the California Department of Transportation (Caltrans) calls the bridges Brea Canyon Blvd. This report uses the Caltrans naming for consistency with the bridge inspection reports. Additionally, Caltrans refers to the creek beneath the bridges as Brea Canyon Channel which will be used throughout the report; however; the name of the creek is Brea Canyon Creek.

The existing Brea Canyon Blvd. Bridges 55C0121 (bridge 1), 55C0122 (bridge 2), and 55C0123 (bridge 3) at Brea Canyon Channel in Orange County, California are proposed for replacement by Orange County Public Works (OC Public Works). The proposed bridges will be single span precast/prestressed concrete girder bridges as shown on the attached General Plan (Appendix A). Bridges 1 and 3 rest upon seat type abutment caps which are supported by 4' diameter CIDH piles. The remaining bridge, Bridge 2, also rests upon a seat type abutment pile cap. However, the deep foundation for this bridge is a secant pile wall which consists of alternating primary (unreinforced) and secondary (reinforced) 3' diameter CIDH piles. The proposed bridge numbers are 55C0729 (bridge 1), 55C0730 (bridge 2), 55C0731 (bridge 3). This report uses the existing bridge numbers throughout to provide consistent references throughout all backup reports.

Brea Canyon Channel flows southwesterly through the project site through the northern part of Orange County. It drains an approximate 18.4 square miles at the project site. The discharges used for the bridge hydraulic analysis were provided by OC Public Works. The peak discharges for each hydrograph are shown in Table 1.

Table 1. Discharge and water surface elevation for bridge design.

	Design	**Base**
Frequency (years)	50	100
Discharge (cubic feet per second)	7,180	8,030
Water Surface Bridge 1 (elevation in feet at upstream face of Bridge)	390.4	391.5
Water Surface Bridge 2 (elevation in feet at upstream face of Bridge)	398.1	398.7
Water Surface Bridge 3 (elevation in feet at upstream face of Bridge)	420.4	423.7

This study used hydraulic modeling based on a HEC-RAS[1] version 5.0.7 model to estimate the water surface elevation (WSE) for the existing and proposed bridges. Resulting WSE's and available freeboard at each of the bridges for the proposed condition are shown in Table 2.

Table 2. WSE and Freeboard values under 50-year and 100-year proposed conditions at the upstream face of the bridges.

Bridge	Min. Soffit Elevation (ft)	50-yr WSE (ft)	**50-yr Freeboard (ft)**	100-yr WSE (ft)	**100-yr Freeboard (ft)**
1	391.8	390.4	**1.4**	391.5	**0.3**
2	407.1	398.1	**9**	398.7	**8.4**
3	422.8	420.4	**2.4**	423.7	**-0.9**

[1] US Army Corps of Engineers Hydraulic Engineering Center River Analysis System which backwater hydraulic model designed to perform one-dimensional hydraulic calculations for a full network of natural and constructed channels.

Table 3. WSE and Freeboard values under 50-year and 100-year proposed conditions at the downstream face of the bridges.

Bridge	Min. Soffit Elevation (ft)	50-yr WSE (ft)	**50-yr Freeboard (ft)**	100-yr WSE (ft)	**100-yr Freeboard (ft)**
1	387.3	388.5	**-1.2**	389	**-1.7**
2	400.3	397.1	**3.2**	397.5	**2.8**
3	423.5	417.7	**5.8**	418.8	**4.7**

This report follows the California Department of Transportation (Caltrans) Final Hydraulic Report Format and has been prepared in accordance with the Caltrans Local Assistance Program Guidelines (Caltrans 2020a) and Memos to Designers 16-1 (Caltrans 2020b).

GENERAL

This design hydraulic study has been prepared for the sole purpose of meeting the requirements of the Caltrans "Local Assistance Program Guidelines." Although potentially useful for other purposes, this analysis has not been prepared for any other purpose. Reuse of information contained in this report for purposes other than for which Avila and Associates Consulting Engineers, Inc. (Avila and Associates) intended and without their written authorization is not endorsed or encouraged and is at the sole risk of the entity reusing the information.

Avila and Associates was retained to complete the hydraulic analysis of the existing Brea Canyon Blvd. Bridges: 55C0121 (bridge 1), 55C0122 (bridge 2), 55C0123 (bridge 3) over Brea Canyon Channel in Orange County. The location of this project is shown in Figure 1. The following scope of work has been completed to develop this report:

1. Obtain backup information and field review.
2. Obtain discharge information.
3. Create HEC-RAS model and perform hydraulic analysis of existing and proposed conditions.
4. Estimate scour, channel bed degradation, and bank protection parameters.
5. Prepare draft report for comment.
6. Prepare final report.

The existing bridges are located in the northern region of Brea, CA as shown in Figure 1 and Figure 2. The existing bridges were constructed in 1920 (bridge 1), 1930 (bridge 2), and 1939 (bridge 3). The original structures are two span cast in place slab (bridge 1) and T-beam (bridges 2 and 3) bridges supported by unknown foundation (bridge 1) or reinforced concrete open-end abutments on concrete piles (bridges 2 and 3). As of 2015, the bridges have sufficiency ratings of 93.2 (bridge 1), 61.1 (bridge2), and 63.9 (bridge 3).

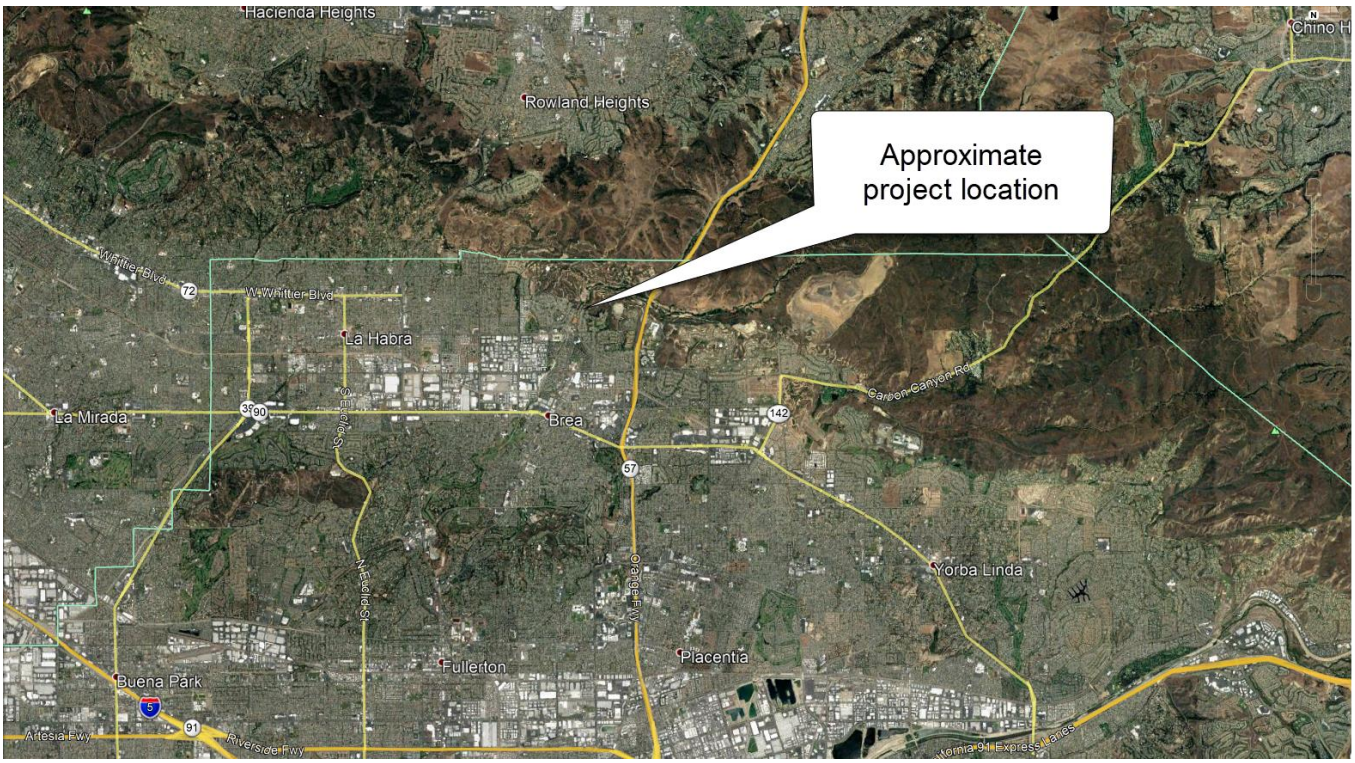

Figure 1. Bridge location map

Figure 2. Detail of project location

The datum elevation used for this study is NGVD-29[2]. The proposed bridges will be along the same alignment as the existing bridges and will be single span precast/prestressed concrete girder bridges as shown on the attached General Plan (Appendix A). The bridges will be supported by abutment piles as shown in Figure 3, Figure 4, and Figure 5.

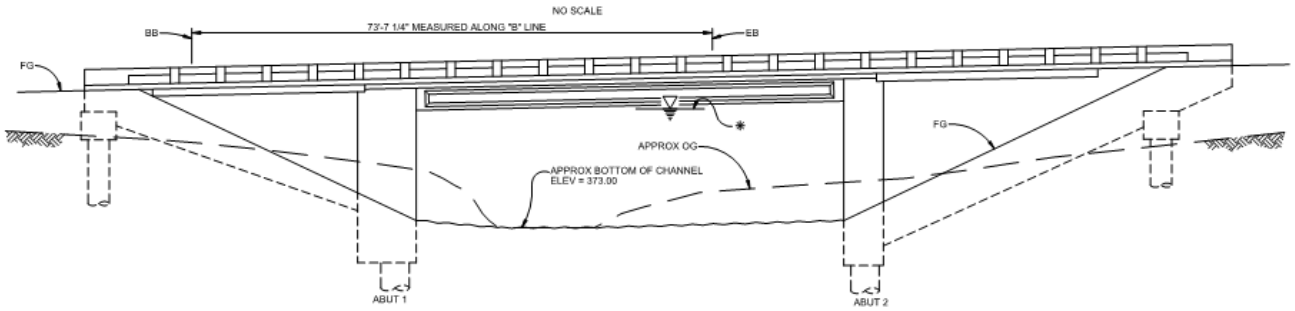

Figure 3. Proposed bridge 1 profile view

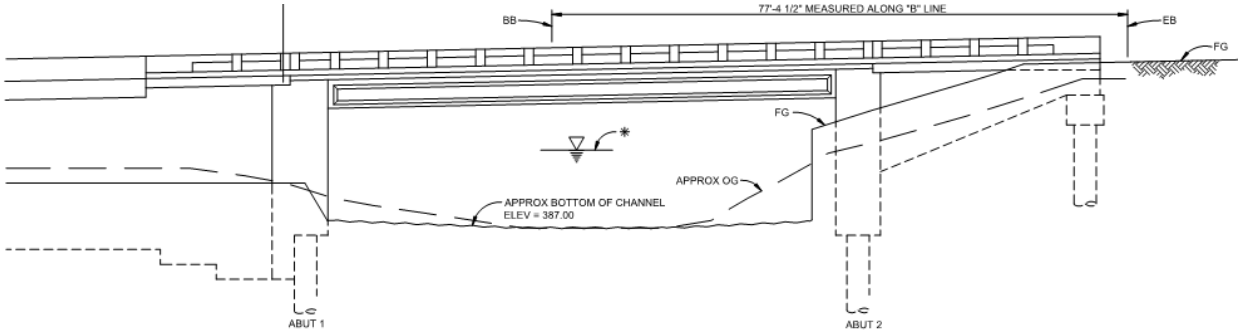

Figure 4. Proposed bridge 2 profile view

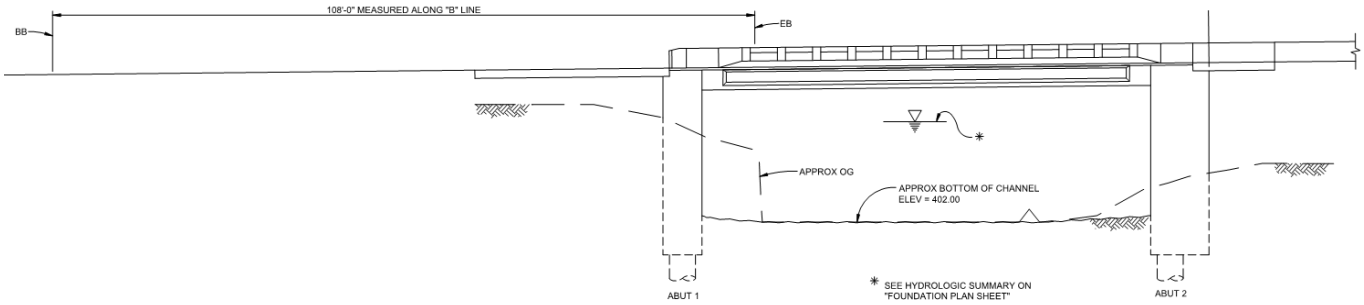

Figure 5. Proposed bridge 3 profile view

[2] Electronic mail from Arturo Vivar, Project Manager, Mark Thomas, to Todd Remington, Avila and Associates on March 20, 2019.

BRIDGE HISTORY

Avila and Associates reviewed the pertinent bridge maintenance records for the existing bridges to review the typical impacts to bridges along this reach. Details of the bridge are shown in Table 4.

Table 4. Bridge information from maintenance records.

	Brea Canyon Blvd. over Brea Canyon Channel		
Bridge Number	55C0121	55C0122	55C0123
Bridge Length (ft)	30	62	92
Span Lengths (ft)	2 @ 13.5	2 @ 29.9	3 @ 29.9
Bridge Type	Continuous 2 span CIP/RC deck slab under 4.9 ft of fill supported by RC closed end backfilled strutted abutments on unknown foundations	Simply supported 2 span CIP/RC T-beam with RC open end diaphragm abutments on concrete piles	Simply supported 2 span CIP/RC T-beam with RC open end diaphragm abutments on concrete piles
Debris Challenges	1983[3], 1985[4], 1997[5], 2001[6], 2003[7], 2005[8], 2007[9], 2010[10], 2012[11], 2013[12]	1983[13]	1980[14], 1983[15]
Cross Sections Available for	2013	none	none
NBIS Item 113 (scour) code	U	8	8
Pier Type	RC Pier on unknown foundation	RC pier wall supported by concrete piles	RC pier walls supported by concrete piles
Year Built	1920	1930	1939
Year Widened	1929	n/a	n/a
Scour Challenges	1938[16], 1980[17]	1938[18], 1939[19], 1945[20], 1941[21], 1954[22], 1981[23]	1938[24], 1953[25],

[3] Much debris wrapped around the center pier nose. Several fallen trees are upstream in the creek.
[4] Same as 1983
[5] Notes spall on nose of pier likely caused by debris
[6] Same as 1997
[7] Same as 2001
[8] Same as 2003
[9] Same as 2005
[10] Same as 2007
[11] Same as 2010
[12] Same as 2012
[13] Large forked tree jammed into the center pile. There was much debris around the upstream pile.
[14] Much debris and drift under the structure
[15] Many tree limbs have collected around the two exterior piles on the west side of the channel.
[16] Storm of Mar. 1938 caused undermining of the footing of the original (east) portion of the structure at the upstream end causing settlement of approx. 2 feet. Structure repaired and reconstructed.
[17] Erosion at the northwest, northeast, and southeast wingwalls
[18] Channel has scoured approx. 4 ft since structure was built extending from upper edge of bridge downstream only with sharp 2 foot drop off.

DISCHARGE

Brea Creek at the Brea Canyon Road bridges drains an approximate 18.4 square miles as shown Figure 6. The mean annual precipitation of the project watershed is approximately 19 inches/year (streamstats).

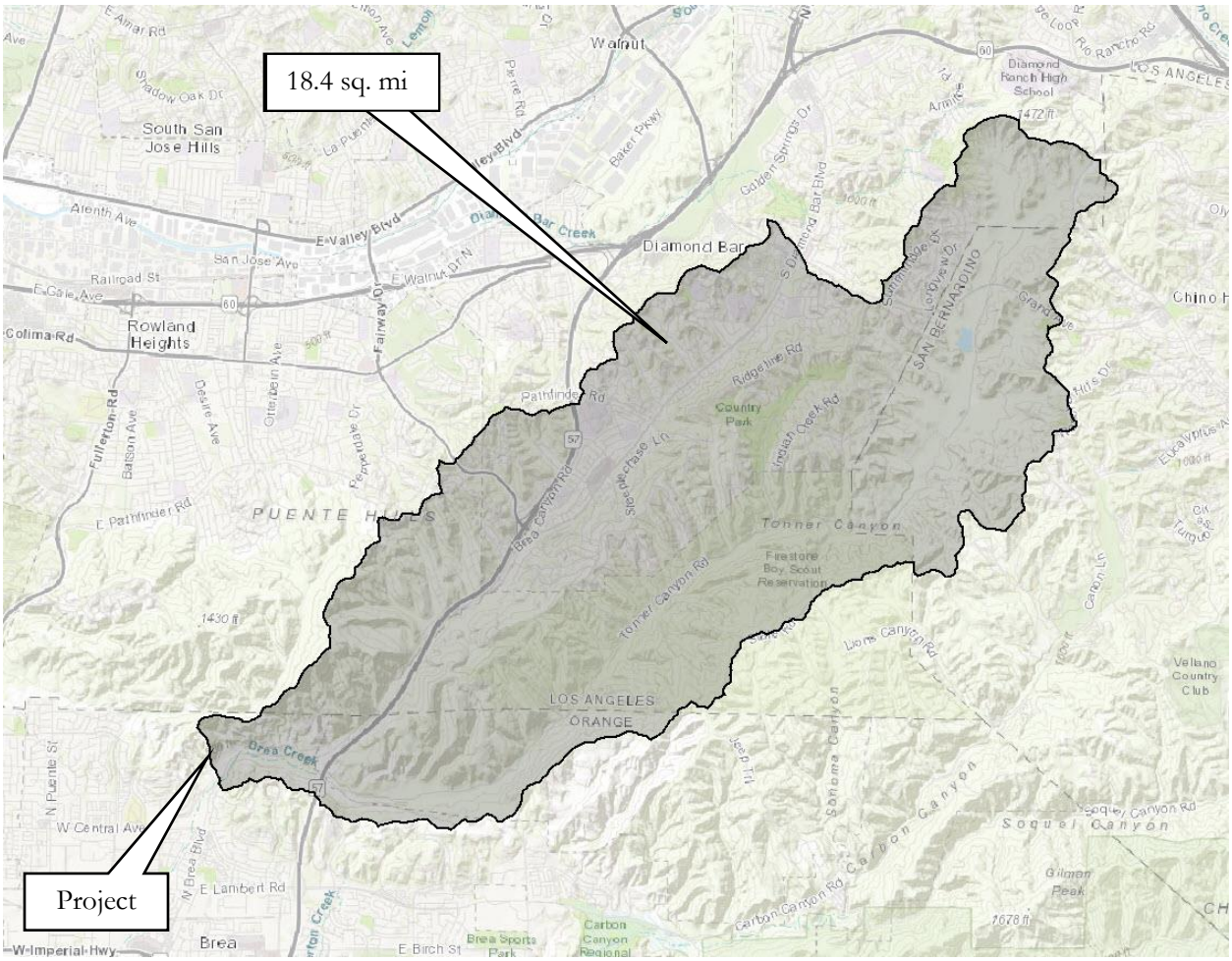

Figure 6. Project hydrology map.

At the request of OC Public Works, the 50-year and 100-year Expected Value hydrographs were used for the analysis. These 50-year and 100-year 24-hour runoff hydrographs for Brea Canyon Channel were provided by OC Public Works on February 28, 2019[26]. The peak discharges in these hydrographs are 7,180 cfs for the 50-year and 8,030 cfs for the 100-yr as shown in Figure 7 and Figure 8. Additional analyses were

[19] Broken concrete placed along base of north bulkhead and channel may have been backfilled.
[20] Riprap below the level of the bottom plank of the bulkhead and the soil below the riprap has eroded causing settlement. More riprap placed to protect structure.
[21] Steel cut off wall and rock slope protection placed to protect from scour
[22] Cavity under RC cap of north abutment
[23] Storm of 1980 causes abutment embankment slopes to wash out and exposed the abutment RC piles to a depth of approx.. 8 feet. Retaining walls were constructed to protect abutments and the embankments were repaired.
[24] Channel has scoured down approx. 5 feet since bridge was built. Channel lining constructed to protect structure.
[25] Cavities noted under caps at Abutments 1 and 4.
[26] Electronic mail from Austin Morgan, Project Management, Orange County Public Works to Arturo Vivar, Project Manager, Mark Thomas on February 28, 2019

performed by Avila and Associates for comparison to the OC Public Works discharges. The provided hydrographs were used for analysis at OC Public Works' request.

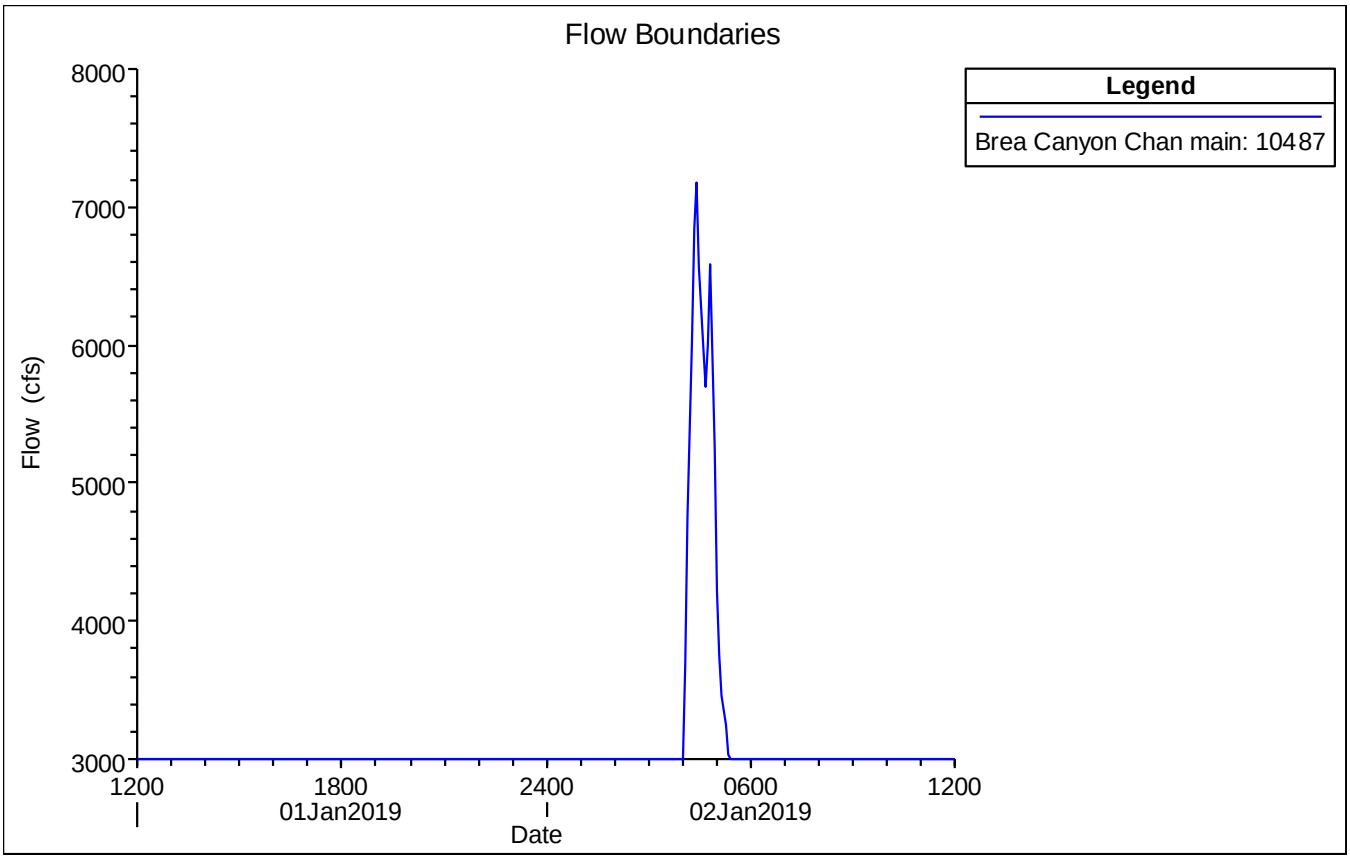

Figure 7. 50-year hydrograph for Brea Creek.

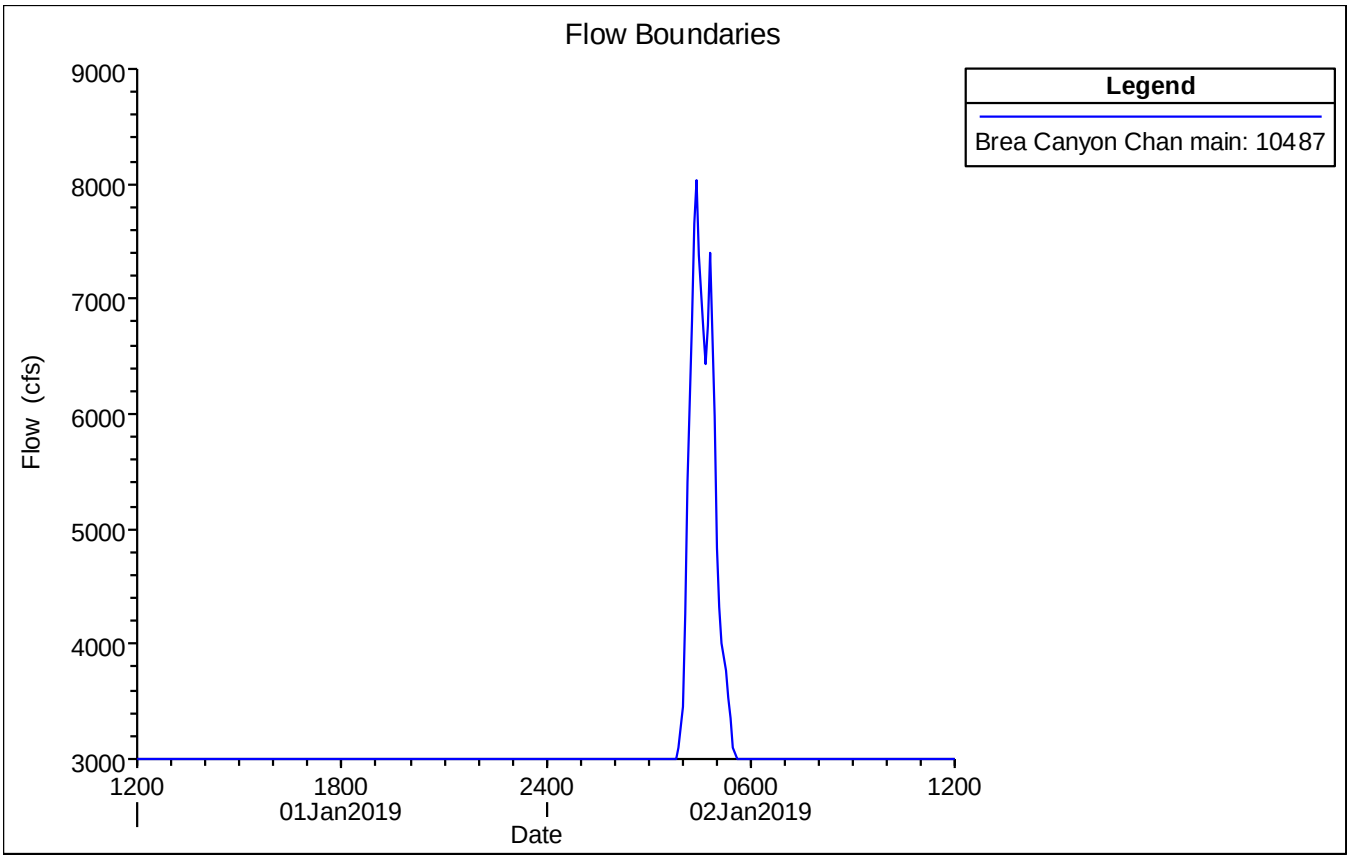

Figure 8. 100-year hydrograph for Brea Creek.

A summary of the hydrology analyses is included in Appendix B.

HEC-RAS ANALYSIS

Hydraulic parameters (water surface elevations and velocity) were obtained from the U.S. Army Corps of Engineers HEC-RAS (Hydraulic Engineering Center River Analysis System) version 5.0.7 model based on survey information provided by Mark Thomas and LiDAR information provided by OC Public Works on January 4, 2019. The model was run unsteady using the hydrographs provided by OC Public Works. Cross sections surveyed for the HEC-RAS model are shown in Figure 9.

Figure 9. Plan View of HEC-RAS cross sections

Existing Condition

A Mannings "n" value of 0.065 was used for the banks and overbanks starting from most upstream cross section (above bridge 3) to approximately 630 feet downstream of bridge 1. As the creek becomes channelized downstream of bridge 1, the Manning's "n" values were reduced to 0.04 for the channel and 0.05 for the overbanks for approximately 1,300 ft. The channel "n" value was further reduced for the remaining 600 feet of the model to account for the concrete lining at the downstream most section of the channel. The bridges were put into the model as two-span bridges with a minimum soffit elevation of 390.7 ft (bridge 1), 406.1 ft (bridge 2), and 424.2 ft (bridge 3) on the upstream side as illustrated in Figure 10, Figure 11, and Figure 12.

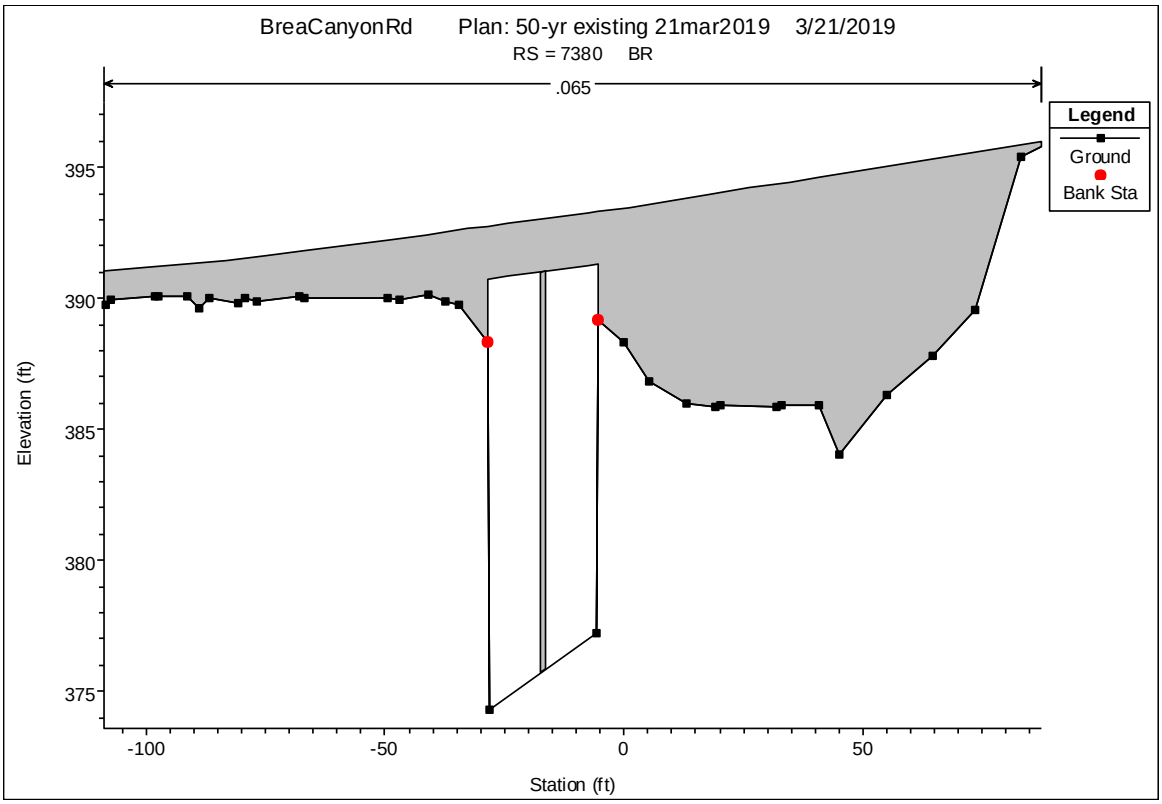

Figure 10. HEC-RAS cross section for the upstream existing condition bridge 1

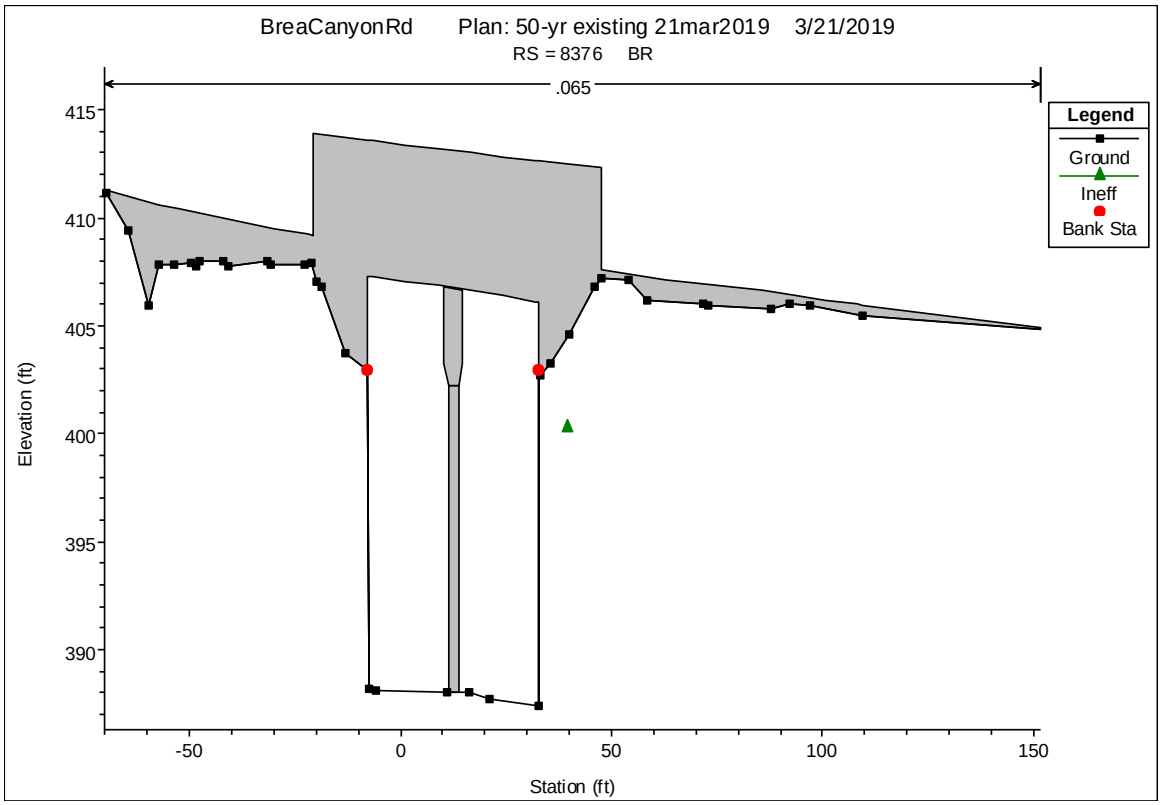

Figure 11. HEC-RAS cross section for the upstream existing condition bridge 2

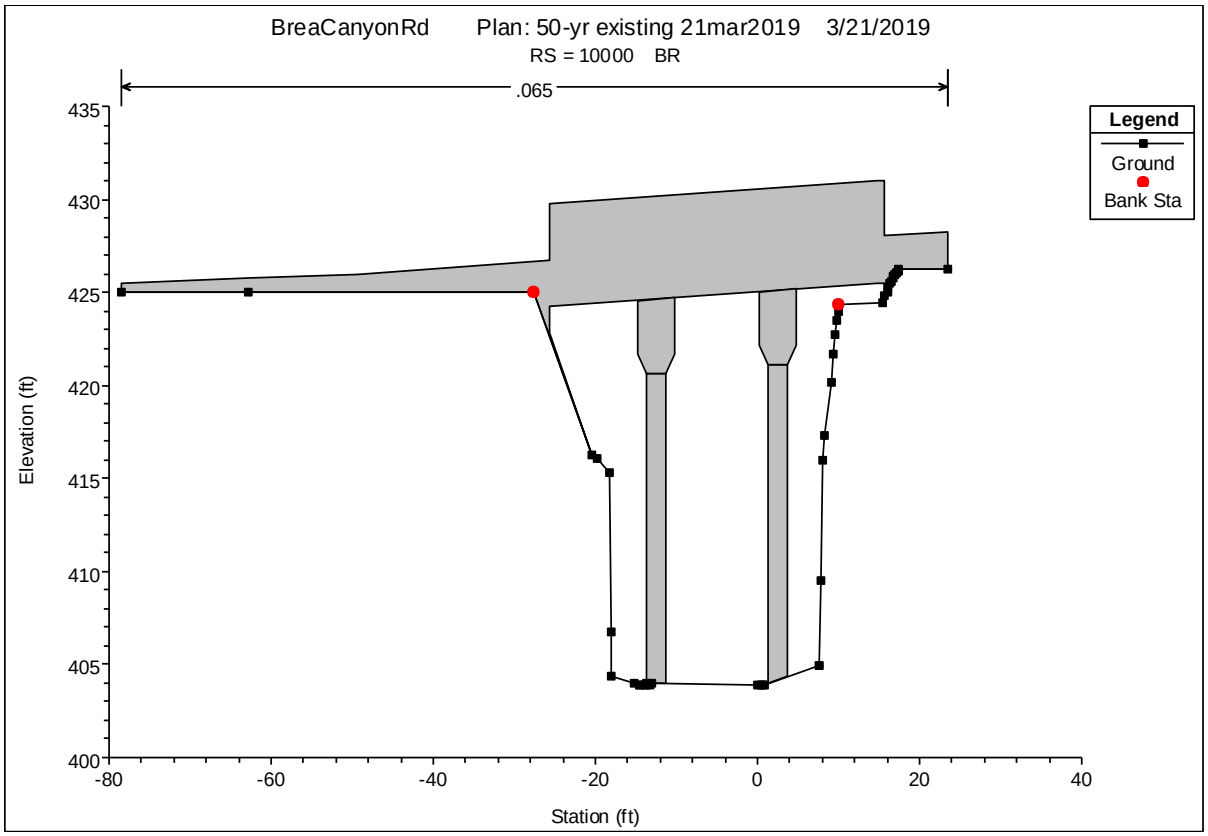

Figure 12. HEC-RAS cross section for the upstream existing condition bridge 3

Starting Water Surface Elevation

The downstream boundary condition used in the unsteady flow model was normal depth with slope of 0.0065.

Proposed Condition Model

The HEC-RAS model was re-run for the proposed condition by replacing the existing bridges with the proposed bridges. The proposed bridges were modeled as a single span bridges with minimum soffit elevations of 391.8 ft (bridge 1), 407.1 ft (bridge 2), and 422.8 ft (bridge 3) on the upstream side as shown in Figure 13, Figure 14, and Figure 15. The proposed bridges will be along the same alignment as the existing bridges and will be approximately 23 ft (bridge 1), 57 ft (bridge 2), and 101 ft (bridge 3) longer (from the face of one abutment to the other, on average) as shown in Figure 16, Figure 17, and Figure 18. The bridge openings used for analysis are the hydraulic openings adjusted for hydraulic skew.

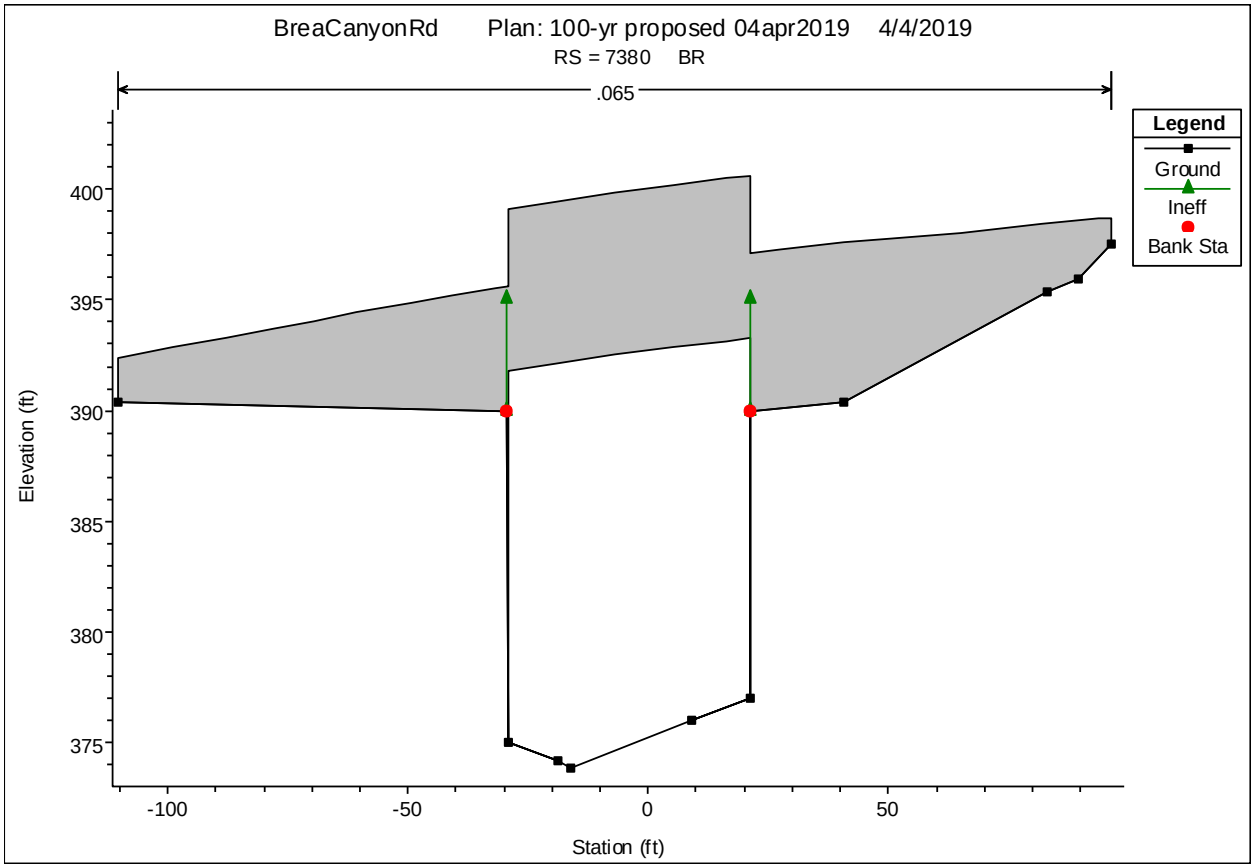

Figure 13.HEC-RAS cross section of proposed bridge 1.

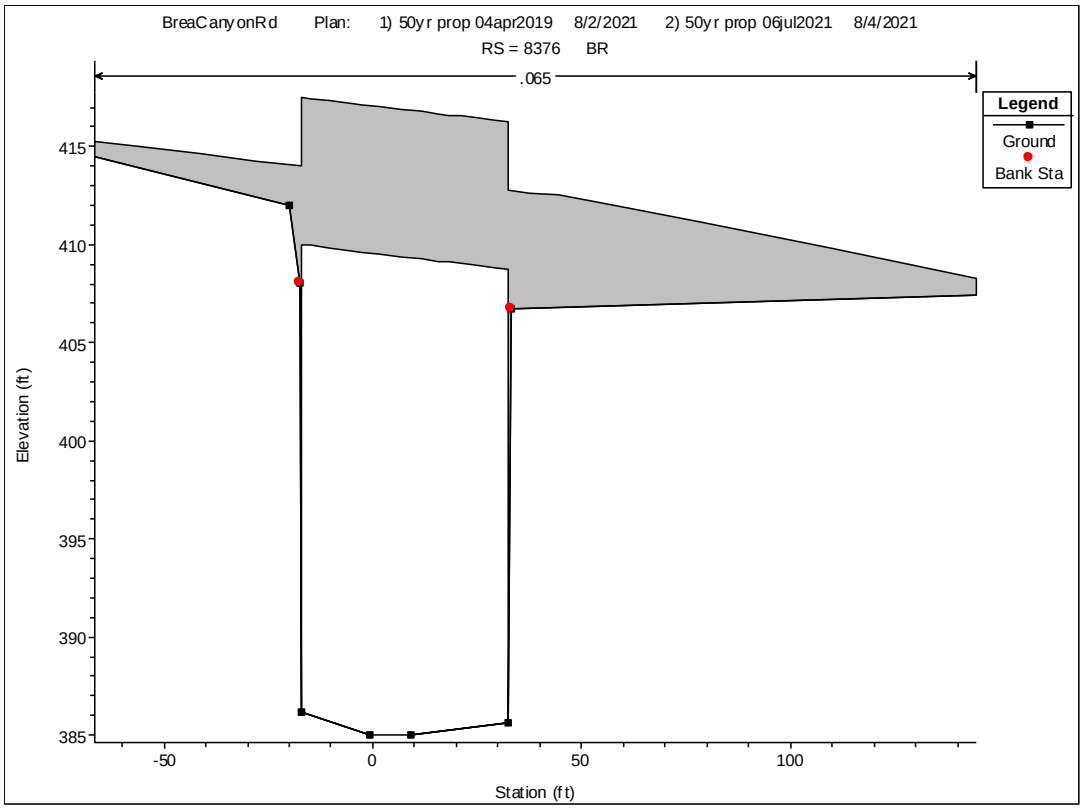

Figure 14. HEC-RAS cross section of proposed bridge 2

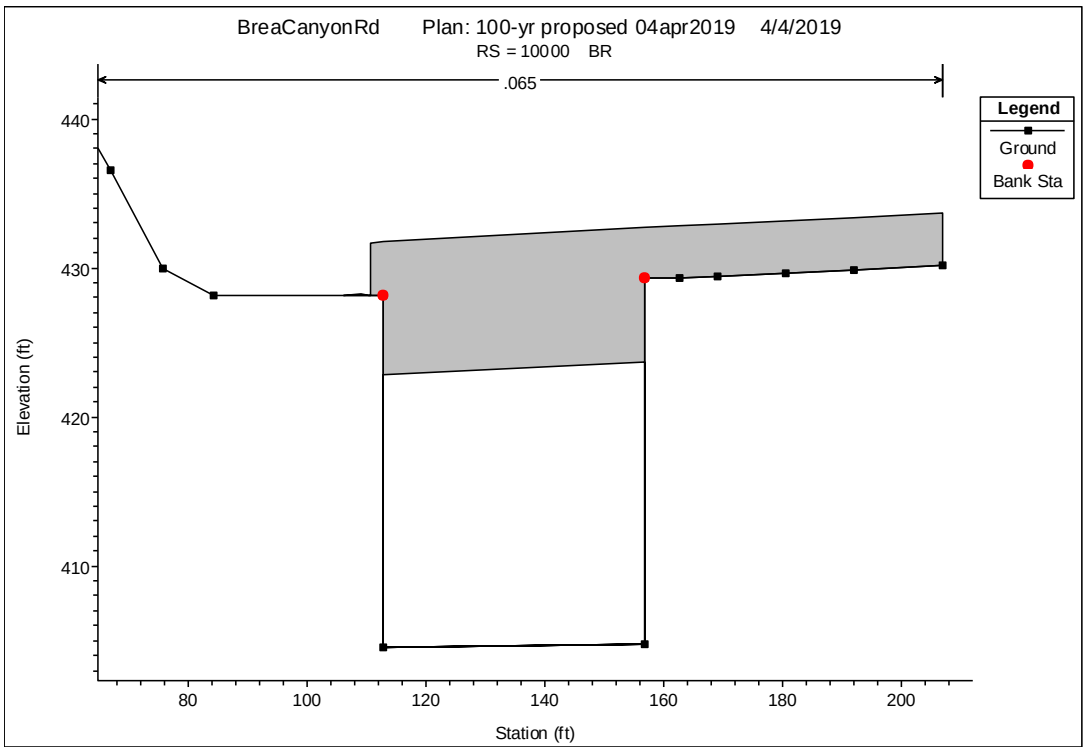

Figure 15. HEC-RAS cross section of proposed bridge 3

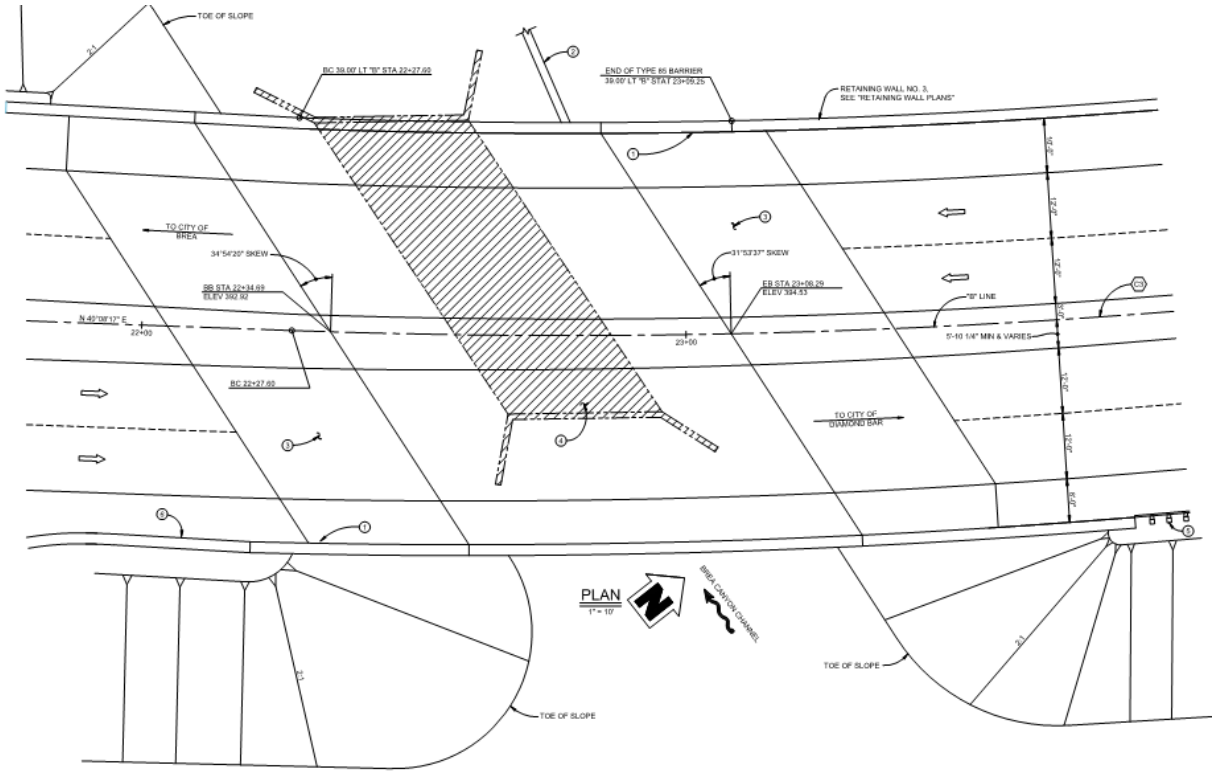

Figure 16. Plan view of proposed bridge 1

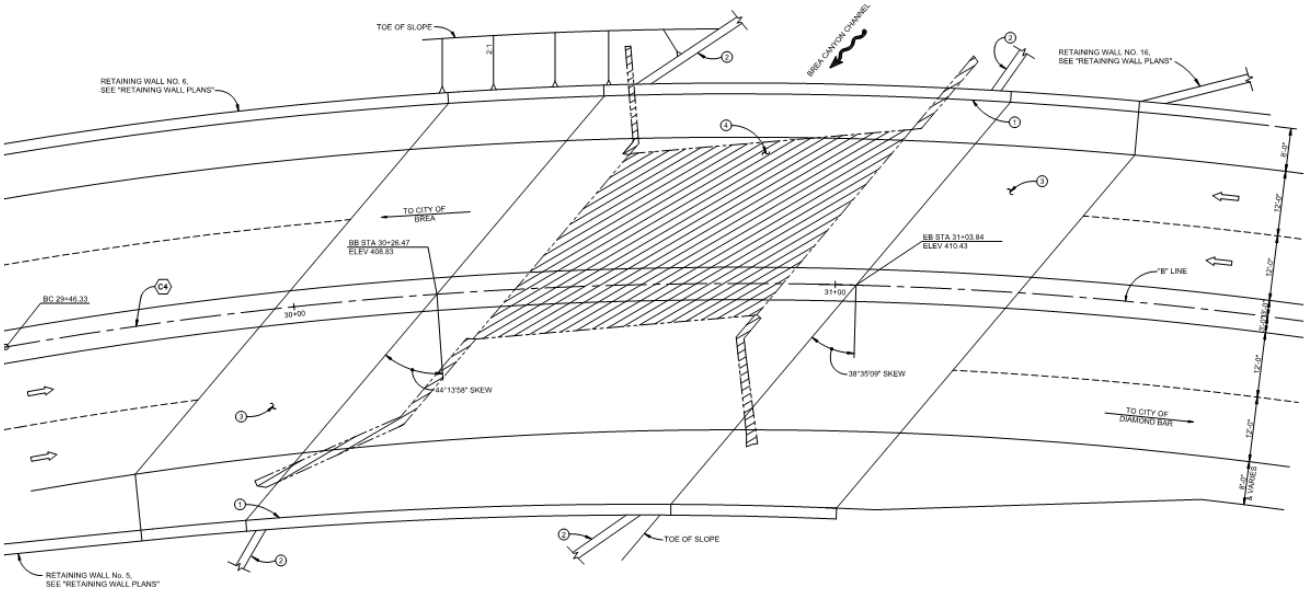

Figure 17. Plan view of proposed bridge 2.

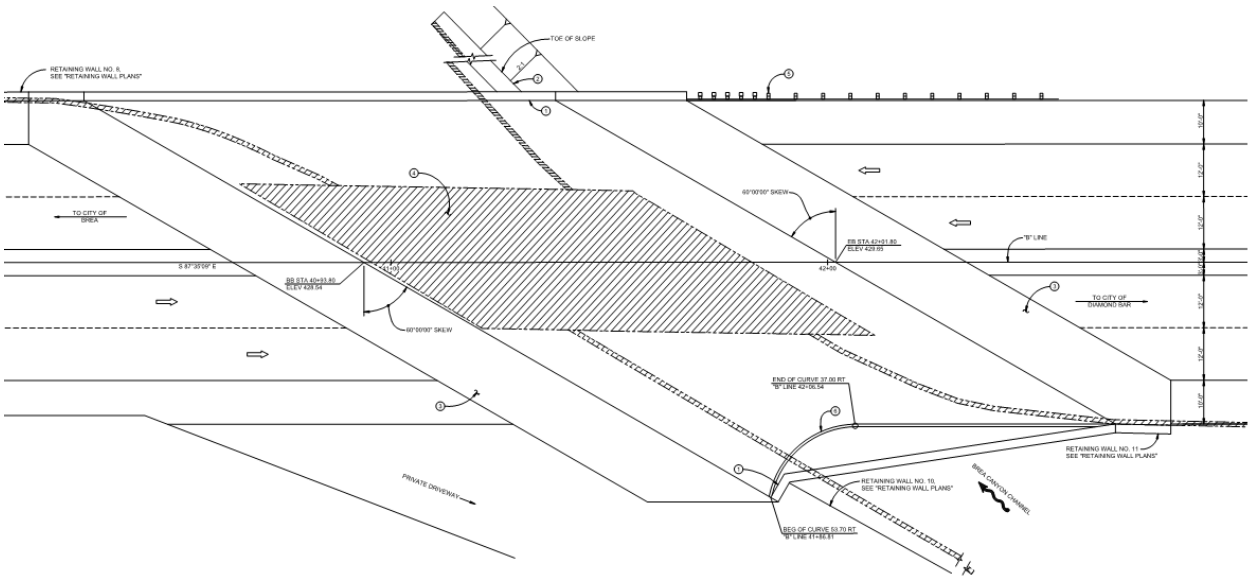

Figure 18. Plan view of proposed bridge 3.

Figure 19, Figure 20, Figure 21, Figure 22, and Table 5 shows a comparison of the existing to the proposed water surface elevation (WSE) profiles for the 50-yr and 100-yr discharges. As can be seen under 100-year conditions, the water surface elevation is lowered approximately 5 feet at bridge 1, 7 ft at bridge 2, and 10 ft at bridge 3 as a result of the proposed bridges. Downstream of bridge 1 there is a slight increase (less than 0.1 ft) in the water surface elevation.

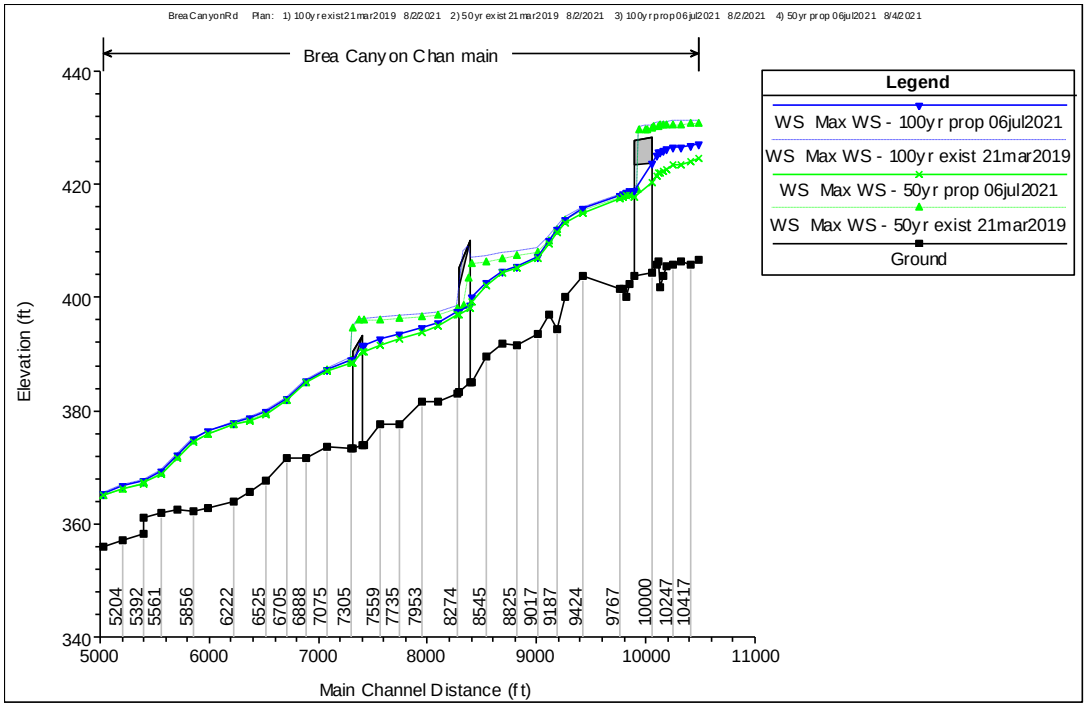

Figure 19. Water surface elevation profile comparison of existing to proposed for the 50-yr and 100-yr discharge

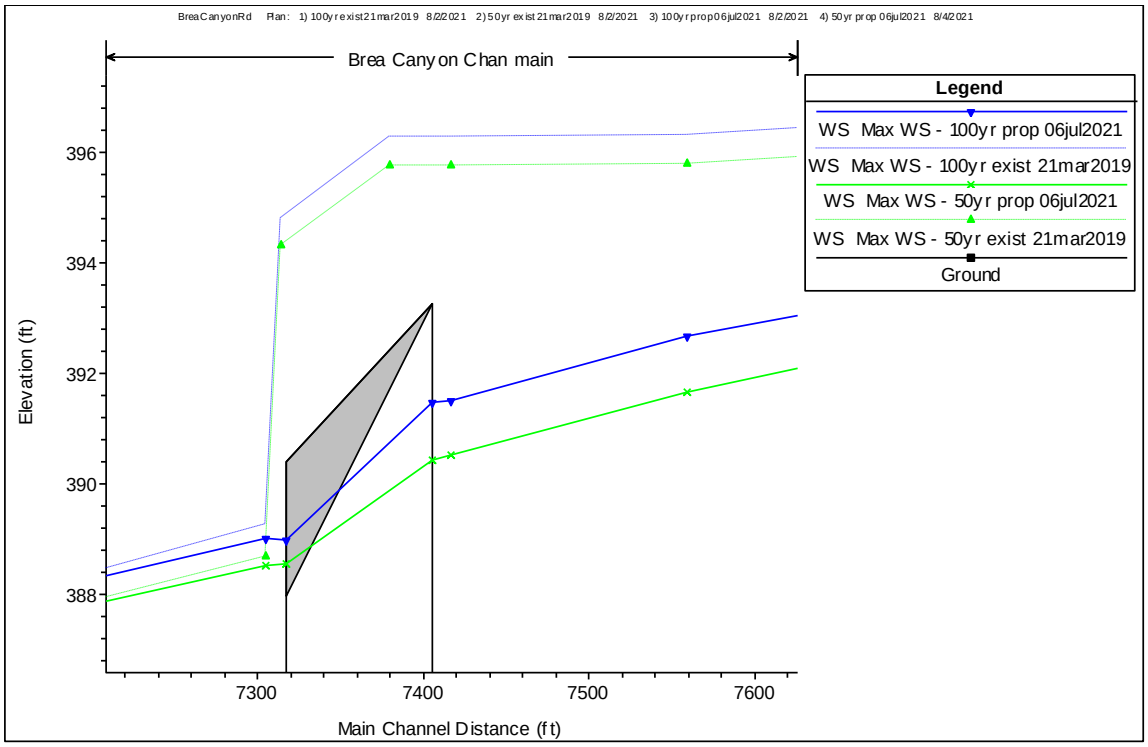

Figure 20. Zoomed in Figure 19 for bridge 1.

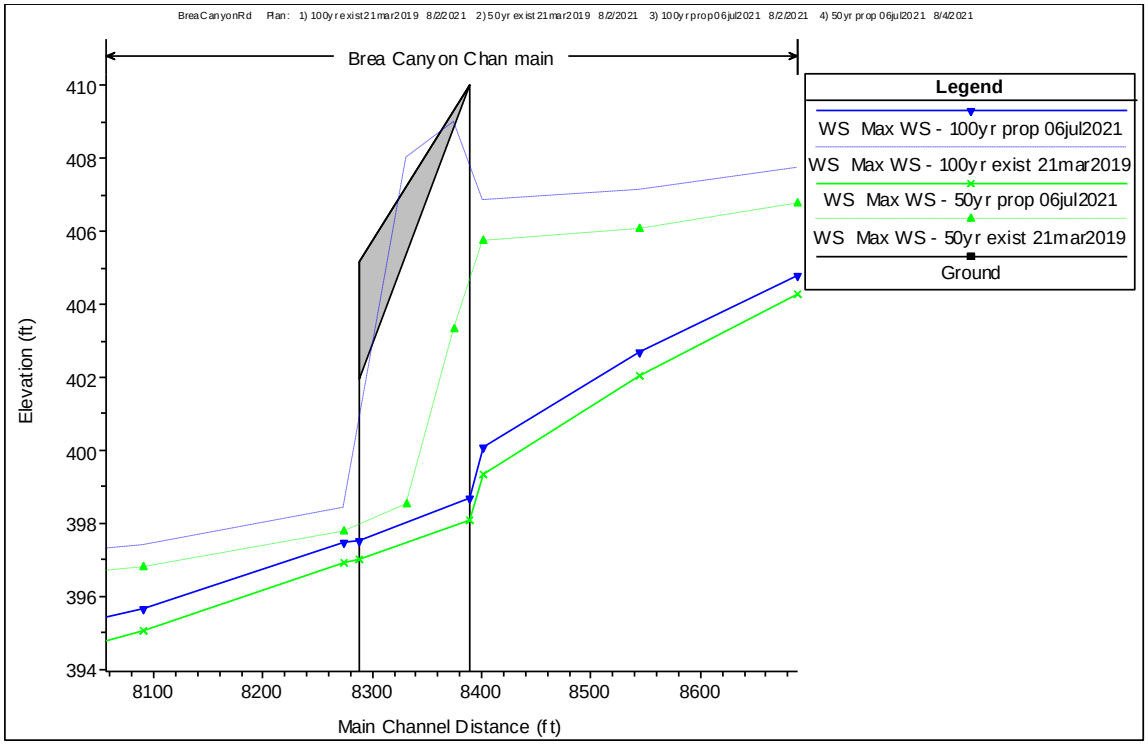

Figure 21. Zoomed in Figure 19 for bridge 2.

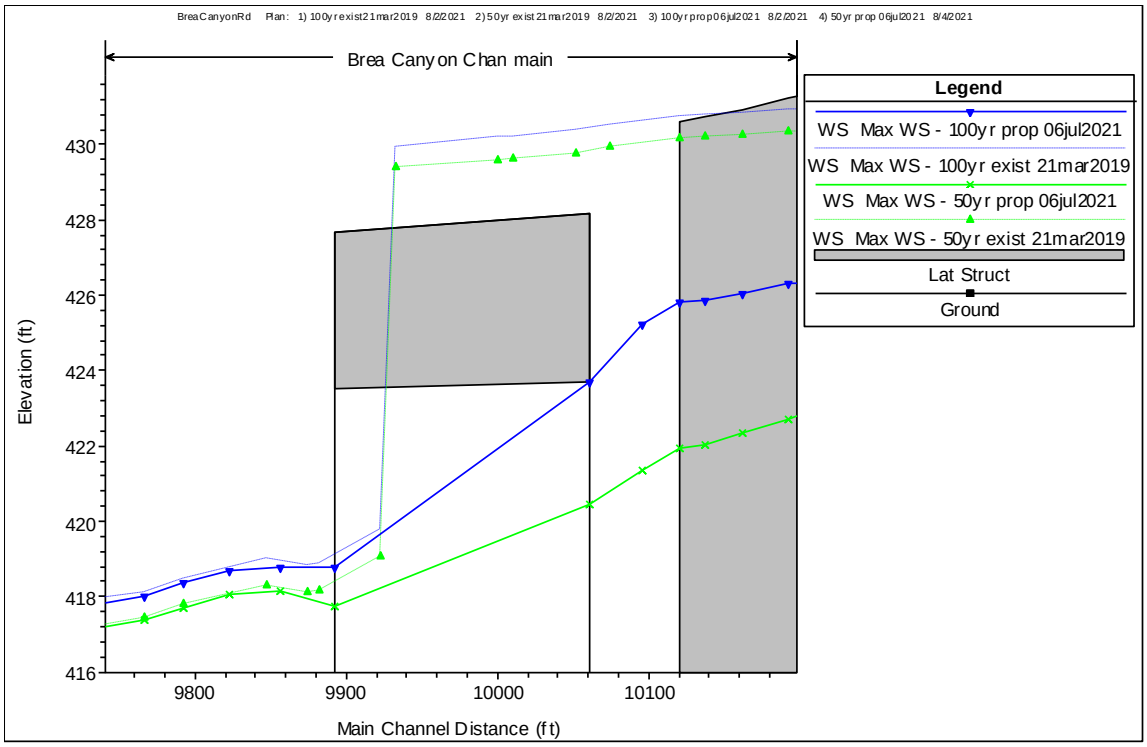

Figure 22. Zoomed in Figure 19 for bridge 3.

See Appendix C for complete HEC-RAS results.

Table 5. Water Surface Elevation (WSE) comparison existing to proposed condition 50-yr and 100-yr discharges

River Station	50-yr			100-yr		
	Existing	Proposed	Difference	Existing	Proposed	Difference
10487	430.6	424.6	-6.0	431.2	427.3	-3.9
10417	430.5	424.1	-6.4	431.1	427.0	-4.2
10319	430.5	423.5	-7.0	431.1	426.8	-4.4
10247	430.4	423.3	-7.1	431	426.7	-4.3
10192	430.3	422.7	-7.6	430.9	426.3	-4.6
10162	430.2	422.4	-7.8	430.8	426.1	-4.8
10137	430.2	422.0	-8.2	430.8	425.9	-4.9
10121	430.2	421.9	-8.3	430.8	425.8	-5.0
Bridge 3						
9793	417.8	417.7	-0.1	418.5	418.4	-0.1
9767	417.4	417.4	0.0	418.1	418.0	-0.1
9424	415.1	415.0	-0.1	415.8	415.6	-0.2
9267	413.4	413.2	-0.2	414.2	413.9	-0.3
9187	411.7	411.4	-0.3	412.5	412.1	-0.4
9119	409.9	409.4	-0.5	410.7	410.0	-0.7
9017	407.9	406.8	-1.1	408.7	407.3	-1.4
8825	407.1	405.1	-2.0	408	405.6	-2.4
8689	406.8	404.3	-2.5	407.8	404.8	-3.0
8545	406	402.1	-3.9	407.1	402.7	-4.4
8402	405.7	399.4	-6.3	406.9	400.1	-6.8
Bridge 2						
8274	397.8	396.9	-0.9	398.4	397.5	-0.9
8091	396.8	395.0	-1.8	397.4	395.7	-1.7
7953	396.4	393.9	-2.5	397	394.7	-2.3
7735	396.1	392.8	-3.3	396.7	393.7	-3.0
7559	395.8	391.7	-4.2	396.3	392.7	-3.6
7417	395.7	390.5	-5.2	396.3	391.5	-4.8
Bridge 1						
7305	388.7	388.5	-0.2	389.3	389.0	-0.3
7075	386.9	387.0	0.06	387.4	387.4	0.0
6888	384.8	384.9	0.09	385.3	385.3	0.0
6705	381.7	381.8	0.09	382.2	382.2	0.0
6525	379.3	379.4	0.05	379.8	379.9	0.05
6364	378.2	378.3	0.09	378.8	378.8	0.0
6222	377.4	377.5	0.08	378	378.0	0.0
5993	375.7	375.8	0.13	376.3	376.3	0.0
5856	374.5	374.6	0.07	375.1	375.1	0.0
5709	371.6	371.7	0.10	372.2	372.2	0.0
5561	368.8	368.9	0.09	369.3	369.4	0.05
5405	367.2	367.2	0.04	367.8	367.8	0.0
5392	367	367.1	0.13	367.7	367.7	0.0
5204	366.1	366.1	0.04	366.7	366.7	0.0
5024	364.9	365.0	0.08	365.5	365.5	0.0

Chapter 820 of the Caltrans Highway Design Manual (HDM) delineates the hydraulic design criteria for bridges (Caltrans, 2020). The basic HDM rule for hydraulic design is that bridges should be designed to pass the Q_{50} with sufficient freeboard and convey the Q_{100} without freeboard. Exceptions may be granted if the bridge designer can provide sufficient evidence that less freeboard is needed. The HDM notes that 2 feet of freeboard is often assumed to be appropriate for preliminary bridge designs but leaves the recommendation for freeboard to the judgment of the hydraulic engineer based primarily upon the debris anticipated at the bridge.

The Orange County Flood Control District (OCFCD) Design Manual outlines the freeboard criteria for bridges on channels with a watershed area greater than 1,000 acres. Since the watershed area tributary to the three bridges of 11,776 acres (18.41 square miles), the watershed is subject to the criteria outlined in the OCFCD Design Manual. Since the channel is a non-leveed channel, it is assumed that the minimum freeboard requirement is 1.0-ft as outlined on Addendum #3 (see Appendix F).

As shown in Table 6 and Table 7, proposed bridges 2 and 3 meet the HDM and the OCFCD criteria at the upstream and downstream faces of the bridge. Using the minimum soffit elevation, bridge 1 does not meet the criteria. However, using an average soffit elevation of 392.6 ft the bridge provides 2.2ft of freeboard over the 50-year water surface elevation (WSE) and 1.1 ft of freeboard over the 100-year WSE. While Table 6, indicates bridge 3 is under pressure flow for the 100-year conditions, this was determined to not be the case as the maximum soffit elevation at the upstream face of the bridge is 423.7 ft, the same as the WSE. In addition, the OCFCD Design Manual notes that "in many instances the design hydrograph may indicate a peak of such short duration that the addition of freeboard would be unreasonably conservative". We have evaluated the hydrograph at bridge #1 and determined that the bridge freeboard would only be encroached upon for less than an hour for the 50-year design discharge which should be considered a short duration and raising the roadway profile to provide freeboard would be unreasonably conservative.

Table 6. Available Freeboard under 50-year and 100-year proposed conditions.

Bridge	Soffit Elevation (ft)	50-yr WSE (ft)	**50-yr Freeboard (ft)**	100-yr WSE (ft)	**100-yr Freeboard (ft)**
1	391.8	390.4	**1.4**	391.5	**0.3**
2	407.1	398.1	**9**	398.7	**8.4**
3	422.8	420.4	**2.4**	423.7	**-0.9**

Table 7. WSE and Freeboard values under 50-year and 100-year proposed conditions at the downstream face of the bridges.

Bridge	Min. Soffit Elevation (ft)	50-yr WSE (ft)	**50-yr Freeboard (ft)**	100-yr WSE (ft)	**100-yr Freeboard (ft)**
1	387.3	388.5	**-1.2**	389	**-1.7**
2	400.3	397.1	**3.2**	397.5	**2.8**
3	423.5	417.7	**5.8**	418.8	**4.7**

Avila and Associates researched the available Bridge Maintenance Reports for the existing bridge to determine if floating debris catches on the bridge. There were numerous instances of debris captured by the bridge piers in the reports. The proposed bridge will improve the hydraulics of the channel by removing the piers and opening the waterway thus reducing the likelihood of debris capture which is a primary reason to provide bridge freeboard.

In accordance with Memos to Designers 16-1 (Caltrans, 2017) the 100-year discharge was used for the scour analysis.

Degradation

Channel bed degradation analysis (sediment transport) was completed for the project reach by WEST Consultants, Inc. and will be included in Appendix E. Long term degradation results and recommendations from the analysis are shown in Table 8. As described in the report, degradation values are determined as the condition when the stream slope has reached an equilibrium state. The analysis is based on the "dominant discharge," or 10-year event, as this is the event that contributes most the formation of the channel. However, since the degradation estimate is based on the equilibrium state, it encompasses all potential flood events. A more detailed sediment transport study would be needed to determine the specific channel lowering that could occur during the 100-year event and is likely closely estimated as the contraction scour.

Table 8. Degradation scour results for each bridge.

Bridge	Degradation depth (ft)
1 (55C0121)	1
2 (55C0122)	1
3 (55C0123)	1

Contraction Scour

All three bridges constrict the channel resulting in contraction scour. Contraction scour was estimated using the HEC-18 (Arneson, 2012) guidelines and a grain size of 0.2 mm. This grainsize is the smallest allowable grainsize for these calculations and was used as the channel median grainsize is at or less than this value (Leighton, 2021). The widths of the upstream channel, bridge opening, and corresponding contraction scour depth are provided in Table 9. However, since all three bridges are single span structures, and the contraction scour is included in the abutment scour calculations, these values are provided for information only and were not used for further analysis or included in the total scour values.

Table 9. Contraction scour estimates

Bridge	Upstream channel width (ft)	Bridge opening (ft)	Contraction scour depth (ft)
1 (55C0121)	70	54	3
2 (55C0122)	74	50	5
3 (55C0123)	71	44	2

Pressure Flow Scour

Under proposed conditions, Bridges 1 and 2 are not vulnerable to pressure flow scour. As modeled, Bridge 3 is just under pressure flow with the maximum water surface elevation at the upstream face of bridge equaling the minimum soffit elevation of the bridge (Figure 23). As shown in Figure 23, the maximum water surface elevation at bridge 3 occurs at simulation time 04:25. At the time steps 5 minutes before (04:20), and 5 minutes after (04:30) the peak, bridge 3 is not under pressure flow and has approximately 2 feet of freeboard. Since the low chord is submerged for less than 10 minutes, if pressure flow were to occur, it would be for a short enough time period that there would be no appreciable pressure flow scour.

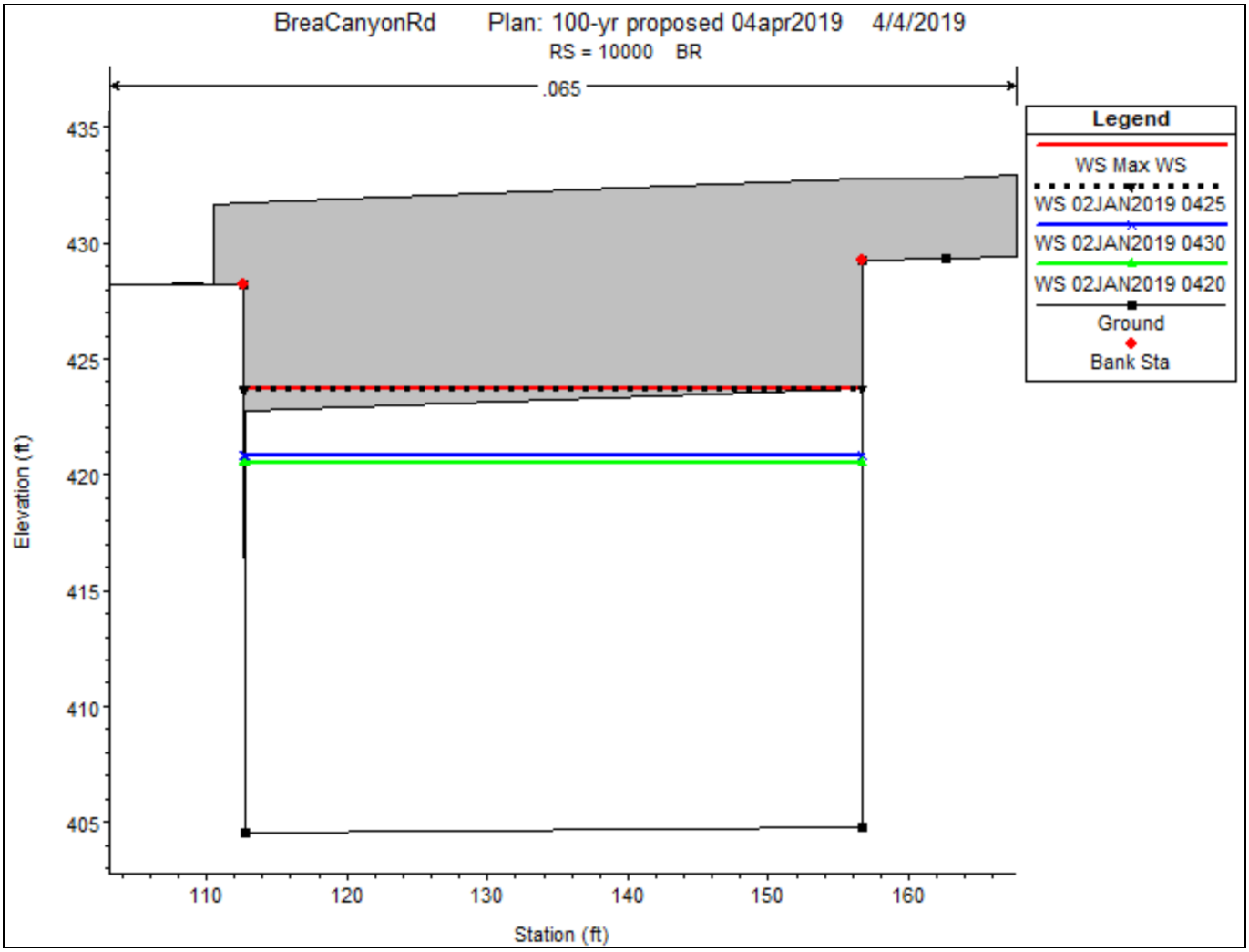

Figure 23. Cross section of bridge 3 under 100-year flow conditions.

Abutment Scour

Preliminary abutment scour estimates using the HEC-18 (Arneson, 2012) guidelines and the NCHRP 24-20 equations are provided in Table 10. These results are inclusive of contraction scour. Therefore, contraction scour does not need to be added to the results. These values assume channel lowering to the thalweg elevation, the lowest elevation in the channel, due channel lateral migration of the channel.

Table 10. Abutment scour estimates.

Bridge	Abutment scour depth (ft)	Channel Thalweg (ft)	Abutment Scour Elevation (ft)
1 (55C0121)	9	373	364
2 (55C0122)	16	384	368
3 (55C0123)	9	402	393

Total Scour

The total scour elevations are provided in Table 11 for each bridge. The erodibility of the soil at each bridge was tested using the Erosion Function Apparatus and determined the siltstone at each support is not resistant to scour. Therefore, theoretical scour will not be limited by geotechnical considerations.

Table 11. Total scour elevations and siltstone bedrock elevations.

Bridge	Thalweg Elevation (ft)	Degradation Scour Depth (ft)	Abutment Scour Depth (ft)	Total Scour Elevation (ft)
1 (55C0121)	373	1	9	363
2 (55C0122)	384	1	16	367
3 (55C0123)	402	1	9	392

See Appendix G for theoretical abutment scour estimates.

SUMMARY TABLES

The following Hydrologic Summary Table is provided for your use for placement on the Foundation Plan:

Drainage Area: 18.4 Square miles

	Design	**Base**	**Flood of Record (1941)**
Frequency (Years)	50	100	<50
Discharge (Cubic feet per second)	7,180	8,030	3,000
Water Surface Bridge 1 (elevation in feet at upstream face of Bridge)	390.4	391.5	385.2
Water Surface Bridge 2 (elevation in feet at upstream face of Bridge)	398.1	398.7	394.1
Water Surface Bridge 3 (elevation in feet at upstream face of Bridge)	420.4	423.7	415.0
Flood plain data are based upon information available when the plans were prepared and are shown to meet Federal requirements. The accuracy of said information is not warranted by OC Public Works and interested or affected parties should make their own investigation.			

The following Scour Summary Table is provided for bridge 1:

Long Term & Short-Term Scour Depths			
Support No.	Degradation Scour Depth (ft)	Contraction Scour Depth (ft)	Short Term (Local) Scour Depth (ft)
A1	1	3	9*
A2	1	3	9*
*Abutment scour is inclusive of contraction scour and additional contraction scour should not be added to these values.			

The following Scour Data Table is provided for placement on the Foundation Plan of bridge 1 assuming a thalweg elevation of 373 ft:

Support No.	Long Term (Degradation and Contraction) Scour Elevation (ft)	Short Term (Local) Scour Depth (ft)
A1	369	9*
A2	369	9*
*Abutment scour is inclusive of contraction scour and additional contraction scour should not be added to these values.		

The following Scour Summary Table is provided for bridge 2:

Long Term & Short-Term Scour Depths			
Support No.	Degradation Scour Depth (ft)	Contraction Scour Depth (ft)	Short Term (Local) Scour Depth (ft)
A1	1	5	16*
A2	1	5	16*
*Abutment scour is inclusive of contraction scour and additional contraction scour should not be added to these values.			

The following Scour Data Table is provided for placement on the Foundation Plan of bridge 2 assuming a thalweg elevation of 384 ft:

Support No.	Long Term (Degradation and Contraction) Scour Elevation (ft)	Short Term (Local) Scour Depth (ft)
A1	378	16*
A2	378	16*
*Abutment scour is inclusive of contraction scour and additional contraction scour should not be added to these values.		

The following Scour Summary Table is provided for bridge 3:

Long Term & Short-Term Scour Depths			
Support No.	Degradation Scour Depth (ft)	Contraction Scour Depth (ft)	Short Term (Local) Scour Depth (ft)
A1	1	2	9*
A2	1	2	9*
*Abutment scour is inclusive of contraction scour and additional contraction scour should not be added to these values.			

The following Scour Data Table is provided for placement on the Foundation Plan of bridge 3 assuming a thalweg elevation of 402 ft:

Support No.	Long Term (Degradation and Contraction) Scour Elevation (ft)	Short Term (Local) Scour Depth (ft)
A1	399	9*
A2	399	9*
*Abutment scour is inclusive of contraction scour and additional contraction scour should not be added to these values.		

REFERENCES

Arneson, L.A., Zevenbergen, L.W., Lagasse, P.F., and Clopper, P.E. 2012. *Evaluating Scour at Bridges. Fifth Edition.* Hydraulic Engineering Circular No. 18. Federal Highway Administration Publication No. FHWA HIF-12-003, Washington, D.C. April.

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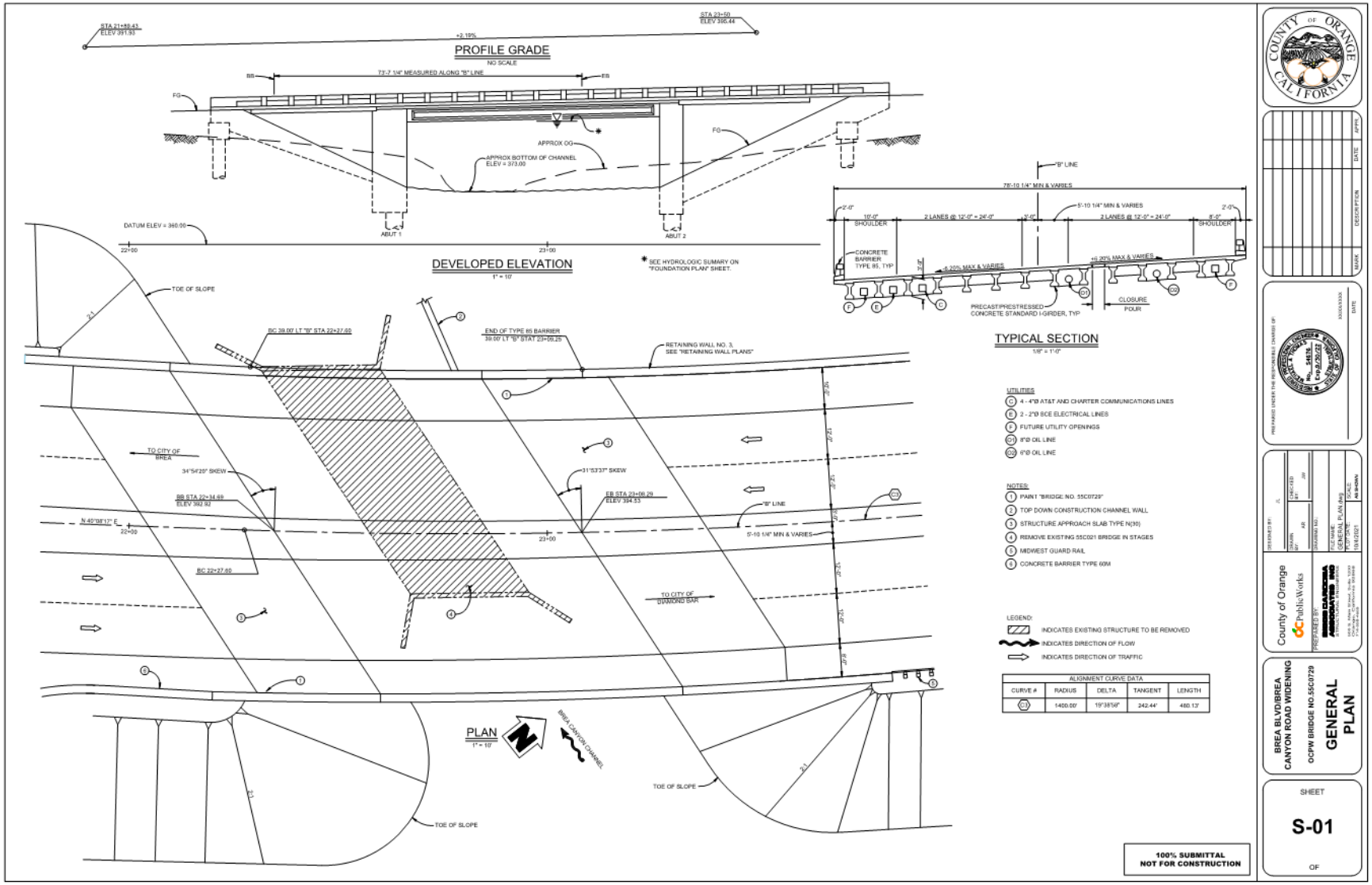
_____. 1995. "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges". Federal Highway Administration Report No. FHWA-RD-96-0001. December.

Lagasse, P.F. Clopper, P.E., Pagan-Ortiz, J.E., Zeverbergen, L.W., Arneson, L.A., Schall, J.D., Girard, L. G. 2009. "Bridge Scour and Stream Instability Countermeasures. Volumes 1 and 2. Third Edition." Hydraulic Engineering Circular No. 23. Federal Highway Administration Publication No. FHWA-NHI-09-112, Washington, D.C. September.

Leighton Consulting, Inc. 2021. "Geotechnical Engineering Report Proposed Earth Retention Systems and Roadway Pavement Brea Boulevard Corridor Improvements County of Orange, California". June 23.

APPENDICES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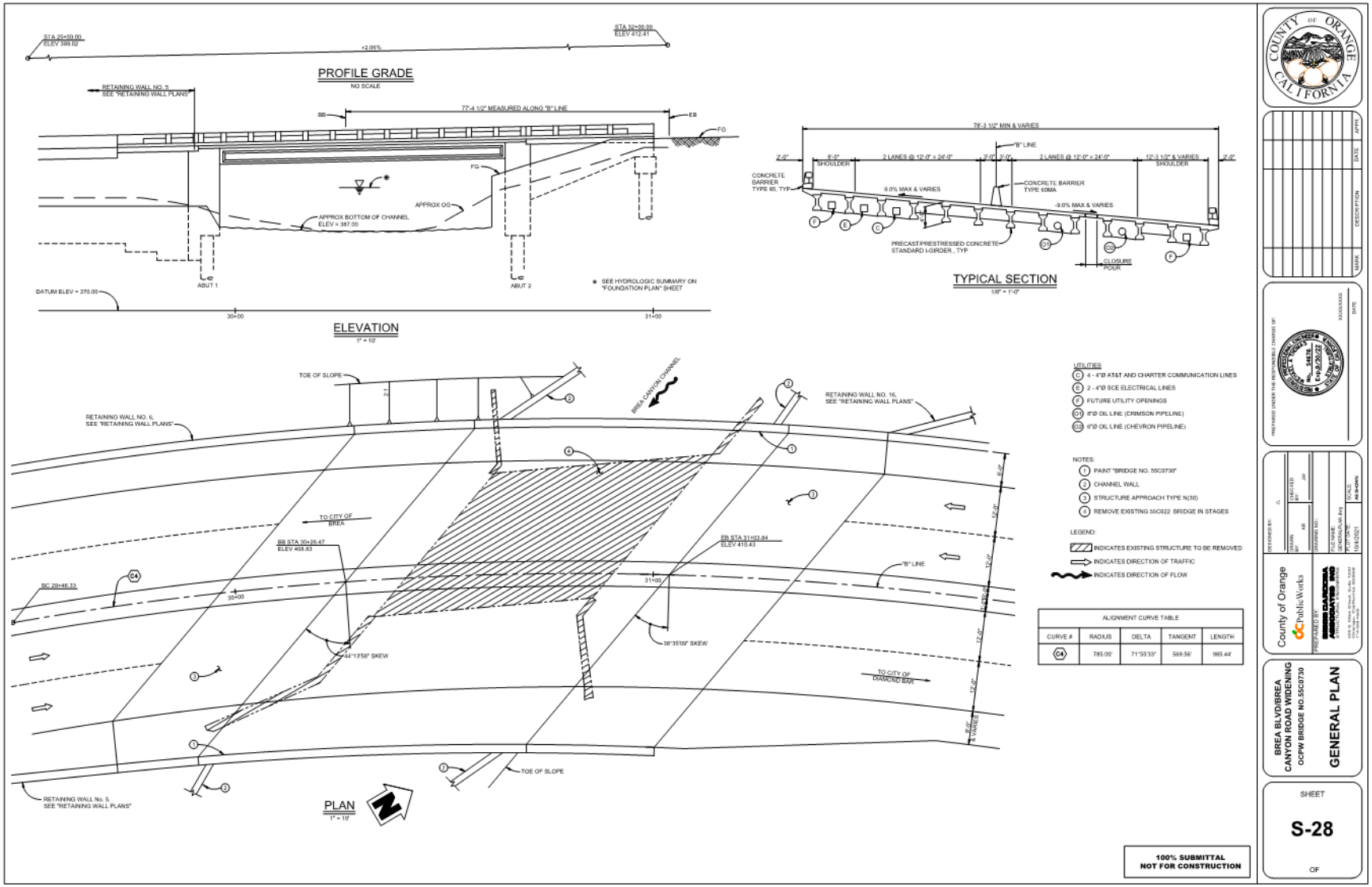
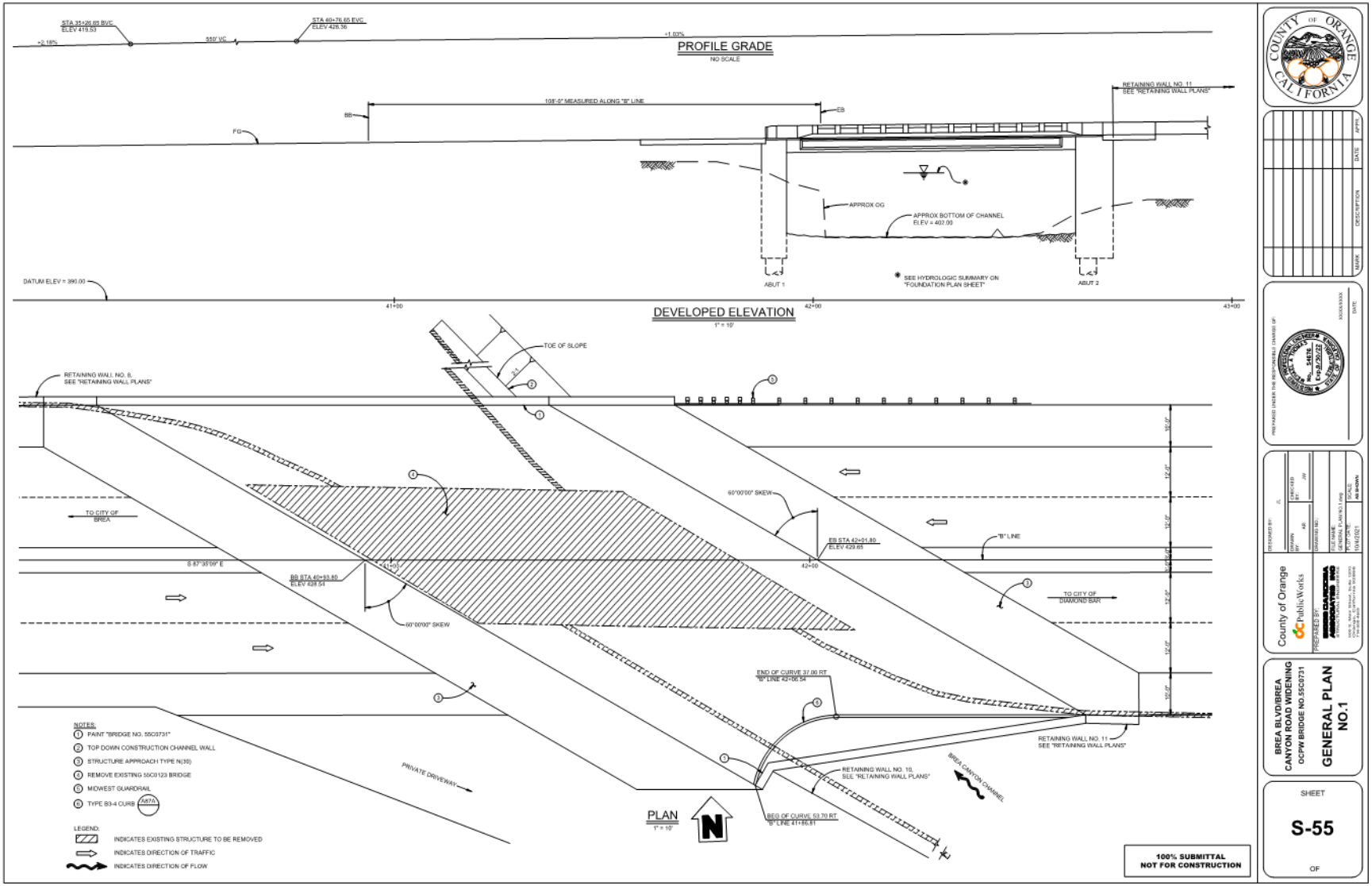
DEVELOPED ELEVATION
1" = 10'
* SEE HYDROLOGIC SUMMARY ON "FOUNDATION PLAN" SHEET.
TYPICAL SECTION
1/8" = 1'-0"
PLAN
1" = 10'
UTILITIES
C 4 - 4"Ø AT&T AND CHARTER COMMUNICATIONS LINES
E 2 - 2"Ø SCE ELECTRICAL LINES
F FUTURE UTILITY OPENINGS
D1 8"Ø OIL LINE
D2 6"Ø OIL LINE
NOTES:
1 PAINT "BRIDGE NO. 55C0729"
2 TOP DOWN CONSTRUCTION CHANNEL WALL
3 STRUCTURE APPROACH SLAB TYPE N(30)
4 REMOVE EXISTING 55C021 BRIDGE IN STAGES
5 MIDWEST GUARD RAIL
6 CONCRETE BARRIER TYPE 60M
LEGEND:
INDICATES EXISTING STRUCTURE TO BE REMOVED
INDICATES DIRECTION OF FLOW
INDICATES DIRECTION OF TRAFFIC
ALIGNMENT CURVE DATA
CURVE # | RADIUS | DELTA | TANGENT | LENGTH
C3 | 1400.00' | 19°38'56" | 242.44' | 480.13'
100% SUBMITTAL
NOT FOR CONSTRUCTION
County of Orange
Public Works
BREA BLVD/BREA CANYON ROAD WIDENING
OCPW BRIDGE NO.55C0729
GENERAL PLAN
SHEET
S-01
OF


PROFILE GRADE
NO SCALE
STA 25+50.00
ELEV 399.02
STA 32+00.00
ELEV 412.41
+2.06%
RETAINING WALL NO. 5
SEE "RETAINING WALL PLANS"
77'-4 1/2" MEASURED ALONG "B" LINE
EB
FG
APPROX OG
APPROX BOTTOM OF CHANNEL
ELEV = 387.00
ABUT 1
ABUT 2
DATUM ELEV = 370.00
30+00
31+00
★ SEE HYDROLOGIC SUMMARY ON "FOUNDATION PLAN" SHEET
ELEVATION
1" = 10'
78'-3 1/2" MIN & VARIES
"B" LINE
2'-0"
8'-0"
SHOULDER
2 LANES @ 12'-0" = 24'-0"
3'-0"
3'-0"
2 LANES @ 12'-0" = 24'-0"
12'-3 1/2" & VARIES
SHOULDER
2'-0"
CONCRETE BARRIER TYPE 85, TYP
9.0% MAX & VARIES
CONCRETE BARRIER TYPE 60MA
-9.0% MAX & VARIES
PRECAST/PRESTRESSED CONCRETE STANDARD I-GIRDER , TYP
CLOSURE POUR
TYPICAL SECTION
1/8" = 1'-0"
TOE OF SLOPE
2:1
BREA CANYON CHANNEL
RETAINING WALL NO. 6,
SEE "RETAINING WALL PLANS"
RETAINING WALL NO. 16,
SEE "RETAINING WALL PLANS"
TO CITY OF BREA
BB STA 30+26.47
ELEV 408.83
EB STA 31+03.84
ELEV 410.43
"B" LINE
BC 28+46.33
30+00
31+00
44°13'58" SKEW
56°35'09" SKEW
TO CITY OF DIAMOND BAR
50'
VARIES
RETAINING WALL No. 5,
SEE "RETAINING WALL PLANS"
TOE OF SLOPE
PLAN
1" = 10'
N
UTILITIES
C 4 - 4"Ø AT&T AND CHARTER COMMUNICATION LINES
E 2 - 4"Ø SCE ELECTRICAL LINES
F FUTURE UTILITY OPENINGS
D1 8"Ø OIL LINE (CRIMSON PIPELINE)
D2 6"Ø OIL LINE (CHEVRON PIPELINE)
NOTES:
1 PAINT "BRIDGE NO. 55C0730"
2 CHANNEL WALL
3 STRUCTURE APPROACH TYPE N(30)
4 REMOVE EXISTING 55C0322 BRIDGE IN STAGES
LEGEND:
INDICATES EXISTING STRUCTURE TO BE REMOVED
INDICATES DIRECTION OF TRAFFIC
INDICATES DIRECTION OF FLOW
ALIGNMENT CURVE TABLE
CURVE # | RADIUS | DELTA | TANGENT | LENGTH
C4 | 785.00' | 71°55'33" | 569.56' | 985.44'
100% SUBMITTAL
NOT FOR CONSTRUCTION
COUNTY OF ORANGE CALIFORNIA
MARK | DESCRIPTION | DATE | APPR.
PREPARED UNDER THE RESPONSIBLE CHARGE OF:
REGISTERED CIVIL ENGINEER
No. 54674
Exp. 6/30/22
DATE
DESIGNED BY: FL
DRAWN: EP
CHECKED: AR / JW
QUANTITIES CHECKED:
FILE NAME: 55C0730_GENERAL PLAN.dwg
PLOT DATE: 10/4/2021
SCALE: AS SHOWN
County of Orange PublicWorks
PREPARED BY:
BRIDGE DESIGN ASSOCIATES, INC.
BREA BLVD/BREA CANYON ROAD WIDENING
OCPW BRIDGE NO.55C0730
GENERAL PLAN
SHEET
S-28
OF



COUNTY OF ORANGE
CALIFORNIA

MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:
No. 54676
Exp.06/30/22
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
XXXXXXXXX
DATE

DESIGNED BY: CL
DRAWN: AR
CHECKED: BS / JW
QUANTITIES BY:
CAD FILENAME: GENERAL PLAN NO.1.dwg
PLOT DATE: 10/4/2021
SCALE: AS SHOWN

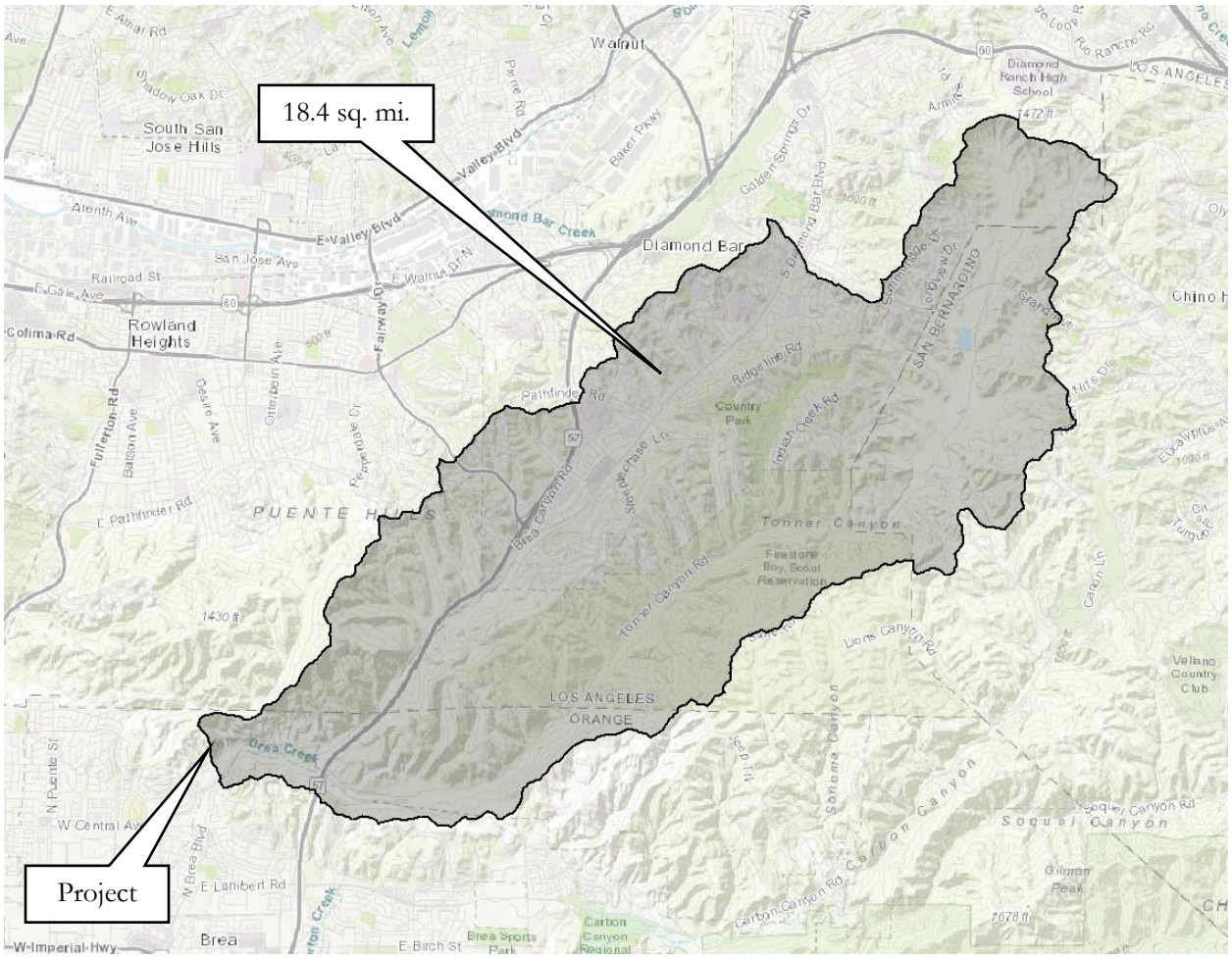
County of Orange
PublicWorks
PREPARED BY:
PACIFIC ENGINEERING & SURVEYING, INC.
1000 W. Ninth St., Suite 200, Upland, CA 91786
Tel: (909) 949-0033 Fax: (909) 949-0044

BREA BLVD/BREA
CANYON ROAD WIDENING
OCPW BRIDGE NO.55C0731

GENERAL PLAN NO.1

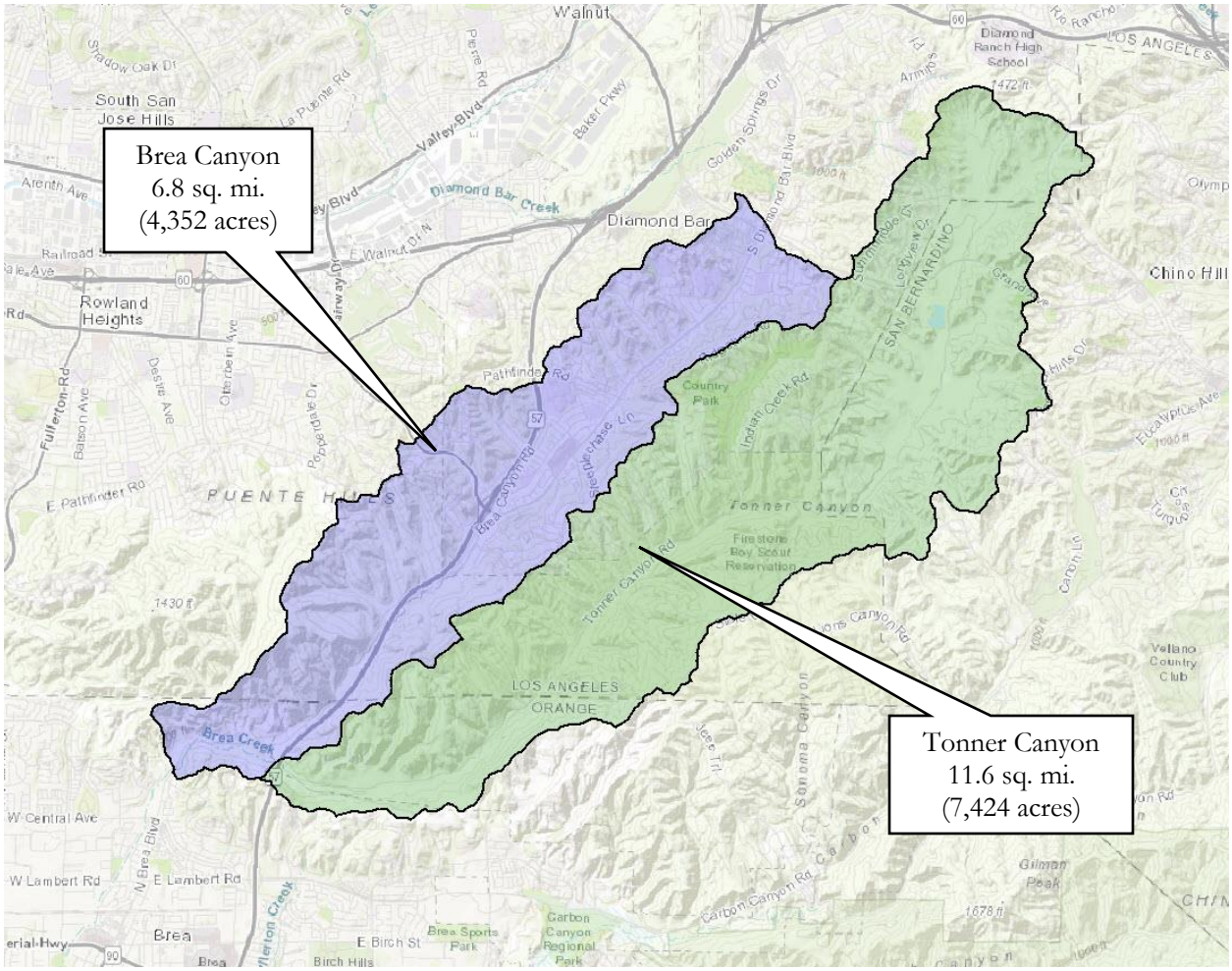
SHEET
S-55
OF

Brea Creek at the Brea Canyon Road bridges drains an approximate 18.4 square miles as shown on the Project Hydrology Map. The mean annual precipitation of the project watershed is approximately 19 inches/year (streamstats).



Project Hydrology Map (ArcGIS World Topo Map)

The watershed is comprised of two subareas, Tonner Canyon and Brea Canyon as shown on the Sub-Area Hydrology Map.



Sub-Area Hydrology Map (ArcGIS World Topo Map)

Four methods of analysis were performed to estimate the design discharges for the hydraulic analysis:

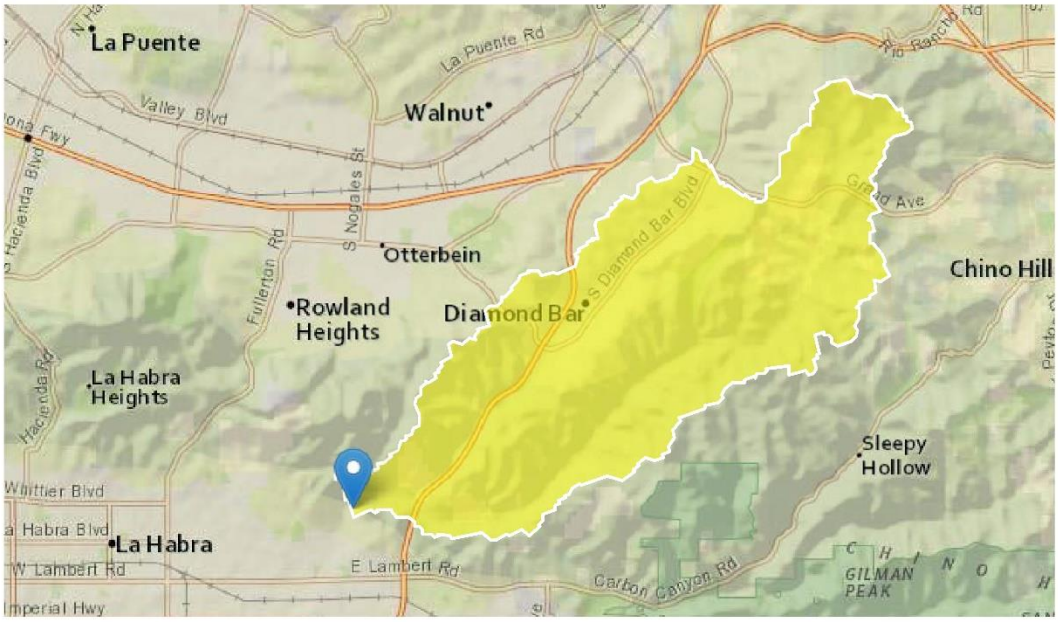
1. Regional Regression
2. HEC-HMS analysis.
3. Discharges provided by Orange County Public Works

METHOD 1: Regional Regression

U.S. Geological Survey website application Streamstats (http://streamstats.usgs.gov) was used to obtain the basin characteristics and flow statistics for the project watershed. Flow characteristics are based on *Methods for Determining Magnitude and Frequency of Floods in California, Based on Data through Water Year 2006 (USGS SIR 2012-5113).* The streamstats report for the overall watershed is shown below.

StreamStats Report

Region ID: CA
Workspace ID: CA20190114222724185000
Clicked Point (Latitude, Longitude): 33.93806, -117.89133
Time: 2019-01-14 14:27:43 -0800



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	18.4	square miles
PRECIP	Mean Annual Precipitation	18.9	inches
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	31.9	thousand feet
BSLDEM30M	Mean basin slope computed from 30 m DEM	24.2	percent
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	-1984482.4	feet

Parameter Code	Parameter Description	Value	Unit
CENTROIDY	Basin centroid vertical (y) location in state plane units	1440652.9	feet
EL6000	Percent of area above 6000 ft	0	percent
ELEV	Mean Basin Elevation	930	feet
ELEVMAX	Maximum basin elevation	1463	feet
FOREST	Percentage of area covered by forest	16.8	percent
JANMAXTMP	Mean Maximum January Temperature	65.82	degrees F
JANMINTMP	Mean Minimum January Temperature	42.09	degrees F
LAKEAREA	Percentage of Lakes and Ponds	0.0812	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	36.1	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	9.6	percent
LFPLENGTH	Length of longest flow path	11	miles
MINBELEV	Minimum basin elevation	399	feet
OUTLETELEV	Elevation of the stream outlet in thousands of feet above NAVD88.	400	feet
RELIEF	Maximum - minimum elevation	1064	feet
RELRELF	Basin relief divided by basin perimeter	33.4	feet per mi

Peak-Flow Statistics Parameters [2012 5113 Region 5 South Coast]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	18.4	square miles	0.04	850
PRECIP	Mean Annual Precipitation	18.9	inches	10	45

Peak-Flow Statistics Flow Report [2012 5113 Region 5 South Coast]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	SEp

Statistic	Value	Unit	PII	PIu	SEp
2 Year Peak Flood	233	ft^3/s	43.6	1250	134
5 Year Peak Flood	829	ft^3/s	252	2730	83.1
10 Year Peak Flood	1490	ft^3/s	569	3900	64
25 Year Peak Flood	2570	ft^3/s	1160	5700	51.5
50 Year Peak Flood	3580	ft^3/s	1720	7450	47.6
100 Year Peak Flood	4700	ft^3/s	2260	9800	47.2
200 Year Peak Flood	6030	ft^3/s	2870	12700	47.7
500 Year Peak Flood	7800	ft^3/s	3540	17200	52

Peak-Flow Statistics Citations

Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles,2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012–5113, 38 p., 1 pl. (http://pubs.usgs.gov/sir/2012/5113/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.3.0

METHOD 2: HEC-HMS analysis

Brea Creek was previously studied in 1986 using methodology outlined in the Orange County Hydrology Manual (OCHM). Excerpts from the Hydrology Report (Report), *Hydrology Report No. A04-2, Brea Canyon Channel, Facility A04,* dated October, 1986 are included at the end of this Appendix. The previous study only analyzed the 100-yr recurrence interval. For this hydraulic analysis, the 2, 5, 10, 25, and 50-yr discharges were also of interest. Computer program HEC-HMS was used to determine the peak discharge for these other recurrence intervals using the same watershed parameters used in the previous study.

Watershed parameters taken from the Report and used for the HEC-HMS analysis are shown in the following table:

Watershed parameters from previous study used in HEC-HMS analysis

Watershed	% Impervious Area	Curve Number (CN)		Lag Time
		AMC II	AMC III	(min)
Tonner Canyon	17	73	89.4	49.32
Brea Canyon	25	75	91	19.7

Per the OCHM, Curve Numbers (CN) are based on the corresponding antecedent moisture condition (AMC) and depend on the recurrence interval. AMC III is used for the 100-yr, AMC II is used for the 10, 25, and 50-yr, and AMC I is used for the 2 and 5-yr. Table C.1 of the OCHM lists the relationship between the various AMC's. Using Table C.1, it was determined that the CN's for AMC I for the Tonner Canyon and Brea Canyons watersheds are 55 and 57 respectively.

Precipitation data used for the analysis was taken from Table B.2 in the OCHM and is shown in the following table:

Precipitation data from Table B.2 of OCHM

Recurrence Interval	Precipitation (in.)					
	5min	30min	1hr	3hr	6hr	24hr
100	0.52	1.09	1.45	2.43	3.36	5.63
50	0.45	0.98	1.3	2.19	3.02	5.07
25	0.4	0.87	1.15	1.94	2.71	4.49
10	0.34	0.72	0.95	1.59	2.2	3.68
5	0.26	0.59	0.78	1.31	1.81	3.03
2	0.19	0.4	0.53	0.89	1.22	2.05

The Frequency Storm precipitation method was used in HEC-HMS which requires precipitation data for 5 min, 15 min, 1 hr, 2 hr, 3 hr, 6 hr, 12 hr, and 24 hr durations. Missing from Table B.2 is data for durations of 15 min, 2 hr, and 12 hr. The missing data points were estimated for the various recurrence intervals by trial and error trying to match a best-fit curve using the data in the table above. The estimated precipitation data missing from Table B.2 used for the analysis is shown in the following table:

Estimated precipitation data for durations missing from Table B.2

Recurrence Interval	Precipitation (in.)		
	15min	2hr	12hr
100	0.82	2.0	4.3
50	0.72	1.81	3.89
25	0.65	1.6	3.48
10	0.55	1.31	2.82
5	0.43	1.08	2.33
2	0.31	0.73	1.58

Per the OCHM, precipitation values are adjusted by a reduction factor depending on the size of the watershed. Reduction factors to be used are shown in Figure B-6 of the OCHM. Similar to the missing durations in Table B.2, reduction factors were estimated for the same durations by the same best-fit curve method. The reduction factors used for the HEC-HMS analysis are shown in the following table:

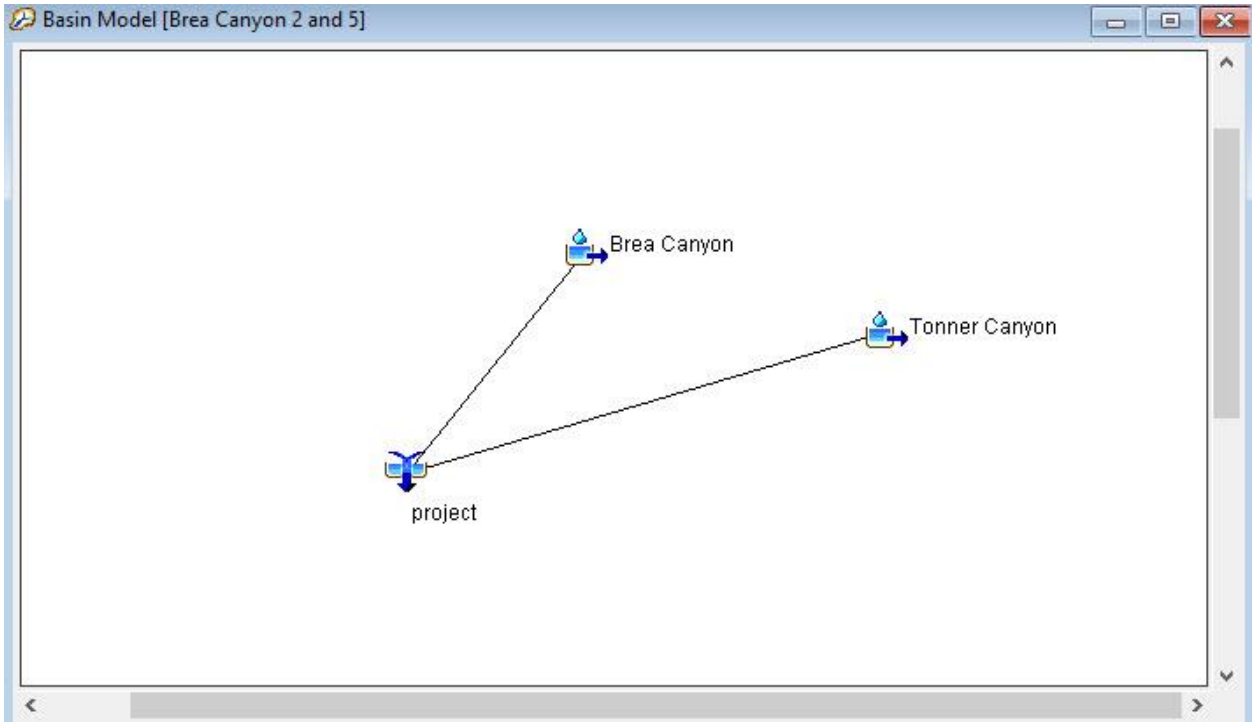
Reduction Factors applied to precipitation data

Watershed	Reduction Factor							
	5min	15min	1hr	2hr	3hr	6hr	12hr	24hr
Tonner Canyon	0.82	0.82	0.82	0.9	0.975	0.983	0.989	0.991
Brea Canyon	0.72	0.72	0.72	0.84	0.955	0.978	0.983	0.987

Other methods and parameters used in the HEC-HMS analysis include the following:

- SCS Curve Number loss method
  - Initial Abstraction = 0.2
- SCS Unit Hydrograph transform method
- 24 hr duration storm
- Time interval of 5 minutes

A schematic of the HEC-HMS model is shown below.



HEC-HMS Model Schematic

Results of the HEC-HMS analysis are shown below.

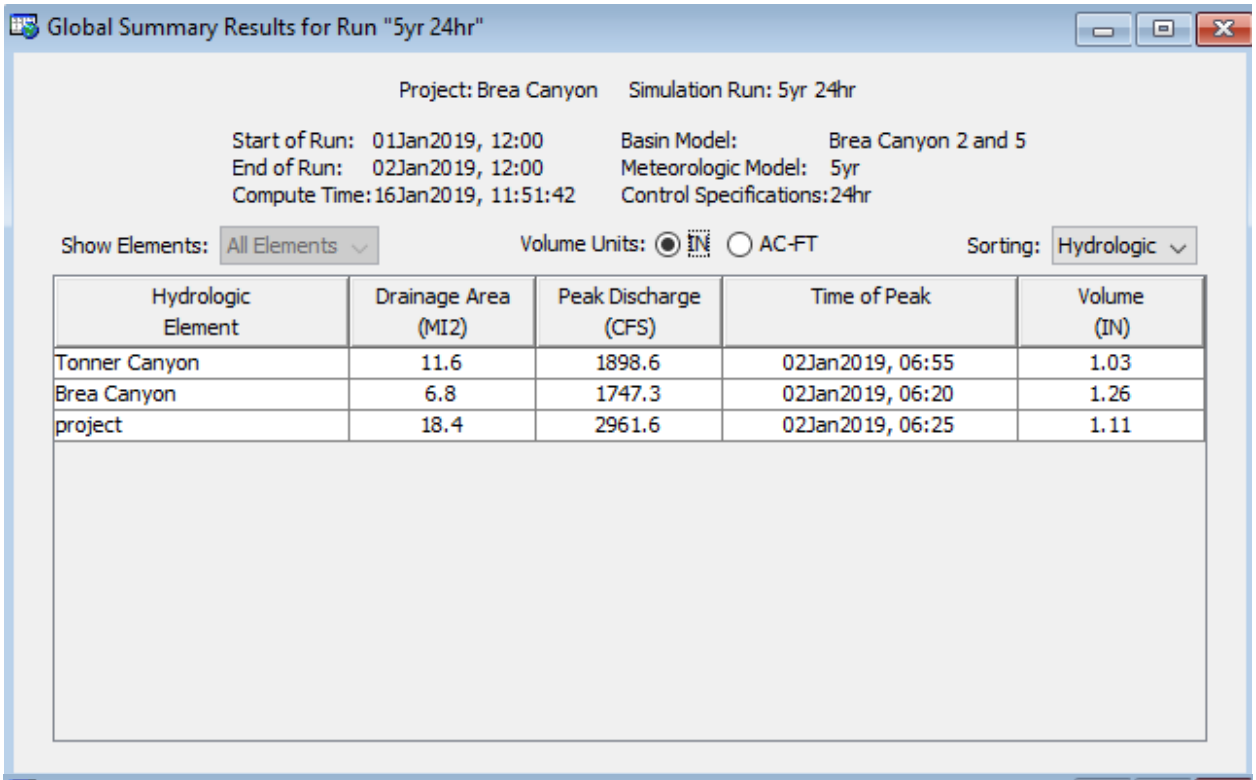
Global Summary Results for Run "2yr 24hr"

Project: Brea Canyon Simulation Run: 2yr 24hr

Start of Run: 01Jan2019, 12:00
End of Run: 02Jan2019, 12:00
Compute Time: 16Jan2019, 11:49:24
Basin Model: Brea Canyon 2 and 5
Meteorologic Model: 2yr
Control Specifications: 24hr

Show Elements: All Elements Volume Units: (•) IN ( ) AC-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Tonner Canyon	11.6	1064.4	02Jan2019, 06:55	0.58
Brea Canyon	6.8	1045.6	02Jan2019, 06:20	0.74
project	18.4	1713.0	02Jan2019, 06:25	0.64



Global Summary Results for Run "5yr 24hr"

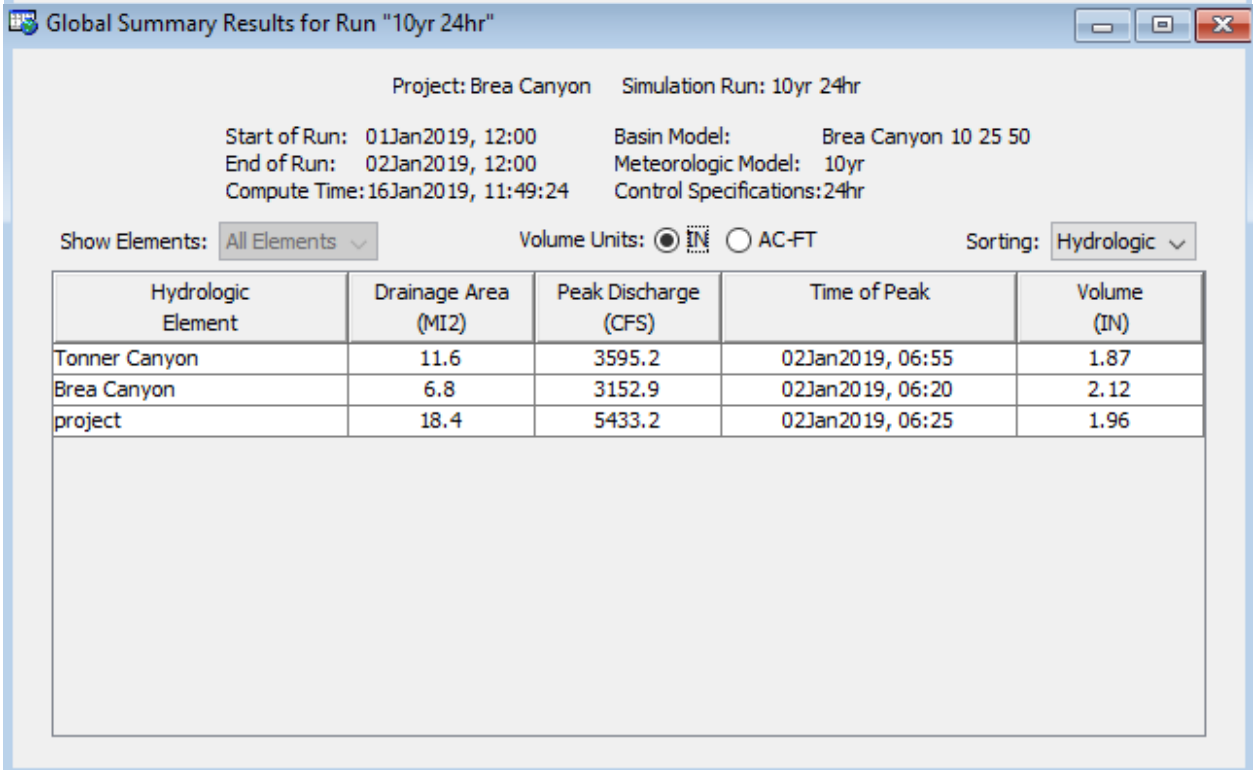
Project: Brea Canyon Simulation Run: 5yr 24hr

Start of Run: 01Jan2019, 12:00
End of Run: 02Jan2019, 12:00
Compute Time: 16Jan2019, 11:51:42

Basin Model: Brea Canyon 2 and 5
Meteorologic Model: 5yr
Control Specifications: 24hr

Show Elements: All Elements | Volume Units: (•) IN ( ) AC-FT | Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Tonner Canyon	11.6	1898.6	02Jan2019, 06:55	1.03
Brea Canyon	6.8	1747.3	02Jan2019, 06:20	1.26
project	18.4	2961.6	02Jan2019, 06:25	1.11



Global Summary Results for Run "10yr 24hr"

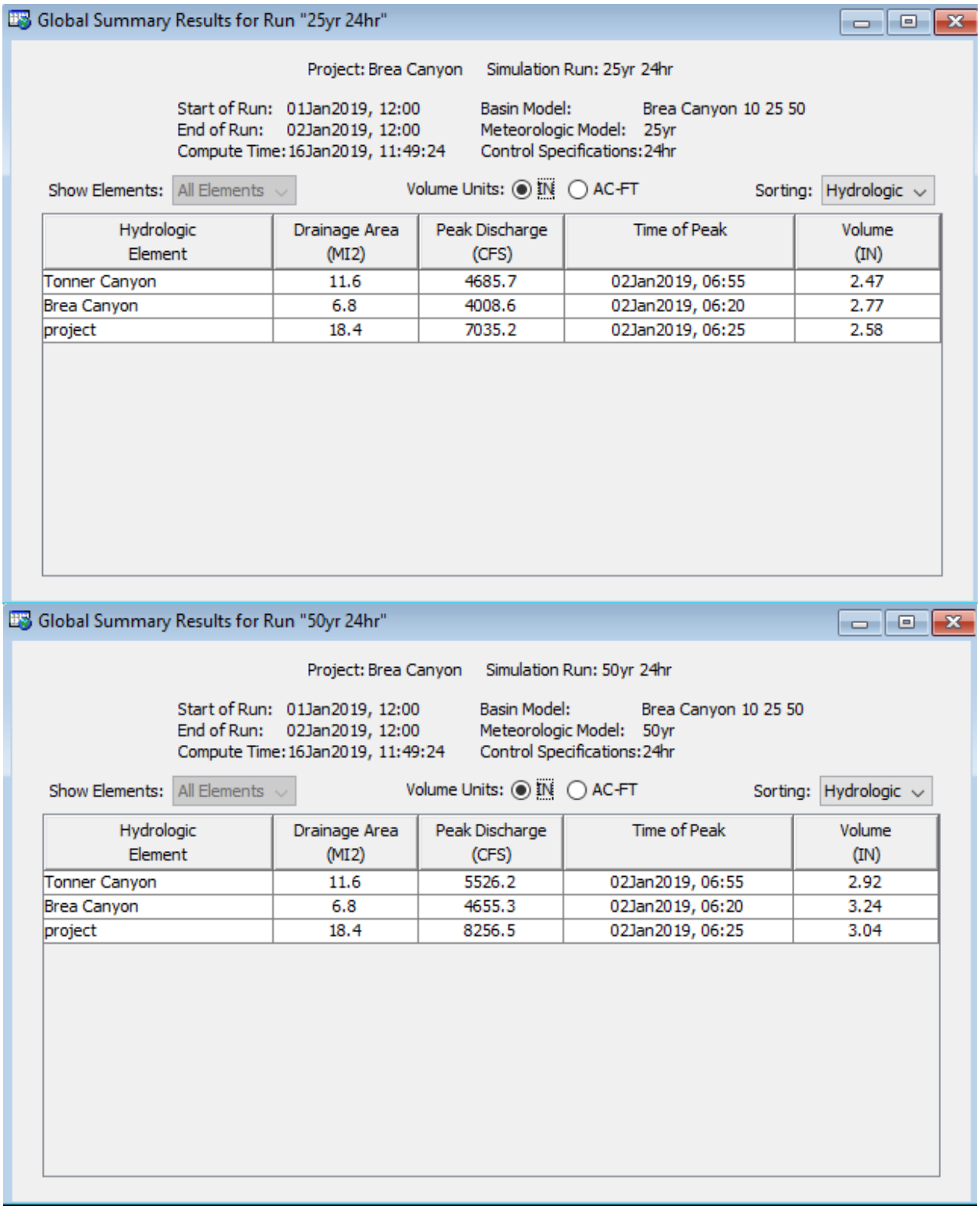
Project: Brea Canyon Simulation Run: 10yr 24hr

Start of Run: 01Jan2019, 12:00
End of Run: 02Jan2019, 12:00
Compute Time: 16Jan2019, 11:49:24

Basin Model: Brea Canyon 10 25 50
Meteorologic Model: 10yr
Control Specifications: 24hr

Show Elements: All Elements | Volume Units: (•) IN ( ) AC-FT | Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Tonner Canyon	11.6	3595.2	02Jan2019, 06:55	1.87
Brea Canyon	6.8	3152.9	02Jan2019, 06:20	2.12
project	18.4	5433.2	02Jan2019, 06:25	1.96



Global Summary Results for Run "25yr 24hr"

Project: Brea Canyon Simulation Run: 25yr 24hr

Start of Run: 01Jan2019, 12:00
End of Run: 02Jan2019, 12:00
Compute Time: 16Jan2019, 11:49:24

Basin Model: Brea Canyon 10 25 50
Meteorologic Model: 25yr
Control Specifications: 24hr

Show Elements: All Elements | Volume Units: (•) IN ( ) AC-FT | Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Tonner Canyon	11.6	4685.7	02Jan2019, 06:55	2.47
Brea Canyon	6.8	4008.6	02Jan2019, 06:20	2.77
project	18.4	7035.2	02Jan2019, 06:25	2.58

Global Summary Results for Run "50yr 24hr"

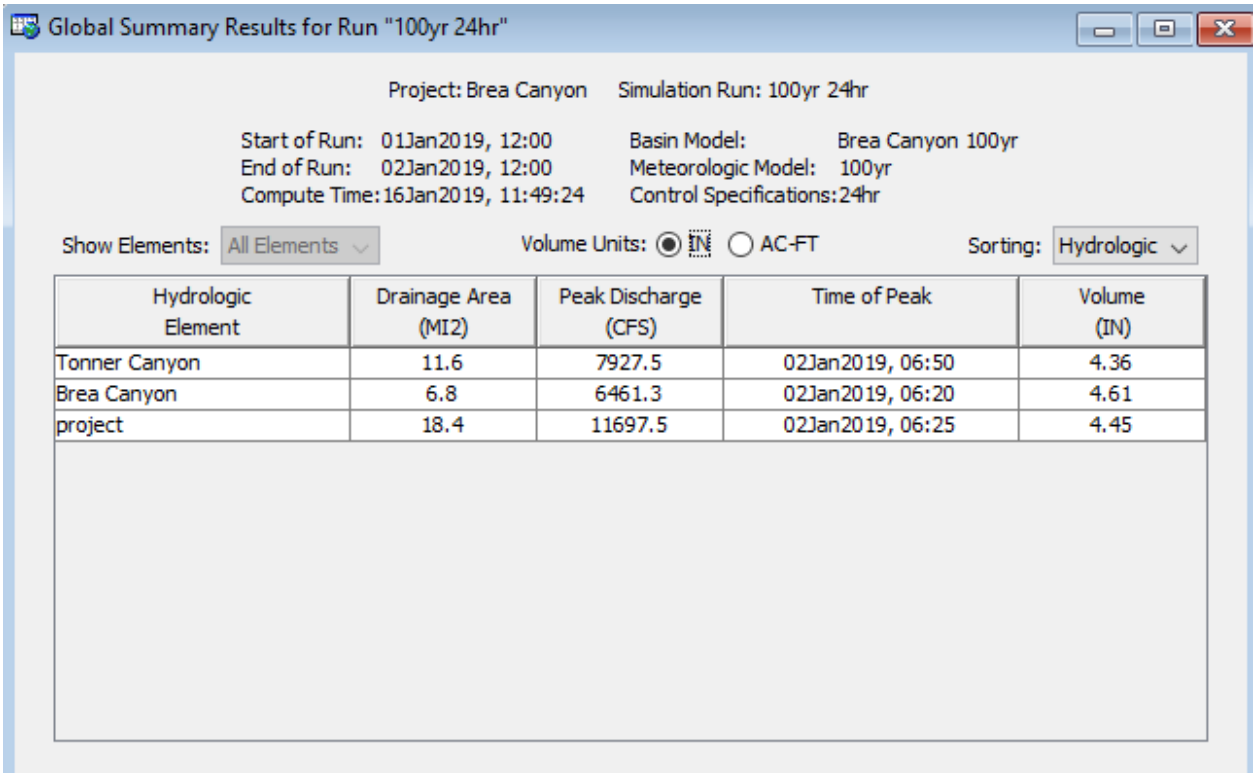
Project: Brea Canyon Simulation Run: 50yr 24hr

Start of Run: 01Jan2019, 12:00
End of Run: 02Jan2019, 12:00
Compute Time: 16Jan2019, 11:49:24

Basin Model: Brea Canyon 10 25 50
Meteorologic Model: 50yr
Control Specifications: 24hr

Show Elements: All Elements | Volume Units: (•) IN ( ) AC-FT | Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Tonner Canyon	11.6	5526.2	02Jan2019, 06:55	2.92
Brea Canyon	6.8	4655.3	02Jan2019, 06:20	3.24
project	18.4	8256.5	02Jan2019, 06:25	3.04

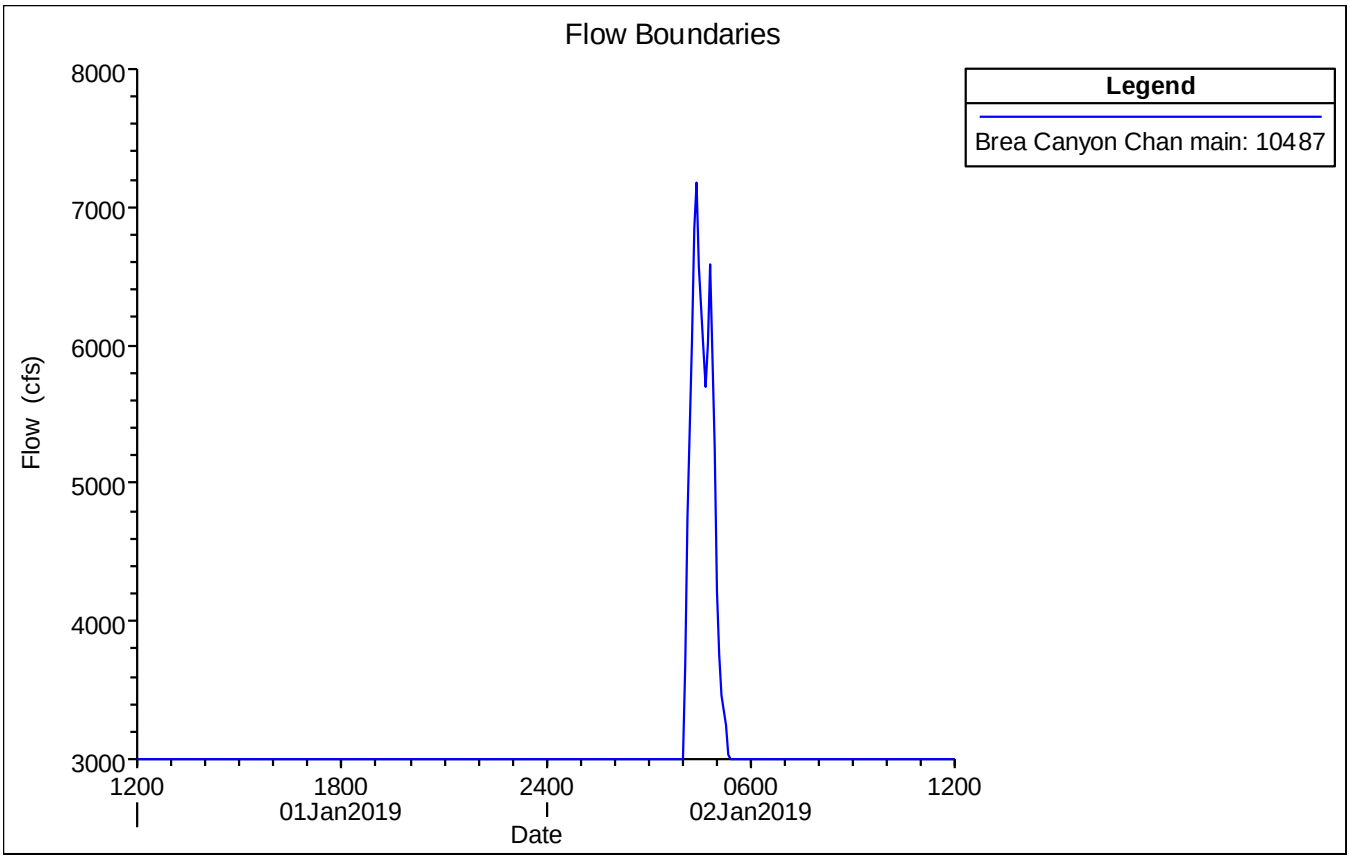

Global Summary Results for Run "100yr 24hr"
Project: Brea Canyon Simulation Run: 100yr 24hr
Start of Run: 01Jan2019, 12:00
End of Run: 02Jan2019, 12:00
Compute Time: 16Jan2019, 11:49:24
Basin Model: Brea Canyon 100yr
Meteorologic Model: 100yr
Control Specifications: 24hr
Show Elements: All Elements
Volume Units: IN AC-FT
Sorting: Hydrologic
Hydrologic Element | Drainage Area (MI2) | Peak Discharge (CFS) | Time of Peak | Volume (IN)
Tonner Canyon | 11.6 | 7927.5 | 02Jan2019, 06:50 | 4.36
Brea Canyon | 6.8 | 6461.3 | 02Jan2019, 06:20 | 4.61
project | 18.4 | 11697.5 | 02Jan2019, 06:25 | 4.45

METHOD 3: Discharges provided by Orange County Public Works

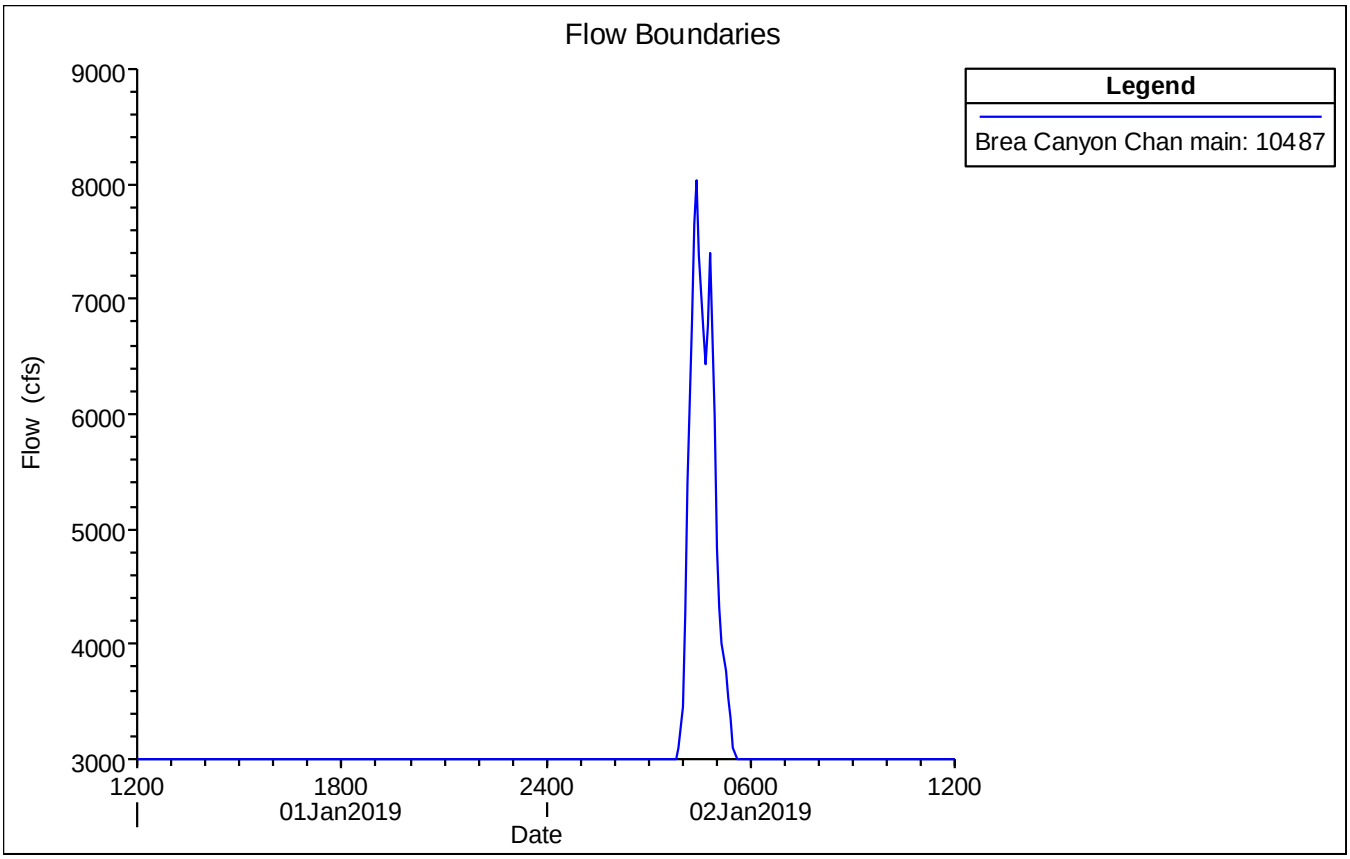
The following table of discharges was provided by OC Public Works:

Node	Location	Tributary Area (ac)	Peak Discharge (cfs)						
			100-yr HC	100-yr EV	50-yr EV	25-yr EV	10-yr EV	5-yr EV	2-yr EV
20U	Upstream of Confluence with Tonner Canyon Channel (A09)	4,020	7,050	5,220	4,740	4,200	3,210	1,590	800
20T	A09 Upstream of Confluence with Brea Canyon Channel (A04)	7,600	8,700	5,920	5,310	4,630	3,420	1,620	770
20C	Confluence of A04 and A09	11,620	11,800	8,030	7,180	6,230	4,670	2,190	1,040
30	Memory Garden Storm Channel (A04S01)	13,510	12,400	8,230	7,330	6,340	4,670	2,190	1,040
40	Brea Flood Control Reservoir	13,990	12,400	8,300	7,330	6,340	4,670	2,190	1,040

The node and discharges of interest are shown in blue. In the table, there are two discharges for the 100-yr event; 1) the High Confidence (HC), and 2) Expected Value (EV). The difference between HC and EV is the precipitation value used in the analysis. The precipitation value used for the HC discharge represents the upper bound of the 90% confidence interval from the frequency analysis of partial duration series. According to OC Public Works, the HC discharge is considered the most conservative and is used for their primary drainage facilities. The EV discharges are less conservative and used for secondary facilities. The results of the 1986 study by OC Public Works represent the HC discharge for the 100-yr event. OC Public Works asked that the EV discharges be used for the hydraulic analysis for this project and provided their runoff hydrographs. The 50-yr EV and 100-yr EV hydrographs provided are shown below and were used for the unsteady flow analysis.



50-yr EV hydrograph



100-yr EV hydrograph

A summary of the results of the three methods of analysis are shown in the table below.

Summary of Results from two methods of analysis

Method	Discharge (cfs)					
	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Regression	233	829	1,490	2,570	3,580	4,700
HEC-HMS	1,715	2,960	5,435	7,.035	8,260	11,700
Discharges from OC Public Works	1,040	2,190	4,670	6,230	7,180	8,030

The results from the HEC-HMS analysis are conservative when compared to the regression and OC Public Works provided discharges. The 100-yr peak discharge from the HEC-HMS analysis of 11,700 cfs is very similar to the HC discharge of 11,800 cfs. This is expected because the same precipitation data from the 1986 study was used for the HEC-HMS analysis. As mentioned, OC Public Works requested that the EV discharges be used for the hydraulic analysis for this project as shown in the table below.

Estimated discharges used for hydraulic analysis

	Project					
					Design	Base
Frequency	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Discharge (cfs)	1,040	2,190	4,670	6,230	7,180	8,030

HYDROLOGY REPORT

BREA CANYON CHANNEL

FACILITY NO. A04

ENTIRE DRAINAGE SYSTEM

REGISTERED PROFESSIONAL ENGINEER
JOSEPH M. NATSUHARA
No. 12550
Exp. 3-31-89
CIVIL
STATE OF CALIFORNIA

APPROVED: _____
J. M. Natsuhara, Manager, Flood Program Division

RECOMMENDED: _____
R. D. Runge, Chief, Hydrology Section

EXP 3-31-90

SUBMITTED: _____
D. M. Weisz, Chief, Flood Projects Planning Section

REGISTERED PROFESSIONAL ENGINEER
DOROTHY WEISZ
No. 29819
Exp. 3-31-87
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STATE OF CALIFORNIA

Prepared By:

Barbara Munoz
FLOOD PROJECTS PLANNING SECTION
Flood Program Division

ENVIRONMENTAL MANAGEMENT AGENCY
M. STORM, DIRECTOR
October, 1986

HYDROLOGY REPORT
BREA CANYON CHANNEL
FACILITY NO. A04
ENTIRE DRAINAGE SYSTEM

PURPOSE:

This hydrology report provides 100-year discharges for Brea Canyon Channel, Facility No. A04, from the upstream end of the Brea Flood Control Reservoir to the Orange County line.

GENERAL DESCRIPTION:

The 14,930-acre drainage area is located in north Orange County and east Los Angeles County (Exhibit 1). The drainage area orginates in the Chino and Puente Hills, and extends down to Brea Dam. The southern portion of the drainage area below the hills, lies within the City of Brea, City of Fullerton and Unincorporated Orange County territory. The Brea Flood Control Reservoir lies almost entirely within the City of Fullerton.

Consisting of 7,600 acres, Tonner Canyon is the largest tributary area. The topography of this area is mostly hilly and undeveloped. Above the confluence with Tonner Canyon is Brea Canyon which is 4,020 acres in size. This area is also hilly but it is partially developed with single family dwellings. The elevations range from 440' to 1,200'.

The remainder of the drainage area below the confluence is basically fully urbanized. The elevations range from 220' at the Brea Flood Control Reservoir to 440' at the confluence of Tonner Canyon and Brea Canyon channels.

The watershed is composed of all four hydrologic soil groups. However, soil group C dominates the majority of the area.

One major feature of the Brea Canyon Channel Drainage Area is the Brea Flood Control Reservoir. This Dam is operated and maintained by the Corps of Engineers.

EXISTING DRAINAGE IMPROVEMENTS:

The Brea Canyon Channel is a trapezoidal earth channel from the upper end of the reservoir to Imperial Highway and from Lambert Road to the Orange County northerly boundary. The reach between Imperial Highway and Lambert Road is concrete lined.

PREVIOUS HYDROLOGY STUDIES:

Only one previous hydrology report, A04-1, has been published. The local 100-year flood discharges presented in this 1976 hydrology report are based on the unit-hydrograph method set forth in the 1973 OCFCD Hydrology Manual.

BASIS FOR DETERMINATION OF DISCHARGES:

The 100-year discharges for this report were calculated using the unit hydrograph method prescribed by the proposed 1986 Orange County Hydrology Manual. The unit hydrographs are derived from the Valley (Developed) and Foothill S-graph. Lag for the unit hydrographs is based on lag = 0.8 Tc. As approved by the Hydrology Section, Tc was derived from using Manning's equation and 0.9 cfs per acre to determine the discharge. The 0.9 cfs per acre is based on the 1976 hydrology report.

Except for the Tonner Canyon area and the reservoir, it was assumed that the drainage facilities would be improved with adequate sized pipes and concrete-lined channels.

The drainage area boundaries are shown on Exhibit 1. These boundaries are based on the cities of Brea and Fullerton Master Plans of Drainage, County of Orange Master Plan of Drainage, and topography maps. The soil groups and anticipated land uses are shown on Exhibit 2. The hydrologic soil groups were based on the soil maps in the proposed 1986 Hydrology Manuals. Land use projections are based on the latest general plans from the cities of Brea and Fullerton in addition to the County of Los Angeles planning data. The County of Los Angeles did not have a general plan for the Tonner Canyon area available; however, a planner for L. A. County confirmed that this area will not be developed.

SUMMARY OF 100-YEAR DESIGN DISCHARGES:

Concentration Point	Drainage Area* (Acres)	100 Yr. Discharge (cfs)
Brea Canyon Channel (A04)		
Brea Flood Control Reservoir	13,990	12,400
Memory Garden Storm Channel (A04S01)	13,510	12,400
At the Confluence of Tonner Canyon Channel (A09)	11,620	11,800
Upstream of the Confluence with Tonner Canyon Channel	4,020	7,050
Tonner Canyon Channel (A09)		
Upstream of the Confluence with Brea Canyon Channel	7,600	8,700

*Total drainage area upstream of the concentration point.

EXHIBITS:

Drainage Area Map . . . . . Exhibit 1

Land Use and Soil Map . . . . . Exhibit 2

Unit Hydrograph Calculations . . . . . Exhibit 3

BM:cs(16/004)
6290

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            F L O O D   R O U T I N G   A N A L Y S I S

          USING ORANGE COUNTY UNIT-HYDROGRAPH (1986 MANUAL)

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        (C) Copyright 1983,1986 Advanced Engineering Software [AES]

                        Especially prepared for:

                  COUNTY OF ORANGE, STATE OF CALIFORNIA

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**********DESCRIPTION OF RESULTS*********************************************
* BREA CANYON CHANNEL HYDROLOGY REPORT NO.A04-2                             *
* SINGLE HYDROGRAPH METHOD                                                  *
* Conc. Pt.:U/S AND D/S OF A04/A09 CONFLUENCE          B.MUNOZ   10/86      *
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                  Advanced Engineering Software [AES]
                            SERIAL No. N1707
                  VER. 2.4D     RELEASE DATE: 3/28/86

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  FLOW PROCESS FROM NODE    10.00 TO NODE    20.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>UNIT-HYDROGRAPH ANALYSIS<<<<<
============================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         *USER ENTERED "LAG" TIME =    0.822 HOURS

         UNIT HYDROGRAPH TIME UNIT =   5.000 MINUTES
         UNIT INTERVAL PERCENTAGE OF LAG-TIME =  10.138

         WATERSHED AREA =    7600.000 ACRES  Tonner Cyn
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         FOOTHILL S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.211
         LOW LOSS RATE PERCENTAGE(DECIMAL) = 0.215
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK 5-MINUTES RAINFALL(INCH)=  0.52
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH) =  1.09
         SPECIFIED PEAK 1-HOUR RAINFALL(INCH) =  1.45
         SPECIFIED PEAK 3-HOUR RAINFALL(INCH) =  2.43
```

24-HOUR STORM
RUNOFF HYDROGRAPH

HYDROGRAPH IN FIVE-MINUTE INTERVALS(CFS)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	2175.0	4350.0	6525.0	8700.0
15.083	1102.0653	3004.86	.	. Q V	.	.	.
15.167	1123.3427	3089.47	.	. Q V	.	.	.
15.250	1145.1832	3171.25	.	. Q V	.	.	.
15.333	1167.5741	3251.16	.	. Q V	.	.	.
15.417	1190.4335	3319.18	.	. QV	.	.	.
15.500	1213.6897	3376.81	.	. Q V	.	.	.
15.583	1237.2820	3425.61	.	. Q V	.	.	.
15.667	1261.2131	3474.81	.	. Q V	.	.	.
15.750	1285.4579	3520.33	.	. Q V	.	.	.
15.833	1310.0394	3569.25	.	. Q V	.	.	.
15.917	1334.9609	3618.60	.	. Q V.	.	.	.
16.000	1360.4045	3694.41	.	. Q V.	.	.	.
16.083	1387.3754	3916.16	.	. QV.	.	.	.
16.167	1415.2275	4044.13	.	. Q V	.	.	.
16.250	1444.1974	4206.42	.	. QV	.	.	.
16.333	1474.7380	4434.51	.	. QV	.	.	.
16.417	1507.4077	4743.63	.	. .Q	.	.	.
16.500	1542.7220	5127.64	.	. .V Q	.	.	.
16.583	1581.9790	5700.12	.	. . V Q	.	.	.
16.667	1625.4749	6315.60	.	. . V	Q.	.	.
16.750	1675.2289	7224.28	.	. . V	. Q	.	.
16.833	1735.0646	8688.14	.	. . V	.	.	Q.
16.917	1784.8822	7233.52	.	. . V	. Q	.	.
17.000	1825.0366	5830.42	.	. . VQ	.	.	.
17.083	1861.8848	5350.36	.	. . Q V	.	.	.
17.167	1897.2142	5129.83	.	. . Q V	.	.	.
17.250	1931.3744	4960.05	.	. . Q V	.	.	.
17.333	1963.8698	4718.32	.	. .Q V	.	.	.
17.417	1995.2982	4563.41	.	. Q V	.	.	.
17.500	2025.6487	4406.88	.	. Q V	.	.	.
17.583	2054.4912	4187.92	.	. Q. V.	.	.	.
17.667	2082.2915	4036.61	.	. Q . V.	.	.	.
17.750	2108.5149	3807.65	.	. Q . V	.	.	.
17.833	2133.0408	3561.15	.	. Q . V	.	.	.
17.917	2156.2295	3367.01	.	. Q . V	.	.	.
18.000	2178.2876	3202.85	.	. Q . .V	.	.	.
18.083	2199.5027	3080.42	.	. Q . .V	.	.	.
18.167	2219.6831	2930.21	.	. Q . .V	.	.	.
18.250	2239.0796	2816.35	.	. Q . .V	.	.	.
18.333	2257.7183	2706.35	.	. Q . . V	.	.	.
18.417	2275.5603	2590.65	.	.Q . . V	.	.	.
18.500	2292.7400	2494.51	.	.Q . . V	.	.	.
18.583	2309.0959	2374.89	.	Q . . V	.	.	.
18.667	2324.7700	2275.89	.	Q . . V	.	.	.
18.750	2339.6660	2162.91	.	Q. . . V	.	.	.
18.833	2353.6177	2025.79	.	Q. . . V	.	.	.
18.917	2366.8970	1928.15	.	Q . . . V	.	.	.
19.000	2379.5625	1839.03	.	Q . . . V	.	.	.

SPECIFIED PEAK 6-HOUR RAINFALL(INCH) = 3.36
SPECIFIED PEAK 24-HOUR RAINFALL(INCH)= 5.63

*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE FACTOR = 0.720
30-MINUTE FACTOR = 0.720
1-HOUR FACTOR = 0.720
3-HOUR FACTOR = 0.955
6-HOUR FACTOR = 0.978
24-HOUR FACTOR = 0.987

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 15.00
MODEL TIME(HOURS) FOR END OF RESULTS = 19.00

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	0.642	590.138
2	2.013	1260.186
3	3.909	1742.401
4	6.207	2112.741
5	9.046	2609.380
6	12.435	3114.852
7	17.027	4219.986
8	22.629	5149.059
9	30.510	7243.996
10	44.660	13005.113
11	54.423	8973.562
12	59.929	5061.208
13	64.335	4049.179
14	67.902	3278.240
15	71.018	2864.762
16	73.584	2358.399
17	75.977	2199.050
18	78.226	2067.176
19	80.109	1731.087
20	81.960	1700.724
21	83.527	1440.593
22	84.987	1341.697
23	86.368	1269.189
24	87.589	1122.392
25	88.791	1105.212
26	89.818	943.283
27	90.791	894.491
28	91.702	837.655
29	92.514	746.459
30	93.312	733.269
31	93.989	622.242
32	94.638	596.388
33	95.215	530.338
34	95.702	447.298
35	96.179	438.967
36	96.596	383.016
37	97.001	372.567
38	97.345	315.725

SPECIFIED PEAK 6-HOUR RAINFALL(INCH) = 3.36
SPECIFIED PEAK 24-HOUR RAINFALL(INCH)= 5.63

*USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
5-MINUTE FACTOR = 0.720
30-MINUTE FACTOR = 0.720
1-HOUR FACTOR = 0.720
3-HOUR FACTOR = 0.955
6-HOUR FACTOR = 0.978
24-HOUR FACTOR = 0.987

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 15.00
MODEL TIME(HOURS) FOR END OF RESULTS = 19.00

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	0.642	590.138
2	2.013	1260.186
3	3.909	1742.401
4	6.207	2112.741
5	9.046	2609.380
6	12.435	3114.852
7	17.027	4219.986
8	22.629	5149.059
9	30.510	7243.996
10	44.660	13005.113
11	54.423	8973.562
12	59.929	5061.208
13	64.335	4049.179
14	67.902	3278.240
15	71.018	2864.762
16	73.584	2358.399
17	75.977	2199.050
18	78.226	2067.176
19	80.109	1731.087
20	81.960	1700.724
21	83.527	1440.593
22	84.987	1341.697
23	86.368	1269.189
24	87.589	1122.392
25	88.791	1105.212
26	89.818	943.283
27	90.791	894.491
28	91.702	837.655
29	92.514	746.459
30	93.312	733.269
31	93.989	622.242
32	94.638	596.388
33	95.215	530.338
34	95.702	447.298
35	96.179	438.967
36	96.596	383.016
37	97.001	372.567
38	97.345	315.725

```
**************************************************************************
 FLOW PROCESS FROM NODE    11.00 TO NODE    20.00 IS CODE =   1
--------------------------------------------------------------------------
 >>>>>UNIT-HYDROGRAPH ANALYSIS<<<<<
==========================================================================

     (UNIT-HYDROGRAPH ADDED TO STREAM #2)

       *USER ENTERED "LAG" TIME =    0.328 HOURS

       UNIT HYDROGRAPH TIME UNIT =   5.000 MINUTES
       UNIT INTERVAL PERCENTAGE OF LAG-TIME =  25.407

       WATERSHED AREA =    4020.000 ACRES  Brea Cyn u/s Tonner Cyn
       BASEFLOW =   0.000 CFS/SQUARE-MILE
       VALLEY(DEVELOPED) S-GRAPH SELECTED
       MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.197
       LOW LOSS RATE PERCENTAGE(DECIMAL) = 0.184
       *HYDROGRAPH MODEL #1 SPECIFIED*

       SPECIFIED PEAK 5-MINUTES RAINFALL(INCH)=  0.52
       SPECIFIED PEAK 30-MINUTES RAINFALL(INCH) =  1.09
       SPECIFIED PEAK 1-HOUR RAINFALL(INCH) =  1.45
       SPECIFIED PEAK 3-HOUR RAINFALL(INCH) =  2.43
       SPECIFIED PEAK 6-HOUR RAINFALL(INCH) =  3.36
       SPECIFIED PEAK 24-HOUR RAINFALL(INCH)=  5.63

       *USER SPECIFIED PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
         5-MINUTE FACTOR = 0.820
         30-MINUTE FACTOR = 0.820
         1-HOUR FACTOR = 0.820
         3-HOUR FACTOR = 0.975
         6-HOUR FACTOR = 0.983
         24-HOUR FACTOR = 0.991

       RUNOFF HYDROGRAPH LISTING LIMITS:
       MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 15.00
       MODEL TIME(HOURS) FOR END OF RESULTS = 19.00


==========================================================================
                    UNIT HYDROGRAPH DETERMINATION

--------------------------------------------------------------------------
    INTERVAL          "S" GRAPH          UNIT HYDROGRAPH
     NUMBER          MEAN VALUES          ORDINATES(CFS)
--------------------------------------------------------------------------
       1                 1.525               741.484
       2                 7.660              2982.356
       3                21.435              6697.339
       4                39.714              8886.530
       5                60.779             10241.324
       6                77.589              8172.106
       7                87.674              4903.138
       8                93.266              2718.724
       9                96.469              1557.245
      10                98.072               779.346
      11                98.596               254.575
      12                99.072               231.571
      13                99.548               231.571
```

24 - HOUR STORM
RUNOFF HYDROGRAPH

HYDROGRAPH IN FIVE-MINUTE INTERVALS(CFS)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	1775.0	3550.0	5325.0	7100.0
15.083	690.6769	1911.51	.	Q	V .	.	.
15.167	704.1800	1960.64	.	.Q	V .	.	.
15.250	718.0464	2013.41	.	.Q	V .	.	.
15.333	732.3109	2071.20	.	.Q	V .	.	.
15.417	746.9371	2123.73	.	.Q	V.	.	.
15.500	761.7093	2144.92	.	. Q	V.	.	.
15.583	776.2664	2113.69	.	.Q	V	.	.
15.667	790.4438	2058.57	.	.Q	V	.	.
15.750	804.2438	2003.76	.	.Q	V	.	.
15.833	818.1313	2016.47	.	.Q	.V	.	.
15.917	832.9177	2146.98	.	. Q	.V	.	.
16.000	849.6357	2427.45	.	. Q	.V	.	.
16.083	871.1312	3121.15	.	. Q	. V	.	.
16.167	901.2953	4379.82	.	.	. VQ	.	.
16.250	942.5344	5987.91	.	.	. V	. Q	.
16.333	989.6659	6843.50	.	.	. V	.	Q .
16.417	1038.2062	7048.06	.	.	. V	.	Q.
16.500	1079.1268	5941.67	.	.	. V	. Q	.
16.583	1109.9165	4470.66	.	.	. Q	V .	.
16.667	1133.7195	3456.20	.	.	Q.	V.	.
16.750	1153.6205	2889.63	.	. Q	.	V.	.
16.833	1170.8621	2503.48	.	. Q	.	V	.
16.917	1186.1797	2224.12	.	. Q	.	V	.
17.000	1200.7688	2118.34	.	.Q	.	.V	.
17.083	1214.6864	2020.83	.	.Q	.	.V	.
17.167	1227.7687	1899.55	.	Q	.	.V	.
17.250	1239.4343	1693.85	.	Q.	.	. V	.
17.333	1250.1405	1554.53	.	Q .	.	. V	.
17.417	1259.8934	1416.12	.	Q .	.	. V	.
17.500	1268.8575	1301.60	.	Q .	.	. V	.
17.583	1277.2264	1215.17	.	Q .	.	. V	.
17.667	1285.1537	1151.03	.	Q .	.	. V	.
17.750	1292.7317	1100.32	.	Q .	.	. V	.
17.833	1300.0276	1059.37	.	Q .	.	. V	.
17.917	1307.0914	1025.67	.	Q .	.	. V	.
18.000	1313.9427	994.82	.	Q .	.	. V	.
18.083	1320.5782	963.47	.	Q .	.	. V	.
18.167	1326.9541	925.77	.	Q .	.	. V	.
18.250	1332.9983	877.62	.	Q .	.	. V	.
18.333	1338.6658	822.91	.	Q .	.	. V	.
18.417	1343.9323	764.69	.	Q .	.	. V	.
18.500	1348.8618	715.78	.	Q .	.	. V	.
18.583	1353.5487	680.53	.	Q .	.	. V	.
18.667	1358.0575	654.68	.	Q .	.	. V	.
18.750	1362.4252	634.19	.	Q .	.	. V	.
18.833	1366.6780	617.51	.	Q .	.	. V	.
18.917	1370.8350	603.59	.	Q .	.	. V	.
19.000	1374.9014	590.45	.	Q .	.	. V	.

```
**************************************************************************
 FLOW PROCESS FROM NODE    11.00 TO NODE    20.00 IS CODE =   7
--------------------------------------------------------------------------
 >>>>>STREAM NUMBER 2 ADDED TO STREAM NUMBER 1<<<<<
==========================================================================

**************************************************************************
 FLOW PROCESS FROM NODE    20.00 TO NODE    20.00 IS CODE =  11
--------------------------------------------------------------------------
 >>>>>VIEW STREAM NUMBER 1 HYDROGRAPH<<<<<
==========================================================================

            STREAM HYDROGRAPH IN FIVE-MINUTE INTERVALS(CFS)

--------------------------------------------------------------------------
TIME(HRS) VOLUME(AF)   Q(CFS) 0.     2950.0    5900.0    8850.0   11800.0
--------------------------------------------------------------------------
  15.083   1792.7428  4916.37  .        .     Q   .        .        .
  15.167   1827.5232  5050.11  .        .     VQ  .        .        .
  15.250   1863.2302  5184.66  .        .      Q  .        .        .
  15.333   1899.8855  5322.35  .        .     VQ  .        .        .
  15.417   1937.3711  5442.91  .        .     VQ  .        .        .
  15.500   1975.3995  5521.73  .        .      Q  .        .        .
  15.583   2013.5490  5539.29  .        .      Q  .        .        .
  15.667   2051.6577  5533.38  .        .      Q  .        .        .
  15.750   2089.7024  5524.09  .        .      QV .        .        .
  15.833   2128.1716  5585.72  .        .      QV .        .        .
  15.917   2167.8794  5765.58  .        .       Q.        .        .
  16.000   2210.0410  6121.86  .        .        Q        .        .
  16.083   2258.5073  7037.31  .        .        V  Q     .        .
  16.167   2316.5237  8423.96  .        .        .V    Q  .        .
  16.250   2386.7327 10194.33  .        .        .V       .   Q    .
  16.333   2464.4048 11278.00  .        .        . V      .     Q  .
  16.417   2545.6147 11791.69  .        .        .  V     .      Q.
  16.500   2621.8496 11069.31  .        .        .   V    .    Q  .
  16.583   2691.8962 10170.77  .        .        .   V    .  Q    .
  16.667   2759.1951  9771.80  .        .        .    V   . Q     .
  16.750   2828.8501 10113.91  .        .        .    V   .  Q    .
  16.833   2905.9272 11191.62  .        .        .     V  .    Q  .
  16.917   2971.0625  9457.65  .        .        .      V . Q      .
  17.000   3025.8059  7948.76  .        .        .     QV  .       .
  17.083   3076.5718  7371.19  .        .        .   Q  V .       .
  17.167   3124.9836  7029.39  .        .        .  Q   V .       .
  17.250   3170.8093  6653.90  .        .        . Q    V.       .
  17.333   3214.0107  6272.85  .        .        .Q     V.       .
  17.417   3255.1921  5979.52  .        .        Q      V.       .
  17.500   3294.5068  5708.48  .        .       Q.      V        .
  17.583   3331.7183  5403.09  .        .      Q .      V        .
  17.667   3367.4458  5187.65  .        .     Q  .      V        .
  17.750   3401.2473  4907.97  .        .    Q   .      .V       .
  17.833   3433.0691  4620.52  .        .   Q    .      .V       .
  17.917   3463.3218  4392.68  .        .  Q     .      .V       .
  18.000   3492.2314  4197.67  .        .  Q     .      . V      .
  18.083   3520.0820  4043.89  .        . Q      .      . V      .
  18.167   3546.6384  3855.98  .        . Q      .      . V      .
  18.250   3572.0791  3693.97  .        .Q       .      . V      .
  18.333   3596.3853  3529.26  .        .Q       .      .  V     .
  18.417   3619.4937  3355.34  .        .Q       .      .  V     .
  18.500   3641.6030  3210.28  .        Q        .      .  V     .
```

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY

BY B. Munoz DATE 9/86 SUBJECT A09 SHEET NO. ____ OF ____

CHKD. BY ____ DATE ____ Loss Rate Calcs. JOB NO. ____

Subarea 1

* See Worksheets in Hydrology File

$F_m = a_p F_p = .83 (.254) = 0.211$

$a_p^* = .83$ % impervious = $1 - .83 = .17$

$F_p^* = 0.254$

$\bar{Y} = 1 - Y$

Composite $CN_{II} = .83(.003)32 + .83(.084)(56) + .83(.906)(69)$

$+ .83(.007)(75) + .17(98) = 73$

from Table C.1 $CN_{III} = 89.4$

$S = \frac{1000}{89.4} - 10 = 1.186$

$I_a = 0.2(1.186) = 0.237$

$Y = \frac{(5.63 - 0.237)^2}{5.63(5.63 + 1.186 - 0.237)} = 0.785$

$\bar{Y} = 1 - 0.785 = 0.215$

F 0250-115

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY

BY B. Munoz DATE 10/13 SUBJECT AOA Hydrology SHEET NO. ____ OF ____

CHKD. BY ____ DATE ____ JOB NO. ____

Loss Rate Calculations Subarea 2B

* See Worksheets in Hydrology File

$F_m = a_p F_p = .75\,(.263) = 0.197$

*$a_p = \frac{\%\ \text{pervious}}{100} = \frac{75}{100} = .75$

% impervious = 1 − .75 = .25

*$F_p = .263$

$\bar{Y} = 1 - Y$

Composite $CN_{II} = .75\,(.17)56 + .75\,(.83)(69) + .25\,(98) = 75.1$

from Table C.1 $CN_{III} = 91$

$S = \frac{1000}{91} - 10 = 0.989$

$I_a = 0.2\,(.989) = 0.198$

$Y = \frac{(5.63 - 0.198)^2}{5.63\,(5.63 + 0.989 - .198)} = 0.816$

$\bar{Y} = 1 - 0.816 = 0.184$

F 0250-115

APPENDIX C – HEC-RAS RESULTS

HEC-RAS River: Brea Canyon Chan Reach: main Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
main	10487	Max WS	50yr exist 21mar2019	7128.20	406.69	430.579600		430.83	0.001005	4.05	1798.21	151.56	0.19
main	10487	Max WS	50yr prop 06jul2021	7176.51	406.69	424.589300		425.34	0.005177	6.97	1029.72	111.29	0.40
main	10486.9			Lat Struct									
main	10417	Max WS	50yr exist 21mar2019	7130.18	405.82	430.477400		430.75	0.001301	4.22	1689.62	139.08	0.21
main	10417	Max WS	50yr prop 06jul2021	7116.73	405.82	424.070700		424.98	0.006459	7.64	931.22	100.86	0.44
main	10319	Max WS	50yr exist 21mar2019	7120.23	406.34	430.446800		430.65	0.000839	3.60	2036.69	185.34	0.17
main	10319	Max WS	50yr prop 06jul2021	7123.01	406.34	423.534300		424.33	0.006220	7.14	998.12	120.33	0.44
main	10247	Max WS	50yr exist 21mar2019	7127.74	405.91	430.428500		430.59	0.000599	3.26	2238.03	182.65	0.15
main	10247	Max WS	50yr prop 06jul2021	7125.18	405.91	423.338300		423.90	0.003668	6.03	1181.87	121.81	0.34
main	10192	Max WS	50yr exist 21mar2019	7129.82	405.52	430.311400		430.56	0.001027	3.97	1817.22	163.64	0.19
main	10192	Max WS	50yr prop 06jul2021	7126.93	405.52	422.726100		423.77	0.007498	8.21	867.77	92.99	0.47
main	10162	Max WS	50yr exist 21mar2019	7127.91	403.94	430.235100		430.53	0.001121	4.42	1686.08	149.98	0.20
main	10162	Max WS	50yr prop 06jul2021	7127.26	403.94	422.352700		423.63	0.008321	9.08	789.60	79.94	0.51
main	10137	Max WS	50yr exist 21mar2019	7116.13	401.73	430.175500		430.51	0.001264	4.67	1583.27	131.11	0.21
main	10137	Max WS	50yr prop 06jul2021	7127.01	401.73	422.017500		423.50	0.009916	9.79	736.14	73.76	0.54
main	10121	Max WS	50yr exist 21mar2019	7102.58	406.32	430.160400		430.49	0.001171	4.67	1593.40	128.94	0.20
main	10121	Max WS	50yr prop 06jul2021	7126.86	406.32	421.922300		423.31	0.008106	9.45	756.36	68.01	0.50
main	10096	Max WS	50yr prop 06jul2021	7126.87	405.90	421.363900	416.87	423.42	0.008609	11.65	646.43	48.56	0.55
main	10075	Max WS	50yr exist 21mar2019	7034.94	405.79	429.929600		430.46	0.002441	5.96	1265.46	115.43	0.26
main	10052	Max WS	50yr exist 21mar2019	6975.70	405.31	429.752500		430.44	0.003535	6.89	1119.92	104.47	0.29
main	10010	Max WS	50yr exist 21mar2019	6975.49	404.09	429.590700	418.00	430.29	0.003573	6.96	1100.21	93.48	0.29
main	10000			Bridge									
main	9923	Max WS	50yr exist 21mar2019	6966.81	403.70	419.049200		422.66	0.034040	15.25	456.75	41.59	0.81
main	9882	Max WS	50yr exist 21mar2019	7120.12	403.48	418.151100		419.59	0.009797	9.64	738.98	64.57	0.50
main	9874	Max WS	50yr exist 21mar2019	7119.24	403.45	418.114900		419.49	0.009125	9.41	756.19	68.60	0.50
main	9856.3	Max WS	50yr prop 06jul2021	7124.23	402.46	418.129000		419.19	0.004610	8.31	882.95	71.65	0.40
main	9847	Max WS	50yr exist 21mar2019	7119.46	399.82	418.280000		419.08	0.004339	7.17	993.26	83.56	0.37
main	9823	Max WS	50yr prop 06jul2021	7124.20	400.14	418.041500		418.99	0.005328	7.79	914.30	70.27	0.38
main	9793	Max WS	50yr exist 21mar2019	7116.03	401.40	417.769000		418.88	0.007021	8.45	841.77	82.32	0.47
main	9793	Max WS	50yr prop 06jul2021	7123.97	401.40	417.721500		418.87	0.007049	8.59	829.76	76.98	0.46
main	9767	Max WS	50yr exist 21mar2019	7114.78	401.42	417.420500		418.78	0.009855	9.35	761.08	85.02	0.54
main	9767	Max WS	50yr prop 06jul2021	7123.47	401.42	417.383100		418.76	0.010001	9.40	757.91	84.58	0.55
main	9424	Max WS	50yr exist 21mar2019	7094.71	403.77	415.139900		415.85	0.005404	6.76	1049.16	120.75	0.40
main	9424	Max WS	50yr prop 06jul2021	7115.49	403.77	415.023000		415.76	0.005668	6.87	1035.05	120.58	0.41
main	9267	Max WS	50yr exist 21mar2019	7088.79	400.02	413.403700		415.14	0.012680	10.75	696.11	89.78	0.59
main	9267	Max WS	50yr prop 06jul2021	7112.85	400.02	413.227600		415.05	0.013584	11.00	680.48	87.82	0.61
main	9187	Max WS	50yr exist 21mar2019	7085.26	394.40	411.683700		414.76	0.023549	14.06	503.88	88.52	0.70
main	9187	Max WS	50yr prop 06jul2021	7112.19	394.40	411.440300		414.66	0.025216	14.40	493.99	87.76	0.73
main	9119	Max WS	50yr exist 21mar2019	7062.44	396.90	409.864200		413.65	0.029979	15.60	452.77	116.93	0.84
main	9119	Max WS	50yr prop 06jul2021	7111.25	396.90	409.395200		413.59	0.034945	16.43	432.77	113.98	0.91
main	9017	Max WS	50yr exist 21mar2019	6988.23	393.58	407.852600		409.02	0.009618	9.48	852.05	127.47	0.54
main	9017	Max WS	50yr prop 06jul2021	7107.91	393.58	406.828800		408.53	0.015416	11.37	724.75	121.14	0.68
main	8825	Max WS	50yr exist 21mar2019	6938.77	391.58	407.094200		407.40	0.002072	5.54	1792.87	289.15	0.27
main	8825	Max WS	50yr prop 06jul2021	7096.56	391.58	405.109200		405.69	0.004603	7.37	1290.74	218.92	0.40
main	8689	Max WS	50yr exist 21mar2019	6934.29	391.98	406.765500		407.11	0.002290	5.55	1649.10	253.07	0.28
main	8689	Max WS	50yr prop 06jul2021	7095.59	391.98	404.287100		405.02	0.006124	7.78	1124.77	191.18	0.45
main	8545	Max WS	50yr exist 21mar2019	6933.37	389.58	406.035700		406.76	0.004758	7.34	1139.03	186.78	0.39
main	8545	Max WS	50yr prop 06jul2021	7094.21	389.58	402.045900	401.72	404.70	0.025050	13.28	573.37	109.31	0.84
main	8402	Max WS	50yr exist 21mar2019	6932.73	385.91	405.719500	399.02	406.14	0.002279	5.85	1486.14	183.28	0.27
main	8402	Max WS	50yr prop 06jul2021	7094.16	385.10	399.345300	394.96	401.20	0.012766	10.93	652.00	59.14	0.55
main	8376			Bridge									
main	8274	Max WS	50yr exist 21mar2019	6923.13	383.44	397.777200		399.50	0.009343	11.64	726.65	91.19	0.57
main	8274	Max WS	50yr prop 06jul2021	7090.50	383.10	396.904400		398.45	0.009282	10.53	784.47	107.52	0.51

HEC-RAS River: Brea Canyon Chan Reach: main Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
main	8091	Max WS	50yr exist 21mar2019	6909.89	381.59	396.775300		397.59	0.005344	7.81	1015.49	131.67	0.41
main	8091	Max WS	50yr prop 06jul2021	7073.27	381.59	395.040600		396.48	0.011458	10.23	791.73	126.31	0.59
main	7953	Max WS	50yr exist 21mar2019	6906.33	381.58	396.417900		396.93	0.002662	6.18	1282.99	148.20	0.31
main	7953	Max WS	50yr prop 06jul2021	7051.67	381.58	393.944100		394.94	0.006635	8.45	938.93	131.20	0.46
main	7735	Max WS	50yr exist 21mar2019	6901.15	377.64	396.087500		396.42	0.001634	4.84	1541.98	184.75	0.24
main	7735	Max WS	50yr prop 06jul2021	7035.28	377.64	392.817400		393.57	0.004985	7.19	1065.75	150.31	0.40
main	7559	Max WS	50yr exist 21mar2019	6900.86	377.58	395.771700		396.14	0.001665	5.44	1465.66	183.36	0.24
main	7559	Max WS	50yr prop 06jul2021	7026.82	377.58	391.650100		392.62	0.006922	9.09	943.78	158.43	0.46
main	7417	Max WS	50yr exist 21mar2019	6901.35	373.98	395.731400	386.67	395.93	0.000918	4.38	2062.16	197.29	0.18
main	7417	Max WS	50yr prop 06jul2021	7027.98	373.90	390.523300	383.16	391.72	0.006621	8.78	800.49	156.65	0.39
main	7380			Bridge									
main	7305	Max WS	50yr exist 21mar2019	6899.59	373.11	388.662300		390.07	0.009309	9.97	766.38	90.15	0.51
main	7305	Max WS	50yr prop 06jul2021	7025.02	373.20	388.512100		389.89	0.007376	9.41	746.60	110.16	0.44
main	7075	Max WS	50yr exist 21mar2019	6898.52	373.58	386.882500		387.97	0.007488	8.51	837.38	143.29	0.49
main	7075	Max WS	50yr prop 06jul2021	7023.59	373.58	386.961300		388.07	0.007533	8.58	845.53	144.03	0.50
main	6888	Max WS	50yr exist 21mar2019	6897.81	371.58	384.829700		386.62	0.013999	10.76	661.21	111.45	0.65
main	6888	Max WS	50yr prop 06jul2021	7023.00	371.58	384.893600		386.71	0.014128	10.86	668.37	112.60	0.65
main	6705	Max WS	50yr exist 21mar2019	6894.97	371.58	381.716900		383.45	0.020074	11.60	713.12	159.73	0.77
main	6705	Max WS	50yr prop 06jul2021	7019.48	371.58	381.787600		383.52	0.019893	11.62	724.46	161.05	0.76
main	6525	Max WS	50yr exist 21mar2019	6891.37	367.65	379.258900		381.17	0.007297	11.10	620.71	90.80	0.75
main	6525	Max WS	50yr prop 06jul2021	7014.31	367.65	379.348200		381.28	0.007316	11.15	628.86	91.54	0.75
main	6364	Max WS	50yr exist 21mar2019	6890.14	365.58	378.206500		380.50	0.005644	12.51	628.34	100.15	0.69
main	6364	Max WS	50yr prop 06jul2021	7012.90	365.58	378.293600		380.62	0.005654	12.59	637.09	100.76	0.69
main	6222	Max WS	50yr exist 21mar2019	6889.07	363.98	377.392400		379.59	0.005859	12.07	621.28	97.44	0.69
main	6222	Max WS	50yr prop 06jul2021	7011.82	363.98	377.479400		379.70	0.005867	12.15	629.79	97.98	0.69
main	5993	Max WS	50yr exist 21mar2019	6888.51	362.93	375.741100		378.67	0.008581	13.77	514.98	76.35	0.82
main	5993	Max WS	50yr prop 06jul2021	7010.91	362.93	375.826400		378.79	0.008595	13.87	521.49	76.72	0.82
main	5856	Max WS	50yr exist 21mar2019	6888.37	362.17	374.487600	373.73	377.69	0.009730	14.37	487.51	72.86	0.86
main	5856	Max WS	50yr prop 06jul2021	7010.58	362.17	374.571300	373.82	377.82	0.009746	14.48	493.63	73.29	0.87
main	5709	Max WS	50yr exist 21mar2019	6887.84	362.43	371.624600	373.63	378.32	0.029229	20.76	331.75	51.16	1.44
main	5709	Max WS	50yr prop 06jul2021	7010.22	362.43	371.702900	373.73	378.48	0.029323	20.88	335.81	51.48	1.44
main	5561	Max WS	50yr exist 21mar2019	6887.57	361.85	368.817200	371.99	378.83	0.008700	25.39	271.29	50.39	1.93
main	5561	Max WS	50yr prop 06jul2021	7009.52	361.85	368.894200	372.09	378.98	0.008653	25.47	275.17	50.62	1.93
main	5405	Max WS	50yr exist 21mar2019	6887.32	361.20	367.150000	370.93	380.13	0.012690	28.90	238.31	40.10	2.09
main	5405	Max WS	50yr prop 06jul2021	7009.25	361.20	367.240000	371.04	380.29	0.012558	28.97	241.92	40.11	2.08
main	5392	Max WS	50yr exist 21mar2019	6887.04	358.30	367.041400	368.03	373.05	0.004029	19.66	350.22	40.13	1.17
main	5392	Max WS	50yr prop 06jul2021	7009.18	358.30	367.132000	368.15	373.23	0.004049	19.81	353.86	40.13	1.18
main	5204	Max WS	50yr exist 21mar2019	6887.23	357.00	366.055800	368.31	374.32	0.006466	23.06	298.66	40.11	1.49
main	5204	Max WS	50yr prop 06jul2021	7009.16	357.00	366.144600	368.42	374.50	0.006465	23.19	302.22	40.11	1.49
main	5024	Max WS	50yr exist 21mar2019	6887.16	356.05	364.889300	367.17	373.19	0.006504	23.11	298.00	40.11	1.49
main	5024	Max WS	50yr prop 06jul2021	7009.05	356.05	364.977900	367.29	373.37	0.006503	23.24	301.55	40.11	1.49

HEC-RAS River: Brea Canyon Chan Reach: main Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
main	10487	Max WS	100yr exist 21mar2019	8023.01	406.69	431.198200		431.49	0.001097	4.35	1894.89	160.90	0.20
main	10487	Max WS	100yr prop 06jul2021	8026.86	406.69	427.256800		427.81	0.002954	5.99	1345.49	125.96	0.31
main	10486.9			Lat Struct									
main	10417	Max WS	100yr exist 21mar2019	7975.52	405.82	431.087300		431.40	0.001389	4.50	1777.92	150.48	0.22
main	10417	Max WS	100yr prop 06jul2021	8020.89	405.82	426.950200		427.60	0.003778	6.45	1244.22	116.55	0.35
main	10319	Max WS	100yr exist 21mar2019	7981.76	406.34	431.059400		431.29	0.000901	3.84	2152.64	193.69	0.18
main	10319	Max WS	100yr prop 06jul2021	8012.55	406.34	426.749600		427.25	0.002835	5.65	1422.92	143.56	0.31
main	10247	Max WS	100yr exist 21mar2019	7988.47	405.91	431.039000		431.23	0.000655	3.50	2353.57	194.09	0.16
main	10247	Max WS	100yr prop 06jul2021	8008.61	405.91	426.675400		427.06	0.001924	4.96	1616.25	138.52	0.26
main	10192	Max WS	100yr exist 21mar2019	7966.59	405.52	430.913000		431.19	0.001103	4.24	1916.71	166.94	0.20
main	10192	Max WS	100yr prop 06jul2021	8006.86	405.52	426.296400		426.96	0.003762	6.52	1228.04	108.82	0.34
main	10162	Max WS	100yr exist 21mar2019	7914.54	403.94	430.833800		431.17	0.001202	4.69	1776.74	152.89	0.21
main	10162	Max WS	100yr prop 06jul2021	8006.09	403.94	426.053700		426.89	0.003773	7.33	1110.15	94.95	0.36
main	10137	Max WS	100yr exist 21mar2019	7865.70	401.73	430.772800		431.15	0.001351	4.95	1661.96	132.40	0.22
main	10137	Max WS	100yr prop 06jul2021	8005.93	401.73	425.861300		426.82	0.004378	7.87	1041.93	86.52	0.38
main	10121	Max WS	100yr exist 21mar2019	7824.94	406.32	430.760700		431.13	0.001248	4.94	1671.13	130.03	0.21
main	10121	Max WS	100yr prop 06jul2021	8005.90	406.32	425.809500		426.74	0.003895	7.77	1049.61	85.01	0.36
main	10096	Max WS	100yr prop 06jul2021	8005.92	405.90	425.254200	417.61	426.84	0.004775	10.23	835.35	48.57	0.43
main	10075	Max WS	100yr exist 21mar2019	7670.27	405.79	430.535600		431.10	0.002507	6.20	1335.67	116.31	0.27
main	10052	Max WS	100yr exist 21mar2019	7559.88	405.31	430.366100		431.08	0.003587	7.10	1184.30	105.37	0.29
main	10010	Max WS	100yr exist 21mar2019	7559.77	404.09	430.196800	418.84	430.93	0.003645	7.18	1156.94	93.74	0.29
main	10000			Bridge									
main	9923	Max WS	100yr exist 21mar2019	7545.83	403.70	419.767800		423.50	0.033598	15.49	487.20	43.07	0.81
main	9882	Max WS	100yr exist 21mar2019	7962.34	403.48	418.865500		420.46	0.010420	10.13	785.94	66.94	0.52
main	9874	Max WS	100yr exist 21mar2019	7962.80	403.45	418.830600		420.35	0.009602	9.88	806.04	70.72	0.52
main	9856.3	Max WS	100yr prop 06jul2021	7991.38	402.46	418.799300		420.00	0.004920	8.86	931.33	72.68	0.41
main	9847	Max WS	100yr exist 21mar2019	7962.64	399.82	419.000200		419.89	0.004624	7.55	1054.30	85.97	0.38
main	9823	Max WS	100yr prop 06jul2021	7990.17	400.14	418.703600		419.78	0.005851	8.31	961.26	71.60	0.40
main	9793	Max WS	100yr exist 21mar2019	7965.12	401.40	418.471700		419.69	0.007353	8.84	900.62	85.18	0.48
main	9793	Max WS	100yr prop 06jul2021	7985.34	401.40	418.371200		419.65	0.007534	9.07	880.29	78.56	0.48
main	9767	Max WS	100yr exist 21mar2019	7965.05	401.42	418.123900		419.59	0.009872	9.71	823.55	91.30	0.55
main	9767	Max WS	100yr prop 06jul2021	7979.90	401.42	418.038300		419.54	0.010177	9.82	815.75	90.99	0.56
main	9424	Max WS	100yr exist 21mar2019	7929.60	403.77	415.839500		416.60	0.005310	6.99	1134.00	121.80	0.40
main	9424	Max WS	100yr prop 06jul2021	7955.58	403.77	415.644300		416.44	0.005705	7.17	1110.25	121.51	0.42
main	9267	Max WS	100yr exist 21mar2019	7941.23	400.02	414.149700		415.99	0.012315	11.10	766.19	98.09	0.59
main	9267	Max WS	100yr prop 06jul2021	7952.50	400.02	413.852100		415.82	0.013661	11.48	737.49	94.77	0.62
main	9187	Max WS	100yr exist 21mar2019	7952.79	394.40	412.493400		415.90	0.024038	14.81	537.69	100.90	0.72
main	9187	Max WS	100yr prop 06jul2021	7951.75	394.40	412.127000		415.73	0.026402	15.24	522.16	95.34	0.75
main	9119	Max WS	100yr exist 21mar2019	7907.67	396.90	410.646600		414.76	0.030179	16.26	486.23	119.98	0.85
main	9119	Max WS	100yr prop 06jul2021	7948.36	396.90	409.981900		414.67	0.036701	17.36	457.79	117.67	0.94
main	9017	Max WS	100yr exist 21mar2019	7866.29	393.58	408.666600		409.82	0.008838	9.46	957.77	132.30	0.53
main	9017	Max WS	100yr prop 06jul2021	7937.37	393.58	407.322100		409.11	0.015493	11.70	785.27	124.23	0.69
main	8825	Max WS	100yr exist 21mar2019	7783.11	391.58	408.037100		408.32	0.001760	5.35	2071.56	301.83	0.26
main	8825	Max WS	100yr prop 06jul2021	7914.77	391.58	405.606800		406.22	0.004593	7.59	1401.47	226.10	0.40
main	8689	Max WS	100yr exist 21mar2019	7789.31	391.98	407.754500		408.07	0.001916	5.36	1901.03	256.35	0.26
main	8689	Max WS	100yr prop 06jul2021	7909.34	391.98	404.788500		405.56	0.006020	7.98	1221.52	194.74	0.45
main	8545	Max WS	100yr exist 21mar2019	7790.84	389.58	407.115000		407.77	0.004045	7.10	1363.71	216.12	0.36
main	8545	Max WS	100yr prop 06jul2021	7904.20	389.58	402.675200	402.33	405.33	0.023343	13.41	645.31	119.32	0.82
main	8402	Max WS	100yr exist 21mar2019	7792.48	385.91	406.847400	400.43	407.24	0.002012	5.77	1697.06	190.64	0.25
main	8402	Max WS	100yr prop 06jul2021	7894.93	385.10	400.079600	395.71	402.12	0.012989	11.47	698.95	103.28	0.56
main	8376			Bridge									
main	8274	Max WS	100yr exist 21mar2019	7786.60	383.44	398.390500		400.26	0.009652	12.21	783.45	93.83	0.59
main	8274	Max WS	100yr prop 06jul2021	7883.90	383.10	397.458200		399.11	0.009516	10.95	844.45	109.11	0.52

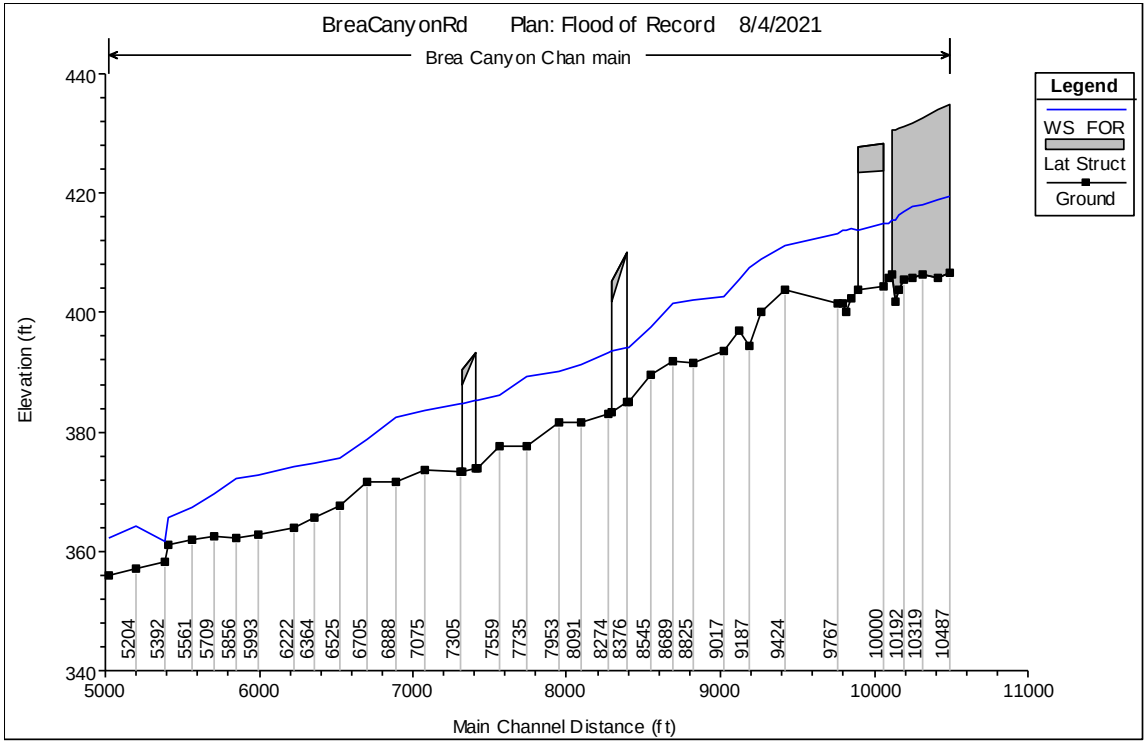
HEC-RAS River: Brea Canyon Chan Reach: main Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
main	8091	Max WS	100yr exist 21mar2019	7765.23	381.59	397.369900		398.25	0.005422	8.14	1094.32	133.51	0.42
main	8091	Max WS	100yr prop 06jul2021	7841.00	381.59	395.668100		397.11	0.010723	10.31	871.60	128.25	0.58
main	7953	Max WS	100yr exist 21mar2019	7757.35	381.58	397.004000		397.57	0.002796	6.52	1371.08	152.42	0.32
main	7953	Max WS	100yr prop 06jul2021	7811.23	381.58	394.666600		395.68	0.006191	8.54	1035.30	135.59	0.45
main	7735	Max WS	100yr exist 21mar2019	7754.99	377.64	396.651900		397.03	0.001760	5.14	1625.30	187.86	0.25
main	7735	Max WS	100yr prop 06jul2021	7779.19	377.64	393.663400		394.39	0.004480	7.13	1187.75	159.52	0.39
main	7559	Max WS	100yr exist 21mar2019	7754.54	377.58	396.302500		396.72	0.001819	5.81	1533.39	185.85	0.25
main	7559	Max WS	100yr prop 06jul2021	7771.68	377.58	392.670000		393.57	0.005691	8.71	1072.25	168.82	0.43
main	7417	Max WS	100yr exist 21mar2019	7754.34	373.98	396.263500	387.33	396.49	0.001047	4.76	2169.30	206.77	0.19
main	7417	Max WS	100yr prop 06jul2021	7769.66	373.90	391.503800	383.74	392.80	0.006620	9.14	850.17	183.45	0.39
main	7380			Bridge									
main	7305	Max WS	100yr exist 21mar2019	7749.09	373.11	389.252500		390.80	0.009711	10.51	820.00	92.31	0.52
main	7305	Max WS	100yr prop 06jul2021	7763.47	373.20	389.011100		390.58	0.008034	10.05	772.70	112.67	0.46
main	7075	Max WS	100yr exist 21mar2019	7744.47	373.58	387.376100		388.60	0.007852	9.02	889.18	147.92	0.51
main	7075	Max WS	100yr prop 06jul2021	7757.58	373.58	387.383400		388.61	0.007857	9.03	889.96	147.99	0.51
main	6888	Max WS	100yr exist 21mar2019	7743.57	371.58	385.263700		387.26	0.014723	11.41	711.14	117.68	0.67
main	6888	Max WS	100yr prop 06jul2021	7756.27	371.58	385.269700		387.27	0.014735	11.42	711.85	117.73	0.67
main	6705	Max WS	100yr exist 21mar2019	7739.78	371.58	382.191000		383.94	0.018889	11.75	790.95	168.57	0.75
main	6705	Max WS	100yr prop 06jul2021	7751.20	371.58	382.195500		383.95	0.018894	11.75	791.70	168.65	0.75
main	6525	Max WS	100yr exist 21mar2019	7735.59	367.65	379.844600		381.89	0.007220	11.46	675.67	98.32	0.75
main	6525	Max WS	100yr prop 06jul2021	7744.83	367.65	379.848500		381.89	0.007225	11.47	676.05	98.39	0.75
main	6364	Max WS	100yr exist 21mar2019	7734.30	365.58	378.803600		381.26	0.005679	13.04	689.38	104.30	0.70
main	6364	Max WS	100yr prop 06jul2021	7743.10	365.58	378.806800		381.27	0.005685	13.04	689.71	104.33	0.70
main	6222	Max WS	100yr exist 21mar2019	7733.33	363.98	377.984600		380.35	0.005888	12.59	680.06	101.07	0.69
main	6222	Max WS	100yr prop 06jul2021	7741.90	363.98	377.988500		380.35	0.005892	12.60	680.46	101.10	0.70
main	5993	Max WS	100yr exist 21mar2019	7732.08	362.93	376.324100	375.53	379.51	0.008626	14.41	560.24	78.92	0.83
main	5993	Max WS	100yr prop 06jul2021	7740.58	362.93	376.327800	375.54	379.52	0.008634	14.42	560.51	78.93	0.83
main	5856	Max WS	100yr exist 21mar2019	7732.19	362.17	375.062700	374.55	378.56	0.009781	15.05	530.20	75.43	0.88
main	5856	Max WS	100yr prop 06jul2021	7740.39	362.17	375.066900	374.56	378.56	0.009786	15.06	530.52	75.44	0.88
main	5709	Max WS	100yr exist 21mar2019	7731.82	362.43	372.161000	374.28	379.34	0.029738	21.49	359.78	53.33	1.46
main	5709	Max WS	100yr prop 06jul2021	7740.08	362.43	372.166100	374.30	379.35	0.029733	21.49	360.09	53.36	1.46
main	5561	Max WS	100yr exist 21mar2019	7731.06	361.85	369.342500	372.68	379.79	0.008387	25.93	298.18	52.03	1.91
main	5561	Max WS	100yr prop 06jul2021	7739.41	361.85	369.348300	372.71	379.80	0.008382	25.93	298.47	52.05	1.91
main	5405	Max WS	100yr exist 21mar2019	7730.99	361.20	367.761900	371.71	381.21	0.011897	29.41	262.85	40.11	2.03
main	5405	Max WS	100yr prop 06jul2021	7738.68	361.20	367.767600	371.72	381.21	0.011889	29.42	263.08	40.11	2.03
main	5392	Max WS	100yr exist 21mar2019	7730.93	358.30	367.657600	368.81	374.26	0.004160	20.62	374.95	40.14	1.19
main	5392	Max WS	100yr prop 06jul2021	7739.20	358.30	367.663300	368.82	374.28	0.004162	20.63	375.18	40.14	1.19
main	5204	Max WS	100yr exist 21mar2019	7731.10	357.00	366.659400	369.08	375.57	0.006468	23.94	322.88	40.12	1.49
main	5204	Max WS	100yr prop 06jul2021	7738.78	357.00	366.665100	369.09	375.58	0.006467	23.95	323.10	40.12	1.49
main	5024	Max WS	100yr exist 21mar2019	7730.90	356.05	365.492600	367.93	374.44	0.006503	23.99	322.20	40.12	1.49
main	5024	Max WS	100yr prop 06jul2021	7738.69	356.05	365.498300	367.94	374.45	0.006503	24.00	322.43	40.12	1.49

Five USGS Stream gages were included in the Flood of Record analysis (peak discharges are bold in the table below). A basin transfer was completed for each gage to the project basin. The resulting discharges at the project location are shown below. The Brea gage (# 11089000) is downstream from the project reach and produces the largest Flood of Record discharge, from the 1941 event. Therefore, this gage was used for analysis.

	Brea	Carbon	Coyote	Fullerton
Gage #	11089000	11075730	11090700	11090200
Qg	**3700**	**1760**	**14300**	**2050**
Au	18.4	18.4	18.4	18.4
Ag	23.6	19.7	150	12.1
b	0.83	0.83	0.83	0.83
Qu	3,009.43	1,663.05	2,505.99	2,902.96

The HEC-RAS model was re-run as a steady flow model using the Flood of Record Discharge. This will produce the most conservative water surface elevation results for the bridges as shown below.


BreaCanyonRd Plan: Flood of Record 8/4/2021
Brea Canyon Chan main
Legend
WS FOR
Lat Struct
Ground
Elevation (ft)
440
420
400
380
360
340
5204
5392
5561
5709
5856
5993
6222
6364
6525
6705
6888
7075
7305
7559
7735
7953
8091
8274
8376
8545
8689
8825
9017
9187
9424
9767
10000
10192
10319
10487
5000
6000
7000
8000
9000
10000
11000
Main Channel Distance (ft)

APPENDIX E- SEDIMENT TRANSPORT ANALYSIS

MEMORANDUM

Project:	Brea Creek Widening
Subject:	Hydraulic Modeling Summary for Equilibrium Slope Analysis
Date:	February 22, 2021
To:	Catherine Avila, P.E., Avila and Associates
From:	David S. Smith, P.E., WEST Consultants, Inc.

REGISTERED PROFESSIONAL ENGINEER
David S. Smith
No. C056132
EXP. 12/31/22
CIVIL
STATE OF CALIFORNIA

Background

This memo summarizes the equilibrium slope analysis completed by WEST Consultants, Inc. (WEST) for Brea Creek in the vicinity of Bridge Nos. 55C0121, 122 and 123, Orange County, California. The upstream boundary of the study is the Orange Freeway and the downstream boundary is W. Central Avenue in Brea, CA (see Figure 1).

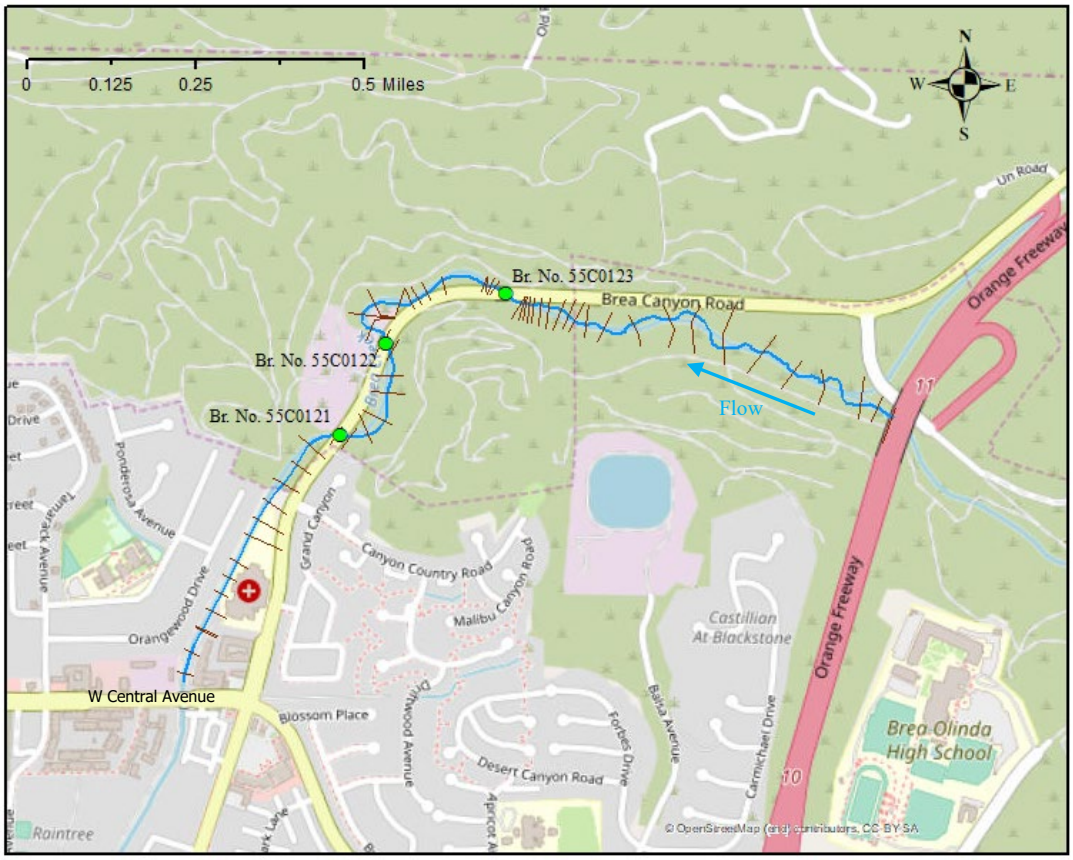


Figure 1. Location Map

WEST performed an equilibrium slope analysis to determine whether aggradation or degradation trends are anticipated in the reach and to provide approximate long-term aggradation/degradation depths at each bridge. "Long-term" is referring to the condition where the stream slope has reached an equilibrium condition. The total scour for the design storm event is the summation of the long-term aggradation/degradation depths provided in this memo and the local scour components computed by Avila and Associates, Inc. Modeling assumptions and a summary of results for the long-term aggradation/degradation depths are provided below.

Topography

The topography used for the equilibrium slope analysis was 1-meter high resolution digital elevation model (DEM) from Orange County Public Works based on Light Detection and Ranging (LIDAR) data collected between December 17, 2011 and February 9, 2012. The topography data was referenced horizontally in the CCS83, Zone VI, (US Feet) coordinate system, and referenced vertically in the North American Vertical Datum of 1988 (NAVD88) (US Feet).

WEST converted the DEM vertical datum to the National Geodetic Vertical Datum of 1929 (NGVD29) for consistency with the HEC-RAS model provided by Avila and Associates.

Hydraulics

The channel hydraulics were evaluated using HEC-RAS version 5.0.7. The HEC-RAS model provided by Avila and Associates (Brea hecras 21mar2019\ BreaCanyonRd.prj) was extended upstream to the Orange Highway. Cross section geometry was updated to use the high-resolution DEM obtained from Orange County Public Works. Bridge deck geometry data and Manning's *n* values were not modified.

Equilibrium Slope Analysis

When sediment delivered to a stream reach is reduced or is less than the stream's transport capacity, the channel will flatten its slope to attain an equilibrium condition so that transport is balanced with supply. The opposite is true for the case when sediment delivery to a reach is increased—the channel will steepen. The ultimate slope towards which the channel will tend for this condition is referred to as the equilibrium slope.

The equilibrium slope can be estimated for specific discharge and sediment inflow conditions; however, sediment inflow data are rarely available. An alternative approximation of equilibrium slope can be used that is based on the observation that stable alluvial channels rarely, if ever, sustain supercritical flow for extended periods of time. The maximum stable slope for a channel of given geometry and discharge can be computed by combining the relationship for the Froude Number with a uniform flow formula. For creeks in which the wide rectangular channel assumption is valid, the following relationship can be derived based on Manning's formula (reference: Mussetter Engineering, Inc., *Sediment and Erosion Design Guide*, prepared for the Southern Sandoval County Arroyo Flood Control Authority, November 2008):

$$S_S = 18.28 * n^2 * {F_D}^{0.133} * Fr^{2.133} * {Q_D}^{-0.133}$$

Where:
S_s = maximum stable slope
n = Manning's roughness coefficient
F_r = Froude Number
Q_D = dominant discharge (approximated as Q_{10}, or 4,670 cfs for Brea Creek, provided by Avila and Associates)
F_D = width-depth ratio of the flowing water

Based on HEC-RAS model results, the S_s (maximum stable slope) was initially calculated at each cross section. Reaches of similar geometry characteristics were then identified and the average S_s value was computed for the reach (see Figure 2 and tabular backup data in Attachment 1).

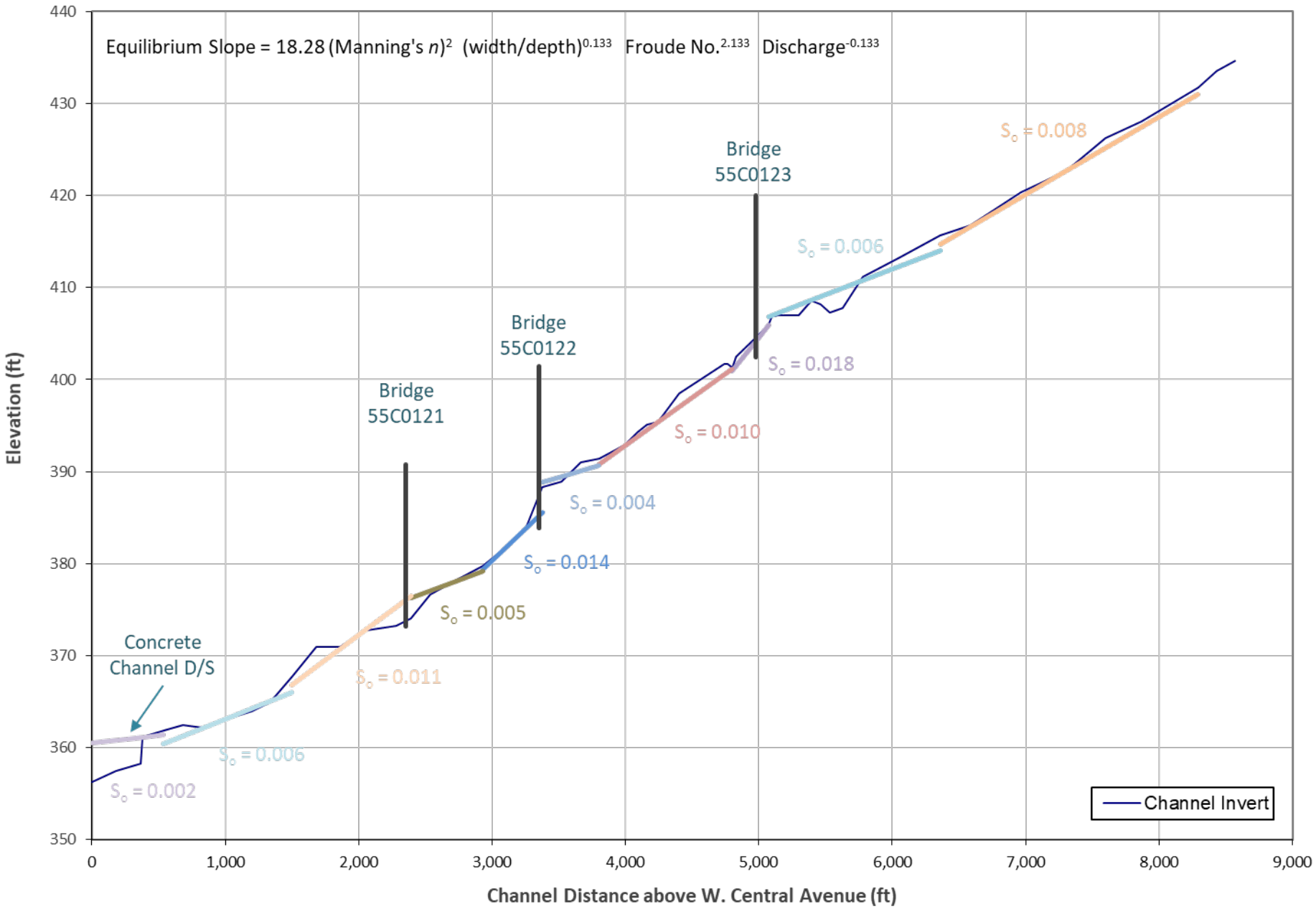
Figure 2 shows that the Brea Creek reaches evaluated in this study are, in general, in a state of relative equilibrium. The figure shows lines at the computed equilibrium slope with the current bed profile. As a sensitivity check, the equilibrium slope was calculated with 20% higher and 20% lower discharges and there were minimal changes to the results. The equilibrium slope results for the 20% higher and 20% lower discharges are provided in Attachments 2 and 3, respectively.

Recommendations
As described above, the reach appears to be in relative equilibrium. However, WEST recommends allowing for potential long-term degradation at each bridge as a factor of safety for the new bridge foundation design with a minimum long-term degradation depth of 1 foot. Recommendations of long-term degradation for each bridge are provided in Table 1.

Table 1. Long-term Degradation Results/Recommendations.

Bridge Number	Approximate Long-term Degradation Depth (feet)	Approximate Long-term Degradation Elevation at Downstream Bridge Face (feet, NGVD29)
55C0121	1	372.2
55C0122	1	382.5
55C0123	1	400.6

Figure 2. Brea Creek Equilibrium Slope



Attachment 1

Equilibrium Slope Analysis Results
Peak discharge Q=4670 cfs

HEC-RAS River Sta	Channel Width (ft)	Hydraulic Depth (ft)	Manning's n	Froude Number	Q (cfs)	AMAFCA Slope	Avg AMAFCA Slope
8354	190.36	6.2	0.065	0.31	3420	0.003	
7930	185.52	6.45	0.065	0.4	4670	0.006	0.008
7662	92.28	5.33	0.065	0.73	4670	0.019	
7366	83	8.39	0.065	0.41	4670	0.005	
7025	156.17	5.11	0.065	0.46	4670	0.008	
6652	62.04	8.05	0.065	0.58	4670	0.010	
6423	112.06	8.14	0.065	0.32	4670	0.003	
6119	150.98	6.91	0.065	0.36	4670	0.004	
5843	77.3	7.39	0.065	0.53	4670	0.009	
5693	130.27	7.46	0.065	0.31	4670	0.003	
5598	109.95	7.79	0.065	0.36	4670	0.004	
5526	88.39	8.27	0.065	0.39	4670	0.005	0.006
5456	124.26	5.58	0.065	0.51	4670	0.009	
5358	122.79	6.85	0.065	0.37	4670	0.004	
5287	96.15	7.17	0.065	0.45	4670	0.006	
5232	76.94	7.86	0.065	0.51	4670	0.008	
5202	79.59	8.51	0.065	0.45	4670	0.006	
5177	76.13	9.24	0.065	0.43	4670	0.005	
5160	72.3	9.64	0.065	0.42	4670	0.005	
5135	55.29	11.63	0.065	0.63	4670	0.012	
5039							0.018
4894	63.81	9.03	0.065	0.89	4670	0.025	
4862	81.8	11.62	0.065	0.41	4670	0.005	
4832	87.78	8.42	0.065	0.38	4670	0.004	
4806	87.37	7.78	0.065	0.43	4670	0.006	
4463	118.05	7.15	0.065	0.36	4670	0.004	0.010
4307	75.93	10.61	0.065	0.39	4670	0.004	
4226	92.63	7.68	0.065	0.81	4670	0.022	
4159	116.78	8.76	0.065	0.67	4670	0.015	
4056	110.57	7.09	0.065	0.79	4670	0.022	
3864	253.23	8.74	0.065	0.32	4670	0.003	
3729	188.5	8.16	0.065	0.34	4670	0.004	0.004
3585	153.01	7.54	0.065	0.4	4670	0.005	
3441	106.19	8.85	0.065	0.65	4670	0.014	
3415							0.014
3314	108.68	8.64	0.065	0.64	4670	0.014	
3130	105.36	7.78	0.065	0.64	4670	0.014	
2992	125.39	8.8	0.065	0.43	4670	0.006	
2774	147.27	8.39	0.065	0.37	4670	0.004	0.005
2598	129.9	10.34	0.065	0.44	4670	0.006	
2456	162.78	11.64	0.065	0.51	4670	0.008	
2419							
2344	104.37	11.15	0.065	0.53	4670	0.009	
2114	142.79	8.03	0.065	0.44	4670	0.006	0.011
1927	69.41	7.91	0.065	0.54	4670	0.009	
1744	149.48	6.35	0.065	0.77	4670	0.022	

HEC-RAS River Sta	Channel Width (ft)	Hydraulic Depth (ft)	Manning's n	Froude Number	Q (cfs)	AMAFCA Slope	Avg AMAFCA Slope
1565	78.48	6.42	0.04	0.65	4670	0.005	
1403	92.25	9.07	0.04	0.58	4670	0.004	
1262	91.07	8.62	0.04	0.56	4670	0.004	0.006
1032	72.28	8.15	0.04	0.63	4670	0.005	
895	72.91	8.57	0.04	0.59	4670	0.004	
749	50.7	6.42	0.04	1	4670	0.013	
600	55.52	6.41	0.016	0.91	4670	0.002	
444	45.9	7.49	0.016	0.99	4670	0.002	
431	48.65	9.57	0.016	0.68	4670	0.001	0.002
244	43.9	7.47	0.016	1	4670	0.002	
63	46.05	7.49	0.016	0.99	4670	0.002	

Attachment 2

Equilibrium Slope Analysis Results
Peak discharge Q = 5604 cfs

HEC-RAS River Sta	Channel Width (ft)	Hydraulic Depth (ft)	Manning's n	Froude Number	Q (cfs)	AMAFCA Slope	Avg AMAFCA Slope
8354	197.72	6.64	0.065	0.33	4104	0.004	
7930	187.56	6.88	0.065	0.43	5604	0.006	0.009
7662	133.34	5.82	0.065	0.65	5604	0.015	
7366	153.11	8.29	0.065	0.42	5604	0.006	
7025	160.55	6.13	0.065	0.41	5604	0.006	
6652	106.88	5.84	0.065	0.68	5604	0.016	
6423	116.02	8.85	0.065	0.32	5604	0.003	
6119	154.38	7.96	0.065	0.34	5604	0.004	
5843	153.79	6.71	0.065	0.56	5604	0.011	
5693	135.46	8.4	0.065	0.3	5604	0.003	
5598	124.02	8.84	0.065	0.35	5604	0.004	
5526	111.67	8.28	0.065	0.4	5604	0.005	0.005
5456	133.18	6.92	0.065	0.43	5604	0.006	
5358	137.1	8.07	0.065	0.33	5604	0.003	
5287	126.82	6.99	0.065	0.43	5604	0.006	
5232	84.84	9.14	0.065	0.45	5604	0.006	
5202	88.38	9.64	0.065	0.41	5604	0.005	
5177	82.66	10.55	0.065	0.39	5604	0.004	
5160	78.43	10.98	0.065	0.39	5604	0.004	
5135	59.03	13.14	0.065	0.63	5604	0.011	
5039							0.021
4894	64.7	9.45	0.065	1	5604	0.032	
4862	83.7	12.46	0.065	0.45	5604	0.006	
4832	90.17	9.11	0.065	0.4	5604	0.005	
4806	90	8.44	0.065	0.45	5604	0.006	
4463	120.44	7.92	0.065	0.37	5604	0.004	0.011
4307	80.11	11.34	0.065	0.42	5604	0.005	
4226	94.25	8.38	0.065	0.81	5604	0.022	
4159	118.34	9.34	0.065	0.68	5604	0.015	
4056	113.47	7.46	0.065	0.81	5604	0.022	
3864	256.28	9.79	0.065	0.29	5604	0.003	
3729	193.76	9.28	0.065	0.32	5604	0.003	0.003
3585	156.78	8.72	0.065	0.36	5604	0.004	
3441	138.48	9.95	0.065	0.65	5604	0.014	
3415							0.012
3314	111.47	9.43	0.065	0.65	5604	0.014	
3130	121.82	8.61	0.065	0.5	5604	0.008	
2992	129.16	9.85	0.065	0.32	5604	0.003	
2774	160.48	9.42	0.065	0.26	5604	0.002	0.002
2598	148.4	11.82	0.065	0.25	5604	0.002	
2456	186.9	13.06	0.065	0.43	5604	0.006	
2419							
2344	104.65	12.05	0.065	0.85	5604	0.023	
2114	146.83	8.77	0.065	0.44	5604	0.006	0.014
1927	101.86	7.92	0.065	0.59	5604	0.011	
1744	152.36	6.76	0.065	0.79	5604	0.022	

HEC-RAS River Sta	Channel Width (ft)	Hydraulic Depth (ft)	Manning's n	Froude Number	Q (cfs)	AMAFCA Slope	Avg AMAFCA Slope
1565	85.43	6.87	0.04	0.64	5604	0.005	
1403	97.58	10.07	0.04	0.58	5604	0.004	
1262	97.38	9.65	0.04	0.56	5604	0.004	0.006
1032	77.77	9.14	0.04	0.63	5604	0.005	
895	76.8	9.59	0.04	0.59	5604	0.004	
749	54.63	6.89	0.04	1	5604	0.012	
600	71.07	7.64	0.016	0.76	5604	0.001	
444	47	8.46	0.016	0.99	5604	0.002	
431	49.86	10.68	0.016	0.7	5604	0.001	0.001
244	44.89	8.44	0.016	1	5604	0.002	
63	47.28	8.45	0.016	0.99	5604	0.002	

Attachment 3

Equilibrium Slope Analysis Results
Peak discharge Q = 3736 cfs

HEC-RAS River Sta	Channel Width (ft)	Hydraulic Depth (ft)	Manning's n	Froude Number	Q (cfs)	AMAFCA Slope	Avg AMAFCA Slope
8354	88.32	5.8	0.065	0.39	2736	0.003	
7930	133.8	5.97	0.065	0.39	3736	0.006	0.010
7662	83.14	4.51	0.065	0.83	3736	0.019	
7366	72.9	7.65	0.065	0.43	3736	0.005	
7025	79.19	7.08	0.065	0.44	3736	0.008	
6652	56.55	7.79	0.065	0.54	3736	0.010	
6423	108.88	7.34	0.065	0.3	3736	0.003	
6119	147.79	5.77	0.065	0.39	3736	0.004	
5843	66.17	7.3	0.065	0.5	3736	0.009	
5693	123.98	6.47	0.065	0.32	3736	0.003	
5598	98.36	6.83	0.065	0.38	3736	0.004	
5526	83.65	7.33	0.065	0.4	3736	0.005	0.007
5456	87.63	5.99	0.065	0.51	3736	0.009	
5358	102.79	6.51	0.065	0.39	3736	0.004	
5287	89.74	5.91	0.065	0.51	3736	0.006	
5232	70.37	6.33	0.065	0.59	3736	0.008	
5202	71.77	7.13	0.065	0.51	3736	0.006	
5177	68.6	7.91	0.065	0.47	3736	0.005	
5160	66.32	8.1	0.065	0.46	3736	0.005	
5135	51.98	10.07	0.065	0.63	3736	0.012	
5039							0.016
4894	62.93	8.6	0.065	0.77	3736	0.025	
4862	79.55	10.67	0.065	0.38	3736	0.005	
4832	84.91	7.67	0.065	0.37	3736	0.004	
4806	84.72	7	0.065	0.42	3736	0.006	
4463	115.16	6.27	0.065	0.36	3736	0.004	0.010
4307	68.04	9.74	0.065	0.35	3736	0.004	
4226	90.59	6.86	0.065	0.81	3736	0.022	
4159	115.13	8.21	0.065	0.63	3736	0.015	
4056	94.06	6.42	0.065	0.83	3736	0.022	
3864	243.65	7.76	0.065	0.34	3736	0.003	
3729	181.83	7.1	0.065	0.36	3736	0.004	0.005
3585	148.44	6.3	0.065	0.47	3736	0.005	
3441	85.57	7.7	0.065	0.64	3736	0.014	
3415							0.013
3314	104.46	7.69	0.065	0.61	3736	0.013	
3130	79.79	6.91	0.065	0.59	3736	0.010	
2992	114.01	7.92	0.065	0.38	3736	0.004	
2774	125.87	7.44	0.065	0.31	3736	0.003	0.004
2598	111.28	8.94	0.065	0.33	3736	0.003	
2456	131.59	10.44	0.065	0.43	3736	0.006	
2419							
2344	103.44	10.18	0.065	0.78	3736	0.023	
2114	138.05	7.25	0.065	0.42	3736	0.006	0.013
1927	66.62	7.54	0.065	0.48	3736	0.009	
1744	129	5.63	0.065	0.83	3736	0.022	

HEC-RAS River Sta	Channel Width (ft)	Hydraulic Depth (ft)	Manning's n	Froude Number	Q (cfs)	AMAFCA Slope	Avg AMAFCA Slope
1565	67.17	6.16	0.04	0.64	3736	0.005	
1403	70.31	7.94	0.04	0.58	3736	0.004	
1262	66.88	7.56	0.04	0.56	3736	0.004	0.006
1032	54.59	7.26	0.04	0.62	3736	0.005	
895	56.11	7.5	0.04	0.58	3736	0.004	
749	47.37	5.79	0.04	1	3736	0.013	
600	50.8	5.52	0.016	1	3736	0.002	
444	44.72	6.45	0.016	1	3736	0.002	
431	47.34	8.37	0.016	0.67	3736	0.001	0.002
244	42.85	6.45	0.016	1	3736	0.002	
63	44.82	6.43	0.016	1	3736	0.002	

APPENDIX F- OCFCD DESIGN MANUAL ADDENDUM #3

ADDENDUM NO. 3

ISSUED: January 28, 1988

Criteria: ☒ New ☐ Replacement ☐ Amendment

CHAPTER I

ITEM: Freeboard

A. PURPOSE

Freeboard is provided to insure that the desired degree of protection will not be reduced by unaccounted for factors which affect channel hydraulics but which are not required to be specifically analyzed in design. These factors include but are not limited to: variations in Manning's n with channel bottom conditions, uncertainties in the selection of Manning's n, variation in stage-discharge relationships, variation in velocity from average velocity, sedimentation, debris, bulking, and air entrainment. When any of the above factors are expected to be significant, its effect shall be separately estimated.

B. DEFINITION

Freeboard is the vertical distance from the design hydraulic-grade-line (plus wave height, super-elevation, and any other factors required to be separately evaluated):

1. to the top of levee in ultimate unlined earth levee channels.
2. to the top of channel in the ultimate unlined earth channels.
3. to the top of wall engineered channel lining (examples: riprap, concrete, sheet piles, etc.).
4. to the soffit where box-conduits or culverts are designed as open channels.
5. to the low point of the soffit of bridges.

Under some supercritical conditions freeboard may be required above conjugate depth –refer to Other Considerations – Stable depth.

C. MINIMUM VALUES

The Minimum Values addressed herein shall comply with the current Federal Emergency Management Agency (FEMA) Regulations for levees.

The following are minimum acceptable freeboard for Froude number below 0.90 (for larger Froude numbers refer to Other Considerations – Stable depth):

1. Leveed channels and flood-walls*. Levees or floodwalls shall be used only when there is no reasonable alternative conveyance section. "Reasonable" shall be determined by an analysis of alternatives approved by the Engineer. The magnitude of freeboard for levees and flood walls shall consider the degree of hazard to the protected area. When levees or flood walls are used, the following minimum criteria shall apply.

    a. Two feet of freeboard shall be provided for facilities with the water surface not more than 2-feet above surrounding ground.

    b. Where the water surface is more than 2 ft. above surrounding ground, a minimum freeboard of 3 ft. above the water surface level of the design discharge shall be provided. An additional 1 ft. is required within 100-ft on either side of structures (such as bridges) riverward of the levee. An additional 1½ ft. above the minimum at the upstream end of the levee, tapering over 500 ft. to not less than the minimum is also required.

    c. For super-critical flow, refer to Other Considerations – Stable depth.

    d. For levees subject to tidal conditions, the freeboard shall be established one-foot above the height determined by a special study which shall consider all factors affecting water surface, including but not limited to astronomical tides, wave set-up, wave run-up (if applicable), storm surge, and tsunamis. Tsunamis shall be considered as an independent event unrelated to the other factors.

* A flood wall is a wall, in lieu of a levee, which projects above the surrounding ground for the purpose of conveying flood waters.

2. Non-leveed channels with design frequency of 100-years – 1.5 ft.

3. Non-leveed channels with a design frequency of less than 100-years.

   a. drainage area between 500 acres and 4,000 acres – 1.0 ft.

   b. drainage area less than 500 acres – 0.5 ft.

D. OTHER CONSIDERATIONS

1. Overtopping

   Flows exceeding the design discharge shall be considered and the design shall include measures to assure the least hazardous (damaging) initial overtopping location or to assure initial overtopping of levee on least hazardous (damaging) side. Future land use shall be considered and whenever possible, the overflow location should be into parks, wetlands, flood-plain easements or streets.

2. Hydraulic gradeline

   Freeboard may also be determined by local drainage considerations. Unless pumping stations are an economical alternative for tributary drainage, the design hydraulic gradeline in the main trunk shall be sufficiently below surrounding ground to accommodate local drainage.

   Where an entire tributary system has been designed, including all inlets, a design hydraulic-gradeline at least 0.5 ft. below street gutter grade shall be provided within catch-basins. In all other cases, or in preliminary studies which do not consider inlet hydraulics, the design hydraulic-gradeline of the conveyance facility shall be at least two feet below street gutter grade. Design in undeveloped areas shall consider the possibility that future street elevations may be one or more (usually 2) feet below average existing ground.

3. Alluvial fans

   On alluvial fans where overflow may escape (cascade) to an adjoining watershed, a minimum of one-foot additional freeboard shall be provided.

4. Stable depths and supercritical flow

Stable depths (Froude number below 0.90 or above 1.20) shall be provided. Where a channel must be designed for Froude number between 1.00 and 1.20 or where piers or confluences introduce potential instability, freeboard shall be added to the conjugate depth. For leveed channels, freeboard shall be added to conjugate depth when Froude number is between 1.00 and 2.00. For non-leveed channels with Froude number greater than 1.2, the freeboard shall be as follows:

design frequency of 100-yrs.	3.0 ft.
drainage area between 500 acres and 4000 acres	2.0 ft.
drainage area less than 500 acres	1.0 ft.

5. Exceptions

A request for less than the minimum specified herein may be submitted to the Engineer for approval. The request shall include appropriate engineering analysis demonstrating adequate freeboard. The engineering analysis shall address those factors listed in paragraph A, Purpose. Under no circumstances will freeboard less than two feet be accepted for levees and floodwalls. In the case of coastal levees no exceptions will be made because Minimum Values requires a special study.

Contraction Scour

For a grainsize of 0.2 mm, the fall velocity is 0.06 fps.

2). HEC-18 Figure 6.8 (Alternative):

D_{50}:	0.2	mm	USER INPUT REQUIRED
Fall Velocity (ω):	0.018	m/s	← Insert estimated Fall Velocity (ω) from Figure 6.8 below
	0.06	ft/s	in the orange box to convert units.
	18.0	cm/s	

Note: Move green lines below to help estimate ω using d_{50} as D_s.

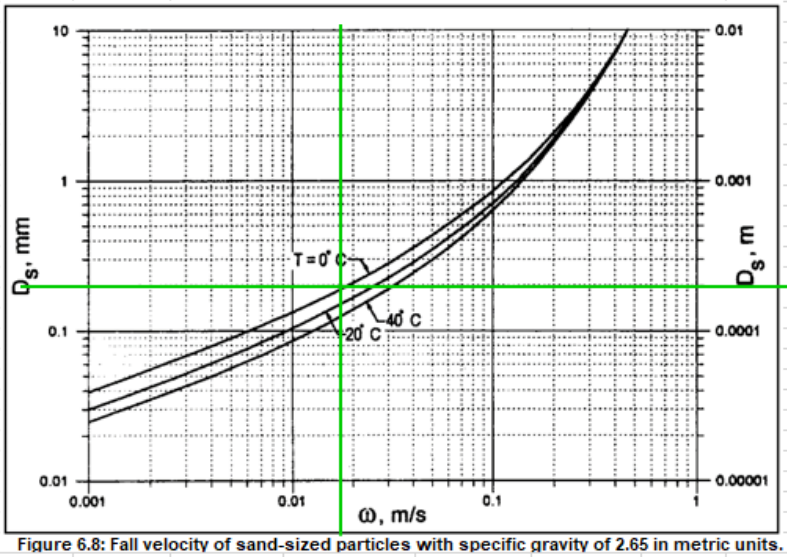


Figure 6.8: Fall velocity of sand-sized particles with specific gravity of 2.65 in metric units.

The critical velocity for this grainsize is 1.5 fps. This is lower than the average channel velocity for each bridge, indicating Live Bed scour conditions are present.

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HEC-18 5th Edition - Scour Calculation Spreadsheet (1D)

Critical Velocity Calculation (Clear vs. Live Bed Determination)

Critical Velocity ***(V_c): The velocity above which the bed material of size D, D_{50}, etc. and smaller will be transported. Critical velocity is used as an indicator for clear-water or live-bed scour.***

→ If the mean velocity (V) of the upstream reach is equal to or less than the critical velocity (V_c) of the median diameter (D_{50}) of the bed material, then contraction and local scour will be clear-water.

→ If the mean velocity (V) of the upstream reach is greater than the critical velocity (V_c) of the median diameter (D_{50}) of the bed material, then contraction and local scour will be live-bed.

Parameter	Metric		US	
Median Diameter of Bed Material (D_{50}):	0.20	(mm)	0.2	(mm)
Average Upstream Depth (y):	4.01	(m)	13.15	(ft)
Critical Velocity Parameter (K_u):	6.19	($m^{1/2}/s$)	11.17	($ft^{1/2}/s$)
Average Upstream Velocity (V):	2.597	(m/s)	8.52	(ft/s)
Critical Velocity (V_c):	0.456	(m/s)	**1.5**	(ft/s)

$$V_c = K_u \, y^{1/6} \, D^{1/3}$$

*Note: To determine Live Bed Scour vs Clear Scour, D in the equation above is set equal to D_{50}

Upstream V ≤ V_c: Clear Water Contraction Scour

Upstream V > V_c: Live Bed Contraction Scour

Proceed to Live Bed Contraction Scour Tab

Bridge 1:

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HEC-18 5th Edition - Scour Calculation Spreadsheet (1D)

Live Bed Contraction Scour

***Live Bed Contraction Scour*: Scour at a contraction when the bed material in the channel upstream of the bridge is moving at the flow causing bridge scour.**

Modified Laursen's Equation (1): $\frac{y_2}{y_1} = \left(\frac{Q_2}{Q_1}\right)^{6/7} \left(\frac{W_1}{W_2}\right)^{k_1}$

Average Contraction Scour Depth: $y_s = y_2 - y_o$

Parameter	Description	Metric Units		US Units		Notes
y_0	Existing Depth in the Contracted Section Before Scour	4.98	(m)	16.35	(ft)	*Flow area of bridge / W_2*
y_1	Average Depth in the Upstream Channel	4.01	(m)	13.15	(ft)	*Data from Chosen Upstream XS*
y_2	Average Depth in the Contraction Section	5.81	(m)	19.06	(ft)	*Modified Laursen's Equation*
Q_1	Flow in the Upstream Channel Transporting Sediment	186.95	(m^3/s)	6601.92	(cfs)	*Flow in the main channel upstream of the bridge, not including overbank flow.*
Q_2	Flow in the Contracted Channel	221.65	(m^3/s)	7827.59	(cfs)	*Flow at the bridge section (through the bridge opening)*
W_1	Bottom Width of the Upstream Main Channel that is Transporting Bed Material	21.37	(m)	70.12	(ft)	*Can be estimated by Upstream Channel Top Width. Data from Chosen Upstream XS*
W_2	Bottom width of the Contracted Section Minus Pier and Debris Width	15.42	(m)	50.58	(ft)	*Effective Bridge Width Calculated Given Bridge, Pier, and Debris Width*
S_1	Slope of EGL of Upstream Channel	0.01	(m/m)	0.01	(ft/ft)	*Data from Chosen Upstream XS*
V^*	Shear Velocity in the Upstream Main Channel	0.49	(m/s)	1.61	(ft/s)	*Calculated from data from Chosen Upstream XS(s). [$V^* = (g y_1 S_1)^{0.5}$]*
ω	Fall Velocity of Bed Material based on D50	0.02	(m/s)	0.07	(ft/s)	*See Fall Velocity Tab*
V^*/ω	Ratio of Shear Velocity to Fall Velocity	22.728	-	22.728	-	*Determines Mode of Bed Transport and k_1*
k_1	Modified Laursen's Equation Exponent	0.69	-	0.69	-	*See Table 2 to the right.*

Average Live Bed Contraction Scour Depth (y_s)	**2.7**	**(ft)**
	0.8	(m)

Bridge 2:

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HEC-18 5th Edition - Scour Calculation Spreadsheet (1D)

Live Bed Contraction Scour

Live Bed Contraction Scour *: Scour at a contraction when the bed material in the channel upstream of the bridge is moving at the flow causing bridge scour.*

Modified Laursen's Equation (1):

$$\frac{y_2}{y_1} = \left(\frac{Q_2}{Q_1}\right)^{6/7} \left(\frac{W_1}{W_2}\right)^{k_1}$$

Average Contraction Scour Depth:

$$y_s = y_2 - y_o$$

Parameter	Description	Metric Units		US Units		Notes
y_0	Existing Depth in the Contracted Section Before Scour	4.07	(m)	13.37	(ft)	*Flow area of bridge / W_2*
y_1	Average Depth in the Upstream Channel	4.00	(m)	13.11	(ft)	*Data from Chosen Upstream XS*
y_2	Average Depth in the Contraction Section	5.53	(m)	18.14	(ft)	*Modified Laursen's Equation*
Q_1	Flow in the Upstream Channel Transporting Sediment	211.27	(m^3/s)	7460.87	(cfs)	*Flow in the main channel upstream of the bridge, not including overbank flow.*
Q_2	Flow in the Contracted Channel	223.56	(m^3/s)	7894.93	(cfs)	*Flow at the bridge section (through the bridge opening)*
W_1	Bottom Width of the Upstream Main Channel that is Transporting Bed Material	22.58	(m)	74.09	(ft)	*Can be estimated by Upstream Channel Top Width. Data from Chosen Upstream XS*
W_2	Bottom width of the Contracted Section Minus Pier and Debris Width	15.14	(m)	49.66	(ft)	*Effective Bridge Width Calculated Given Bridge, Pier, and Debris Width*
S_1	Slope of EGL of Upstream Channel	0.02	(m/m)	0.02	(ft/ft)	*Data from Chosen Upstream XS*
V*	Shear Velocity in the Upstream Main Channel	0.96	(m/s)	3.14	(ft/s)	*Calculated from data from Chosen Upstream XS(s). [$V^* = (g y_1 S_1)^{0.5}$]*
ω	Fall Velocity of Bed Material based on D50	0.02	(m/s)	0.07	(ft/s)	*See Fall Velocity Tab*
V*/ω	Ratio of Shear Velocity to Fall Velocity	44.317	-	44.317	-	*Determines Mode of Bed Transport and k_1*
k_1	Modified Laursen's Equation Exponent	0.69	-	0.69	-	*See Table 2 to the right.*

Average Live Bed Contraction Scour Depth (y_s)	**4.8**	**(ft)**
	1.5	(m)

Bridge 3:

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HEC-18 5th Edition - Scour Calculation Spreadsheet (1D)

Live Bed Contraction Scour

Live Bed Contraction Scour *: Scour at a contraction when the bed material in the channel upstream of the bridge is moving at the flow causing bridge scour.*

Modified Laursen's Equation (1):

$$\frac{y_2}{y_1} = \left(\frac{Q_2}{Q_1}\right)^{6/7} \left(\frac{W_1}{W_2}\right)^{k_1}$$

Average Contraction Scour Depth:

$$y_s = y_2 - y_o$$

Parameter	Description	Metric Units		US Units		Notes
y_0	Existing Depth in the Contracted Section Before Scour	5.68	(m)	18.63	(ft)	*Flow area of bridge / W_2*
y_1	Average Depth in the Upstream Channel	4.52	(m)	14.83	(ft)	*Data from Chosen Upstream XS*
y_2	Average Depth in the Contraction Section	6.30	(m)	20.67	(ft)	*Modified Laursen's Equation*
Q_1	Flow in the Upstream Channel Transporting Sediment	225.57	(m^3/s)	7966.04	(cfs)	*Flow in the main channel upstream of the bridge, not including overbank flow.*
Q_2	Flow in the Contracted Channel	226.70	(m^3/s)	8005.85	(cfs)	*Flow at the bridge section (through the bridge opening)*
W_1	Bottom Width of the Upstream Main Channel that is Transporting Bed Material	21.58	(m)	70.79	(ft)	*Can be estimated by Upstream Channel Top Width. Data from Chosen Upstream XS*
W_2	Bottom width of the Contracted Section Minus Pier and Debris Width	13.41	(m)	44.00	(ft)	*Effective Bridge Width Calculated Given Bridge, Pier, and Debris Width*
S_1	Slope of EGL of Upstream Channel	0.00	(m/m)	0.00	(ft/ft)	*Data from Chosen Upstream XS*
V^*	Shear Velocity in the Upstream Main Channel	0.42	(m/s)	1.36	(ft/s)	*Calculated from data from Chosen Upstream XS(s). [$V^* = (g y_1 S_1)^{0.5}$]*
ω	Fall Velocity of Bed Material based on D50	0.02	(m/s)	0.07	(ft/s)	*See Fall Velocity Tab*
V^*/ω	Ratio of Shear Velocity to Fall Velocity	19.252	-	19.252	-	*Determines Mode of Bed Transport and k_1*
k_1	Modified Laursen's Equation Exponent	0.69	-	0.69	-	*See Table 2 to the right.*

Average Live Bed Contraction Scour Depth (y_s)	**2.0**	**(ft)**
	0.6	(m)

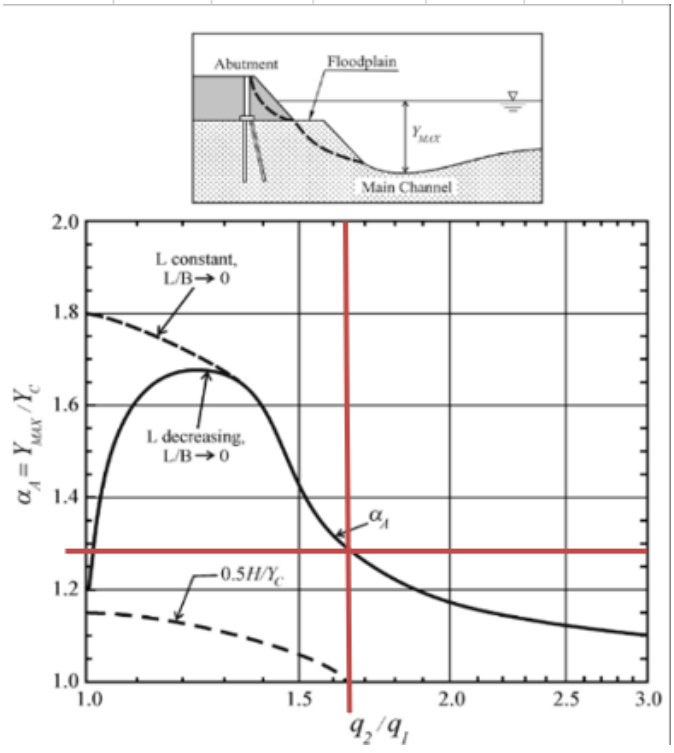
Bridge 1:

2a) Scour occurring when the abutment is in or close to the main channel (Live Bed)

$$y_c = y_1\left(\frac{q_{2c}}{q_1}\right)^{6/7} \qquad y_{max} = \alpha_A\, y_c \qquad y_s = y_{max} - y_0$$

Parameter	Description	Metric Units		US Units		Notes
y_1	Upstream flow depth	4.01	(m)	13.15	(ft)	*Flow area of bridge / W_2*
y_0	Flow depth prior to scour	4.98	(m)	16.35	(ft)	*Data from chosen upstream XS*
α_a	Amplification factor for live-bed conditions	1.27	-	**1.27**	-	*For spill through abutments: Use Figure 8.9 For wingwall abutments: Use Figure 8.10*
W_1	Width of the upstream channel	21.37	(m)	70.12	(ft)	*Width of Flow upstream of the bridge section*
Q_1	Flow in the upstream channel	186.95	(m^3/s)	6601.9	(ft^3/s)	*Flow upstream of the bridge section*
q_{2c}	Unit discharge in the constricted opening accounting for non-uniform flow distribution	14.38	(m^2/s)	154.77	(ft^2/s)	*Estimated as the total discharge in the bridge opening divided by the width of the bridge opening: Q_2 / W_2*
q_1	Upstream unit discharge	8.75	(m^2/s)	94.15	(ft^2/s)	*Q_1 / W_1*
q_2/q_1	Ratio of unit discharge	1.64	(m)	1.64	(ft)	*Value used in Figure 8.9 and Figure 8.10 to determine amplification factor*
y_c	Flow depth including live-bed contraction scour	6.14	(m)	20.14	(ft)	*Equation Above*
y_{max}	Max flow depth resulting from abutment scour	7.79	(m)	25.57	(ft)	*Equation Above*

Live Bed Abutment Scour Depth (y_s)	**9.2**	**(ft)**
	2.8	(m)



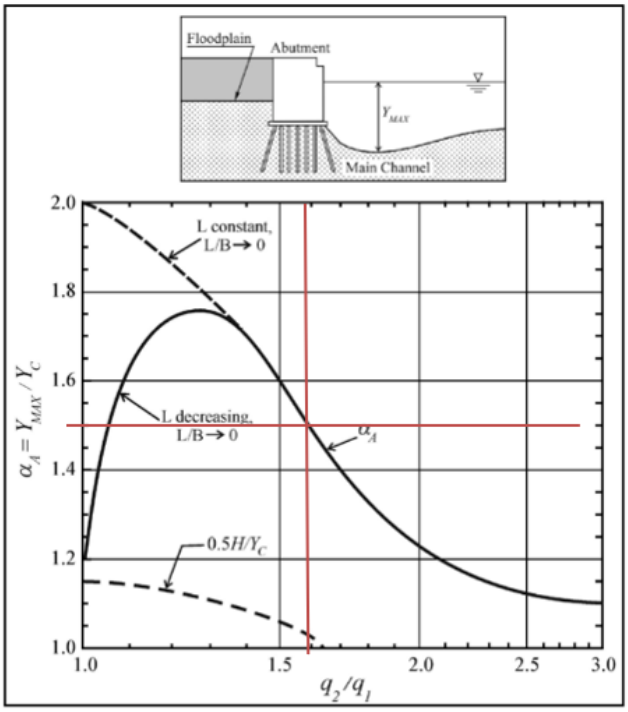
Bridge 2:

2a) Scour occurring when the abutment is in or close to the main channel (Live Bed)

$$y_c = y_1\left(\frac{q_{2c}}{q_1}\right)^{6/7} \qquad y_{max} = \alpha_A\, y_c \qquad y_s = y_{max} - y_0$$

Parameter	Description	Metric Units		US Units		Notes
y_1	Upstream flow depth	4.00	(m)	13.11	(ft)	*Flow area of bridge / W_2*
y_0	Flow depth prior to scour	4.07	(m)	13.37	(ft)	*Data from chosen upstream XS*
α_a	Amplification factor for live-bed conditions	1.50	-	1.50	-	*For spill through abutments: Use Figure 8.9 For wingwall abutments: Use Figure 8.10*
W_1	Width of the upstream channel	22.58	(m)	74.09	(ft)	*Width of Flow upstream of the bridge section*
Q_1	Flow in the upstream channel	211.27	(m^3/s)	7460.9	(ft^3/s)	*Flow upstream of the bridge section*
q_{2c}	Unit discharge in the constricted opening accounting for non-uniform flow distribution	14.77	(m^2/s)	158.98	(ft^2/s)	*Estimated as the total discharge in the bridge opening divided by the width of the bridge opening: Q_2 / W_2*
q_1	Upstream unit discharge	9.36	(m^2/s)	100.70	(ft^2/s)	*Q_1 / W_1*
q_2/q_1	Ratio of unit discharge	1.58	(m)	1.58	(ft)	*Value used in Figure 8.9 and Figure 8.10 to determine amplification factor*
y_c	Flow depth including live-bed contraction scour	5.91	(m)	19.39	(ft)	*Equation Above*
y_{max}	Max flow depth resulting from abutment scour	8.87	(m)	29.09	(ft)	*Equation Above*

Live Bed Abutment Scour Depth (y_s)	**15.7**	**(ft)**
	4.8	(m)



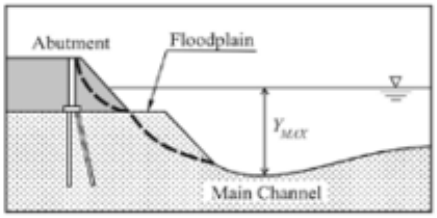
Bridge 3:

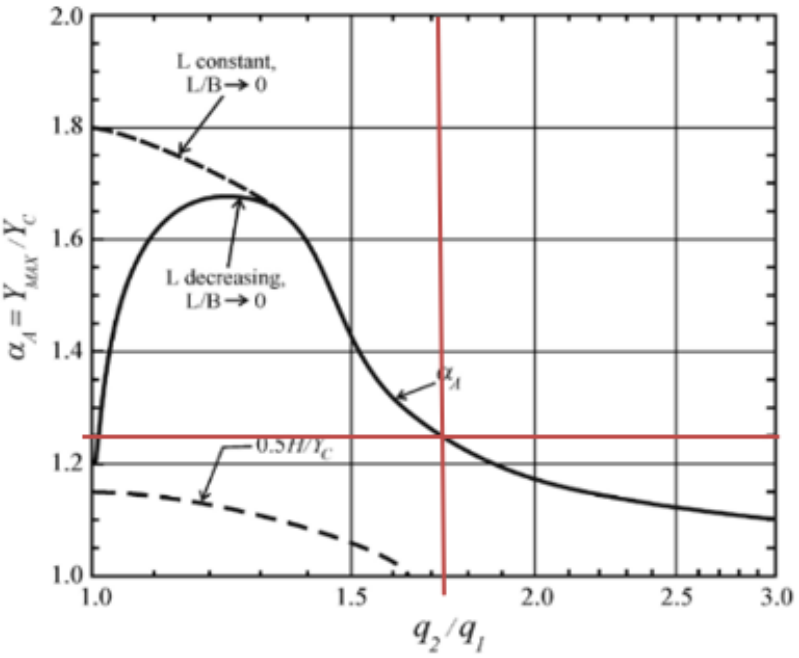
2a) Scour occurring when the abutment is in or close to the main channel (Live Bed)

$$y_c = y_1\left(\frac{q_{2c}}{q_1}\right)^{6/7} \qquad y_{max} = \alpha_A\, y_c \qquad y_s = y_{max} - y_0$$

Parameter	Description	Metric Units		US Units		Notes
y_1	Upstream flow depth	4.52	(m)	14.83	(ft)	*Flow area of bridge / W_2*
y_0	Flow depth prior to scour	5.68	(m)	18.63	(ft)	*Data from chosen upstream XS*
α_a	Amplification factor for live-bed conditions	1.25	-	**1.25**	-	*For spill through abutments: Use Figure 8.9 For wingwall abutments: Use Figure 8.10*
W_1	Width of the upstream channel	21.58	(m)	70.79	(ft)	*Width of Flow upstream of the bridge section*
Q_1	Flow in the upstream channel	225.57	(m^3/s)	7966.0	(ft^3/s)	*Flow upstream of the bridge section*
q_{2c}	Unit discharge in the constricted opening accounting for non-uniform flow distribution	16.90	(m^2/s)	181.95	(ft^2/s)	*Estimated as the total discharge in the bridge opening divided by the width of the bridge opening: Q_2 / W_2*
q_1	Upstream unit discharge	10.45	(m^2/s)	112.53	(ft^2/s)	Q_1 / W_1
q_2/q_1	Ratio of unit discharge	1.62	(m)	1.62	(ft)	*Value used in Figure 8.9 and Figure 8.10 to determine amplification factor*
y_c	Flow depth including live-bed contraction scour	6.82	(m)	22.38	(ft)	*Equation Above*
y_{max}	Max flow depth resulting from abutment scour	8.53	(m)	27.98	(ft)	*Equation Above*

Live Bed Abutment Scour Depth (y_s)	**9.4**	**(ft)**
	2.9	(m)





The abutment piles are 4 feet in diameter. Maximum pier scour is 2.4 times the pier width. In this case, all of the calculated pier scour values were greater than the maximum. Therefore, the pier scour for each bridge is 10 ft. An example calculation for the first bridge is below.

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HEC-18 5th Edition - Scour Calculation Spreadsheet (1D)

Pier Scour

***Pier Scour** is a function of bed material characteristics, bed configuration, flow characteristics, fluid properties, and the geometry of the pier and footing.*

1). HEC-18 5th Edition Pier Scour Equation (based on the CSU Equation)

HEC-18 Equation:

$$\frac{y_s}{y_1} = 2.0\, K_1\, K_2\, K_3 \left(\frac{a}{y_1}\right)^{0.65} Fr_1^{0.43}$$

In terms of y_s/a:

$$\frac{y_s}{a} = 2.0\, K_1\, K_2\, K_3 \left(\frac{y_1}{a}\right)^{0.35} Fr_1^{0.43}$$

Parameter	Description	Metric Units		US Units		Notes
y_1	Flow depth directly upstream of the pier	3.35	(m)	11.00	(ft)	*Obtained from (BR U) Flow Distribution Table; Bridge Information Macro*
θ	Angle of attack of the flow (skew)	0	(deg)	0	(deg)	*Bridge Skew*
K_1	Correction factor for Pier nose shape	1.0	-	**1.0**	-	*Use Figure 7.3 and Table 7.1* ***If θ > 5 degrees, K_1 = 1.0***
K_2	Correction factor for angle of attack of flow	1.0	-	1.0		$K_2 = [(\cos(\theta) + \sin(\theta) * L/A)^{0.65}]$ *(where L/A_{max} = 12)*
K_3	Correction factor for bed condition	1.1	-	**1.1**	-	*Use Table 7.3*
a	Pier Width (including bottom width)	1.2	(m)	4.00	(ft)	*Bottom Pier Width; no floating debris included*
L	Length of Pier	0.0	(m)	0.0	(ft)	*See Figure 7.3 for Guidance*
V_1	Velocity of flow directly upstream of the pier	3.47	(m/s)	11.40	(ft/s)	*Obtained from (BR U) Flow Distribution Table; Bridge Information Macro*
Fr_1	Froude Number directly upstream of the pier	0.61	-	0.61	-	$Fr_1 = [V_1 / (g y_1)^{1/2}]$

HEC-18 Equation Maximum Pier Scour Depth (y_s)	**10.1**	**(ft)**
	3.1	(m)

***Note for Round Nose Piers:**

Maximum Scour Depth (y_s) is typically ≤ (2.4 * a) for Fr ≤ 0.8 → 2.4 * a = 9.60

Maximum Scour Depth (y_s) is typically ≤ (3.0 * a) for Fr > 0.8 → 3.0 * a = 12.00

APPENDIX N
NOISE IMPACT ANALYSIS

AECOM
401 W A St., Suite 1200
San Diego, CA 92101
aecom.com

Project name:
Brea Boulevard Corridor Improvement Project

Project ref:
AECOM JN 60663742

To:
Austin Morgan, P.E.
OC Public Works
601 N. Ross Street,
Santa Ana, CA 92701

From:
Paul Burge, INCE Bd. Cert.

Date:
September 9, 2022

Technical Memorandum

Subject: Brea Boulevard Corridor Improvement Project, Noise and Vibration Impact Analysis

Executive Summary

A noise and vibration analysis was conducted for the Brea Boulevard Corridor Improvement Project (Project) in order to determine if noise or vibration impacts might occur as a result of the project construction and operation. It was determined that predicted noise and vibration levels would be less than significant and further abatement would not be required.

1. Introduction

This document reports a noise impact assessment of the Project, which is located in the City of Brea and unincorporated land Orange County. Orange County Public Works (OCPW) has identified the need to widen Brea Boulevard consistent with the Orange County Transportation Authority (OCTA) Master Plan of Arterial Highways (MPAH).

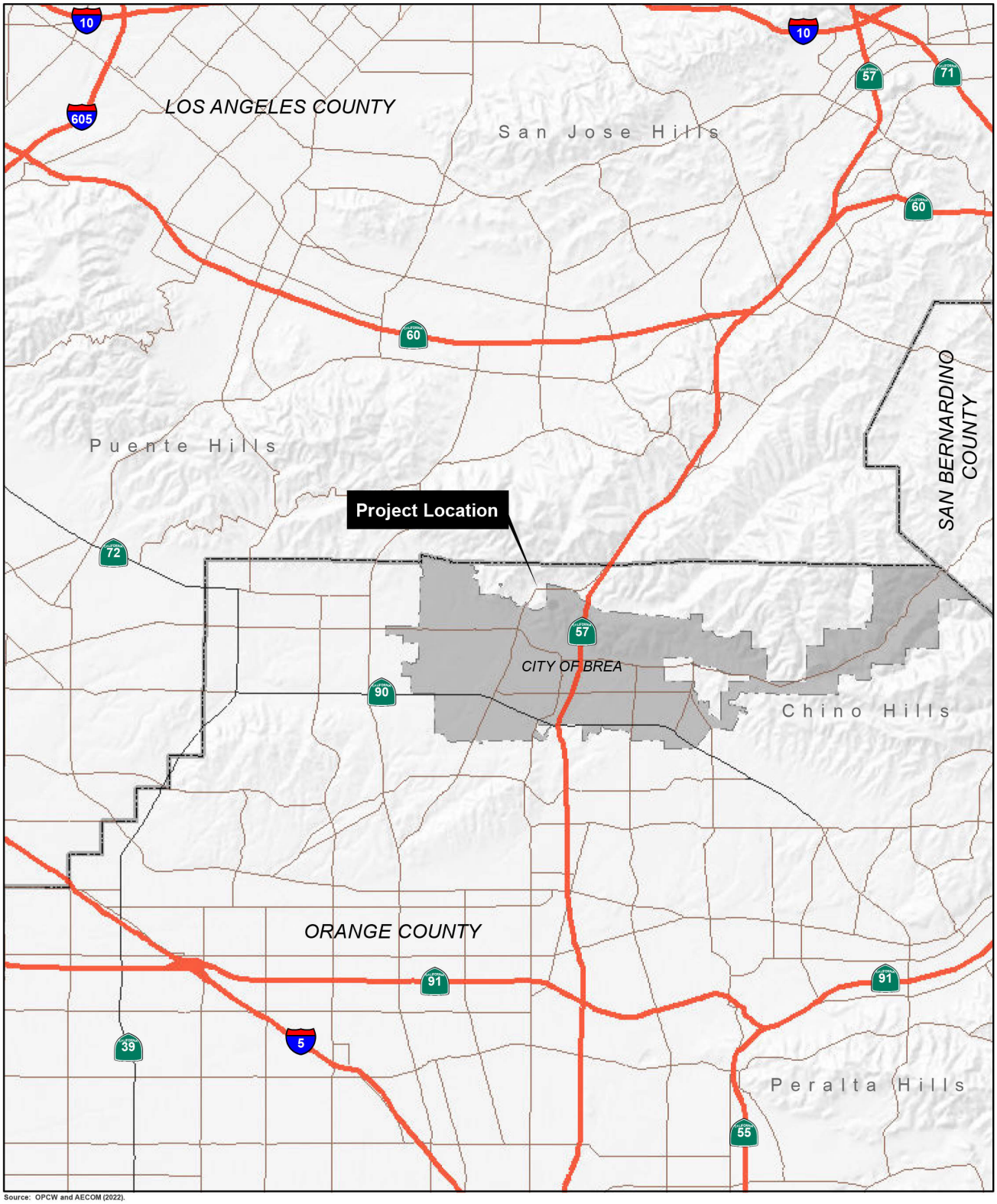
2. Project Description

2.1 Project Background and Location

The Project is located within the City of Brea and unincorporated Orange County, from Central Avenue/State College Boulevard to the State Route 57 (SR-57) southbound on-ramp approximately 1,700 feet northeast of Tonner Canyon Road, a total length of approximately 8,800 linear feet or 1.7 miles (the Brea Boulevard Corridor, or "corridor"); refer to Figure 1, Regional Map, and Figure 2, Vicinity Map.

The Project is within Sections 2 and 12 of Township 3 South, Range 10 West of the La Habra (1964) U.S. Geological Survey (USGS) 7.5-minute quadrangle map, and Unsectioned Township 2 South, Range 9 West of the Yorba Linda (1981) 7.5-minute quadrangle map.

AECOM



Source: OPCW and AECOM (2022).

Scale 1 : 126720
1" = 2 miles

0 1 2 4 Miles

Figure 1
Regional Map

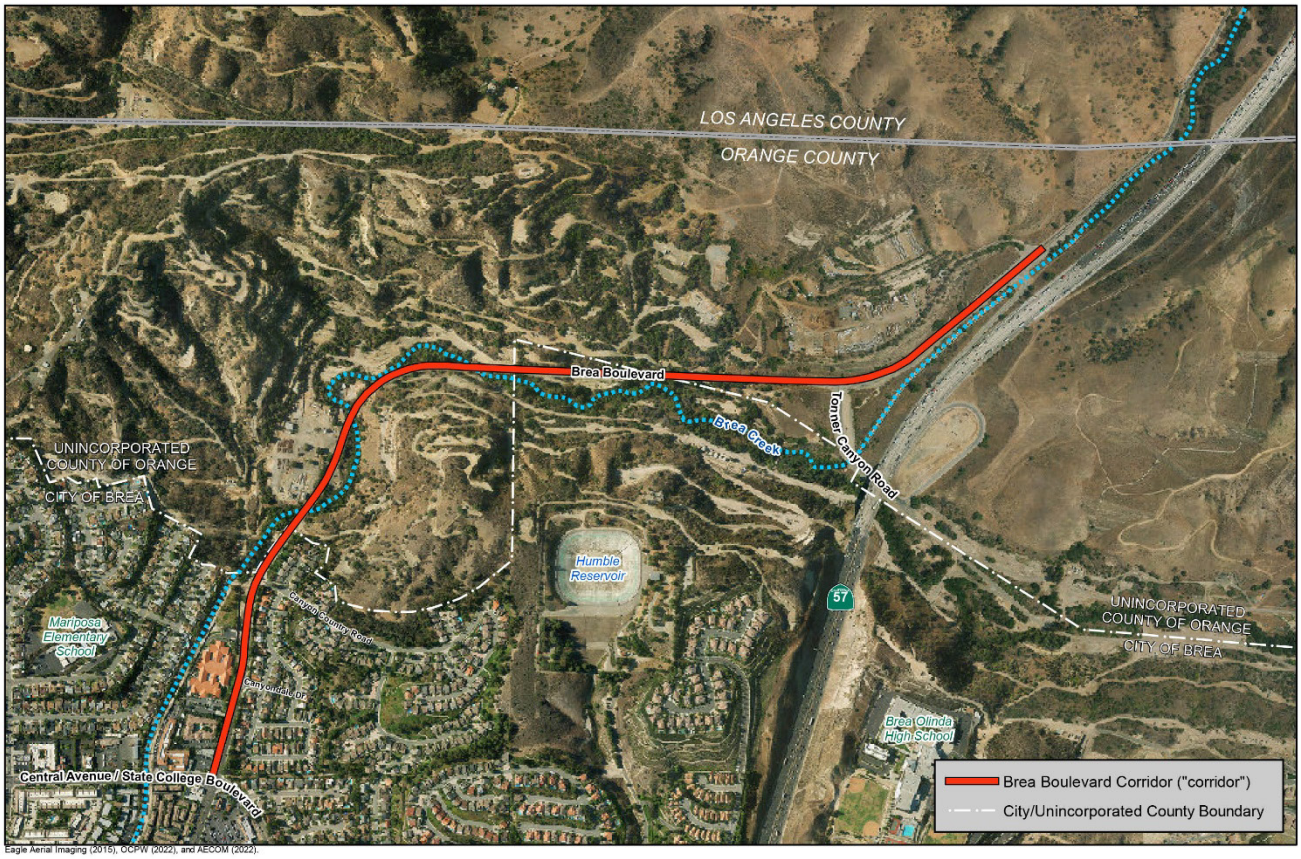


Figure 2
Vicinity Map

Brea Boulevard Corridor Improvement Project

2.2 Environmental Setting and Existing Conditions

Brea Boulevard is a 30-foot-wide paved surface, two-lane, undivided highway (one lane in each direction) with portions of the roadway having no curb or gutter, and unpaved, earthen shoulders. Other portions of the roadway are improved with curb, gutter, and sidewalk. The posted speed limit is 55 miles per hour (MPH) in the unincorporated portion of the corridor, and 45 MPH in the City of Brea at the southern end of the corridor. Brea Boulevard has remained unchanged since the roadway was realigned to its present configuration between 1928 and 1930 with right-of-way (R/W) width that varies between 60 to 100 feet.

There are three bridges crossing Brea Creek within the corridor: a two span reinforced concrete slab bridge constructed circa 1920 and widened circa 1929 (Bridge 1 [#55C0121]), a two span reinforced concrete T-beam bridge constructed circa 1930 (Bridge 2 [#55C0122]), and a three span reinforced concrete T-beam bridge constructed circa1939 (Bridge 3 [#55C0123]). In addition to the three bridges there are approximately thirteen existing culvert crossings (for drainage or utilities or both).

The following land uses surround the corridor:

- North of the corridor is an active oil field and natural open space within unincorporated Orange County. Much of this area is property owned by Cal Resources LLC and Brea Hills LLC. North of the eastern end of the corridor on property owned by Cal Resources LLC is a commercial vehicle storage facility for several lessees.
- East of the corridor is SR-57 and Tonner Canyon Road.
- South and west of the corridor is the City of Brea and associated residential areas, with general commercial and public facility land uses. Immediately south of the middle stretch of the corridor are steep slopes containing additional oil field activity and the Humble Reservoir.

2.3 Proposed Project

The Project involves widening Brea Boulevard from two to four lanes (two lanes each direction) between Canyondale Drive and the northern end of the corridor (approximately 1.5-miles) replacing and widening three functionally obsolete bridges, installing traffic signals approximately 1,200 feet north of Canyon Country Road and at the intersection of Brea Boulevard and Tonner Canyon Road, replacing the existing signal at Canyon Country Road, modifying existing driveway ingress/egress, installing a new wildlife overpass/land bridge, adding open graded asphalt concrete (OGAC) paving at the southern end of the corridor, and providing striping and installing new signage. Construction of these improvements would be conducted within permanent and temporary limits of disturbance along the corridor (i.e., the project limits; refer to Figure 3, Proposed Project).

To reduce the existing high traffic noise levels along Brea Boulevard, the OGAC paving will be installed at the southern end of the corridor to minimize roadway surface noise in the City of Brea. OGAC will be added from Central Avenue/State College Boulevard north to the City/unincorporated County boundary (a total length of approximately 2,000 feet).

Construction Schedule and General Activity

The Project is anticipated to be divided into two phases:

- Phase I will include utility relocations, the infrastructure necessary for utility companies to relocate their utilities, wildlife overpass/land bridge, bridge replacement, retaining walls, associated temporary transition pavement, and associated grading; and
- Phase II will include the widening of the road, OGAC paving the three intersections at Canyon Country Road, 1,200 feet north of Canyon Country Road, and at Tonner Canyon Road, along with other associated roadway features.

Construction is expected to last approximately 5 years and is anticipated to begin in the year 2026.

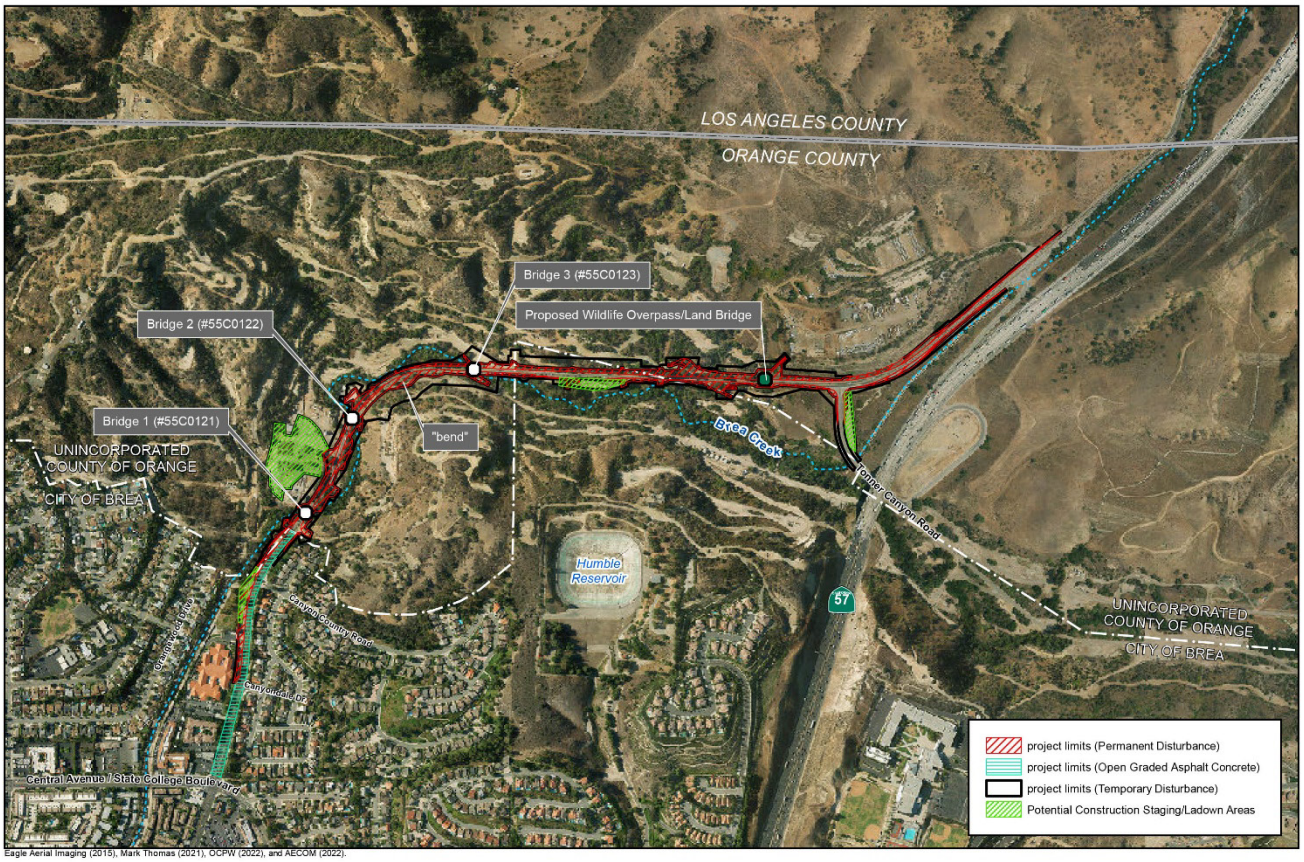


Figure 3
Proposed Project

Brea Boulevard Corridor Improvement Project

The normal hours of construction for the Project would be between 7:00 am and 7:00 pm, Monday through Saturday, consistent with the City of Brea Municipal Code, Noise Ordinance, which does not regulate noise from construction activities that are limited to these daytime hours. However, due to bridge replacement-related work construction will result in periodic full closure of Brea Boulevard from north of Canyon Country Road to Tonner Canyon Road from Friday at 8:00 pm to Monday at 5:00 am. During these times (up to a maximum 26 weekends with the full roadway closure), construction activities would occur outside the normal hours of construction, as crews will work extended hours, night shifts, and weekends. During nightshifts and extended hours, construction lighting will be required. Access will remain for emergency responders and oil field operators.

A construction crew of approximately 40 construction workers (daily) will be in the project area during construction. For safety purposes, a temporary fence will be installed to secure the construction site and restrict public access while maintaining vehicular access to Brea Boulevard.

Construction Equipment

Major equipment to be used during construction will include, but not be limited to: crane, excavator, backhoes, scrapers, crane crawlers, truck cranes, hydraulic all-terrain and rough terrain cranes, loaders, concrete breaker, dump or haul trucks, pile driver/rotary drilling rig, asphalt-concrete (AC) paver, AC grinder, redi-mix truck/pumps, compactors (vibratory steel drum, padded drum, and sheepsfoot), dozers, motor grader, water tower, water truck, sweeper, concrete saw cutter, 50 lbs. hammer, handheld jackhammer, core drills, horizontal drill rig, compressors, welders, forklifts, portable lighting, and water pumps.

Construction Access and Construction Staging/Laydown

There are four potential construction staging/laydown areas for the Project that can be used simultaneously:

(1) Located west of Canyon Country Road on an unpaved strip next to the grass field of Kindred Hospital located on private property;

(2) Located at an unpaved area 1,200 feet north of Canyon Country Road on the west side of Brea Boulevard located on private property; and

(3) Located at approximately the middle of the corridor on an unpaved strip containing an oil derrick on the south side of Brea Boulevard where the roadway is at a straightaway and aligned in an east/west direction;

(4) Located at an unpaved area on the east side of Tonner Canyon Road at its intersection with Brea Boulevard; and

At time of construction if vacant office space is available in the nearby area, this may be considered for a field office.

All staging/laydown areas located on private property will require a written agreement between the contractor and property owner and/or oil field operator.

3. Background Information on Noise

Noise is most commonly described as unwanted sound, and both are measured and quantified in a similar manner. Sound levels are expressed on a logarithmic scale of “decibels” (dB), in which a change of 10 units on a decibel scale reflects a 10-fold increase in sound energy. A 10 dB increase (or decrease) in sound energy is generally experienced by most people as about a doubling, (or halving), of perceived loudness. Table 1 provides a summary of the relationship between changes in noise level in decibels and perceived change

Table 1. Relationship between Noise Level Change and Perceived Change

Noise Level Change (dBA)	Change in Relative Energy	Description in Perception
+20 dBA	100 x	Four times as loud
+10 dBA	10 x	Two times as loud
+5 dBA	3.16 x	Readily perceptible increase
+3 dBA	2.0 x	Barely perceptible increase
0 dBA	1 x	No change
-3 dBA	0.5 x	Barely perceptible decrease
-5 dBA	0.316 x	Readily perceptible decrease
-10 dBA	0.1 x	Half as loud
-20 dBA	0.01 x	One-quarter as loud

Source: Caltrans Technical Noise Supplement, 2013

In evaluating human response to sound, acousticians compensate for the response of the human ear to varying frequency, or pitch, of components of sound. The human ear is most sensitive to sounds in the middle frequency range of human speech and less sensitive to lower and higher pitched sounds. An "A" weighted scale was developed to account for this variable sensitivity. Therefore, most community noise standards are expressed in decibels on the "A"-weight scale (dBA). Zero on the decibel scale is set roughly at the lower threshold of human hearing. Sound levels of common sounds in the environment include office background noise at about 50 dBA; human conversation at 5 to 10 feet away at about 65-70 dBA; cars driving by at 50 feet away at 65-70 dBA; heavy trucks driving by at 50 feet away at 75-80 dBA; and aircraft fights directly overhead one mile away at about 90-100 dBA.

Environmental noise is constantly changing over time. The equivalent sound level (L_{eq}) is used to describe the equivalent (or energy average) over a specific period of time (such as a second, minute, hour or day). The equivalent sound level over the period of 1 hour is described as $L_{eq(1\text{-}hour)}$. Another common metric for quantifying environmental noise is the Community Noise Equivalent Level, or CNEL, which is the 24-hour equivalent level with a 5 dBA penalty added for evening periods (7 to 10 pm), and a 10 dBA penalty added for nighttime periods (10 pm to 7 am), to account for higher sensitivity to noise during those periods.

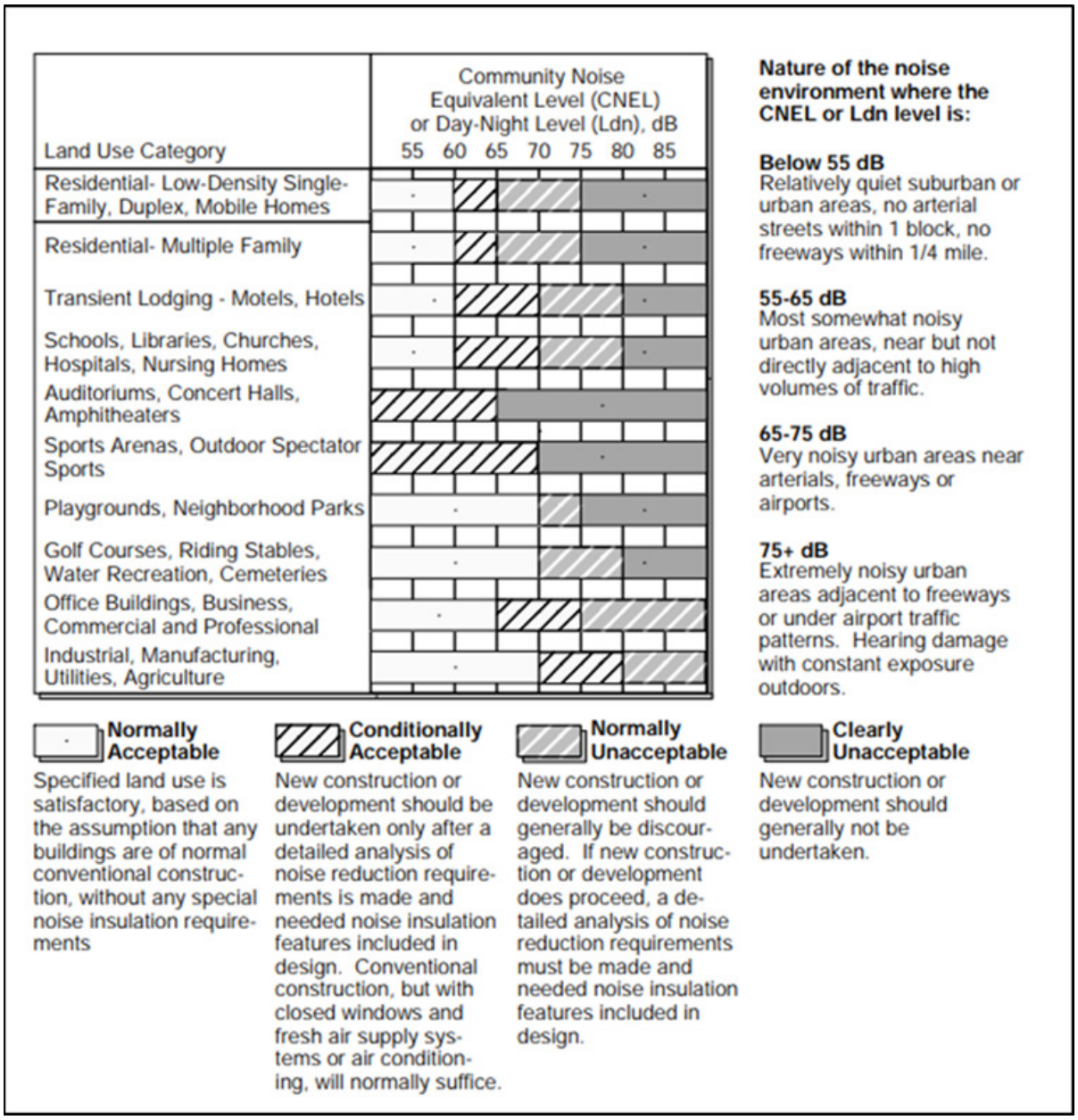
4. Noise Policy and Impact Criteria

Various noise standards and regulations exist at the city, state, and federal level that could potentially be applied to this Project, as described below.

4.1 City of Brea Noise Policy

The City of Brea General Plan has a section on noise under the Public Safety Chapter which includes a noise/land use compatibility matrix, as shown in Table 2 below. This matrix outlines acceptable noise levels for certain types of new construction, using the 24 hours noise metric CNEL and is used primarily for assessing appropriate noise levels for future developments.

Table 2. City of Brea, Noise/Land Use Compatibility Matrix



Source: Brea General Plan,2003, Noise, Figure PS-6

The City of Brea Municipal Code addresses construction noise in Chapter 8.20 - Noise Control. The exterior noise standard is provided under section 8.20.050, as shown below:

> *A. The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:*
>
> **Table 3. City of Brea Exterior Noise Standard:**

Noise Zone	***Noise Level***	***Time Period***
1	*55 dB(A)*	*7:00 a.m. – 10:00 p.m.*
1	*50 dB(A)*	*10:00 p.m. – 7:00 a.m.*
In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).		

> *B. It shall be unlawful for any person at any location within the city to create any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:*
>
> 1. *The noise standard for a cumulative period of more than 30 minutes in any hour; or*
> 2. *The noise standard plus five (5) dB(A) for a cumulative period of more than 15 minutes in any hour; or*
> 3. *The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or*
> 4. *The noise standards plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or*
> 5. *The noise standard plus twenty (20) dB(A) for any period of time.*
>
> *C. In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.*

Construction noise is specifically exempted under sub-section 8.20.070; part E, of the noise control code, as shown below:

> *The following activities shall be exempted from the provisions of this chapter:*
> *E. Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.*

As provided above, construction noise is exempt from City noise standards so long as construction activity is restricted to daytime hours on Weekdays and Saturday.

Neither the noise section of the City of Brea General Plan nor the Noise Chapter of the Municipal Code specifically offers potential noise impacts for traffic noise on existing land uses.

4.2 County of Orange Noise Policy

The County of Orange Noise Ordinance.is provided under The Codified Ordinances of the County of Orange, Title 4, Division 6 – Noise Control. Section 4-6-5 of this code provides the Exterior Noise Standard and Section 4-6-7 of this code provides the Special Provisions (and exemptions), which are essentially identical to both the exterior noise standard and construction noise exemption in the City of Brea Municipal Code. However, the County of Orange noise policy only applies to developed unincorporated areas of the County. All sensitive receptors (residences) are within the boundaries of the incorporated City of Brea.

4.3 Federal Highway Administration and Caltrans Noise Policy

The FHWA and Caltrans both have highway noise policies that define noise abatement criteria for proposed Federal or Federal-aid highway projects. These policies identify noise abatement criteria for various land uses based upon the future loudest hour of the day for the proposed project. For residential land uses, for example, a loudest hour traffic noise level of 66 dBA L_{eq} or greater would be evaluated for potential noise abatement. However, since this project is not a Federal or Federal-aid highway project, these policies do not strictly apply.

Traffic and Construction Vibration

Vibration from heavy trucks on typical roadways is rarely perceptible beyond about 40 feet from the centerline of the closest lane (Caltrans Transportation and Construction Vibration Manual [2020]), but construction activity can generate higher vibration levels that can potentially produce human annoyance or even potential architectural or structural damage. The Caltrans guidance manual for construction and transportation vibration provides impact thresholds for both annoyance and potential damage from construction vibration, as reported in Tables 4 and 5 below, respectively. Both are expressed in term of Peak Particle Velocity (PPV) as measured in inches/second (in/sec).

Table 4. Vibration Annoyance Criteria

Human Annoyance	Maximum PPV (in/sec)	
	Transient Source	Continuous Source
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment Source Caltrans 2020, Table 20.

Table 5. Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source Caltrans 2020, Table 19.

4.4 Project Noise Impact Thresholds of Significance

While neither FHWA/Caltrans noise abatement criteria nor City of Brea Land Use Compatibility guidance are directly applicable to the Project, it is recommended to recognize the Caltrans reference to the relationship between noise level change and perceived change in loudness (Table 1), to establish a (barely perceptible) 3 dBA increase in noise level as a potential noise impact.

The thresholds used in the noise and vibration analysis are summarized in Table 6.

Table 6. Recommended Noise and Vibration Impact Thresholds

Noise Source	Impact Threshold	Metric
Traffic Noise	>3 dBA increase in noise level for residential land uses and hospitals,	$L_{eq\ (1\ hour)}$ for loudest hour
Construction Noise	None if conducted during daytime hours (7:00 am and 7:00 pm)	Not applicable
Construction Vibration	0.3 in/sec for potential Damage 0.1 in/sec for potential annoyance	Peak Particle Velocity (PPV), inches per second

5. Noise Study Area

The noise study area for this noise and vibration analysis focuses on the southern end of the corridor, as there are no identified noise-sensitive land uses along the corridor north of the City of Brea City Line (approximately 2,000 feet north of W. Central Ave/State College Blvd; Figure 3). North of this point is industrial property, oil and gas drilling and storage activity, vehicle storage facilities, or undeveloped land, which are not considered noise-sensitive uses.

The noise study area includes entirely single-family homes on the northbound (east) side of Brea Boulevard, with 37 first-row homes within about 200 feet of the existing roadway. On the southbound (west) side of Brea Boulevard is Kindred Hospital of Brea with an associated outdoor activity area, the

Vintage Canyon senior apartment complex (with a few street-facing units), and a commercial strip mall (no noise-sensitive activities).

6. Noise Measurements

Noise measurements were conducted in the noise study area on Wednesday, October 2, 2019. The purpose of the noise measurements was not to represent existing noise conditions, but rather to serve as a tool to validate the traffic noise model's accuracy. An American National Standards Institute (ANSI) Type 1 precision sound level meter (SLM) within its manufacturer's recommended calibration period was used for all measurements and all typically recommended noise measurement field procedures were observed. These included mounting the SLM on a tripod clear of acoustically reflecting or shielding surfaces, noting extraneous events that could potentially contaminate noise measurement, conducting pre- and post-measurement field calibrations, and properly documenting the entire measurement event. Table 6, below, presents a summary of the noise measurements conducted for the Project. Noise measurement field data sheets, photos of the noise measurement set-ups, and a sound level meter calibration certificate are on file and available upon request.

A map showing the noise study area and noise measurement locations is shown in Figure 4.

Table 7. Noise Measurement Summary

Measurement Data, October 2, 2019				Concurrent Traffic Counts*	
ID	**Description**	**Time**	**L_{eq}**	**Northbound**	**Southbound**
LT-1	Kindred Hospital	09:52-13:32	61.2	--	--
ST-2	Northeast Corner of Brea Blvd. and Canyon Country Rd.	11:05-11:26	66.8	90/2/2	45/1/0
ST-3	Apartment Building Exterior	13:02-13:21	65.4	85/0/4	50/0/15

Notes:
* Traffic counts in autos and light trucks/medium trucks/heavy trucks.
Concurrent traffic counts were completed for short-term noise measurements only

7. Predicted Existing and Future Traffic Noise

7.1 Noise Modeling Procedures

Traffic noise modeling was conducted using the FHWA Traffic Noise Model (TNM) version 2.5, which is the most current version available at the time of the analysis, and which remains the current version authorized for use by FHWA. The TNM model runs developed for this Project included project roadways, representative receiver locations, and noise barriers to represent existing walls and structures. Each of the roadway segments include roadway and traffic attributes including roadway width and pavement type and hourly traffic volumes for autos, medium trucks and heavy trucks with average vehicle speeds for each.

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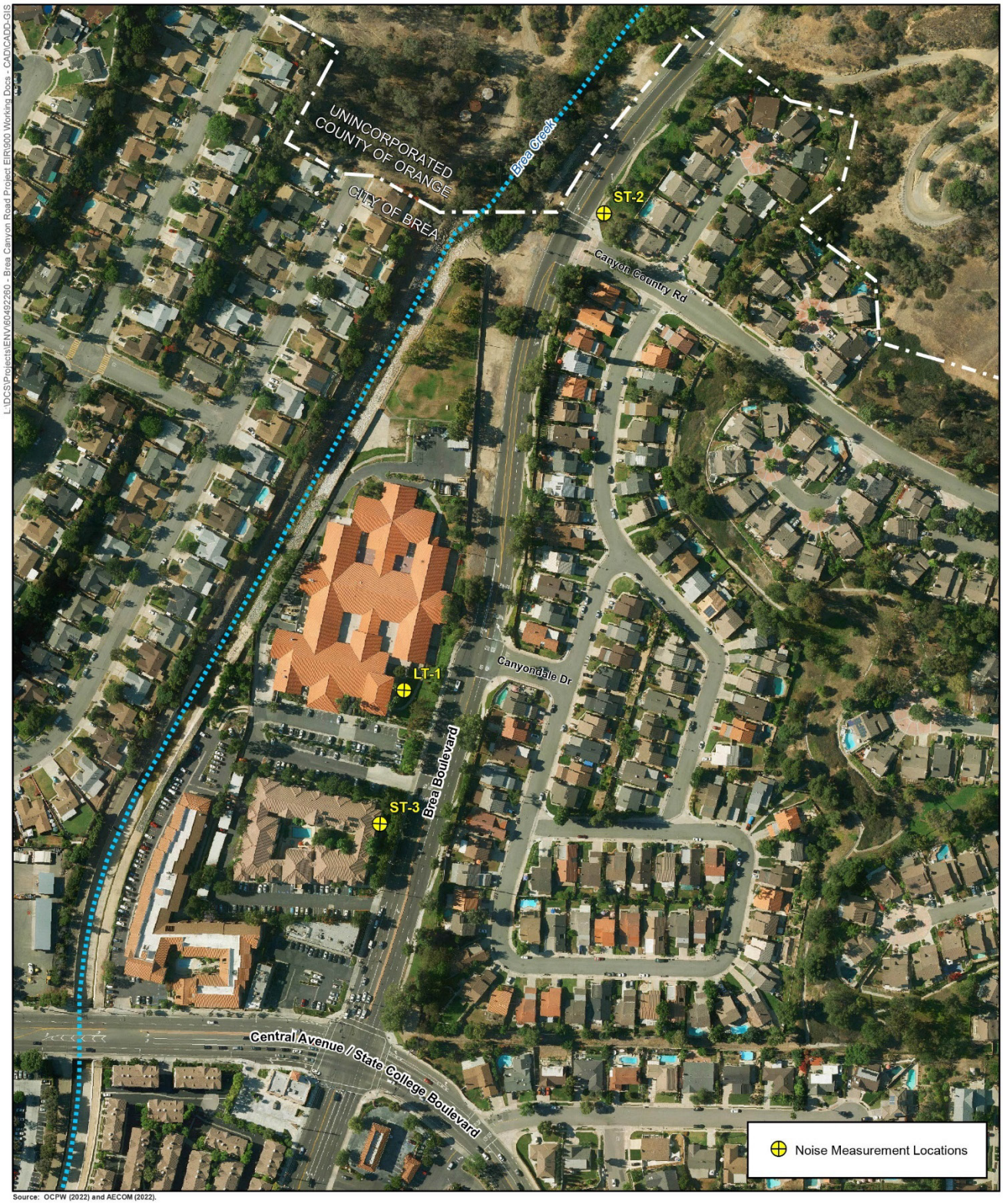

Figure 4
Noise Measurement Locations

Brea Boulevard Corridor Improvement Project

7.2 Noise Model Validation

Traffic noise model validation is the process of testing the accuracy of each modeled area by comparing the actual measured noise level to the predicted levels for traffic conditions observed during the noise measurement (typically from traffic counts videotaped during the noise measurements). Traffic noise models are generally considered to be validated if the measured and predicted noise levels are within a 3 dBA margin of error. All three noise measurement locations were modeled in TNM validation runs and each was validated within the acceptable 3 dBA margin of error, as summarized in Table 8.

Table 8. Traffic Noise Model Validation Summary

Measurement Location	Measured (L_{eq}, dBA)	Predicted (L_{eq}, dBA)	Predicted – Measured	Result
LT-1	61.2	61.4	0.2	Validated
ST-2	66.8	64.8	2.0	Validated
ST-3	65.4	63.4	2.0	Validated

7.3 Project Traffic and Roadway Inputs for Traffic Prediction

Traffic data for the TNM data inputs were developed from project traffic projections for peak hour traffic (the traffic volumes for the busiest hour of the day) to simulate loudest hour traffic levels, as provided in Table 9. Peak traffic was developed for each of the three unique roadway segments within the noise study area: Brea Boulevard from Central Avenue to Canyondale Drive, Canyondale Drive to Canyon Country Road, and Canyon Country Road to Tonner Canyon Road, both for northbound and southbound, for the existing am and pm peak. Traffic was not modeled for Canyondale Drive or Canyon Country Road, as the traffic volumes for these roadways were much lower (2% to 4% of traffic volume on Brea Boulevard, respectively), and would not have made a significant contribution to predicted noise levels.

TNM runs were developed for two scenarios, with varying traffic and roadway configurations for each, as noted below in Table 10.

Table 9. Project Traffic Volumes, Peak Hour

Existing 2019 Peak Hour	**Northbound**				**Southbound**			
Roadway	**Total**	**Autos**	**MT**	**HT**	**Total**	**Autos**	**MT**	**HT**
Brea Boulevard (Central Ave. to Canyondale Dr.)	472	463	5	5	1,490	1,461	15	15
Brea Boulevard (Canyondale Dr. to Canyon Country Rd.)	453	444	5	5	1,890	1,409	15	15
Brea Boulevard (Canyon Country Rd. to Tonner Canyon Rd.)	458	449	5	5	1,853	1,368	14	14
Future 2045 Build Peak	***Northbound***				***Southbound***			
Roadway	***Total***	***Autos***	***MT***	***HT***	***Total***	***Autos***	***MT***	***HT***
Brea Boulevard (Central Ave. to Canyondale Dr.)	713	699	8	8	1,915	1,877	20	20
Brea Boulevard (Canyondale Dr. to Canyon Country Rd.)	741	727	8	8	1,971	1,932	20	20
Brea Boulevard (Canyon Country Rd. to Tonner Canyon Rd.)	749	735	8	8	1,941	1,903	20	20

Source, AECOM 2020

Table 10. Modeled Roadway Configurations

Modeled Alternative	Roadway Configuration	Traffic Input
Existing/No-Build	Existing Roadways: South of Canyondale Dr., 4 lanes Canyondale Dr. to Canyon Country Rd., 3 lanes North of Canyon Country Rd., 2 lanes Average pavement type	2019 Peak Hour
Future Build	Future Roadways: 4 lanes throughout OGAC pavement type	2045 Peak Hour

7.4 Modeled Receiver Locations

The traffic noise model included modeled receiver locations for each first-row noise-sensitive land use within the noise study area as shown in Figure 5, including each first-row home along the northbound (east) side of Brea Boulevard and along the southbound (west) side of Brea Boulevard. In addition to roadways and receivers, existing masonry walls between roadways and receivers were also included in the model, although less substantial privacy fences were ignored in the model as these typically provide limited noise reduction.

Figure 5
Modeled Receiver Locations

7.5 Noise Model Results

Predicted noise levels for the modeled alternatives (Existing and Future Build), and the increase of Future Build over Existing are reported in Table 11.

Table 11. Predicted Noise levels, No Mitigation (L_{eq}, dBA)

Receiver	Land Use	Existing (2019)	Future (2045)	Increase
R01	SFR	62.5	64.1	1.6
R02	SFR	66.7	67.4	0.7
R03	SFR	58.2	58.6	0.4
R04	SFR	67.1	67.2	0.1
R05	SFR	66.4	66.5	0.1
R06	SFR	66.5	66.7	0.2
R07	SFR	65.4	66.2	0.8
R08	SFR	65.8	66.6	0.8
R09	SFR	68.4	68.7	0.3
R10	SFR	68.4	68.7	0.3
R11	SFR	69.1	69.3	0.2
R12	SFR	68.0	68.1	0.1
R13	SFR	68.3	68.5	0.2
R14	SFR	68.3	68.4	0.1
R15	Park	66.8	66.5	-0.3
R16	SFR	68.5	68.6	0.1
R17	Park	62.7	62.5	-0.2
R18	SFR	68.0	68.0	0.0
R19	SFR	67.7	67.7	0.0
R20	SFR	67.3	67.3	0.0
R21	SFR	67.6	67.5	-0.1
R22	SFR	67.6	67.5	-0.1
R23	SFR	68.5	68.5	0.0
R24	SFR	68.3	68.3	0.0
R25	SFR	69.0	69.0	0.0
R26	SFR	64.3	64.6	0.3
R27	SFR	62.9	63.3	0.4
R28	SFR	64.1	64.4	0.3
R29	SFR	66.6	66.5	-0.1
R30	SFR	65.0	65.0	0.0

Receiver	Land Use	Existing (2019)	Future (2045)	Increase
R31	SFR	66.7	66.6	-0.1
R32	SFR	66.2	66.2	0.0
R33	SFR	67.5	67.7	0.2
R34	SFR	66.6	66.8	0.2
R35	SFR	66.4	66.6	0.2
R36	SFR	65.6	65.9	0.3
R37	SFR	62.5	62.9	0.4
R38	Hospital	66.6	66.3	-0.3
R39	MFR	68.7	68.4	-0.3
Average	--	66.9	67.1	0.2

Note:
For Existing conditions TNM "average" pavement type was used.
For future (2045) conditions TNM OGAC pavement was assumed.
SFR = single-family residence; MFR = multi-family residence.

8. Noise Impacts and Recommended Mitigation

8.1 Identified Noise Impacts

Of all analyzed receptors none were predicted to have future noise levels of 3 dBA or greater than existing noise levels, with predicted increases ranging from +1.6 to -0.3 dBA, with an average of 0.2 dBA increase. Therefore, no noise impacts are predicted to exist.

8.2 Recommended Noise Mitigation

Since all noise impacts are predicted to be less than significant, no noise mitigation is recommended.

9. Construction Noise and Vibration

9.1 Construction Noise

Roadway construction is part of the Project and could last for as long as 5 years, although only a portion of that activity would take place in proximity to noise-sensitive receivers in the noise study area. A variety of construction equipment will be used, as identified in Table 12, along with typical noise levels and duty cycles (percent of time during the workday that it is in use) for each. The actual noise level at any given receiver location would depend on the type and number of equipment being used that the construction task and the distance between the construction activity. There will also be four construction staging/laydown areas where material and equipment will be stored, and other activities will take place. The southern most of these staging areas will be located in the noise study area, in an unpaved area on the west side of Brea Boulevard, west of the existing traffic signal at Canyon Country Road.

Table 12. Construction Equipment and Typical Noise Levels

Construction Equipment	Max Noise Level Lmax @ 50 ft. (dBA)	Acoustical Usage factors (%)	Equivalent Level L_{eq} @ 50 ft. (dBA)
Crane	81	16	73
Excavator	81	40	77
Backhoes	78	40	74
Concrete Breaker (jackhammer)	89	20	82
Dump or Haul Trucks	76	40	72
Pile Driver/Drill	101	20	94
Drill Rigs	80	20	73
Asphalt-Concrete (AC) Paver	77	50	74
AC Grinder (Concrete saw)	90	20	83
Redi-Mix Truck/Pumps	81	20	74
Compactors (Vibratory Steel Drum)	83	20	76
Dozer	82	40	78
Motor Grader	85	40	81
Water Truck (dump truck)	76	40	72
Concrete Saw Cutter	90	20	83
Handheld Jack Hammers	89	20	82
Core Drills (rock drills)	81	20	74
Water Pump	81	50	78

Source: FHWA Roadway Construction Noise Model, User Manual, Table 1 (Measured values).

Noise levels due to construction activity at most noise-sensitive receiver locations in the noise study area would probably range from the existing daytime ambient level (50-60 dBA) when not much construction activity is occurring nearby, to a temporary but substantially higher level (70-90 dBA) if multiple pieces of equipment were operating in proximity to the receiver. However, there would technically be no noise impacts associated with the construction activity if construction activity were limited to daytime periods between 7 am and 7 pm (exempt from City noise standards). It should be noted that prolonged exposure to construction noise could generate complaints by neighbors, especially if the activity persists for many weeks and months.

Construction noise is not regulated by the City of Brea as long as it is limited to daytime hours of 7:00 am to 7:00 pm Monday through Saturday However, due to bridge replacement-related work construction will result in periodic full closure of Brea Boulevard from north of Canyon Country Road to Tonner Canyon Road from Friday at 8:00 pm to Monday at 5:00 am. During these times (up to a maximum 26 weekends with the full roadway closure), activities would occur outside the normal hours

of construction, as crews will work extended hours, night shifts, and weekends. Two bridges are within a sufficient distance from noise-sensitive receivers in the City of Brea such that noise from activities occurring outside the normal hours of construction could be audible; these are Bridge 1 (approximately 200 feet from the nearest receiver locations [e.g., R01, R02, etc.]) and Bridge 2 (approximately 1,000 feet from the nearest receiver locations). The types of bridge-related construction activities that could occur outside the normal hours include: abutment excavation (requiring use of an excavator or backhoe); bridge demolition (requiring excavators, water trucks, loaders, and dump or haul trucks for debris); cast-in-drilled-hole (CIDH) installation for abutments and associated wingwalls (requiring use of drill rig, skid steer or small loader, crane, and concrete trucks/concrete pump trucks); etc. As mentioned above, the simultaneous operation of multiple pieces of equipment could likely result in temporary noise levels of 70-90 dBA at a distance of 50 feet. Using a simple noise attenuation model (i.e., straight line, not taking into account any topographic features or vegetation, etc., that could provide natural shielding) of 6 dBA reduction per doubling of distance from a noise source, the noise level of 90 dBA at 50 feet would attenuate to approximately 78 dBA at 200 feet (representative of Bridge 1 construction to nearest receiver locations) or approximately 66 dBA at 800 feet. Thus, nighttime construction activities (particularly those occurring in the vicinity of Bridge 1) would be above the City's nighttime noise standard of 50 dBA for a number of noise-sensitive receivers in the City of Brea, as well as any construction activities on Sundays, and would represent a significant noise-related impact.

It should be noted that these instances would be infrequent (i.e., a maximum of 26 weekends, which is the total for work required at all three bridges) and would only be associated with certain activities tied to the bridge replacement-related work (e.g., abutment excavation, bridge demolition, CIDH installation, etc.). Other major bridge activities generating noise would occur during the daytime of the full closure, such as temporary shoring activities during initial bridge demolition phases (prior to opening to traffic) and the setting of precast concrete girders. The setting of the girders typically requires a larger hydraulic crane (220-ton to 300-ton) with outriggers. Nevertheless, the infrequent construction-related noise of the Project occurring over these weekends (between the hours of 7:00 pm and 7:00 am and on Sundays) would be considered a significant noise-related impact.

9.2 Recommended Construction Noise Mitigation

The following mitigation measures are recommended to help reduce construction-related noise:

N-1 The construction contractor shall ensure that all motorized equipment includes original manufacturers noise control systems, including mufflers and shielding, in good working order and shall shut off idling equipment when not in use.

N-2 Prior to any weekend construction at Bridges 1 or 2 that would occur between the hours of 7:00pm and 7:00am, and any time on Sunday, OC Public Works shall retain the assistance of an experienced noise control engineer to consult with the construction contractor in identifying and determining appropriate and feasible noise barrier systems and their proper placement during construction. In order for acoustical noise barriers to be effective in reducing noise levels, they must be made of substantial construction (e.g., ½ inch thick plywood, proprietary/vendor supplied systems, etc.), with no gaps, and completely block

line of sight between noise source and receptor. Because nearest noise-sensitive receptors are elevated relative to bridge locations, the experienced noise control engineer, in coordination with OC Public Works and the construction contractor, shall determine if a wall(s) of feasible height and placement can be effectively implemented at these locations; if effective implementation (i.e., continuous line of sight to residences blocked) is feasible, OC Public Works shall ensure the recommended temporary acoustical noise barrier(s) are installed. Additionally, prior to any weekend construction at Bridges 1 or 2 that would occur between the hours of 7:00pm and 7:00am, and any time on Sunday, OC Public Works shall notify all residences within 1,000 feet of the bridge(s) when noise during these times is scheduled to occur.

9.3 Construction Vibration

The types of vibration-generating construction equipment likely to be used on the Project, and their associated reference vibration levels (in peak particle velocity in inches/second) are listed in Table 12.

Table 12. Construction Equipment Reference Vibration Levels

Equipment	Reference PPV at 25 ft. (in/sec)
Vibratory roller	0.210
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Caltrans 2020, Table 18

Predicted vibration levels at specific distance from the equipment listed in Table 12 can be calculated using the following equation:

$$PPV_{Equipment} = PPV_{Ref} (25/D)^n \text{ (in/sec)}$$

Where:

PPV_{Ref} = *reference PPV at 25 ft.*
D = *distance from equipment to the receiver in ft.*
n = *1.1 (the value related to the attenuation rate through ground)*

PPV values were calculated for the closest structure in three different areas nearest to the construction area. Calculations were made assuming the use of a vibratory roller, which has the highest reference vibration value of the equipment listed in Table 12. The results of these calculations are presented in Table 13.

Table 13. Predicted Construction Vibration Values and Impacts

Vibration Receptors	Closest receptor distance (feet)	Reference PPV at 25 feet (in./sec.)	Calculated PPV at receptor (in./sec.)	Annoyance Threshold (in./sec.)	Damage Threshold (in./sec.)	Impact
Hospital	60	0.21	0.080	0.1	0.3	none
Homes, Canondale to Canyon Country	60	0.21	0.080	0.1	0.3	none
Homes, north of Canyon Country	65	0.21	0.073	0.1	0.3	none

Reference PPV used is for "vibratory roller", with the highest reference level listed, other equipment types would be lower.

As indicated in Table 13, predicted construction vibration levels are less than the significance threshold for both potential annoyance and potential damage.

10. Summary and Conclusions

As discussed in previous sections, predicted future noise levels using OGAC would not produce noise level of greater than 3 dBA above current noise levels, so operational noise impacts would be considered less than significant.

Vibration from roadway traffic rarely results in perceptible vibration beyond about 40 feet and no sensitive receptors are within this distance. Vibration from construction activity was analyzed and found to be less than significant.

Construction noise is not regulated by the City of Brea as long as it is limited to daytime hours of 7:00 am to 7:00 pm Monday through Saturday. However, due to bridge replacement-related work, construction will require activities to occur outside these hours, Nighttime construction activities (particularly those occurring in the vicinity of Bridge 1) would be above the City's nighttime noise standard of 50 dBA for a number of noise-sensitive receivers in the City of Brea, as well as any construction activities on Sundays, and would represent a significant noise-related impact. Feasible mitigation measures are recommended, which could result in noise reductions up to 5 to 10 dBA for some sound sources, but would not be sufficient to reduce noise levels to below City's nighttime noise standard of 50 dBA. Thus, the infrequent construction-related noise of the Project occurring over these weekends (between the hours of 7:00 pm and 7:00 am and on Sundays) would be considered an unavoidable significant impact.

11. References

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APPENDIX O
TRAFFIC IMPACT ANALYSIS REPORT

TRAFFIC IMPACT ANALYSIS REPORT

BREA BOULEVARD CORRIDOR IMPROVEMENT PROJECT

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ACRONYMS AND ABBREVIATIONS

ADT	Average Daily Traffic
AADT	Annual Average Daily Traffic
Caltrans	California Department of Transportation
CMP	Congestion Management Program
HCM	Highway Capacity Manual
ICU	Intersection Capacity Utilization
ITE	Institute of Transportation Engineers
LOS	Level of Service
MPAH	Master Plan of Arterial Highways
Mph	Miles per Hour
OCTA	Orange County Transportation Authority
OCTAM	Orange County Traffic Analysis Model
PCE	Passenger Car Equivalent
s/veh	Seconds per Vehicle
v/c	Volume to Capacity
vph	Vehicles per Hour
veh/sec	Vehicles per Second
vpd	Vehicles per Day
VMT	Vehicles Miles Traveled

1.0 INTRODUCTION

1.1 STUDY PURPOSE

Orange County Public Works (OC Public Works) has identified the need to widen Brea Boulevard consistent with the Orange County Transportation Authority (OCTA) Master Plan of Arterial Highways (MPAH). The Brea Boulevard Corridor (corridor) is located within the City of Brea and unincorporated Orange County, from Central Avenue/N. State College Boulevard to the State Route 57 (SR-57) southbound on-ramp approximately 1,700 feet northeast of Tonner Canyon Road, a total length of approximately 8,800 linear feet or 1.7 miles.

The Brea Boulevard Corridor Improvement Project (Project) involves widening Brea Boulevard from two to four lanes (two lanes each direction) between Canyondale Drive and the northern end of the corridor (approximately 1.5-miles) and associated improvements. The purpose of this Traffic Impact Analysis Report (report) is to identify and document potential traffic impacts related to implementation of the Project within the context of Existing, Project Construction, and Future Buildout Conditions.

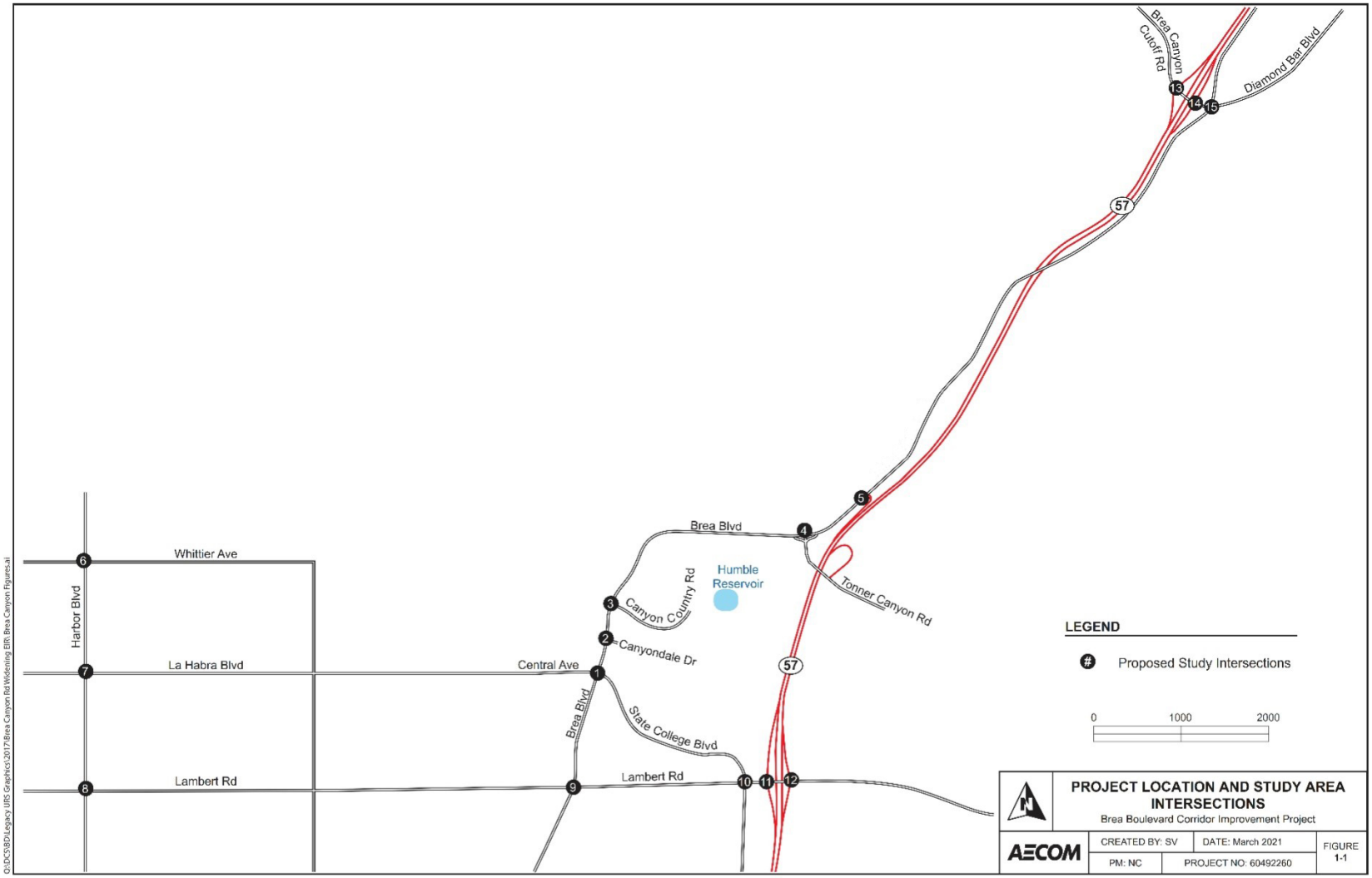
1.2 STUDY AREA

Figure 1-1 shows the project area in the context of the regional circulation system. In consultation with OC Public Works staff, the focus of the report's study area was defined to encompass the 1.7-mile corridor and five key study intersections within the corridor:

1. Brea Boulevard/Central Avenue - N. State College Boulevard (City of Brea; Signalized)
2. Brea Boulevard/Canyondale Drive (City of Brea; Unsignalized)
3. Brea Boulevard/Canyon Country Road (City of Brea; Signalized)
4. Brea Boulevard/Tonner Canyon Road (County of Orange; Unsignalized)
5. Brea Boulevard/SR-57 SB On-Ramp (County of Orange; Unsignalized)

The report's study area also includes an additional ten (10) intersections outside of the corridor, where there is potential for short-term traffic disruptions related to construction detours and associated shifts in travel demands due to Project construction.

Figure 1-1
Project Location and Study Area Intersections



Source: AECOM

During Project construction, planned closures of Brea Boulevard will potentially result in through traffic seeking alternate travel routes. The two adjacent facilities that can provide alternate travel routes are Harbor Boulevard to the west and the SR-57 freeway to the east. The following ten additional intersections were evaluated for impact when short duration and non-recurring detours are needed:

6. Harbor Boulevard / Whittier Avenue (City of La Habra; Signalized)
7. Harbor Boulevard / La Habra Boulevard (City of La Habra; Signalized)
8. Harbor Boulevard / Lambert Road (City of La Habra/City of Fullerton; Signalized)
9. Brea Boulevard / Lambert Road (City of Brea; Signalized)
10. State College Boulevard / Lambert Road (City of Brea; Signalized)
11. SR-57 SB Ramps / Lambert Road (City of Brea; Signalized)
12. SR-57 NB Ramps / Lambert Road (City of Brea; Signalized)
13. SR-57 SB Ramps / Brea Canyon Cutoff Road (City of Diamond Bar; Signalized)
14. SR-57 NB Ramps / S Diamond Bar Boulevard (City of Diamond Bar; Signalized)
15. Brea Boulevard / Diamond Bar Boulevard (City of Diamond Bar; Signalized)

Figure 1-2 shows existing lane geometrics and traffic control at the five key study intersections and at the 10 additional intersections to be evaluated for when short duration and non-recurring detours are needed.

1.3 STUDY ROADWAY SEGMENTS

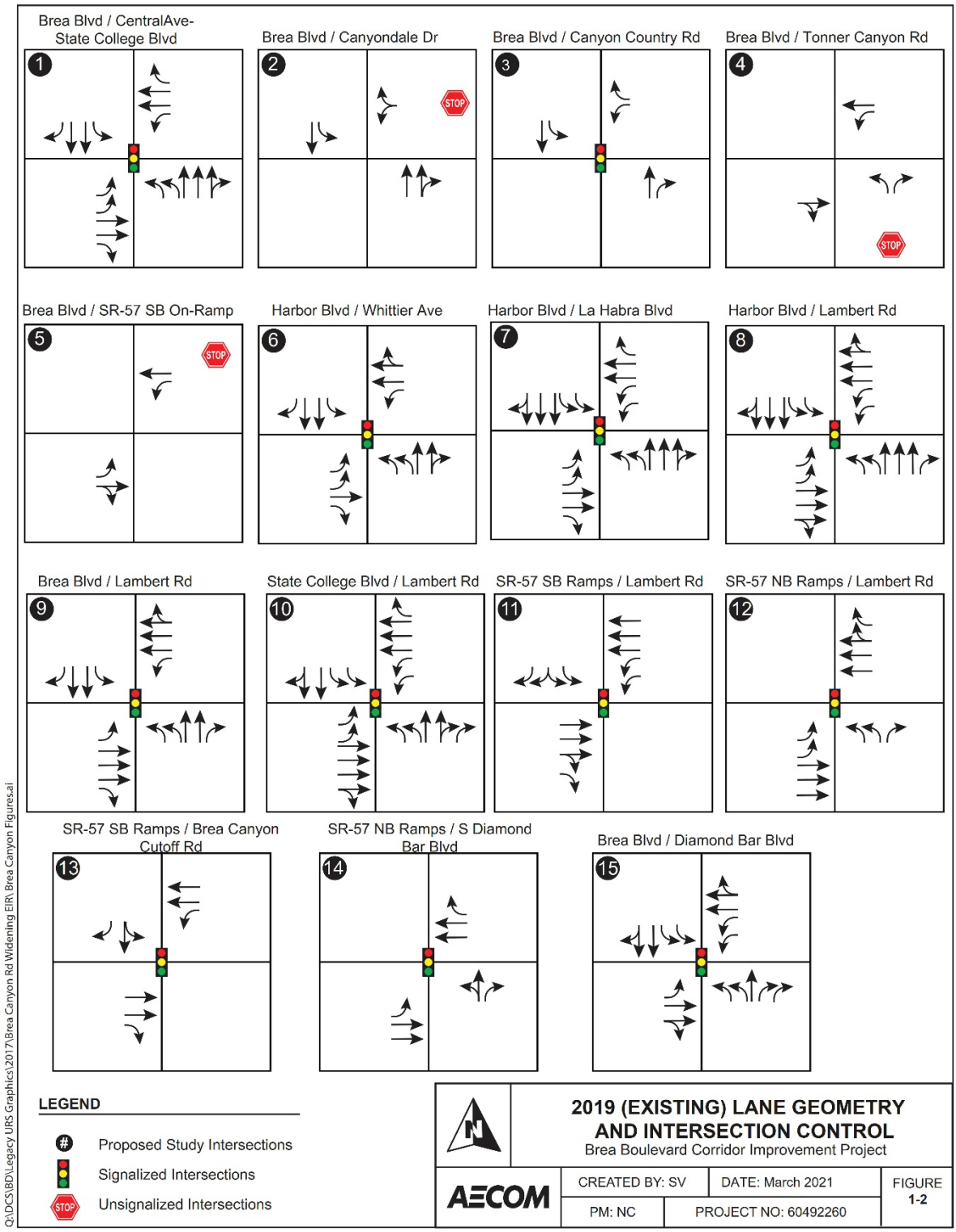
The following seven roadway segments were analyzed:

1. Brea Boulevard between Central Avenue - N. State College Blvd and Canyondale Drive.
2. Brea Boulevard between Canyon Country Road and Tonner Canyon Road
3. Brea Boulevard between Tonner Canyon Road and SR-57 SB On-Ramp
4. Brea Boulevard north of SR-57 SB On-Ramp
5. Tonner Canyon Road east of Brea Boulevard
6. Canyon Country Road east of Brea Boulevard
7. Canyondale Drive east of Brea Boulevard

The following three roadway segments were evaluated for impact when short duration and non-recurring detours are needed:

8. Lambert Road between Brea Boulevard and Harbor Boulevard
9. Harbor Boulevard between Lambert Road and La Habra Avenue
10. SR-57 between Lambert Road and S. Diamond Bar Boulevard

Figure 1-2
2019 (Existing) Lane Geometry and Intersection Control



Source: AECOM

1.4 TRAFFIC ANALYSIS SCENARIOS EVALUATED

The following scenarios were analyzed as a part of this report:

- **2019 (Existing) Conditions** – Used to establish the current level of traffic operating conditions within the study area.
- **2019 Plus Project Conditions** – Represents the existing year traffic conditions, plus implementation of the Project.
- **No Project Construction (2028) Conditions** – Represents the baseline traffic conditions at year 2028 without Project construction.
- **Project Construction (2028) Conditions** – Represents the baseline traffic conditions at year 2028 plus Project construction (With and Without Detour) traffic.
- **Future Buildout (2045) No Project Conditions** – Represents Future Buildout without Project improvement conditions.
- **Future Buildout (2045) Plus Project Conditions** – Represents future Buildout plus Project improvement conditions.

1.5 REPORT ORGANIZATION

This report is organized into ten chapters beginning with this Introduction chapter and followed by the various elements of this report:

- **Chapter 1.0, Introduction** – This chapter describes the report purpose, area, and background for the Project.
- **Chapter 2.0, Analysis Methodology** – This chapter describes the methodologies and standards used to analyze intersection and roadway traffic conditions.
- **Chapter 3.0, 2019 (Existing) Conditions –** This chapter describes the existing traffic network within the study area and provides analysis results for existing traffic conditions.
- **Chapter 4.0, Project Environmental Setting –** This chapter describes the Projects environmental setting.
- **Chapter 5.0, 2019 Plus Project Conditions** - This chapter describes existing plus Project conditions which is an analysis of 2019 (Existing) travel demands with the completed Project.
- **Chapter 6.0, No Project Construction (2028) Conditions** - This chapter describes baseline traffic conditions for an assumed peak construction activity year of 2028, before adding Project construction activity.
- **Chapter 7.0, Project Construction (2028) Conditions –** This chapter describes Project construction activity and phasing and provides the analysis results for the Project Construction Year Traffic conditions with the Project-related construction trip generation (With and Without Detour).

- **Chapter 8.0, Future Buildout (2045) No Project Conditions -** This chapter describes Future Buildout (2045) without Project Conditions based on the future buildout traffic projections.
- **Chapter 9.0, Future Buildout (2045) Plus Project Conditions -** This chapter describes Future Buildout (2045) with Project Conditions based on the future buildout traffic projections.
- **Chapter 10.0, Summary, VMT Assessment, Mitigation Measures, and Conclusions –** Summarizes and outlines the overall report results and findings, provides a separate vehicle miles traveled assessment, and provides mitigation measures.

2.0 ANALYSIS METHODOLOGY

The traffic analyses conducted for this report was performed in accordance with County of Orange and City of Brea traffic study requirements. The study intersection and roadway segment analyses were conducted based on the following methodologies for each analysis type.

- City of Brea and Orange County signalized intersection Level of Service (LOS) - Intersection Capacity Utilization (ICU) methodology.[1] The City of Brea performance criteria incorporates a lane capacity of 1,700 vehicles per hour (vph), a clearance interval of 0.05, and a right-turn-on-red utilization factor of 0.75. Orange County uses the same ICU as the City, although the right-turn-on-red utilization factor of 0.75 only applies when it overlaps with an opposing left-turn.
- Signalized intersections under Caltrans' jurisdiction, LOS – Highway Capacity Manual (HCM), 6th Edition.
- Unsignalized intersections LOS – Highway Capacity Manual (HCM), 6th Edition.
- Arterial roadway segment LOS conducted using the capacities from the OCTA MPAH and the total number of through lanes.
- Freeway segment (Caltrans' jurisdiction), LOS – HCM, 7th Edition.
- For vehicle miles traveled (VMT) assessment, the OCTA's Orange County Traffic Analysis Model (OCTAM) VMT Tool (provided in the Scenario file model dashboard) was utilized using the full model stream provided by OCTA. All OCTAM model steps were run separately for each model run for both Future Buildout (2045) Plus Project Conditions and Future Buildout (2045) No Project Conditions models.

2.1 INTERSECTION LOS STANDARDS AND METHODOLOGY

LOS is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from A to F, with "A" representing the best traffic flow conditions and "F" representing poor conditions. LOS A indicates free-flowing traffic, and LOS F indicates substantial congestion with stop-and-go traffic and long delays at intersections. Table 2-1 provides descriptions of LOS for both signalized and unsignalized intersections.

[1] *Transportation Research Board (TRB), Circular 212 Planning Method,* 1980

Table 2-1
Intersection LOS Descriptions

LOS	Description of Operation	Signalized Intersection Volume to Capacity Ratio (v/c)	Unsignalized Intersection Average Delay (s/veh)
A	LOS A describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0.00 – 0.60	0 – 10
B	LOS B describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	0.61 – 0.70	> 10 – 15
C	LOS C describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	0.71 – 0.80	> 15 – 25
D	LOS D describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.	0.81 – 0.90	> 25 – 35
E	LOS E is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.	0.91 – 1.00	> 35 – 50
F	LOS F describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.	Above 1.00	> 50

LOS = Level of Service[2]

The intersection analyses were conducted using the ICU methodology's intersection capacity utilization ratio for the signalized study intersections and the HCM methodology for unsignalized intersections which defines LOS in terms of average delay (delay defined as the average of delays experienced for all approaches at an intersection). Both are based on vph. The LOS criteria used for these techniques are described below in the latter part of this chapter. The computerized analysis of intersection operations was performed using PTV Vistro analysis software, which calculates both ICU and HCM methodologies.

City of Brea Performance Criteria and Thresholds of Significance

The City of Brea's performance criteria is based on peak hour intersection volumes using ICU values for both AM and PM peak hour traffic at study intersections. As shown in the performance criteria, LOS "D" (ICU <= 0.90) for arterial intersections is the performance standard adopted by the City of Brea. For intersections under the City of Brea's jurisdiction, a project will have a significant impact if (a) the addition of Project traffic causes the LOS to drop to a LOS "E" or below. or (b) if the addition of Project traffic contributes 0.02 or more to the ICU of an intersection

[2] *Transportation Research Board (TRB), Circular 212 Planning Method,* 1980

that already operates at LOS "E" or worse without the Project traffic. The City of Brea performance criteria incorporates a lane capacity of 1,700 vph, a clearance interval of 0.05, and a right-turn-on-red utilization factor of 0.75.

Orange County Congestion Management Program (CMP) Thresholds of Significance

The Orange County Congestion Management Program (CMP) designates intersections to achieve LOS "E" or better (ICU not to exceed 1.00). The City of Brea has four CMP intersections, however none of those intersections are within the study area.

Caltrans Thresholds of Significance

Highway Capacity Manual (HCM), 6th Edition, methodology was used to evaluate intersections maintained by Caltrans. According to the Caltrans Traffic Impact Analysis Guidelines, "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities". Generally, two criteria must be met for Caltrans intersections to be considered significantly impacted. First, the LOS must be unacceptable i.e. LOS E or F. Secondly, the change in delay due to the project exceeds two seconds. If both criteria are met, the intersection is considered to have a significant impact and mitigation is required.

2.2 NON-FREEWAY ARTERIAL SEGMENT LOS STANDARDS AND METHODOLOGY - OCTA MPAH

Planning Criteria for Determining Arterial Highway Classifications

To evaluate the arterial classifications needed to serve current and future traffic conditions, certain criteria and assumptions are made regarding roadway capacities. The concept of capacity, and the relationship between capacity and traffic volumes is expressed by means of LOS. The LOS criteria from OCTA's MPAH are depicted on Figure 2-1.

Figure 2-1
Arterial Highways MPAH Capacity Values

Type of Arterial		Level of Service A	B	C	D	E	F	Assymetric Capacity / Added Lane C	D	E	F
8	Lanes Divided	45,000	52,500	60,000	67,500	75,000	--	7,500	8,400	9,400	--
6	Lanes Divided	33,900	39,400	45,000	50,600	56,300	--	7,500	8,400	9,400	--
4	Lanes Divided	22,500	26,300	30,000	33,800	37,500	--	7,500	8,400	9,400	--
2	Lanes Divided	9,000	12,000	15,000	20,000	22,000	--	--	--	--	--
4	Lanes Undivided	15,000	17,500	20,000	22,500	25,000	--	5,000	5,600	6,300	--
2	Lanes Undivided	7,500	8,800	10,000	11,300	12,500	--	5,000	5,600	6,300	--

Source: Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

These roadway capacities are approximate figures only, for use at the General Plan level. They are affected by such factors as intersections (numbers, spacing and configuration), degree of access control, roadway grades, design geometries (horizontal and vertical) alignment standards), sight distance, level of truck and bus traffic, and level of pedestrian and bicycle traffic. Average daily traffic (ADT) has historically been used by the County as a long-range planning tool to assist in determining arterial highway classification (number of through lanes) needed to meet traffic demand.

Freeway Arterial Segment LOS Methodology - Caltrans

For Caltrans freeway traffic impacts, HCM, 7th Edition (2022) was used, which includes a new procedure for evaluating systems of freeways. Figure 2-2 depicts a reproduction of Exhibit 12-39 from HCM 7th Edition that provides generalized LOS traffic volumes for four-, six-, and eight-lane freeways based on terrain type and the K (i.e., percent traffic expected during peak hour) and D (i.e., assumed ADT split between northbound vs. southbound lanes) factors. For the SR-57 segment (between Lambert Road and S. Diamond Bar Boulevard), a capacity of 205,100 vehicles per day was determined using the generalized traffic volume for an eight-lane freeway in rolling terrain, with conservatively assumed K-factor of 0.08 and an assumed D-factor of 0.5 (Figure 2-2). Since the No Project Construction ADT forecast for SR-57 (see Table 6-2) is more than 19 percent higher than the LOS E threshold, the forecast LOS is F.

Figure 2-2
Exhibit 12-39 From HCM: A Guide for Multimodal Mobility Analysis, 7th Edition (2022)

Highway Capacity Manual: A Guide for Multimodal Mobility Analysis

		Four-Lane Freeways				Six-Lane Freeways				Eight-Lane Freeways			
		LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
K-factor	D-factor	B	C	D	E	B	C	D	E	B	C	D	E
Level Terrain													
0.08	0.5	56.4	77.4	94.4	107.4	84.6	116.2	141.7	161.1	112.8	154.9	188.9	214.9
	0.6	51.3	70.4	85.9	97.7	76.9	105.6	128.8	146.5	102.5	140.8	171.7	195.3
	0.6	47.0	64.5	78.7	89.5	70.5	96.8	118.1	134.3	94.0	129.1	157.4	179.0
	0.7	43.4	59.6	72.7	82.6	65.1	89.4	109.0	124.0	86.8	119.1	145.3	165.3
0.09	0.5	50.1	68.8	84.0	95.5	75.2	103.3	125.9	143.2	100.3	137.7	167.9	191.0
	0.6	45.6	62.6	76.3	86.8	68.4	93.9	114.5	130.2	91.2	125.2	152.6	173.6
	0.6	41.8	57.4	70.0	79.6	62.7	86.0	104.9	119.4	83.6	114.7	139.9	159.2
	0.7	38.6	52.9	64.6	73.5	57.8	79.4	96.9	110.2	77.1	105.9	129.2	146.9
0.1	0.5	45.1	62.0	75.6	85.9	67.7	92.9	113.3	128.9	90.2	123.9	151.1	171.9
	0.6	41.0	56.3	68.7	78.1	61.5	84.5	103.0	117.2	82.0	112.6	137.4	156.3
	0.6	37.6	51.6	63.0	71.6	56.4	77.4	94.4	107.4	75.2	103.3	125.9	143.2
	0.7	34.7	47.7	58.1	66.1	52.1	71.5	87.2	99.2	69.4	95.3	116.2	132.2
0.11	0.5	41.0	56.3	68.7	78.1	61.5	84.5	103.0	117.2	82.0	112.6	137.4	156.3
	0.6	37.3	51.2	62.4	71.0	55.9	76.8	93.7	106.5	74.6	102.4	124.9	142.1
	0.6	34.2	46.9	57.2	65.1	51.3	70.4	85.9	97.7	68.4	93.9	114.5	130.2
	0.7	31.6	43.3	52.8	60.1	47.3	65.0	79.3	90.1	63.1	86.6	105.7	120.2
0.12	0.5	37.6	51.6	63.0	71.6	56.4	77.4	94.4	107.4	75.2	103.3	125.9	143.2
	0.6	34.2	46.9	57.2	65.1	51.3	70.4	85.9	97.7	68.4	93.9	114.5	130.2
	0.6	31.3	43.0	52.5	59.7	47.0	64.5	78.7	89.5	62.7	86.0	104.9	119.4
	0.7	28.9	39.7	48.4	55.1	43.4	59.6	72.7	82.6	57.8	79.4	96.9	110.2
Rolling Terrain													
0.08	0.5	53.8	73.9	90.2	102.5	80.8	110.9	135.2	153.8	107.7	147.8	180.3	205.1
	0.6	48.9	67.2	82.0	93.2	73.4	100.8	122.9	139.8	97.9	134.4	163.9	186.4
	0.6	44.9	61.6	75.1	85.5	67.3	92.4	112.7	128.2	89.7	123.2	150.3	170.9
	0.7	41.4	56.9	69.3	78.9	62.1	85.3	104.0	118.3	82.8	113.7	138.7	157.8
0.09	0.5	47.9	65.7	80.1	91.2	71.8	98.6	120.2	136.7	95.7	131.4	160.3	182.3
	0.6	43.5	59.7	72.9	82.9	65.3	89.6	109.3	124.3	87.0	119.5	145.7	165.7
	0.6	39.9	54.8	66.8	76.0	59.8	82.1	100.2	113.9	79.8	109.5	133.6	151.9
	0.7	36.8	50.5	61.6	70.1	55.2	75.8	92.5	105.2	73.6	101.1	123.3	140.2
0.1	0.5	43.1	59.1	72.1	82.0	64.6	88.7	108.2	123.1	86.1	118.3	144.2	164.1
	0.6	39.2	53.8	65.6	74.6	58.7	80.6	98.4	111.9	78.3	107.5	131.1	149.2
	0.6	35.9	49.3	60.1	68.4	53.8	73.9	90.2	102.5	71.8	98.6	120.2	136.7
	0.7	33.1	45.5	55.5	63.1	49.7	68.2	83.2	94.7	66.3	91.0	111.0	126.2
0.11	0.5	39.2	53.8	65.6	74.6	58.7	80.6	98.4	111.9	78.3	107.5	131.1	149.2
	0.6	35.6	48.9	59.6	67.8	53.4	73.3	89.4	101.7	71.2	97.7	119.2	135.6
	0.6	32.6	44.8	54.6	62.1	48.9	67.2	82.0	93.2	65.3	89.6	109.3	124.3
	0.7	30.1	41.4	50.4	57.4	45.2	62.0	75.7	86.1	60.2	82.7	100.9	114.7
0.12	0.5	35.9	49.3	60.1	68.4	53.8	73.9	90.2	102.5	71.8	98.6	120.2	136.7
	0.6	32.6	44.8	54.6	62.1	48.9	67.2	82.0	93.2	65.3	89.6	109.3	124.3
	0.6	29.9	41.1	50.1	57.0	44.9	61.6	75.1	85.5	59.8	82.1	100.2	113.9
	0.7	27.6	37.9	46.2	52.6	41.4	56.9	69.3	78.9	55.2	75.8	92.5	105.2

Source: Highway Capacity Manual 7th Edition, Exhibit 12-39, Using: 8 lanes, Rolling Terrain, K=0.08. D=0.50, LOS=E

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3.0 2019 (EXISTING) CONDITIONS

This chapter describes the existing roadway circulation system, study intersections and roadways segments, existing daily roadway and peak hour intersection traffic volume information, and LOS analysis results for 2019 (Existing) Conditions.

3.1 EXISTING ROADWAY NETWORK

Several regionally and locally significant roadways traverse the project area. The key roadways in the vicinity of the corridor are discussed below.

State Route 57 (SR-57) – The SR-57 begins near the City of Orange, where it meets the northwest–southeast Santa Ana Freeway (I-5) and the east–west Garden Grove Freeway (SR 22). From the south SR-57 proceeds northbound and enters Brea Canyon, the gap between the Chino Hills and Puente Hills. The freeway segment over Tonner Canyon provides one High Occupancy Vehicle (HOV) lane and 4 General Purpose (GP) lanes in each direction. The Annual Average Daily Traffic (AADT) volume on the segment by Tonner Canyon Road is 227,500 vehicles per day (vpd). AADT is the total amount of traffic in a year divided by 365 days. AADT is used on freeway facilities as there are many permanent count stations that collect traffic throughout the year. As such AADT averages weekend, holiday, and weekday traffic.

Brea Boulevard – Brea Boulevard is a two-lane, undivided highway (one lane in each direction) with portions of the roadway having no curb or gutter, and unpaved, earthen shoulders, and with other portions of the roadway improved with curb, gutter, and sidewalk. The posted speed limit is 55 miles per hour (MPH) in the unincorporated portion of the corridor, and 45 MPH in the City of Brea at the southern end of the corridor. The Average Daily Traffic (ADT) is 20,300 vpd on the segment between Tonner Canyon Road and SR-57 SB On-Ramp, 16,700 vpd between Canyon Country Road and Tonner Canyon, Road, and 18,000 vpd south of Canyon Country Road to Central Avenue-N State College Blvd. ADT is adjusted from data, as necessary, to reflect average weekday traffic.

Tonner Canyon Road – Tonner Canyon Road is a short east-west, two-lane local roadway that primarily serves as a connector of the northbound SR-57 Off Ramp to Brea Boulevard. There is no public access to the easterly segment of Tonner Canyon Road east of the northbound SR-57 Off Ramp. The ADT along Tonner Canyon Road is 3,350 vpd.

Canyon Country Road – Canyon Country Road, is an east-west, two-lane undivided local collector roadway that exclusively serves local residences on the east side of Brea Boulevard. There is an existing traffic signal at the T-intersection of Canyon Country Road and Brea Boulevard. The ADT is 1,250 vpd on the roadway segment just east of Brea Boulevard.

Canyondale Drive – Canyondale Drive, is a short east-west, two-lane divided local collector roadway that connects Brea Boulevard from the west and N. Evening Canyon Road to the east. Both westbound and eastbound lanes are separated by a raised landscaped median. The existing T-intersection of Canyondale Drive and Brea Boulevard is currently stop-controlled at Canyondale only and Brea Boulevard is uncontrolled. The ADT on the roadway segment just east of Brea Boulevard is 750 vpd.

3.2 KEY STUDY INTERSECTIONS

The five key study intersections shown in Table 3-1 have been identified based on the intersection locations that would potentially experience Project construction related traffic impacts. The existing lane geometry and intersection control are shown in Figure 1-2.

Table 3-1
Key Study Intersections

ID	Intersection	Jurisdiction
1	Brea Boulevard/Central Avenue - N. State College Boulevard	City of Brea
2	Brea Boulevard/Canyondale Drive	City of Brea
3	Brea Boulevard/Canyon Country Road	City of Brea
4	Brea Boulevard/Tonner Canyon Road	County of Orange
5	Brea Boulevard/SR-57 SB On-Ramp	County of Orange

3.3 STUDY ROADWAY SEGMENTS

In addition to the intersections shown in Table 3-1, the following study roadway segments shown in Table 3-2 had been identified for evaluation in this report based on consultation and coordination with OC Public Works and City of Brea Traffic Engineering staff.

Table 3-2
Study Roadway Segments

ID	Roadway Segments	Jurisdiction
1	Brea Boulevard between - Central Avenue - N. State College Boulevard and Canyondale Drive.	City of Brea
2	Brea Boulevard between – Canyon Country Road and Tonner Canyon Road	City of Brea & County of Orange
3	Brea Boulevard between – Tonner Canyon Road and SR-57 SB On-Ramp	County of Orange
4	Brea Boulevard north of –SR-57 SB On-Ramp	County of Orange
5	Tonner Canyon Road east of - Brea Boulevard	County of Orange
6	Canyon Country Road east of - Brea Boulevard	City of Brea
7	Canyondale Drive east of - Brea Boulevard	City of Brea

3.4 2019 (EXISTING) TRAFFIC VOLUME

The traffic data collected for the traffic analysis included 7:00 to 9:00 AM and 4:00 to 6:00 PM peak hour turning movement and ADT counts conducted during the second week of September in 2019. The dates for the traffic counts are representative of typical conditions in the study area. Figure 3-1 shows existing AM/PM peak hour traffic for the key study intersections and ADT volumes for the study area roadway segments. The AM/PM peak hour intersection turning movement and ADT counts are provided in Appendix A.

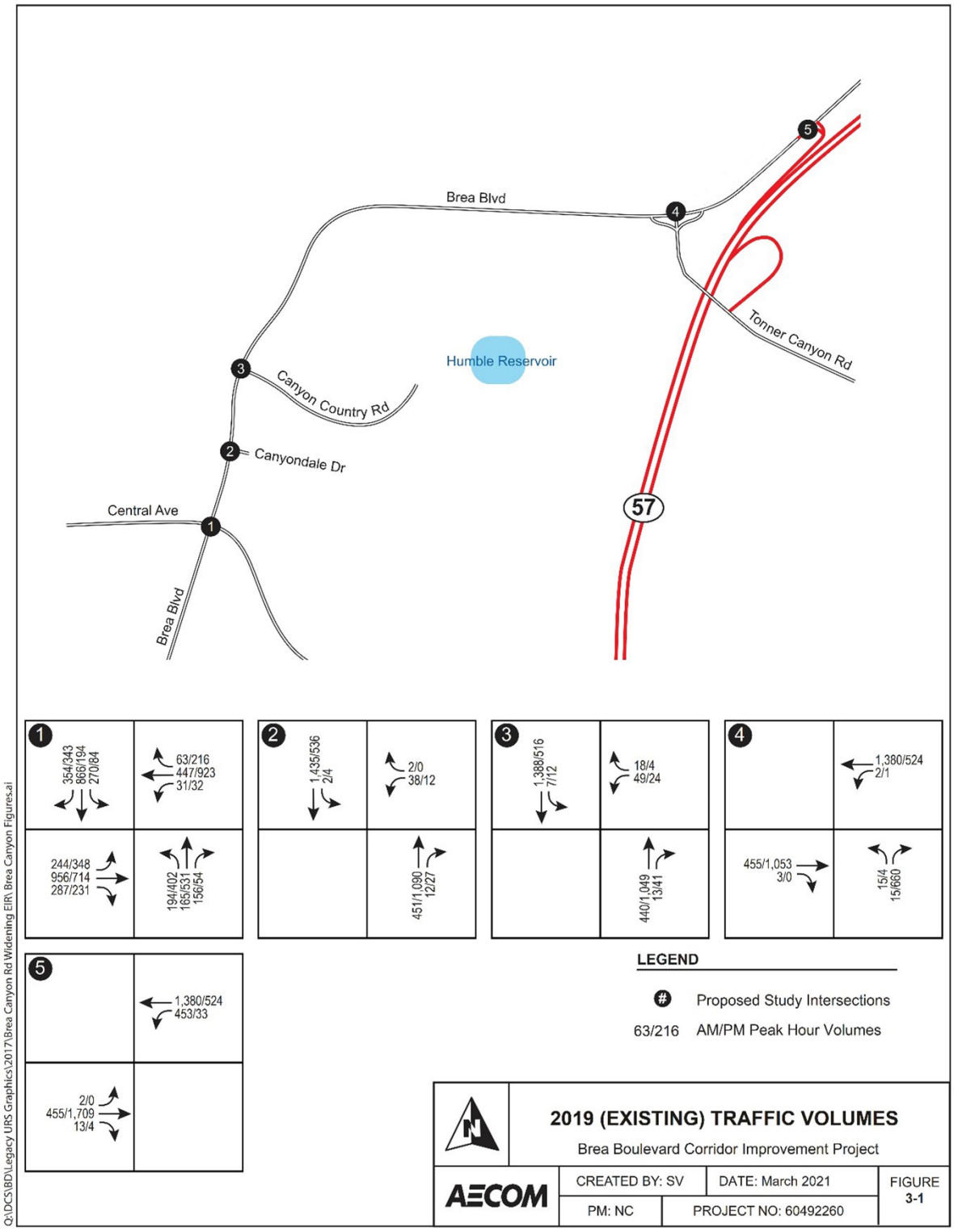
Traffic Analysis

LOS analyses under 2019 conditions were conducted using the methodologies described in Chapter 2.0. The intersection LOS analysis results are discussed below.

Intersection Analysis

Table 3-3 displays the intersection LOS and delay results for the study intersections under 2019 (Existing) Conditions. The detailed intersection LOS calculation worksheets for 2019 (Existing Conditions) are provided in Appendix B.

Figure 3-1
2019 (Existing) Traffic Volumes



Source: AECOM

Table 3-3
2019 (Existing) LOS Analysis

ID	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS
1	Brea Boulevard/Central Avenue - N. State College Boulevard	Signal (ICU)	0.76	C	0.77	C
2	Brea Boulevard/Canyondale Drive	STOP (HCM 6th)	33.3	D	36.3	**E**
3	Brea Boulevard/Canyon Country Road	Signal (ICU)	0.99	**E**	0.78	C
4	Brea Boulevard/Tonner Canyon Road	STOP (HCM 6th)	66.3	**F**	>300	**F**
5	Brea Boulevard / SR-57 SB On-Ramp	STOP (HCM 6th)	12.5	B	16.6	C

Source: AECOM

As shown in Table 3-3, two study intersections are currently operating at acceptable LOS D or better. The remaining three study intersections exceed LOSD. They are:

- Brea Boulevard/Canyondale Drive (PM Peak – LOS E)
- Brea Boulevard/Canyon Country Road (AM Peak – LOS E)
- Brea Boulevard/Tonner Canyon Road (AM/PM Peak – LOS F/F)

Roadway Segment Analysis

Table 3-4 displays the roadway segment analysis results for the study roadway segments under 2019 (Existing) Conditions.

Table 3-4
2019 (Existing) Roadway Segment LOS Analysis

ID	Roadway	Segment	Roadway Classification	Average Daily Traffic (ADT)	Capacity	V/C	LOS
1	Brea Boulevard	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	Primary	18,800	30,000	0.50	A
2	Brea Boulevard	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	Primary	16,700	10,000	1.34	**F**
3	Brea Boulevard	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	Primary	20,300	15,000	0.92	**E**
4	Brea Boulevard	Brea Blvd north of SR-57 SB On-Ramp	Primary	22,500	15,000	1.02	**F**
5	Tonner Canyon Road	Tonner Canyon Rd east of Brea Blvd	Primary	3,350	10,000	0.27	A
6	Canyon Country Road	Canyon Country Rd east of Brea Blvd	Collector	1,250	10,000	0.13	A
7	Canyondale Drive	Canyondale Dr east of Brea Blvd	Collector	750	10,000	0.08	A

Source: AECOM

V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

As shown in Table 3-4, all of the study roadway segments are currently operating at LOS A except for the following segments:

- Brea Boulevard – between Canyon Country Road and Tonner Canyon Road (LOS F)
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp (LOS E)
- Brea Boulevard – north of SR-57 SB On-Ramp (LOS F)

4.0 PROJECT ENVIRONMENTAL SETTING

4.1 PROJECT ENVIRONMENTAL SETTING AND EXISTING CONDITIONS

Brea Boulevard is a 30-foot-wide, two-lane, undivided highway (one lane in each direction) with portions of the roadway having no curb or gutter, and unpaved, earthen shoulders. Other portions of the roadway are improved with curb, gutter, and sidewalk. The posted speed limit is 55 miles per hour (MPH) in the unincorporated portion of the corridor, and 45 MPH in the City of Brea at the southern end of the corridor. Brea Boulevard has remained unchanged since the roadway was realigned to its present configuration between 1928 and 1930 with right-of-way (R/W) width that varies between 60 to 100 feet.

Source: AECOM 2020

Source: AECOM 2020

There are three bridges crossing Brea Creek within the corridor: a two span reinforced concrete slab bridge constructed circa 1920 and widened circa 1929 (Bridge 1 [#55C0121]), a two-span reinforced concrete T-beam bridge constructed circa 1930 (Bridge 2 [#55C0122]), and a three-span reinforced concrete T-beam bridge constructed circa 1939 (Bridge 3 [#55C0123]). In addition to the three bridges there are approximately thirteen existing culvert crossings (for drainage or utilities or both).

North of the corridor is an active oil field and natural open space within unincorporated Orange County. Much of this area is property owned by Cal Resources LLC and Brea Hills LLC. North of the eastern end of the corridor on property owned by Cal Resources LLC is a commercial vehicle storage facility for several lessees.

South and west of the corridor are the City of Brea and associated residential areas, with general commercial and public facility land uses. Immediately south of the middle stretch of the corridor are steep slopes containing additional oil field activity and the Humble Reservoir.

4.2 PROJECT PURPOSE, NEED, AND BENEFITS

Brea Boulevard presently meets the classification for a Collector Arterial Highway in the Orange County General Plan Transportation Element (2020), which should accommodate between 7,500 to 10,000 Average Daily Traffic (ADT, is the number of vehicles two-way passing a specific point in a 24-hour period). With traffic volumes for Brea Boulevard between 17,000 to 22,000 ADT as of November 4, 2019, the roadway should match the OCTA MPAH designation for a Primary Arterial Highway which is designed to accommodate approximately 30,000 ADT. Brea Boulevard will be widened from two to four lanes (two lanes each direction) with 12-foot width lanes, shoulders that will vary from 6-feet to 10-feet wide, and a median that is either 12-foot wide raised with landscaping, 6-foot wide with a concrete barrier, or striped of varying widths. Widening would occur between Canyondale Drive and the SR-57 southbound on-ramp, a total length of approximately 8,100 linear feet or 1.5 miles. In an effort to limit the footprint of the Project the design will utilize a modified Primary Arterial Highway per OC Public Works' Standard Plan 1103 for Standard Street Sections which includes: R/W width less than 100 feet, reducing the median width to less than 14-foot, and no sidewalk throughout the limits within unincorporated County. Within the City of Brea, the roadway section will be a modified Primary Arterial Highway Section per City of Brea's Standard Plan 109-0 to match the existing roadway configuration south of the corridor by reducing the shoulder width.

The three bridges within the corridor are functionally obsolete, meaning they have exceeded their design lives, do not have the adequate geometry to accommodate the proposed corridor improvements, and should be replaced. Replacing the bridges will present an opportunity to increase the flood conveyance under the bridges to current design standards and avoid emergency response delays during larger storm events.

The Project is located along the southern perimeter of a regional wildlife corridor, Puente Hills-Chino Hills Wildlife Corridor, that connects the Santa Ana Mountains in the southeast to the Whittier Hills area to the northwest. Enhancing wildlife movement will conserve and provide greater connectivity for wildlife while potentially reducing the risk for wildlife collisions with traffic.

Throughout the corridor, sight distance (the distance a driver can see unobstructed) does not meet current design standards and the Project provides an opportunity to enhance driver sight distance.

Currently, there are multiple driveways throughout the corridor that serve as access for the adjacent active oil field. There is an opportunity with the Project to improve and enhance the ingress and egress to limit potential traffic delays from large, specialized equipment accessing the field. The intersection of Brea Boulevard and Tonner Canyon Road is an unsignalized, three-way T-intersection with stop control on Tonner Canyon Road. Motorists on Tonner Canyon Road suffer undue delay at Brea Boulevard, and traffic control features will be added to improve traffic flow

at this intersection as part of the Project. Traffic Signal improvements include installation of a new traffic signal approximately 1,200 feet north of Canyon Country Road and at the existing one-way stop-controlled T-intersection at Brea Boulevard and Tonner Canyon Road.

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5.0 2019 PLUS PROJECT CONDITIONS

This section provides a summary of the LOS results if the Project is implemented under 2019 Plus Project Conditions. For analysis purposes, all applicable Project improvements were applied to the existing roadway network within the study area.

5.1 PROJECT IMPACT ASSESSMENT

It should be noted that the Project is not a land use development project that will generate trips associated with development, but rather it is characterized as a roadway circulation network solution to enhance roadway safety and traffic flow. A separate VMT analysis using the OCTAM VMT Tool is provided in Section 10.3.

2019 Plus Project Conditions

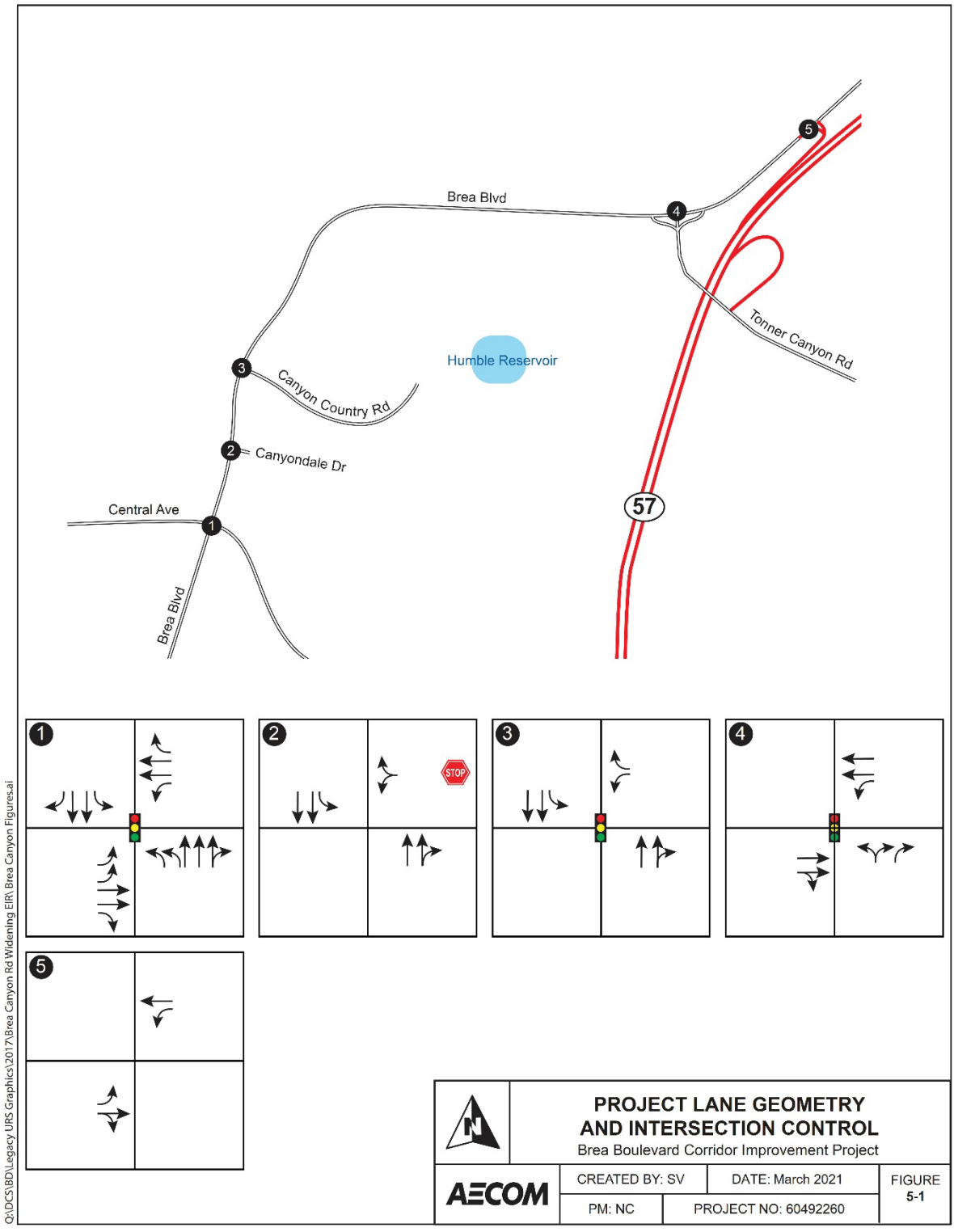
2019 Plus Project traffic volumes were assumed to be the same as existing traffic volume shown in Figure 3-1. The only differentiator between the two scenarios is the implementation of the Project under Existing conditions. Figure 5-1 shows the Project lane geometry and intersection control at the five key intersections after implementation of the proposed improvements.

5.2 2019 (EXISTING) PLUS PROJECT LEVEL OF SERVICE (LOS) ANALYSIS

Intersection Analysis

Table 5-1 shows the intersection LOS and ICU or delay results for the study intersections under 2019 Plus Project Conditions. The detailed intersection LOS calculation worksheets for 2019 Plus Project Conditions are provided in Appendix B.

Figure 5-1
Project Lane Geometry and Intersection Control



Source: AECOM

Table 5-1
Intersection LOS Analysis 2019 Plus Project Conditions

ID	Intersection	2019 (Existing) Conditions					2019 Plus Project Conditions					Significant Impact?
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour		
		Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	
1	Brea Boulevard/ Central Avenue - N. State College Boulevard	Signal (ICU)	0.76	C	0.77	C	Signal (ICU)	0.76	C	0.77	C	No
2	Brea Boulevard/ Canyondale Drive	STOP (HCM 6th)	33.3	D	36.3	**E**	STOP (HCM 6th)	33.3	D	36.3	**E**	No
3	Brea Boulevard/ Canyon Country Road	Signal (ICU)	0.99	**E**	0.78	C	Signal (ICU)	0.56	A	0.46	A	No
4	Brea Boulevard/ Tonner Canyon Road	STOP (HCM 6th)	66.3	**F**	>300	**F**	Signal (ICU)	0.53	A	0.58	A	No
5	Brea Boulevard/ SR-57 SB On-Ramp	STOP (HCM 6th)	12.5	B	16.6	C	STOP (HCM 6th)	12.5	B	16.6	C	No

Source: AECOM

Significant impact occurs when the final LOS is E or F and the ICU increases by more than 0.02 and by more than 2.0 seconds for HCM 6th analysis.

As shown in Table 5-1, no study intersections would be significantly impacted by the Project under 2019 Plus Project Conditions. Additionally, the proposed signalization of the intersection of Brea Boulevard and Tonner Canyon Road as part of the Project would result in the improvement of the intersection from LOS F (AM/PM) to LOS A (AM/PM).

Roadway Segment Analysis

Table 5-2 displays the roadway segment analysis results for the study roadway segments under 2019 Plus Project Conditions.

Table 5-2
Roadway Segment LOS Analysis 2019 Plus Project Conditions

ID	Roadway	Segment	2019 Average Daily Traffic (ADT)	2019 (Existing)				2019 Plus Project Conditions			LOS D or Better?
				Roadway Classification	Capacity (vpd)	V/C	LOS	Capacity (vpd)	V/C	LOS	
1	Brea Boulevard	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	18,800	Primary	30,000	0.50	A	30,000	0.50	A	YES
2	Brea Boulevard	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	16,700	Primary	10,000	1.34	**F**	30,000	0.45	A	YES
3	Brea Boulevard	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	20,300	Primary	15,000	0.92	**E**	30,000	0.54	A	YES
4	Brea Boulevard	Brea Blvd north of SR-57 SB On-Ramp	22,500	Primary	15,000	1.02	**F**	15,000	1.02	**F**	**NO**
5	Tonner Canyon Road	Tonner Canyon Rd east of Brea Blvd	3,350	Primary	10,000	0.27	A	10,000	0.27	A	YES
6	Canyon Country Road	Canyon Country Rd east of Brea Blvd	1,250	Collector	10,000	0.13	A	10,000	0.13	A	YES
7	Canyondale Drive	Canyondale Dr east of Brea Blvd	750	Collector	10,000	0.08	A	10,000	0.08	A	YES

Source: AECOM
V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

As shown in Table 5-2, all of the study roadway segments are forecast to operate at LOS A after the Project construction with the exception of Brea Boulevard north of SR-57 SB On-Ramp which will remain at LOS F. This segment is not being improved as part of the Project and would continue to operate as it does under existing conditions.

As shown previously in Table 5-1, the signal at Brea Boulevard/Tonner Canyon Road is to operate at a LOS A for both AM/PM peaks which would improve queuing at this location. However, northeast of the intersection and the SR-57 SB On-Ramp, Brea Boulevard would remain unimproved (one lane in each direction) and so there is the potential for vehicles continuing northeast to experience slower traffic.

Brea Boulevard is neither signalized nor stop controlled northeast of Tonner Canyon Road until the Diamond Bar Boulevard signal, an approximate 2.5-mile roadway segment. Traffic queuing extends upstream from a bottleneck; in this case the queuing would be upstream from Diamond

Bar Boulevard. For backing to occur all the way to Tonner Canyon, it would have to queue the entire 2.5-miles from Diamond Bar Boulevard to Tonner Canyon. If this were to occur, it would not be because of the 2 NB to 1 NB lane transition at Brea Boulevard/Tonner Canyon Road.

As shown in Table 5-2, the LOS on Brea Boulevard where roadway segments are widened would be substantially improved. Brea Boulevard between Canyon Country Road and Tonner Canyon Road would improve from a LOS of F to A, and between Tonner Canyon Road and SR-57 SB On-Ramp from LOS E to A.

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6.0 NO PROJECT CONSTRUCTION (2028) CONDITIONS

This section provides a summary of the baseline traffic conditions in Year 2028 without Project construction. As the entire construction of the Project is expected to last approximately 5 years and is anticipated to begin in the year 2026, Year 2028, the mid-year of the 5-year construction schedule, was used as the construction analysis year, assuming that construction activity will peak in 2028.

6.1 NO PROJECT CONSTRUCTION (2028) TRAFFIC VOLUMES

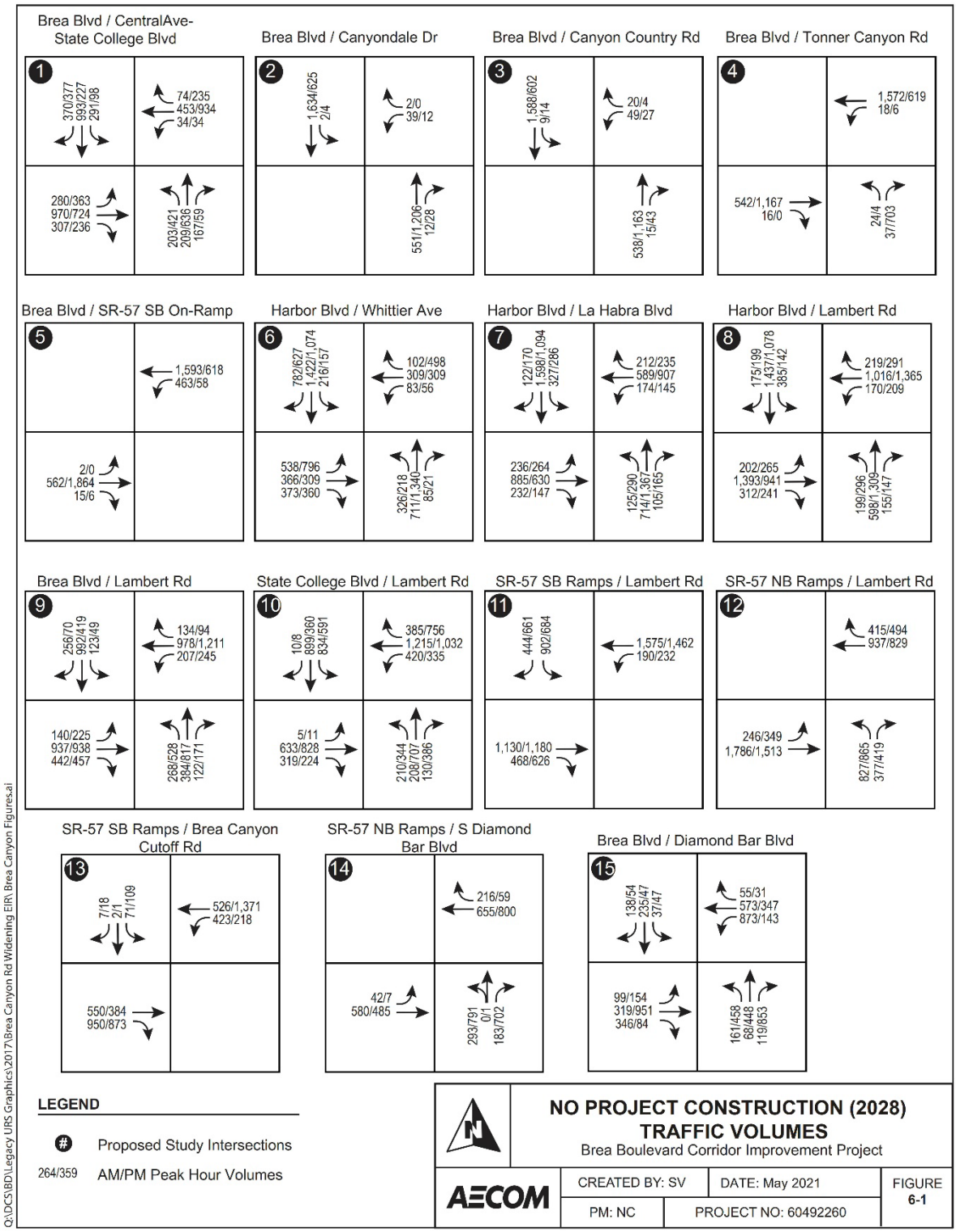
No Project Construction (2028) forecast volumes were developed using the Orange County Traffic Analysis Model (OCTAM) growth forecast data. This modeling shows an increase in daily traffic between 2019 to 2028 of 9% within the corridor. This is a rough increase in traffic of 1% per year. This growth rate is consistent throughout the corridor. Tonner Canyon Road shows a growth rate of 1.5%. Growth on Canyon Country Road and Canyondale Drive is negligible as these roads access residential areas that are built-out. Figure 6-1 shows No Project Construction AM/PM peak hour intersection and roadway segment ADT volumes.

6.2 NO PROJECT CONSTRUCTION (2028) LEVEL OF SERVICE (LOS) ANALYSIS

Intersection Analysis

Table 6-1 displays the intersection LOS and delay results for the study intersections under No Project Construction (2028) Conditions. The detailed intersection LOS calculation worksheets for 2028 No Project Construction (2028) Conditions are provided in Appendix B.

Figure 6-1
No Project Construction (2028) Traffic Volumes



Source: AECOM

Table 6-1
No Project Construction (2028) Intersection LOS Analysis

ID	Intersection	Control Type	2028 AM Peak Hour		2028 PM Peak Hour	
			ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS
1	Brea Boulevard/Central Avenue - N. State College Boulevard	Signal (ICU)	0.81	C	0.80	C
2	Brea Boulevard/ Canyondale Drive	STOP (HCM 6th)	49.1	**E**	46.5	**E**
3	Brea Boulevard/Canyon Country Road	Signal (ICU)	1.11	**F**	0.86	D
4	Brea Boulevard/Tonner Canyon Road	STOP (HCM 6th)	159.6	**F**	>300	**F**
5	Brea Boulevard/SR-57 SB On-Ramp	STOP (HCM 6th)	14.1	B	20.1	C
6	Harbor Blvd / Whittier Ave	Signal (ICU)	0.93	**E**	1.07	**F**
7	Harbor Blvd / La Habra Blvd	Signal (ICU)	0.82	D	0.84	D
8	Harbor Blvd / Lambert Road	Signal (ICU)	0.91	**E**	0.83	D
9	Brea Blvd / Lambert Road	Signal (ICU)	0.86	D	0.80	C
10	State College Blvd / Lambert Road	Signal (ICU)	0.76	C	0.75	C
11	SR-57 SB Ramps / Lambert Road	Signal (HCM 6th)	21.6	C	24.9	C
12	SR-57 NB Ramps / Lambert Road	Signal (HCM 6th)	16.7	B	19.5	B
13	SR-57 SB Ramps / Brea Canyon Cutoff Road	Signal (HCM 6th)	256.2	**F**	183.0	**F**
14	SR-57 NB Ramps / S Diamond Bar Blvd	Signal (HCM 6th)	29.7	C	34.3	C
15	Brea Blvd / Diamond Bar Blvd	Signal (ICU)	0.70	B	0.74	C

Source: AECOM

As shown in Table 6-1, all study intersections are forecast to operate at acceptable LOS D or better under No Project Construction (2028) Conditions with the exception of the following LOS E/F intersections:

- Brea Boulevard/Canyondale Drive (AM/PM Peak – LOS E)
- Brea Boulevard/Canyon Country Road (AM Peak – LOS F)
- Brea Boulevard/Tonner Canyon Road (AM/PM Peak – LOS F)
- Harbor Blvd / Whittier Ave (AM Peak – LOS E, PM Peak – LOS F)

- Harbor Blvd / Lambert Rd (AM Peak – LOS E)
- SR-57 SB Ramps / Brea Canyon Cutoff Road (AM/PM Peak – LOS F)

Roadway Segment Analysis

Table 6-2 displays the roadway segment analysis results for the study roadway segments under No Project Construction (2028) Conditions.

Table 6-2
Roadway Segment LOS Analysis (2028) No Project Construction

ID	Segment	Roadway Classification	2028 Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS
1	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	Primary	20,400	30,000	0.54	A
2	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	Primary	18,500	10,000	1.48	**F**
3	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	Primary	22,400	15,000	1.02	**F**
4	Brea Blvd north of SR-57 SB On-Ramp	Primary	24,700	15,000	1.12	**F**
5	Tonner Canyon Rd east of Brea Blvd	Primary	3,800	10,000	0.30	A
6	Canyon Country Rd east of Brea Blvd	Collector	1,300	10,000	0.13	A
7	Canyondale Dr east of Brea Blvd	Collector	750	10,000	0.08	A
8	Lambert Road between Brea Boulevard and Harbor Boulevard	Primary	37,700	45,000	0.67	B
9	Harbor Blvd between Lambert Road and La Habra Boulevard	Primary	42,100	45,000	0.75	C
10	SR-57 Between Lambert Road and Diamond Bar Boulevard	Freeway	233,300	205,100	1.14	**F**

Source: AECOM
V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

As shown in Table 6-2, all of the study roadway segments are currently operating at LOS D or better except for the following segments:

- Brea Boulevard – between Canyon Country Road and Tonner Canyon Road (LOS F)
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp (LOS F)
- Brea Boulevard – north of SR-57 SB On-Ramp (LOS F)
- SR-57 - Lambert Road to Diamond Bar Boulevard (LOS F)

7.0 PROJECT CONSTRUCTION (2028) CONDITIONS

This section provides a summary of the LOS results during Project Construction (2028) Conditions (with and without Detour). The Project is anticipated to be divided into two phases:

- **Phase I** will include utility relocations, the infrastructure necessary for utility companies to relocate their utilities, wildlife overpass/land bridge, bridge replacement, retaining walls, associated temporary transition pavement, and associated grading; and
- **Phase II** will include the widening of the road, open graded asphalt concrete paving, the intersections at Canyon Country Road, 1,200 feet north of Canyon Country Road, and at Tonner Canyon Road along with other miscellaneous features.

Construction is expected to last approximately 5 years and is anticipated to begin in 2026. As discussed earlier and for analysis purposes, Year 2028, the mid-year of the 5-year construction schedule was assumed as the construction analysis year including the implementation of Phase II construction activities described above.

To evaluate temporary potential impacts of the Project on the surrounding circulation system during construction, the trip generation associated with the anticipated construction of the Project has been developed according to planned construction activities, equipment and manpower needs. This section summarizes the trip generation calculations conducted for the Project, based on anticipated trip making associated with the phased Project construction activities.

7.1 PROJECT CONSTRUCTION TRIP GENERATION

During construction of the Project, up to 40 construction workers are anticipated to be working at the Project site daily. It is expected that 50 percent of the workers will arrive during the AM peak hours (7:00-9:00) and that other workers and trades will arrive later in the morning as mobilization takes place. During the PM peak hours, it is assumed that all workers will leave at the end of the day during the PM peak hours. It is assumed that all workers will arrive individually with each driving their own or assign vehicle.

Additionally, various types of construction equipment ranging from stationary or mobile heavy equipment to handheld equipment will be used depending on the work activities planned during construction. The Project Construction Trip Generation Summary is depicted on Table 7-1.

Table 7-1
Project Construction Trip Generation Summary

	AM Peak Hour Trips (7:00 – 9:00 AM)[1]			PM Peak Hour Trips (4:00 – 6:00 PM)[2]			Daily Trips		
Category	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Autos (workers)	20	0	20	0	40	40	40	40	80
Trucks	8	8	16	8	8	16	73	73	146
Total Vehicles	28	8	36	8	48	56	113	113	226

Source: AECOM

[1] – Assumed 50 percent of workers arrive during the AM peak hour
[2] – *Assumed 100 percent of workers leave during the PM peak hour*

7.2 PROJECT CONSTRUCTION (2028) WITHOUT DETOUR TRAFFIC VOLUMES

Project Construction (2028) Without Detour traffic volumes shown in Figure 7-1 were developed by assigning the anticipated Project construction trip generation to the study intersections and roadway segments. These forecasts served as the basis of the Project construction analysis.

Intersection Analysis

Table 7-2 shows the Project Construction (2028) Without Detour Traffic Analysis for intersections. For the without Detour columns, the AM/PM peak hour LOS are shown for the study intersections using the forecasts from Figure 7-1. Three of the intersections operate at a LOS E or F:

- Brea Boulevard / Canyondale Drive, LOS E AM/PM
- Brea Boulevard / Canyon County Road, LOS F AM
- Brea Boulevard / Tonner Canyon Road, LOS F AM/PM

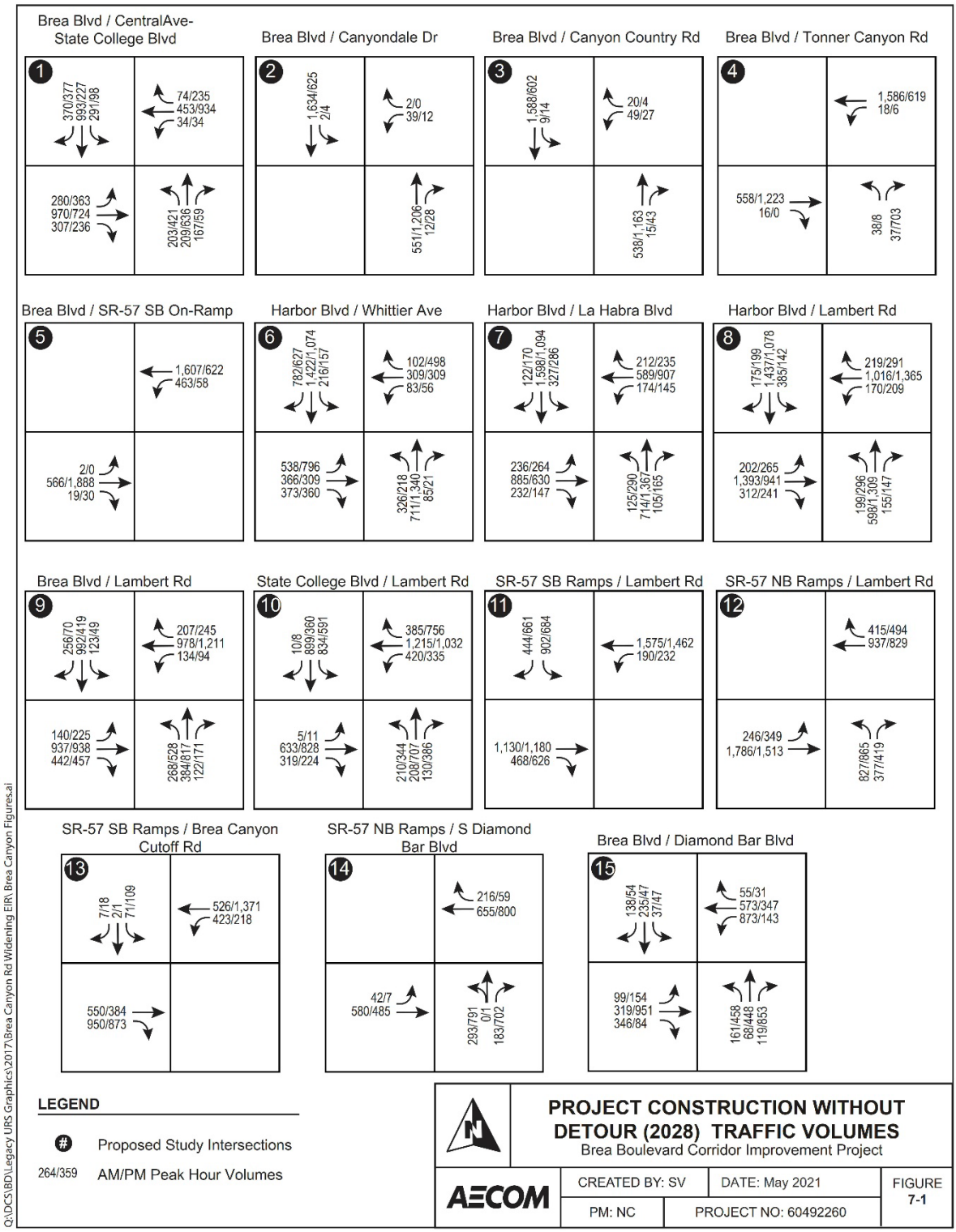
Table 7-2
Project Construction (2028) Without Detour Traffic Analysis

ID	Intersection	No Project Construction (2028)					Project Construction (2028) without Detour					Impact?
			2028 AM Peak Hour		2028 PM Peak Hour			2028 AM Peak Hour		2028 PM Peak Hour		
		Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	
1	Brea Boulevard/Central Avenue - N. State College Boulevard	Signal (ICU)	0.81	D	0.80	D	Signal (ICU)	0.81	D	0.80	D	No
2	Brea Boulevard/ Canyondale Drive	STOP (HCM 6th)	49.10	**E**	46.50	**E**	STOP (HCM 6th)	49.10	**E**	46.50	**E**	No
3	Brea Boulevard/Canyon Country Road	Signal (ICU)	1.11	**F**	0.86	D	Signal (ICU)	1.11	**F**	0.86	D	No
4	Brea Boulevard/Tonner Canyon Road	STOP (HCM 6th)	159.60	**F**	>300	**F**	STOP (HCM 6th)	263.90	**F**	>300	**F**	**Yes**
5	Brea Boulevard/SR-57 SB On-Ramp	STOP (HCM 6th)	14.10	B	20.10	C	STOP (HCM 6th)	14.20	B	20.60	C	No

Source: AECOM

Significant impact occurs when the final LOS is E or F and the ICU increases by more than 0.02 and by more than 2.0 seconds for HCM 6th analysis.

Figure 7-1
Project Construction (2028) Without Detour Traffic Volumes



Source: AECOM

The results for Project Construction (2028) Without Detour show little change from No Project Construction (2028) except at the Brea Boulevard/Tonner Canyon Road intersection during the AM peak hour. While additional trips generated by construction activity are modest the AM peak hour increase in delay would be a significant impact throughout the duration of construction at this intersection.

Roadway Segment Analysis

Table 7-3 shows the Project Construction (2028) Without Detour Roadway Segment Traffic Analysis. These results for Project Construction (2028) Without Detour show no change from No Project Construction (2028) and as a result, no impact occurs.

Table 7-3
Project Construction (2028) without Detour Roadway Segment Traffic Analysis

			No Project Construction (2028)				Project Construction (2028) without Detour				
ID	Segment	Roadway Classification	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Impact?
1	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	Primary	20,400	30,000	0.54	A	20,400	30,000	0.54	A	No
2	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	Primary	18,500	10,000	1.48	**F**	18,500	10,000	1.48	**F**	No
3	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	Primary	22,400	15,000	1.02	**F**	22,800	15,000	1.04	**F**	No
4	Brea Blvd north of SR-57 SB On-Ramp	Primary	24,700	15,000	1.12	**F**	24,900	15,000	1.13	**F**	No
5	Tonner Canyon Rd east of Brea Blvd	Primary	3,800	10,000	0.30	A	3,900	10,000	0.31	A	No
6	Canyon Country Rd east of Brea Blvd	Collector	1,300	10,000	0.13	A	1,300	10,000	0.13	A	No
7	Canyondale Dr east of Brea Blvd	Collector	750	10,000	0.08	A	750	10,000	0.08	A	No

Source: AECOM
V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

No roadway segments will be impacted under Project Construction (2028) Without Detour. Four of the roadway segments will operate at a LOS D or better. The exceptions to this are:

- Brea Boulevard – between Canyon Country Road and Tonner Canyon Road (LOS F)
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp (LOS F)
- Brea Boulevard – north of SR-57 SB On-Ramp (LOS F)

7.3 PROJECT CONSTRUCTION WITH DETOUR (2028) LEVEL OF SERVICE (LOS) ANALYSIS

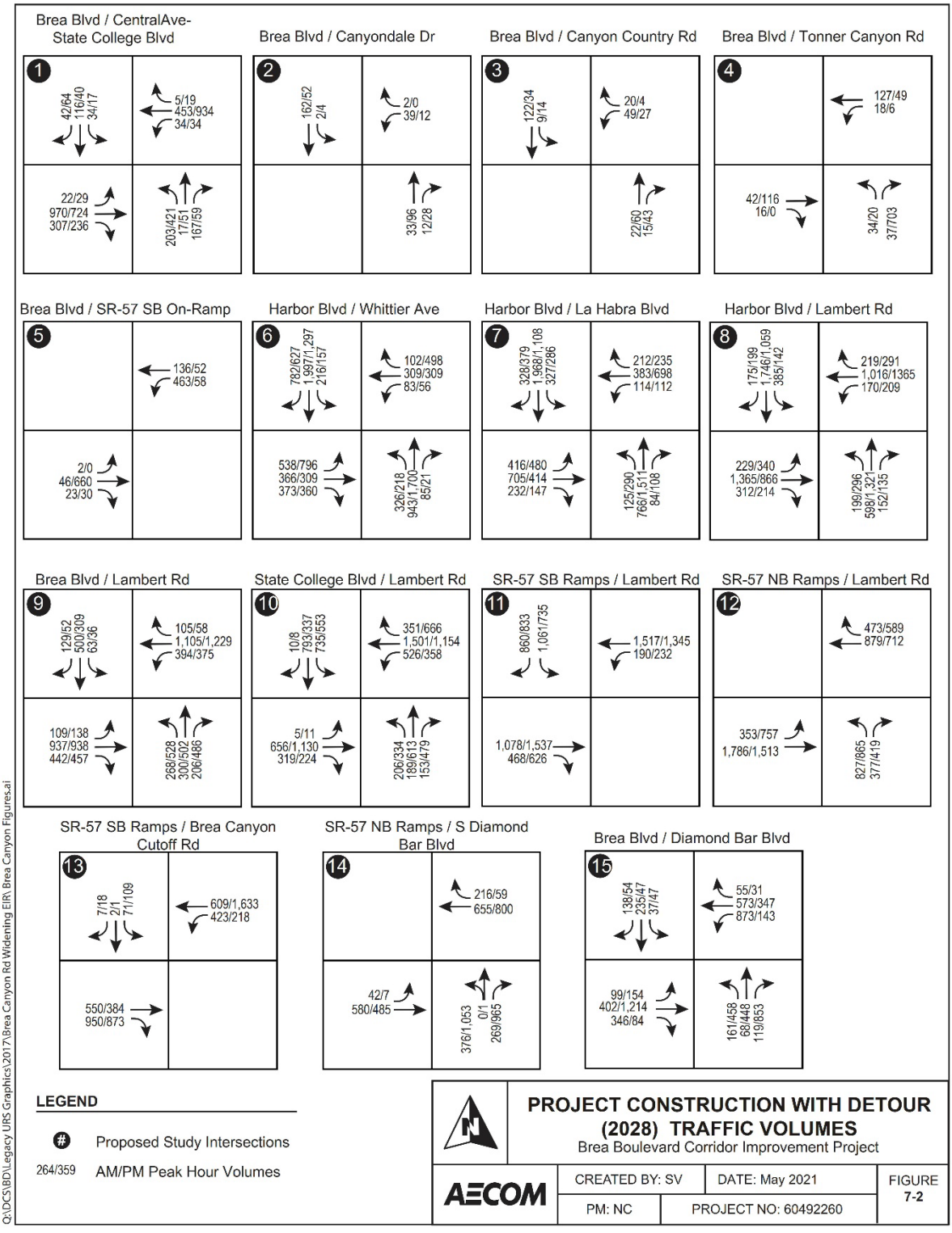
Construction of the Project will require the periodic full closure of Brea Boulevard from north of Canyon Country Road to Tonner Canyon Road from Friday at 8:00 pm to Monday at 5:00 am. Access will remain for emergency responders and oil field operators. These planned closures of Brea Boulevard would potentially result in through traffic seeking alternate travel routes; the two adjacent facilities that can provide alternate travel routes are Harbor Boulevard to the west and SR-57 freeway to the east.

Figure 7-2 shows the 2028 Project Construction AM/PM peak hour traffic with Detour. What is shown on Figure 7-2, are mid-week traffic closures with correspondingly heavy mid-week traffic flows. The actual closures would be periodic and over weekends. As such, the impacts presented are very conservative.

Intersection Analysis

The impacts for 2028 construction detours at intersections are depicted on Table 7-4. Significant impact occurs at signalized ICU intersections when the final LOS is E or F and the ICU increases by more than 0.02. For HCM analyses, significant impact occurs when the final LOS is E or F and the delay increases by more than 2.0 seconds. The Table 7-4 findings and results show that three intersections would experience impacts with 2028 project construction detours. They are Harbor Blvd / Whittier Ave, Harbor Blvd / Lambert Road, and SR-57 NB Ramps / S Diamond Bar Blvd. The detailed intersection LOS calculation worksheets for Project Construction with Detour (2028) Traffic Volumes are provided in Appendix B. As mentioned previously, the impacts are overstated as they are based on mid-week flow when actual detours will be periodic and on weekends.

Figure 7-2
Project Construction (2028) With Detour Traffic Volumes



Source: AECOM

Table 7-4
Project Construction (2028) With Detour Traffic Analysis

ID	Intersection	No Project Construction (2028)					Project Construction (2028) with Detour					Impact?
			2028 AM Peak Hour		2028 PM Peak Hour			2028 AM Peak Hour		2028 PM Peak Hour		
		Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	
1	Brea Boulevard/ Central Avenue - N. State College Boulevard	Signal (ICU)	0.81	D	0.80	D	Signal (ICU)	0.53	A	0.55	A	No
2	Brea Boulevard/ Canyondale Drive	STOP (HCM 6th)	49.10	**E**	46.50	**E**	STOP (HCM 6th)	9.50	A	9.40	A	No
3	Brea Boulevard/ Canyon Country Road	Signal (ICU)	1.11	**F**	0.86	D	Signal (ICU)	0.21	A	0.16	A	No
4	Brea Boulevard/ Tonner Canyon Road	STOP (HCM 6th)	159.60	**F**	>300	**F**	STOP (HCM 6th)	10.00	A	22.50	C	No
5	Brea Boulevard/ SR-57 SB On-Ramp	STOP (HCM 6th)	14.10	B	20.10	C	STOP (HCM 6th)	8.30	A	9.30	A	No
6	Harbor Blvd / Whittier Ave	Signal (ICU)	0.93	**E**	1.07	**F**	Signal (ICU)	1.11	**F**	1.18	**F**	**Yes**
7	Harbor Blvd / La Habra Blvd	Signal (ICU)	0.82	D	0.84	D	Signal (ICU)	0.85	D	0.86	D	No
8	Harbor Blvd / Lambert Road	Signal (ICU)	0.91	**E**	0.83	D	Signal (ICU)	0.97	**E**	0.85	D	**Yes**
9	Brea Blvd / Lambert Road	Signal (ICU)	0.86	D	0.80	C	Signal (ICU)	0.83	D	0.81	D	No
10	State College Blvd / Lambert Road	Signal (ICU)	0.76	C	0.75	C	Signal (ICU)	0.76	C	0.77	C	No
11	SR-57 SB Ramps / Lambert Road	Signal (HCM 6th)	21.60	C	24.90	C	Signal (HCM 6th)	48.00	D	41.70	D	No
12	SR-57 NB Ramps / Lambert Road	Signal (HCM 6th)	16.70	B	19.50	B	Signal (HCM 6th)	18.50	B	30.70	C	No
13	SR-57 SB Ramps / Brea Canyon Cutoff Road	Signal (HCM 6th)	256.20	**F**	183.00	**F**	Signal (HCM 6th)	248.40	**F**	97.70	**F**	No
14	SR-57 NB Ramps / S Diamond Bar Blvd	Signal (HCM 6th)	29.70	C	34.30	C	Signal (HCM 6th)	28.50	C	95.50	**F**	**Yes**
15	Brea Blvd / Diamond Bar Blvd	Signal (ICU)	0.70	B	0.74	C	Signal (ICU)	0.73	C	0.82	D	No

Source: AECOM

Significant impact occurs when the final LOS is E or F and the ICU increases by more than 0.02 and by more than 2.0 seconds for HCM 6th analysis.

Roadway Segment Analysis

Table 7-5 displays the roadway segment analysis results for the study roadway segments under both Project Construction without Detour (2028) and Project Construction with Detour (2028).

As shown on Table 7-5, impacts due to detours on roadway segments is less than those to intersections as roadway segments spread total demand across several lanes rather than concentrated delays at intersections as a result of the additional turning movements required when following detours.

Table 7-5
Project Construction (2028) with Detour Roadway Segment Traffic Analysis

			No Project Construction (2028)				Project Construction (2028) with Detour				
ID	Segment	Roadway Classification	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Impact?
1	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	Primary	20,400	30,000	0.54	A	2,200	30,000	0.06	A	No
2	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	Primary	18,500	10,000	1.48	**F**	1,300	10,000	0.10	A	No
3	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	Primary	22,400	15,000	1.02	**F**	5,300	15,000	0.24	A	No
4	Brea Blvd north of SR-57 SB On-Ramp	Primary	24,700	15,000	1.12	**F**	6,800	15,000	0.31	A	No
5	Tonner Canyon Rd east of Brea Blvd	Primary	3,800	10,000	0.30	A	3,950	10,000	0.32	A	No
6	Canyon Country Rd east of Brea Blvd	Collector	1,300	10,000	0.13	A	1,300	10,000	0.13	A	No
7	Canyondale Dr east of Brea Blvd	Collector	750	10,000	0.08	A	750	10,000	0.08	A	No
8	Lambert Road between Brea Boulevard and Harbor Boulevard	Primary	37,700	45,000	0.67	B	37,000	45,000	0.66	B	No
9	Harbor Blvd between Lambert Road and La Habra Boulevard	Primary	42,100	45,000	0.75	C	42,100	45,000	0.75	C	No
10	SR-57 Between Lambert Road and Diamond Bar Boulevard	Freeway	233,300	205,100	1.14	**F**	243,000	205,100	1.18	**F**	**Yes**

Source: AECOM
V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

The SR-57 Between Lambert Road and Diamond Bar Boulevard does show significant impact with a V/C increase of 0.04. SR-57 parallels Brea Boulevard and as such would receive a good portion of the diverted traffic with closure of Brea Boulevard. However, the modeled delays and

changes in LOS presented in this analysis reflect mid-week, peak travel demand, which overstates the impact.

On weekends, weekend ADT on SR-57 would be lower than the AADT that was used in the model and much of the detoured traffic would be from non-freeway travel demands which can be approximately 10% lower on Saturdays and 20% lower on Sundays. As a result, the impacts to SR-57 are overstated.

8.0 FUTURE BUILDOUT (2045) NO PROJECT CONDITIONS

This section provides a summary of the LOS results under Future Buildout (2045) No Project Conditions.

8.1 FUTURE BUILDOUT (2045) NO PROJECT TRAFFIC VOLUMES

Future Buildout (2045) baseline traffic forecast were developed using OCTAM forecast data. Figure 8-1 shows Future Buildout (2045) No Project AM/PM peak hour traffic volumes for the study intersections and ADT volumes for the study area roadway segments.

8.2 FUTURE BUILDOUT (2045) NO PROJECT LEVEL OF SERVICE (LOS) ANALYSIS

Intersection Analysis

Table 8-1 displays the intersection LOS and delay results for the study intersections under Future Buildout (2045) No Project Conditions. The detailed intersection LOS calculation worksheets are provided in Appendix B.

Table 8-1
Future Buildout (2045) No Project Conditions Intersection LOS Analysis

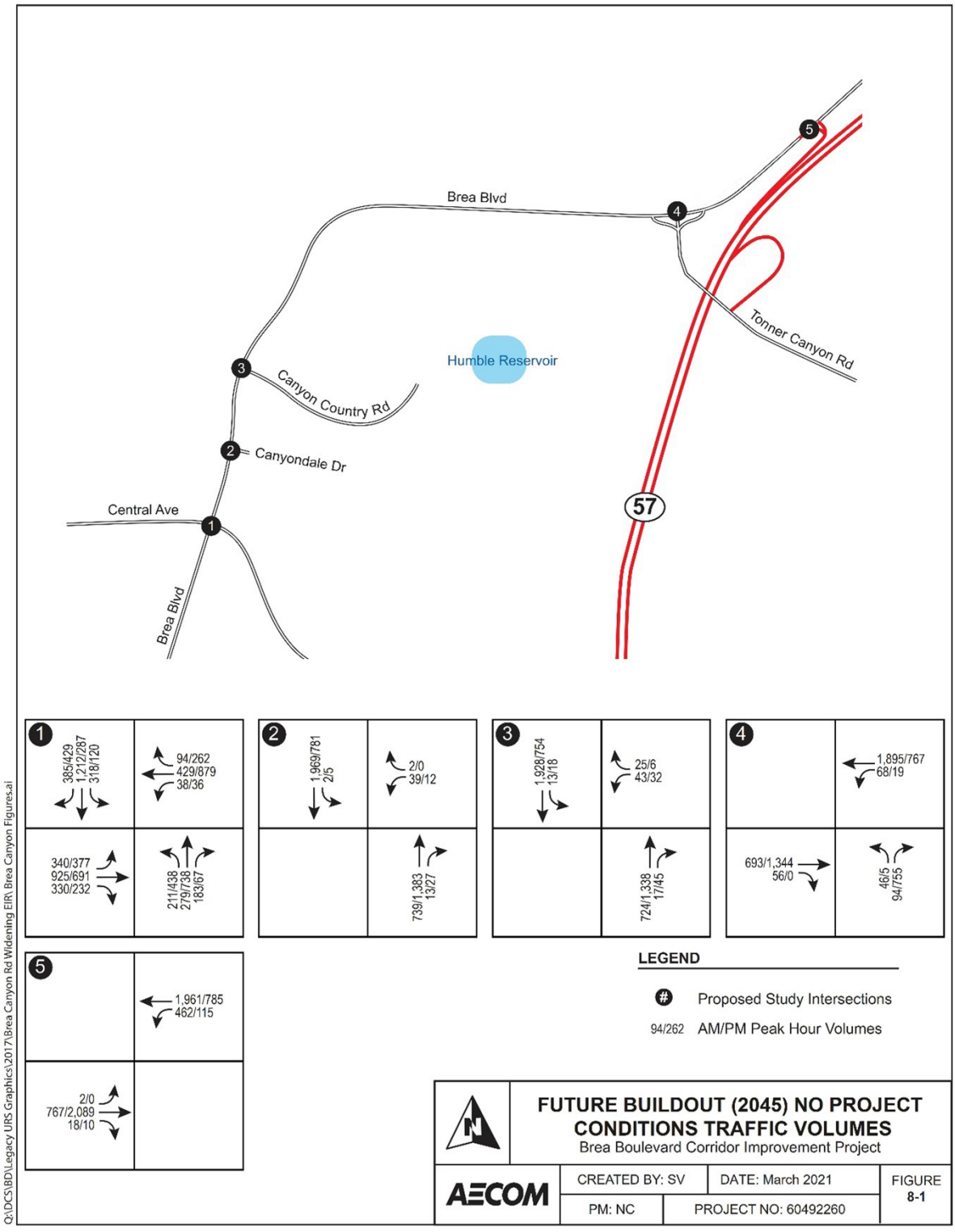
ID	Intersection	Future Buildout (2045) No Project Conditions				
			2045 AM Peak Hour		2045 PM Peak Hour	
		Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS
1	Brea Boulevard/Central Avenue - N. State College Boulevard	Signal (ICU)	0.81	D	0.79	C
2	Brea Boulevard/Canyondale Drive	STOP (HCM 6th)	90.1	**F**	66.1	**F**
3	Brea Boulevard/Canyon Country Road	Signal (ICU)	1.26	**F**	0.92	**E**
4	Brea Boulevard/Tonner Canyon Road	STOP (HCM 6th)	>300	**F**	>300	**F**
5	Brea Boulevard / SR-57 SB On-Ramp	STOP (HCM 6th)	17.2	C	28.7	D

Source: AECOM

As shown in Table 8-1, the following study intersections are forecast to operate at an unacceptable LOS E or F under Future Buildout (2045). These intersections are:

- Brea Boulevard/Canyondale Drive (AM/PM Peak – LOS F/F)
- Brea Boulevard/Canyon Country Road (AM/PM Peak – LOS F/E)
- Brea Boulevard/Tonner Canyon Road (AM/PM Peak – LOS F/F)

Figure 8-1
Future Buildout (2045) No Project Conditions Traffic Volumes



Source: AECOM

Roadway Segment Analysis

Table 8-2 displays the roadway segment analysis results for the study roadway segments under Future Buildout (2045) No Project Conditions.

Table 8-2
Roadway Segment LOS Analysis Future Buildout (2045) No Project Conditions

ID	Segment	Roadway Classification	Future Buildout (2045) No Project Conditions			
			Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS
1	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	Primary	23,700	30,000	0.63	B
2	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	Primary	22,000	10,000	1.76	**F**
3	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	Primary	26,600	15,000	1.21	**F**
4	Brea Blvd north of SR-57 SB On-Ramp	Primary	29,100	15,000	1.32	**F**
5	Tonner Canyon Rd east of Brea Blvd	Primary	4,700	10,000	0.38	A
6	Canyon Country Rd east of Brea Blvd	Collector	1,400	10,000	0.14	A
7	Canyondale Dr east of Brea Blvd	Collector	750	10,000	0.08	A

Source: AECOM
V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

As shown in Table 8-2, four study roadway segments are forecast to operate at LOS B or better and three under Future Buildout (2045) No Project Conditions are at LOS F. These segments are:

- Brea Boulevard – between Canyon Country Road and Tonner Canyon Road
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp
- Brea Boulevard - north of SR-57 SB On-Ramp

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9.0 FUTURE BUILDOUT (2045) PLUS PROJECT CONDITIONS

This section provides a summary of the LOS results under Future Buildout (2045) Plus Project Conditions.

9.1 FUTURE BUILDOUT (2045) PLUS PROJECT TRAFFIC VOLUMES

The traffic volumes used to evaluate Future Buildout (2045) Plus Project Conditions were assumed to be the same as Future Buildout (2045) No Project Traffic Volumes shown in Figure 8-1. The only differentiator between the two scenarios is the addition of Project-related improvements under Future Buildout (2045) Plus Project Conditions.

9.2 FUTURE BUILDOUT (2045) PLUS PROJECT LEVEL OF SERVICE (LOS) ANALYSIS

Intersection Analysis

Table 9-1 displays the intersection LOS and delay results for the study intersections under Future Buildout (2045) Plus Project Conditions. The detailed intersection LOS calculation worksheets for Future Buildout (2045) Plus Project Conditions are provided in Appendix B.

Table 9-1
Future Buildout (2045) Plus Project Conditions Intersection LOS Analysis

		Future Buildout (2045) No Project Conditions					Future Buildout (2045) Plus Project Conditions					
			2045 AM Peak Hour		2045 PM Peak Hour			2045 AM Peak Hour		2045 PM Peak Hour		
ID	Intersection	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Impact?
1	Brea Boulevard/Central Avenue - N. State College Boulevard	Signal (ICU)	0.81	D	0.79	C	Signal (ICU)	0.81	D	0.79	C	No
2	Brea Boulevard/Canyondale Drive	STOP (HCM 6th)	90.1	**F**	66.1	**F**	STOP (HCM 6th)	88.4	**F**	66.0	**F**	No
3	Brea Boulevard/Canyon Country Road	Signal (ICU)	1.26	**F**	0.92	**E**	Signal (ICU)	0.69	B	0.53	A	No
4	Brea Boulevard/Tonner Canyon Road	STOP (HCM 6th)	>300	**F**	>300	**F**	Signal (ICU)	0.69	B	0.67	B	No
5	Brea Boulevard/SR-57 SB On-Ramp	STOP (HCM 6th)	17.2	C	28.7	D	STOP (HCM 6th)	17.2	C	28.7	D	No

Source: AECOM

Significant impact occurs when the final LOS is E or F and the V/C increases by more than 0.02.

As shown in Table 9-1, most study intersections are forecast to operate at acceptable LOS D or better. The proposed signalization of the intersection of Brea Boulevard and Tonner Canyon Road as part of the Project improvements would result in the improvement of the intersection from LOS F/F (AM/PM) to LOS B/B (AM/PM) under Future Buildout (2045) Plus Project Conditions. The

Brea Boulevard/Canyondale Drive intersection is also at LOS F, but the delay of the intersection decreases with project improvements.

Roadway Segment Analysis

Table 9-2 displays the roadway segment analysis results for the study roadway segments under Future Buildout (2045) Plus Project Conditions.

Table 9-2
Future Buildout (2045) Plus Project Conditions Roadway Segment LOS Analysis

ID	Segment	Roadway Classification	Future Buildout (2045) No Project Conditions				Future Buildout (2045) Plus Project Conditions				Impact?
			Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	
1	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	Primary	23,700	30,000	0.63	B	23,700	30,000	0.63	B	No
2	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	Primary	22,000	10,000	1.76	**F**	22,000	30,000	0.59	A	No
3	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	Primary	26,600	15,000	1.21	**F**	26,600	30,000	0.71	B	No
4	Brea Blvd north of SR-57 SB On-Ramp	Primary	29,100	15,000	1.32	**F**	29,100	15,000	1.32	**F**	No
5	Tonner Canyon Rd east of Brea Blvd	Primary	4,700	10,000	0.38	A	4,700	10,000	0.38	A	No
6	Canyon Country Rd east of Brea Blvd	Collector	1,400	10,000	0.14	A	1,400	10,000	0.14	A	No
7	Canyondale Dr east of Brea Blvd	Collector	750	10,000	0.08	A	750	10,000	0.08	A	No

Source: AECOM
V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.
Significant impact occurs when the final LOS is E or F and the V/C increases by more than 0.02.

As shown in Table 9-2, all study roadway segments are forecast to operate at LOS B or better after the Project with the exception of Brea Boulevard - north of SR-57 SB On-Ramp that is not widened and which will remain at LOS F. According to the significant impact criteria, the roadway segment will not be significantly impacted by the Project since the V/C and LOS remain the same as Future Buildout (2045) No Project Conditions.

With the implementation of the Project under Future Buildout (2045) Plus Project Conditions, the following roadway segments where widening occurs, would result in the improvement of roadway LOS.

- Brea Boulevard - between Canyon Country Road and Tonner Canyon Road (LOS A, improvement from LOS F)
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp (LOS B, improvement from LOS F)

10.0 SUMMARY, VMT ASSESSMENT, MITIGATION MEASURES, AND CONCLUSIONS

10.1 INTERSECTION ANALYSIS SUMMARY AND CONCLUSIONS

Table 10-1 displays intersection LOS results for each of the analyzed scenarios and shows the LOS beginning from Existing (2019) Conditions, 2019 Plus Project Conditions, No Project Construction (2028) Conditions, Project Construction (2028) Without Detour, Project Construction (2028) With Detour, Future Buildout (2045) No Project Conditions, and Future Buildout (2045) Plus Project Conditions.

Under 2019 Plus Project Conditions, two intersections will experience improvements in LOS from LOS F/F to LOS A/A during the AM/PM peak hours. This improvement in LOS is attributable to the proposed signalization of the intersections:

- Brea Boulevard/Canyon Country Road improves from LOS D/E to LOS A/A (with widening)
- Brea Boulevard/Tonner Canyon Road – improves from LOS F/F to LOS A/A (with Signal)

Under Project Construction (2028) Without Detour, one study intersection, Brea Boulevard/ Tonner Canyon Road is forecast to be impacted. The following intersections are projected to operate at LOS E/F while the remaining intersections operate at LOS D or better:

- Brea Boulevard/Canyondale Drive (AM/PM Peak – LOS E/E)
- Brea Boulevard/Canyon Country Road (AM Peak – LOS F)
- Brea Boulevard/Tonner Canyon Road (AM/PM Peak – LOS F/F) (Impacted)

Under Project Construction (2028) With Detour, three study intersections are forecast to be temporarily impacted. The following intersections are projected to operate at LOS E/F while the remaining intersections operate at LOS D or better:

- Harbor Boulevard/Whittier Avenue (AM/PM Peak – LOS F/F) (Temporarily Impacted)
- Harbor Boulevard/Lambert Road (AM Peak – LOS E) (Temporarily Impacted)
- SR-57 SB Ramps/Brea Canyon Cutoff Road (AM/PM Peak – LOS F/F)
- SR-57 NB Ramps/S Diamond Bar Boulevard (PM Peak – LOS F) (Temporarily Impacted)

It should be noted that the detour impacted locations will temporarily be impacted during full road closure events only and are overstated because impacts were modeled using mid-week, peak traffic volumes whereas the closure would occur on the weekend.

Under Future Buildout (2045) Plus Project Conditions, no study intersections are impacted, and two intersections will experience improvements in LOS during the AM/PM peak hours. This improvement in LOS is attributable to the proposed widening and signalization of the Brea Boulevard/Tonner Canyon Road intersection.

- Brea Boulevard/Canyon Country Road - improves from LOS F/E to LOS B/A (with widening)
- Brea Boulevard/Tonner Canyon Road – improves from LOS F/F to LOS B/B (with signalization)

10.2 ROADWAY SEGMENTS ANALYSIS SUMMARY AND CONCLUSIONS

Table 10-2 displays roadway segments LOS results for each of the analyzed scenarios and shows the LOS analysis results beginning from Existing (2019) Conditions, 2019 Plus Project Conditions, No Project Construction (2028) Conditions, Project Construction (2028) Without Detour, Project Construction (2028) With Detour, Future Buildout (2045) No Project Conditions, and Future Buildout (2045) Plus Project Conditions.

Under 2019 Plus Project Conditions, no study roadway segment is impacted. All study roadway segments are forecast to operate at LOS C or better after the Project except for the following segment that is not widened, and which remains at LOS F.

- Brea Boulevard - north of SR-57 SB On-Ramp (LOS F)

With the implementation of the Project under 2019 conditions, the following roadway segments where widening occurs, would result in the improvement of roadway LOS.

- Brea Boulevard - between Canyon Country Road and Tonner Canyon Road (LOS A, improvement from LOS F)
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp (LOS A, improvement from LOS E)

Table 10-1
Summary of Intersection Level of Service Results

ID	Intersection	Existing Traffic Conditions				2019 Plus Project Conditions				No Project Construction (2028)				Project Construction (2028) without Detour				Project Construction (2028) with Detour				Future Buildout (2045) No Project Conditions				Future Buildout (2045) Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS
1	Brea Boulevard / Central Avenue - N. State College Boulevard	0.76	C	0.77	C	0.76	C	0.77	C	0.81	D	0.80	D	0.81	D	0.80	D	0.53	A	0.55	A	0.81	D	0.79	C	0.81	D	0.79	C
2	Brea Boulevard / Canyondale Drive	33.3	D	36.3	**E**	33.3	D	36.3	**E**	49.1	**E**	46.5	**E**	49.1	**E**	46.5	**E**	9.5	A	9.4	A	90.1	**F**	66.1	**F**	88.4	**F**	66.0	**F**
3	Brea Boulevard / Canyon Country Road	0.99	**E**	0.78	C	0.56	A	0.46	A	1.11	**F**	0.86	D	1.11	**F**	0.86	D	0.21	A	0.16	A	1.26	**F**	0.92	**E**	0.69	B	0.53	A
4	Brea Boulevard / Tonner Canyon Road	66.3	**F**	>300	**F**	0.53	A	0.58	A	159.6	**F**	>300	**F**	263.9	**F**	>300	**F**	10.0	A	22.5	C	>300	**F**	>300	**F**	0.69	B	0.67	B
5	Brea Boulevard/SR-57 SB On-Ramp	12.5	B	16.6	C	12.5	B	16.6	C	14.1	B	20.1	C	14.2	B	20.6	C	8.30	A	9.30	A	17.2	C	28.7	D	17.2	C	28.7	D
6	Harbor Blvd / Whittier Ave	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.93	**E**	1.07	**F**	n/a	n/a	n/a	n/a	1.11	**F**	1.18	**F**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7	Harbor Blvd / La Habra Blvd	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.82	D	0.84	D	n/a	n/a	n/a	n/a	0.85	D	0.86	D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
8	Harbor Blvd / Lambert Road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.91	**E**	0.83	D	n/a	n/a	n/a	n/a	0.97	**E**	0.85	D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
9	Brea Blvd / Lambert Road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.86	D	0.80	C	n/a	n/a	n/a	n/a	0.83	D	0.81	D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10	State College Blvd / Lambert Road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.76	C	0.75	C	n/a	n/a	n/a	n/a	0.76	C	0.77	C	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
11	SR-57 SB Ramps / Lambert Road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	21.60	C	24.90	C	n/a	n/a	n/a	n/a	48.00	D	41.70	D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
12	SR-57 NB Ramps / Lambert Road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	16.70	B	19.50	B	n/a	n/a	n/a	n/a	18.50	B	30.70	C	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
13	SR-57 SB Ramps / Brea Canyon Cutoff Road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	256.20	**F**	183.00	**F**	n/a	n/a	n/a	n/a	248.40	**F**	97.70	**F**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
14	SR-57 NB Ramps / S Diamond Bar Blvd	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	29.70	C	34.30	C	n/a	n/a	n/a	n/a	28.50	C	95.50	**F**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
15	Brea Blvd / Diamond Bar Blvd	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.70	B	0.74	C	n/a	n/a	n/a	n/a	0.73	C	0.82	D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: AECOM

Table 10-2
Summary of Roadway Segments Level of Service Results

ID	Roadway	Segment	2019 (Existing) Traffic Conditions		2019 (Existing) Plus Project		No Project Construction (2028)		Project Construction (2028) without Detour		Project Construction (2023) with Detour		Future Buildout (2045) No Project Conditions		Future Buildout (2045) Plus Project Conditions	
			V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1	Brea Boulevard	Brea Blvd between Central Ave-N State College Blvd and Canyondale Dr	0.50	A	0.50	A	0.54	A	0.54	A	0.06	A	0.63	B	0.63	B
2	Brea Boulevard	Brea Blvd between Canyon Country Rd and Tonner Canyon Rd	1.34	**F**	0.45	A	1.48	**F**	1.48	**F**	0.10	A	1.76	**F**	0.59	A
3	Brea Boulevard	Brea Blvd between Tonner Canyon Rd and SR-57 SB On-Ramp	0.92	**E**	0.54	A	1.02	**F**	1.04	**F**	0.24	A	1.21	**F**	0.71	C
4	Brea Boulevard	Brea Blvd north of SR-57 SB On-Ramp	1.02	**F**	1.02	**F**	1.12	**F**	1.13	**F**	0.31	A	1.32	**F**	1.32	**F**
5	Tonner Canyon Road	Tonner Canyon Rd east of Brea Blvd	0.27	A	0.27	A	0.30	A	0.31	A	0.32	A	0.38	A	0.38	A
6	Canyon Country Road	Canyon Country Rd east of Brea Blvd	0.13	A	0.13	A	0.13	A	0.13	A	0.13	A	0.14	A	0.14	A
7	Canyondale Drive	Canyondale Dr east of Brea Blvd	0.08	A	0.08	A	0.08	A	0.08	A	0.08	A	0.08	A	0.08	A
8	Lambert Blvd	Lambert Road between Brea Boulevard and Harbor Boulevard	n/a	n/a	n/a	n/a	0.67	B	n/a	n/a	0.66	B	n/a	n/a	n/a	n/a
9	Harbor Blvd	Harbor Blvd between Lambert Road and La Habra Boulevard	n/a	n/a	n/a	n/a	0.75	C	n/a	n/a	0.75	C	n/a	n/a	n/a	n/a
10	SR-57	SR-57 Between Lambert Road and Diamond Bar Boulevard	n/a	n/a	n/a	n/a	1.14	**F**	n/a	n/a	1.18	**F**	n/a	n/a	n/a	n/a

Source: AECOM

Under Project Construction (2028) Without Detour, no study roadway segment is forecast to be impacted. Under Project Construction (2028) With Detour, the following study roadway segment is forecast to be impacted.

- SR-57 – between Lambert Road and Diamond Bar Boulevard

During road closures, delays will occur on SR-57 – between Lambert Road and Diamond Bar Boulevard. However, this analysis reflected mid-week, peak travel demand, which overstates the impact. On weekends, weekend ADT on SR-57 would be lower than the AADT that was used in the model and much of the detoured traffic would be from non-freeway travel demands which can be approximately 10% lower on Saturdays and 20% lower on Sundays.

Under Future Buildout (2045) Plus Project Conditions, no study roadway segment is forecast to be impacted. Brea Boulevard - north of SR-57 SB On-Ramp although not impacted by the improvements will continue at LOS F as the project does not add improvements to SR 57.

It should be noted that with the implementation of the Project the following roadway segments, where widening occurs, would result in the improvement of roadway LOS.

- Brea Boulevard - between Canyon Country Road and Tonner Canyon Road (LOS A, improvement from LOS F)
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp (LOS B, improvement from LOS F)

10.3 VEHICLE MILES TRAVELLED (VMT) ASSESSMENT

Regulatory Requirements and Background

The 2018 California Environmental Quality Act (CEQA) Guidelines Update makes important changes to the Guidelines related to transportation impact analysis. The traditional standard metric for traffic impact analysis, LOS, is no longer to be used for an impact significance determination. Vehicle Miles Travelled (VMT) is the new metric for transportation impacts. The two metrics generally used in evaluations of VMT impacts are VMT per capita or VMT per employee, but these are only applicable to projects which change land use such as a new development[3]. Roadway projects are assessed only for their net effect on total VMT.[4]

[3] *TECHNICAL ADVISORY - ON EVALUATING TRANSPORTATION IMPACTS IN CEQA, Governor's Office of Planning and Research* (TA), December 2018 – Section E
[4] Ibid. Section F

Technical Guidance

The County of Orange Board of Supervisors adopted the *Guidelines for Evaluating Vehicle Miles Travelled Under CEQA*, (County VMT Guidelines) on November 17, 2020. The County VMT Guidelines are incorporated into the County of Orange 2020 Local CEQA Procedures Manual discussed in Section 3.6 - Vehicle Miles Traveled Analysis. This document provides a guide for application and substantial evidence for the County's adopted thresholds of significance, modeled after the Governor's Office of Planning and Research (OPR)'s suggestions for CEQA transportation studies.

The County VMT Guidelines generally refers to Appendix A – *Technical Advisory on Evaluating Transportation Impacts in CEQA*[5] (OPR, September 2020) for evaluating VMT impacts. The County VMT Guidelines provide the following general guidance:

- Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact.[6]
- For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements.[7]

The County's VMT guidelines also state that a project that is consistent with the build out of the *Orange County Master Plan of Arterial Highways* (MPAH) network may have a less than significant impact.[8] The Brea Boulevard Corridor Improvement Project is intended to improve Brea Boulevard to be consistent with its designated Primary Arterial Highway classification per the MPAH. To assess its potential impact related to VMT/consistency with CEQA Guidelines section 15064.3, subdivision (b), the County decided to perform a separate VMT assessment by calculating the Project's net effect on VMT using OCTA's OCTAM VMT Tool.

OCTAM VMT Analysis

The OCTAM Version 4.2 VMT Tool (provided in the Scenario file model dashboard) is capable of re-distributing traffic volumes as a result of land use changes or roadway network changes using a cost-analysis-type approach (e.g., taking into consideration travel time, travel distance, vehicle operation, mode choice, etc.). For this analysis, AECOM utilized the full model stream provided by OCTA and ran all OCTAM model steps (i.e., network preparation, trip generation, trip distribution, mode choice, assignment, and post-processing) separately for the Future Buildout (2045) Plus Project Conditions and the Future Buildout (2045) No Project Conditions models. Because the OCTAM Model considers buildout of the MPAH (which already takes Project-related

[5] Ibid.
[6] *Guidelines for Evaluating Vehicle Miles Traveled Under County of Orange*, September 2020, page 1.
[7] Ibid.
[8] Ibid. page 16.

widening of Brea Boulevard into account), AECOM removed the two associated lanes (one in each direction) in order to model Future Buildout (2045) No Project Conditions.

The VMT summary results in Table 10-3 which are presented as a daily VMT, daily percent change in VMT, and as an extrapolated yearly VMT change) show that VMT would be lower for the Future Buildout (2045) Plus Project Conditions model than the Future Buildout (2045) No Project Conditions model (i.e., approximately 0.23 percent lower with the Project).

Table 10-3
Vehicle Miles Travel Assessment Results

Vehicle Miles Traveled (VMT)	Future Buildout (2045) No Project Conditions Model (2 Total Lanes; Daily Weekday VMT)	Future Buildout (2045) Plus Project Conditions Model (4 Total Lanes; Daily Weekday VMT)	Daily VMT Change	Daily VMT Change (%)	Approximate Yearly VMT Change in OCTAM (305 equivalent days/year)
VMT	80,555,339	80,371,625	-183,714	-0.23%	-56,000,000

Source: AECOM

These results indicate that with the Project improvements, the modeled desired trip paths over Brea Boulevard would be shorter and less congested than the more heavily congested and longer options. For example, the model indicates that for motorists near the southern end of the corridor intending to travel north on SR 57 to Los Angeles County, a primary route option change of some vehicles would be a shift north through the shorter and less congested corridor instead of travelling southeast to the SR 57 at Lambert Road via State College Boulevard. The VMT model shows a similar case in the southbound direction. This results in a net reduction in VMT with the Project.

As a parallel roadway, some motorists are likely using Brea Boulevard to bypass the SR-57 under existing conditions. However, with the implementation of this Project it is expected that the Project conditions will not change substantially and the majority of these motorists, and traffic within the corridor in general, will be primarily local in nature (i.e., having starting points or destinations in the northern Brea area and general vicinity). While the Project would widen a segment of Brea Boulevard from two lanes to four lanes, this widening would only occur on a relatively short segment (approximately 1.5 miles). This corridor improvement within unincorporated Orange County does not affect throughput on Brea Boulevard further north within Brea Canyon (i.e., within Los Angeles County), where an increase in capacity could increase the regional attractiveness of the roadway as an alternative to SR-57; and it only extends as far south as Canyondale Drive, where the widened cross-section would match the existing four-lane cross-section of Brea Boulevard. With several existing/redesigned (and one new) signalized intersections concentrated at the southern end in the City of Brea, the Project would also not be expected to result in substantial travel time reduction relative to SR-57 for non-local motorists. As such, the majority of traffic along the affected segment of Brea Boulevard is expected to continue to be

primarily local in nature, and the potential for substantial diversion of regional traffic from parallel arterials or highways as a result of the Project is expected to be minimal.

In addition, the Project is strictly a transportation project, and it does not include any changes in land use for areas adjacent to the affected segment of Brea Boulevard or for any other areas. There are no major development proposals or zoning changes contemplated along the affected segment of Brea Boulevard at this time, and much of the surrounding area is expected to continue to remain in use for oil extraction, low-density residential, open space, and other light-intensity uses into the future. Traffic levels associated with these uses are primarily dependent on other factors (e.g., sociodemographic trends; unemployment rates and other economic performance metrics; market demand for petroleum; etc.) and are not expected to be substantially affected by the Project.

Therefore, the Project would not result in an impact related to VMT and, as such, would not conflict with CEQA Guidelines section 15064.3, subdivision (b).

Project Potential to Create Localized Induced Demand on Brea Boulevard

As shown above, the Project would not result in induced automobile use, as there would be a net reduction in VMT. However, during the public scoping process, one of the concerns brought up was the Project's potential to result in "induced demand" on the localized segment of Brea Boulevard where widening would occur. The VMT analysis indicated an increase in traffic volumes along the affected segment of Brea Boulevard is expected as motorists divert from other, longer routes. As discussed above, however, the majority of traffic along the affected segment (1.5-miles of widening) of Brea Boulevard is expected to continue to be primarily local in nature, and the potential for substantial diversion of regional traffic from parallel arterials or highways as a result of the Project is expected to be minimal.

The LOS analysis shows that there would be an approximate 1 percent per year increase over existing traffic volumes during the weekday AM and PM peak hours along the affected segment of Brea Boulevard. However, despite the increase in traffic volume, the VMT analysis shows that overall VMT within Orange County would still decrease with the Project, and the LOS analysis shows that intersections (and segments) along Brea Boulevard would see improvements in LOS and delay (or v/c ratio) with the Project (refer to Tables 10-1 and 10-2).

10.4 INTERSECTION CONTROL EVALUATION (ICE) POLICY DIRECTIVE REQUEST

During the public scoping process, Caltrans requested an analysis using ICE Policy Directive for the intersection of Brea Boulevard and State Route 57 On Ramp. Upon review of the geometric layout and traffic volume at the intersection and by a process of elimination of the intersection control options listed below, it was determined that the current southbound uncontrolled

permissive left turn with the northbound free right-turn channel (with no actual conflict at the channel exit) is an appropriate traffic control at the intersection.

- Roundabout – Roundabouts are generally deployed at intersection with balanced traffic flow from all approaches. Since all intersection movements at a roundabout have equal priority, major street movements may be delayed more than desired. The current intersection layout with the northbound right turn approach generally unimpeded and a permissive low volume southbound left entry to the on-ramp, it does not warrant further complication to the current intersection operations.
- Stop Control – There is no current justification to use additional stop control at the intersection, in particular the major street (Brea Boulevard) north-south traffic or for the channelized northbound free-right turn and the southbound permissive left turn.
- Traffic Signal – Similar to stop control, a traffic signal is not an appropriate control for this type of intersection.

Given the current and projected low-volume demand at this intersection, the current operations at the intersection should be maintained until such time that changes in traffic volumes and trip patterns may require future re-evaluation.

10.5 PROJECT IMPACTS AND MITIGATION MEASURES

Project Construction Mitigation

The results of the Project construction traffic analysis (without detour) showed that while additional trips generated by construction activity would be modest, the AM peak hour increase in delay at the Brea Boulevard/Tonner Canyon Road intersection would be a significant impact throughout the duration of construction. Mitigation Measure T-1 is intended to encourage construction work force ride sharing to reduce the total construction-related peak hour trips.

The Project construction traffic analysis (with detour) conservatively showed that the study roadway segments would be impacted due to periodic full closure of Brea Boulevard on weekends. Three intersections and one roadway segment were identified as being impacted due to the short duration detours, but these impacts would be temporary and periodic. Furthermore, the modeled delays and changes in LOS presented in this analysis reflect mid-week, peak travel demand, which overstates the impact. Mitigation Measure T-2 is intended to document the timeframe restriction for when full closure of Brea Boulevard can occur (i.e., night and weekend only), which will ensure that the traffic volumes diverted from Brea Boulevard to adjacent facilities, such as SR-57, would be lower than modeled (e.g., typically 10% lower on Saturday and 20% lower on Sundays). Additionally, mitigation in the form of public awareness and traffic control planning would assist in further reducing these temporary construction-related impacts. Mitigation Measure HHM-4 that was developed to help reduce or avoid potential impacts related to emergency/fire response as a

result of construction-related road and lane closures contains these public awareness and traffic control planning components:

Mitigation Measure T-1

Prior to the start of construction, the contractor shall prepare and have approved a Ride Sharing Incentive Plan by the Director of OC Public Works or designee. The plan shall encourage ride sharing by offering incentives to the construction work force for carpooling to and from the construction site.

Mitigation Measure T-2

Periodic full closures of Brea Boulevard from north of Canyon Country Road to Tonner Canyon Road shall be limited to between Friday at 8:00 pm to Monday at 5:00 am.

Mitigation Measure HHM-4

Prior to the start of construction, the contractor shall prepare and have approved a Construction Emergency Access/Response and Fire Prevention Plan (Emergency Plan) by Director of OC Public Works or designee, the local OCFA Division Chief, the local Orange County Sheriff Lieutenant, and the City of Brea Fire Services Department. The Emergency Plan shall detail emergency access and traffic control during construction-related road and lane closures and the implementation of fire safety measures during construction activities. The Emergency Plan shall include at a minimum the following requirements, restrictions, and measures, which are to be documented in the contractor's construction plans and specifications to the satisfaction of the Director of OC Public Works or designee:

- Requirement for contractor to provide a detailed schedule of work activities at a pre-construction meeting, including start and end dates for work phases, calendared work-day hours, temporary signal/flagman hours of operation, and after work hours emergency access solutions;
- Detailed traffic control and detour plan that assures emergency access is always maintained and is not in conflict with the LHMP or City of Brea's Emergency Response Plan;
- Community communication/alert plan, including public notification activities via social media, changeable message signs, pre-construction updates, safety and emergency protocols, etc. Community communication shall involve disseminating information on OCFA's Ready!, Set!, Go! Safety program and an emergency evacuation route map;
- Protocols for ongoing contractor updates to local OCFA Division Chief, local Orange County Sheriff Lieutenant, City of Brea, and OC Public Works, beginning at the pre-construction meeting and continuing until the end of construction.
- Inclusion of specific emergency operational procedures (i.e., response actions, communication protocols, hazardous condition/weather monitoring, etc.) for (a) flood emergencies,

(b) wildland fires, (c) structure fires, (d) Emergency Medical Services emergencies, (e) red flag warning periods/days (e.g., no hot work), and (f) loss of power;

- Immediate suspension of all construction activities in the event of a fire within the project limits and immediate construction crew use of onsite fire extinguishers and water truck, as well as 911 emergency call;
- Compliance with applicable subsections of Chapter 33 of the 20191 California Fire Code, the National Fire Protection Association Standard 51B, and Section 4442 of the California Public Resources Code;
- Compliance with the fire protection provisions contained in Caltrans Standard Specifications No. 7-1.02(m);
- Details for coordinating with OCFA, Orange County Sheriff's Department, City of Brea Fire Services Department and Police Department through their Incident Command System should a wildfire evacuation be necessary.

Operation Mitigation

None proposed. There are no Project operational impacts identified in this report under Future Buildout conditions.

10.6 CONCLUSIONS

Based on the results of this Traffic Impact Analysis Report, implementation of the Project would not result in any long-term significant traffic impacts at the study intersections or roadway segments during Project Construction and Future Buildout (2045) Plus Project Conditions. Implementation of Mitigation Measure T-1 would reduce the impact from construction-related trips at the Brea Boulevard/Tonner Canyon intersection and Mitigation Measures T-2 and HHM-4 would reduce construction-related impacts resulting from road and lane closures.

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Appendix A

Traffic Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Tonner Canyon Rd & Brea Blvd/Brea Canyon Rd
City: Brea
Control: 1-Way Stop (NB)

Project ID: 19-01173-004
Date: 9/10/2019

Total

NS/EW Streets:	Tonner Canyon Rd				Tonner Canyon Rd				Brea Blvd/Brea Canyon Rd				Brea Blvd/Brea Canyon Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	0	0	0	0	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	0	3	0	0	0	0	0	0	91	2	0	0	355	0	0	456
7:15 AM	4	0	6	0	0	0	0	0	0	114	1	0	1	339	0	0	465
7:30 AM	5	0	4	0	0	0	0	0	0	110	0	0	1	360	0	0	480
7:45 AM	1	0	2	0	0	0	0	0	0	115	0	0	0	326	0	0	444
8:00 AM	1	0	2	0	0	0	0	0	0	98	1	0	0	344	0	0	446
8:15 AM	3	0	3	0	0	0	0	0	0	83	1	0	2	326	0	0	418
8:30 AM	9	0	2	0	0	0	0	0	0	95	1	0	2	349	0	0	458
8:45 AM	5	0	3	0	0	0	0	0	0	76	1	0	1	288	0	0	374
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	33	0	25	0	0	0	0	0	0	782	7	0	7	2687	0	0	3541
APPROACH %'s :	56.90%	0.00%	43.10%	0.00%					0.00%	99.11%	0.89%	0.00%	0.26%	99.74%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	15	0	15	0	0	0	0	0	0	430	3	0	2	1380	0	0	1845
PEAK HR FACTOR :	0.750	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.935	0.375	0.000	0.500	0.958	0.000	0.000	0.961
	0.750								0.941				0.957				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	0	0	0	0	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	0	146	0	0	0	0	0	0	226	0	0	0	93	0	0	468
4:15 PM	3	0	135	0	0	0	0	0	0	278	0	0	1	109	0	0	526
4:30 PM	0	0	156	0	0	0	0	0	0	242	0	0	0	115	0	0	513
4:45 PM	2	0	118	0	0	0	0	0	0	254	0	0	0	135	0	0	509
5:00 PM	2	0	152	0	0	0	0	0	0	251	0	0	0	119	0	0	524
5:15 PM	0	0	150	0	0	0	0	0	0	267	0	0	0	138	0	0	555
5:30 PM	1	0	170	0	0	0	0	0	0	271	0	0	0	139	0	0	581
5:45 PM	1	0	188	0	0	0	0	0	0	221	0	0	1	125	0	0	536
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	0	1215	0	0	0	0	0	0	2010	0	0	2	973	0	0	4212
APPROACH %'s :	0.98%	0.00%	99.02%	0.00%					0.00%	100.00%	0.00%	0.00%	0.21%	99.79%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	4	0	660	0	0	0	0	0	0	1010	0	0	1	521	0	0	2196
PEAK HR FACTOR :	0.500	0.000	0.878	0.000	0.000	0.000	0.000	0.000	0.000	0.932	0.000	0.000	0.250	0.937	0.000	0.000	0.945
	0.878								0.932				0.939				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Brea Canyon Rd & SR-57 SB On Ramp
City: Brea
Control: No Control

Project ID: 19-01173-005
Date: 9/10/2019

Total

NS/EW Streets:	Brea Canyon Rd				Brea Canyon Rd				SR-57 SB On Ramp				SR-57 SB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	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	96	1	0	98	360	1	0	0	0	0	0	0	0	0	0	556
7:15 AM	2	110	1	0	103	349	0	0	0	0	0	0	0	0	0	0	565
7:30 AM	0	115	4	0	108	351	1	0	0	0	2	0	0	0	0	0	581
7:45 AM	0	111	1	0	113	329	1	0	1	0	0	0	0	0	0	0	556
8:00 AM	0	94	6	0	129	337	0	0	0	0	0	0	0	0	0	0	566
8:15 AM	0	91	2	0	130	341	0	0	0	0	0	0	0	0	0	0	564
8:30 AM	0	94	0	0	133	336	1	0	0	0	0	0	0	0	0	0	564
8:45 AM	0	87	0	0	117	295	0	0	1	0	0	0	0	0	0	0	500
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	798	15	0	931	2698	4	0	2	0	2	0	0	0	0	0	4452
APPROACH %'s :	0.25%	97.91%	1.84%	0.00%	25.63%	74.26%	0.11%	0.00%	50.00%	0.00%	50.00%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	2	430	12	0	453	1366	2	0	1	0	2	0	0	0	0	0	2268
PEAK HR FACTOR :	0.250	0.935	0.500	0.000	0.878	0.973	0.500	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.976
	0.933				0.977				0.375								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	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	3	375	2	0	7	101	0	0	1	1	3	0	0	0	0	0	493
4:15 PM	2	396	0	0	4	103	1	0	4	1	0	0	0	0	0	0	511
4:30 PM	0	398	2	0	5	128	0	0	2	0	0	0	0	0	0	0	535
4:45 PM	0	379	1	0	1	127	0	0	1	0	1	0	0	0	0	0	510
5:00 PM	0	406	3	0	11	127	0	0	0	1	0	0	0	0	0	0	548
5:15 PM	0	423	0	0	11	133	0	0	0	0	0	0	0	0	0	0	567
5:30 PM	0	436	0	0	5	142	0	0	0	1	0	0	0	0	0	0	584
5:45 PM	0	403	1	0	6	118	1	0	0	0	1	0	0	0	0	0	530
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	3216	9	0	50	979	2	0	8	4	5	0	0	0	0	0	4278
APPROACH %'s :	0.15%	99.57%	0.28%	0.00%	4.85%	94.96%	0.19%	0.00%	47.06%	23.53%	29.41%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1668	4	0	33	520	1	0	0	2	1	0	0	0	0	0	2229
PEAK HR FACTOR :	0.000	0.956	0.333	0.000	0.750	0.915	0.250	0.000	0.000	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.954
	0.959				0.942				0.750								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Harbor Blvd & Whittier Ave
City: Brea
Control: Signalized

Project ID: 19-01173-006
Date: 9/10/2019

Total

NS/EW Streets:	Harbor Blvd				Harbor Blvd				Whittier Ave				Whittier Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	1	2	1	0	2	1	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	59	137	3	0	33	391	243	0	102	43	57	0	7	62	16	0	1153
7:15 AM	79	152	3	0	47	357	180	0	121	43	72	0	17	66	27	0	1164
7:30 AM	80	145	12	0	60	304	175	0	92	106	110	0	14	69	21	0	1188
7:45 AM	74	175	27	0	55	337	179	0	140	90	89	0	17	86	18	0	1287
8:00 AM	69	181	33	0	31	292	188	0	146	91	72	0	26	61	26	0	1216
8:15 AM	83	136	20	0	43	279	166	0	106	69	86	0	28	88	20	0	1124
8:30 AM	58	146	16	0	27	349	189	0	111	36	92	0	29	69	12	0	1134
8:45 AM	68	158	13	0	14	337	171	0	80	30	61	0	9	47	12	0	1000
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	570	1230	127	0	310	2646	1491	0	898	508	639	0	147	548	152	0	9266
APPROACH %'s :	29.58%	63.83%	6.59%	0.00%	6.97%	59.50%	33.53%	0.00%	43.91%	24.84%	31.25%	0.00%	17.36%	64.70%	17.95%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	302	653	75	0	193	1290	722	0	499	330	343	0	74	282	92	0	4855
PEAK HR FACTOR :	0.944	0.902	0.568	0.000	0.804	0.903	0.960	0.000	0.854	0.778	0.780	0.000	0.712	0.820	0.852	0.000	0.943
	0.910				0.944				0.918				0.926				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	1	2	1	0	2	1	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	52	289	8	0	29	179	94	0	209	78	85	0	10	59	88	0	1180
4:15 PM	71	361	6	0	23	258	106	0	187	57	65	0	8	55	84	0	1281
4:30 PM	59	316	3	0	37	231	113	0	180	61	60	0	10	74	119	0	1263
4:45 PM	50	271	5	0	42	239	151	0	217	95	89	0	12	68	114	0	1353
5:00 PM	52	312	4	0	38	254	141	0	170	47	84	0	14	77	108	0	1301
5:15 PM	47	297	2	0	32	238	141	0	171	66	97	0	17	78	132	0	1318
5:30 PM	52	338	9	0	31	256	146	0	173	75	63	0	8	60	97	0	1308
5:45 PM	52	279	5	0	42	221	126	0	176	87	86	0	13	95	83	0	1265
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	435	2463	42	0	274	1876	1018	0	1483	566	629	0	92	566	825	0	10269
APPROACH %'s :	14.80%	83.78%	1.43%	0.00%	8.65%	59.22%	32.13%	0.00%	55.38%	21.14%	23.49%	0.00%	6.20%	38.17%	55.63%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	201	1218	20	0	143	987	579	0	731	283	333	0	51	283	451	0	5280
PEAK HR FACTOR :	0.966	0.901	0.556	0.000	0.851	0.964	0.959	0.000	0.842	0.745	0.858	0.000	0.750	0.907	0.854	0.000	0.976
	0.902				0.987				0.840				0.865				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Harbor Blvd & E La Habra Blvd
City: La Habra
Control: Signalized

Project ID: 19-01173-007
Date: 9/10/2019

Total

NS/EW Streets:	Harbor Blvd				Harbor Blvd				E La Habra Blvd				E La Habra Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	2	3	0	0	2	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	28	139	9	0	77	336	29	0	25	108	38	0	35	109	47	0	980
7:15 AM	20	140	18	0	72	376	27	0	40	161	29	0	35	153	52	0	1123
7:30 AM	34	167	28	0	89	392	34	0	44	216	56	0	40	138	41	0	1279
7:45 AM	29	179	26	0	79	347	32	0	58	214	52	0	50	142	48	0	1256
8:00 AM	30	171	25	0	71	318	21	0	73	215	60	0	29	110	57	0	1180
8:15 AM	27	148	23	0	71	308	36	0	31	108	38	0	32	106	47	0	975
8:30 AM	26	180	24	0	75	342	37	0	27	111	36	0	36	112	57	0	1063
8:45 AM	30	178	27	0	75	358	32	0	24	78	32	0	35	104	60	0	1033
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	224	1302	180	0	609	2777	248	0	322	1211	341	0	292	974	409	0	8889
APPROACH %'s :	13.13%	76.32%	10.55%	0.00%	16.76%	76.42%	6.82%	0.00%	17.18%	64.62%	18.20%	0.00%	17.43%	58.15%	24.42%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	113	657	97	0	311	1433	114	0	215	806	197	0	154	543	198	0	4838
PEAK HR FACTOR :	0.831	0.918	0.866	0.000	0.874	0.914	0.838	0.000	0.736	0.933	0.821	0.000	0.770	0.887	0.868	0.000	0.946
	0.926				0.902				0.875				0.932				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	2	3	0	0	2	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	53	304	34	0	71	220	28	0	83	147	38	0	34	167	78	0	1257
4:15 PM	45	330	25	0	52	226	34	0	77	151	41	0	31	190	68	0	1270
4:30 PM	61	315	44	0	52	217	41	0	74	148	31	0	32	202	54	0	1271
4:45 PM	67	300	41	0	80	246	46	0	65	156	34	0	36	198	58	0	1327
5:00 PM	58	313	36	0	73	257	33	0	54	136	28	0	38	211	53	0	1290
5:15 PM	66	308	26	0	63	289	36	0	54	141	41	0	28	222	59	0	1333
5:30 PM	69	286	26	0	64	237	41	0	63	147	39	0	46	188	42	0	1248
5:45 PM	52	279	29	0	79	220	33	0	51	167	34	0	31	205	52	0	1232
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	471	2435	261	0	534	1912	292	0	521	1193	286	0	276	1583	464	0	10228
APPROACH %'s :	14.87%	76.89%	8.24%	0.00%	19.50%	69.83%	10.66%	0.00%	26.05%	59.65%	14.30%	0.00%	11.88%	68.14%	19.97%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	252	1236	147	0	268	1009	156	0	247	581	134	0	134	833	224	0	5221
PEAK HR FACTOR :	0.940	0.981	0.835	0.000	0.838	0.873	0.848	0.000	0.834	0.931	0.817	0.000	0.882	0.938	0.949	0.000	0.979
	0.973				0.923				0.943				0.964				

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Harbor Blvd & E Lambert Rd
City: La Habra
Control: Signalized

Project ID: 19-01173-008
Date: 9/10/2019

Total

NS/EW Streets:	S Harbor Blvd				S Harbor Blvd				E Lambert Rd				E Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	3	0	0	2	3	0	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	42	143	18	0	42	294	40	0	34	286	88	0	28	214	21	0	1250
7:15 AM	38	132	30	0	62	319	32	0	39	302	91	0	32	235	30	0	1342
7:30 AM	61	125	35	0	75	328	35	0	51	276	56	0	34	266	48	0	1390
7:45 AM	57	140	39	0	83	313	37	0	47	397	77	0	41	245	86	0	1562
8:00 AM	30	151	28	0	90	327	54	0	55	271	75	0	49	191	34	0	1355
8:15 AM	23	132	34	0	50	316	39	0	56	261	82	0	35	178	34	0	1240
8:30 AM	49	154	20	0	41	312	38	0	41	253	68	0	37	174	34	0	1221
8:45 AM	34	150	25	0	66	305	34	0	49	230	55	0	38	178	37	0	1201
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	334	1127	229	0	509	2514	309	0	372	2276	592	0	294	1681	324	0	10561
APPROACH %'s :	19.76%	66.69%	13.55%	0.00%	15.28%	75.45%	9.27%	0.00%	11.48%	70.25%	18.27%	0.00%	12.79%	73.12%	14.09%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	186	548	132	0	310	1287	158	0	192	1246	299	0	156	937	198	0	5649
PEAK HR FACTOR :	0.762	0.907	0.846	0.000	0.861	0.981	0.731	0.000	0.873	0.785	0.821	0.000	0.796	0.881	0.576	0.000	0.904
	0.917				0.932				0.833				0.868				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	3	0	0	2	3	0	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	55	282	40	0	33	213	35	0	78	204	52	0	52	284	60	0	1388
4:15 PM	64	312	29	0	35	256	40	0	80	189	45	0	48	305	46	0	1449
4:30 PM	68	341	34	0	23	223	47	0	78	203	42	0	46	274	50	0	1429
4:45 PM	77	305	41	0	30	230	53	0	79	222	57	0	41	283	61	0	1479
5:00 PM	72	281	34	0	24	229	47	0	54	228	62	0	35	331	65	0	1462
5:15 PM	79	296	35	0	41	264	41	0	49	213	52	0	59	322	54	0	1505
5:30 PM	60	297	25	0	32	274	49	0	58	208	58	0	45	297	53	0	1456
5:45 PM	72	275	43	0	44	235	39	0	59	199	52	0	38	275	50	0	1381
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	547	2389	281	0	262	1924	351	0	535	1666	420	0	364	2371	439	0	11549
APPROACH %'s :	17.00%	74.26%	8.73%	0.00%	10.33%	75.84%	13.84%	0.00%	20.41%	63.56%	16.02%	0.00%	11.47%	74.70%	13.83%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	288	1179	135	0	127	997	190	0	240	871	229	0	180	1233	233	0	5902
PEAK HR FACTOR :	0.911	0.966	0.823	0.000	0.774	0.910	0.896	0.000	0.759	0.955	0.923	0.000	0.763	0.931	0.896	0.000	0.980
	0.947				0.925				0.936				0.946				

National Data & Surveying Services

Intersection Turning Movement Count

Location: N Brea Blvd & Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01173-009
Date: 9/10/2019

Total

NS/EW Streets:	N Brea Blvd				N Brea Blvd				Lambert Rd				Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	1	2	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	36	32	16	0	21	210	41	1	15	214	57	3	45	244	9	3	947
7:15 AM	33	39	13	1	18	219	47	0	14	234	82	1	48	210	14	0	973
7:30 AM	47	66	26	0	15	225	41	0	15	200	119	0	36	227	20	2	1039
7:45 AM	79	108	23	0	33	236	55	0	41	215	125	2	51	236	54	3	1261
8:00 AM	53	107	29	2	32	235	67	4	43	227	92	3	43	232	26	6	1201
8:15 AM	66	61	33	1	23	191	65	0	16	215	77	5	54	213	20	1	1041
8:30 AM	61	58	34	0	16	208	49	0	11	220	102	3	54	199	12	4	1031
8:45 AM	58	37	35	2	18	211	44	0	20	162	74	4	53	219	5	4	946
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	433	508	209	6	176	1735	409	5	175	1687	728	21	384	1780	160	23	8439
APPROACH %'s :	37.46%	43.94%	18.08%	0.52%	7.57%	74.62%	17.59%	0.22%	6.70%	64.61%	27.88%	0.80%	16.36%	75.84%	6.82%	0.98%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	245	342	111	3	103	887	228	4	115	857	413	10	184	908	120	12	4542
PEAK HR FACTOR :	0.775	0.792	0.841	0.375	0.780	0.940	0.851	0.250	0.669	0.944	0.826	0.500	0.852	0.962	0.556	0.500	0.900
	0.835				0.904				0.911				0.890				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	1	2	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	87	178	23	0	16	72	18	1	52	268	79	3	41	276	19	0	1133
4:15 PM	93	157	29	0	15	82	25	0	47	203	95	3	36	276	14	0	1075
4:30 PM	84	149	36	0	8	106	10	1	49	231	83	4	44	301	16	0	1122
4:45 PM	107	151	33	0	12	88	16	0	52	227	84	2	53	300	17	1	1143
5:00 PM	118	161	39	0	5	73	14	0	55	255	114	4	53	273	17	2	1183
5:15 PM	120	209	32	0	12	105	18	2	41	208	118	1	58	300	25	1	1250
5:30 PM	116	183	41	0	10	93	20	0	50	217	93	1	47	245	22	2	1140
5:45 PM	124	169	43	2	14	105	11	1	46	187	96	4	58	288	19	1	1168
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	849	1357	276	2	92	724	132	5	392	1796	762	22	390	2259	149	7	9214
APPROACH %'s :	34.18%	54.63%	11.11%	0.08%	9.65%	75.97%	13.85%	0.52%	13.19%	60.43%	25.64%	0.74%	13.90%	80.53%	5.31%	0.25%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	478	722	155	2	41	376	63	3	192	867	421	10	216	1106	83	6	4741
PEAK HR FACTOR :	0.964	0.864	0.901	0.250	0.732	0.895	0.788	0.375	0.873	0.850	0.892	0.625	0.931	0.922	0.830	0.750	0.948
	0.940				0.881				0.870				0.919				

National Data & Surveying Services

Intersection Turning Movement Count

Location: N State College Blvd & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01173-010
Date: 9/10/2019

Total

NS/EW Streets:	N State College Blvd				N State College Blvd				E Lambert Rd				E Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1.5	1.5	0	2	2	0	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	24	14	0	110	126	1	0	2	188	75	0	68	299	103	0	1025
7:15 AM	23	25	22	0	162	185	1	0	1	166	64	0	87	257	70	0	1063
7:30 AM	37	39	38	0	202	203	1	0	1	117	78	0	94	250	90	1	1151
7:45 AM	77	60	39	0	209	242	2	0	2	139	59	0	84	316	94	1	1324
8:00 AM	56	67	21	0	194	194	5	0	1	143	84	0	104	257	89	0	1215
8:15 AM	21	59	35	0	175	144	3	0	3	135	47	0	74	238	99	0	1033
8:30 AM	22	56	26	0	148	144	3	0	4	179	78	0	72	236	99	0	1067
8:45 AM	36	40	26	0	159	140	2	0	5	183	50	0	78	261	107	0	1087
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	287	370	221	0	1359	1378	18	0	19	1250	535	0	661	2114	751	2	8965
APPROACH %'s :	32.69%	42.14%	25.17%	0.00%	49.33%	50.02%	0.65%	0.00%	1.05%	69.29%	29.66%	0.00%	18.74%	59.92%	21.29%	0.06%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	193	191	120	0	767	824	9	0	5	565	285	0	369	1080	343	2	4753
PEAK HR FACTOR :	0.627	0.713	0.769	0.000	0.917	0.851	0.450	0.000	0.625	0.851	0.848	0.000	0.887	0.854	0.912	0.500	0.897
	0.716				0.883				0.925				0.906				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1.5	1.5	0	2	2	0	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	58	151	61	0	127	70	5	0	4	220	40	1	52	246	173	2	1210
4:15 PM	66	173	85	0	98	81	3	0	2	223	56	0	56	249	154	0	1246
4:30 PM	74	147	76	0	101	71	1	0	3	194	37	0	83	255	160	3	1205
4:45 PM	64	126	73	0	92	84	3	0	3	222	52	0	67	234	151	2	1173
5:00 PM	74	146	107	0	105	85	1	0	1	189	43	0	81	224	152	2	1210
5:15 PM	90	155	98	0	147	88	4	0	1	193	63	0	58	214	153	2	1266
5:30 PM	82	177	77	0	160	84	1	0	2	181	51	0	82	219	186	0	1302
5:45 PM	69	162	71	0	130	74	2	0	6	194	49	0	75	262	186	0	1280
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	577	1237	648	0	960	637	20	0	22	1616	391	1	554	1903	1315	11	9892
APPROACH %'s :	23.44%	50.24%	26.32%	0.00%	59.37%	39.39%	1.24%	0.00%	1.08%	79.61%	19.26%	0.05%	14.64%	50.30%	34.76%	0.29%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	315	640	353	0	542	331	8	0	10	757	206	0	296	919	677	4	5058
PEAK HR FACTOR :	0.875	0.904	0.825	0.000	0.847	0.940	0.500	0.000	0.417	0.976	0.817	0.000	0.902	0.877	0.910	0.500	0.971
	0.953				0.899				0.946				0.906				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 SB Ramps & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01173-011
Date: 9/10/2019

Total

NS/EW Streets:	SR-57 SB Ramps				SR-57 SB Ramps				E Lambert Rd				E Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	2.5	1.5	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	192	0	115	0	0	216	95	0	37	356	0	0	1011
7:15 AM	0	0	0	0	224	1	86	0	0	250	106	0	36	337	0	0	1040
7:30 AM	0	0	0	0	184	0	95	0	0	252	101	0	56	347	0	0	1035
7:45 AM	0	0	0	0	203	0	118	0	0	268	118	0	27	398	0	0	1132
8:00 AM	0	0	0	0	209	0	114	0	0	253	107	0	48	332	0	1	1064
8:15 AM	0	0	0	0	209	0	91	0	0	221	121	0	31	305	0	0	978
8:30 AM	0	0	0	0	218	0	93	0	0	246	113	0	47	324	0	0	1041
8:45 AM	0	0	0	0	213	0	115	0	0	257	106	0	39	347	0	0	1077
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1652	1	827	0	0	1963	867	0	321	2746	0	1	8378
APPROACH %'s :					66.61%	0.04%	33.35%	0.00%	0.00%	69.36%	30.64%	0.00%	10.46%	89.50%	0.00%	0.03%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	820	1	413	0	0	1023	432	0	167	1414	0	1	4271
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.915	0.250	0.875	0.000	0.000	0.954	0.915	0.000	0.746	0.888	0.000	0.250	0.943
					0.955				0.942				0.931				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	2.5	1.5	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	123	0	140	0	0	266	132	0	53	335	0	0	1049
4:15 PM	0	0	0	0	150	0	138	0	0	291	127	0	34	337	0	3	1080
4:30 PM	0	0	0	0	181	0	163	0	0	244	131	0	63	321	0	1	1104
4:45 PM	0	0	0	0	182	0	157	0	0	270	114	0	40	319	0	0	1082
5:00 PM	0	0	0	0	143	0	156	0	0	259	148	0	58	307	0	1	1072
5:15 PM	0	0	0	0	151	0	144	0	0	266	174	0	64	314	0	0	1113
5:30 PM	0	0	0	0	162	2	150	0	0	284	130	0	44	346	0	1	1119
5:45 PM	0	0	0	0	170	0	157	0	0	274	124	0	46	378	0	0	1149
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1262	2	1205	0	0	2154	1080	0	402	2657	0	6	8768
APPROACH %'s :					51.11%	0.08%	48.81%	0.00%	0.00%	66.60%	33.40%	0.00%	13.12%	86.69%	0.00%	0.20%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	626	2	607	0	0	1083	576	0	212	1345	0	2	4453
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.921	0.250	0.967	0.000	0.000	0.953	0.828	0.000	0.828	0.890	0.000	0.500	0.969
					0.944				0.943				0.919				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 NB Ramps & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01173-012
Date: 9/10/2019

Total

NS/EW Streets:	SR-57 NB Ramps				SR-57 NB Ramps				E Lambert Rd				E Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0	1	0	0	0	0	0	2	3	0	0	2.5	0	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	208	0	86	0	0	0	0	0	64	348	0	0	0	182	109	0	997
7:15 AM	201	0	77	0	0	0	0	0	77	391	0	0	0	174	97	0	1017
7:30 AM	178	0	96	0	0	0	0	0	37	408	0	0	0	226	100	0	1045
7:45 AM	171	0	88	0	0	0	0	0	38	426	0	0	0	277	76	0	1076
8:00 AM	157	0	71	0	0	0	0	0	58	404	0	1	0	199	81	0	971
8:15 AM	184	0	99	0	0	0	0	0	49	392	0	0	0	161	78	0	963
8:30 AM	174	0	97	0	0	0	0	0	61	392	0	0	0	187	98	0	1009
8:45 AM	189	0	101	0	0	0	0	0	55	409	0	1	0	207	103	0	1065
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1462	0	715	0	0	0	0	0	439	3170	0	2	0	1613	742	0	8143
APPROACH %'s :	67.16%	0.00%	32.84%	0.00%					12.16%	87.79%	0.00%	0.06%	0.00%	68.49%	31.51%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	758	0	347	0	0	0	0	0	216	1573	0	0	0	859	382	0	4135
PEAK HR FACTOR :	0.911	0.000	0.904	0.000	0.000	0.000	0.000	0.000	0.701	0.923	0.000	0.000	0.000	0.775	0.876	0.000	0.961
	0.940								0.956				0.879				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0	1	0	0	0	0	0	2	3	0	0	2.5	0	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	215	0	127	0	0	0	0	0	62	317	0	0	0	174	109	0	1004
4:15 PM	199	1	108	0	0	0	0	0	87	366	0	1	0	173	112	0	1047
4:30 PM	190	2	82	0	0	0	0	0	89	336	0	0	0	192	112	0	1003
4:45 PM	170	2	66	0	0	0	0	0	84	372	0	0	0	192	115	0	1001
5:00 PM	192	0	95	0	0	0	0	0	89	311	0	0	0	173	114	0	974
5:15 PM	209	0	80	0	0	0	0	0	98	312	0	1	0	178	93	0	971
5:30 PM	246	0	90	0	0	0	0	0	81	358	0	0	0	160	122	0	1057
5:45 PM	212	0	77	0	0	0	0	0	66	386	0	0	0	193	94	0	1028
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1633	5	725	0	0	0	0	0	656	2758	0	2	0	1435	871	0	8085
APPROACH %'s :	69.11%	0.21%	30.68%	0.00%					19.20%	80.74%	0.00%	0.06%	0.00%	62.23%	37.77%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	774	5	383	0	0	0	0	0	322	1391	0	1	0	731	448	0	4055
PEAK HR FACTOR :	0.900	0.625	0.754	0.000	0.000	0.000	0.000	0.000	0.904	0.935	0.000	0.250	0.000	0.952	0.974	0.000	0.968
	0.849								0.940				0.960				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 SB Ramps & Brea Canyon Cutoff Rd
City: Diamond Bar
Control: Signalized

Project ID: 19-01173-013
Date: 9/10/2019

Total

NS/EW Streets:	SR-57 SB Ramps				SR-57 SB Ramps				Brea Canyon Cutoff Rd				Brea Canyon Cutoff Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	0.5	1	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	9	0	2	0	0	94	194	0	103	70	0	0	472
7:15 AM	0	0	0	0	15	0	1	0	0	118	214	0	95	83	0	0	526
7:30 AM	0	0	0	0	12	0	2	0	0	109	223	0	82	95	0	0	523
7:45 AM	0	0	0	0	20	0	1	0	0	118	217	0	100	112	0	0	568
8:00 AM	0	0	0	0	16	2	2	0	0	131	206	0	99	109	0	0	565
8:15 AM	0	0	0	0	19	0	6	0	0	73	202	0	63	136	0	0	499
8:30 AM	0	0	0	0	20	0	5	0	0	79	167	0	75	130	0	0	476
8:45 AM	0	0	0	0	15	1	3	0	0	88	163	0	54	130	0	0	454
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	126	3	22	0	0	810	1586	0	671	865	0	0	4083
APPROACH %'s :					83.44%	1.99%	14.57%	0.00%	0.00%	33.81%	66.19%	0.00%	43.68%	56.32%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	63	2	6	0	0	476	860	0	376	399	0	0	2182
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.788	0.250	0.750	0.000	0.000	0.908	0.964	0.000	0.940	0.891	0.000	0.000	0.960
						0.845				0.991				0.914			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	0.5	1	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	10	0	1	0	0	49	146	0	34	283	0	0	523
4:15 PM	0	0	0	0	14	0	5	0	0	55	159	0	47	272	0	0	552
4:30 PM	0	0	0	0	15	1	1	0	0	57	186	0	61	277	0	0	598
4:45 PM	0	0	0	0	31	0	7	0	0	74	167	0	46	239	0	0	564
5:00 PM	0	0	0	0	22	0	5	0	0	65	193	0	52	298	0	0	635
5:15 PM	0	0	0	0	22	0	4	0	0	75	202	0	53	305	0	0	661
5:30 PM	0	0	0	0	23	0	2	0	0	75	220	0	46	280	0	0	646
5:45 PM	0	0	0	0	33	1	6	0	0	107	184	0	55	312	0	0	698
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	170	2	31	0	0	557	1457	0	394	2266	0	0	4877
APPROACH %'s :					83.74%	0.99%	15.27%	0.00%	0.00%	27.66%	72.34%	0.00%	14.81%	85.19%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	100	1	17	0	0	322	799	0	206	1195	0	0	2640
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.758	0.250	0.708	0.000	0.000	0.752	0.908	0.000	0.936	0.958	0.000	0.000	0.946
						0.738				0.950				0.954			

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 NB Ramps & S Diamond Bar Blvd
City: Diamond Bar
Control: Signalized

Project ID: 19-01173-014
Date: 9/10/2019

Total

NS/EW Streets:	SR-57 NB Ramps				SR-57 NB Ramps				S Diamond Bar Blvd				S Diamond Bar Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	39	2	45	0	0	0	0	0	11	91	0	4	0	134	36	0	362
7:15 AM	40	0	42	0	0	0	0	0	7	121	0	2	0	130	44	0	386
7:30 AM	46	0	43	0	0	0	0	0	1	114	0	8	0	129	47	0	388
7:45 AM	52	0	47	0	0	0	0	0	3	130	0	3	0	151	58	0	444
8:00 AM	53	0	41	0	0	0	0	0	6	136	0	3	0	153	45	0	437
8:15 AM	67	0	40	0	0	0	0	0	6	89	0	0	0	126	56	0	384
8:30 AM	71	0	50	0	0	0	0	0	8	86	0	0	0	141	45	0	401
8:45 AM	83	3	55	0	0	0	0	0	9	93	0	0	0	94	39	0	376
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	451	5	363	0	0	0	0	0	51	860	0	20	0	1058	370	0	3178
APPROACH %'s :	55.07%	0.61%	44.32%	0.00%					5.48%	92.37%	0.00%	2.15%	0.00%	74.09%	25.91%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	243	0	178	0	0	0	0	0	23	441	0	6	0	571	204	0	1666
PEAK HR FACTOR :	0.856	0.000	0.890	0.000	0.000	0.000	0.000	0.000	0.719	0.811	0.000	0.500	0.000	0.933	0.879	0.000	0.938
	0.870								0.810				0.927				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	174	2	187	0	0	0	0	0	0	59	0	0	0	142	7	0	571
4:15 PM	162	1	185	0	0	0	0	0	4	63	0	1	0	160	15	0	591
4:30 PM	167	0	141	0	0	0	0	0	0	72	0	1	0	172	10	0	563
4:45 PM	130	0	127	0	0	0	0	0	2	104	0	0	0	150	18	0	531
5:00 PM	154	1	161	0	0	0	0	0	0	82	0	0	0	202	14	0	614
5:15 PM	185	0	159	0	0	0	0	0	3	101	0	0	0	168	9	0	625
5:30 PM	160	0	180	0	0	0	0	0	0	97	0	1	0	166	16	0	620
5:45 PM	183	0	164	0	0	0	0	0	1	132	0	1	0	187	17	0	685
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1315	4	1304	0	0	0	0	0	10	710	0	4	0	1347	106	0	4800
APPROACH %'s :	50.13%	0.15%	49.71%	0.00%					1.38%	98.07%	0.00%	0.55%	0.00%	92.70%	7.30%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	682	1	664	0	0	0	0	0	4	412	0	2	0	723	56	0	2544
PEAK HR FACTOR :	0.922	0.250	0.922	0.000	0.000	0.000	0.000	0.000	0.333	0.780	0.000	0.500	0.000	0.895	0.824	0.000	0.928
	0.970								0.780				0.902				

National Data & Surveying Services

Intersection Turning Movement Count

Location: S Brea Canyon Rd & S Diamond Bar Blvd
City: Diamond Bar
Control: Signalized

Project ID: 19-01173-015
Date: 9/10/2019

Total

NS/EW Streets:	S Brea Canyon Rd				S Brea Canyon Rd				S Diamond Bar Blvd				S Diamond Bar Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	2	0	2	2	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	25	7	9	0	4	59	8	0	5	47	68	6	204	141	10	0	593
7:15 AM	36	12	13	0	2	78	6	0	7	45	96	5	144	132	18	0	594
7:30 AM	28	10	26	0	2	58	6	0	11	57	82	9	161	139	12	0	601
7:45 AM	30	17	28	0	6	51	27	0	17	68	84	9	158	132	8	0	635
8:00 AM	28	21	23	0	14	52	34	0	23	63	80	9	179	122	33	0	681
8:15 AM	29	16	22	0	14	61	42	0	8	66	49	5	223	109	8	0	652
8:30 AM	32	3	29	0	1	48	12	0	1	62	52	6	249	135	4	0	634
8:45 AM	35	8	22	0	3	85	8	0	9	72	58	4	184	90	5	0	583
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	243	94	172	0	46	492	143	0	81	480	569	53	1502	1000	98	0	4973
APPROACH %'s :	47.74%	18.47%	33.79%	0.00%	6.75%	72.25%	21.00%	0.00%	6.85%	40.57%	48.10%	4.48%	57.77%	38.46%	3.77%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	119	57	102	0	35	212	115	0	49	259	265	29	809	498	53	0	2602
PEAK HR FACTOR :	0.930	0.679	0.879	0.000	0.625	0.869	0.685	0.000	0.533	0.952	0.789	0.806	0.812	0.922	0.402	0.000	0.955
	0.927				0.774				0.846				0.876				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	2	0	2	2	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	85	71	216	0	9	4	3	0	12	203	17	4	24	70	4	0	722
4:15 PM	67	79	210	0	8	3	7	0	12	204	16	3	29	81	11	0	730
4:30 PM	96	100	217	0	6	5	18	0	21	154	22	7	27	67	4	0	744
4:45 PM	66	58	196	0	9	2	11	0	25	181	16	1	32	80	11	0	688
5:00 PM	113	89	215	0	9	7	14	0	23	191	13	5	26	89	8	0	802
5:15 PM	90	99	186	0	13	9	9	0	26	223	12	12	29	68	7	0	783
5:30 PM	104	113	194	0	14	11	16	0	17	208	19	8	29	70	6	0	809
5:45 PM	91	96	187	0	8	11	9	0	34	245	22	10	33	82	7	0	835
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	712	705	1621	0	76	52	87	0	170	1609	137	50	229	607	58	0	6113
APPROACH %'s :	23.44%	23.21%	53.36%	0.00%	35.35%	24.19%	40.47%	0.00%	8.65%	81.84%	6.97%	2.54%	25.62%	67.90%	6.49%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	398	397	782	0	44	38	48	0	100	867	66	35	117	309	28	0	3229
PEAK HR FACTOR :	0.881	0.878	0.909	0.000	0.786	0.864	0.750	0.000	0.735	0.885	0.750	0.729	0.886	0.868	0.875	0.000	0.967
	0.945				0.793				0.859				0.923				

Prepared by National Data & Surveying Services

VOLUME

N Brea Blvd Bet. Central Ave/State College Blvd & Canyondale Dr

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_001

DAILY TOTALS	NB	SB	EB	WB	Total
	8,551	10,244	0	0	18,795

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	19		9				28		12:00	89		62				151	
00:15	11		6				17		12:15	78		70				148	
00:30	18		6				24		12:30	115		90				205	
00:45	8	56	6	27			14	83	12:45	89	371	59	281			148	652
01:00	3		2				5		13:00	105		84				189	
01:15	4		2				6		13:15	98		84				182	
01:30	8		6				14		13:30	135		93				228	
01:45	8	23	3	13			11	36	13:45	150	488	78	339			228	827
02:00	17		2				19		14:00	126		120				246	
02:15	6		2				8		14:15	119		84				203	
02:30	9		4				13		14:30	183		124				307	
02:45	5	37	2	10			7	47	14:45	159	587	89	417			248	1004
03:00	6		7				13		15:00	175		95				270	
03:15	11		14				25		15:15	197		114				311	
03:30	11		19				30		15:30	245		137				382	
03:45	9	37	13	53			22	90	15:45	207	824	126	472			333	1296
04:00	9		9				18		16:00	279		105				384	
04:15	9		27				36		16:15	276		125				401	
04:30	13		53				66		16:30	252		136				388	
04:45	27	58	47	136			74	194	16:45	270	1077	142	508			412	1585
05:00	16		48				64		17:00	284		120				404	
05:15	31		62				93		17:15	274		140				414	
05:30	46		138				184		17:30	283		146				429	
05:45	36	129	307	555			343	684	17:45	230	1071	145	551			375	1622
06:00	56		299				355		18:00	223		112				335	
06:15	55		316				371		18:15	206		128				334	
06:30	85		356				441		18:30	157		126				283	
06:45	98	294	351	1322			449	1616	18:45	151	737	94	460			245	1197
07:00	96		372				468		19:00	137		68				205	
07:15	115		369				484		19:15	109		56				165	
07:30	120		382				502		19:30	90		51				141	
07:45	110	441	340	1463			450	1904	19:45	80	416	47	222			127	638
08:00	112		371				483		20:00	90		27				117	
08:15	86		347				433		20:15	71		24				95	
08:30	98		355				453		20:30	70		32				102	
08:45	84	380	334	1407			418	1787	20:45	48	279	35	118			83	397
09:00	90		292				382		21:00	43		30				73	
09:15	68		222				290		21:15	44		27				71	
09:30	75		223				298		21:30	49		44				93	
09:45	78	311	177	914			255	1225	21:45	34	170	27	128			61	298
10:00	60		118				178		22:00	28		31				59	
10:15	63		80				143		22:15	38		26				64	
10:30	71		112				183		22:30	30		13				43	
10:45	66	260	85	395			151	655	22:45	30	126	16	86			46	212
11:00	61		85				146		23:00	14		17				31	
11:15	83		83				166		23:15	20		15				35	
11:30	78		72				150		23:30	25		11				36	
11:45	80	302	70	310			150	612	23:45	18	77	14	57			32	134
TOTALS		2328		6605				8933	TOTALS		6223		3639				9862
SPLIT %		26.1%		73.9%				47.5%	SPLIT %		63.1%		36.9%				52.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	8,551	10,244	0	0	18,795

AM Peak Hour	07:15	06:45			07:15	PM Peak Hour	16:45	17:00			16:45
AM Pk Volume	457	1474			1919	PM Pk Volume	1111	551			1659
Pk Hr Factor	0.952	0.965			0.956	Pk Hr Factor	0.978	0.943			0.967
7 - 9 Volume	821	2870	0	0	3691	4 - 6 Volume	2148	1059	0	0	3207
7 - 9 Peak Hour	07:15	07:00			07:15	4 - 6 Peak Hour	16:45	17:00			16:45
7 - 9 Pk Volume	457	1463	0	0	1919	4 - 6 Pk	1111	551	0	0	1659
Pk Hr Factor	0.952	0.957	0.000	0.000	0.956	Pk Hr Factor	0.978	0.943	0.000	0.000	0.967

Prepared by National Data & Surveying Services

VOLUME

Brea Blvd Bet. Canyon Country Rd & Tonner Canyon Rd

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,567	9,179	16,746

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			19		7		26		12:00			73		44		117	
00:15			10		6		16		12:15			67		56		123	
00:30			15		6		21		12:30			88		75		163	
00:45			9	53	6	25	15	78	12:45			81	309	59	234	140	543
01:00			4		2		6		13:00			94		56		150	
01:15			3		4		7		13:15			76		71		147	
01:30			8		5		13		13:30			119		80		199	
01:45			7	22	3	14	10	36	13:45			119	408	57	264	176	672
02:00			17		2		19		14:00			97		64		161	
02:15			7		2		9		14:15			99		71		170	
02:30			10		5		15		14:30			118		64		182	
02:45			3	37	1	10	4	47	14:45			171	485	70	269	241	754
03:00			6		7		13		15:00			140		74		214	
03:15			11		15		26		15:15			178		102		280	
03:30			11		21		32		15:30			204		87		291	
03:45			9	37	10	53	19	90	15:45			198	720	106	369	304	1089
04:00			10		10		20		16:00			222		95		317	
04:15			6		30		36		16:15			280		107		387	
04:30			18		50		68		16:30			246		113		359	
04:45			24	58	40	130	64	188	16:45			249	997	134	449	383	1446
05:00			21		46		67		17:00			254		122		376	
05:15			32		59		91		17:15			264		140		404	
05:30			43		135		178		17:30			270		136		406	
05:45			34	130	310	550	344	680	17:45			215	1003	124	522	339	1525
06:00			50		281		331		18:00			190		99		289	
06:15			46		312		358		18:15			175		109		284	
06:30			71		328		399		18:30			144		108		252	
06:45			81	248	325	1246	406	1494	18:45			131	640	89	405	220	1045
07:00			90		358		448		19:00			129		56		185	
07:15			113		339		452		19:15			91		55		146	
07:30			103		361		464		19:30			72		39		111	
07:45			117	423	331	1389	448	1812	19:45			67	359	43	193	110	552
08:00			97		343		440		20:00			78		24		102	
08:15			82		324		406		20:15			54		23		77	
08:30			96		358		454		20:30			50		28		78	
08:45			76	351	294	1319	370	1670	20:45			44	226	36	111	80	337
09:00			77		280		357		21:00			36		24		60	
09:15			62		186		248		21:15			39		26		65	
09:30			70		200		270		21:30			42		37		79	
09:45			64	273	141	807	205	1080	21:45			28	145	27	114	55	259
10:00			57		97		154		22:00			24		28		52	
10:15			44		71		115		22:15			31		26		57	
10:30			63		76		139		22:30			26		11		37	
10:45			56	220	66	310	122	530	22:45			25	106	14	79	39	185
11:00			57		81		138		23:00			11		17		28	
11:15			54		65		119		23:15			15		15		30	
11:30			61		59		120		23:30			24		11		35	
11:45			80	252	55	260	135	512	23:45			15	65	14	57	29	122
TOTALS				2104		6113		8217	TOTALS				5463		3066		8529
SPLIT %				25.6%		74.4%		49.1%	SPLIT %				64.1%		35.9%		50.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,567	9,179	16,746

AM Peak Hour			07:15	07:00	07:00	PM Peak Hour			16:45	16:45	16:45
AM Pk Volume			430	1389	1812	PM Pk Volume			1037	532	1569
Pk Hr Factor			0.919	0.962	0.976	Pk Hr Factor			0.960	0.950	0.966
7 - 9 Volume	0	0	774	2708	3482	4 - 6 Volume	0	0	2000	971	2971
7 - 9 Peak Hour			07:15	07:00	07:00	4 - 6 Peak Hour			16:45	16:45	16:45
7 - 9 Pk Volume	0	0	430	1389	1812	4 - 6 Pk	0	0	1037	532	1569
Pk Hr Factor	0.000	0.000	0.919	0.962	0.976	Pk Hr Factor	0.000	0.000	0.960	0.950	0.966

Prepared by National Data & Surveying Services

VOLUME

Brea Canyon Rd Bet. Tonner Canyon Rd & SR-57 SB On Ramp

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_003

DAILY TOTALS	NB	SB	EB	WB	Total
	10,892	9,377	0	0	20,269

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	18		6						24		12:00	85		48						133	
00:15	12		5						17		12:15	69		63						132	
00:30	15		7						22		12:30	99		76						175	
00:45	10	55	5	23					15	78	12:45	101	354	60	247					161	601
01:00	6		2						8		13:00	106		60						166	
01:15	2		4						6		13:15	96		71						167	
01:30	8		5						13		13:30	142		85						227	
01:45	6	22	3	14					9	36	13:45	150	494	73	289					223	783
02:00	18		1						19		14:00	134		74						208	
02:15	7		3						10		14:15	130		78						208	
02:30	12		5						17		14:30	166		63						229	
02:45	3	40	1	10					4	50	14:45	302	732	73	288					375	1020
03:00	8		6						14		15:00	265		82						347	
03:15	12		13						25		15:15	330		101						431	
03:30	11		22						33		15:30	404		110						514	
03:45	9	40	9	50					18	90	15:45	391	1390	113	406					504	1796
04:00	12		12						24		16:00	365		96						461	
04:15	7		27						34		16:15	417		109						526	
04:30	19		51						70		16:30	400		114						514	
04:45	24	62	46	136					70	198	16:45	364	1546	134	453					498	1999
05:00	28		43						71		17:00	415		121						536	
05:15	33		64						97		17:15	427		140						567	
05:30	51		141						192		17:30	417		134						551	
05:45	40	152	332	580					372	732	17:45	412	1671	127	522					539	2193
06:00	57		284						341		18:00	414		106						520	
06:15	58		323						381		18:15	399		102						501	
06:30	91		341						432		18:30	285		102						387	
06:45	98	304	356	1304					454	1608	18:45	218	1316	75	385					293	1701
07:00	93		347						440		19:00	169		50						219	
07:15	123		340						463		19:15	123		53						176	
07:30	115		356						471		19:30	88		38						126	
07:45	121	452	331	1374					452	1826	19:45	76	456	40	181					116	637
08:00	101		340						441		20:00	92		24						116	
08:15	88		337						425		20:15	62		24						86	
08:30	98		348						446		20:30	49		26						75	
08:45	77	364	295	1320					372	1684	20:45	59	262	39	113					98	375
09:00	95		277						372		21:00	39		20						59	
09:15	61		212						273		21:15	38		26						64	
09:30	83		216						299		21:30	48		36						84	
09:45	57	296	140	845					197	1141	21:45	29	154	26	108					55	262
10:00	79		115						194		22:00	29		28						57	
10:15	50		84						134		22:15	34		23						57	
10:30	71		76						147		22:30	22		10						32	
10:45	64	264	68	343					132	607	22:45	33	118	15	76					48	194
11:00	65		74						139		23:00	14		17						31	
11:15	65		66						131		23:15	16		14						30	
11:30	71		57						128		23:30	24		10						34	
11:45	77	278	59	256					136	534	23:45	16	70	13	54					29	124
TOTALS		2329		6255						8584	TOTALS		8563		3122						11685
SPLIT %		27.1%		72.9%						42.4%	SPLIT %		73.3%		26.7%						57.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	10,892	9,377	0	0	20,269

AM Peak Hour	07:15		06:45						06:45		PM Peak Hour	17:00		16:45						17:00	
AM Pk Volume	460		1399						1828		PM Pk Volume	1671		529						2193	
Pk Hr Factor	0.935		0.982						0.970		Pk Hr Factor	0.978		0.945						0.967	
7 - 9 Volume	816		2694		0		0		3510		4 - 6 Volume	3217		975		0		0		4192	
7 - 9 Peak Hour	07:15		07:00						07:15		4 - 6 Peak Hour	17:00		16:45						17:00	
7 - 9 Pk Volume	460		1374		0		0		1827		4 - 6 Pk	1671		529		0		0		2193	
Pk Hr Factor	0.935		0.965		0.000		0.000		0.970		Pk Hr Factor	0.978		0.945		0.000		0.000		0.967	

Prepared by National Data & Surveying Services

VOLUME

Brea Canyon Rd N/O SR-57 SB On Ramp

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_004

DAILY TOTALS	NB	SB	EB	WB	Total
	10,721	11,772	0	0	22,493

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	18		8				26		12:00	75		47				122	
00:15	11		9				20		12:15	68		74				142	
00:30	15		7				22		12:30	103		82				185	
00:45	10	54	5	29			15	83	12:45	102	348	79	282			181	630
01:00	6		2				8		13:00	84		64				148	
01:15	3		4				7		13:15	100		82				182	
01:30	7		5				12		13:30	134		95				229	
01:45	7	23	4	15			11	38	13:45	147	465	79	320			226	785
02:00	18		2				20		14:00	129		82				211	
02:15	6		2				8		14:15	134		86				220	
02:30	12		5				17		14:30	151		69				220	
02:45	3	39	1	10			4	49	14:45	312	726	76	313			388	1039
03:00	6		8				14		15:00	267		88				355	
03:15	13		13				26		15:15	318		117				435	
03:30	10		22				32		15:30	396		115				511	
03:45	8	37	13	56			21	93	15:45	394	1375	124	444			518	1819
04:00	11		14				25		16:00	360		99				459	
04:15	6		30				36		16:15	423		113				536	
04:30	16		65				81		16:30	400		125				525	
04:45	23	56	58	167			81	223	16:45	362	1545	139	476			501	2021
05:00	27		47				74		17:00	411		128				539	
05:15	35		89				124		17:15	428		145				573	
05:30	46		214				260		17:30	411		143				554	
05:45	41	149	394	744			435	893	17:45	403	1653	134	550			537	2203
06:00	57		428				485		18:00	409		107				516	
06:15	54		461				515		18:15	397		114				511	
06:30	86		456				542		18:30	299		108				407	
06:45	99	296	470	1815			569	2111	18:45	216	1321	84	413			300	1734
07:00	90		467				557		19:00	166		52				218	
07:15	119		458				577		19:15	122		59				181	
07:30	116		483				599		19:30	85		41				126	
07:45	122	447	471	1879			593	2326	19:45	74	447	43	195			117	642
08:00	98		477				575		20:00	89		28				117	
08:15	84		464				548		20:15	64		31				95	
08:30	99		468				567		20:30	46		27				73	
08:45	78	359	439	1848			517	2207	20:45	55	254	46	132			101	386
09:00	89		382				471		21:00	40		22				62	
09:15	57		301				358		21:15	35		29				64	
09:30	76		262				338		21:30	44		41				85	
09:45	63	285	166	1111			229	1396	21:45	31	150	28	120			59	270
10:00	67		145				212		22:00	29		34				63	
10:15	60		103				163		22:15	30		22				52	
10:30	57		98				155		22:30	24		12				36	
10:45	72	256	77	423			149	679	22:45	32	115	15	83			47	198
11:00	61		81				142		23:00	13		16				29	
11:15	54		76				130		23:15	16		14				30	
11:30	69		67				136		23:30	21		11				32	
11:45	70	254	69	293			139	547	23:45	17	67	13	54			30	121
TOTALS		2255		8390				10645	TOTALS		8466		3382				11848
SPLIT %		21.2%		78.8%				47.3%	SPLIT %		71.5%		28.5%				52.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	10,721	11,772	0	0	22,493

AM Peak Hour	07:15	07:30				07:15			PM Peak Hour	17:00	16:45				17:00		
AM Pk Volume	455	1895				2344			PM Pk Volume	1653	555				2203		
Pk Hr Factor	0.932	0.981				0.978			Pk Hr Factor	0.966	0.957				0.961		
7 - 9 Volume	806	3727	0	0		4533			4 - 6 Volume	3198	1026	0	0		4224		
7 - 9 Peak Hour	07:15	07:30				07:15			4 - 6 Peak Hour	17:00	16:45				17:00		
7 - 9 Pk Volume	455	1895	0	0		2344			4 - 6 Pk	1653	555	0	0		2203		
Pk Hr Factor	0.932	0.981	0.000	0.000		0.978			Pk Hr Factor	0.966	0.957	0.000	0.000		0.961		

Prepared by National Data & Surveying Services

VOLUME

Tonner Canyon Rd S/O Brea Canyon Rd

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_005

DAILY TOTALS	NB	SB	EB	WB	Total
	3,250	108	0	0	3,358

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	2		0						2		12:00	12		4						16	
00:15	2		1						3		12:15	9		1						10	
00:30	0		0						0		12:30	10		2						12	
00:45	1	5	0	1					1	6	12:45	12	43	0	7					12	50
01:00	2		0						2		13:00	17		1						18	
01:15	0		0						0		13:15	28		4						32	
01:30	0		0						0		13:30	20		4						24	
01:45	0	2	0						0	2	13:45	22	87	1	10					23	97
02:00	0		0						0		14:00	31		0						31	
02:15	1		0						1		14:15	30		2						32	
02:30	0		1						1		14:30	56		1						57	
02:45	0	1	0	1					0	2	14:45	121	238	1	4					122	242
03:00	2		0						2		15:00	119		0						119	
03:15	1		0						1		15:15	153		1						154	
03:30	1		1						2		15:30	193		0						193	
03:45	1	5	0	1					1	6	15:45	176	641	0	1					176	642
04:00	0		0						0		16:00	146		0						146	
04:15	1		0						1		16:15	140		1						141	
04:30	0		1						1		16:30	149		0						149	
04:45	0	1	1	2					1	3	16:45	122	557	0	1					122	558
05:00	6		1						7		17:00	154		0						154	
05:15	4		3						7		17:15	152		0						152	
05:30	4		3						7		17:30	170		0						170	
05:45	1	15	4	11					5	26	17:45	199	675	1	1					200	676
06:00	3		1						4		18:00	195		1						196	
06:15	6		1						7		18:15	186		6						192	
06:30	8		5						13		18:30	130		0						130	
06:45	15	32	3	10					18	42	18:45	89	600	0	7					89	607
07:00	8		2						10		19:00	47		3						50	
07:15	10		2						12		19:15	31		0						31	
07:30	8		1						9		19:30	15		0						15	
07:45	4	30	0	5					4	35	19:45	17	110	1	4					18	114
08:00	3		1						4		20:00	6		0						6	
08:15	6		3						9		20:15	11		0						11	
08:30	10		3						13		20:30	3		0						3	
08:45	8	27	2	9					10	36	20:45	16	36	4	4					20	40
09:00	12		4						16		21:00	7		2						9	
09:15	2		3						5		21:15	0		0						0	
09:30	6		1						7		21:30	8		0						8	
09:45	9	29	1	9					10	38	21:45	3	18	0	2					3	20
10:00	8		3						11		22:00	5		0						5	
10:15	4		3						7		22:15	6		0						6	
10:30	15		1						16		22:30	2		0						2	
10:45	9	36	5	12					14	48	22:45	3	16	0						3	16
11:00	11		3						14		23:00	4		0						4	
11:15	11		1						12		23:15	1		0						1	
11:30	8		1						9		23:30	1		0						1	
11:45	9	39	1	6					10	45	23:45	1	7	0						1	7
TOTALS		222		67						289	TOTALS		3028		41						3069
SPLIT %		76.8%		23.2%						8.6%	SPLIT %		98.7%		1.3%						91.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	3,250	108	0	0	3,358

AM Peak Hour	10:30	06:30			10:30	PM Peak Hour	17:30	13:00			17:30
AM Pk Volume	46	12			56	PM Pk Volume	750	10			758
Pk Hr Factor	0.767	0.600			0.875	Pk Hr Factor	0.942	0.625			0.948
7 - 9 Volume	57	14	0	0	71	4 - 6 Volume	1232	2	0	0	1234
7 - 9 Peak Hour	07:00	08:00			08:00	4 - 6 Peak Hour	17:00	16:00			17:00
7 - 9 Pk Volume	30	9	0	0	36	4 - 6 Pk	675	1	0	0	676
Pk Hr Factor	0.750	0.750	0.000	0.000	0.692	Pk Hr Factor	0.848	0.250	0.000	0.000	0.845

Prepared by National Data & Surveying Services

VOLUME

Canyon Country Rd E/O N Brea Blvd

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	592	678	1,270

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		1		2		12:00			9		11		20	
00:15			0		0		0		12:15			10		10		20	
00:30			3		1		4		12:30			15		2		17	
00:45			0	4	0	2	0	6	12:45			9	43	13	36	22	79
01:00			0		0		0		13:00			11		7		18	
01:15			0		0		0		13:15			6		16		22	
01:30			0		0		0		13:30			8		16		24	
01:45			0		0		0		13:45			11	36	9	48	20	84
02:00			0		0		0		14:00			12		11		23	
02:15			0		0		0		14:15			10		12		22	
02:30			0		0		0		14:30			15		24		39	
02:45			0		0		0		14:45			12	49	14	61	26	110
03:00			0		0		0		15:00			16		13		29	
03:15			0		0		0		15:15			16		12		28	
03:30			1		2		3		15:30			9		15		24	
03:45			0	1	0	2	0	3	15:45			10	51	8	48	18	99
04:00			0		1		1		16:00			18		4		22	
04:15			1		1		2		16:15			12		15		27	
04:30			0		4		4		16:30			7		18		25	
04:45			0	1	1	7	1	8	16:45			15	52	8	45	23	97
05:00			1		0		1		17:00			12		7		19	
05:15			0		4		4		17:15			12		8		20	
05:30			0		3		3		17:30			14		7		21	
05:45			1	2	9	16	10	18	17:45			15	53	11	33	26	86
06:00			2		5		7		18:00			10		4		14	
06:15			0		6		6		18:15			5		14		19	
06:30			3		9		12		18:30			13		3		16	
06:45			5	10	16	36	21	46	18:45			12	40	13	34	25	74
07:00			5		18		23		19:00			8		7		15	
07:15			1		21		22		19:15			18		9		27	
07:30			2		21		23		19:30			13		5		18	
07:45			9	17	21	81	30	98	19:45			12	51	4	25	16	76
08:00			7		11		18		20:00			8		3		11	
08:15			6		14		20		20:15			11		0		11	
08:30			5		14		19		20:30			12		4		16	
08:45			7	25	13	52	20	77	20:45			8	39	3	10	11	49
09:00			5		6		11		21:00			4		3		7	
09:15			3		15		18		21:15			4		6		10	
09:30			6		13		19		21:30			4		3		7	
09:45			7	21	14	48	21	69	21:45			5	17	1	13	6	30
10:00			7		10		17		22:00			2		1		3	
10:15			10		10		20		22:15			6		3		9	
10:30			4		10		14		22:30			1		1		2	
10:45			6	27	13	43	19	70	22:45			4	13	2	7	6	20
11:00			8		6		14		23:00			3		1		4	
11:15			15		7		22		23:15			2		1		3	
11:30			5		9		14		23:30			3		1		4	
11:45			2	30	6	28	8	58	23:45			2	10	0	3	2	13
TOTALS				138		315		453	TOTALS				454		363		817
SPLIT %				30.5%		69.5%		35.7%	SPLIT %				55.6%		44.4%		64.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	592	678	1,270

AM Peak Hour				11:45	07:00	07:00	PM Peak Hour				14:30	14:15	14:30
AM Pk Volume				36	81	98	PM Pk Volume				59	63	122
Pk Hr Factor				0.600	0.964	0.817	Pk Hr Factor				0.922	0.656	0.782
7 - 9 Volume	0	0		42	133	175	4 - 6 Volume	0	0		105	78	183
7 - 9 Peak Hour				07:45	07:00	07:00	4 - 6 Peak Hour				16:45	16:15	16:00
7 - 9 Pk Volume	0	0		27	81	98	4 - 6 Pk	0	0		53	48	97
Pk Hr Factor	0.000	0.000		0.750	0.964	0.817	Pk Hr Factor	0.000	0.000		0.883	0.667	0.898

Prepared by National Data & Surveying Services

VOLUME

Canyondale Dr E/O N Brea Blvd

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	353	391	744

AM Period	NB		SB		EB		WB		TOTAL	
00:00					0		4		4	
00:15					2		0		2	
00:30					0		0		0	
00:45					0	2	0	4	0	6
01:00					0		0		0	
01:15					1		0		1	
01:30					1		0		1	
01:45					0	2	0		0	2
02:00					0		0		0	
02:15					0		0		0	
02:30					0		0		0	
02:45					1	1	0		1	1
03:00					0		0		0	
03:15					0		0		0	
03:30					0		0		0	
03:45					1	1	0		1	1
04:00					0		0		0	
04:15					1		0		1	
04:30					0		2		2	
04:45					0	1	0	2	0	3
05:00					0		3		3	
05:15					0		6		6	
05:30					0		7		7	
05:45					0		3	19	3	19
06:00					2		2		4	
06:15					1		5		6	
06:30					1		13		14	
06:45					3	7	3	23	6	30
07:00					0		3		3	
07:15					3		9		12	
07:30					3		12		15	
07:45					4	10	11	35	15	45
08:00					3		7		10	
08:15					2		8		10	
08:30					4		7		11	
08:45					3	12	11	33	14	45
09:00					1		5		6	
09:15					1		9		10	
09:30					1		5		6	
09:45					5	8	13	32	18	40
10:00					2		5		7	
10:15					3		6		9	
10:30					2		8		10	
10:45					3	10	7	26	10	36
11:00					4		5		9	
11:15					7		1		8	
11:30					6		4		10	
11:45					2	19	5	15	7	34
TOTALS						73		189		262
SPLIT %						27.9%		72.1%		35.2%

PM Period	NB		SB		EB		WB		TOTAL	
12:00					6		4		10	
12:15					4		12		16	
12:30					5		3		8	
12:45					7	22	7	26	14	48
13:00					2		6		8	
13:15					4		7		11	
13:30					7		5		12	
13:45					7	20	5	23	12	43
14:00					5		9		14	
14:15					5		9		14	
14:30					6		5		11	
14:45					4	20	5	28	9	48
15:00					11		8		19	
15:15					9		4		13	
15:30					1		8		9	
15:45					3	24	3	23	6	47
16:00					9		3		12	
16:15					7		5		12	
16:30					4		6		10	
16:45					7	27	2	16	9	43
17:00					13		1		14	
17:15					7		3		10	
17:30					5		5		10	
17:45					11	36	6	15	17	51
18:00					10		9		19	
18:15					12		8		20	
18:30					8		8		16	
18:45					8	38	3	28	11	66
19:00					9		2		11	
19:15					6		4		10	
19:30					12		6		18	
19:45					4	31	6	18	10	49
20:00					8		1		9	
20:15					8		2		10	
20:30					5		0		5	
20:45					3	24	2	5	5	29
21:00					4		0		4	
21:15					5		1		6	
21:30					4		5		9	
21:45					0	13	0	6	0	19
22:00					5		5		10	
22:15					6		3		9	
22:30					2		2		4	
22:45					2	15	2	12	4	27
23:00					2		0		2	
23:15					4		2		6	
23:30					2		0		2	
23:45					2	10	0	2	2	12
TOTALS						280		202		482
SPLIT %						58.1%		41.9%		64.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	353	391	744

AM Peak Hour				11:15	07:15	07:15	PM Peak Hour			17:45	17:45	17:45
AM Pk Volume				21	39	52	PM Pk Volume			41	31	72
Pk Hr Factor				0.750	0.813	0.867	Pk Hr Factor			0.854	0.861	0.900
7 - 9 Volume	0	0		22	68	90	4 - 6 Volume	0	0	63	31	94
7 - 9 Peak Hour				07:15	07:15	07:15	4 - 6 Peak Hour			17:00	16:00	17:00
7 - 9 Pk Volume	0	0		13	39	52	4 - 6 Pk	0	0	36	16	51
Pk Hr Factor	0.000	0.000		0.813	0.813	0.867	Pk Hr Factor	0.000	0.000	0.692	0.667	0.750

Prepared by National Data & Surveying Services

VOLUME

Lambert Rd Bet. Brea Blvd & Harbor Blvd

Day: Tuesday
Date: 9/10/2019

City: Brea
Project #: CA19_1174_008

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	17,152	17,545	34,697

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			25		28		53		12:00			235		212		447	
00:15			24		33		57		12:15			259		248		507	
00:30			31		16		47		12:30			307		211		518	
00:45			17	97	24	101	41	198	12:45			263	1064	229	900	492	1964
01:00			23		24		47		13:00			213		262		475	
01:15			24		13		37		13:15			217		242		459	
01:30			47		10		57		13:30			354		271		625	
01:45			42	136	16	63	58	199	13:45			235	1019	259	1034	494	2053
02:00			41		12		53		14:00			240		262		502	
02:15			14		18		32		14:15			231		280		511	
02:30			18		14		32		14:30			256		325		581	
02:45			18	91	26	70	44	161	14:45			221	948	321	1188	542	2136
03:00			30		28		58		15:00			222		304		526	
03:15			30		42		72		15:15			269		330		599	
03:30			59		72		131		15:30			276		343		619	
03:45			90	209	71	213	161	422	15:45			277	1044	341	1318	618	2362
04:00			56		46		102		16:00			295		336		631	
04:15			81		60		141		16:15			271		340		611	
04:30			90		90		180		16:30			278		388		666	
04:45			114	341	100	296	214	637	16:45			270	1114	353	1417	623	2531
05:00			99		72		171		17:00			323		390		713	
05:15			130		81		211		17:15			270		359		629	
05:30			160		126		286		17:30			272		343		615	
05:45			180	569	148	427	328	996	17:45			281	1146	346	1438	627	2584
06:00			151		156		307		18:00			253		339		592	
06:15			202		159		361		18:15			247		295		542	
06:30			260		180		440		18:30			239		290		529	
06:45			308	921	242	737	550	1658	18:45			238	977	264	1188	502	2165
07:00			316		260		576		19:00			229		213		442	
07:15			335		267		602		19:15			180		204		384	
07:30			305		249		554		19:30			176		205		381	
07:45			399	1355	261	1037	660	2392	19:45			187	772	180	802	367	1574
08:00			349		253		602		20:00			129		158		287	
08:15			323		239		562		20:15			129		217		346	
08:30			277		255		532		20:30			115		154		269	
08:45			287	1236	242	989	529	2225	20:45			118	491	150	679	268	1170
09:00			295		220		515		21:00			92		135		227	
09:15			279		228		507		21:15			96		139		235	
09:30			244		226		470		21:30			90		104		194	
09:45			218	1036	220	894	438	1930	21:45			68	346	109	487	177	833
10:00			199		220		419		22:00			67		108		175	
10:15			245		212		457		22:15			69		88		157	
10:30			231		216		447		22:30			57		72		129	
10:45			223	898	242	890	465	1788	22:45			52	245	64	332	116	577
11:00			215		186		401		23:00			42		59		101	
11:15			254		213		467		23:15			44		55		99	
11:30			261		211		472		23:30			35		61		96	
11:45			218	948	231	841	449	1789	23:45			28	149	29	204	57	353
TOTALS				7837		6558		14395	TOTALS				9315		10987		20302
SPLIT %				54.4%		45.6%		41.5%	SPLIT %				45.9%		54.1%		58.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	17,152	17,545	34,697

AM Peak Hour			07:15	07:00	07:15	PM Peak Hour			17:00	16:30	16:30
AM Pk Volume			1388	1037	2418	PM Pk Volume			1146	1490	2631
Pk Hr Factor			0.870	0.971	0.916	Pk Hr Factor			0.887	0.955	0.923
7 - 9 Volume	0	0	2591	2026	4617	4 - 6 Volume	0	0	2260	2855	5115
7 - 9 Peak Hour			07:15	07:00	07:15	4 - 6 Peak Hour			17:00	16:30	16:30
7 - 9 Pk Volume	0	0	1388	1037	2418	4 - 6 Pk	0	0	1146	1490	2631
Pk Hr Factor	0.000	0.000	0.870	0.971	0.916	Pk Hr Factor	0.000	0.000	0.887	0.955	0.923

Prepared by National Data & Surveying Services

VOLUME

Harbor Blvd Bet. Lambert Rd & La Habra Blvd

Day: Tuesday
Date: 9/10/2019

City: La Habra
Project #: CA19_1174_009

DAILY TOTALS	NB	SB	EB	WB	Total
	18,213	20,581	0	0	38,794

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	67		24				91		12:00	276		301				577	
00:15	61		30				91		12:15	265		243				508	
00:30	56		13				69		12:30	308		266				574	
00:45	26	210	27	94			53	304	12:45	258	1107	282	1092			540	2199
01:00	20		17				37		13:00	262		252				514	
01:15	26		14				40		13:15	228		275				503	
01:30	44		24				68		13:30	302		268				570	
01:45	27	117	19	74			46	191	13:45	269	1061	285	1080			554	2141
02:00	15		14				29		14:00	299		267				566	
02:15	14		17				31		14:15	299		283				582	
02:30	23		16				39		14:30	336		274				610	
02:45	17	69	27	74			44	143	14:45	345	1279	303	1127			648	2406
03:00	8		15				23		15:00	355		306				661	
03:15	15		35				50		15:15	364		330				694	
03:30	22		59				81		15:30	374		302				676	
03:45	15	60	80	189			95	249	15:45	377	1470	305	1243			682	2713
04:00	25		40				65		16:00	384		298				682	
04:15	27		57				84		16:15	393		308				701	
04:30	21		90				111		16:30	419		283				702	
04:45	32	105	131	318			163	423	16:45	404	1600	292	1181			696	2781
05:00	44		93				137		17:00	404		302				706	
05:15	60		129				189		17:15	396		366				762	
05:30	65		193				258		17:30	386		348				734	
05:45	58	227	283	698			341	925	17:45	351	1537	304	1320			655	2857
06:00	82		324				406		18:00	366		293				659	
06:15	80		406				486		18:15	360		305				665	
06:30	111		464				575		18:30	315		277				592	
06:45	141	414	412	1606			553	2020	18:45	324	1365	273	1148			597	2513
07:00	187		399				586		19:00	296		260				556	
07:15	187		436				623		19:15	267		204				471	
07:30	227		491				718		19:30	286		200				486	
07:45	239	840	472	1798			711	2638	19:45	229	1078	194	858			423	1936
08:00	229		417				646		20:00	201		194				395	
08:15	195		379				574		20:15	202		173				375	
08:30	223		385				608		20:30	190		168				358	
08:45	227	874	406	1587			633	2461	20:45	185	778	121	656			306	1434
09:00	185		356				541		21:00	185		130				315	
09:15	215		350				565		21:15	200		130				330	
09:30	215		346				561		21:30	173		116				289	
09:45	206	821	334	1386			540	2207	21:45	155	713	104	480			259	1193
10:00	200		262				462		22:00	150		95				245	
10:15	201		265				466		22:15	124		72				196	
10:30	204		249				453		22:30	108		77				185	
10:45	211	816	279	1055			490	1871	22:45	72	454	59	303			131	757
11:00	204		240				444		23:00	78		57				135	
11:15	211		268				479		23:15	66		47				113	
11:30	237		269				506		23:30	82		42				124	
11:45	284	936	255	1032			539	1968	23:45	56	282	36	182			92	464
TOTALS		5489		9911				15400	TOTALS		12724		10670				23394
SPLIT %		35.6%		64.4%				39.7%	SPLIT %		54.4%		45.6%				60.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	18,213	20,581	0	0	38,794

AM Peak Hour	11:45	07:15				07:15	PM Peak Hour	16:30	17:00				16:45
AM Pk Volume	1133	1816				2698	PM Pk Volume	1623	1320				2898
Pk Hr Factor	0.920	0.925				0.939	Pk Hr Factor	0.968	0.902				0.951
7 - 9 Volume	1714	3385	0	0		5099	4 - 6 Volume	3137	2501	0	0		5638
7 - 9 Peak Hour	07:30	07:15				07:15	4 - 6 Peak Hour	16:30	17:00				16:45
7 - 9 Pk Volume	890	1816	0	0		2698	4 - 6 Pk	1623	1320	0	0		2898
Pk Hr Factor	0.931	0.925	0.000	0.000		0.939	Pk Hr Factor	0.968	0.902	0.000	0.000		0.951

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Appendix B

LOS Worksheets

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro Scenario 1 Existing AM Peak Hour
Report File: C:\...\Exisitng_AM.pdf 2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	EB Thru	0.706	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.241	33.3	D
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	0.940	-	E
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	0.215	66.3	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.004	12.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	194	165	117	270	866	266	244	956	215	31	447	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	165	117	270	866	266	244	956	215	31	447	47
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	44	31	72	232	71	65	256	58	8	120	13
Total Analysis Volume [veh/h]	208	177	126	290	929	285	262	1026	231	33	480	50
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.06	0.06	0.17	0.27	0.17	0.08	0.30	0.07	0.02	0.14	0.03
Intersection LOS	C											
Intersection V/C	0.706											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	33.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.241

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	451	12	2	1435	38	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	451	12	2	1435	38	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	3	1	378	10	1
Total Analysis Volume [veh/h]	476	13	2	1514	40	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

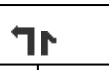
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.24	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.37	0.00	33.26	16.35
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.91	0.91
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.14	0.00	22.86	22.86
d_A, Approach Delay [s/veh]	0.00		0.01		32.46	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.940

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	440	10	49	14	7	1388
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	440	10	49	14	7	1388
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	3	13	4	2	365
Total Analysis Volume [veh/h]	463	11	52	15	7	1461
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.01	0.03	0.01	0.00	0.86
Intersection LOS	E					
Intersection V/C	0.940					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	66.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.215

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	15	15	455	3	2	1380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	15	455	3	2	1380
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	4	118	1	1	359
Total Analysis Volume [veh/h]	16	16	473	3	2	1436
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.03	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	66.29	11.27	0.00	0.00	8.31	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.75	0.08	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	18.67	2.09	0.00	0.00	0.14	0.00
d_A, Approach Delay [s/veh]	38.78		0.00		0.01	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	455	13	453	1380	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	455	13	453	1380	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	117	3	116	353	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	466	13	464	1414	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.42	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.50	0.00	0.00	10.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	2.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.31	0.00	0.00	53.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.05			2.64			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.11											
Intersection LOS	B											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 2 Existing PM Peak Hour
Report File: C:\...\Exisitng_PM.pdf
2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.721	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.094	36.3	E
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.732	-	C
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	2.756	831.2	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.101	16.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	402	531	41	84	194	257	348	714	173	32	923	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	402	531	41	84	194	257	348	714	173	32	923	162
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	138	11	22	51	67	91	186	45	8	241	42
Total Analysis Volume [veh/h]	419	554	43	88	202	268	363	745	180	33	962	169
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.12	0.05	0.06	0.16	0.11	0.22	0.00	0.02	0.28	0.10
Intersection LOS	C											
Intersection V/C	0.721											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	36.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.094

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1090	27	4	536	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1090	27	4	536	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	280	7	1	138	3	0
Total Analysis Volume [veh/h]	1120	28	4	551	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.09	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.00	0.00	36.27	15.73
Movement LOS	A	A	B	A	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.31	0.31
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.00	7.66	7.66
d_A, Approach Delay [s/veh]	0.00		0.08		36.27	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1049	31	24	3	12	516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1049	31	24	3	12	516
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	280	8	6	1	3	138
Total Analysis Volume [veh/h]	1121	33	26	3	13	551
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.66	0.02	0.02	0.00	0.01	0.32
Intersection LOS	C					
Intersection V/C	0.732					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	831.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.756

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	4	660	1053	0	1	524
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	660	1053	0	1	524
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	175	279	0	0	139
Total Analysis Volume [veh/h]	4	698	1114	0	1	554
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	2.76	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	40.48	831.17	0.00	0.00	10.75	0.00
Movement LOS	E	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.12	59.96	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.93	1498.96	0.00	0.00	0.12	0.00
d_A, Approach Delay [s/veh]	826.66		0.00		0.02	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	244.76					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.101

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	1709	4	33	524	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1709	4	33	524	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	448	1	9	137	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	1791	4	35	549	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.53	0.00	0.00	16.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	C	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	8.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			1.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.24											
Intersection LOS	C											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 3 Existing plus Project AM Peak Hour
Report File: C:\...\Existing_Plus_Project_AM.pdf
2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	EB Thru	0.706	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.241	33.3	D
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	0.510	-	A
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Signalized	ICU 1	WB Thru	0.482	-	A
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.004	12.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	194	165	117	270	866	266	244	956	215	31	447	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	165	117	270	866	266	244	956	215	31	447	47
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	44	31	72	232	71	65	256	58	8	120	13
Total Analysis Volume [veh/h]	208	177	126	290	929	285	262	1026	231	33	480	50
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.06	0.06	0.17	0.27	0.17	0.08	0.30	0.07	0.02	0.14	0.03
Intersection LOS	C											
Intersection V/C	0.706											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	33.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.241

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	451	12	2	1435	38	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	451	12	2	1435	38	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	3	1	378	10	1
Total Analysis Volume [veh/h]	476	13	2	1514	40	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.24	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.37	0.00	33.25	16.35
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.91	0.91
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.14	0.00	22.85	22.85
d_A, Approach Delay [s/veh]	0.00		0.01		32.45	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	440	10	49	14	7	1388
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	440	10	49	14	7	1388
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	3	13	4	2	365
Total Analysis Volume [veh/h]	463	11	52	15	7	1461
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.14	0.03	0.01	0.00	0.43
Intersection LOS	A					
Intersection V/C	0.510					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.482

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	15	11	455	2	2	1380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	11	455	2	2	1380
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	3	118	1	1	359
Total Analysis Volume [veh/h]	16	11	473	2	2	1436
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.14	0.14	0.00	0.42
Intersection LOS	A					
Intersection V/C	0.482					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	455	13	453	1380	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	455	13	453	1380	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	117	3	116	353	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	466	13	464	1414	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.42	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.50	0.00	0.00	10.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	2.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.31	0.00	0.00	53.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.05			2.64			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.11											
Intersection LOS	B											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 4 Existing plus Project PM Peak Hour
Report File: C:\...\Existing_Plus_Project_PM.pdf
2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.721	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.094	36.3	E
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.412	-	A
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Signalized	ICU 1	EB Thru	0.534	-	A
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.101	16.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	402	531	41	84	194	257	348	714	173	32	923	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	402	531	41	84	194	257	348	714	173	32	923	162
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	138	11	22	51	67	91	186	45	8	241	42
Total Analysis Volume [veh/h]	419	554	43	88	202	268	363	745	180	33	962	169
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.12	0.05	0.06	0.16	0.11	0.22	0.00	0.02	0.28	0.10
Intersection LOS	C											
Intersection V/C	0.721											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	36.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.094

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1090	27	4	536	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1090	27	4	536	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	280	7	1	138	3	0
Total Analysis Volume [veh/h]	1120	28	4	551	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.09	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.00	0.00	36.27	15.73
Movement LOS	A	A	B	A	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.31	0.31
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.00	7.66	7.66
d_A, Approach Delay [s/veh]	0.00		0.08		36.27	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.412

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1049	31	24	3	12	516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1049	31	24	3	12	516
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	280	8	6	1	3	138
Total Analysis Volume [veh/h]	1121	33	26	3	13	551
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.34	0.02	0.00	0.01	0.16
Intersection LOS	A					
Intersection V/C	0.412					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.534

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	4	495	1053	0	1	524
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	495	1053	0	1	524
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	131	279	0	0	139
Total Analysis Volume [veh/h]	4	524	1114	0	1	554
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.16	0.33	0.00	0.00	0.16
Intersection LOS	A					
Intersection V/C	0.534					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.101

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	1709	4	33	524	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1709	4	33	524	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	448	1	9	137	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	1791	4	35	549	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.53	0.00	0.00	16.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	C	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	8.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			1.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.24											
Intersection LOS	C											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 5 2045 No Project AM Peak Hour
Report File: C:\...\2045_No_Project_AM.pdf
2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	SB Thru	0.763	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.503	90.1	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	1.209	-	F
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	414.223	10,000.0	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.007	17.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.763

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	211	279	137	318	1212	289	340	925	248	38	429	71
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	279	137	318	1212	289	340	925	248	38	429	71
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	70	34	80	303	72	85	231	62	10	107	18
Total Analysis Volume [veh/h]	211	279	137	318	1212	289	340	925	248	38	429	71
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.08	0.08	0.19	0.36	0.17	0.10	0.27	0.08	0.02	0.13	0.04
Intersection LOS	C											
Intersection V/C	0.763											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	90.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.503

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	739	13	2	1969	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	739	13	2	1969	39	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	185	3	1	492	10	1
Total Analysis Volume [veh/h]	739	13	2	1969	39	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.50	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.23	0.00	90.11	49.51
Movement LOS	A	A	A	A	F	E
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	2.15	2.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.18	0.00	53.71	53.71
d_A, Approach Delay [s/veh]	0.00		0.01		88.13	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.31					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.209

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	724	13	43	19	13	1928
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	724	13	43	19	13	1928
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	3	11	5	3	482
Total Analysis Volume [veh/h]	724	13	43	19	13	1928
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.43	0.01	0.03	0.01	0.01	1.13
Intersection LOS	F					
Intersection V/C	1.209					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	414.223

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	46	94	693	56	68	1895
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	94	693	56	68	1895
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	24	173	14	17	474
Total Analysis Volume [veh/h]	46	94	693	56	68	1895
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	414.22	0.22	0.01	0.00	0.08	0.02
d_M, Delay for Movement [s/veh]	10000.00	15.78	0.00	0.00	9.32	0.00
Movement LOS	F	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	7.92	0.83	0.00	0.00	0.24	0.00
95th-Percentile Queue Length [ft/ln]	197.89	20.74	0.00	0.00	6.10	0.00
d_A, Approach Delay [s/veh]	3296.31		0.00		0.32	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	162.03					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	767	18	462	1961	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	767	18	462	1961	0	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	192	5	116	490	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	767	18	462	1961	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.55	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.23	0.00	0.00	14.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	3.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.51	0.00	0.00	84.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.04			2.71			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.06											
Intersection LOS	C											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Report File: C:\...\2045_No_Project_PM.pdf

Scenario 6 2045 No Project PM Peak Hour
2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.738	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.170	66.1	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.866	-	D
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	4.069	1,430.5	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.435	28.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	438	738	50	120	287	322	377	691	174	36	879	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	438	738	50	120	287	322	377	691	174	36	879	197
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	185	13	30	72	81	94	173	44	9	220	49
Total Analysis Volume [veh/h]	438	738	50	120	287	322	377	691	174	36	879	197
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.15	0.15	0.07	0.08	0.19	0.11	0.20	0.00	0.02	0.26	0.12
Intersection LOS	C											
Intersection V/C	0.738											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	66.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1383	27	5	781	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1383	27	5	781	12	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	346	7	1	195	3	0
Total Analysis Volume [veh/h]	1383	27	5	781	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.17	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	12.58	0.00	66.05	24.64
Movement LOS	A	A	B	A	F	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.00	0.57	0.57
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.79	0.00	14.23	14.23
d_A, Approach Delay [s/veh]	0.00		0.08		66.05	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.866

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1338	34	32	5	18	754
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1338	34	32	5	18	754
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	335	9	8	1	5	189
Total Analysis Volume [veh/h]	1338	34	32	5	18	754
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.79	0.02	0.02	0.00	0.01	0.44
Intersection LOS	D					
Intersection V/C	0.866					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,430.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.069

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	5	755	1344	0	19	767
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	755	1344	0	19	767
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	189	336	0	5	192
Total Analysis Volume [veh/h]	5	755	1344	0	19	767
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	4.07	0.01	0.00	0.04	0.01
d_M, Delay for Movement [s/veh]	83.01	1430.53	0.00	0.00	12.29	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.31	74.96	0.00	0.00	0.12	0.00
95th-Percentile Queue Length [ft/ln]	7.73	1873.91	0.00	0.00	2.88	0.00
d_A, Approach Delay [s/veh]	1421.67		0.00		0.30	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	373.94					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	28.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	2089	10	115	785	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2089	10	115	785	0	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	522	3	29	196	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	2089	10	115	785	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.44	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.32	0.00	0.00	28.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	D	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	52.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			3.67			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.10											
Intersection LOS	D											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 7 2045 with Project AM Peak Hour
Report File: C:\...\2045_with Project_AM.pdf
2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	SB Thru	0.763	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.496	88.4	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	0.642	-	B
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Signalized	ICU 1	WB Thru	0.642	-	B
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.007	17.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.763

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	211	279	137	318	1212	289	340	925	248	38	429	71
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	279	137	318	1212	289	340	925	248	38	429	71
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	70	34	80	303	72	85	231	62	10	107	18
Total Analysis Volume [veh/h]	211	279	137	318	1212	289	340	925	248	38	429	71
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.08	0.08	0.19	0.36	0.17	0.10	0.27	0.08	0.02	0.13	0.04
Intersection LOS	C											
Intersection V/C	0.763											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	88.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.496

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	739	13	2	1969	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	739	13	2	1969	39	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	185	3	1	492	10	1
Total Analysis Volume [veh/h]	739	13	2	1969	39	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.50	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.23	0.00	88.36	48.33
Movement LOS	A	A	A	A	F	E
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	2.12	2.12
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.18	0.00	52.99	52.99
d_A, Approach Delay [s/veh]	0.00		0.01		86.41	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.29					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.642

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	724	13	43	19	13	1928
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	724	13	43	19	13	1928
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	3	11	5	3	482
Total Analysis Volume [veh/h]	724	13	43	19	13	1928
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.22	0.03	0.01	0.01	0.57
Intersection LOS	B					
Intersection V/C	0.642					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.642

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	46	71	693	42	68	1895
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	71	693	42	68	1895
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	18	173	11	17	474
Total Analysis Volume [veh/h]	46	71	693	42	68	1895
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.22	0.22	0.04	0.56
Intersection LOS	B					
Intersection V/C	0.642					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	767	18	462	1961	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	767	18	462	1961	0	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	192	5	116	490	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	767	18	462	1961	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.55	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.23	0.00	0.00	14.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	3.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.51	0.00	0.00	84.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.04			2.71			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.06											
Intersection LOS	C											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 8 2045 with Project PM Peak Hour
Report File: C:\...\2045_with Project_PM.pdf
2/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.738	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.170	66.0	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Right	0.483	-	A
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Signalized	ICU 1	EB Thru	0.624	-	B
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.435	28.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	438	738	50	120	287	322	377	691	174	36	879	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	438	738	50	120	287	322	377	691	174	36	879	197
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	185	13	30	72	81	94	173	44	9	220	49
Total Analysis Volume [veh/h]	438	738	50	120	287	322	377	691	174	36	879	197
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.15	0.15	0.07	0.08	0.19	0.11	0.20	0.00	0.02	0.26	0.12
Intersection LOS	C											
Intersection V/C	0.738											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	66.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1383	27	5	781	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1383	27	5	781	12	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	346	7	1	195	3	0
Total Analysis Volume [veh/h]	1383	27	5	781	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.17	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	12.58	0.00	66.05	24.64
Movement LOS	A	A	B	A	F	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.00	0.57	0.57
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.79	0.00	14.23	14.23
d_A, Approach Delay [s/veh]	0.00		0.08		66.05	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.483

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1338	34	32	5	18	754
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1338	34	32	5	18	754
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	335	9	8	1	5	189
Total Analysis Volume [veh/h]	1338	34	32	5	18	754
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.40	0.40	0.02	0.00	0.01	0.22
Intersection LOS	A					
Intersection V/C	0.483					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.624

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	5	566	1344	0	19	767
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	566	1344	0	19	767
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	142	336	0	5	192
Total Analysis Volume [veh/h]	5	566	1344	0	19	767
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.17	0.40	0.00	0.01	0.23
Intersection LOS	B					
Intersection V/C	0.624					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	28.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	2089	10	115	785	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2089	10	115	785	0	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	522	3	29	196	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	2089	10	115	785	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.44	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.32	0.00	0.00	28.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	D	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	52.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			3.67			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.10											
Intersection LOS	D											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro Scenario 21 2028 Pre-Constrction AM Peak Hour

Report File: C:\...\2028_PreConstructn_AM.pdf 5/20/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	SB Thru	0.755	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.340	49.1	E
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	1.064	-	F
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	0.559	159.6	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.005	14.1	B
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	SB Thru	0.884	-	D
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	SB Right	0.768	-	C
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	EB Thru	0.863	-	D
9	Brea Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.814	-	D
10	State College Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.710	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	WB Left	0.747	21.6	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.747	16.7	B
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	1.068	256.2	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.464	29.7	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	WB Left	0.651	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.755

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	203	209	125	291	993	278	280	970	230	34	453	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	209	125	291	993	278	280	970	230	34	453	56
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	56	34	78	266	75	75	260	62	9	122	15
Total Analysis Volume [veh/h]	218	224	134	312	1065	298	300	1041	247	36	486	60
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.07	0.18	0.31	0.18	0.09	0.31	0.08	0.02	0.14	0.04
Intersection LOS	C											
Intersection V/C	0.755											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	49.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.340

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	551	12	2	1634	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	551	12	2	1634	39	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	3	1	431	10	1
Total Analysis Volume [veh/h]	581	13	2	1724	41	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.34	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.69	0.00	49.08	24.40
Movement LOS	A	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	1.38	1.38
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.15	0.00	34.47	34.47
d_A, Approach Delay [s/veh]	0.00		0.01		47.93	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.88					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.064

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	538	11	49	15	9	1588
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	538	11	49	15	9	1588
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	142	3	13	4	2	418
Total Analysis Volume [veh/h]	566	12	52	16	9	1672
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.01	0.03	0.01	0.01	0.98
Intersection LOS	F					
Intersection V/C	1.064					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	159.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	24	37	542	16	18	1572
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	37	542	16	18	1572
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	10	141	4	5	409
Total Analysis Volume [veh/h]	25	39	564	17	19	1636
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.56	0.08	0.01	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	159.62	12.49	0.00	0.00	8.64	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.07	0.24	0.00	0.00	0.06	0.00
95th-Percentile Queue Length [ft/ln]	51.68	6.07	0.00	0.00	1.44	0.00
d_A, Approach Delay [s/veh]	69.97		0.00		0.10	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	2.02					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	562	15	463	1593	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	562	15	463	1593	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	144	4	119	408	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	576	15	474	1632	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.48	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.10	0.00	0.00	11.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.38	0.00	0.00	65.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.05			2.66			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.09											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	326	711	64	216	1422	587	538	366	280	83	309	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	711	64	216	1422	587	538	366	280	83	309	77
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	188	17	57	377	156	143	97	74	22	82	20
Total Analysis Volume [veh/h]	346	754	68	229	1508	622	571	388	297	88	328	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.24	0.24	0.13	0.44	0.20	0.17	0.23	0.07	0.05	0.12	0.12
Intersection LOS	D											
Intersection V/C	0.884											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	125	714	79	327	1598	92	236	885	174	174	589	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	714	79	327	1598	92	236	885	174	174	589	159
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	189	21	86	422	24	62	234	46	46	156	42
Total Analysis Volume [veh/h]	132	755	84	346	1689	97	249	936	184	184	623	168
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	8	7	4	4
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

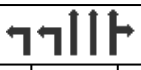
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.16	0.16	0.10	0.35	0.35	0.07	0.28	0.07	0.05	0.18	0.00
Intersection LOS	C											
Intersection V/C	0.768											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	199	598	116	385	1437	131	202	1393	234	170	1016	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	598	116	385	1437	131	202	1393	234	170	1016	164
Peak Hour Factor	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	165	32	106	397	36	56	385	65	47	281	45
Total Analysis Volume [veh/h]	220	662	128	426	1590	145	223	1541	259	188	1124	181
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	0	7	4	4
Auxiliary Signal Groups			6,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.13	0.02	0.13	0.34	0.34	0.07	0.35	0.35	0.06	0.26	0.26
Intersection LOS	D											
Intersection V/C	0.863											

Intersection Level Of Service Report
Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.814

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	268	384	92	123	992	192	140	937	332	207	978	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	384	92	123	992	192	140	937	332	207	978	101
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	107	26	34	276	53	39	260	92	58	272	28
Total Analysis Volume [veh/h]	298	427	102	137	1102	213	156	1041	369	230	1087	112
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.13	0.06	0.08	0.32	0.13	0.09	0.20	0.22	0.14	0.24	0.24
Intersection LOS	D											
Intersection V/C	0.814											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.710

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	210	208	98	834	899	8	5	633	239	420	1215	289
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	208	98	834	899	8	5	633	239	420	1215	289
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	58	27	232	251	2	1	176	67	117	339	81
Total Analysis Volume [veh/h]	234	232	109	930	1002	9	6	706	266	468	1355	322
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.06	0.27	0.30	0.30	0.00	0.14	0.14	0.14	0.27	0.00
Intersection LOS	C											
Intersection V/C	0.710											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	902	1	444	0	1130	468	190	1575	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	902	1	444	0	1130	468	190	1575	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9430	1.0000	0.9430	1.0000	0.9430	0.9430	0.9430	0.9430	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	239	0	118	0	300	124	50	418	0
Total Analysis Volume [veh/h]	0	0	0	957	1	471	0	1198	496	201	1670	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	41	0	13	54	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		69	69	69	69	69	69	69	69
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	25	25	25	7	35
g / C, Green / Cycle		0.37	0.37	0.37	0.36	0.36	0.36	0.10	0.51
(v / s)_i Volume / Saturation Flow Rate		0.30	0.30	0.33	0.26	0.29	0.30	0.06	0.36
s, saturation flow rate [veh/h]		1603	1603	1431	3204	1457	1431	3113	4584
c, Capacity [veh/h]		601	601	536	1139	518	508	302	2338
d1, Uniform Delay [s]		19.36	19.36	20.24	19.64	20.37	20.52	30.29	13.13
k, delay calibration		0.22	0.22	0.28	0.11	0.21	0.22	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		4.98	4.98	11.12	0.98	6.13	7.12	2.52	0.41
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.80	0.80	0.88	0.74	0.82	0.83	0.67	0.71
d, Delay for Lane Group [s/veh]		24.34	24.34	31.36	20.62	26.50	27.64	32.81	13.55
Lane Group LOS		C	C	C	C	C	C	C	B
Critical Lane Group		No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		7.08	7.08	8.09	5.39	6.31	6.47	1.62	5.44
50th-Percentile Queue Length [ft/ln]		177.05	177.05	202.28	134.68	157.70	161.80	40.42	135.96
95th-Percentile Queue Length [veh/ln]		11.45	11.45	12.76	9.19	10.43	10.64	2.91	9.26
95th-Percentile Queue Length [ft/ln]		286.16	286.16	318.90	229.85	260.68	266.11	72.75	231.57

Movement, Approach, & Intersection Results

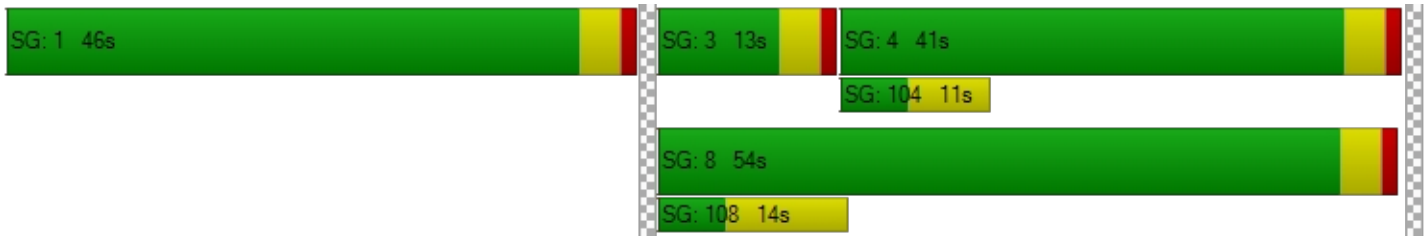
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	24.34	0.00	31.36	0.00	20.96	27.47	32.81	13.55	0.00
Movement LOS				C		C		C	C	C	B	
d_A, Approach Delay [s/veh]	0.00			26.65			23.84			15.62		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	21.56											
Intersection LOS	C											
Intersection V/C	0.747											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.061	2.411	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	840	740	1000
d_b, Bicycle Delay [s]	50.00	16.82	19.85	12.50
l_b,int, Bicycle LOS Score for Intersection	4.132	3.916	2.491	2.589
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	827	0	377	0	0	0	246	1786	0	0	937	415
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	827	0	377	0	0	0	246	1786	0	0	937	415
Peak Hour Factor	0.9610	1.0000	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	0	98	0	0	0	64	465	0	0	244	108
Total Analysis Volume [veh/h]	861	0	392	0	0	0	256	1858	0	0	975	432
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	0	0	0	0	0	15	58	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	58	58		58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20		7	30	19	19	19
g / C, Green / Cycle	0.35	0.35		0.12	0.51	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.28	0.27		0.08	0.41	0.22	0.24	0.25
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1448	1431
c, Capacity [veh/h]	1084	498		385	2354	1028	464	459
d1, Uniform Delay [s]	17.00	16.94		24.22	11.51	17.11	17.63	17.70
k, delay calibration	0.11	0.11		0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.37	2.80		1.98	0.61	0.82	2.55	2.71
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.79		0.67	0.79	0.68	0.76	0.77
d, Delay for Lane Group [s/veh]	18.36	19.74		26.20	12.13	17.92	20.19	20.41
Lane Group LOS	B	B		C	B	B	C	C
Critical Lane Group	Yes	No		No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	4.71	4.48		1.60	4.78	3.52	3.84	3.87
50th-Percentile Queue Length [ft/ln]	117.80	111.91		40.02	119.61	88.07	96.03	96.77
95th-Percentile Queue Length [veh/ln]	8.27	7.95		2.88	8.37	6.34	6.91	6.97
95th-Percentile Queue Length [ft/ln]	206.80	198.66		72.04	209.29	158.52	172.85	174.19

Movement, Approach, & Intersection Results

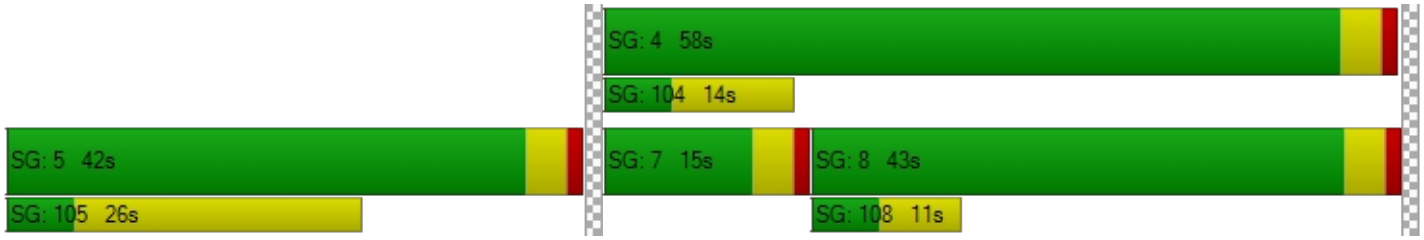
d_M, Delay for Movement [s/veh]	18.36	0.00	19.74	0.00	0.00	0.00	26.20	12.13	0.00	0.00	18.01	20.37
Movement LOS	B		B				C	B			B	C
d_A, Approach Delay [s/veh]	18.79			0.00			13.83			19.11		
Approach LOS	B			A			B			B		
d_I, Intersection Delay [s/veh]	16.69											
Intersection LOS	B											
Intersection V/C	0.747											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.354	2.057	0.000	3.280
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	760	0	1080	780
d_b, Bicycle Delay [s]	19.22	50.00	10.58	18.61
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.722	2.333
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	256.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.068

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	71	2	7	423	526	0	0	550	950
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	71	2	7	423	526	0	0	550	950
Peak Hour Factor	1.0000	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	18	1	2	110	137	0	0	143	247
Total Analysis Volume [veh/h]	0	0	0	74	2	7	441	548	0	0	573	990
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	9	0	29	91	0	0	62	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	29	63	30	30
g / C, Green / Cycle		0.29	0.29	0.29	0.63	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.05	0.00	0.28	0.17	0.18	0.69
s, saturation flow rate [veh/h]		1605	1431	1603	3204	3204	1431
c, Capacity [veh/h]		464	414	466	2021	961	429
d1, Uniform Delay [s]		26.52	25.39	34.69	8.22	29.84	35.00
k, delay calibration		0.50	0.50	0.39	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.76	0.07	25.68	0.07	0.60	595.47
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.16	0.02	0.95	0.27	0.60	2.31
d, Delay for Lane Group [s/veh]		27.28	25.46	60.37	8.29	30.43	630.47
Lane Group LOS		C	C	E	A	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.44	0.13	13.14	2.23	5.86	81.13
50th-Percentile Queue Length [ft/ln]		36.07	3.18	328.54	55.79	146.44	2028.33
95th-Percentile Queue Length [veh/ln]		2.60	0.23	19.09	4.02	9.83	130.05
95th-Percentile Queue Length [ft/ln]		64.93	5.72	477.17	100.43	245.67	3251.25

Movement, Approach, & Intersection Results

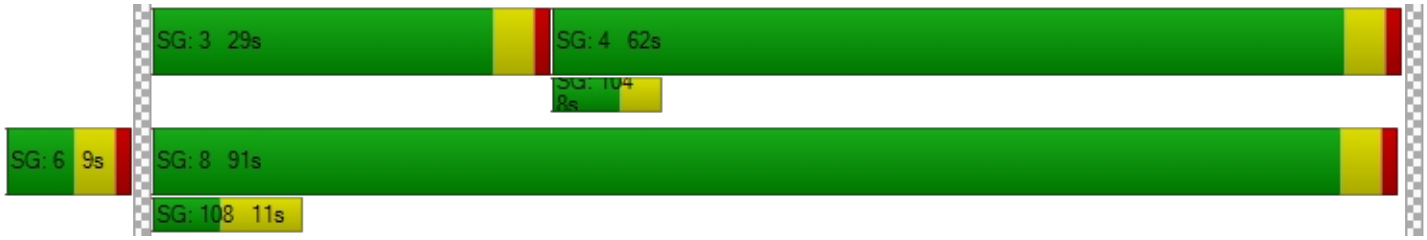
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	27.28	27.28	25.46	60.37	8.29	0.00	0.00	30.43	630.47
Movement LOS				C	C	C	E	A			C	F
d_A, Approach Delay [s/veh]	0.00			27.12			31.52			410.50		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	256.18											
Intersection LOS	F											
Intersection V/C	1.068											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.827	1.762	0.000	0.000
Crosswalk LOS	C	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	100	1740	1160
d_b, Bicycle Delay [s]	50.00	45.13	0.85	8.82
l_b,int, Bicycle LOS Score for Intersection	4.132	1.697	2.376	2.849
Bicycle LOS	D	A	B	C

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.464

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			Yes			No			No		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	655	216	293	0	183	0	0	0	42	580	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	655	216	293	0	183	0	0	0	42	580	0
Peak Hour Factor	1.0000	0.9380	0.9380	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	175	58	78	0	49	0	0	0	11	155	0
Total Analysis Volume [veh/h]	0	698	230	312	0	195	0	0	0	45	618	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	64	0	0	0	0	11	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	25	25	60	60		4	32
g / C, Green / Cycle	0.25	0.25	0.60	0.60		0.04	0.32
(v / s)_i Volume / Saturation Flow Rate	0.22	0.16	0.19	0.14		0.03	0.19
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	789	352	957	854		59	1035
d1, Uniform Delay [s]	36.32	33.85	10.08	9.40		47.74	28.39
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	3.53	2.08	0.91	0.62		18.31	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.65	0.33	0.23		0.76	0.60
d, Delay for Lane Group [s/veh]	39.85	35.93	10.99	10.03		66.05	28.95
Lane Group LOS	D	D	B	B		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	8.24	5.03	3.45	2.02		1.37	5.92
50th-Percentile Queue Length [ft/ln]	206.00	125.69	86.37	50.51		34.35	148.01
95th-Percentile Queue Length [veh/ln]	12.95	8.70	6.22	3.64		2.47	9.91
95th-Percentile Queue Length [ft/ln]	323.69	217.62	155.47	90.93		61.82	247.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	39.85	35.93	10.99	10.99	10.03	0.00	0.00	0.00	66.05	28.95	0.00
Movement LOS		D	D	B	B	B				E	C	
d_A, Approach Delay [s/veh]	38.88			10.62			0.00			31.47		
Approach LOS	D			B			A			C		
d_I, Intersection Delay [s/veh]	29.71											
Intersection LOS	C											
Intersection V/C	0.464											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.969	0.000	0.000
Crosswalk LOS	F	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	420	1200	0	640
d_b, Bicycle Delay [s]	31.21	8.00	50.00	23.12
l_b,int, Bicycle LOS Score for Intersection	2.325	2.396	4.132	2.107
Bicycle LOS	B	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	99	319	260	873	573	41	161	68	89	37	235	104
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	319	260	873	573	41	161	68	89	37	235	104
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	84	68	229	150	11	42	18	23	10	62	27
Total Analysis Volume [veh/h]	104	334	272	914	600	43	169	71	93	39	246	109
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.18	0.18	0.27	0.19	0.19	0.05	0.04	0.03	0.01	0.10	0.10
Intersection LOS	B											
Intersection V/C	0.651											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro Scenario 22 2028 Pre-Construction PM Peak Hour

Report File: C:\...\2028_PreConstructn_PM.pdf 5/20/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.751	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.122	46.5	E
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.807	-	D
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	3.458	1,151.1	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.204	20.1	C
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	NB Thru	1.019	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	NB Right	0.786	-	C
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.780	-	C
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Right	0.748	-	C
10	State College Blvd/Lambert Road	Signalized	ICU 1	NB Thru	0.696	-	B
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	WB Left	0.778	24.9	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.711	19.5	B
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	0.906	183.0	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.849	34.3	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	EB Thru	0.689	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	421	636	44	98	227	283	363	724	177	34	934	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	421	636	44	98	227	283	363	724	177	34	934	176
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	166	11	26	59	74	95	189	46	9	243	46
Total Analysis Volume [veh/h]	439	663	46	102	237	295	379	755	185	35	974	184
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.14	0.14	0.06	0.07	0.17	0.11	0.22	0.00	0.02	0.29	0.11
Intersection LOS	C											
Intersection V/C	0.751											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	46.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.122

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1206	28	4	625	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1206	28	4	625	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	310	7	1	161	3	0
Total Analysis Volume [veh/h]	1239	29	4	642	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.12	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.67	0.00	46.47	18.52
Movement LOS	A	A	B	A	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.40	0.40
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.56	0.00	10.01	10.01
d_A, Approach Delay [s/veh]	0.00		0.07		46.47	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.31					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1163	32	27	3	14	602
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1163	32	27	3	14	602
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	311	9	7	1	4	161
Total Analysis Volume [veh/h]	1243	34	29	3	15	643
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.73	0.02	0.02	0.00	0.01	0.38
Intersection LOS	D					
Intersection V/C	0.807					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,151.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.458

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	4	703	1167	0	6	619
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	703	1167	0	6	619
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	186	309	0	2	164
Total Analysis Volume [veh/h]	4	744	1235	0	6	655
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	3.46	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	55.69	1151.07	0.00	0.00	11.45	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.17	70.09	0.00	0.00	0.03	0.00
95th-Percentile Queue Length [ft/ln]	4.15	1752.24	0.00	0.00	0.81	0.00
d_A, Approach Delay [s/veh]	1145.21		0.00		0.10	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	324.01					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.204

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	1864	6	58	618	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1864	6	58	618	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	488	2	15	162	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	1954	6	61	648	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.20	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.84	0.00	0.00	20.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	C	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	18.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			1.73			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.46											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.019

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	218	1340	16	157	1074	470	796	309	270	56	309	374
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	1340	16	157	1074	470	796	309	270	56	309	374
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	343	4	40	275	120	204	79	69	14	79	96
Total Analysis Volume [veh/h]	223	1373	16	161	1100	482	816	317	277	57	317	383
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.41	0.41	0.09	0.32	0.04	0.24	0.19	0.10	0.03	0.21	0.21
Intersection LOS	F											
Intersection V/C	1.019											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	290	1367	124	286	1094	128	264	630	110	145	907	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	1367	124	286	1094	128	264	630	110	145	907	176
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	349	32	73	279	33	67	161	28	37	232	45
Total Analysis Volume [veh/h]	296	1396	127	292	1117	131	270	644	112	148	926	180
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.30	0.30	0.09	0.24	0.24	0.08	0.19	0.00	0.04	0.27	0.02
Intersection LOS	C											
Intersection V/C	0.786											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	296	1309	110	142	1078	149	265	941	181	209	1365	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	296	1309	110	142	1078	149	265	941	181	209	1365	218
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	334	28	36	275	38	68	240	46	53	348	56
Total Analysis Volume [veh/h]	302	1336	112	145	1100	152	270	960	185	213	1393	222
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.26	0.00	0.04	0.25	0.25	0.08	0.22	0.22	0.06	0.32	0.32
Intersection LOS	C											
Intersection V/C	0.780											

Intersection Level Of Service Report
Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.748

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	528	817	128	49	419	53	225	938	343	245	1211	71
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	528	817	128	49	419	53	225	938	343	245	1211	71
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	215	34	13	110	14	59	247	90	65	319	19
Total Analysis Volume [veh/h]	557	862	135	52	442	56	237	989	362	258	1277	75
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.25	0.08	0.03	0.13	0.03	0.14	0.19	0.21	0.15	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.748											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	344	707	290	591	360	6	11	828	168	335	1032	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	344	707	290	591	360	6	11	828	168	335	1032	567
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	182	75	152	93	2	3	213	43	86	266	146
Total Analysis Volume [veh/h]	354	728	299	609	371	6	11	853	173	345	1063	584
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.21	0.18	0.18	0.11	0.11	0.00	0.15	0.15	0.10	0.21	0.16
Intersection LOS	B											
Intersection V/C	0.696											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	24.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.778

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	684	1	661	0	1180	626	232	1462	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	684	1	661	0	1180	626	232	1462	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9690	1.0000	0.9690	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	176	0	171	0	304	162	60	377	0
Total Analysis Volume [veh/h]	0	0	0	706	1	682	0	1218	646	239	1509	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	34	0	0	0	34	0	12	46	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	24	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	27	28	28	28	8	40
g / C, Green / Cycle		0.36	0.36	0.36	0.37	0.37	0.37	0.11	0.53
(v / s)_i Volume / Saturation Flow Rate		0.29	0.31	0.32	0.29	0.33	0.33	0.08	0.33
s, saturation flow rate [veh/h]		1603	1516	1431	3204	1431	1431	3113	4584
c, Capacity [veh/h]		580	549	518	1186	529	529	339	2439
d1, Uniform Delay [s]		21.59	22.10	22.70	21.09	22.19	22.19	32.43	12.30
k, delay calibration		0.25	0.28	0.31	0.11	0.32	0.32	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.74	8.79	14.17	1.19	12.82	12.82	2.69	0.26
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.80	0.84	0.89	0.79	0.88	0.88	0.70	0.62
d, Delay for Lane Group [s/veh]		27.33	30.88	36.86	22.28	35.00	35.00	35.11	12.56
Lane Group LOS		C	C	D	C	D	D	D	B
Critical Lane Group		No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		7.73	8.30	9.19	6.65	8.68	8.68	2.11	4.89
50th-Percentile Queue Length [ft/ln]		193.16	207.54	229.68	166.34	216.94	216.94	52.64	122.23
95th-Percentile Queue Length [veh/ln]		12.28	13.03	14.16	10.88	13.51	13.51	3.79	8.52
95th-Percentile Queue Length [ft/ln]		307.12	325.67	353.96	272.10	337.71	337.71	94.74	212.89

Movement, Approach, & Intersection Results

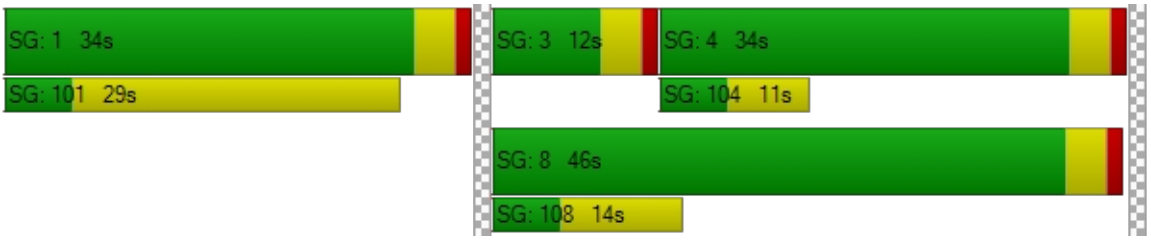
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.55	0.00	34.94	0.00	22.28	35.00	35.11	12.56	0.00
Movement LOS				C		C		C	D	D	B	
d_A, Approach Delay [s/veh]	0.00			31.69			28.64			15.65		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	24.95											
Intersection LOS	C											
Intersection V/C	0.778											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.153	2.398	3.354	3.329
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	600	600	840
d_b, Bicycle Delay [s]	50.00	24.50	24.50	16.82
l_b,int, Bicycle LOS Score for Intersection	4.132	3.850	2.585	2.521
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	865	0	419	0	0	0	349	1513	0	0	829	494
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	865	0	419	0	0	0	349	1513	0	0	829	494
Peak Hour Factor	0.9680	1.0000	0.9680	1.0000	1.0000	1.0000	0.9680	0.9680	1.0000	1.0000	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	223	0	108	0	0	0	90	391	0	0	214	128
Total Analysis Volume [veh/h]	894	0	433	0	0	0	361	1563	0	0	856	510
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	44	0	0	0	0	0	20	56	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	24	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	66	66		66	66	66	66	66
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24		10	34	20	20	20
g / C, Green / Cycle	0.36	0.36		0.16	0.52	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.29	0.30		0.12	0.34	0.21	0.24	0.24
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	1121	515		487	2379	968	432	432
d1, Uniform Delay [s]	18.99	19.41		26.60	11.60	20.46	21.15	21.15
k, delay calibration	0.11	0.21		0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.35	6.94		2.25	0.31	0.96	3.28	3.28
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.84		0.74	0.66	0.71	0.79	0.79
d, Delay for Lane Group [s/veh]	20.34	26.35		28.85	11.92	21.42	24.43	24.43
Lane Group LOS	C	C		C	B	C	C	C
Critical Lane Group	No	Yes		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.76	6.48		2.63	4.40	4.23	4.63	4.63
50th-Percentile Queue Length [ft/ln]	143.88	162.08		65.66	109.97	105.77	115.84	115.84
95th-Percentile Queue Length [veh/ln]	9.69	10.66		4.73	7.84	7.60	8.16	8.16
95th-Percentile Queue Length [ft/ln]	242.24	266.48		118.19	195.96	190.10	204.10	204.10

Movement, Approach, & Intersection Results

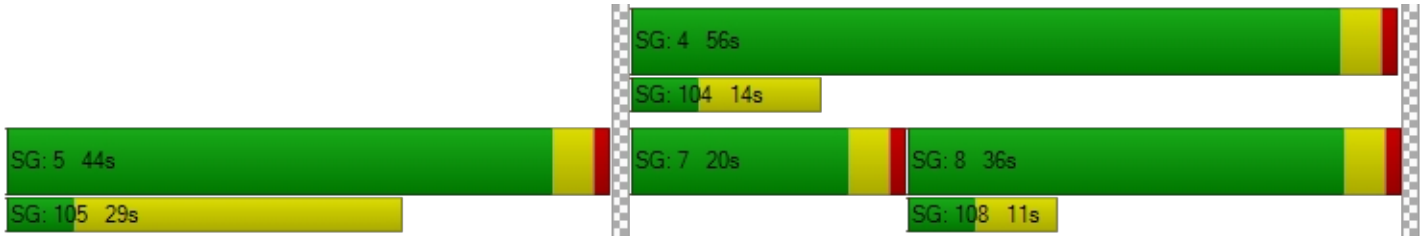
d_M, Delay for Movement [s/veh]	20.34	0.00	26.35	0.00	0.00	0.00	28.85	11.92	0.00	0.00	21.42	24.43
Movement LOS	C		C				C	B			C	C
d_A, Approach Delay [s/veh]	22.30			0.00			15.09			22.92		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	19.48											
Intersection LOS	B											
Intersection V/C	0.711											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.378	2.146	3.329	3.225
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	0	1040	640
d_b, Bicycle Delay [s]	18.00	50.00	11.52	23.12
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.618	2.311
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	183.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.906

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	109	1	18	218	1371	0	0	384	873
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	109	1	18	218	1371	0	0	384	873
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	29	0	5	58	362	0	0	101	231
Total Analysis Volume [veh/h]	0	0	0	115	1	19	230	1449	0	0	406	923
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	24	0	18	76	0	0	58	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	15	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		41	41	16	51	30	30
g / C, Green / Cycle		0.41	0.41	0.16	0.51	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.07	0.01	0.14	0.45	0.13	0.65
s, saturation flow rate [veh/h]		1603	1431	1603	3204	3204	1431
c, Capacity [veh/h]		665	593	263	1619	964	431
d1, Uniform Delay [s]		18.45	17.35	40.79	22.35	27.98	34.95
k, delay calibration		0.50	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.57	0.10	8.87	1.97	0.29	522.43
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.17	0.03	0.87	0.90	0.42	2.14
d, Delay for Lane Group [s/veh]		19.03	17.45	49.66	24.32	28.27	557.38
Lane Group LOS		B	B	D	C	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.78	0.27	5.93	13.91	3.88	72.66
50th-Percentile Queue Length [ft/ln]		44.43	6.85	148.17	347.74	97.05	1816.56
95th-Percentile Queue Length [veh/ln]		3.20	0.49	9.92	20.03	6.99	116.32
95th-Percentile Queue Length [ft/ln]		79.97	12.33	247.99	500.65	174.69	2908.09

Movement, Approach, & Intersection Results

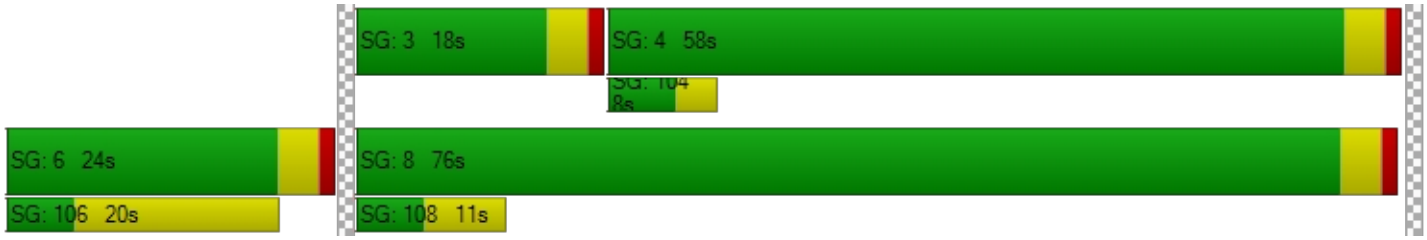
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	19.03	19.03	17.45	49.66	24.32	0.00	0.00	28.27	557.38
Movement LOS				B	B	B	D	C			C	F
d_A, Approach Delay [s/veh]	0.00			18.80			27.79			395.74		
Approach LOS	A			B			C			F		
d_I, Intersection Delay [s/veh]	182.99											
Intersection LOS	F											
Intersection V/C	0.906											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.555	1.787	2.950	2.852
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	400	1440	1080
d_b, Bicycle Delay [s]	50.00	32.00	3.92	10.58
l_b,int, Bicycle LOS Score for Intersection	4.132	1.782	2.945	2.656
Bicycle LOS	D	A	C	B

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	800	59	791	1	702	0	0	0	7	485	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	800	59	791	1	702	0	0	0	7	485	0
Peak Hour Factor	1.0000	0.9280	0.9280	0.9280	0.9280	0.9280	1.0000	1.0000	1.0000	0.9280	0.9280	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	216	16	213	0	189	0	0	0	2	131	0
Total Analysis Volume [veh/h]	0	862	64	852	1	756	0	0	0	8	523	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	59	0	0	0	0	9	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	3	0	0	15	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	29	29	58	58		1	34
g / C, Green / Cycle	0.29	0.29	0.58	0.58		0.01	0.34
(v / s)_i Volume / Saturation Flow Rate	0.27	0.04	0.53	0.53		0.00	0.16
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	924	412	931	831		18	1088
d1, Uniform Delay [s]	34.65	26.51	18.80	18.65		49.15	26.08
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	5.03	0.17	15.14	15.79		16.73	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.16	0.92	0.91		0.45	0.48
d, Delay for Lane Group [s/veh]	39.68	26.69	33.93	34.44		65.87	26.41
Lane Group LOS	D	C	C	C		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	10.33	1.12	19.86	17.67		0.28	4.68
50th-Percentile Queue Length [ft/ln]	258.37	28.02	496.62	441.78		6.88	116.90
95th-Percentile Queue Length [veh/ln]	15.61	2.02	27.17	24.57		0.50	8.22
95th-Percentile Queue Length [ft/ln]	390.18	50.44	679.36	614.13		12.38	205.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	39.68	26.69	33.93	33.93	34.44	0.00	0.00	0.00	65.87	26.41	0.00
Movement LOS		D	C	C	C	C				E	C	
d_A, Approach Delay [s/veh]	38.78			34.17			0.00			27.00		
Approach LOS	D			C			A			C		
d_I, Intersection Delay [s/veh]	34.32											
Intersection LOS	C											
Intersection V/C	0.849											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.880	2.506	1.501	2.963
Crosswalk LOS	C	B	A	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	560	1100	0	740
d_b, Bicycle Delay [s]	25.92	10.13	50.00	19.85
l_b,int, Bicycle LOS Score for Intersection	2.324	4.214	4.132	1.998
Bicycle LOS	B	D	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	154	951	63	143	347	23	458	448	640	47	47	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	951	63	143	347	23	458	448	640	47	47	41
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	246	16	37	90	6	118	116	165	12	12	11
Total Analysis Volume [veh/h]	159	983	65	148	359	24	474	463	662	49	49	42
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.31	0.31	0.04	0.11	0.11	0.14	0.27	0.19	0.01	0.03	0.03
Intersection LOS	B											
Intersection V/C	0.689											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 23 2028 Const - No Detour AM Peak Hour

Report File: C:\...\2028_Constructn_No Detour_AM.pdf
5/20/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	SB Thru	0.755	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.340	49.1	E
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	1.064	-	F
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	0.936	263.9	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.005	14.2	B
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	SB Thru	0.884	-	D
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	SB Right	0.768	-	C
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	EB Thru	0.863	-	D
9	Brea Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.814	-	D
10	State College Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.710	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	WB Left	0.747	21.6	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.747	16.7	B
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	1.068	256.2	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.464	29.7	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	WB Left	0.651	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.755

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	203	209	125	291	993	278	280	970	230	34	453	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	209	125	291	993	278	280	970	230	34	453	56
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	56	34	78	266	75	75	260	62	9	122	15
Total Analysis Volume [veh/h]	218	224	134	312	1065	298	300	1041	247	36	486	60
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.07	0.18	0.31	0.18	0.09	0.31	0.08	0.02	0.14	0.04
Intersection LOS	C											
Intersection V/C	0.755											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	49.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.340

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	551	12	2	1634	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	551	12	2	1634	39	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	3	1	431	10	1
Total Analysis Volume [veh/h]	581	13	2	1724	41	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.34	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.69	0.00	49.08	24.40
Movement LOS	A	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	1.38	1.38
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.15	0.00	34.47	34.47
d_A, Approach Delay [s/veh]	0.00		0.01		47.93	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.88					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.064

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	538	11	49	15	9	1588
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	538	11	49	15	9	1588
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	142	3	13	4	2	418
Total Analysis Volume [veh/h]	566	12	52	16	9	1672
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.01	0.03	0.01	0.01	0.98
Intersection LOS	F					
Intersection V/C	1.064					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	263.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.936

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	38	37	558	16	18	1586
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	37	558	16	18	1586
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	10	145	4	5	413
Total Analysis Volume [veh/h]	40	39	581	17	19	1650
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.94	0.08	0.01	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	263.95	12.68	0.00	0.00	8.70	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.71	0.25	0.00	0.00	0.06	0.00
95th-Percentile Queue Length [ft/ln]	92.67	6.21	0.00	0.00	1.46	0.00
d_A, Approach Delay [s/veh]	139.90		0.00		0.10	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	4.78					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	566	19	463	1607	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	566	19	463	1607	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	145	5	119	412	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	580	19	474	1647	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.48	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.22	0.00	0.00	11.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.38	0.00	0.00	65.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.05			2.65			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.08											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	326	711	64	216	1422	587	538	366	280	83	309	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	711	64	216	1422	587	538	366	280	83	309	77
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	188	17	57	377	156	143	97	74	22	82	20
Total Analysis Volume [veh/h]	346	754	68	229	1508	622	571	388	297	88	328	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.24	0.24	0.13	0.44	0.20	0.17	0.23	0.07	0.05	0.12	0.12
Intersection LOS	D											
Intersection V/C	0.884											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	125	714	79	327	1598	92	236	885	174	174	589	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	714	79	327	1598	92	236	885	174	174	589	159
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	189	21	86	422	24	62	234	46	46	156	42
Total Analysis Volume [veh/h]	132	755	84	346	1689	97	249	936	184	184	623	168
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

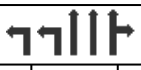
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.16	0.16	0.10	0.35	0.35	0.07	0.28	0.07	0.05	0.18	0.00
Intersection LOS	C											
Intersection V/C	0.768											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	199	598	116	385	1437	131	202	1393	234	170	1016	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	598	116	385	1437	131	202	1393	234	170	1016	164
Peak Hour Factor	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	165	32	106	397	36	56	385	65	47	281	45
Total Analysis Volume [veh/h]	220	662	128	426	1590	145	223	1541	259	188	1124	181
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.13	0.02	0.13	0.34	0.34	0.07	0.35	0.35	0.06	0.26	0.26
Intersection LOS	D											
Intersection V/C	0.863											

Intersection Level Of Service Report
Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.814

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	268	384	92	123	992	192	140	937	332	207	978	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	384	92	123	992	192	140	937	332	207	978	101
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	107	26	34	276	53	39	260	92	58	272	28
Total Analysis Volume [veh/h]	298	427	102	137	1102	213	156	1041	369	230	1087	112
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.13	0.06	0.08	0.32	0.13	0.09	0.20	0.22	0.14	0.24	0.24
Intersection LOS	D											
Intersection V/C	0.814											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.710

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	210	208	98	834	899	8	5	633	239	420	1215	289
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	208	98	834	899	8	5	633	239	420	1215	289
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	58	27	232	251	2	1	176	67	117	339	81
Total Analysis Volume [veh/h]	234	232	109	930	1002	9	6	706	266	468	1355	322
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.06	0.27	0.30	0.30	0.00	0.14	0.14	0.14	0.27	0.00
Intersection LOS	C											
Intersection V/C	0.710											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	902	1	444	0	1130	468	190	1575	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	902	1	444	0	1130	468	190	1575	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9430	1.0000	0.9430	1.0000	0.9430	0.9430	0.9430	0.9430	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	239	0	118	0	300	124	50	418	0
Total Analysis Volume [veh/h]	0	0	0	957	1	471	0	1198	496	201	1670	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	41	0	13	54	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		69	69	69	69	69	69	69	69
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	25	25	25	7	35
g / C, Green / Cycle		0.37	0.37	0.37	0.36	0.36	0.36	0.10	0.51
(v / s)_i Volume / Saturation Flow Rate		0.30	0.30	0.33	0.26	0.29	0.30	0.06	0.36
s, saturation flow rate [veh/h]		1603	1603	1431	3204	1457	1431	3113	4584
c, Capacity [veh/h]		601	601	536	1139	518	508	302	2338
d1, Uniform Delay [s]		19.36	19.36	20.24	19.64	20.37	20.52	30.29	13.13
k, delay calibration		0.22	0.22	0.28	0.11	0.21	0.22	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		4.98	4.98	11.12	0.98	6.13	7.12	2.52	0.41
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.80	0.80	0.88	0.74	0.82	0.83	0.67	0.71
d, Delay for Lane Group [s/veh]		24.34	24.34	31.36	20.62	26.50	27.64	32.81	13.55
Lane Group LOS		C	C	C	C	C	C	C	B
Critical Lane Group		No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		7.08	7.08	8.09	5.39	6.31	6.47	1.62	5.44
50th-Percentile Queue Length [ft/ln]		177.05	177.05	202.28	134.68	157.70	161.80	40.42	135.96
95th-Percentile Queue Length [veh/ln]		11.45	11.45	12.76	9.19	10.43	10.64	2.91	9.26
95th-Percentile Queue Length [ft/ln]		286.16	286.16	318.90	229.85	260.68	266.11	72.75	231.57

Movement, Approach, & Intersection Results

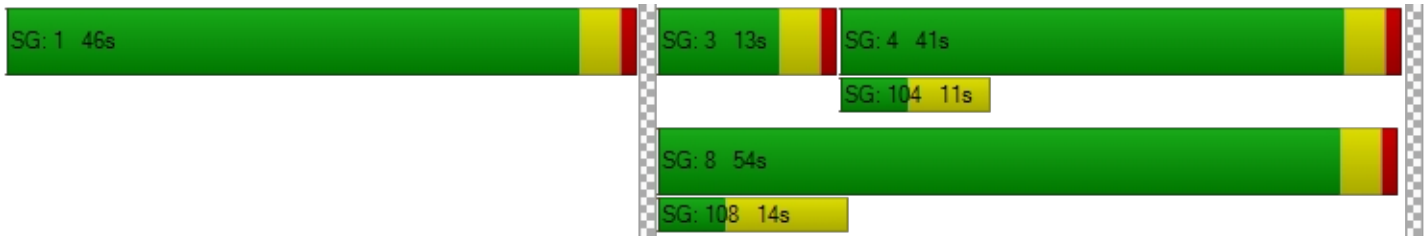
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	24.34	0.00	31.36	0.00	20.96	27.47	32.81	13.55	0.00
Movement LOS				C		C		C	C	C	B	
d_A, Approach Delay [s/veh]	0.00			26.65			23.84			15.62		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	21.56											
Intersection LOS	C											
Intersection V/C	0.747											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.061	2.411	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	840	740	1000
d_b, Bicycle Delay [s]	50.00	16.82	19.85	12.50
l_b,int, Bicycle LOS Score for Intersection	4.132	3.916	2.491	2.589
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	827	0	377	0	0	0	246	1786	0	0	937	415
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	827	0	377	0	0	0	246	1786	0	0	937	415
Peak Hour Factor	0.9610	1.0000	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	0	98	0	0	0	64	465	0	0	244	108
Total Analysis Volume [veh/h]	861	0	392	0	0	0	256	1858	0	0	975	432
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	0	0	0	0	0	15	58	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	58	58		58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20		7	30	19	19	19
g / C, Green / Cycle	0.35	0.35		0.12	0.51	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.28	0.27		0.08	0.41	0.22	0.24	0.25
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1448	1431
c, Capacity [veh/h]	1084	498		385	2354	1028	464	459
d1, Uniform Delay [s]	17.00	16.94		24.22	11.51	17.11	17.63	17.70
k, delay calibration	0.11	0.11		0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.37	2.80		1.98	0.61	0.82	2.55	2.71
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.79		0.67	0.79	0.68	0.76	0.77
d, Delay for Lane Group [s/veh]	18.36	19.74		26.20	12.13	17.92	20.19	20.41
Lane Group LOS	B	B		C	B	B	C	C
Critical Lane Group	Yes	No		No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	4.71	4.48		1.60	4.78	3.52	3.84	3.87
50th-Percentile Queue Length [ft/ln]	117.80	111.91		40.02	119.61	88.07	96.03	96.77
95th-Percentile Queue Length [veh/ln]	8.27	7.95		2.88	8.37	6.34	6.91	6.97
95th-Percentile Queue Length [ft/ln]	206.80	198.66		72.04	209.29	158.52	172.85	174.19

Movement, Approach, & Intersection Results

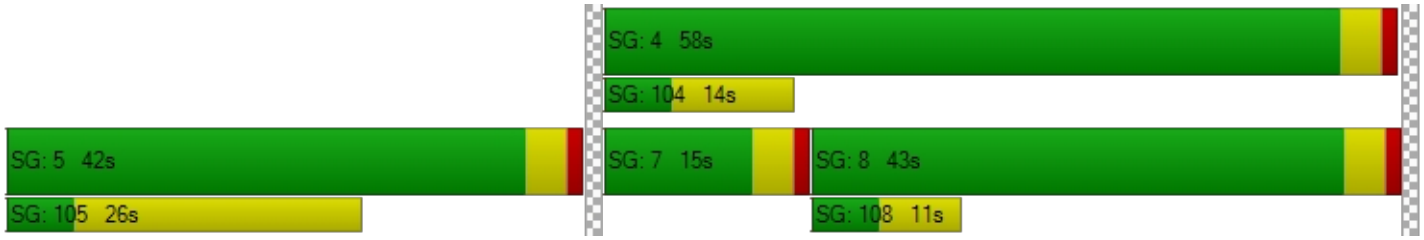
d_M, Delay for Movement [s/veh]	18.36	0.00	19.74	0.00	0.00	0.00	26.20	12.13	0.00	0.00	18.01	20.37
Movement LOS	B		B				C	B			B	C
d_A, Approach Delay [s/veh]	18.79			0.00			13.83			19.11		
Approach LOS	B			A			B			B		
d_I, Intersection Delay [s/veh]	16.69											
Intersection LOS	B											
Intersection V/C	0.747											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.354	2.057	0.000	3.280
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	760	0	1080	780
d_b, Bicycle Delay [s]	19.22	50.00	10.58	18.61
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.722	2.333
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	256.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.068

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	71	2	7	423	526	0	0	550	950
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	71	2	7	423	526	0	0	550	950
Peak Hour Factor	1.0000	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	18	1	2	110	137	0	0	143	247
Total Analysis Volume [veh/h]	0	0	0	74	2	7	441	548	0	0	573	990
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	9	0	29	91	0	0	62	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	29	63	30	30
g / C, Green / Cycle		0.29	0.29	0.29	0.63	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.05	0.00	0.28	0.17	0.18	0.69
s, saturation flow rate [veh/h]		1605	1431	1603	3204	3204	1431
c, Capacity [veh/h]		464	414	466	2021	961	429
d1, Uniform Delay [s]		26.52	25.39	34.69	8.22	29.84	35.00
k, delay calibration		0.50	0.50	0.39	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.76	0.07	25.68	0.07	0.60	595.47
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.16	0.02	0.95	0.27	0.60	2.31
d, Delay for Lane Group [s/veh]		27.28	25.46	60.37	8.29	30.43	630.47
Lane Group LOS		C	C	E	A	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.44	0.13	13.14	2.23	5.86	81.13
50th-Percentile Queue Length [ft/ln]		36.07	3.18	328.54	55.79	146.44	2028.33
95th-Percentile Queue Length [veh/ln]		2.60	0.23	19.09	4.02	9.83	130.05
95th-Percentile Queue Length [ft/ln]		64.93	5.72	477.17	100.43	245.67	3251.25

Movement, Approach, & Intersection Results

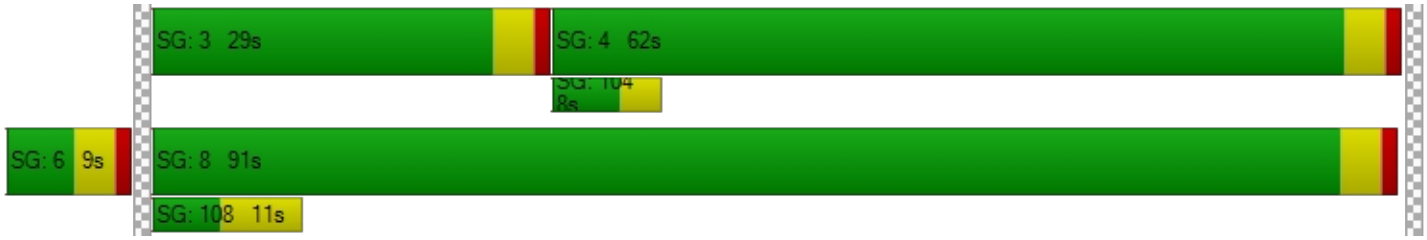
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	27.28	27.28	25.46	60.37	8.29	0.00	0.00	30.43	630.47
Movement LOS				C	C	C	E	A			C	F
d_A, Approach Delay [s/veh]	0.00			27.12			31.52			410.50		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	256.18											
Intersection LOS	F											
Intersection V/C	1.068											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.827	1.762	0.000	0.000
Crosswalk LOS	C	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	100	1740	1160
d_b, Bicycle Delay [s]	50.00	45.13	0.85	8.82
l_b,int, Bicycle LOS Score for Intersection	4.132	1.697	2.376	2.849
Bicycle LOS	D	A	B	C

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.464

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			Yes			No			No		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	655	216	293	0	183	0	0	0	42	580	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	655	216	293	0	183	0	0	0	42	580	0
Peak Hour Factor	1.0000	0.9380	0.9380	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	175	58	78	0	49	0	0	0	11	155	0
Total Analysis Volume [veh/h]	0	698	230	312	0	195	0	0	0	45	618	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	64	0	0	0	0	11	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	25	25	60	60		4	32
g / C, Green / Cycle	0.25	0.25	0.60	0.60		0.04	0.32
(v / s)_i Volume / Saturation Flow Rate	0.22	0.16	0.19	0.14		0.03	0.19
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	789	352	957	854		59	1035
d1, Uniform Delay [s]	36.32	33.85	10.08	9.40		47.74	28.39
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	3.53	2.08	0.91	0.62		18.31	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.65	0.33	0.23		0.76	0.60
d, Delay for Lane Group [s/veh]	39.85	35.93	10.99	10.03		66.05	28.95
Lane Group LOS	D	D	B	B		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	8.24	5.03	3.45	2.02		1.37	5.92
50th-Percentile Queue Length [ft/ln]	206.00	125.69	86.37	50.51		34.35	148.01
95th-Percentile Queue Length [veh/ln]	12.95	8.70	6.22	3.64		2.47	9.91
95th-Percentile Queue Length [ft/ln]	323.69	217.62	155.47	90.93		61.82	247.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	39.85	35.93	10.99	10.99	10.03	0.00	0.00	0.00	66.05	28.95	0.00
Movement LOS		D	D	B	B	B				E	C	
d_A, Approach Delay [s/veh]	38.88			10.62			0.00			31.47		
Approach LOS	D			B			A			C		
d_I, Intersection Delay [s/veh]	29.71											
Intersection LOS	C											
Intersection V/C	0.464											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.969	0.000	0.000
Crosswalk LOS	F	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	420	1200	0	640
d_b, Bicycle Delay [s]	31.21	8.00	50.00	23.12
l_b,int, Bicycle LOS Score for Intersection	2.325	2.396	4.132	2.107
Bicycle LOS	B	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	99	319	260	873	573	41	161	68	89	37	235	104
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	319	260	873	573	41	161	68	89	37	235	104
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	84	68	229	150	11	42	18	23	10	62	27
Total Analysis Volume [veh/h]	104	334	272	914	600	43	169	71	93	39	246	109
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	0
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.18	0.18	0.27	0.19	0.19	0.05	0.04	0.00	0.01	0.10	0.10
Intersection LOS	B											
Intersection V/C	0.651											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro Scenario 24 2028 Const - No Detour PM Peak Hour
Report File: C:\...\2028_Constructn_No Detour_PM.pdf 5/20/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.751	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.122	46.5	E
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.807	-	D
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	3.746	1,283.1	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.209	20.6	C
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	NB Thru	1.019	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	NB Right	0.786	-	C
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.780	-	C
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Right	0.748	-	C
10	State College Blvd/Lambert Road	Signalized	ICU 1	NB Thru	0.696	-	B
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	WB Left	0.778	24.9	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.711	19.5	B
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	0.906	183.0	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.849	34.3	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	EB Thru	0.689	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	421	636	44	98	227	283	363	724	177	34	934	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	421	636	44	98	227	283	363	724	177	34	934	176
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	166	11	26	59	74	95	189	46	9	243	46
Total Analysis Volume [veh/h]	439	663	46	102	237	295	379	755	185	35	974	184
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.14	0.14	0.06	0.07	0.17	0.11	0.22	0.00	0.02	0.29	0.11
Intersection LOS	C											
Intersection V/C	0.751											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	46.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.122

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1206	28	4	625	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1206	28	4	625	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	310	7	1	161	3	0
Total Analysis Volume [veh/h]	1239	29	4	642	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.12	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.67	0.00	46.47	18.52
Movement LOS	A	A	B	A	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.40	0.40
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.56	0.00	10.01	10.01
d_A, Approach Delay [s/veh]	0.00		0.07		46.47	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.31					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1163	32	27	3	14	602
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1163	32	27	3	14	602
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	311	9	7	1	4	161
Total Analysis Volume [veh/h]	1243	34	29	3	15	643
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.73	0.02	0.02	0.00	0.01	0.38
Intersection LOS	D					
Intersection V/C	0.807					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,283.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.746

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	8	703	1223	0	6	619
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	703	1223	0	6	619
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	186	324	0	2	164
Total Analysis Volume [veh/h]	8	744	1294	0	6	655
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	3.75	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	64.04	1283.13	0.00	0.00	11.80	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.38	72.05	0.00	0.00	0.03	0.00
95th-Percentile Queue Length [ft/ln]	9.40	1801.17	0.00	0.00	0.85	0.00
d_A, Approach Delay [s/veh]	1270.16		0.00		0.11	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	352.87					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.209

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	1888	30	58	622	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1888	30	58	622	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	495	8	15	163	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	1979	31	61	652	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.21	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.85	0.00	0.00	20.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	C	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	19.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			1.76			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.46											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.019

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	218	1340	16	157	1074	470	796	309	270	56	309	374
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	1340	16	157	1074	470	796	309	270	56	309	374
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	343	4	40	275	120	204	79	69	14	79	96
Total Analysis Volume [veh/h]	223	1373	16	161	1100	482	816	317	277	57	317	383
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.41	0.41	0.09	0.32	0.04	0.24	0.19	0.10	0.03	0.21	0.21
Intersection LOS	F											
Intersection V/C	1.019											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	290	1367	124	286	1094	128	264	630	110	145	907	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	1367	124	286	1094	128	264	630	110	145	907	176
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	349	32	73	279	33	67	161	28	37	232	45
Total Analysis Volume [veh/h]	296	1396	127	292	1117	131	270	644	112	148	926	180
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.30	0.30	0.09	0.24	0.24	0.08	0.19	0.00	0.04	0.27	0.02
Intersection LOS	C											
Intersection V/C	0.786											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	296	1309	110	142	1078	149	265	941	181	209	1365	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	296	1309	110	142	1078	149	265	941	181	209	1365	218
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	334	28	36	275	38	68	240	46	53	348	56
Total Analysis Volume [veh/h]	302	1336	112	145	1100	152	270	960	185	213	1393	222
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.26	0.00	0.04	0.25	0.25	0.08	0.22	0.22	0.06	0.32	0.32
Intersection LOS	C											
Intersection V/C	0.780											

Intersection Level Of Service Report
Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.748

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	528	817	128	49	419	53	225	938	343	245	1211	71
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	528	817	128	49	419	53	225	938	343	245	1211	71
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	215	34	13	110	14	59	247	90	65	319	19
Total Analysis Volume [veh/h]	557	862	135	52	442	56	237	989	362	258	1277	75
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.25	0.08	0.03	0.13	0.03	0.14	0.19	0.21	0.15	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.748											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	344	707	290	591	360	6	11	828	168	335	1032	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	344	707	290	591	360	6	11	828	168	335	1032	567
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	182	75	152	93	2	3	213	43	86	266	146
Total Analysis Volume [veh/h]	354	728	299	609	371	6	11	853	173	345	1063	584
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.21	0.18	0.18	0.11	0.11	0.00	0.15	0.15	0.10	0.21	0.16
Intersection LOS	B											
Intersection V/C	0.696											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	24.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.778

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	684	1	661	0	1180	626	232	1462	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	684	1	661	0	1180	626	232	1462	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9690	1.0000	0.9690	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	176	0	171	0	304	162	60	377	0
Total Analysis Volume [veh/h]	0	0	0	706	1	682	0	1218	646	239	1509	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	43	0	0	0	43	0	14	57	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	24	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	27	28	28	28	8	40
g / C, Green / Cycle		0.36	0.36	0.36	0.37	0.37	0.37	0.11	0.53
(v / s)_i Volume / Saturation Flow Rate		0.29	0.31	0.32	0.29	0.33	0.33	0.08	0.33
s, saturation flow rate [veh/h]		1603	1516	1431	3204	1431	1431	3113	4584
c, Capacity [veh/h]		580	549	518	1186	529	529	339	2439
d1, Uniform Delay [s]		21.59	22.10	22.69	21.09	22.18	22.18	32.43	12.30
k, delay calibration		0.25	0.28	0.31	0.11	0.32	0.32	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.74	8.79	14.17	1.19	12.82	12.82	2.69	0.26
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.80	0.84	0.89	0.79	0.88	0.88	0.70	0.62
d, Delay for Lane Group [s/veh]		27.33	30.88	36.86	22.28	35.00	35.00	35.11	12.56
Lane Group LOS		C	C	D	C	D	D	D	B
Critical Lane Group		No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		7.73	8.30	9.19	6.65	8.68	8.68	2.11	4.89
50th-Percentile Queue Length [ft/ln]		193.15	207.53	229.68	166.33	216.93	216.93	52.63	122.23
95th-Percentile Queue Length [veh/ln]		12.28	13.03	14.16	10.88	13.51	13.51	3.79	8.52
95th-Percentile Queue Length [ft/ln]		307.12	325.66	353.95	272.09	337.70	337.70	94.74	212.89

Movement, Approach, & Intersection Results

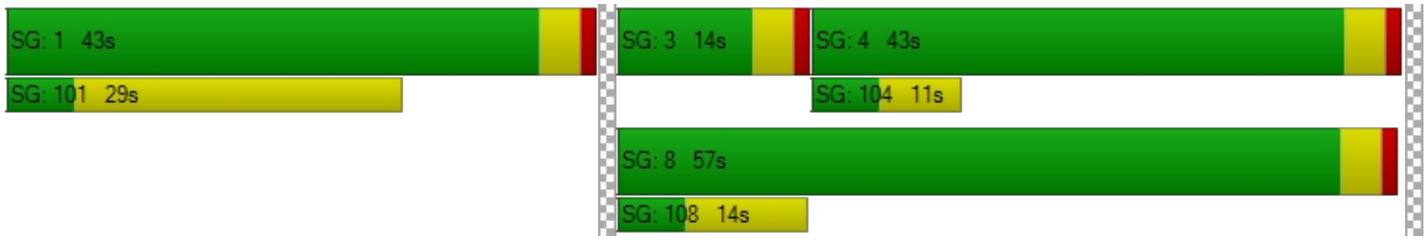
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.55	0.00	34.94	0.00	22.28	35.00	35.11	12.56	0.00
Movement LOS				C		C		C	D	D	B	
d_A, Approach Delay [s/veh]	0.00			31.69			28.64			15.65		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	24.94											
Intersection LOS	C											
Intersection V/C	0.778											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.153	2.398	3.354	3.329
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	780	780	1060
d_b, Bicycle Delay [s]	50.00	18.61	18.61	11.05
l_b,int, Bicycle LOS Score for Intersection	4.132	3.850	2.585	2.521
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	865	0	419	0	0	0	349	1513	0	0	829	494
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	865	0	419	0	0	0	349	1513	0	0	829	494
Peak Hour Factor	0.9680	1.0000	0.9680	1.0000	1.0000	1.0000	0.9680	0.9680	1.0000	1.0000	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	223	0	108	0	0	0	90	391	0	0	214	128
Total Analysis Volume [veh/h]	894	0	433	0	0	0	361	1563	0	0	856	510
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	44	0	0	0	0	0	20	56	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	24	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	66	66		66	66	66	66	66
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24		10	34	20	20	20
g / C, Green / Cycle	0.36	0.36		0.16	0.52	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.29	0.30		0.12	0.34	0.21	0.24	0.24
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	1121	515		487	2379	968	432	432
d1, Uniform Delay [s]	18.99	19.41		26.60	11.60	20.46	21.15	21.15
k, delay calibration	0.11	0.21		0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.35	6.94		2.25	0.31	0.96	3.28	3.28
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.84		0.74	0.66	0.71	0.79	0.79
d, Delay for Lane Group [s/veh]	20.34	26.35		28.85	11.92	21.42	24.43	24.43
Lane Group LOS	C	C		C	B	C	C	C
Critical Lane Group	No	Yes		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.76	6.48		2.63	4.40	4.23	4.63	4.63
50th-Percentile Queue Length [ft/ln]	143.88	162.08		65.66	109.97	105.77	115.84	115.84
95th-Percentile Queue Length [veh/ln]	9.69	10.66		4.73	7.84	7.60	8.16	8.16
95th-Percentile Queue Length [ft/ln]	242.24	266.48		118.19	195.96	190.10	204.10	204.10

Movement, Approach, & Intersection Results

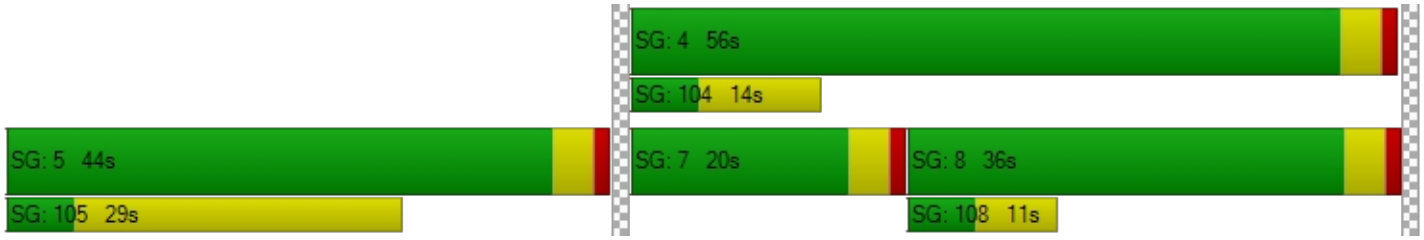
d_M, Delay for Movement [s/veh]	20.34	0.00	26.35	0.00	0.00	0.00	28.85	11.92	0.00	0.00	21.42	24.43
Movement LOS	C		C				C	B			C	C
d_A, Approach Delay [s/veh]	22.30			0.00			15.09			22.92		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	19.48											
Intersection LOS	B											
Intersection V/C	0.711											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.378	2.146	3.329	3.225
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	0	1040	640
d_b, Bicycle Delay [s]	18.00	50.00	11.52	23.12
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.618	2.311
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	183.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.906

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	109	1	18	218	1371	0	0	384	873
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	109	1	18	218	1371	0	0	384	873
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	29	0	5	58	362	0	0	101	231
Total Analysis Volume [veh/h]	0	0	0	115	1	19	230	1449	0	0	406	923
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	24	0	18	76	0	0	58	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	15	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		41	41	16	51	30	30
g / C, Green / Cycle		0.41	0.41	0.16	0.51	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.07	0.01	0.14	0.45	0.13	0.65
s, saturation flow rate [veh/h]		1603	1431	1603	3204	3204	1431
c, Capacity [veh/h]		665	593	263	1619	964	431
d1, Uniform Delay [s]		18.45	17.35	40.79	22.35	27.98	34.95
k, delay calibration		0.50	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.57	0.10	8.87	1.97	0.29	522.43
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.17	0.03	0.87	0.90	0.42	2.14
d, Delay for Lane Group [s/veh]		19.03	17.45	49.66	24.32	28.27	557.38
Lane Group LOS		B	B	D	C	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.78	0.27	5.93	13.91	3.88	72.66
50th-Percentile Queue Length [ft/ln]		44.43	6.85	148.17	347.74	97.05	1816.56
95th-Percentile Queue Length [veh/ln]		3.20	0.49	9.92	20.03	6.99	116.32
95th-Percentile Queue Length [ft/ln]		79.97	12.33	247.99	500.65	174.69	2908.09

Movement, Approach, & Intersection Results

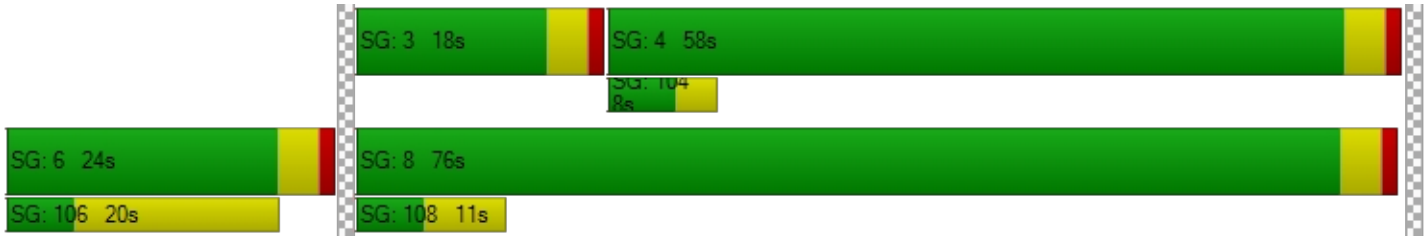
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	19.03	19.03	17.45	49.66	24.32	0.00	0.00	28.27	557.38
Movement LOS				B	B	B	D	C			C	F
d_A, Approach Delay [s/veh]	0.00			18.80			27.79			395.74		
Approach LOS	A			B			C			F		
d_I, Intersection Delay [s/veh]	182.99											
Intersection LOS	F											
Intersection V/C	0.906											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.555	1.787	2.950	2.852
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	400	1440	1080
d_b, Bicycle Delay [s]	50.00	32.00	3.92	10.58
l_b,int, Bicycle LOS Score for Intersection	4.132	1.782	2.945	2.656
Bicycle LOS	D	A	C	B

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	800	59	791	1	702	0	0	0	7	485	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	800	59	791	1	702	0	0	0	7	485	0
Peak Hour Factor	1.0000	0.9280	0.9280	0.9280	0.9280	0.9280	1.0000	1.0000	1.0000	0.9280	0.9280	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	216	16	213	0	189	0	0	0	2	131	0
Total Analysis Volume [veh/h]	0	862	64	852	1	756	0	0	0	8	523	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	59	0	0	0	0	9	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	3	0	0	15	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	29	29	58	58		1	34
g / C, Green / Cycle	0.29	0.29	0.58	0.58		0.01	0.34
(v / s)_i Volume / Saturation Flow Rate	0.27	0.04	0.53	0.53		0.00	0.16
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	924	412	931	831		18	1088
d1, Uniform Delay [s]	34.65	26.51	18.80	18.65		49.15	26.08
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	5.03	0.17	15.14	15.79		16.73	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.16	0.92	0.91		0.45	0.48
d, Delay for Lane Group [s/veh]	39.68	26.69	33.93	34.44		65.87	26.41
Lane Group LOS	D	C	C	C		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	10.33	1.12	19.86	17.67		0.28	4.68
50th-Percentile Queue Length [ft/ln]	258.37	28.02	496.62	441.78		6.88	116.90
95th-Percentile Queue Length [veh/ln]	15.61	2.02	27.17	24.57		0.50	8.22
95th-Percentile Queue Length [ft/ln]	390.18	50.44	679.36	614.13		12.38	205.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	39.68	26.69	33.93	33.93	34.44	0.00	0.00	0.00	65.87	26.41	0.00
Movement LOS		D	C	C	C	C				E	C	
d_A, Approach Delay [s/veh]	38.78			34.17			0.00			27.00		
Approach LOS	D			C			A			C		
d_I, Intersection Delay [s/veh]	34.32											
Intersection LOS	C											
Intersection V/C	0.849											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.880	2.506	1.501	2.963
Crosswalk LOS	C	B	A	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	560	1100	0	740
d_b, Bicycle Delay [s]	25.92	10.13	50.00	19.85
l_b,int, Bicycle LOS Score for Intersection	2.324	4.214	4.132	1.998
Bicycle LOS	B	D	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	154	951	63	143	347	23	458	448	640	47	47	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	951	63	143	347	23	458	448	640	47	47	41
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	246	16	37	90	6	118	116	165	12	12	11
Total Analysis Volume [veh/h]	159	983	65	148	359	24	474	463	662	49	49	42
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.31	0.31	0.04	0.11	0.11	0.14	0.27	0.19	0.01	0.03	0.03
Intersection LOS	B											
Intersection V/C	0.689											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro Scenario 25 2028 Const - Detour AM Peak Hour
Report File: C:\...\2028_Constructn_With Detour_AM.pdf 5/20/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	EB Thru	0.478	-	A
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.048	9.5	A
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	0.156	-	A
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	0.046	10.0	A
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.304	8.3	A
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	SB Thru	1.063	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	SB Thru	0.802	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	SB Right	0.924	-	E
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.776	-	C
10	State College Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.710	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	SB Right	0.885	48.0	D
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.740	18.5	B
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	1.068	248.4	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.522	28.5	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	WB Left	0.677	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.478

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	203	17	125	34	116	32	22	970	230	34	453	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	17	125	34	116	32	22	970	230	34	453	4
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	5	34	9	31	9	6	260	62	9	122	1
Total Analysis Volume [veh/h]	218	18	134	36	124	34	24	1041	247	36	486	4
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.03	0.03	0.02	0.04	0.02	0.01	0.31	0.08	0.02	0.14	0.00
Intersection LOS	A											
Intersection V/C	0.478											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.048

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	33	12	2	162	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	12	2	162	39	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	1	43	10	1
Total Analysis Volume [veh/h]	35	13	2	171	41	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.31	0.00	9.47	8.66
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.10	0.00	3.96	3.96
d_A, Approach Delay [s/veh]	0.00		0.08		9.43	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.59					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.156

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	22	11	49	15	9	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	11	49	15	9	122
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	13	4	2	32
Total Analysis Volume [veh/h]	23	12	52	16	9	128
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.03	0.01	0.01	0.08
Intersection LOS	A					
Intersection V/C	0.156					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	34	37	42	16	18	127
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	37	42	16	18	127
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	10	11	4	5	33
Total Analysis Volume [veh/h]	35	39	44	17	19	132
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.04	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	9.99	8.69	0.00	0.00	7.33	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.12	0.00	0.00	0.04	0.00
95th-Percentile Queue Length [ft/ln]	3.63	2.99	0.00	0.00	0.92	0.00
d_A, Approach Delay [s/veh]	9.30		0.00		0.92	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.89					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.304

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	46	23	463	136	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	46	23	463	136	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	12	6	119	35	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	47	24	474	139	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.50	0.00	0.00	8.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	A	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.10	0.00	0.00	32.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.21			6.43			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.76											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.063

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	326	943	64	216	1997	587	538	366	280	83	309	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	943	64	216	1997	587	538	366	280	83	309	77
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	250	17	57	529	156	143	97	74	22	82	20
Total Analysis Volume [veh/h]	346	1000	68	229	2118	622	571	388	297	88	328	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.31	0.31	0.13	0.62	0.20	0.17	0.23	0.07	0.05	0.12	0.12
Intersection LOS	F											
Intersection V/C	1.063											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.802

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	125	766	63	327	1968	246	416	705	174	114	383	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	766	63	327	1968	246	416	705	174	114	383	159
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	202	17	86	520	65	110	186	46	30	101	42
Total Analysis Volume [veh/h]	132	810	67	346	2080	260	440	745	184	121	405	168
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

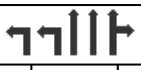
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.17	0.17	0.10	0.46	0.46	0.13	0.22	0.07	0.04	0.12	0.00
Intersection LOS	D											
Intersection V/C	0.802											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.924

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	199	598	114	385	1746	131	229	1365	234	170	1016	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	598	114	385	1746	131	229	1365	234	170	1016	164
Peak Hour Factor	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	165	32	106	483	36	63	377	65	47	281	45
Total Analysis Volume [veh/h]	220	662	126	426	1931	145	253	1510	259	188	1124	181
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.13	0.02	0.13	0.41	0.41	0.07	0.35	0.35	0.06	0.26	0.26
Intersection LOS	E											
Intersection V/C	0.924											

Intersection Level Of Service Report
Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	268	300	155	63	500	97	109	937	332	394	1105	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	300	155	63	500	97	109	937	332	394	1105	79
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	83	43	18	139	27	30	260	92	109	307	22
Total Analysis Volume [veh/h]	298	333	172	70	556	108	121	1041	369	438	1228	88
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.10	0.10	0.04	0.16	0.06	0.07	0.20	0.22	0.26	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.776											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.710

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	206	189	115	735	793	8	5	656	239	526	1501	263
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	189	115	735	793	8	5	656	239	526	1501	263
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	53	32	205	221	2	1	183	67	147	418	73
Total Analysis Volume [veh/h]	230	211	128	819	884	9	6	731	266	586	1673	293
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.07	0.24	0.26	0.26	0.00	0.15	0.15	0.17	0.33	0.00
Intersection LOS	C											
Intersection V/C	0.710											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	48.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1061	1	860	0	1078	468	190	1517	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1061	1	860	0	1078	468	190	1517	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9430	1.0000	0.9430	1.0000	0.9430	0.9430	0.9430	0.9430	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	281	0	228	0	286	124	50	402	0
Total Analysis Volume [veh/h]	0	0	0	1125	1	912	0	1143	496	201	1609	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	55	0	0	0	36	0	9	45	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		30	30	30	25	25	25	7	36
g / C, Green / Cycle		0.40	0.40	0.40	0.34	0.34	0.34	0.10	0.49
(v / s)_i Volume / Saturation Flow Rate		0.42	0.44	0.47	0.26	0.28	0.29	0.06	0.35
s, saturation flow rate [veh/h]		1603	1539	1431	3204	1451	1431	3113	4584
c, Capacity [veh/h]		647	621	577	1088	492	486	298	2242
d1, Uniform Delay [s]		22.19	22.19	22.19	21.80	22.61	22.73	32.50	14.96
k, delay calibration		0.49	0.50	0.50	0.11	0.23	0.24	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		48.86	64.31	96.61	1.08	7.59	8.49	2.65	0.44
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.05	1.09	1.18	0.75	0.83	0.84	0.67	0.72
d, Delay for Lane Group [s/veh]		71.05	86.49	118.79	22.88	30.20	31.23	35.16	15.40
Lane Group LOS		F	F	F	C	C	C	D	B
Critical Lane Group		No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		18.98	20.89	24.59	5.83	6.92	7.06	1.76	6.06
50th-Percentile Queue Length [ft/ln]		474.38	522.14	614.71	145.80	172.96	176.45	43.91	151.39
95th-Percentile Queue Length [veh/ln]		27.03	30.17	36.39	9.79	11.23	11.42	3.16	10.09
95th-Percentile Queue Length [ft/ln]		675.68	754.17	909.69	244.81	280.80	285.38	79.03	252.29

Movement, Approach, & Intersection Results

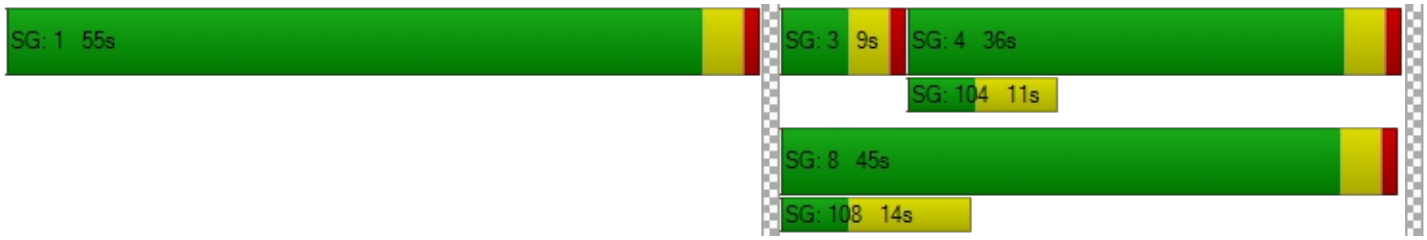
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	77.17	0.00	110.54	0.00	23.20	31.05	35.16	15.40	0.00
Movement LOS				E		F		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			92.11			26.79			17.59		
Approach LOS	A			F			C			B		
d_I, Intersection Delay [s/veh]	48.01											
Intersection LOS	D											
Intersection V/C	0.885											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.061	2.609	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1020	640	820
d_b, Bicycle Delay [s]	50.00	12.01	23.12	17.41
l_b,int, Bicycle LOS Score for Intersection	4.132	4.921	2.461	2.555
Bicycle LOS	D	E	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	827	0	377	0	0	0	353	1786	0	0	879	473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	827	0	377	0	0	0	353	1786	0	0	879	473
Peak Hour Factor	0.9610	1.0000	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	0	98	0	0	0	92	465	0	0	229	123
Total Analysis Volume [veh/h]	861	0	392	0	0	0	367	1858	0	0	915	492
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	0	0	0	0	0	15	58	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	64	64		64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22		10	34	20	20	20
g / C, Green / Cycle	0.34	0.34		0.16	0.54	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.28	0.27		0.12	0.41	0.22	0.25	0.25
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	1057	486		498	2454	1002	447	447
d1, Uniform Delay [s]	19.25	19.19		25.53	11.59	19.32	20.00	20.00
k, delay calibration	0.11	0.14		0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	4.28		2.15	0.49	0.91	3.10	3.10
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.81		0.74	0.76	0.70	0.79	0.79
d, Delay for Lane Group [s/veh]	20.84	23.47		27.68	12.08	20.23	23.10	23.10
Lane Group LOS	C	C		C	B	C	C	C
Critical Lane Group	Yes	No		No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.47	5.33		2.55	5.20	4.10	4.50	4.50
50th-Percentile Queue Length [ft/ln]	136.83	133.29		63.66	130.01	102.60	112.55	112.55
95th-Percentile Queue Length [veh/ln]	9.31	9.12		4.58	8.94	7.39	7.98	7.98
95th-Percentile Queue Length [ft/ln]	232.75	227.96		114.58	223.50	184.68	199.54	199.54

Movement, Approach, & Intersection Results

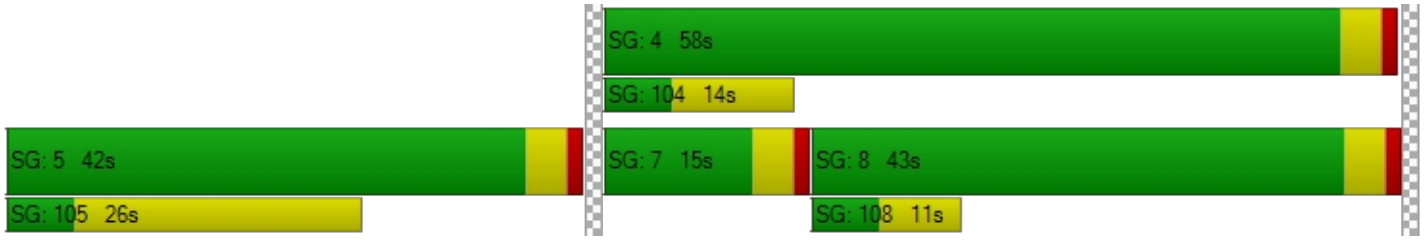
d_M, Delay for Movement [s/veh]	20.84	0.00	23.47	0.00	0.00	0.00	27.68	12.08	0.00	0.00	20.23	23.10
Movement LOS	C		C				C	B			C	C
d_A, Approach Delay [s/veh]	21.66			0.00			14.66			21.67		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	18.47											
Intersection LOS	B											
Intersection V/C	0.740											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.354	2.140	0.000	3.280
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	760	0	1080	780
d_b, Bicycle Delay [s]	19.22	50.00	10.58	18.61
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.783	2.333
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	248.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.068

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	71	2	7	423	609	0	0	550	950
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	71	2	7	423	609	0	0	550	950
Peak Hour Factor	1.0000	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	18	1	2	110	159	0	0	143	247
Total Analysis Volume [veh/h]	0	0	0	74	2	7	441	634	0	0	573	990
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	9	0	30	91	0	0	61	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	29	63	30	30
g / C, Green / Cycle		0.29	0.29	0.29	0.63	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.05	0.00	0.28	0.20	0.18	0.69
s, saturation flow rate [veh/h]		1605	1431	1603	3204	3204	1431
c, Capacity [veh/h]		464	414	466	2021	961	429
d1, Uniform Delay [s]		26.52	25.39	34.69	8.50	29.84	35.00
k, delay calibration		0.50	0.50	0.39	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.76	0.07	25.68	0.09	0.60	595.47
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.16	0.02	0.95	0.31	0.60	2.31
d, Delay for Lane Group [s/veh]		27.28	25.46	60.37	8.58	30.43	630.47
Lane Group LOS		C	C	E	A	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.44	0.13	13.14	2.67	5.86	81.13
50th-Percentile Queue Length [ft/ln]		36.07	3.18	328.54	66.72	146.44	2028.33
95th-Percentile Queue Length [veh/ln]		2.60	0.23	19.09	4.80	9.83	130.05
95th-Percentile Queue Length [ft/ln]		64.93	5.72	477.17	120.10	245.67	3251.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	27.28	27.28	25.46	60.37	8.58	0.00	0.00	30.43	630.47
Movement LOS				C	C	C	E	A			C	F
d_A, Approach Delay [s/veh]	0.00			27.12			29.83			410.50		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	248.41											
Intersection LOS	F											
Intersection V/C	1.068											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.827	1.762	0.000	0.000
Crosswalk LOS	C	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	100	1740	1140
d_b, Bicycle Delay [s]	50.00	45.13	0.85	9.25
l_b,int, Bicycle LOS Score for Intersection	4.132	1.697	2.446	2.849
Bicycle LOS	D	A	B	C

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			Yes			No			No		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	655	216	376	0	269	0	0	0	42	580	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	655	216	376	0	269	0	0	0	42	580	0
Peak Hour Factor	1.0000	0.9380	0.9380	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	175	58	100	0	72	0	0	0	11	155	0
Total Analysis Volume [veh/h]	0	698	230	401	0	287	0	0	0	45	618	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	66	0	0	0	0	9	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	25	25	60	60		4	32
g / C, Green / Cycle	0.25	0.25	0.60	0.60		0.04	0.32
(v / s)_i Volume / Saturation Flow Rate	0.22	0.16	0.25	0.20		0.03	0.19
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	789	352	957	854		59	1035
d1, Uniform Delay [s]	36.32	33.85	10.83	10.16		47.74	28.39
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	3.53	2.08	1.35	1.06		18.31	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.65	0.42	0.34		0.76	0.60
d, Delay for Lane Group [s/veh]	39.85	35.93	12.18	11.22		66.05	28.95
Lane Group LOS	D	D	B	B		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	8.24	5.03	4.80	3.23		1.37	5.92
50th-Percentile Queue Length [ft/ln]	206.00	125.69	119.88	80.76		34.35	148.01
95th-Percentile Queue Length [veh/ln]	12.95	8.70	8.39	5.81		2.47	9.91
95th-Percentile Queue Length [ft/ln]	323.69	217.62	209.66	145.37		61.82	247.77

Movement, Approach, & Intersection Results

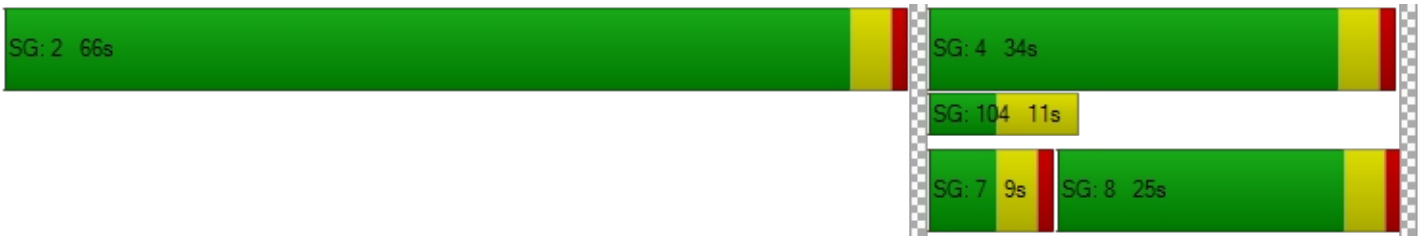
d_M, Delay for Movement [s/veh]	0.00	39.85	35.93	12.18	12.18	11.22	0.00	0.00	0.00	66.05	28.95	0.00
Movement LOS		D	D	B	B	B				E	C	
d_A, Approach Delay [s/veh]	38.88			11.78			0.00			31.47		
Approach LOS	D			B			A			C		
d_I, Intersection Delay [s/veh]	28.54											
Intersection LOS	C											
Intersection V/C	0.522											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.057	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	420	1240	0	600
d_b, Bicycle Delay [s]	31.21	7.22	50.00	24.50
l_b,int, Bicycle LOS Score for Intersection	2.325	2.695	4.132	2.107
Bicycle LOS	B	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	99	402	260	873	573	41	161	68	89	37	235	104
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	402	260	873	573	41	161	68	89	37	235	104
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	105	68	229	150	11	42	18	23	10	62	27
Total Analysis Volume [veh/h]	104	421	272	914	600	43	169	71	93	39	246	109
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	0
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.20	0.20	0.27	0.19	0.19	0.05	0.04	0.00	0.01	0.10	0.10
Intersection LOS	B											
Intersection V/C	0.677											

Brea Boulevard Corridor Improvement

Vistro File: C:\...\Brea Blvd Corridor Improvement.vistro
Scenario 26 2028 Const - Detour PM Peak Hour

Report File: C:\...\2028_Constructn_With Detour_PM.pdf
5/20/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.504	-	A
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.015	9.4	A
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.114	-	A
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	0.802	22.5	C
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.068	9.3	A
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	NB Thru	1.127	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	NB Thru	0.809	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.799	-	C
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.756	-	C
10	State College Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.719	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Right	0.900	41.7	D
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	NB Right	0.833	30.7	C
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	0.906	97.7	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	NEB Right	1.054	95.5	F
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	EB Right	0.769	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	421	51	44	17	40	48	29	724	177	34	934	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	421	51	44	17	40	48	29	724	177	34	934	14
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	13	11	4	10	13	8	189	46	9	243	4
Total Analysis Volume [veh/h]	439	53	46	18	42	50	30	755	185	35	974	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.02	0.02	0.01	0.01	0.03	0.01	0.22	0.00	0.02	0.29	0.01
Intersection LOS	A											
Intersection V/C	0.504											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	96	28	4	52	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	28	4	52	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	7	1	13	3	0
Total Analysis Volume [veh/h]	99	29	4	53	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.48	0.00	9.42	8.71
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.21	0.00	1.10	1.10
d_A, Approach Delay [s/veh]	0.00		0.52		9.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.73					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.114

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	60	32	27	3	14	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	32	27	3	14	34
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	9	7	1	4	9
Total Analysis Volume [veh/h]	64	34	29	3	15	36
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.02	0.02	0.00	0.01	0.02
Intersection LOS	A					
Intersection V/C	0.114					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	22.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.802

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	20	703	116	0	6	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	703	116	0	6	49
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	186	31	0	2	13
Total Analysis Volume [veh/h]	21	744	123	0	6	52
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.80	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.63	22.49	0.00	0.00	7.47	0.00
Movement LOS	A	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	8.78	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	2.02	219.53	0.00	0.00	0.31	0.00
d_A, Approach Delay [s/veh]	22.14		0.00		0.77	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	17.95					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	660	30	58	52	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	660	30	58	52	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	173	8	15	14	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	692	31	61	55	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.32	0.00	0.00	9.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	A	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	5.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			4.88			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.67											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.127

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	218	1700	16	157	1297	470	796	309	270	56	309	374
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	1700	16	157	1297	470	796	309	270	56	309	374
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	435	4	40	332	120	204	79	69	14	79	96
Total Analysis Volume [veh/h]	223	1742	16	161	1329	482	816	317	277	57	317	383
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.52	0.52	0.09	0.39	0.04	0.24	0.19	0.10	0.03	0.21	0.21
Intersection LOS	F											
Intersection V/C	1.127											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.809

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	290	1511	81	286	1108	284	480	414	110	112	698	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	1511	81	286	1108	284	480	414	110	112	698	176
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	386	21	73	283	73	123	106	28	29	178	45
Total Analysis Volume [veh/h]	296	1543	83	292	1132	290	490	423	112	114	713	180
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.32	0.32	0.09	0.28	0.28	0.14	0.12	0.00	0.03	0.21	0.02
Intersection LOS	D											
Intersection V/C	0.809											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.799

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	296	1321	101	142	1059	149	340	866	181	209	1365	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	296	1321	101	142	1059	149	340	866	181	209	1365	218
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	337	26	36	270	38	87	221	46	53	348	56
Total Analysis Volume [veh/h]	302	1348	103	145	1081	152	347	884	185	213	1393	222
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.26	0.00	0.04	0.24	0.24	0.10	0.21	0.21	0.06	0.32	0.32
Intersection LOS	C											
Intersection V/C	0.799											

Intersection Level Of Service Report
Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	528	502	365	36	309	39	138	938	343	375	1229	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	528	502	365	36	309	39	138	938	343	375	1229	44
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	132	96	9	81	10	36	247	90	99	324	12
Total Analysis Volume [veh/h]	557	530	385	38	326	41	146	989	362	396	1296	46
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.16	0.23	0.02	0.10	0.02	0.09	0.19	0.21	0.23	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.756											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.719

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	334	613	359	553	337	6	11	1130	168	358	1154	500
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	334	613	359	553	337	6	11	1130	168	358	1154	500
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	158	92	142	87	2	3	291	43	92	297	129
Total Analysis Volume [veh/h]	344	631	370	570	347	6	11	1164	173	369	1188	515
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.20	0.20	0.17	0.10	0.10	0.00	0.20	0.20	0.11	0.23	0.14
Intersection LOS	C											
Intersection V/C	0.719											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	735	1	833	0	1537	626	232	1345	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	735	1	833	0	1537	626	232	1345	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9690	1.0000	0.9690	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	190	0	215	0	397	162	60	347	0
Total Analysis Volume [veh/h]	0	0	0	759	1	860	0	1586	646	239	1388	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	33	0	0	0	35	0	32	67	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	24	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		81	81	81	81	81	81	81	81
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		30	30	30	30	30	30	9	43
g / C, Green / Cycle		0.37	0.37	0.37	0.37	0.37	0.37	0.11	0.53
(v / s)_i Volume / Saturation Flow Rate		0.34	0.36	0.38	0.35	0.38	0.39	0.08	0.30
s, saturation flow rate [veh/h]		1603	1496	1431	3204	1459	1431	3113	4584
c, Capacity [veh/h]		596	556	532	1191	542	532	337	2427
d1, Uniform Delay [s]		24.03	24.94	25.37	24.46	25.37	25.37	34.77	12.83
k, delay calibration		0.38	0.43	0.46	0.11	0.47	0.49	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		16.13	28.93	41.40	4.24	45.18	52.24	2.76	0.21
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.91	0.97	1.02	0.94	1.03	1.05	0.71	0.57
d, Delay for Lane Group [s/veh]		40.16	53.86	66.77	28.70	70.55	77.61	37.54	13.04
Lane Group LOS		D	D	F	C	F	F	D	B
Critical Lane Group		No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		11.77	13.91	15.57	9.89	16.07	16.79	2.29	4.84
50th-Percentile Queue Length [ft/ln]		294.21	347.73	389.37	247.25	401.67	419.78	57.15	120.94
95th-Percentile Queue Length [veh/ln]		17.39	20.03	22.28	15.05	23.08	24.29	4.11	8.44
95th-Percentile Queue Length [ft/ln]		434.86	500.64	556.88	376.19	577.04	607.16	102.87	211.12

Movement, Approach, & Intersection Results

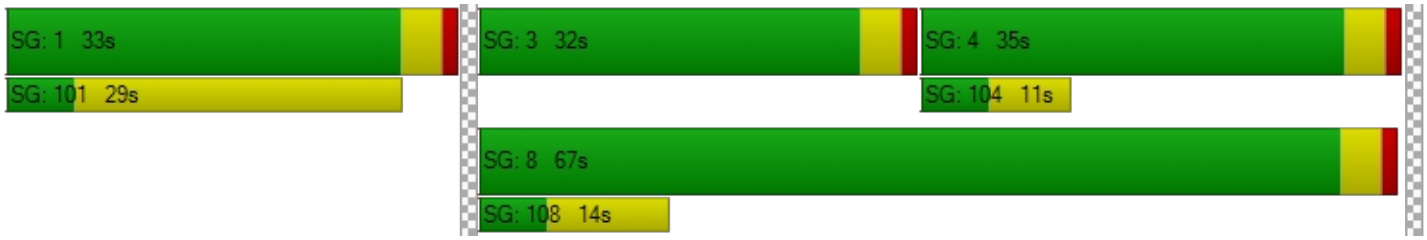
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	44.12	0.00	61.96	0.00	31.29	76.65	37.54	13.04	0.00
Movement LOS				D		E		C	E	D	B	
d_A, Approach Delay [s/veh]	0.00			53.60			51.39			16.64		
Approach LOS	A			D			D			B		
d_I, Intersection Delay [s/veh]	41.72											
Intersection LOS	D											
Intersection V/C	0.900											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.153	2.473	3.433	3.378
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	580	620	1260
d_b, Bicycle Delay [s]	50.00	25.21	23.81	6.85
l_b,int, Bicycle LOS Score for Intersection	4.132	4.231	2.787	2.454
Bicycle LOS	D	D	C	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	865	0	419	0	0	0	757	1513	0	0	712	589
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	865	0	419	0	0	0	757	1513	0	0	712	589
Peak Hour Factor	0.9680	1.0000	0.9680	1.0000	1.0000	1.0000	0.9680	0.9680	1.0000	1.0000	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	223	0	108	0	0	0	196	391	0	0	184	152
Total Analysis Volume [veh/h]	894	0	433	0	0	0	782	1563	0	0	736	608
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	39	0	0	0	0	0	31	61	0	0	30	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	24	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	93	93		93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30		26	56	25	25	25
g / C, Green / Cycle	0.32	0.32		0.28	0.59	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.29	0.30		0.25	0.34	0.21	0.23	0.23
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	995	457		869	2726	874	390	390
d1, Uniform Delay [s]	30.37	31.05		32.46	11.66	31.32	32.35	32.35
k, delay calibration	0.11	0.41		0.11	0.11	0.11	0.25	0.25
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.22	26.93		3.70	0.19	1.46	12.21	12.21
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.95		0.90	0.57	0.77	0.86	0.86
d, Delay for Lane Group [s/veh]	33.59	57.98		36.16	11.85	32.78	44.56	44.56
Lane Group LOS	C	E		D	B	C	D	D
Critical Lane Group	No	Yes		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.70	12.59		8.47	5.73	6.78	8.15	8.15
50th-Percentile Queue Length [ft/ln]	242.47	314.64		211.78	143.24	169.58	203.64	203.64
95th-Percentile Queue Length [veh/ln]	14.81	18.40		13.24	9.66	11.05	12.83	12.83
95th-Percentile Queue Length [ft/ln]	370.16	460.10		331.12	241.38	276.36	320.66	320.66

Movement, Approach, & Intersection Results

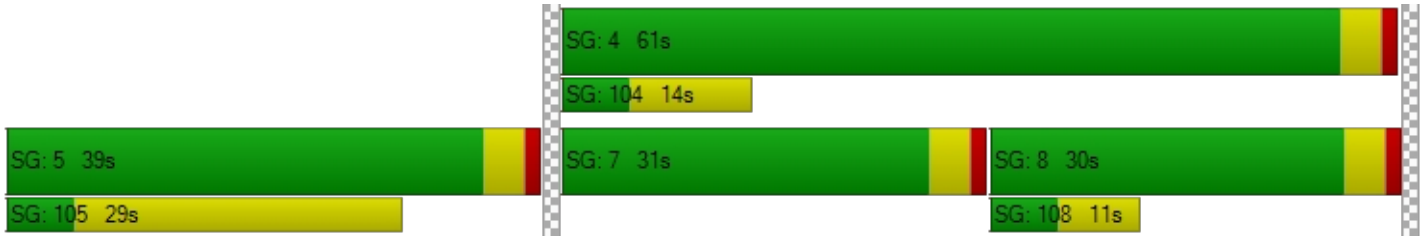
d_M, Delay for Movement [s/veh]	33.59	0.00	57.98	0.00	0.00	0.00	36.16	11.85	0.00	0.00	32.78	44.56
Movement LOS	C		E				D	B			C	D
d_A, Approach Delay [s/veh]	41.55			0.00			19.96			38.67		
Approach LOS	D			A			B			D		
d_I, Intersection Delay [s/veh]	30.69											
Intersection LOS	C											
Intersection V/C	0.833											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.378	2.399	3.378	3.221
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	0	1140	520
d_b, Bicycle Delay [s]	21.13	50.00	9.25	27.38
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.849	2.299
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	97.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.906

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	109	1	18	218	1633	0	0	384	873
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	109	1	18	218	1633	0	0	384	873
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	29	0	5	58	432	0	0	101	231
Total Analysis Volume [veh/h]	0	0	0	115	1	19	230	1726	0	0	406	923
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	24	0	9	76	0	0	67	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	15	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		31	31	16	61	41	41
g / C, Green / Cycle		0.31	0.31	0.16	0.61	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate		0.07	0.01	0.14	0.54	0.13	0.65
s, saturation flow rate [veh/h]		1603	1431	1603	3204	3204	1431
c, Capacity [veh/h]		497	444	263	1954	1300	580
d1, Uniform Delay [s]		25.65	24.11	40.80	16.50	20.22	29.71
k, delay calibration		0.50	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.10	0.18	8.91	1.46	0.14	273.66
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.23	0.04	0.87	0.88	0.31	1.59
d, Delay for Lane Group [s/veh]		26.75	24.30	49.71	17.96	20.35	303.37
Lane Group LOS		C	C	D	B	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		2.19	0.34	5.93	14.00	3.19	57.43
50th-Percentile Queue Length [ft/ln]		54.68	8.40	148.24	350.09	79.77	1435.77
95th-Percentile Queue Length [veh/ln]		3.94	0.60	9.92	20.14	5.74	89.82
95th-Percentile Queue Length [ft/ln]		98.42	15.11	248.08	503.52	143.59	2245.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	26.75	26.75	24.30	49.71	17.96	0.00	0.00	20.35	303.37
Movement LOS				C	C	C	D	B			C	F
d_A, Approach Delay [s/veh]	0.00			26.40			21.70			216.91		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	97.74											
Intersection LOS	F											
Intersection V/C	0.906											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.555	1.787	3.031	2.906
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	400	1440	1260
d_b, Bicycle Delay [s]	50.00	32.00	3.92	6.85
l_b,int, Bicycle LOS Score for Intersection	4.132	1.782	3.173	2.656
Bicycle LOS	D	A	C	B

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	95.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.054

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	800	59	1053	1	965	0	0	0	7	485	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	800	59	1053	1	965	0	0	0	7	485	0
Peak Hour Factor	1.0000	0.9280	0.9280	0.9280	0.9280	0.9280	1.0000	1.0000	1.0000	0.9280	0.9280	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	216	16	284	0	260	0	0	0	2	131	0
Total Analysis Volume [veh/h]	0	862	64	1135	1	1040	0	0	0	8	523	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	12	0	0	79	0	0	0	0	9	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	3	0	0	15	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	29	29	58	58		1	34
g / C, Green / Cycle	0.29	0.29	0.58	0.58		0.01	0.34
(v / s)_i Volume / Saturation Flow Rate	0.27	0.04	0.71	0.73		0.00	0.16
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	922	411	932	832		18	1085
d1, Uniform Delay [s]	34.72	26.57	20.94	20.94		49.15	26.13
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	5.18	0.17	108.41	122.72		16.73	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.16	1.22	1.25		0.45	0.48
d, Delay for Lane Group [s/veh]	39.89	26.74	129.35	143.66		65.87	26.46
Lane Group LOS	D	C	F	F		E	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	10.36	1.12	47.51	45.71		0.28	4.68
50th-Percentile Queue Length [ft/ln]	258.91	28.03	1187.86	1142.75		6.88	116.95
95th-Percentile Queue Length [veh/ln]	15.63	2.02	68.35	66.98		0.50	8.23
95th-Percentile Queue Length [ft/ln]	390.85	50.46	1708.66	1674.48		12.38	205.63

Movement, Approach, & Intersection Results

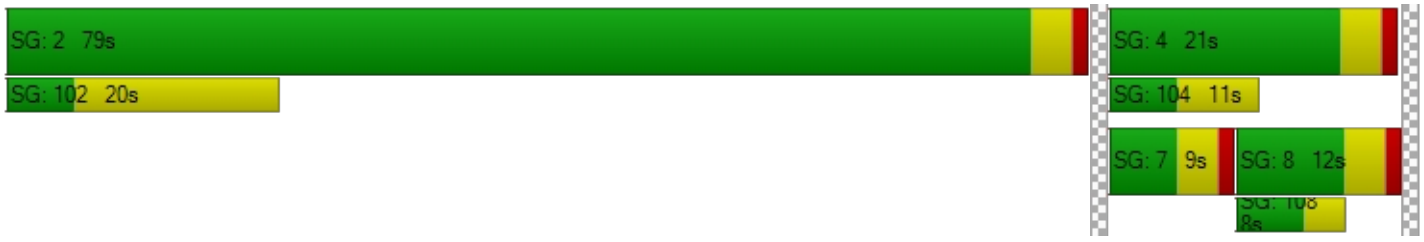
d_M, Delay for Movement [s/veh]	0.00	39.89	26.74	129.35	129.35	143.66	0.00	0.00	0.00	65.87	26.46	0.00
Movement LOS		D	C	F	F	F				E	C	
d_A, Approach Delay [s/veh]	38.99			136.19			0.00			27.06		
Approach LOS	D			F			A			C		
d_I, Intersection Delay [s/veh]	95.46											
Intersection LOS	F											
Intersection V/C	1.054											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.954	2.782	1.501	3.046
Crosswalk LOS	C	C	A	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	160	1500	0	340
d_b, Bicycle Delay [s]	42.32	3.13	50.00	34.45
l_b,int, Bicycle LOS Score for Intersection	2.324	5.150	4.132	1.998
Bicycle LOS	B	F	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.769

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	154	1214	63	143	347	23	458	448	640	47	47	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	1214	63	143	347	23	458	448	640	47	47	41
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	314	16	37	90	6	118	116	165	12	12	11
Total Analysis Volume [veh/h]	159	1255	65	148	359	24	474	463	662	49	49	42
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.39	0.39	0.04	0.11	0.11	0.14	0.27	0.19	0.01	0.03	0.03
Intersection LOS	C											
Intersection V/C	0.769											

APPENDIX P
ALTERNATIVES ANALYSIS MEMOS

TRAFFIC ALTERNATIVE MEMO

AECOM
999 Town and Country Road
Orange, CA 92868
aecom.com

Project name:
Brea Boulevard Corridor
Improvement Project

Project ref:
AECOM JN 60663742

To:
Austin Morgan, P.E.
OC Public Works
601 N. Ross Street
Santa Ana, CA 92701
County of Orange

From:
Don Holloway, PE, PTOE, AECOM

Date:
September 15, 2022

Technical Memorandum

Subject: Brea Boulevard Corridor Improvement Project, Alternative Traffic Analysis

1. Introduction

AECOM prepared this memo to supplement the September 2022 Traffic Impact Analysis Report (September 2022 Report) of the Brea Boulevard Corridor (corridor) Improvement Project (Project). This memo's purpose is to address potential traffic impacts as it relates to Alternative 3 - 4-Phase Project Construction Approach Timeline.

Under Alternative 3, the same Project described in the September 2022 Report would be proposed, but the total construction timeline would be extended from five to ten years to account for the availability of Project funding sources. Active construction duration would remain at 5 years (and the same maximum intensity of construction activity identified for the Project would remain the same for Alternative 3 within any given year) but the 5 years of active construction could occur at any time within the 10-year timeframe (e.g., within the first five years, within the last five years, or at various combinations of years with periods of inactivity within the overall 10 years) depending on funding availability. Thus, the construction timeframe for Alternative 3 would be extended from 2026-2030 to 2026-2035. Additionally, whereas the Project is divided into two phases of activities required for the entire corridor (i.e., Phase I: utility relocations, infrastructure for utilities, wildlife overpass/land bridge, bridge replacement, retaining walls, and associated grading/pavement, and Phase II: road widening, sound reduction surface treatment, and intersections), Alternative 3 is divided into four phases corresponding to four separate segments along the corridor. The four phases under Alternative 3 are a segmentation of the project limits with each of the four phases including all of the improvements necessary for that segment (i.e., both the Phase I and Phase II activities identified for the Project that are applicable to the specific segment length).

To account for a worst-case scenario of traffic effects under the variable timeline of this alternative, the construction timing assumptions that were the most conservative were used. For this supplemental traffic analysis, it was assumed that construction would occur within the last five years (2031-2035) when daily traffic volumes would be higher due to five additional years of forecast annual regional growth in the vicinity of the roadway. As such, construction under Alternative 3 for this analysis would span 5 sequential years, beginning in the year 2031. Thus, Year 2033, the mid-year of the 5-year construction schedule, was used as the construction analysis year assuming that construction activity will peak in 2033.

The following scenarios were analyzed as a part of the September 2022 Report:

- **2019 (Existing) Conditions** – Used to establish the current level of traffic operating conditions within the study area.
- **2019 Plus Project Conditions** – Represents the existing year traffic conditions, plus implementation of the Project.
- **No Project Construction (2028) Conditions** – Represents the baseline traffic conditions at year 2028 without Project construction.
- **Project Construction (2028) Conditions** – Represents the baseline traffic conditions at year 2028 plus Project construction (With and Without Detour) traffic.
- **Future Buildout (2045) No Project Conditions** – Represents Future Buildout without Project improvement conditions.
- **Future Buildout (2045) Plus Project Conditions** – Represents future Buildout plus Project improvement conditions.

This memo does not change any of the findings nor analysis contained in the September 2022 Report for these scenarios. What this memo provides is analysis of the following two scenarios:

- **No Project Construction (2033) Conditions** – Represents the baseline traffic conditions at year 2033 without Project construction.
- **Project Construction (2033) Conditions** – Represents the baseline traffic conditions at year 2033 plus Project construction (With and Without Detour) traffic.

This memo uses the very same assumptions, methodologies, trip generation, base traffic counts, study area, and project description contained in the September 2022 Report. Year 2033 traffic forecasts are developed in a manner like those previously conducted for 2028 in the September 2022 Report. This memo will focus on results and findings of Year 2033 traffic conditions.

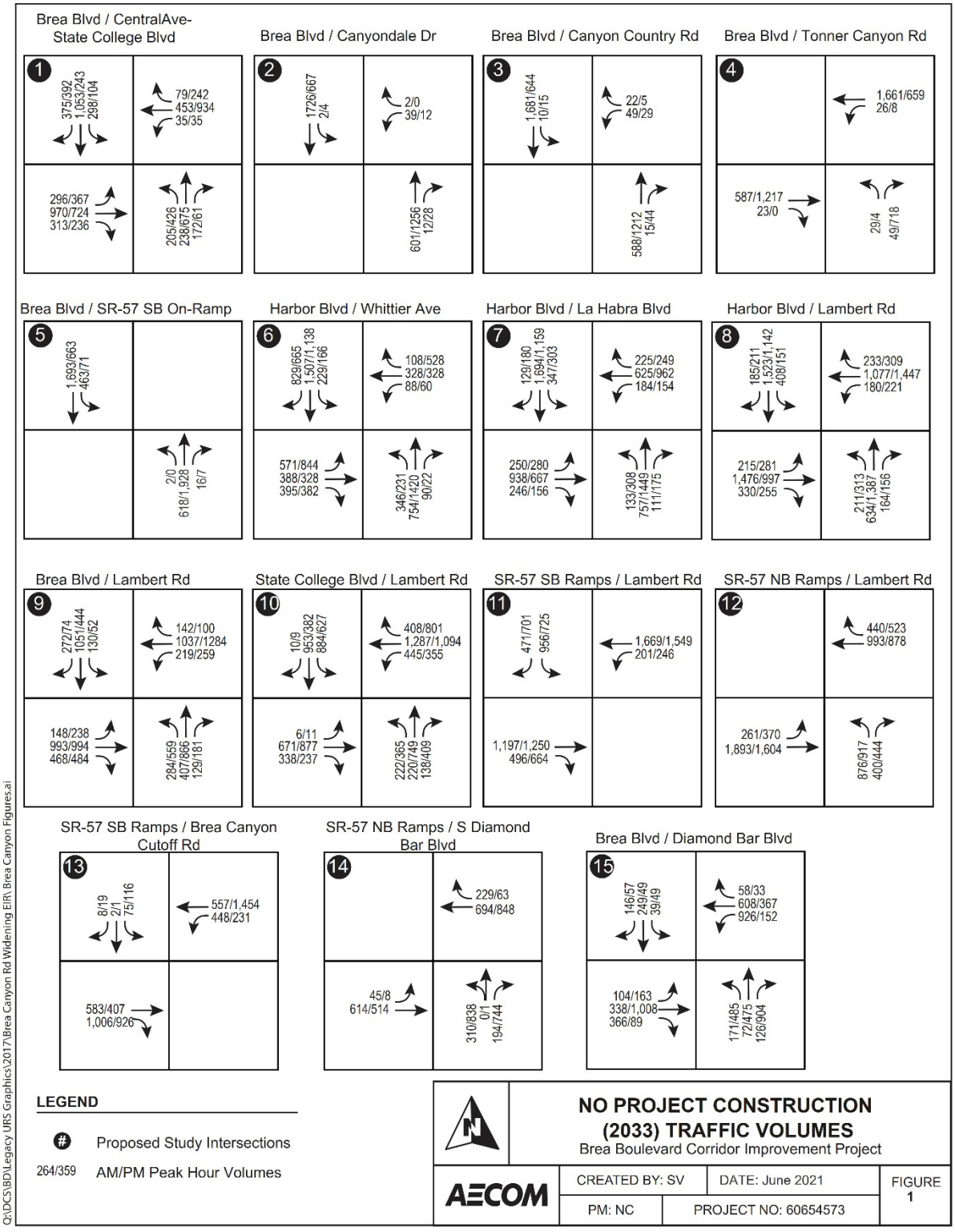
2. No Project Construction (2033) Conditions

This section provides a summary of the baseline traffic conditions in Year 2033 without Project construction. As the entire construction of the Project is expected to last approximately 5 years and is anticipated to be completed by 2035. Year 2033, the mid-year of the latest 5-year construction schedule, was used as the construction analysis year, assuming that construction activity will peak in 2033.

2.1 No Project Construction (2033) Traffic Volumes

No Project Construction (2033) forecast volumes were developed using the Orange County Traffic Analysis Model (OCTAM) growth forecast data. This modeling shows a rough increase in traffic of 1% per year and is generally consistent throughout the corridor. Tonner Canyon Road shows a growth rate of 1.5% per year. Growth on Canyon Country Road and Canyondale Drive is negligible as these roads access residential areas that are built-out. Figure 1 shows the No Project Construction (2033) Traffic Volumes for the key study intersections. Table 1 shows the intersection level of service (LOS) and delay results under the No Project Construction (2033) Conditions. Table 2 shows roadway segment analysis results for the study roadway segments under No Project Construction (2033) Conditions.

Figure 1 - No Project Construction (2033) Traffic Volumes



Source: AECOM

Table 1. No Project Construction (2033) Intersection LOS Analysis

ID	Intersection	No Project Construction (2033)				
			2033 AM Peak Hour		2033 PM Peak Hour	
		Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS
1	Brea Boulevard/Central Avenue - N. State College Boulevard	Signal (ICU)	0.83	D	0.81	D
2	Brea Boulevard/Canyondale Drive	STOP (HCM 6th)	61.4	**F**	52.2	**F**
3	Brea Boulevard/Canyon Country Road	Signal (ICU)	1.17	**F**	0.89	D
4	Brea Boulevard/Tonner Canyon Road	STOP (HCM 6th)	279.7	**F**	>300	**F**
5	Brea Boulevard/SR-57 SB On-Ramp	STOP (HCM 6th)	15.0	B	22.3	C
6	Harbor Blvd / Whittier Ave	Signal (ICU)	0.98	**E**	1.13	**F**
7	Harbor Blvd / La Habra Blvd	Signal (ICU)	0.86	D	0.88	D
8	Harbor Blvd / Lambert Road	Signal (ICU)	0.96	**E**	0.87	D
9	Brea Blvd / Lambert Road	Signal (ICU)	0.91	**E**	0.84	D
10	State College Blvd / Lambert Road	Signal (ICU)	0.80	C	0.78	C
11	SR-57 SB Ramps / Lambert Road	Signal (HCM 6th)	25.2	C	29.7	C
12	SR-57 NB Ramps / Lambert Road	Signal (HCM 6th)	18.7	B	22.2	C
13	SR-57 SB Ramps / Brea Canyon Cutoff Road	Signal (HCM 6th)	279.9	**F**	176.3	**F**
14	SR-57 NB Ramps / S Diamond Bar Blvd	Signal (HCM 6th)	29.5	C	42.5	D
15	Brea Blvd / Diamond Bar Blvd	Signal (ICU)	0.74	C	0.74	C

Source: AECOM

As shown in Table 1, 8 of the 15 study intersections are forecast to operate at acceptable LOS D or better under No Project Construction (2033) Conditions with the exception of the following LOS E/F intersections:

- Brea Boulevard/Canyondale Drive (AM/PM Peak - LOS F)
- Brea Boulevard/Canyon Country Road (AM Peak - LOS F)
- Brea Boulevard/Tonner Canyon Road (AM/PM Peak - LOS F)
- Harbor Boulevard/Whittier Avenue (AM Peak - LOS E, PM Peak - LOS F)
- Harbor Boulevard/Lambert Road (AM Peak - LOS E)
- Brea Boulevard/Lambert Road (AM Peak - LOS E)
- SR-57 SB Ramps/Brea Canyon Cutoff Road (AM/PM Peak - LOS F)

As shown in Table 2, all of the study roadway segments are forecast to operate at an acceptable LOS under No Project Construction (2033) Conditions with the exception of the following LOS F segments:

- Brea Boulevard – between Canyon Country Road and Tonner Canyon Road (LOS F)
- Brea Boulevard – between Tonner Canyon Road and SR-57 SB On-Ramp (LOS F)
- Brea Boulevard – north of SR-57 SB On-Ramp (LOS F)
- SR-57 – between Lambert Road and Diamond Bar Boulevard (LOS F)

Table 2. No Project Construction (2033) Roadway Segment LOS Analysis

ID	Roadway	Segment	Roadway Classification	No Project Construction (2033)			
				Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS
1	Brea Boulevard	Central Ave-N State College Blvd to Canyondale Dr	Primary	21,300	30,000	0.57	A
2	Brea Boulevard	Canyon Country Rd to Tonner Canyon Rd	Primary	19,500	10,000	1.56	**F**
3	Brea Boulevard	Tonner Canyon Rd to SR-57 SB On-Ramp	Primary	23,500	15,000	1.07	**F**
4	Brea Boulevard	north of SR-57 SB On-Ramp	Primary	25,900	15,000	1.18	**F**
5	Tonner Canyon Road	east of Brea Blvd	Primary	4,050	10,000	0.32	A
6	Canyon Country Road	east of Brea Blvd	Collector	1,350	10,000	0.14	A
7	Canyondale Drive	east of Brea Blvd	Collector	750	10,000	0.08	A
8	Lambert Road	Brea Boulevard to Harbor Boulevard	Primary	39,400	45,000	0.70	B
9	Harbor Boulevard	Lambert Road to La Habra Boulevard	Primary	44,000	45,000	0.78	C
10	SR-57	Lambert Road to Diamond Bar Boulevard	Freeway	243,700	205,100	1.19	**F**

Source: AECOM

3. Project Construction (2033) Conditions

This section provides a summary of the LOS results during Project Construction (2033) Conditions (With and Without Detour). The Project construction trip generation, is the same as was used in the September 2022 Report and is repeated here in Table 3.

Table 3. Project Construction Trip Generation Summary

	AM Peak Hour Trips (7:00 – 9:00 PM)[1]			PM Peak Hour Trips (4:00 – 6:00 PM)[2]			Daily Trips		
Category	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Autos (workers)	20	0	20	0	40	40	40	40	80
Trucks	8	8	16	8	8	16	73	73	146
Total Vehicles	28	8	36	8	48	56	113	113	226

Source: AECOM

[1] – Assumed 50 percent of workers arrive during the AM peak hour

[2] – Assumed 100 percent of workers leave during the PM peak hour

3.1 Project Construction (2033) Without Detour Traffic Volumes

Project Construction (2033) Without Detour Traffic Volumes is depicted in Figure 2. The results in Table 4 for Project Construction (2033) Without Detour show little change from No Project Construction (2033) except at the Brea Boulevard/Tonner Canyon Road intersection during the AM peak hour. While additional trips generated by construction activity are modest the AM peak hour increase in delay would be a significant impact throughout the duration of construction at this intersection.

Table 4. Project Construction (2033) Without Detour Intersection LOS Analysis

		No Project Construction (2033)					Project Construction (2033) without Detour					
			2033 AM Peak Hour		2033 PM Peak Hour			2033 AM Peak Hour		2033 PM Peak Hour		
ID	Intersection	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Impact?
1	Brea Boulevard/Central Avenue - N. State College Boulevard	Signal (ICU)	0.83	D	0.81	D	Signal (ICU)	0.83	D	0.81	D	No
2	Brea Boulevard/ Canyondale Drive	STOP (HCM 6th)	61.40	**F**	52.20	**F**	STOP (HCM 6th)	61.40	**F**	52.20	**F**	No
3	Brea Boulevard/Canyon Country Road	Signal (ICU)	1.17	**F**	0.89	D	Signal (ICU)	1.17	**F**	0.89	D	No
4	Brea Boulevard/Tonner Canyon Road	STOP (HCM 6th)	279.70	**F**	>300	**F**	STOP (HCM 6th)	>300	**F**	>300	**F**	**Yes**
5	Brea Boulevard/SR-57 SB On-Ramp	STOP (HCM 6th)	15.00	B	22.30	C	STOP (HCM 6th)	15.10	B	22.90	C	No
6	Harbor Blvd / Whittier Ave	Signal (ICU)	0.98	**E**	1.13	**F**	Signal (ICU)	0.98	**E**	1.13	**F**	No
7	Harbor Blvd/ La Habra Blvd	Signal (ICU)	0.86	D	0.88	D	Signal (ICU)	0.86	D	0.88	D	No
8	Harbor Blvd/Lambert Road	Signal (ICU)	0.96	**E**	0.87	D	Signal (ICU)	0.96	**E**	0.87	D	No
9	Brea Blvd/Lambert Road	Signal (ICU)	0.91	**E**	0.84	D	Signal (ICU)	0.91	**E**	0.84	D	No
10	State College Blvd/ Lambert Road	Signal (ICU)	0.80	C	0.78	C	Signal (ICU)	0.80	C	0.78	C	No
11	SR-57 SB Ramps/ Lambert Road	Signal (HCM 6th)	25.20	C	29.70	C	Signal (HCM 6th)	25.20	C	29.70	C	No
12	SR-57 NB Ramps/ Lambert Road	Signal (HCM 6th)	18.70	B	22.20	C	Signal (HCM 6th)	18.70	B	22.20	C	No
13	SR-57 SB Ramps/ Brea Canyon Cutoff Road	Signal (HCM 6th)	279.90	**F**	176.30	**F**	Signal (HCM 6th)	279.90	**F**	176.30	**F**	No
14	SR-57 NB Ramps/ S Diamond Bar Blvd	Signal (HCM 6th)	29.50	C	42.50	D	Signal (HCM 6th)	29.50	C	42.50	D	No
15	Brea Blvd/Diamond Bar Blvd	Signal (ICU)	0.74	C	0.74	C	Signal (ICU)	0.74	C	0.78	C	No

Source: AECOM

Significant impact occurs when the final LOS is E or F and the ICU increases by more than 0.02 and by more than 2.0 seconds for HCM 6th analysis.

Table 5 shows the Project Construction (2033) Without Detour roadway segment traffic analysis. The addition of Project construction trips does not significantly impact the roadway segments.

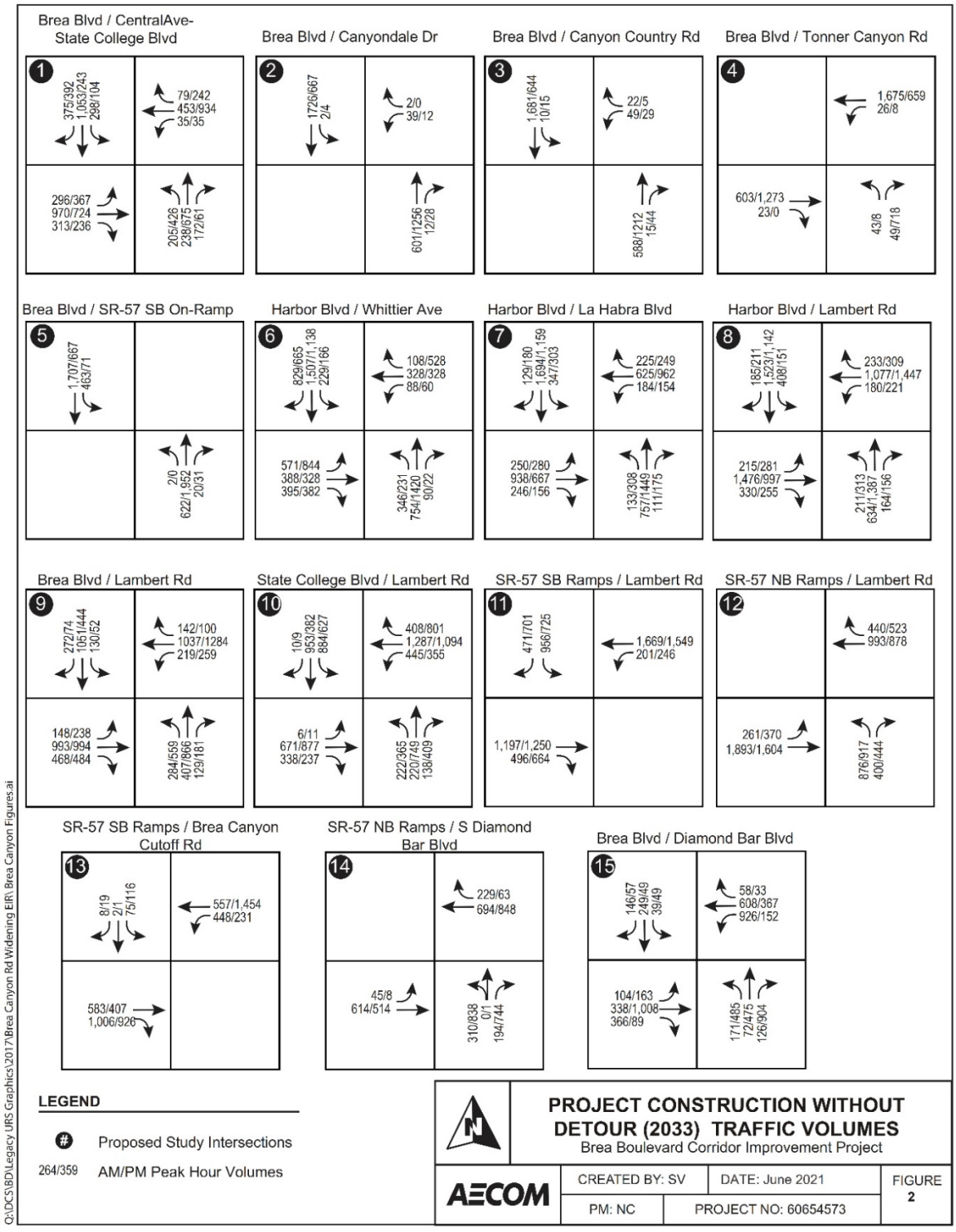
Table 5. Project Construction (2033) Without Detour Roadway Segment LOS Analysis

				No Project Construction (2033)				Project Construction (2033) without Detour				
ID	Roadway	Segment	Roadway Classification	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Impact?
1	Brea Boulevard	Central Ave-N State College Blvd to Canyondale Dr	Primary	21,300	30,000	0.57	A	21,300	30,000	0.57	A	No
2	Brea Boulevard	Canyon Country Rd to Tonner Canyon Rd	Primary	19,500	10,000	1.56	**F**	19,500	10,000	1.56	**F**	No
3	Brea Boulevard	Tonner Canyon Rd to SR-57 SB On-Ramp	Primary	23,500	15,000	1.07	**F**	23,900	15,000	1.09	**F**	No
4	Brea Boulevard	north of SR-57 SB On-Ramp	Primary	25,900	15,000	1.18	**F**	26,100	15,000	1.19	**F**	No
5	Tonner Canyon Road	east of Brea Blvd	Primary	4,050	10,000	0.32	A	4,150	10,000	0.33	A	No
6	Canyon Country Road	east of Brea Blvd	Collector	1,350	10,000	0.14	A	1,350	10,000	0.14	A	No
7	Canyondale Drive	east of Brea Blvd	Collector	750	10,000	0.08	A	750	10,000	0.08	A	No
8	Lambert Road	Brea Boulevard to Harbor Boulevard	Primary	39,400	45,000	0.70	B	39,400	45,000	0.70	B	No
9	Harbor Boulevard	Lambert Road to La Habra Boulevard	Primary	44,000	45,000	0.78	C	44,000	45,000	0.78	C	No
10	SR-57	Lambert Road to Diamond Bar Boulevard	Freeway	243,700	205,100	1.19	**F**	243,700	205,100	1.19	**F**	No

Source: AECOM

V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

Figure 2 - Project Construction (2033) Without Detour Traffic Volumes



Source: AECOM

3.2 Project Construction (2033) With Detour Traffic Volumes

Construction will require the periodic full closure of Brea Boulevard from north of Canyon Country Road to Tonner Canyon Road from Friday at 8:00 p.m. to Monday at 5:00 a.m. These planned closures would potentially result in through traffic seeking alternate travel routes; the two adjacent facilities that can provide alternate travel routes are Harbor Boulevard to the west and SR-57 freeway to the east. Figure 3 shows the Project Construction (2033) AM/PM peak hour traffic With Detour. What is shown on Figure 3, are mid-week traffic closures with correspondingly heavy mid-week traffic flows. The actual closures would be periodic and over weekends. As such, the impacts presented are very conservative.

The impacts for Project Construction (2033) With Detour Conditions traffic volumes at intersections are depicted on Table 6**.** Significant impact occurs at signalized ICU intersections when the final LOS is E or F and the ICU increases by more than 0.02. For HCM analyses, significant impact occurs when the final LOS is E or F and the delay increases by more than 2.0 seconds. The Table 6 findings and results show that five intersections would experience significant impacts under the Project Construction (2033) With Detour conditions.

- Harbor Boulevard/Whittier Avenue
- Harbor Boulevard/La Habra Boulevard
- Harbor Boulevard/Lambert Road
- SR-57 SB Ramps/Lambert Road
- SR-57 NB Ramps/S Diamond Bar Boulevard

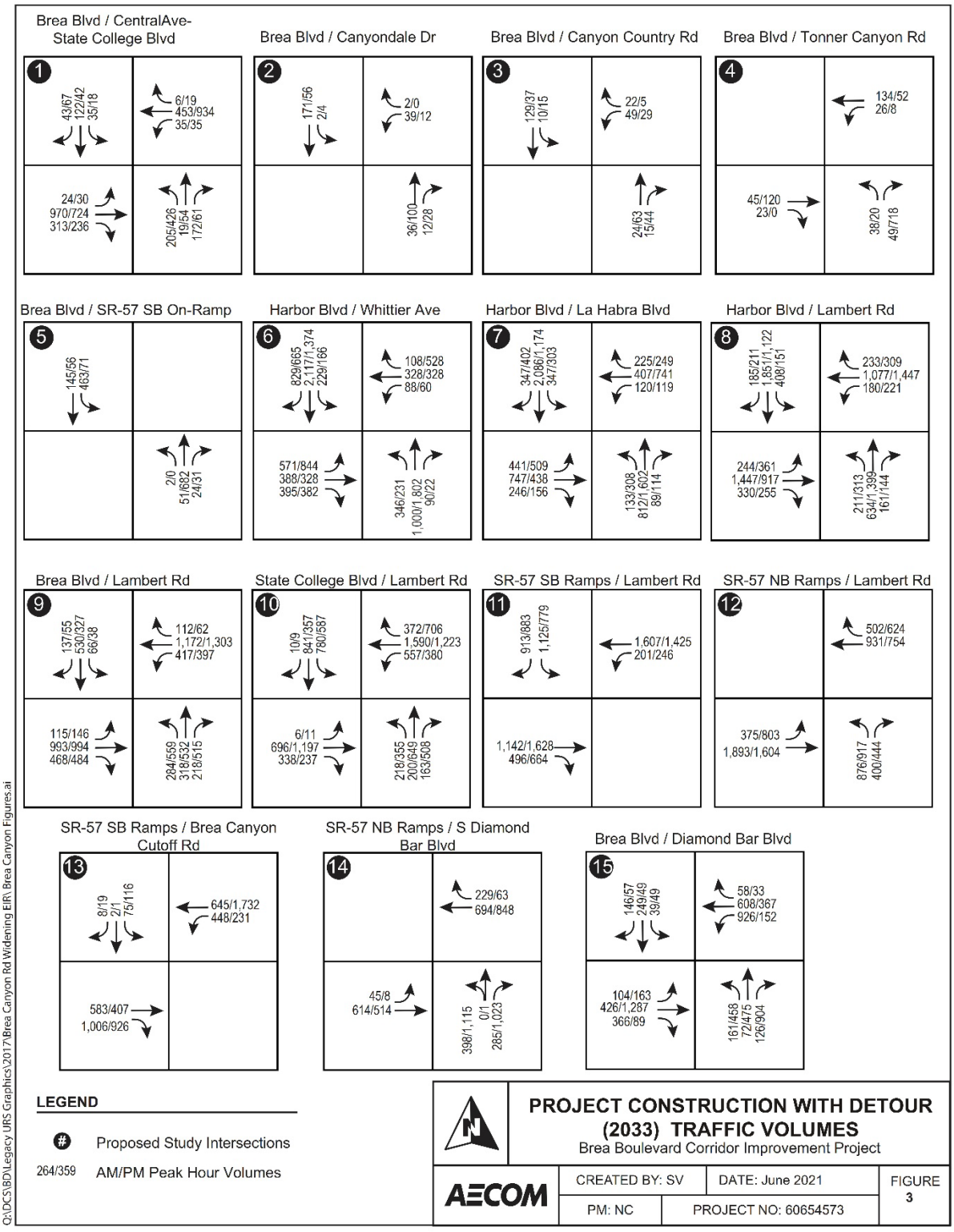
The detailed intersection LOS calculation worksheets for Project Construction (2033) With Detour Conditions traffic volumes are provided in Appendix A. As mentioned previously, the impacts are overstated as they are based on mid-week flow when actual detours will be periodic and on weekends.

Table 7 the roadway segment analysis results for the study roadway segments for Project Construction (2033) With Detour Conditions. As shown on Table 7, impacts due to detours on roadway segments are less than those to intersections as roadway segments spread total demand across several lanes rather than concentrated delays at intersections as a result of the additional turning movements required when following detours.

The SR-57 Between Lambert Road and Diamond Bar Boulevard does show a significant impact with a V/C increase of 0.10. SR-57 parallels Brea Boulevard and as such would receive a good portion of the diverted traffic with closure of Brea Boulevard. However, the modeled delays and changes in LOS presented in this analysis reflect mid-week, peak travel demand, which overstates the impact.

On weekends, weekend ADT on SR-57 would be lower than the AADT that was used in the model and much of the detoured traffic would be from non-freeway travel demands which can be approximately 10% lower on Saturdays and 20% lower on Sundays. As a result, the impacts to SR-57 are overstated.

Figure 3 - Project Construction (2033) With Detour Traffic Volumes



Source: AECOM

Table 6. Project Construction (2033) With Detour Intersection LOS Analysis

		No Project Construction (2033)					Project Construction (2033) with Detour					
			2033 AM Peak Hour		2033 PM Peak Hour			2033 AM Peak Hour		2033 PM Peak Hour		
ID	Intersection	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Control Type	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	Impact?
1	Brea Boulevard/ Central Avenue - N. State College Boulevard	Signal (ICU)	0.83	D	0.81	D	Signal (ICU)	0.53	A	0.56	A	No
2	Brea Boulevard/ Canyondale Drive	STOP (HCM 6th)	61.40	**F**	52.20	**F**	STOP (HCM 6th)	9.50	A	9.50	A	No
3	Brea Boulevard/ Canyon Country Road	Signal (ICU)	1.17	**F**	0.89	D	Signal (ICU)	0.21	A	0.17	A	No
4	Brea Boulevard/ Tonner Canyon Road	STOP (HCM 6th)	279.70	**F**	>300	**F**	STOP (HCM 6th)	10.30	B	24.10	C	No
5	Brea Boulevard/SR-57 SB On-Ramp	STOP (HCM 6th)	15.00	B	22.30	C	STOP (HCM 6th)	8.30	A	9.40	A	No
6	Harbor Blvd/ Whittier Ave	Signal (ICU)	0.98	**E**	1.13	**F**	Signal (ICU)	1.17	**F**	1.24	**F**	**Yes**
7	Harbor Blvd/ La Habra Blvd	Signal (ICU)	0.86	D	0.88	D	Signal (ICU)	0.90	D	0.91	**E**	**Yes**
8	Harbor Blvd/ Lambert Road	Signal (ICU)	0.96	**E**	0.87	D	Signal (ICU)	1.03	**F**	0.89	D	**Yes**
9	Brea Blvd/ Lambert Road	Signal (ICU)	0.91	**E**	0.84	D	Signal (ICU)	0.87	D	0.85	D	No
10	State College Blvd/ Lambert Road	Signal (ICU)	0.80	C	0.78	C	Signal (ICU)	0.80	C	0.81	D	No
11	SR-57 SB Ramps/ Lambert Road	Signal (HCM 6th)	25.20	C	29.70	C	Signal (HCM 6th)	63.70	**E**	53.40	D	**Yes**
12	SR-57 NB Ramps/ Lambert Road	Signal (HCM 6th)	18.70	B	22.20	C	Signal (HCM 6th)	21.10	C	36.50	D	No
13	SR-57 SB Ramps/ Brea Canyon Cutoff Road	Signal (HCM 6th)	279.90	**F**	176.30	**F**	Signal (HCM 6th)	271.30	**F**	93.40	**F**	No
14	SR-57 NB Ramps/ S Diamond Bar Blvd	Signal (HCM 6th)	29.50	C	42.50	D	Signal (HCM 6th)	28.50	C	121.60	**F**	**Yes**
15	Brea Blvd/ Diamond Bar Blvd	Signal (ICU)	0.74	C	0.74	C	Signal (ICU)	0.76	C	0.86	D	No

Source: AECOM

Significant impact occurs when the final LOS is E or F and the ICU increases by more than 0.02 and by more than 2.0 seconds for HCM 6th analysis.

Table 7. Project Construction (2033) With Detour Roadway Segment LOS Analysis

ID	Roadway	Segment	Roadway Classification	No Project Construction (2033)				Project Construction (2033) with Detour				Impact?
				Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	Average Daily Traffic (ADT)	Capacity (vpd)	V/C	LOS	
1	Brea Boulevard	Central Ave-N State College Blvd to Canyondale Dr	Primary	21,300	30,000	0.57	A	2,300	30,000	0.06	A	No
2	Brea Boulevard	Canyon Country Rd to Tonner Canyon Rd	Primary	19,500	10,000	1.56	**F**	1,400	10,000	0.11	A	No
3	Brea Boulevard	Tonner Canyon Rd to SR-57 SB On-Ramp	Primary	23,500	15,000	1.07	**F**	5,500	15,000	0.25	A	No
4	Brea Boulevard	north of SR-57 SB On-Ramp	Primary	25,900	15,000	1.18	**F**	7,000	15,000	0.32	A	No
5	Tonner Canyon Road	east of Brea Blvd	Primary	4,050	10,000	0.32	A	4,200	10,000	0.34	A	No
6	Canyon Country Road	east of Brea Blvd	Collector	1,350	10,000	0.14	A	1,350	10,000	0.14	A	No
7	Canyondale Drive	east of Brea Blvd	Collector	750	10,000	0.08	A	750	10,000	0.08	A	No
8	Lambert Road	Brea Boulevard to Harbor Boulevard	Primary	39,400	45,000	0.70	B	38,700	45,000	0.69	B	No
9	Harbor Boulevard	Lambert Road to La Habra Boulevard	Primary	44,000	45,000	0.78	C	44,000	45,000	0.78	C	No
10	SR-57	Lambert Road to Diamond Bar Boulevard	Freeway	243,700	205,100	1.19	**F**	263,800	205,100	1.29	**F**	**Yes**

Source: AECOM

V/C – Volume to Capacity ratio using maximum capacities from Guidance for Administration of the Orange County Master Plan of Arterial Highways 2017, Table A-4-1.

4. Summary and Conclusions

Under the Project Construction (2033) Without Detour Conditions, one study intersection is forecast to be impacted:

- Brea Boulevard/Tonner Canyon Road (AM/PM Peak – LOS F/F)

No roadway segments under Project Construction (2033) Without Detour Conditions are impacted.

The findings and results show that five intersections would experience impacts under the Project Construction (2033) With Detour Conditions.

- Harbor Boulevard/Whittier Avenue (temporarily impacted)
- Harbor Boulevard/La Habra Boulevard (new for 2033, temporarily impacted)
- Harbor Boulevard/Lambert Road (temporarily impacted)
- SR-57 SB Ramps/Lambert Road (new for 2033, temporarily impacted)
- SR-57 NB Ramps/S Diamond Bar Boulevard (temporarily impacted)

Under the Project Construction (2033) With Detour Conditions, the following study roadway segment is forecast to be impacted.

- SR-57 – between Lambert Road and Diamond Bar Boulevard (also impacted in 2028)

All mitigation measures identified in the September 2022 Report would still apply.

Appendix A

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Vistro File: \...\BreaCanyonWideningProject_2020_06_07 deh.vistro
Report File: \...\2033 AM Pre-Con.pdf

Scenario 27 2033 Pre-Constrction AM Peak Hour
6/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	SB Thru	0.776	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.401	61.4	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	1.121	-	F
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	0.865	281.8	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.006	15.0	B
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	SB Thru	0.934	-	E
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	SB Thru	0.812	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	EB Thru	0.912	-	E
9	Brea Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.859	-	D
10	State College Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.750	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	SB Right	0.787	25.2	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.785	18.7	B
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	1.130	279.9	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.491	29.5	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	WB Left	0.687	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Generated with PTV VISTRO

Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	205	238	129	298	1053	281	296	970	235	35	453	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	205	238	129	298	1053	281	296	970	235	35	453	59
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	64	35	80	282	75	79	260	63	9	122	16
Total Analysis Volume [veh/h]	220	255	138	320	1130	302	318	1041	252	38	486	63
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.08	0.08	0.19	0.33	0.18	0.09	0.31	0.08	0.02	0.14	0.04
Intersection LOS	C											
Intersection V/C	0.776											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	61.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	601	12	2	1726	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	601	12	2	1726	39	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	158	3	1	455	10	1
Total Analysis Volume [veh/h]	634	13	2	1821	41	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.40	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.86	0.00	61.40	31.57
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	1.68	1.68
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.16	0.00	41.93	41.93
d_A, Approach Delay [s/veh]	0.00		0.01		60.01	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.03					
Intersection LOS	F					

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Intersection Level Of Service Report

Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.121

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	588	11	49	17	10	1681
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	588	11	49	17	10	1681
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	155	3	13	4	3	442
Total Analysis Volume [veh/h]	619	12	52	18	11	1769
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.36	0.01	0.03	0.01	0.01	1.04
Intersection LOS	F					
Intersection V/C	1.121					

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Intersection Level Of Service Report

Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	281.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.865

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	29	49	587	23	26	1661
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	49	587	23	26	1661
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	13	153	6	7	432
Total Analysis Volume [veh/h]	30	51	611	24	27	1728
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.87	0.10	0.01	0.00	0.03	0.02
d_M, Delay for Movement [s/veh]	281.80	13.27	0.00	0.00	8.83	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.07	0.35	0.00	0.00	0.09	0.00
95th-Percentile Queue Length [ft/ln]	76.86	8.74	0.00	0.00	2.15	0.00
d_A, Approach Delay [s/veh]	112.73		0.00		0.14	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	3.79					
Intersection LOS	F					

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Intersection Level Of Service Report

Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	618	16	463	1693	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	618	16	463	1693	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	158	4	119	434	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	633	16	474	1735	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.50	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.98	0.00	0.00	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	2.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.42	0.00	0.00	71.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.05			2.68			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.08											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	346	754	68	229	1507	622	571	388	296	88	328	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	754	68	229	1507	622	571	388	296	88	328	81
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	200	18	61	400	165	151	103	78	23	87	21
Total Analysis Volume [veh/h]	367	800	72	243	1598	660	606	411	314	93	348	86
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	2	3	8	8	7	4	0
Auxiliary Signal Groups						2,3			1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.26	0.26	0.14	0.47	0.21	0.18	0.24	0.08	0.05	0.13	0.13
Intersection LOS	E											
Intersection V/C	0.934											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	133	757	83	347	1694	97	250	938	185	184	625	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	757	83	347	1694	97	250	938	185	184	625	169
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	200	22	92	448	26	66	248	49	49	165	45
Total Analysis Volume [veh/h]	141	800	88	367	1791	103	264	992	196	195	661	179
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	8	7	4	4
Auxiliary Signal Groups									1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.17	0.17	0.11	0.37	0.37	0.08	0.29	0.07	0.06	0.19	0.00
Intersection LOS	D											
Intersection V/C	0.812											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.912

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	211	634	123	408	1523	139	215	1476	248	180	1077	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	634	123	408	1523	139	215	1476	248	180	1077	175
Peak Hour Factor	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	175	34	113	421	38	59	408	69	50	298	48
Total Analysis Volume [veh/h]	233	701	136	451	1685	154	238	1633	274	199	1191	194
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	0	7	4	4
Auxiliary Signal Groups			6,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.14	0.02	0.13	0.36	0.36	0.07	0.37	0.37	0.06	0.27	0.27
Intersection LOS	E											
Intersection V/C	0.912											

Generated with PTV VISTRO

Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.859

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	284	407	97	130	1051	204	148	993	351	219	1037	107
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	284	407	97	130	1051	204	148	993	351	219	1037	107
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	113	27	36	292	57	41	276	98	61	288	30
Total Analysis Volume [veh/h]	316	452	108	144	1168	227	164	1103	390	243	1152	119
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.13	0.06	0.08	0.34	0.13	0.10	0.22	0.23	0.14	0.25	0.25
Intersection LOS	D											
Intersection V/C	0.859											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	222	220	104	884	953	8	6	671	254	445	1287	306
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	220	104	884	953	8	6	671	254	445	1287	306
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	61	29	246	266	2	2	187	71	124	359	85
Total Analysis Volume [veh/h]	247	245	116	986	1062	9	7	748	283	496	1435	341
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.07	0.29	0.32	0.32	0.00	0.15	0.15	0.15	0.28	0.00
Intersection LOS	C											
Intersection V/C	0.750											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	956	1	471	0	1197	496	201	1669	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	956	1	471	0	1197	496	201	1669	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9430	1.0000	0.9430	1.0000	0.9430	0.9430	0.9430	0.9430	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	253	0	125	0	317	131	53	442	0
Total Analysis Volume [veh/h]	0	0	0	1014	1	499	0	1269	526	213	1770	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	41	0	13	54	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	29	27	27	27	7	39
g / C, Green / Cycle		0.38	0.38	0.38	0.36	0.36	0.36	0.10	0.51
(v / s)_i Volume / Saturation Flow Rate		0.32	0.32	0.35	0.28	0.31	0.31	0.07	0.39
s, saturation flow rate [veh/h]		1603	1603	1431	3204	1457	1431	3113	4584
c, Capacity [veh/h]		610	610	544	1156	526	516	310	2354
d1, Uniform Delay [s]		21.16	21.16	22.21	21.38	22.25	22.43	32.81	14.54
k, delay calibration		0.30	0.30	0.36	0.11	0.28	0.30	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		7.91	7.91	17.79	1.15	9.88	11.46	2.72	0.50
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.83	0.92	0.78	0.85	0.87	0.69	0.75
d, Delay for Lane Group [s/veh]		29.06	29.06	40.00	22.54	32.13	33.89	35.53	15.03
Lane Group LOS		C	C	D	C	C	C	D	B
Critical Lane Group		No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.80	8.80	10.40	6.43	7.94	8.20	1.89	6.68
50th-Percentile Queue Length [ft/ln]		220.06	220.06	260.04	160.77	198.52	204.88	47.18	166.91
95th-Percentile Queue Length [veh/ln]		13.67	13.67	15.69	10.59	12.56	12.89	3.40	10.91
95th-Percentile Queue Length [ft/ln]		341.70	341.70	392.27	264.75	314.06	322.25	84.92	272.84

Movement, Approach, & Intersection Results

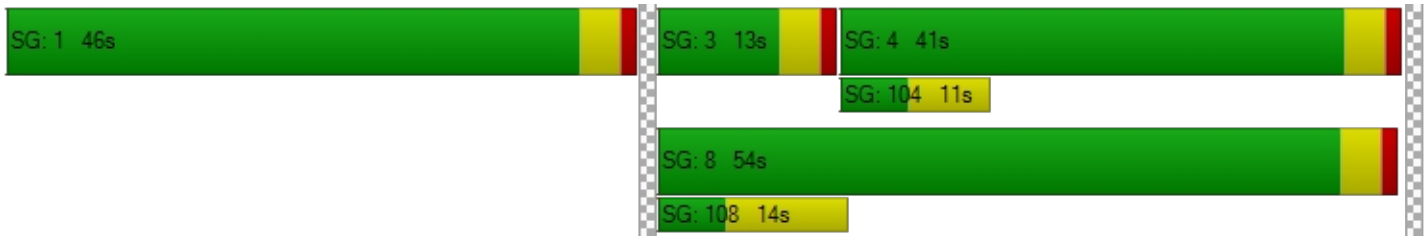
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	29.06	0.00	40.00	0.00	23.08	33.63	35.53	15.03	0.00
Movement LOS				C		D		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			32.67			27.77			17.24		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	25.22											
Intersection LOS	C											
Intersection V/C	0.787											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.082	2.439	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	840	740	1000
d_b, Bicycle Delay [s]	50.00	16.82	19.85	12.50
l_b,int, Bicycle LOS Score for Intersection	4.132	4.056	2.547	2.650
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	876	0	400	0	0	0	261	1893	0	0	993	440
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	876	0	400	0	0	0	261	1893	0	0	993	440
Peak Hour Factor	0.9610	1.0000	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	228	0	104	0	0	0	68	492	0	0	258	114
Total Analysis Volume [veh/h]	912	0	416	0	0	0	272	1970	0	0	1033	458
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	0	0	0	0	0	15	58	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	63	63		63	63	63	63	63
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23		8	33	21	21	21
g / C, Green / Cycle	0.36	0.36		0.13	0.52	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.29	0.29		0.09	0.43	0.23	0.26	0.26
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1448	1431
c, Capacity [veh/h]	1108	509		393	2374	1053	476	470
d1, Uniform Delay [s]	18.61	18.56		26.55	12.94	18.64	19.27	19.35
k, delay calibration	0.11	0.17		0.11	0.11	0.11	0.12	0.12
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.60	5.00		2.19	0.79	0.89	3.09	3.43
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.82		0.69	0.83	0.71	0.78	0.79
d, Delay for Lane Group [s/veh]	20.21	23.55		28.74	13.73	19.53	22.36	22.78
Lane Group LOS	C	C		C	B	B	C	C
Critical Lane Group	Yes	No		No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.69	5.66		1.91	6.10	4.25	4.66	4.72
50th-Percentile Queue Length [ft/ln]	142.36	141.55		47.83	152.51	106.20	116.62	118.04
95th-Percentile Queue Length [veh/ln]	9.61	9.56		3.44	10.15	7.63	8.21	8.29
95th-Percentile Queue Length [ft/ln]	240.20	239.11		86.10	253.78	190.71	205.17	207.13

Movement, Approach, & Intersection Results

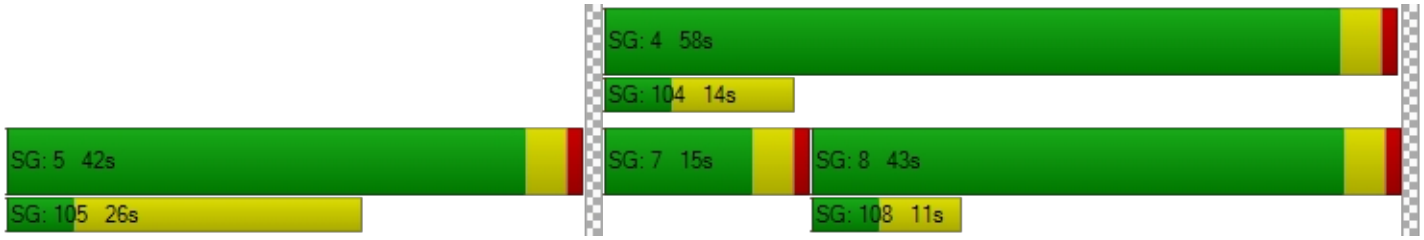
d_M, Delay for Movement [s/veh]	20.21	0.00	23.55	0.00	0.00	0.00	28.74	13.73	0.00	0.00	19.64	22.70
Movement LOS	C		C				C	B			B	C
d_A, Approach Delay [s/veh]	21.26			0.00			15.55			21.05		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	18.67											
Intersection LOS	B											
Intersection V/C	0.785											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.378	2.077	0.000	3.321
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	760	0	1080	780
d_b, Bicycle Delay [s]	19.22	50.00	10.58	18.61
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.793	2.380
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	279.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.130

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	75	2	8	448	557	0	0	583	1006
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	75	2	8	448	557	0	0	583	1006
Peak Hour Factor	1.0000	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	20	1	2	117	145	0	0	152	262
Total Analysis Volume [veh/h]	0	0	0	78	2	8	467	580	0	0	607	1048
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	9	0	29	91	0	0	62	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		28	28	30	64	30	30
g / C, Green / Cycle		0.28	0.28	0.30	0.64	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.05	0.01	0.29	0.18	0.19	0.73
s, saturation flow rate [veh/h]		1605	1431	1603	3204	3204	1431
c, Capacity [veh/h]		450	401	481	2050	961	429
d1, Uniform Delay [s]		27.27	26.06	34.59	7.92	30.23	35.00
k, delay calibration		0.50	0.50	0.43	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.86	0.09	31.67	0.07	0.69	656.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.18	0.02	0.97	0.28	0.63	2.44
d, Delay for Lane Group [s/veh]		28.13	26.15	66.26	7.99	30.92	691.01
Lane Group LOS		C	C	E	A	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.55	0.15	14.69	2.30	6.29	88.35
50th-Percentile Queue Length [ft/ln]		38.72	3.70	367.36	57.52	157.33	2208.73
95th-Percentile Queue Length [veh/ln]		2.79	0.27	20.98	4.14	10.41	141.64
95th-Percentile Queue Length [ft/ln]		69.70	6.65	524.53	103.53	260.18	3541.05

Movement, Approach, & Intersection Results

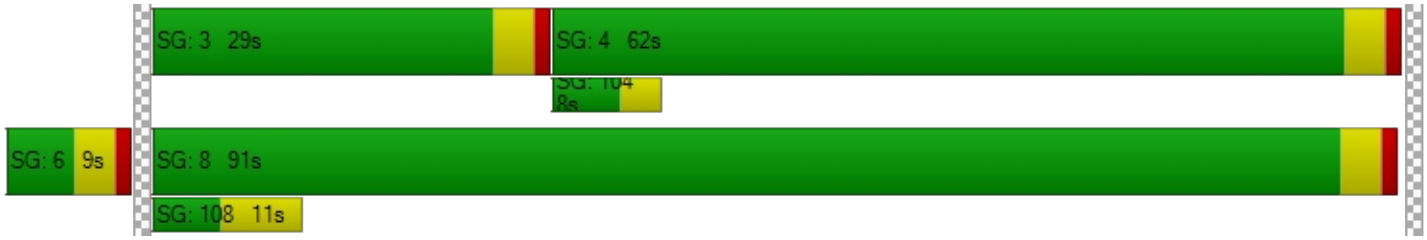
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.13	28.13	26.15	66.26	7.99	0.00	0.00	30.92	691.01
Movement LOS				C	C	C	E	A			C	F
d_A, Approach Delay [s/veh]	0.00			27.95			33.98			448.91		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	279.92											
Intersection LOS	F											
Intersection V/C	1.130											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.909	1.764	0.000	0.000
Crosswalk LOS	C	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	100	1740	1160
d_b, Bicycle Delay [s]	50.00	45.13	0.85	8.82
l_b,int, Bicycle LOS Score for Intersection	4.132	1.705	2.423	2.925
Bicycle LOS	D	A	B	C

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	29.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			Yes			No			No		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	694	229	310	0	194	0	0	0	45	614	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	694	229	310	0	194	0	0	0	45	614	0
Peak Hour Factor	1.0000	0.9380	0.9380	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	185	61	83	0	52	0	0	0	12	164	0
Total Analysis Volume [veh/h]	0	740	244	330	0	207	0	0	0	48	655	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	64	0	0	0	0	11	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	26	26	58	58		4	34
g / C, Green / Cycle	0.26	0.26	0.58	0.58		0.04	0.34
(v / s)_i Volume / Saturation Flow Rate	0.23	0.17	0.21	0.14		0.03	0.20
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	828	370	934	833		63	1082
d1, Uniform Delay [s]	35.75	33.15	10.98	10.19		47.61	27.59
k, delay calibration	0.11	0.13	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	3.66	2.49	1.05	0.71		17.54	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.66	0.35	0.25		0.77	0.61
d, Delay for Lane Group [s/veh]	39.41	35.64	12.03	10.90		65.15	28.14
Lane Group LOS	D	D	B	B		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	8.73	5.33	3.88	2.27		1.45	6.20
50th-Percentile Queue Length [ft/ln]	218.15	133.36	97.04	56.67		36.27	155.07
95th-Percentile Queue Length [veh/ln]	13.57	9.12	6.99	4.08		2.61	10.29
95th-Percentile Queue Length [ft/ln]	339.27	228.05	174.67	102.01		65.28	257.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	39.41	35.64	12.03	12.03	10.90	0.00	0.00	0.00	65.15	28.14	0.00
Movement LOS		D	D	B	B	B				E	C	
d_A, Approach Delay [s/veh]	38.48			11.59			0.00			30.66		
Approach LOS	D			B			A			C		
d_I, Intersection Delay [s/veh]	29.52											
Intersection LOS	C											
Intersection V/C	0.491											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	1.983	0.000	0.000
Crosswalk LOS	F	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	420	1200	0	640
d_b, Bicycle Delay [s]	31.21	8.00	50.00	23.12
I_b,int, Bicycle LOS Score for Intersection	2.371	2.446	4.132	2.140
Bicycle LOS	B	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	104	338	275	926	608	44	171	72	95	39	249	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	338	275	926	608	44	171	72	95	39	249	110
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	88	72	242	159	12	45	19	25	10	65	29
Total Analysis Volume [veh/h]	109	354	288	970	637	46	179	75	99	41	261	115
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.19	0.19	0.29	0.20	0.20	0.05	0.04	0.03	0.01	0.11	0.11
Intersection LOS	B											
Intersection V/C	0.687											

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Vistro File: \...\BreaCanyonWideningProject_2020_06_07 deh.vistro
Report File: \...\2033 PM Pre-Con.pdf

Scenario 28 2033 Pre-Construction PM Peak Hour
6/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.760	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.136	52.2	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.839	-	D
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	3.796	1,305.0	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.263	22.3	C
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	NB Thru	1.076	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	NB Thru	0.831	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.824	-	D
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Right	0.790	-	C
10	State College Blvd/Lambert Road	Signalized	ICU 1	NB Thru	0.734	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Right	0.821	29.7	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	NB Right	0.748	22.2	C
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	0.962	176.3	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.900	42.5	D
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	EB Thru	0.727	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

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Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	426	675	46	104	243	294	367	724	177	35	934	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	675	46	104	243	294	367	724	177	35	934	182
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	176	12	27	63	77	96	189	46	9	243	47
Total Analysis Volume [veh/h]	444	704	48	108	253	307	383	755	185	36	974	190
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.15	0.15	0.06	0.07	0.18	0.11	0.22	0.00	0.02	0.29	0.11
Intersection LOS	C											
Intersection V/C	0.760											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	52.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1256	28	4	667	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1256	28	4	667	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	323	7	1	171	3	0
Total Analysis Volume [veh/h]	1291	29	4	686	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.14	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.98	0.00	52.23	20.22
Movement LOS	A	A	B	A	F	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.45	0.45
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.58	0.00	11.30	11.30
d_A, Approach Delay [s/veh]	0.00		0.07		52.23	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	F					

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Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1212	33	29	4	15	644
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1212	33	29	4	15	644
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	324	9	8	1	4	172
Total Analysis Volume [veh/h]	1295	35	31	4	16	688
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.76	0.02	0.02	0.00	0.01	0.40
Intersection LOS	D					
Intersection V/C	0.839					

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Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,305.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.796

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	4	718	1217	0	8	659
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	718	1217	0	8	659
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	190	322	0	2	174
Total Analysis Volume [veh/h]	4	760	1288	0	8	697
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	3.80	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	64.23	1304.98	0.00	0.00	11.79	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.19	73.83	0.00	0.00	0.05	0.00
95th-Percentile Queue Length [ft/ln]	4.82	1845.79	0.00	0.00	1.13	0.00
d_A, Approach Delay [s/veh]	1298.49		0.00		0.13	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	359.86					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.263

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	1928	7	71	663	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1928	7	71	663	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	505	2	19	174	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	2021	7	74	695	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.26	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.00	0.00	0.00	22.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	C	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	25.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			2.15			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.59											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.076

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	231	1420	17	166	1138	499	844	328	287	60	328	396
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	231	1420	17	166	1138	499	844	328	287	60	328	396
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	364	4	43	291	128	216	84	74	15	84	101
Total Analysis Volume [veh/h]	237	1455	17	170	1166	511	865	336	294	61	336	406
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.43	0.43	0.10	0.34	0.05	0.25	0.20	0.10	0.04	0.22	0.22
Intersection LOS	F											
Intersection V/C	1.076											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.831

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	308	1449	131	303	1159	135	280	667	117	154	962	187
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	1449	131	303	1159	135	280	667	117	154	962	187
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	370	33	77	296	34	72	170	30	39	246	48
Total Analysis Volume [veh/h]	315	1480	134	309	1184	138	286	681	120	157	983	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

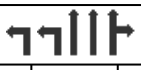
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.32	0.32	0.09	0.26	0.26	0.08	0.20	0.00	0.05	0.29	0.02
Intersection LOS	D											
Intersection V/C	0.831											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.824

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	313	1387	117	151	1142	158	281	997	191	221	1447	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	313	1387	117	151	1142	158	281	997	191	221	1447	232
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	354	30	39	291	40	72	254	49	56	369	59
Total Analysis Volume [veh/h]	319	1415	119	154	1165	161	287	1017	195	226	1477	237
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.28	0.00	0.05	0.26	0.26	0.08	0.24	0.24	0.07	0.34	0.34
Intersection LOS	D											
Intersection V/C	0.824											

Generated with PTV VISTRO

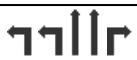
Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	559	866	136	52	444	56	238	994	363	259	1284	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	866	136	52	444	56	238	994	363	259	1284	75
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	147	228	36	14	117	15	63	262	96	68	339	20
Total Analysis Volume [veh/h]	590	914	143	55	468	59	251	1049	383	273	1354	79
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.27	0.08	0.03	0.14	0.03	0.15	0.21	0.23	0.16	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.790											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	365	749	307	627	382	7	11	877	178	355	1094	601
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	365	749	307	627	382	7	11	877	178	355	1094	601
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	193	79	161	98	2	3	226	46	91	282	155
Total Analysis Volume [veh/h]	376	771	316	646	393	7	11	903	183	366	1127	619
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.23	0.19	0.19	0.12	0.12	0.00	0.16	0.16	0.11	0.22	0.17
Intersection LOS	C											
Intersection V/C	0.734											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	725	1	701	0	1250	664	246	1549	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	725	1	701	0	1250	664	246	1549	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9690	1.0000	0.9690	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	187	0	181	0	322	171	63	400	0
Total Analysis Volume [veh/h]	0	0	0	748	1	723	0	1290	685	254	1599	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	34	0	0	0	34	0	12	46	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	24	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	29	30	30	30	9	43
g / C, Green / Cycle		0.37	0.37	0.37	0.37	0.37	0.37	0.11	0.53
(v / s)_i Volume / Saturation Flow Rate		0.31	0.32	0.34	0.31	0.35	0.35	0.08	0.35
s, saturation flow rate [veh/h]		1603	1516	1431	3204	1431	1431	3113	4584
c, Capacity [veh/h]		589	557	525	1186	530	530	352	2444
d1, Uniform Delay [s]		23.15	23.75	24.45	23.01	24.31	24.31	34.38	13.44
k, delay calibration		0.32	0.35	0.39	0.11	0.39	0.39	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		8.68	13.42	21.70	1.60	21.64	21.64	2.80	0.30
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.88	0.93	0.83	0.93	0.93	0.72	0.65
d, Delay for Lane Group [s/veh]		31.83	37.17	46.15	24.61	45.95	45.95	37.18	13.74
Lane Group LOS		C	D	D	C	D	D	D	B
Critical Lane Group		No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		9.33	10.19	11.52	7.88	11.23	11.23	2.41	5.84
50th-Percentile Queue Length [ft/ln]		233.17	254.69	287.93	196.93	280.68	280.68	60.13	146.03
95th-Percentile Queue Length [veh/ln]		14.34	15.42	17.08	12.48	16.72	16.72	4.33	9.80
95th-Percentile Queue Length [ft/ln]		358.38	385.56	427.08	312.00	418.05	418.05	108.24	245.11

Movement, Approach, & Intersection Results

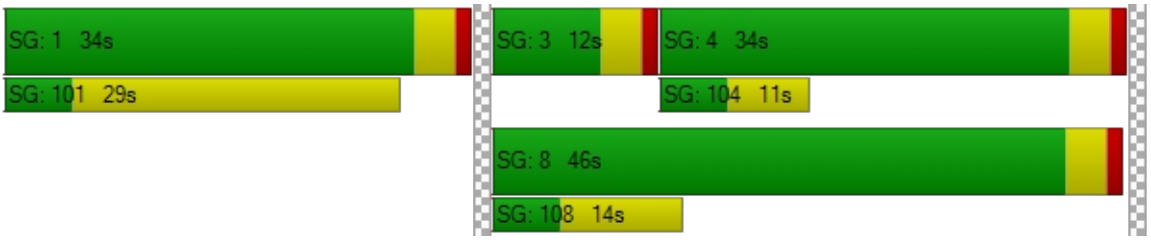
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.67	0.00	43.26	0.00	24.61	45.95	37.18	13.74	0.00
Movement LOS				C		D		C	D	D	B	
d_A, Approach Delay [s/veh]	0.00			38.39			35.28			16.95		
Approach LOS	A			D			D			B		
d_I, Intersection Delay [s/veh]	29.73											
Intersection LOS	C											
Intersection V/C	0.821											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.179	2.425	3.399	3.364
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	600	600	840
d_b, Bicycle Delay [s]	50.00	24.50	24.50	16.82
l_b,int, Bicycle LOS Score for Intersection	4.132	3.987	2.646	2.579
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.748

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	917	0	444	0	0	0	370	1604	0	0	878	523
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	917	0	444	0	0	0	370	1604	0	0	878	523
Peak Hour Factor	0.9680	1.0000	0.9680	1.0000	1.0000	1.0000	0.9680	0.9680	1.0000	1.0000	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	237	0	115	0	0	0	96	414	0	0	227	135
Total Analysis Volume [veh/h]	947	0	459	0	0	0	382	1657	0	0	907	540
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	44	0	0	0	0	0	20	56	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	24	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	73	73		73	73	73	73	73
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27		12	38	22	22	22
g / C, Green / Cycle	0.37	0.37		0.16	0.52	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.30	0.32		0.12	0.36	0.23	0.25	0.25
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	1139	524		498	2403	991	442	442
d1, Uniform Delay [s]	21.02	21.53		29.26	12.90	22.42	23.24	23.24
k, delay calibration	0.11	0.29		0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.65	11.64		2.52	0.36	1.05	5.70	5.70
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.88		0.77	0.69	0.73	0.82	0.82
d, Delay for Lane Group [s/veh]	22.67	33.18		31.78	13.26	23.48	28.94	28.94
Lane Group LOS	C	C		C	B	C	C	C
Critical Lane Group	No	Yes		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.00	8.39		3.14	5.50	5.10	5.83	5.83
50th-Percentile Queue Length [ft/ln]	175.05	209.71		78.42	137.45	127.43	145.81	145.81
95th-Percentile Queue Length [veh/ln]	11.34	13.14		5.65	9.34	8.80	9.79	9.79
95th-Percentile Queue Length [ft/ln]	283.54	328.45		141.16	233.59	220.00	244.82	244.82

Movement, Approach, & Intersection Results

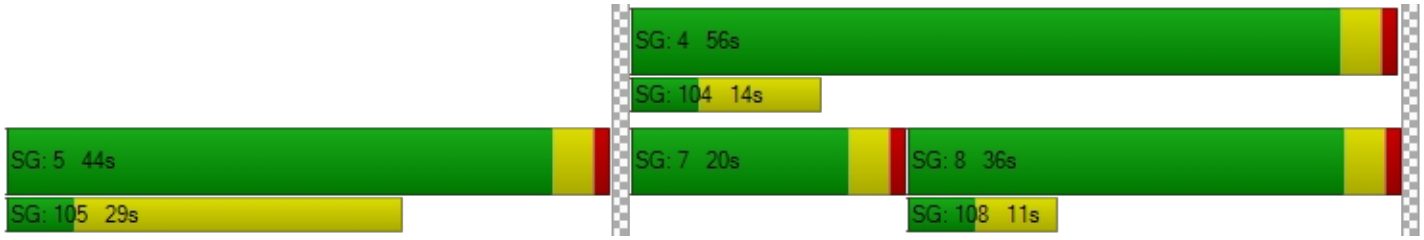
d_M, Delay for Movement [s/veh]	22.67	0.00	33.18	0.00	0.00	0.00	31.78	13.26	0.00	0.00	23.48	28.94
Movement LOS	C		C				C	B			C	C
d_A, Approach Delay [s/veh]	26.10			0.00			16.73			26.21		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	22.23											
Intersection LOS	C											
Intersection V/C	0.748											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.404	2.171	3.365	3.262
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	0	1040	640
d_b, Bicycle Delay [s]	18.00	50.00	11.52	23.12
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.681	2.355
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	176.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.962

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	116	1	19	231	1454	0	0	407	926
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	116	1	19	231	1454	0	0	407	926
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	31	0	5	61	384	0	0	108	245
Total Analysis Volume [veh/h]	0	0	0	123	1	20	244	1537	0	0	430	979
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	24	0	18	76	0	0	58	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	15	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		38	38	17	54	33	33
g / C, Green / Cycle		0.38	0.38	0.17	0.54	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate		0.08	0.01	0.15	0.48	0.13	0.68
s, saturation flow rate [veh/h]		1603	1431	1603	3204	3204	1431
c, Capacity [veh/h]		613	546	277	1724	1042	465
d1, Uniform Delay [s]		20.70	19.37	40.35	20.51	26.31	33.75
k, delay calibration		0.50	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.74	0.13	8.87	1.79	0.26	504.57
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.20	0.04	0.88	0.89	0.41	2.11
d, Delay for Lane Group [s/veh]		21.44	19.49	49.22	22.30	26.57	538.32
Lane Group LOS		C	B	D	C	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		2.05	0.31	6.27	14.12	3.98	76.11
50th-Percentile Queue Length [ft/ln]		51.15	7.72	156.76	352.96	99.42	1902.79
95th-Percentile Queue Length [veh/ln]		3.68	0.56	10.38	20.28	7.16	122.02
95th-Percentile Queue Length [ft/ln]		92.07	13.89	259.42	507.02	178.96	3050.52

Movement, Approach, & Intersection Results

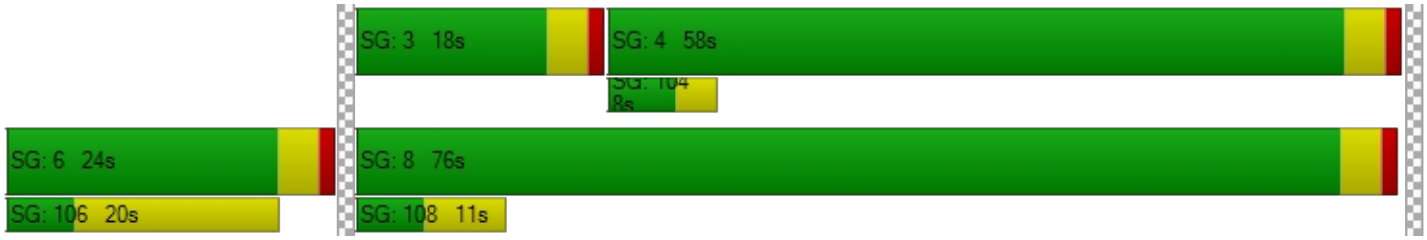
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	21.44	21.44	19.49	49.22	22.30	0.00	0.00	26.57	538.32
Movement LOS				C	C	B	D	C			C	F
d_A, Approach Delay [s/veh]	0.00			21.17			25.99			382.14		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	176.30											
Intersection LOS	F											
Intersection V/C	0.962											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.623	1.792	2.989	2.885
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	400	1440	1080
d_b, Bicycle Delay [s]	50.00	32.00	3.92	10.58
l_b,int, Bicycle LOS Score for Intersection	4.132	1.797	3.029	2.722
Bicycle LOS	D	A	C	B

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	848	63	838	1	744	0	0	0	8	514	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	848	63	838	1	744	0	0	0	8	514	0
Peak Hour Factor	1.0000	0.9280	0.9280	0.9280	0.9280	0.9280	1.0000	1.0000	1.0000	0.9280	0.9280	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	228	17	226	0	200	0	0	0	2	138	0
Total Analysis Volume [veh/h]	0	914	68	903	1	802	0	0	0	9	554	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	59	0	0	0	0	9	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	3	0	0	15	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	30	30	57	57		1	35
g / C, Green / Cycle	0.30	0.30	0.57	0.57		0.01	0.35
(v / s)_i Volume / Saturation Flow Rate	0.29	0.05	0.56	0.56		0.01	0.17
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	960	429	911	813		20	1128
d1, Uniform Delay [s]	34.31	25.74	21.39	21.23		49.07	25.39
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.20	0.17	28.13	28.55		15.94	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.16	0.99	0.99		0.46	0.49
d, Delay for Lane Group [s/veh]	40.51	25.92	49.52	49.78		65.01	25.72
Lane Group LOS	D	C	D	D		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	11.13	1.17	25.98	23.05		0.30	4.89
50th-Percentile Queue Length [ft/ln]	278.27	29.27	649.43	576.27		7.57	122.32
95th-Percentile Queue Length [veh/ln]	16.60	2.11	34.34	30.92		0.54	8.52
95th-Percentile Queue Length [ft/ln]	415.06	52.69	858.40	773.12		13.62	213.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	40.51	25.92	49.52	49.52	49.78	0.00	0.00	0.00	65.01	25.72	0.00
Movement LOS		D	C	D	D	D				E	C	
d_A, Approach Delay [s/veh]	39.50			49.64			0.00			26.35		
Approach LOS	D			D			A			C		
d_I, Intersection Delay [s/veh]	42.54											
Intersection LOS	D											
Intersection V/C	0.900											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.914	2.553	1.506	3.003
Crosswalk LOS	C	B	A	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	560	1100	0	740
d_b, Bicycle Delay [s]	25.92	10.13	50.00	19.85
l_b,int, Bicycle LOS Score for Intersection	2.370	4.375	4.132	2.024
Bicycle LOS	B	E	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	163	1008	67	152	367	25	485	475	678	49	49	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	163	1008	67	152	367	25	485	475	678	49	49	43
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	261	17	39	95	6	125	123	175	13	13	11
Total Analysis Volume [veh/h]	169	1042	69	157	380	26	502	491	701	51	51	44
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.33	0.33	0.05	0.12	0.12	0.15	0.29	0.21	0.02	0.03	0.03
Intersection LOS	C											
Intersection V/C	0.727											

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Vistro File: \...\BreaCanyonWideningProject_2020_06_07 deh.vistro
Report File: \...\2033 AM No Detour.pdf

Scenario 29 2033 Const - No Detour AM Peak Hour
6/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	SB Thru	0.776	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.401	61.4	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	1.121	-	F
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	1.363	466.9	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	NEB Left	0.006	15.1	C
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	SB Thru	0.934	-	E
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	SB Thru	0.812	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	EB Thru	0.912	-	E
9	Brea Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.859	-	D
10	State College Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.750	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	SB Right	0.787	25.2	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.785	18.7	B
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	1.130	279.9	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.491	29.5	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	WB Left	0.687	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Generated with PTV VISTRO

Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	205	238	129	298	1053	281	296	970	235	35	453	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	205	238	129	298	1053	281	296	970	235	35	453	59
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	64	35	80	282	75	79	260	63	9	122	16
Total Analysis Volume [veh/h]	220	255	138	320	1130	302	318	1041	252	38	486	63
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.08	0.08	0.19	0.33	0.18	0.09	0.31	0.08	0.02	0.14	0.04
Intersection LOS	C											
Intersection V/C	0.776											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	61.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	601	12	2	1726	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	601	12	2	1726	39	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	158	3	1	455	10	1
Total Analysis Volume [veh/h]	634	13	2	1821	41	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.40	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.86	0.00	61.40	31.57
Movement LOS	A	A	A	A	F	D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	1.68	1.68
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.16	0.00	41.93	41.93
d_A, Approach Delay [s/veh]	0.00		0.01		60.01	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.03					
Intersection LOS	F					

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Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.121

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	588	11	49	17	10	1681
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	588	11	49	17	10	1681
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	155	3	13	4	3	442
Total Analysis Volume [veh/h]	619	12	52	18	11	1769
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.36	0.01	0.03	0.01	0.01	1.04
Intersection LOS	F					
Intersection V/C	1.121					

Generated with PTV VISTRO

Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	466.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.363

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	43	49	603	23	26	1675
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	49	603	23	26	1675
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	13	157	6	7	436
Total Analysis Volume [veh/h]	45	51	627	24	27	1743
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.36	0.11	0.01	0.00	0.03	0.02
d_M, Delay for Movement [s/veh]	466.90	13.47	0.00	0.00	8.88	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	4.92	0.36	0.00	0.00	0.09	0.00
95th-Percentile Queue Length [ft/ln]	123.12	8.94	0.00	0.00	2.18	0.00
d_A, Approach Delay [s/veh]	226.01		0.00		0.14	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	8.72					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	622	20	463	1707	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	622	20	463	1707	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	159	5	119	437	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	637	20	474	1749	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.50	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.10	0.00	0.00	12.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	A	A	B	A							
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	2.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.42	0.00	0.00	71.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.05			2.68			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.08											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	346	754	68	229	1507	622	571	388	296	88	328	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	754	68	229	1507	622	571	388	296	88	328	81
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	200	18	61	400	165	151	103	78	23	87	21
Total Analysis Volume [veh/h]	367	800	72	243	1598	660	606	411	314	93	348	86
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.26	0.26	0.14	0.47	0.21	0.18	0.24	0.08	0.05	0.13	0.13
Intersection LOS	E											
Intersection V/C	0.934											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	133	757	83	347	1694	97	250	938	185	184	625	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	757	83	347	1694	97	250	938	185	184	625	169
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	200	22	92	448	26	66	248	49	49	165	45
Total Analysis Volume [veh/h]	141	800	88	367	1791	103	264	992	196	195	661	179
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.17	0.17	0.11	0.37	0.37	0.08	0.29	0.07	0.06	0.19	0.00
Intersection LOS	D											
Intersection V/C	0.812											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.912

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	211	634	123	408	1523	139	215	1476	248	180	1077	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	634	123	408	1523	139	215	1476	248	180	1077	175
Peak Hour Factor	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	175	34	113	421	38	59	408	69	50	298	48
Total Analysis Volume [veh/h]	233	701	136	451	1685	154	238	1633	274	199	1191	194
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.14	0.02	0.13	0.36	0.36	0.07	0.37	0.37	0.06	0.27	0.27
Intersection LOS	E											
Intersection V/C	0.912											

Generated with PTV VISTRO

Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.859

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	284	407	97	130	1051	204	148	993	351	219	1037	107
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	284	407	97	130	1051	204	148	993	351	219	1037	107
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	113	27	36	292	57	41	276	98	61	288	30
Total Analysis Volume [veh/h]	316	452	108	144	1168	227	164	1103	390	243	1152	119
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.13	0.06	0.08	0.34	0.13	0.10	0.22	0.23	0.14	0.25	0.25
Intersection LOS	D											
Intersection V/C	0.859											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	222	220	104	884	953	8	6	671	254	445	1287	306
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	220	104	884	953	8	6	671	254	445	1287	306
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	61	29	246	266	2	2	187	71	124	359	85
Total Analysis Volume [veh/h]	247	245	116	986	1062	9	7	748	283	496	1435	341
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.07	0.29	0.32	0.32	0.00	0.15	0.15	0.15	0.28	0.00
Intersection LOS	C											
Intersection V/C	0.750											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	956	1	471	0	1197	496	201	1669	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	956	1	471	0	1197	496	201	1669	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9430	1.0000	0.9430	1.0000	0.9430	0.9430	0.9430	0.9430	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	253	0	125	0	317	131	53	442	0
Total Analysis Volume [veh/h]	0	0	0	1014	1	499	0	1269	526	213	1770	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	41	0	13	54	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	29	27	27	27	7	39
g / C, Green / Cycle		0.38	0.38	0.38	0.36	0.36	0.36	0.10	0.51
(v / s)_i Volume / Saturation Flow Rate		0.32	0.32	0.35	0.28	0.31	0.31	0.07	0.39
s, saturation flow rate [veh/h]		1603	1603	1431	3204	1457	1431	3113	4584
c, Capacity [veh/h]		610	610	544	1156	526	516	310	2354
d1, Uniform Delay [s]		21.16	21.16	22.21	21.38	22.25	22.43	32.81	14.54
k, delay calibration		0.30	0.30	0.36	0.11	0.28	0.30	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		7.91	7.91	17.79	1.15	9.88	11.46	2.72	0.50
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.83	0.92	0.78	0.85	0.87	0.69	0.75
d, Delay for Lane Group [s/veh]		29.06	29.06	40.00	22.54	32.13	33.89	35.53	15.03
Lane Group LOS		C	C	D	C	C	C	D	B
Critical Lane Group		No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.80	8.80	10.40	6.43	7.94	8.20	1.89	6.68
50th-Percentile Queue Length [ft/ln]		220.06	220.06	260.04	160.77	198.52	204.88	47.18	166.91
95th-Percentile Queue Length [veh/ln]		13.67	13.67	15.69	10.59	12.56	12.89	3.40	10.91
95th-Percentile Queue Length [ft/ln]		341.70	341.70	392.27	264.75	314.06	322.25	84.92	272.84

Movement, Approach, & Intersection Results

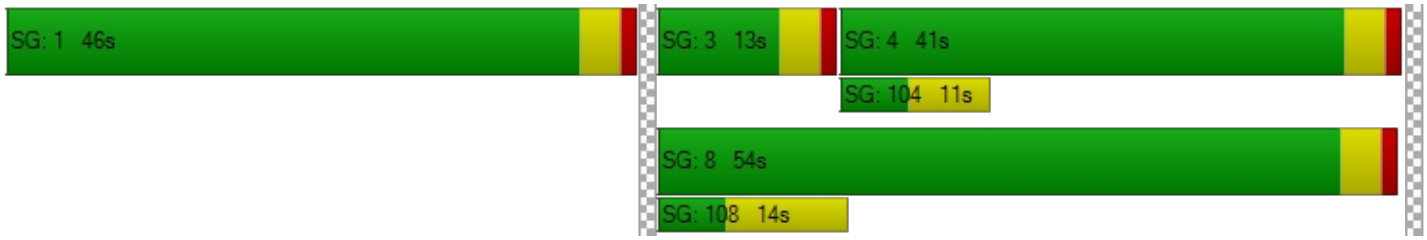
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	29.06	0.00	40.00	0.00	23.08	33.63	35.53	15.03	0.00
Movement LOS				C		D		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			32.67			27.77			17.24		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	25.22											
Intersection LOS	C											
Intersection V/C	0.787											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.082	2.439	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	840	740	1000
d_b, Bicycle Delay [s]	50.00	16.82	19.85	12.50
l_b,int, Bicycle LOS Score for Intersection	4.132	4.056	2.547	2.650
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	876	0	400	0	0	0	261	1893	0	0	993	440
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	876	0	400	0	0	0	261	1893	0	0	993	440
Peak Hour Factor	0.9610	1.0000	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	228	0	104	0	0	0	68	492	0	0	258	114
Total Analysis Volume [veh/h]	912	0	416	0	0	0	272	1970	0	0	1033	458
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	0	0	0	0	0	15	58	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	63	63		63	63	63	63	63
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23		8	33	21	21	21
g / C, Green / Cycle	0.36	0.36		0.13	0.52	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.29	0.29		0.09	0.43	0.23	0.26	0.26
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1448	1431
c, Capacity [veh/h]	1108	509		393	2374	1053	476	470
d1, Uniform Delay [s]	18.61	18.56		26.55	12.94	18.64	19.27	19.35
k, delay calibration	0.11	0.17		0.11	0.11	0.11	0.12	0.12
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.60	5.00		2.19	0.79	0.89	3.09	3.43
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.82		0.69	0.83	0.71	0.78	0.79
d, Delay for Lane Group [s/veh]	20.21	23.55		28.74	13.73	19.53	22.36	22.78
Lane Group LOS	C	C		C	B	B	C	C
Critical Lane Group	Yes	No		No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.69	5.66		1.91	6.10	4.25	4.66	4.72
50th-Percentile Queue Length [ft/ln]	142.36	141.55		47.83	152.51	106.20	116.62	118.04
95th-Percentile Queue Length [veh/ln]	9.61	9.56		3.44	10.15	7.63	8.21	8.29
95th-Percentile Queue Length [ft/ln]	240.20	239.11		86.10	253.78	190.71	205.17	207.13

Movement, Approach, & Intersection Results

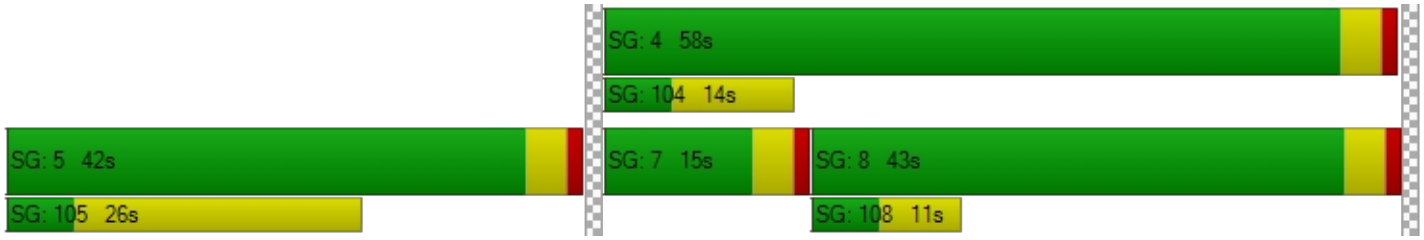
d_M, Delay for Movement [s/veh]	20.21	0.00	23.55	0.00	0.00	0.00	28.74	13.73	0.00	0.00	19.64	22.70
Movement LOS	C		C				C	B			B	C
d_A, Approach Delay [s/veh]	21.26			0.00			15.55			21.05		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	18.67											
Intersection LOS	B											
Intersection V/C	0.785											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.378	2.077	0.000	3.321
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	760	0	1080	780
d_b, Bicycle Delay [s]	19.22	50.00	10.58	18.61
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.793	2.380
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	279.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.130

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	75	2	8	448	557	0	0	583	1006
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	75	2	8	448	557	0	0	583	1006
Peak Hour Factor	1.0000	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	20	1	2	117	145	0	0	152	262
Total Analysis Volume [veh/h]	0	0	0	78	2	8	467	580	0	0	607	1048
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	9	0	29	91	0	0	62	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		28	28	30	64	30	30
g / C, Green / Cycle		0.28	0.28	0.30	0.64	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.05	0.01	0.29	0.18	0.19	0.73
s, saturation flow rate [veh/h]		1605	1431	1603	3204	3204	1431
c, Capacity [veh/h]		450	401	481	2050	961	429
d1, Uniform Delay [s]		27.27	26.06	34.59	7.92	30.23	35.00
k, delay calibration		0.50	0.50	0.43	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.86	0.09	31.67	0.07	0.69	656.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.18	0.02	0.97	0.28	0.63	2.44
d, Delay for Lane Group [s/veh]		28.13	26.15	66.26	7.99	30.92	691.01
Lane Group LOS		C	C	E	A	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.55	0.15	14.69	2.30	6.29	88.35
50th-Percentile Queue Length [ft/ln]		38.72	3.70	367.36	57.52	157.33	2208.73
95th-Percentile Queue Length [veh/ln]		2.79	0.27	20.98	4.14	10.41	141.64
95th-Percentile Queue Length [ft/ln]		69.70	6.65	524.53	103.53	260.18	3541.05

Movement, Approach, & Intersection Results

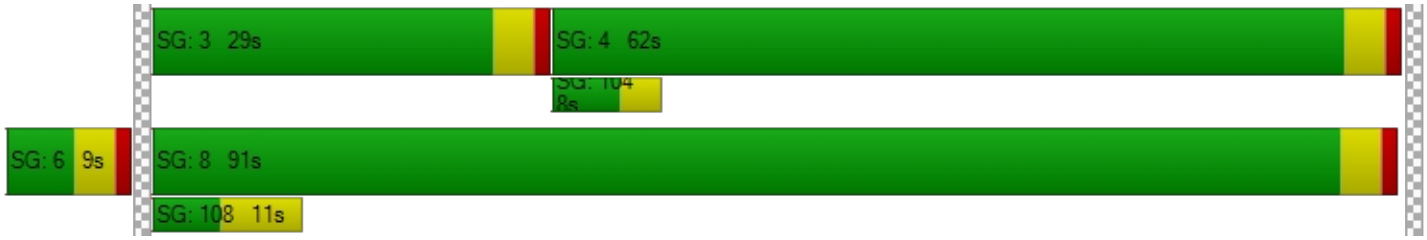
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.13	28.13	26.15	66.26	7.99	0.00	0.00	30.92	691.01
Movement LOS				C	C	C	E	A			C	F
d_A, Approach Delay [s/veh]	0.00			27.95			33.98			448.91		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	279.92											
Intersection LOS	F											
Intersection V/C	1.130											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.909	1.764	0.000	0.000
Crosswalk LOS	C	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	100	1740	1160
d_b, Bicycle Delay [s]	50.00	45.13	0.85	8.82
l_b,int, Bicycle LOS Score for Intersection	4.132	1.705	2.423	2.925
Bicycle LOS	D	A	B	C

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	29.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			Yes			No			No		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	694	229	310	0	194	0	0	0	45	614	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	694	229	310	0	194	0	0	0	45	614	0
Peak Hour Factor	1.0000	0.9380	0.9380	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	185	61	83	0	52	0	0	0	12	164	0
Total Analysis Volume [veh/h]	0	740	244	330	0	207	0	0	0	48	655	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	64	0	0	0	0	11	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	26	26	58	58		4	34
g / C, Green / Cycle	0.26	0.26	0.58	0.58		0.04	0.34
(v / s)_i Volume / Saturation Flow Rate	0.23	0.17	0.21	0.14		0.03	0.20
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	828	370	934	833		63	1082
d1, Uniform Delay [s]	35.75	33.15	10.98	10.19		47.61	27.59
k, delay calibration	0.11	0.13	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	3.66	2.49	1.05	0.71		17.54	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.66	0.35	0.25		0.77	0.61
d, Delay for Lane Group [s/veh]	39.41	35.64	12.03	10.90		65.15	28.14
Lane Group LOS	D	D	B	B		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	8.73	5.33	3.88	2.27		1.45	6.20
50th-Percentile Queue Length [ft/ln]	218.15	133.36	97.04	56.67		36.27	155.07
95th-Percentile Queue Length [veh/ln]	13.57	9.12	6.99	4.08		2.61	10.29
95th-Percentile Queue Length [ft/ln]	339.27	228.05	174.67	102.01		65.28	257.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	39.41	35.64	12.03	12.03	10.90	0.00	0.00	0.00	65.15	28.14	0.00
Movement LOS		D	D	B	B	B				E	C	
d_A, Approach Delay [s/veh]	38.48			11.59			0.00			30.66		
Approach LOS	D			B			A			C		
d_I, Intersection Delay [s/veh]	29.52											
Intersection LOS	C											
Intersection V/C	0.491											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	1.983	0.000	0.000
Crosswalk LOS	F	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	420	1200	0	640
d_b, Bicycle Delay [s]	31.21	8.00	50.00	23.12
I_b,int, Bicycle LOS Score for Intersection	2.371	2.446	4.132	2.140
Bicycle LOS	B	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	104	338	275	926	608	44	171	72	95	39	249	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	338	275	926	608	44	171	72	95	39	249	110
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	88	72	242	159	12	45	19	25	10	65	29
Total Analysis Volume [veh/h]	109	354	288	970	637	46	179	75	99	41	261	115
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	0
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.19	0.19	0.29	0.20	0.20	0.05	0.04	0.00	0.01	0.11	0.11
Intersection LOS	B											
Intersection V/C	0.687											

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Vistro File: \...\BreaCanyonWideningProject_2020_06_07 deh.vistro
Report File: \...\2033 PM No Detour.pdf

Scenario 30 2033 Const - No Detour PM Peak Hour
6/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.760	-	C
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.136	52.2	F
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.839	-	D
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	4.112	1,450.3	F
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.269	22.9	C
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	NB Thru	1.076	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	NB Thru	0.831	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.824	-	D
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Right	0.790	-	C
10	State College Blvd/Lambert Road	Signalized	ICU 1	NB Thru	0.734	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Right	0.821	29.7	C
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	NB Right	0.748	22.2	C
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	0.962	176.3	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.900	42.5	D
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	EB Thru	0.727	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

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Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	426	675	46	104	243	294	367	724	177	35	934	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	675	46	104	243	294	367	724	177	35	934	182
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	176	12	27	63	77	96	189	46	9	243	47
Total Analysis Volume [veh/h]	444	704	48	108	253	307	383	755	185	36	974	190
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.15	0.15	0.06	0.07	0.18	0.11	0.22	0.00	0.02	0.29	0.11
Intersection LOS	C											
Intersection V/C	0.760											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	52.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	1256	28	4	667	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1256	28	4	667	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	323	7	1	171	3	0
Total Analysis Volume [veh/h]	1291	29	4	686	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.14	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	11.98	0.00	52.23	20.22
Movement LOS	A	A	B	A	F	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.45	0.45
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.58	0.00	11.30	11.30
d_A, Approach Delay [s/veh]	0.00		0.07		52.23	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	F					

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Intersection Level Of Service Report

Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	1212	33	29	4	15	644
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1212	33	29	4	15	644
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	324	9	8	1	4	172
Total Analysis Volume [veh/h]	1295	35	31	4	16	688
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.76	0.02	0.02	0.00	0.01	0.40
Intersection LOS	D					
Intersection V/C	0.839					

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Intersection Level Of Service Report

Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,450.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.112

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	8	718	1273	0	8	659
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	718	1273	0	8	659
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	190	337	0	2	174
Total Analysis Volume [veh/h]	8	760	1347	0	8	697
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	4.11	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	74.81	1450.29	0.00	0.00	12.15	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.44	75.67	0.00	0.00	0.05	0.00
95th-Percentile Queue Length [ft/ln]	10.93	1891.63	0.00	0.00	1.19	0.00
d_A, Approach Delay [s/veh]	1435.96		0.00		0.14	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	391.11					
Intersection LOS	F					

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Intersection Level Of Service Report

Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.269

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	1952	31	71	667	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1952	31	71	667	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	512	8	19	175	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	2046	32	74	699	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.27	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.01	0.00	0.00	22.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	C	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	26.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			2.19			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.59											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.076

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	231	1420	17	166	1138	499	844	328	287	60	328	396
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	231	1420	17	166	1138	499	844	328	287	60	328	396
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	364	4	43	291	128	216	84	74	15	84	101
Total Analysis Volume [veh/h]	237	1455	17	170	1166	511	865	336	294	61	336	406
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.43	0.43	0.10	0.34	0.05	0.25	0.20	0.10	0.04	0.22	0.22
Intersection LOS	F											
Intersection V/C	1.076											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.831

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	308	1449	131	303	1159	135	280	667	117	154	962	187
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	1449	131	303	1159	135	280	667	117	154	962	187
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	370	33	77	296	34	72	170	30	39	246	48
Total Analysis Volume [veh/h]	315	1480	134	309	1184	138	286	681	120	157	983	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

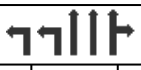
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.32	0.32	0.09	0.26	0.26	0.08	0.20	0.00	0.05	0.29	0.02
Intersection LOS	D											
Intersection V/C	0.831											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.824

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	313	1387	117	151	1142	158	281	997	191	221	1447	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	313	1387	117	151	1142	158	281	997	191	221	1447	232
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	354	30	39	291	40	72	254	49	56	369	59
Total Analysis Volume [veh/h]	319	1415	119	154	1165	161	287	1017	195	226	1477	237
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.28	0.00	0.05	0.26	0.26	0.08	0.24	0.24	0.07	0.34	0.34
Intersection LOS	D											
Intersection V/C	0.824											

Generated with PTV VISTRO

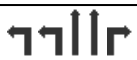
Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	559	866	136	52	444	56	238	994	363	259	1284	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	866	136	52	444	56	238	994	363	259	1284	75
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	147	228	36	14	117	15	63	262	96	68	339	20
Total Analysis Volume [veh/h]	590	914	143	55	468	59	251	1049	383	273	1354	79
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.27	0.08	0.03	0.14	0.03	0.15	0.21	0.23	0.16	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.790											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	365	749	307	627	382	7	11	877	178	355	1094	601
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	365	749	307	627	382	7	11	877	178	355	1094	601
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	193	79	161	98	2	3	226	46	91	282	155
Total Analysis Volume [veh/h]	376	771	316	646	393	7	11	903	183	366	1127	619
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.23	0.19	0.19	0.12	0.12	0.00	0.16	0.16	0.11	0.22	0.17
Intersection LOS	C											
Intersection V/C	0.734											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	725	1	701	0	1250	664	246	1549	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	725	1	701	0	1250	664	246	1549	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9690	1.0000	0.9690	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	187	0	181	0	322	171	63	400	0
Total Analysis Volume [veh/h]	0	0	0	748	1	723	0	1290	685	254	1599	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	43	0	0	0	43	0	14	57	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	24	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	29	30	30	30	9	43
g / C, Green / Cycle		0.37	0.37	0.37	0.37	0.37	0.37	0.11	0.53
(v / s)_i Volume / Saturation Flow Rate		0.31	0.32	0.34	0.31	0.35	0.35	0.08	0.35
s, saturation flow rate [veh/h]		1603	1516	1431	3204	1431	1431	3113	4584
c, Capacity [veh/h]		589	557	525	1186	530	530	352	2444
d1, Uniform Delay [s]		23.15	23.75	24.45	23.01	24.31	24.31	34.38	13.44
k, delay calibration		0.32	0.35	0.39	0.11	0.39	0.39	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		8.68	13.42	21.70	1.60	21.64	21.64	2.80	0.30
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.88	0.93	0.83	0.93	0.93	0.72	0.65
d, Delay for Lane Group [s/veh]		31.83	37.17	46.15	24.61	45.95	45.95	37.18	13.74
Lane Group LOS		C	D	D	C	D	D	D	B
Critical Lane Group		No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		9.33	10.19	11.52	7.88	11.23	11.23	2.41	5.84
50th-Percentile Queue Length [ft/ln]		233.17	254.69	287.93	196.93	280.68	280.68	60.13	146.02
95th-Percentile Queue Length [veh/ln]		14.34	15.42	17.08	12.48	16.72	16.72	4.33	9.80
95th-Percentile Queue Length [ft/ln]		358.38	385.56	427.08	312.00	418.05	418.05	108.24	245.11

Movement, Approach, & Intersection Results

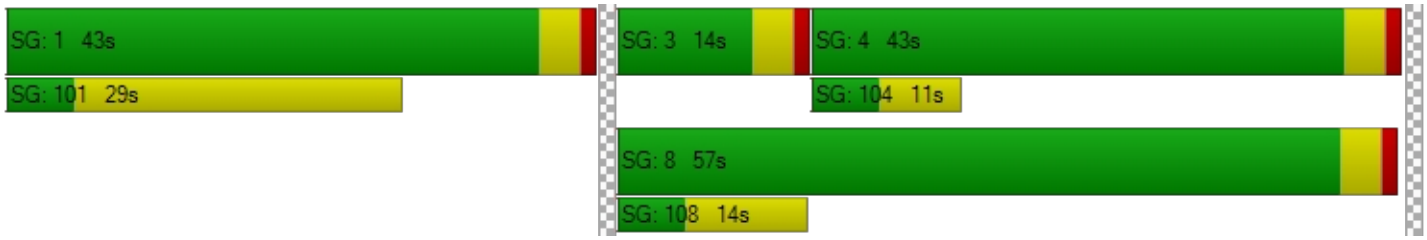
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.67	0.00	43.26	0.00	24.61	45.95	37.18	13.74	0.00
Movement LOS				C		D		C	D	D	B	
d_A, Approach Delay [s/veh]	0.00			38.39			35.28			16.95		
Approach LOS	A			D			D			B		
d_I, Intersection Delay [s/veh]	29.73											
Intersection LOS	C											
Intersection V/C	0.821											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.179	2.425	3.399	3.364
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	780	780	1060
d_b, Bicycle Delay [s]	50.00	18.61	18.61	11.05
l_b,int, Bicycle LOS Score for Intersection	4.132	3.987	2.646	2.579
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.748

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	917	0	444	0	0	0	370	1604	0	0	878	523
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	917	0	444	0	0	0	370	1604	0	0	878	523
Peak Hour Factor	0.9680	1.0000	0.9680	1.0000	1.0000	1.0000	0.9680	0.9680	1.0000	1.0000	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	237	0	115	0	0	0	96	414	0	0	227	135
Total Analysis Volume [veh/h]	947	0	459	0	0	0	382	1657	0	0	907	540
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	44	0	0	0	0	0	20	56	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	24	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	73	73		73	73	73	73	73
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27		12	38	22	22	22
g / C, Green / Cycle	0.37	0.37		0.16	0.52	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.30	0.32		0.12	0.36	0.23	0.25	0.25
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	1139	524		498	2403	991	442	442
d1, Uniform Delay [s]	21.02	21.53		29.26	12.90	22.42	23.24	23.24
k, delay calibration	0.11	0.29		0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.65	11.64		2.52	0.36	1.05	5.70	5.70
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.88		0.77	0.69	0.73	0.82	0.82
d, Delay for Lane Group [s/veh]	22.67	33.18		31.78	13.26	23.48	28.94	28.94
Lane Group LOS	C	C		C	B	C	C	C
Critical Lane Group	No	Yes		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.00	8.39		3.14	5.50	5.10	5.83	5.83
50th-Percentile Queue Length [ft/ln]	175.05	209.71		78.42	137.45	127.43	145.81	145.81
95th-Percentile Queue Length [veh/ln]	11.34	13.14		5.65	9.34	8.80	9.79	9.79
95th-Percentile Queue Length [ft/ln]	283.54	328.45		141.16	233.59	220.00	244.82	244.82

Movement, Approach, & Intersection Results

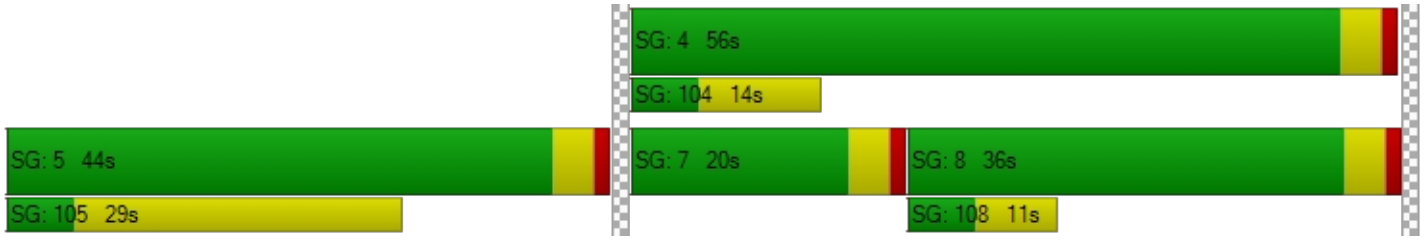
d_M, Delay for Movement [s/veh]	22.67	0.00	33.18	0.00	0.00	0.00	31.78	13.26	0.00	0.00	23.48	28.94
Movement LOS	C		C				C	B			C	C
d_A, Approach Delay [s/veh]	26.10			0.00			16.73			26.21		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	22.23											
Intersection LOS	C											
Intersection V/C	0.748											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.404	2.171	3.365	3.262
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	0	1040	640
d_b, Bicycle Delay [s]	18.00	50.00	11.52	23.12
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.681	2.355
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	176.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.962

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	116	1	19	231	1454	0	0	407	926
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	116	1	19	231	1454	0	0	407	926
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	31	0	5	61	384	0	0	108	245
Total Analysis Volume [veh/h]	0	0	0	123	1	20	244	1537	0	0	430	979
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	24	0	18	76	0	0	58	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	15	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		38	38	17	54	33	33
g / C, Green / Cycle		0.38	0.38	0.17	0.54	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate		0.08	0.01	0.15	0.48	0.13	0.68
s, saturation flow rate [veh/h]		1603	1431	1603	3204	3204	1431
c, Capacity [veh/h]		613	546	277	1724	1042	465
d1, Uniform Delay [s]		20.70	19.37	40.35	20.51	26.31	33.75
k, delay calibration		0.50	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.74	0.13	8.87	1.79	0.26	504.57
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.20	0.04	0.88	0.89	0.41	2.11
d, Delay for Lane Group [s/veh]		21.44	19.49	49.22	22.30	26.57	538.32
Lane Group LOS		C	B	D	C	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		2.05	0.31	6.27	14.12	3.98	76.11
50th-Percentile Queue Length [ft/ln]		51.15	7.72	156.76	352.96	99.42	1902.79
95th-Percentile Queue Length [veh/ln]		3.68	0.56	10.38	20.28	7.16	122.02
95th-Percentile Queue Length [ft/ln]		92.07	13.89	259.42	507.02	178.96	3050.52

Movement, Approach, & Intersection Results

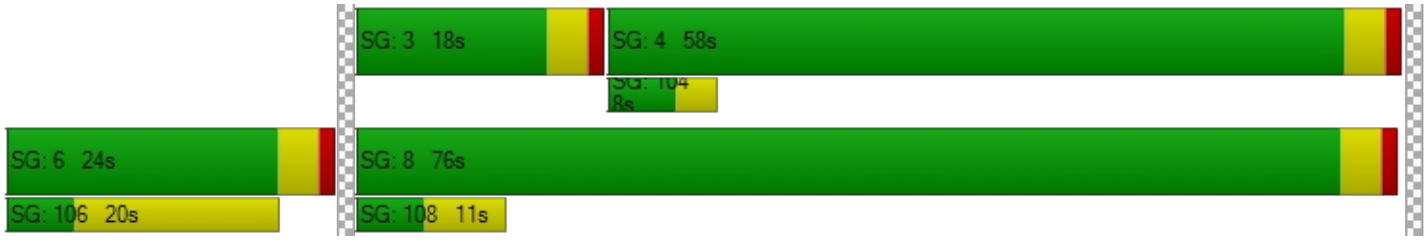
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	21.44	21.44	19.49	49.22	22.30	0.00	0.00	26.57	538.32
Movement LOS				C	C	B	D	C			C	F
d_A, Approach Delay [s/veh]	0.00			21.17			25.99			382.14		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	176.30											
Intersection LOS	F											
Intersection V/C	0.962											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.623	1.792	2.989	2.885
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	400	1440	1080
d_b, Bicycle Delay [s]	50.00	32.00	3.92	10.58
l_b,int, Bicycle LOS Score for Intersection	4.132	1.797	3.029	2.722
Bicycle LOS	D	A	C	B

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	848	63	838	1	744	0	0	0	8	514	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	848	63	838	1	744	0	0	0	8	514	0
Peak Hour Factor	1.0000	0.9280	0.9280	0.9280	0.9280	0.9280	1.0000	1.0000	1.0000	0.9280	0.9280	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	228	17	226	0	200	0	0	0	2	138	0
Total Analysis Volume [veh/h]	0	914	68	903	1	802	0	0	0	9	554	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	59	0	0	0	0	9	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	3	0	0	15	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	30	30	57	57		1	35
g / C, Green / Cycle	0.30	0.30	0.57	0.57		0.01	0.35
(v / s)_i Volume / Saturation Flow Rate	0.29	0.05	0.56	0.56		0.01	0.17
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	960	429	911	813		20	1128
d1, Uniform Delay [s]	34.31	25.74	21.39	21.23		49.07	25.39
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.20	0.17	28.13	28.55		15.94	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.16	0.99	0.99		0.46	0.49
d, Delay for Lane Group [s/veh]	40.51	25.92	49.52	49.78		65.01	25.72
Lane Group LOS	D	C	D	D		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	11.13	1.17	25.98	23.05		0.30	4.89
50th-Percentile Queue Length [ft/ln]	278.27	29.27	649.43	576.27		7.57	122.32
95th-Percentile Queue Length [veh/ln]	16.60	2.11	34.34	30.92		0.54	8.52
95th-Percentile Queue Length [ft/ln]	415.06	52.69	858.40	773.12		13.62	213.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	40.51	25.92	49.52	49.52	49.78	0.00	0.00	0.00	65.01	25.72	0.00
Movement LOS		D	C	D	D	D				E	C	
d_A, Approach Delay [s/veh]	39.50			49.64			0.00			26.35		
Approach LOS	D			D			A			C		
d_I, Intersection Delay [s/veh]	42.54											
Intersection LOS	D											
Intersection V/C	0.900											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.914	2.553	1.506	3.003
Crosswalk LOS	C	B	A	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	560	1100	0	740
d_b, Bicycle Delay [s]	25.92	10.13	50.00	19.85
l_b,int, Bicycle LOS Score for Intersection	2.370	4.375	4.132	2.024
Bicycle LOS	B	E	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	163	1008	67	152	367	25	485	475	678	49	49	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	163	1008	67	152	367	25	485	475	678	49	49	43
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	261	17	39	95	6	125	123	175	13	13	11
Total Analysis Volume [veh/h]	169	1042	69	157	380	26	502	491	701	51	51	44
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.33	0.33	0.05	0.12	0.12	0.15	0.29	0.21	0.02	0.03	0.03
Intersection LOS	C											
Intersection V/C	0.727											

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Report File: \...\2033 AM Detour.pdf

Scenario 31 2033 Const - Detour AM Peak Hour
6/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	EB Thru	0.482	-	A
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.049	9.5	A
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	SWB Thru	0.161	-	A
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Left	0.055	10.3	B
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.305	8.3	A
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	SB Thru	1.124	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	SB Thru	0.847	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	SB Thru	0.976	-	E
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.818	-	D
10	State College Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.750	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	SB Right	0.937	63.7	E
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Left	0.778	21.1	C
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	1.130	271.3	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	SEB Left	0.553	28.5	C
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	WB Left	0.714	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.482

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	205	19	129	35	122	32	24	970	235	35	453	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	205	19	129	35	122	32	24	970	235	35	453	5
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	5	35	9	33	9	6	260	63	9	122	1
Total Analysis Volume [veh/h]	220	20	138	38	131	34	26	1041	252	38	486	5
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.03	0.03	0.02	0.04	0.02	0.01	0.31	0.08	0.02	0.14	0.00
Intersection LOS	A											
Intersection V/C	0.482											

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Intersection Level Of Service Report

Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	36	12	2	171	39	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	12	2	171	39	2
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	1	45	10	1
Total Analysis Volume [veh/h]	38	13	2	180	41	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.32	0.00	9.52	8.67
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.10	0.00	4.00	4.00
d_A, Approach Delay [s/veh]	0.00		0.08		9.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.53					
Intersection LOS	A					

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Intersection Level Of Service Report

Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.161

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	24	11	49	17	10	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	11	49	17	10	129
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	13	4	3	34
Total Analysis Volume [veh/h]	25	12	52	18	11	136
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.03	0.01	0.01	0.08
Intersection LOS	A					
Intersection V/C	0.161					

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Intersection Level Of Service Report

Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.055

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	38	49	45	23	26	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	49	45	23	26	134
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	13	12	6	7	35
Total Analysis Volume [veh/h]	40	51	47	24	27	139
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.05	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	10.26	8.77	0.00	0.00	7.35	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.16	0.00	0.00	0.05	0.00
95th-Percentile Queue Length [ft/ln]	4.38	4.00	0.00	0.00	1.32	0.00
d_A, Approach Delay [s/veh]	9.42		0.00		1.20	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.22					
Intersection LOS	B					

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Intersection Level Of Service Report

Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.305

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	2	51	24	463	145	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	51	24	463	145	0	0	0	0	0	0	0
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	13	6	119	37	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	2	52	25	474	149	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.52	0.00	0.00	8.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	A	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.10	0.00	0.00	32.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.19			6.34			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.65											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.124

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	346	1000	68	229	2117	622	571	388	296	88	328	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	1000	68	229	2117	622	571	388	296	88	328	81
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	265	18	61	561	165	151	103	78	23	87	21
Total Analysis Volume [veh/h]	367	1060	72	243	2245	660	606	411	314	93	348	86
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.33	0.33	0.14	0.66	0.21	0.18	0.24	0.08	0.05	0.13	0.13
Intersection LOS	F											
Intersection V/C	1.124											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.847

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	133	812	67	347	2086	260	441	747	185	120	407	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	812	67	347	2086	260	441	747	185	120	407	169
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	215	18	92	551	69	117	197	49	32	108	45
Total Analysis Volume [veh/h]	141	858	71	367	2205	275	466	790	196	127	430	179
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

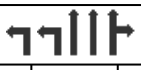
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.18	0.18	0.11	0.49	0.49	0.14	0.23	0.07	0.04	0.13	0.00
Intersection LOS	D											
Intersection V/C	0.847											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.976

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	211	634	121	408	1851	139	244	1447	248	180	1077	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	634	121	408	1851	139	244	1447	248	180	1077	175
Peak Hour Factor	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040	0.9040
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	175	33	113	512	38	67	400	69	50	298	48
Total Analysis Volume [veh/h]	233	701	134	451	2048	154	270	1601	274	199	1191	194
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

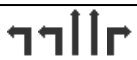
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.14	0.02	0.13	0.43	0.43	0.08	0.37	0.37	0.06	0.27	0.27
Intersection LOS	E											
Intersection V/C	0.976											

Intersection Level Of Service Report
Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.818

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	284	318	164	66	530	103	115	993	351	417	1172	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	284	318	164	66	530	103	115	993	351	417	1172	84
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	88	46	18	147	29	32	276	98	116	326	23
Total Analysis Volume [veh/h]	316	353	182	73	589	114	128	1103	390	463	1302	93
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.10	0.11	0.04	0.17	0.07	0.08	0.22	0.23	0.27	0.27	0.27
Intersection LOS	D											
Intersection V/C	0.818											

Intersection Level Of Service Report
Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	218	200	122	780	841	8	6	696	254	557	1590	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	200	122	780	841	8	6	696	254	557	1590	279
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	56	34	217	234	2	2	194	71	155	443	78
Total Analysis Volume [veh/h]	243	223	136	870	938	9	7	776	283	621	1773	311
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.07	0.26	0.28	0.28	0.00	0.16	0.16	0.18	0.35	0.00
Intersection LOS	C											
Intersection V/C	0.750											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	63.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.937

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1125	1	913	0	1142	496	201	1607	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1125	1	913	0	1142	496	201	1607	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9430	1.0000	0.9430	1.0000	0.9430	0.9430	0.9430	0.9430	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	298	0	242	0	303	131	53	426	0
Total Analysis Volume [veh/h]	0	0	0	1193	1	968	0	1211	526	213	1704	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	55	0	0	0	36	0	9	45	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		30	30	30	27	27	27	8	38
g / C, Green / Cycle		0.39	0.39	0.39	0.35	0.35	0.35	0.10	0.50
(v / s)_i Volume / Saturation Flow Rate		0.45	0.47	0.50	0.27	0.30	0.30	0.07	0.37
s, saturation flow rate [veh/h]		1603	1539	1431	3204	1450	1431	3113	4584
c, Capacity [veh/h]		628	603	560	1126	510	503	311	2309
d1, Uniform Delay [s]		23.29	23.29	23.29	22.09	22.98	23.12	33.29	15.01
k, delay calibration		0.50	0.50	0.50	0.11	0.28	0.29	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		83.84	103.12	141.49	1.15	9.82	10.97	2.66	0.47
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		1.15	1.19	1.29	0.77	0.85	0.86	0.68	0.74
d, Delay for Lane Group [s/veh]		107.12	126.41	164.77	23.24	32.80	34.09	35.95	15.48
Lane Group LOS		F	F	F	C	C	C	D	B
Critical Lane Group		No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		24.96	27.20	31.25	6.40	7.86	8.04	1.92	6.63
50th-Percentile Queue Length [ft/ln]		623.94	679.90	781.26	159.94	196.49	201.03	47.97	165.65
95th-Percentile Queue Length [veh/ln]		36.31	40.10	47.16	10.55	12.46	12.69	3.45	10.85
95th-Percentile Queue Length [ft/ln]		907.68	1002.49	1179.02	263.65	311.44	317.29	86.35	271.19

Movement, Approach, & Intersection Results

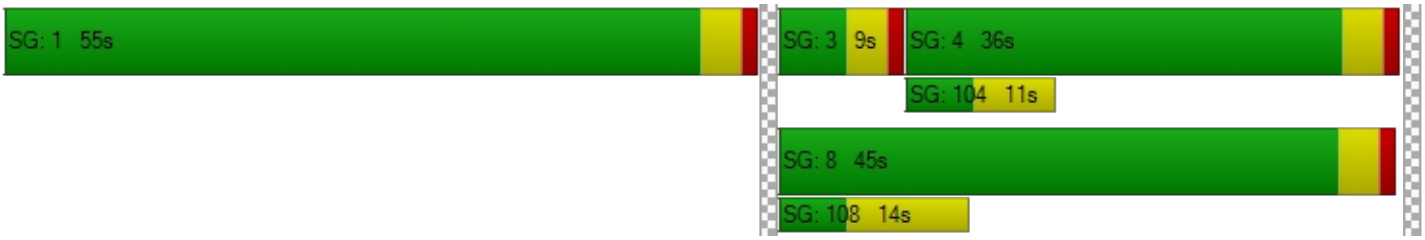
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	114.76	0.00	154.96	0.00	23.65	33.87	35.95	15.48	0.00
Movement LOS				F		F		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			132.77			28.34			17.75		
Approach LOS	A			F			C			B		
d_I, Intersection Delay [s/veh]	63.66											
Intersection LOS	E											
Intersection V/C	0.937											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.082	2.649	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1020	640	820
d_b, Bicycle Delay [s]	50.00	12.01	23.12	17.41
l_b,int, Bicycle LOS Score for Intersection	4.132	5.125	2.515	2.614
Bicycle LOS	D	F	B	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.778

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	876	0	400	0	0	0	375	1893	0	0	931	502
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	876	0	400	0	0	0	375	1893	0	0	931	502
Peak Hour Factor	0.9610	1.0000	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	228	0	104	0	0	0	98	492	0	0	242	131
Total Analysis Volume [veh/h]	912	0	416	0	0	0	390	1970	0	0	969	522
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	0	0	0	0	0	15	58	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	70	70		70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24		12	38	22	22	22
g / C, Green / Cycle	0.35	0.35		0.16	0.54	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.29	0.29		0.13	0.43	0.23	0.26	0.26
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	1078	495		510	2477	1024	457	457
d1, Uniform Delay [s]	21.33	21.26		28.19	13.07	21.28	22.08	22.08
k, delay calibration	0.11	0.22		0.11	0.11	0.11	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.93	7.55		2.41	0.61	1.01	5.42	5.42
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.84		0.76	0.80	0.73	0.81	0.81
d, Delay for Lane Group [s/veh]	23.26	28.81		30.60	13.67	22.28	27.50	27.50
Lane Group LOS	C	C		C	B	C	C	C
Critical Lane Group	Yes	No		No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	6.68	6.85		3.07	6.65	4.98	5.71	5.71
50th-Percentile Queue Length [ft/ln]	166.90	171.18		76.79	166.18	124.62	142.83	142.83
95th-Percentile Queue Length [veh/ln]	10.91	11.14		5.53	10.88	8.65	9.63	9.63
95th-Percentile Queue Length [ft/ln]	272.83	278.47		138.23	271.88	216.16	240.83	240.83

Movement, Approach, & Intersection Results

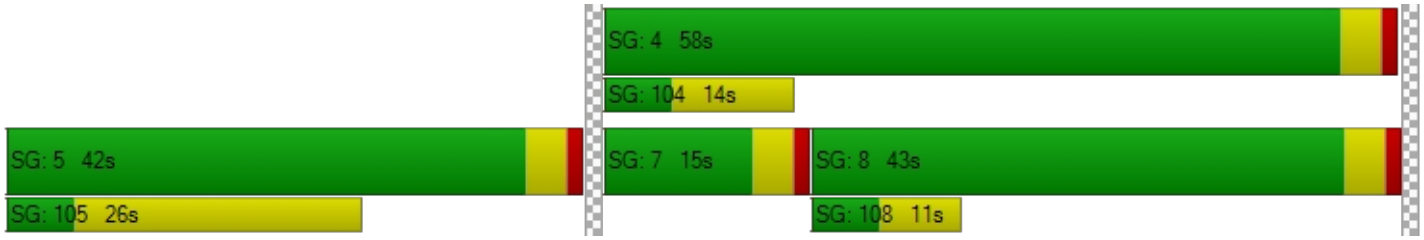
d_M, Delay for Movement [s/veh]	23.26	0.00	28.81	0.00	0.00	0.00	30.60	13.67	0.00	0.00	22.28	27.50
Movement LOS	C		C				C	B			C	C
d_A, Approach Delay [s/veh]	25.00			0.00			16.47			24.89		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	21.08											
Intersection LOS	C											
Intersection V/C	0.778											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.378	2.166	0.000	3.321
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	760	0	1080	780
d_b, Bicycle Delay [s]	19.22	50.00	10.58	18.61
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.858	2.380
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	271.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.130

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	75	2	8	448	645	0	0	583	1006
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	75	2	8	448	645	0	0	583	1006
Peak Hour Factor	1.0000	1.0000	1.0000	0.9600	0.9600	0.9600	0.9600	0.9600	1.0000	1.0000	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	20	1	2	117	168	0	0	152	262
Total Analysis Volume [veh/h]	0	0	0	78	2	8	467	672	0	0	607	1048
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	9	0	30	91	0	0	61	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		28	28	30	64	30	30
g / C, Green / Cycle		0.28	0.28	0.30	0.64	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate		0.05	0.01	0.29	0.21	0.19	0.73
s, saturation flow rate [veh/h]		1605	1431	1603	3204	3204	1431
c, Capacity [veh/h]		450	401	481	2050	961	429
d1, Uniform Delay [s]		27.27	26.06	34.58	8.21	30.23	35.00
k, delay calibration		0.50	0.50	0.43	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.86	0.09	31.64	0.09	0.69	656.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.18	0.02	0.97	0.33	0.63	2.44
d, Delay for Lane Group [s/veh]		28.14	26.15	66.23	8.30	30.92	691.01
Lane Group LOS		C	C	E	A	C	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.55	0.15	14.69	2.76	6.29	88.35
50th-Percentile Queue Length [ft/ln]		38.73	3.70	367.28	69.08	157.33	2208.73
95th-Percentile Queue Length [veh/ln]		2.79	0.27	20.98	4.97	10.41	141.64
95th-Percentile Queue Length [ft/ln]		69.71	6.65	524.43	124.34	260.18	3541.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.14	28.14	26.15	66.23	8.30	0.00	0.00	30.92	691.01
Movement LOS				C	C	C	E	A			C	F
d_A, Approach Delay [s/veh]	0.00			27.96			32.05			448.91		
Approach LOS	A			C			C			F		
d_I, Intersection Delay [s/veh]	271.31											
Intersection LOS	F											
Intersection V/C	1.130											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.909	1.764	0.000	0.000
Crosswalk LOS	C	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	100	1740	1140
d_b, Bicycle Delay [s]	50.00	45.13	0.85	9.25
l_b,int, Bicycle LOS Score for Intersection	4.132	1.705	2.499	2.925
Bicycle LOS	D	A	B	C

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.553

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			Yes			No			No		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	694	229	398	0	285	0	0	0	45	614	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	694	229	398	0	285	0	0	0	45	614	0
Peak Hour Factor	1.0000	0.9380	0.9380	0.9380	0.9380	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	185	61	106	0	76	0	0	0	12	164	0
Total Analysis Volume [veh/h]	0	740	244	424	0	304	0	0	0	48	655	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	66	0	0	0	0	9	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	26	26	58	58		4	34
g / C, Green / Cycle	0.26	0.26	0.58	0.58		0.04	0.34
(v / s)_i Volume / Saturation Flow Rate	0.23	0.17	0.26	0.21		0.03	0.20
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	828	370	934	833		63	1082
d1, Uniform Delay [s]	35.75	33.15	11.85	11.07		47.61	27.59
k, delay calibration	0.11	0.13	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	3.66	2.49	1.59	1.24		17.54	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.66	0.45	0.36		0.77	0.61
d, Delay for Lane Group [s/veh]	39.41	35.64	13.45	12.30		65.15	28.14
Lane Group LOS	D	D	B	B		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	8.73	5.33	5.42	3.64		1.45	6.20
50th-Percentile Queue Length [ft/ln]	218.15	133.36	135.51	90.97		36.27	155.07
95th-Percentile Queue Length [veh/ln]	13.57	9.12	9.24	6.55		2.61	10.29
95th-Percentile Queue Length [ft/ln]	339.27	228.05	230.97	163.75		65.28	257.18

Movement, Approach, & Intersection Results

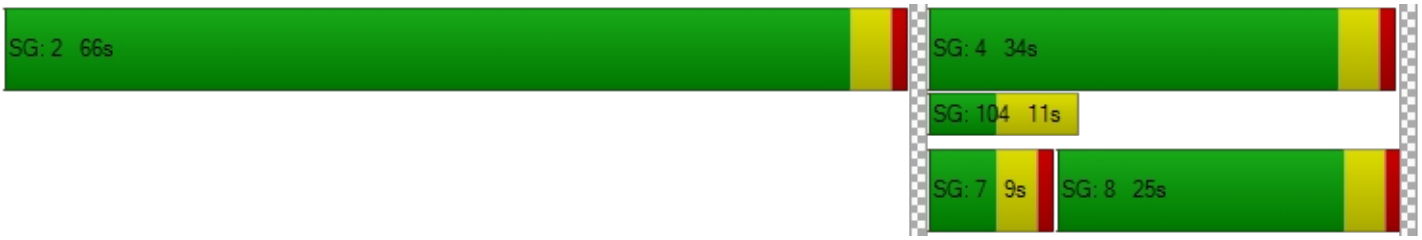
d_M, Delay for Movement [s/veh]	0.00	39.41	35.64	13.45	13.45	12.30	0.00	0.00	0.00	65.15	28.14	0.00
Movement LOS		D	D	B	B	B				E	C	
d_A, Approach Delay [s/veh]	38.48			12.97			0.00			30.66		
Approach LOS	D			B			A			C		
d_I, Intersection Delay [s/veh]	28.51											
Intersection LOS	C											
Intersection V/C	0.553											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.076	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	420	1240	0	600
d_b, Bicycle Delay [s]	31.21	7.22	50.00	24.50
l_b,int, Bicycle LOS Score for Intersection	2.371	2.761	4.132	2.140
Bicycle LOS	B	C	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report

Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	104	426	275	926	608	44	171	72	95	39	249	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	426	275	926	608	44	171	72	95	39	249	110
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	112	72	242	159	12	45	19	25	10	65	29
Total Analysis Volume [veh/h]	109	446	288	970	637	46	179	75	99	41	261	115
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	7	4	0	3	8	0	5	2	2	1	6	0
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.22	0.22	0.29	0.20	0.20	0.05	0.04	0.00	0.01	0.11	0.11
Intersection LOS	C											
Intersection V/C	0.714											

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Report File: \...\2033 PM Detour.pdf

Scenario 32 2033 Const - Detour PM Peak Hour
6/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	N Brea Blvd / Central Ave-N State College Blvd	Signalized	ICU 1	NWB Thru	0.507	-	A
2	N Brea Blvd / Canyondale Dr	Two-way stop	HCM 6th Edition	WB Left	0.015	9.5	A
3	N Brea Blvd/Canyon Country Rd	Signalized	ICU 1	NB Thru	0.117	-	A
4	N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd	Two-way stop	HCM 6th Edition	NB Right	0.823	24.1	C
5	Brea Canyon Rd / SR-57 SB On-Ramp	Two-way stop	HCM 6th Edition	SWB Left	0.084	9.4	A
6	Harbor Blvd/Whittier Ave	Signalized	ICU 1	NB Thru	1.191	-	F
7	Harbor Blvd/La Habra Blvd	Signalized	ICU 1	NB Right	0.855	-	D
8	Harbor Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.844	-	D
9	Brea Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.797	-	C
10	State College Blvd/Lambert Road	Signalized	ICU 1	WB Thru	0.759	-	C
11	SR-57 SB Ramps/Lambert Road	Signalized	HCM 6th Edition	EB Right	0.953	53.4	D
12	SR-57 NB Ramps/Lambert Road	Signalized	HCM 6th Edition	NB Right	0.882	36.5	D
13	SR-57 SB Ramps/Brea Canyon Cutoff Road	Signalized	HCM 6th Edition	SEB Right	0.962	93.4	F
14	SR-57 NB Ramps/S. Diamond Bar Blvd.	Signalized	HCM 6th Edition	NEB Right	1.117	121.6	F
15	Brea Canyon Road/Diamond Bar Blvd.	Signalized	ICU 1	EB Thru	0.812	-	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

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Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 1: N Brea Blvd / Central Ave-N State College Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	185.00	100.00	100.00	235.00	100.00	235.00	320.00	100.00	100.00	95.00	100.00	135.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Ce-N			Ce-N		
Base Volume Input [veh/h]	426	54	46	18	42	50	30	724	177	35	934	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	54	46	18	42	50	30	724	177	35	934	14
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	14	12	5	11	13	8	189	46	9	243	4
Total Analysis Volume [veh/h]	444	56	48	19	44	52	31	755	185	36	974	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups									4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.02	0.02	0.01	0.01	0.03	0.01	0.22	0.00	0.02	0.29	0.01
Intersection LOS	A											
Intersection V/C	0.507											

Intersection Level Of Service Report
Intersection 2: N Brea Blvd / Canyondale Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	150.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	N Brea Blvd		N Brea Blvd		Canyondale Dr	
Base Volume Input [veh/h]	100	28	4	56	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	28	4	56	12	0
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	7	1	14	3	0
Total Analysis Volume [veh/h]	103	29	4	58	12	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.49	0.00	9.46	8.72
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.21	0.00	1.11	1.11
d_A, Approach Delay [s/veh]	0.00		0.48		9.46	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	A					

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Intersection Level Of Service Report

Intersection 3: N Brea Blvd/Canyon Country Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.117

Intersection Setup

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Approach	Northbound		Westbound		Southwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		30.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	N Brea Blvd		Canyon Country Rd		N Brea Blvd-Brea Canyon Rd	
Base Volume Input [veh/h]	63	33	29	4	15	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	33	29	4	15	37
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	9	8	1	4	10
Total Analysis Volume [veh/h]	67	35	31	4	16	40
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	4	0	0	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.02	0.02	0.00	0.01	0.02
Intersection LOS	A					
Intersection V/C	0.117					

Intersection Level Of Service Report
Intersection 4: N Brea Blvd-Brea Canyon Rd/Tonner Canyon Rd

Control Type:	Two-way stop	Delay (sec / veh):	24.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.823

Intersection Setup

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tonner Canyon Rd		N Brea Blvd-Brea Canyon Rd		Brea Canyon Rd	
Base Volume Input [veh/h]	20	718	120	0	8	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	718	120	0	8	52
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	190	32	0	2	14
Total Analysis Volume [veh/h]	21	760	127	0	8	55
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.82	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	9.70	24.14	0.00	0.00	7.48	0.00
Movement LOS	A	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	9.52	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft/ln]	2.06	238.10	0.00	0.00	0.41	0.00
d_A, Approach Delay [s/veh]	23.75		0.00		0.95	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	19.16					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Brea Canyon Rd / SR-57 SB On-Ramp

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.084

Intersection Setup

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Brea Canyon Rd			Brea Canyon Rd			SR-57 SB On-Ramp					
Base Volume Input [veh/h]	0	682	31	71	56	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	682	31	71	56	0	0	0	0	0	0	0
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	179	8	19	15	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	715	32	74	59	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane												
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance												
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	9.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	A	A	A	A							
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	6.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			5.25			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.79											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 6: Harbor Blvd/Whittier Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.191

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	2	0	1	1	0	0
Entry Pocket Length [ft]	245.00	100.00	100.00	155.00	100.00	300.00	250.00	100.00	250.00	120.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Whittier Ave			Whittier Ave		
Base Volume Input [veh/h]	231	1802	17	166	1374	499	844	328	287	60	328	396
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	231	1802	17	166	1374	499	844	328	287	60	328	396
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	462	4	43	352	128	216	84	74	15	84	101
Total Analysis Volume [veh/h]	237	1846	17	170	1408	511	865	336	294	61	336	406
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	7	4	4	3	8	0
Auxiliary Signal Groups						6,7			4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.55	0.55	0.10	0.41	0.05	0.25	0.20	0.10	0.04	0.22	0.22
Intersection LOS	F											
Intersection V/C	1.191											

Intersection Level Of Service Report
Intersection 7: Harbor Blvd/La Habra Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.855

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	180.00	100.00	100.00	250.00	100.00	250.00	230.00	100.00	160.00	195.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			La Habra Blvd			La Habra Blvd		
Base Volume Input [veh/h]	308	1602	86	303	1174	302	509	438	117	119	741	187
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	308	1602	86	303	1174	302	509	438	117	119	741	187
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	409	22	77	300	77	130	112	30	30	189	48
Total Analysis Volume [veh/h]	315	1636	88	309	1199	308	520	447	120	122	757	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	4	3	8	8
Auxiliary Signal Groups									4,5			1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.34	0.34	0.09	0.30	0.30	0.15	0.13	0.00	0.04	0.22	0.02
Intersection LOS	D											
Intersection V/C	0.855											

Intersection Level Of Service Report
Intersection 8: Harbor Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.844

Intersection Setup

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	210.00	100.00	100.00	325.00	100.00	100.00	300.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Blvd			Harbor Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	313	1399	108	151	1122	158	361	917	191	221	1447	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	313	1399	108	151	1122	158	361	917	191	221	1447	232
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	357	28	39	286	40	92	234	49	56	369	59
Total Analysis Volume [veh/h]	319	1428	110	154	1145	161	368	936	195	226	1477	237
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.28	0.00	0.05	0.26	0.26	0.11	0.22	0.22	0.07	0.34	0.34
Intersection LOS	D											
Intersection V/C	0.844											

Generated with PTV VISTRO

Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 9: Brea Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.797

Intersection Setup

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	150.00	260.00	100.00	260.00	200.00	100.00	220.00	230.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	N Brea Blvd			N Brea Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	559	532	386	38	327	41	146	994	363	397	1303	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	532	386	38	327	41	146	994	363	397	1303	47
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	147	140	102	10	86	11	39	262	96	105	344	12
Total Analysis Volume [veh/h]	590	561	407	40	345	43	154	1049	383	419	1374	50
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.17	0.24	0.02	0.10	0.03	0.09	0.21	0.23	0.25	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.797											

Generated with PTV VISTRO

Version 2020 (SP 0-8)

Intersection Level Of Service Report

Intersection 10: State College Blvd/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	0	2	0	0	2	0	1
Entry Pocket Length [ft]	165.00	100.00	240.00	365.00	100.00	100.00	100.00	100.00	100.00	255.00	100.00	255.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Blvd			State College Blvd			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	355	649	381	587	357	7	11	1197	178	380	1223	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	355	649	381	587	357	7	11	1197	178	380	1223	530
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	167	98	151	92	2	3	308	46	98	315	136
Total Analysis Volume [veh/h]	366	668	392	605	368	7	11	1233	183	391	1260	546
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.21	0.21	0.18	0.11	0.11	0.00	0.21	0.21	0.12	0.25	0.14
Intersection LOS	C											
Intersection V/C	0.759											

Intersection Level Of Service Report
Intersection 11: SR-57 SB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	53.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.953

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	2	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	380.00	70.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	779	1	883	0	1628	664	246	1425	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	779	1	883	0	1628	664	246	1425	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9690	1.0000	0.9690	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	201	0	228	0	420	171	63	368	0
Total Analysis Volume [veh/h]	0	0	0	804	1	911	0	1680	685	254	1471	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	1	0	0	0	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	0	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	33	0	0	0	35	0	32	67	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	24	0	0	0	6	0	0	9	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		81	81	81	81	81	81	81	81
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		30	30	30	30	30	30	9	43
g / C, Green / Cycle		0.37	0.37	0.37	0.37	0.37	0.37	0.11	0.53
(v / s)_i Volume / Saturation Flow Rate		0.36	0.38	0.40	0.37	0.41	0.41	0.08	0.32
s, saturation flow rate [veh/h]		1603	1496	1431	3204	1459	1431	3113	4584
c, Capacity [veh/h]		592	553	529	1184	539	529	352	2439
d1, Uniform Delay [s]		25.09	25.60	25.60	25.58	25.60	25.60	34.76	13.09
k, delay calibration		0.43	0.48	0.50	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		26.60	46.49	63.00	11.87	67.78	75.94	2.79	0.24
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.97	1.03	1.08	1.00	1.10	1.12	0.72	0.60
d, Delay for Lane Group [s/veh]		51.69	72.08	88.60	37.45	93.37	101.54	37.55	13.34
Lane Group LOS		D	F	F	D	F	F	D	B
Critical Lane Group		No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		14.43	17.05	18.73	12.13	19.44	20.25	2.44	5.27
50th-Percentile Queue Length [ft/ln]		360.73	426.36	468.35	303.20	485.93	506.34	61.01	131.65
95th-Percentile Queue Length [veh/ln]		20.66	24.38	27.20	17.84	28.33	29.72	4.39	9.03
95th-Percentile Queue Length [ft/ln]		516.48	609.42	680.11	445.98	708.23	742.88	109.82	225.73

Movement, Approach, & Intersection Results

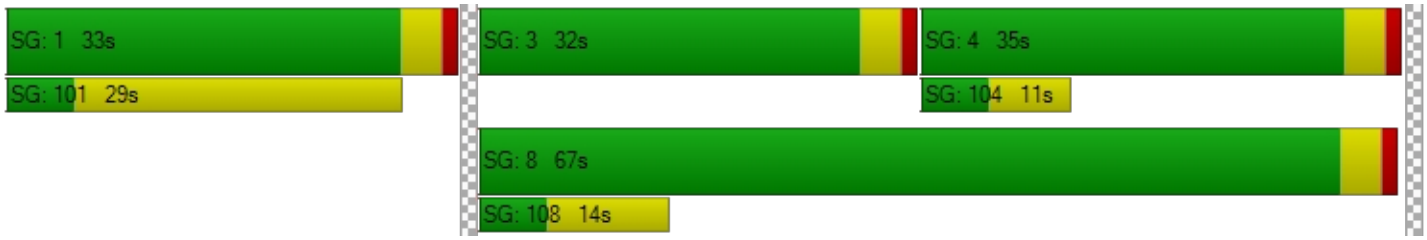
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	57.58	0.00	82.45	0.00	40.89	100.42	37.55	13.34	0.00
Movement LOS				E		F		D	F	D	B	
d_A, Approach Delay [s/veh]	0.00			70.79			67.45			16.90		
Approach LOS	A			E			E			B		
d_I, Intersection Delay [s/veh]	53.42											
Intersection LOS	D											
Intersection V/C	0.953											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.179	2.504	3.482	3.416
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	580	620	1260
d_b, Bicycle Delay [s]	50.00	25.21	23.81	6.85
l_b,int, Bicycle LOS Score for Intersection	4.132	4.389	2.860	2.508
Bicycle LOS	D	E	C	B

Sequence

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: SR-57 NB Ramps/Lambert Road

Control Type:	Signalized	Delay (sec / veh):	36.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.882

Intersection Setup

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	2	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	225.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 NB Off Ramp			SR-57 NB On Ramp			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	917	0	444	0	0	0	803	1604	0	0	754	624
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	917	0	444	0	0	0	803	1604	0	0	754	624
Peak Hour Factor	0.9680	1.0000	0.9680	1.0000	1.0000	1.0000	0.9680	0.9680	1.0000	1.0000	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	237	0	115	0	0	0	207	414	0	0	195	161
Total Analysis Volume [veh/h]	947	0	459	0	0	0	830	1657	0	0	779	645
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	0	0	0	0	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	0	0	0	5	5	0	0	5	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	39	0	0	0	0	0	31	61	0	0	30	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	24	0	0	0	0	0	0	9	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	97	97		97	97	97	97	97
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30		28	59	27	27	27
g / C, Green / Cycle	0.31	0.31		0.29	0.61	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.30	0.32		0.27	0.36	0.22	0.25	0.25
s, saturation flow rate [veh/h]	3113	1431		3113	4584	3204	1431	1431
c, Capacity [veh/h]	957	440		899	2798	899	401	401
d1, Uniform Delay [s]	33.61	33.77		33.63	11.59	32.46	33.61	33.61
k, delay calibration	0.11	0.48		0.11	0.11	0.11	0.31	0.31
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.24	53.88		4.58	0.20	1.62	16.53	16.53
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99	1.04		0.92	0.59	0.79	0.89	0.89
d, Delay for Lane Group [s/veh]	44.85	87.65		38.21	11.79	34.08	50.14	50.14
Lane Group LOS	D	F		D	B	C	D	D
Critical Lane Group	No	Yes		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.29	16.66		9.58	6.30	7.59	9.50	9.50
50th-Percentile Queue Length [ft/ln]	307.14	416.52		239.51	157.39	189.81	237.39	237.39
95th-Percentile Queue Length [veh/ln]	18.03	23.99		14.66	10.41	12.11	14.55	14.55
95th-Percentile Queue Length [ft/ln]	450.85	599.68		366.42	260.26	302.79	363.73	363.73

Movement, Approach, & Intersection Results

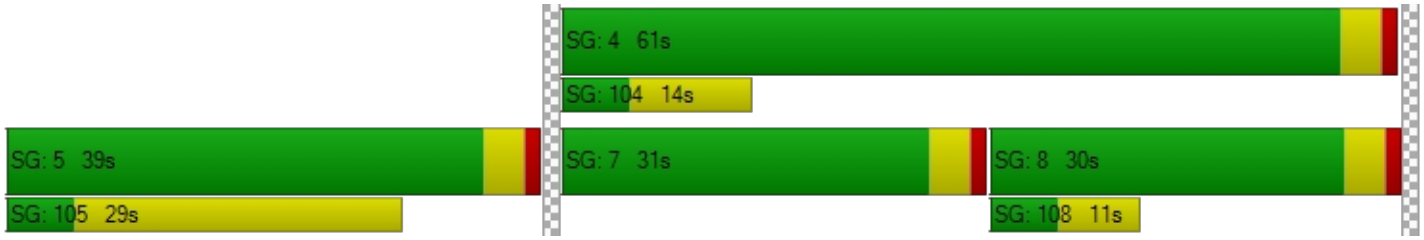
d_M, Delay for Movement [s/veh]	44.85	0.00	87.65	0.00	0.00	0.00	38.21	11.79	0.00	0.00	34.08	50.14
Movement LOS	D		F				D	B			C	D
d_A, Approach Delay [s/veh]	58.82			0.00			20.61			42.11		
Approach LOS	E			A			C			D		
d_I, Intersection Delay [s/veh]	36.47											
Intersection LOS	D											
Intersection V/C	0.882											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.404	2.441	3.417	3.258
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	0	1140	520
d_b, Bicycle Delay [s]	21.13	50.00	9.25	27.38
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.927	2.343
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: SR-57 SB Ramps/Brea Canyon Cutoff Road

Control Type:	Signalized	Delay (sec / veh):	93.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.962

Intersection Setup

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	215.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR-57 SB On Ramp			SR-57 SB Off Ramp			S. Diamond Bar Blvd.			Brea Canyon Cutoff Road		
Base Volume Input [veh/h]	0	0	0	116	1	19	231	1732	0	0	407	926
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	116	1	19	231	1732	0	0	407	926
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	0.9460	0.9460	0.9460	0.9460	1.0000	1.0000	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	31	0	5	61	458	0	0	108	245
Total Analysis Volume [veh/h]	0	0	0	123	1	20	244	1831	0	0	430	979
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	5	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	30	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	24	0	9	76	0	0	67	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	15	0	0	6	0	0	3	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No		No	No			No	
Maximum Recall					No		No	No			No	
Pedestrian Recall					No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	R	L	C	C	R
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	17	65	44	44
g / C, Green / Cycle		0.27	0.27	0.17	0.65	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.08	0.01	0.15	0.57	0.13	0.68
s, saturation flow rate [veh/h]		1603	1431	1603	3204	3204	1431
c, Capacity [veh/h]		435	388	277	2079	1398	624
d1, Uniform Delay [s]		28.80	26.95	40.36	14.38	18.36	28.20
k, delay calibration		0.50	0.50	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.64	0.25	8.90	1.34	0.12	263.86
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.29	0.05	0.88	0.88	0.31	1.57
d, Delay for Lane Group [s/veh]		30.44	27.20	49.26	15.72	18.49	292.06
Lane Group LOS		C	C	D	B	B	F
Critical Lane Group		Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]		2.53	0.38	6.27	13.61	3.20	59.87
50th-Percentile Queue Length [ft/ln]		63.30	9.48	156.82	340.13	79.93	1496.66
95th-Percentile Queue Length [veh/ln]		4.56	0.68	10.38	19.65	5.76	93.46
95th-Percentile Queue Length [ft/ln]		113.95	17.07	259.51	491.36	143.88	2336.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	30.44	30.44	27.20	49.26	15.72	0.00	0.00	18.49	292.06
Movement LOS				C	C	C	D	B			B	F
d_A, Approach Delay [s/veh]	0.00			29.99			19.67			208.57		
Approach LOS	A			C			B			F		
d_I, Intersection Delay [s/veh]	93.44											
Intersection LOS	F											
Intersection V/C	0.962											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.623	1.792	3.075	2.942
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	400	1440	1260
d_b, Bicycle Delay [s]	50.00	32.00	3.92	6.85
l_b,int, Bicycle LOS Score for Intersection	4.132	1.797	3.271	2.722
Bicycle LOS	D	A	C	B

Sequence

Ring 1	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: SR-57 NB Ramps/S. Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	121.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.117

Intersection Setup

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Approach	Westbound			Northeastbound			Southwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	140.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			30.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			SR-57 NB Off Ramp			SR-57 NB On Ramp			S. Diamond Bar Blvd.		
Base Volume Input [veh/h]	0	848	63	1115	1	1023	0	0	0	8	514	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	848	63	1115	1	1023	0	0	0	8	514	0
Peak Hour Factor	1.0000	0.9280	0.9280	0.9280	0.9280	0.9280	1.0000	1.0000	1.0000	0.9280	0.9280	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	228	17	300	0	276	0	0	0	2	138	0
Total Analysis Volume [veh/h]	0	914	68	1202	1	1102	0	0	0	9	554	0
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	2	0	0	0	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	12	0	0	79	0	0	0	0	9	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	3	0	0	15	0	0	0	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No					No	No	
Maximum Recall		No			No					No	No	
Pedestrian Recall		No			No					No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R		L	C
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	30	30	57	57		1	35
g / C, Green / Cycle	0.30	0.30	0.57	0.57		0.01	0.35
(v / s)_i Volume / Saturation Flow Rate	0.29	0.05	0.75	0.77		0.01	0.17
s, saturation flow rate [veh/h]	3204	1431	1603	1431		1603	3204
c, Capacity [veh/h]	957	427	913	815		19	1122
d1, Uniform Delay [s]	34.42	25.83	21.51	21.51		49.12	25.53
k, delay calibration	0.11	0.11	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.56	0.17	150.45	166.41		18.09	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.16	1.32	1.35		0.48	0.49
d, Delay for Lane Group [s/veh]	40.98	26.00	171.96	187.92		67.21	25.87
Lane Group LOS	D	C	F	F		E	C
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	11.18	1.17	57.44	54.88		0.31	4.90
50th-Percentile Queue Length [ft/ln]	279.59	29.30	1436.12	1372.07		7.75	122.50
95th-Percentile Queue Length [veh/ln]	16.67	2.11	85.01	82.59		0.56	8.53
95th-Percentile Queue Length [ft/ln]	416.71	52.73	2125.25	2064.77		13.95	213.26

Movement, Approach, & Intersection Results

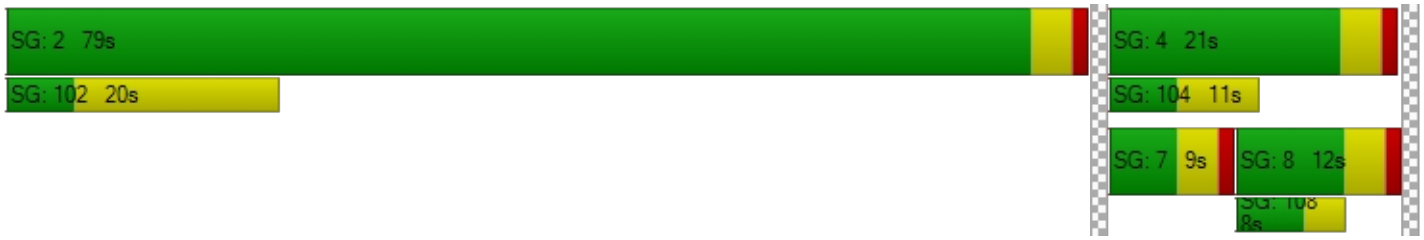
d_M, Delay for Movement [s/veh]	0.00	40.98	26.00	171.96	171.96	187.92	0.00	0.00	0.00	67.21	25.87	0.00
Movement LOS		D	C	F	F	F				E	C	
d_A, Approach Delay [s/veh]	39.95			179.59			0.00			26.53		
Approach LOS	D			F			A			C		
d_I, Intersection Delay [s/veh]	121.59											
Intersection LOS	F											
Intersection V/C	1.117											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	2.992	2.845	1.506	3.090
Crosswalk LOS	C	C	A	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	160	1500	0	340
d_b, Bicycle Delay [s]	42.32	3.13	50.00	34.45
l_b,int, Bicycle LOS Score for Intersection	2.370	5.363	4.132	2.024
Bicycle LOS	B	F	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report

Intersection 15: Brea Canyon Road/Diamond Bar Blvd.

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	2	0	2	2	0	0
Entry Pocket Length [ft]	95.00	100.00	100.00	235.00	100.00	100.00	155.00	100.00	210.00	110.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Diamond Bar Blvd.			Diamond Bar Blvd.			Brea Canyon Road			Brea Canyon Road		
Base Volume Input [veh/h]	163	1287	67	152	367	25	485	475	678	49	49	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	163	1287	67	152	367	25	485	475	678	49	49	43
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	333	17	39	95	6	125	123	175	13	13	11
Total Analysis Volume [veh/h]	169	1331	69	157	380	26	502	491	701	51	51	44
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	4	0	0	8	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.41	0.41	0.05	0.12	0.12	0.15	0.29	0.21	0.02	0.03	0.03
Intersection LOS	D											
Intersection V/C	0.812											

AIR QUALITY /GREENHOUSE GAS EMISSIONS/ENERGY ALTERNATIVE MEMO

AECOM
401 W A St., Suite 1200
San Diego, CA 92101
aecom.com

Project name:
Brea Boulevard Corridor Improvement Project

Project ref:
AECOM JN 60663742

To:
Austin Morgan, P.E.
OC Public Works
601 N. Ross Street
Santa Ana, CA 92701

From:
Paola Peña

Date:
September 9, 2022

Technical Memorandum

Subject: Brea Boulevard Corridor Improvement Project, Alternative Air Quality, Greenhouse Gas Emissions and Energy Analysis

1. Introduction

AECOM prepared this memo to supplement the September 2022 Air Quality and Greenhouse Gas Emissions Technical Report and Energy Impact Analysis (September 2022 Reports) of the Brea Boulevard Corridor (corridor) Improvement Project (Project). This memo's purpose is to address potential air quality, greenhouse gas (GHG) emissions and energy impacts as it relates to Alternative 3 - 4-Phase Project Construction Approach Timeline.

Under Alternative 3, the same Project described in the September 2022 Reports would be proposed, but the total construction timeline would be extended from five to ten years in order to account for the availability of Project funding sources. Active construction duration would remain at 5 years (and the same maximum intensity of construction activity identified for the Project would remain the same for Alternative 3 within any given year) but the 5 years of active construction could occur at any time within the 10-year timeframe (e.g., within the first five years, within the last five years, or at various combinations of years with periods of inactivity within the overall 10 years) depending on funding availability. Thus, the construction timeframe for Alternative 3 would be extended from 2026-2030 to 2026-2035. Additionally, whereas the Project is divided into two phases of activities required for the entire corridor (i.e., Phase I: utility relocations, infrastructure for utilities, wildlife overpass/land bridge, bridge replacement, retaining walls, and associated grading/pavement, and Phase II: road widening, sound reduction surface treatment, and intersections), Alternative 3 is divided into four phases corresponding to four separate segments along the corridor. The four phases under Alternative 3 are a segmentation of the project limits with each of the four phases including all of the improvements necessary for that segment (i.e., both the Phase I and Phase II activities identified for the Project that are applicable to the specific segment length).

In order to account for a worst-case scenario of air quality, GHG emissions, and energy effects under the variable timeline of this alternative, the construction timing assumptions that were the most conservative were used. As described in more detail below, over time, emissions from off-road

equipment and on-road vehicles are anticipated to decrease as technological advances in combustion engines are achieved and phasing out of older vehicles and equipment occurs as stricter regulations take effect. As such, the most conservative construction timing assumption for this alternative would span 5 sequential years at the beginning of the 10-year timeframe (2026-2030), which is the same construction timeframe analyzed under the Project in the September 2022 Reports. In addition, under Alternative 3, construction would be divided into four phases (corresponding to four separate segments along the corridor) instead of the two phases of activities required for the entire corridor. However, the purpose of the four phases/segmentation is to identify discreet portions of the corridor that could be constructed, corresponding to different funding sources that become available; it should be noted that these phases are not necessarily sequential. The four phases can be constructed at any time within the 10-year construction window and with any grouping (for example Phases I and III could be constructed at the same time), but the intensity of construction would be no greater than considered for the Project as there would be no change to the number of daily construction workers, daily truck trips, frequency of lane closures, etc.

Since Alternative 3 would have a total construction timeline of five to ten years in order to account for the availability of Project funding sources, but the active construction duration would remain at 5 years, the construction emissions, energy consumption estimates, and analyses presented in the September 2022 Reports provide a conservative analysis under Alternative 3 as well.

Thus, this memo does not change any of the findings nor analysis contained in the September 2022 Reports. This memorandum focuses on a discussion of the regulatory framework and technology advancements that are anticipated to occur to demonstrate that Alternative 3 is anticipated to result in the same or lower emissions than the Project.

2. Regulatory Framework

As described in the September 2022 Reports, sources of construction-related criteria air pollutant and GHG emissions include on-road and off-road equipment (construction equipment exhaust; construction-related trips by workers, delivery and hauling truck trips), fugitive dust from site preparation and grading activities; and off-gassing from traffic coating and paving activities. Since Alternative 3 would have the same footprint as the construction activities required for the Project, similar fugitive dust and off-gassing emission estimates associated with grading and paving activities would occur. Therefore, the following regulatory discussion is a summary of the regulatory framework and requirements over time applicable to off-road and on-road equipment.

2.1 Off-Road Equipment

In July 2007, the California Air Resources Board (CARB) adopted the In-Use Off-road Diesel Vehicle Regulation. All self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the Regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road Diesel Regulation). The overall purpose of the Off-Road Diesel Regulation is to reduce emissions of oxides of nitrogen (NO_X) and particulate matter (PM) from off-road diesel vehicles operating within California. The Off-Road Diesel Regulation

requires all vehicles be reported to CARB and imposes restrictions of adding older vehicles into fleets over time. The Off-Road Diesel Regulation also requires fleet owners to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS), i.e., exhaust retrofits. To achieve emission reductions, the Off-Road Diesel Regulation requires that fleets meet an increasingly stringent set of annual fleet average targets, through 2023 for large and medium fleets, and 2028 for small fleets. The fleet average index is an indicator of a fleet's overall emissions rate determined by the horsepower and model year of each engine in the fleet. If the fleet average index is equal to or less than the fleet average target for a given year, the fleet owner is not required to take further action to reduce emissions from their vehicles. If a fleet owner cannot, or chooses not to, meet the fleet average target in a given year, it may instead comply with the Best Available Control Technology (BACT) requirements. A fleet owner may meet the BACT requirements each year by turning over or installing VDECS on a certain percentage (referred to as the BACT rate) of the fleet's total horsepower (CARB 2021a). Therefore, as the fleet average index decreases per the regulation, emissions from construction contractor fleets are expected to reduce over time.

In May 2021, CARB held a public workshop to begin discussion of potential proposed amendments to the Off-Road Diesel Regulation. The goal of these amendments would be to reduce emissions of criteria pollutants and toxics from off-road diesel vehicles operating in California, beyond the reductions being achieved via the ongoing implementation of the existing Off-Road Regulation. The target of these amendments aligns with the targets set out by the 2020 Mobile Source Strategy, which sets a goal of reducing statewide NO_X emissions from the construction and earth moving sector by 7.5 tons per day by 2031. The intent of the potential amendments CARB is considering is to achieve further emission reductions from the in-use off-road diesel sector by targeting retirement of the oldest and dirtiest equipment in the fleet, and to build upon the current regulation by ensuring that when a fleet adds a vehicle, it is a cleaner vehicle. In addition, CARB will be reviewing other aspects of the current regulation and exploring changes that could result in further emission reductions, improvements to implementation or enforcement, and clarification of the regulation (CARB 2021b). Furthermore, the 2020 Mobile Source Strategy, a scenario planning document which takes an integrated approach to identifying the technology trajectories and programmatic concepts to meet criteria pollutant, GHG, and toxic air contaminant reduction goals from mobile sources, identified the following concepts to move California toward the goal that 100 percent of equipment will be zero-emission by 2035, where technologically feasible:

- Manufacturer requirements to foster clean technology production and sales;
- In-use requirements to accelerate penetration of newer technology;
- Incentive programs to promote and accelerate the use of advanced clean technologies;
- Outreach and education to increase consumer awareness and acceptance of advanced vehicle and equipment technologies; and
- Infrastructure planning and development to support the transition to cleaner technologies.

Moving forward, the concepts contained in the 2020 Strategy will be translated into federally enforceable measures and commitments that will be included in the next State Implementation Plan strategy being developed for the 8-hour ozone standard. Further, the 2020 Strategy will inform mobile source elements of the 2022 Scoping Plan Update and be incorporated into community emission reduction plans and other CARB planning documents to be released in the coming years. The concepts included in the 2020 Strategy will be incorporated into additional planning documents, and further developed into regulations and other programs through formal rulemaking processes (CARB 2021c). Therefore, it is anticipated that as construction occurs in later years, emissions from off-road equipment will decrease.

2.2 On-Road Heavy-Duty Vehicles

As described in the September 2022 Reports, in September 2011, the U.S. Department of Transportation (USDOT) and United States Environmental Protection Agency (USEPA) adopted Phase 1 standards to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses for model years 2014 through 2018. Building on the success of the Phase 1 standards, USEPA and the National Highway Traffic Safety Administration (NHTSA) finalized Phase 2 standards for medium- and heavy-duty vehicles through model year 2027. The Phase 2 standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons (MT). Therefore, over time, as construction equipment fleets turn over older heavy-duty trucks and replace with newer trucks, emissions from heavy-duty trucks are anticipated to decrease.

Under the Truck and Bus Regulation, adopted by CARB in 2008, heavier trucks and buses (gross vehicle weight rating [GVWR] greater than 26,000 pounds) must comply with a schedule by engine model year or owners can report to show compliance with more flexible options. All heavier vehicles with 1996 or newer model year engines should have a PM filter. Vehicles with 1995 model year and older engines should have been replaced by January 1, 2015. By January 1, 2023, all trucks and buses must have 2010 model year engines with few exceptions. Starting in 2020, the California Department of Motor Vehicles began compliance verification to ensure that vehicles subject to the CARB Truck and Bus Regulation meet the requirements prior to obtaining a Department of Motor Vehicles (DMV) registration. Lighter trucks and buses with a GVWR of 14,001 to 26,000 lbs. have replacement requirements starting January 1, 2015. Starting January 1, 2015, lighter vehicles with engines that are 20 years or older had to be replaced with newer trucks (or engines). Starting in 2020, all remaining vehicles need to be replaced so that they all have 2010 model year engines or equivalent emissions by January 1, 2023. CARB has recently adopted a number of regulations for the on-road heavy-duty sector, including Heavy-Duty Warranty Phase and Periodic Smoke Inspection Program (PSIP) Amendments, designed to reduce emissions from heavy-duty truck fleets by mandating vehicles to meet stricter emissions standards, and requiring replacement of older engines with cleaner engine technology that includes diesel particulate filters, NOx controls, and on-board diagnostic systems. As a result of these collective efforts, emissions from heavy-duty vehicles are lower than in previous years and are continuing to decline. Therefore, over time, as construction fleets turn over their equipment to meet these regulations, emissions from construction-related heavy-duty vehicles are expected to decrease.

The 2020 Mobile Source Strategy in California also includes concepts for on-road medium- and heavy-duty vehicles to move California towards the goal that 100 percent of California-registered trucks will be zero-emissions vehicles (ZEVs) by 2045, where feasible. Strategies include to accelerate the transition of California truck fleets to zero emission technology starting in 2023 through both manufacturer and fleet requirements and encourage adoption of clean combustion engines starting in 2024 along with a smog check program for heavy-duty vehicles to ensure clean in-use operation starting in 2023. As described previously, the concepts included in the 2020 Strategy will be incorporated into additional planning documents, and further developed into regulations and other programs through formal rulemaking processes (CARB 2021c). Therefore, it is anticipated that as construction occurs in later years, emissions from on-road heavy-duty vehicles will continue to decrease.

2.3 On-Road Light-Duty Vehicles

As described in the September 2022 Reports, in August 2012, the USDOT and the USEPA issued a joint Final Rulemaking requiring additional federal GHG and fuel economy standards for Phase 2 of the emissions standards for model year 2017 through 2025 passenger cars and light-duty trucks. The standards would require these vehicles to meet an estimated combined average emissions level of 163 grams of carbon dioxide (CO_2) per mile in model year 2025, which is equivalent to 54.5 miles per gallon if the improvements were made solely through fuel efficiency. On March 31, 2022, NHTSA finalized the standards for model year 2024-2026 passenger cars and light-duty trucks. The final rule establishes standards that would require an industry-wide fleet average of approximately 49 miles per gallon for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024 and 2025, and 10 percent annually for model year 2026.

NHTSA's proposal comes as the automobile industry is retooling future models in response to market demand for cleaner, more fuel-efficient vehicles. Nearly all auto manufacturers have announced new electric vehicle models, and five manufacturers have voluntarily agreed with California to achieve stricter GHG requirements. Contrary to the 2020 Safer Affordable Fuel Efficient Vehicles Rule, and consistent with the President's direction in Executive Order 13990, the proposed new fuel economy standards would achieve a fleet average almost nine miles per gallon higher than the 2020 rule by 2026, and would reduce GHG emissions by 1.8 billion tons over the next three decades (NHTSA 2021). In August 2021, under a new Executive Order (Strengthening American Leadership in Clean Cars and Trucks), NHTSA also announced it will begin work to develop fuel economy standards for passenger cars and light duty trucks for model years 2027-2030. Under this Executive Order, the President sets an ambitious new target to make half of all new vehicles sold in 2030 to be ZEVs, including battery electric, plug-in hybrid electric (PHEV), or fuel cell electric vehicles (The White House 2021).

In 2020, Governor Newsom signed Executive Order N-79-202 which established a goal that 100 percent of California sales of new passenger car and trucks be zero-emission by 2035. The 2020 Mobile Source Strategy also includes concepts to achieve zero-emission and cleaner combustion requirements.

The 2020 Mobile Source Strategy is to reduce NO_X emissions from mobile sources 75 percent below 2017 levels by 2031 and 82 percent below 2017 levels by 2037. The 2020 Mobile Source Strategy also proposes to reduce GHG emissions from mobile sources 76 percent below 2020 levels by 2045 (CARB 2021c).

As such, due to regulations at the federal level, and under the goals and actions at the state level, emissions and energy consumption from passenger cars and light-duty trucks are anticipated to decrease as construction occurs in later years. Statewide, the concepts in the 2020 Strategy could achieve criteria pollutant NO_x reductions of over 590 tons per day in 2037 and reduce mobile source fuel consumption by 9.5 billion gallons of gasoline and 3.0 billion gallons of diesel equivalent in 2045. This equates to a well-to-wheel GHG emissions reduction of approximately 94 million metric tons of carbon dioxide equivalent in 2045 (CARB 2021d).

3. Construction-Related Emissions and Energy Consumption

3.1 Air Quality Impacts

Construction of Alternative 3 would also be required to comply with the applicable South Coast Air Quality Management District (SCAQMD) rules and regulations as described in the September 2022 Reports, including Rule 401 (Visible Emissions), Rule 402 (Nuisance), Rule 403 (Fugitive Dust), Rule 403.2 (Fugitive Dust from Large Roadway Projects), and Rule 1113 (Architectural Coatings [Traffic Coatings]) which are developed to implement Air Quality Management Plan (AQMP) control measures.

Construction of Alternative 3 would occur within a 10-year construction timeline; however, the active the construction duration would remain at 5 years, the same as the Project. As described above, emissions from off-road equipment and on-road vehicles are anticipated to decrease as technological advances in combustion engines are achieved and phasing out of older vehicles and equipment occurs as stricter regulations take effect. As summarized in the Regulatory Framework above, there are a variety of strategies and goals at the federal and state level to continue to reduce emissions from the mobile source emission sector. Therefore, the most conservative construction timing assumption for this alternative would span 5 sequential years at the beginning of the 10-year timeframe (2026-2030), similar to the construction timeframe analyzed under the Project in the September 2022 Reports.

As shown in the September 2022 Reports, the Project would result in emissions that would be below the SCAQMD regional and localized thresholds during construction (refer to Section 7.2 of the Air Quality and GHG Emissions Technical Report). Under Alternative 3, because the intensity of construction would be no greater than considered for the Project, construction activities would result in either the same or lower daily emissions than the Project. Alternative 3 would similarly be required to comply with CARB Airborne Toxic Control Measures (ATCMs) which include limits on diesel-fueled on-road and off-road vehicle idling. Additionally, since Alternative 3 could occur at any time within the 10-year timeframe (e.g., within the first five years, within the last five years, or at various combinations of years with periods of inactivity within the overall 10 years), construction activities would not occur as a constant plume of emissions from the project area and construction emissions

would occur at varying distances from the nearest sensitive receptors. Therefore, construction activities under Alternative 3 would also not conflict with the applicable air quality plan, result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard, nor expose sensitive receptors to substantial pollutant concentrations or result in other emissions, such as those leading to odors.

3.2 Greenhouse Gas Emissions Impacts

As described above, under Alternative 3, the total active construction duration would remain at 5 years (and the same maximum intensity of construction activity identified for the Project would remain the same for Alternative 3 within any given year); however, construction activities could occur within a 10-year timeframe, depending on funding availability. Since the total active construction duration would not change and the construction footprint is the same, and GHG emissions are anticipated to decrease as construction occurs in later years, construction of Alternative 3 is anticipated to result in the same or lower emissions than the Project. Therefore, Alternative 3 would also not exceed SCAQMD's adopted significance threshold of 10,000 MT carbon dioxide equivalents (CO_2e) per year, the adjusted SB 32 threshold of 6,000 MT CO_2e per year, nor the SMAQMD threshold of 1,100 MT CO_2e. Thus, Alternative 3 would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

3.3 Energy Impacts

As described in the September 2022 Reports, implementation of the Project would result in energy consumption for the duration of construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). The primary energy demands during construction would be associated with construction equipment and vehicle fueling for on-road and off-road vehicles. Energy in the form of fuel and electricity would be consumed by construction vehicles and equipment operating on-site, haul trucks moving equipment and materials to and from the site, and construction workers driving to and from the site. Since the total active construction duration would not change and the construction footprint is the same, and fuel consumption is anticipated to decrease (as vehicle fuel efficiency increases) due to technological improvements and improved fuel economy standards over time, construction of Alternative 3 is anticipated to result in the same or lower energy consumption as shown for the Project in the September 2022 Reports.

4. Operational Emissions and Energy Consumption

The same Project described in the September 2022 Reports would be proposed; thus, the improved roadway under Alternative 3 would involve the same routine cleaning of all storm drain facilities, removal of graffiti, cleaning of debris, routine pavement rehabilitation, periodic routine bridge maintenance, and similar activities. Further, as described in more detail in the Transportation Impact Analysis (AECOM 2022), the Project is strictly a transportation project, and it does not include any changes in land use for areas adjacent to the corridor or for any other areas. There are no major development proposals or zoning changes contemplated along the corridor and traffic levels from the types of existing land uses in this area are not expected to be substantially affected by the Project. As a

parallel roadway, some motorists are likely using Brea Boulevard to bypass the SR-57 under existing conditions. However, with the implementation of this Project it is expected that the Project conditions will not change substantially and the majority of these motorists, and traffic within the corridor in general, will be primarily local in nature (i.e., having starting points or destinations in the northern Brea area and general vicinity). While the Project would widen a segment of Brea Boulevard from two lanes to four lanes, this widening would only occur on a relatively short segment (approximately 1.5 miles). This corridor improvement within unincorporated Orange County does not affect throughput on Brea Boulevard further north within Brea Canyon (i.e., within Los Angeles County), where an increase in capacity could increase the regional attractiveness of the roadway as an alternative to SR-57; and it only extends as far south as Canyondale Drive, where the widened cross-section would match the existing four-lane cross-section of Brea Boulevard. With several existing/redesigned (and one new) signalized intersections concentrated at the southern end in the City of Brea, the Project would also not be expected to result in substantial travel time reduction relative to SR-57 for non-local motorists. As such, the majority of traffic along the affected segment of Brea Boulevard is expected to continue to be primarily local in nature, and the potential for substantial diversion of regional traffic from parallel arterials or highways as a result of the Project is expected to be minimal and would not be substantial. Furthermore, the vehicle miles travelled (VMT) analysis shows that overall VMT within Orange County would decrease with the Project (approximately 0.23 percent lower with the Project), and the level of service analysis shows that intersections (and segments) along Brea Boulevard would see improvements in level of service and delay, which is inclusive of modeled forecast growth (i.e., approximately 1 percent increase per year over 2019 traffic volumes). Thus, implementation of the Project improvements on Brea Boulevard is anticipated to improve traffic flow and reduce congestion. Therefore, following construction, operational impacts under Alternative 3 are anticipated to be the same as the Project and as analyzed in the September 2022 Reports. Please refer to Sections 7.2 (Air Quality) and 8.2 (GHG Emissions) of the September 2022 Air Quality and GHG Emissions Technical Report and Section 3 of the September 2022 Energy Impact Analysis Technical Memorandum.

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