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WEDGEWORTH K-8 SCHOOL AND RESIDENTIAL DEVELOPMENT PROJECT

for Hacienda La Puente Unified School District

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PLACEWORKS

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Abbreviations and Acronyms

ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ADT	average daily traffic
AQMP	air quality management plan
CAA	Clean Air Act
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CGS	California Geologic Survey
CMP	congestion management program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CTCs	county transportation commissions
CUP	conditional use permit
dB	decibel
dBA	A-weighted decibel
DEIR	draft environmental impact report

Abbreviations and Acronyms

DNL	Day-Night Sound Level
DPM	diesel particulate matter
DSA	Division of State Architect
EIR	environmental impact report
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ES	elementary school
fc	foot-candle
FEIR	final environmental impact report
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCM	Highway Capacity Manual
HLPUSD	Hacienda La Puente Unified School District
HVAC	heating, ventilating, and air conditioning system
ICU	intersection capacity utilization
IPCC	Intergovernmental Panel on Climate Change
kBTU	kilo-British Thermal Units
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LCFS	low-carbon fuel standard
LID	low impact development
LOS	level of service
LST	localized significance thresholds
MCL	maximum contaminant level
MLD	Most Likely Descendent
MM	mitigation measure
MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
MTCO2e	Metric ton of CO2e

Abbreviations and Acronyms

MUTCD	the Manual for Uniform Traffic Control Devices
NAHC	Native American Heritage Commission
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	California Office of Emergency Services
PDF	project design feature
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RDEIR	recirculated draft environmental impact report
RPS	renewable portfolio standard
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SFL	Sacred Lands File
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SR	State Route
SRA	source receptor area [or state responsibility area]
TAC	toxic air contaminants
TIA	traffic impact analysis
TCR	tribal cultural resources
TNM	transportation noise model
TTCP	traditional tribal cultural places
USGS	United States Geological Survey

Abbreviations and Acronyms

V/C	volume-to-capacity ratio
VdB	velocity decibels
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
ZNE	zero net energy

Abbreviations and Acronyms

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1. Executive Summary

1.1 INTRODUCTION

This recirculated draft environmental impact report (RDEIR) addresses the environmental effects associated with the implementation of the proposed Wedgeworth K-8 School and Residential Development Project. The California Environmental Quality Act (CEQA) requires that government agencies consider the environmental consequences before taking action on projects. An environmental impact report (EIR) analyzes a project's potential environmental impacts in order to inform the public and to support informed decisions by local and state governmental agency decision makers. This document focuses on impacts determined to be potentially significant in the Initial Study completed for this project (see Appendix A).

This RDEIR has been prepared pursuant to the requirements of CEQA and the Hacienda La Puente Unified School District's CEQA procedures. The Hacienda La Puente Unified School District, as the lead agency, has reviewed and revised all submitted drafts, technical studies, and reports as necessary to reflect its own independent judgment, including reliance on District technical personnel and review of all technical subconsultant reports.

A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. Pursuant to Section 15088.5(a) of the CEQA Guidelines, "significant new information" requiring recirculation include, for example, a disclosure showing that 1) a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented (Section 15088.5[a][1]); 2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance (Section 15088.5[a][2]).; 3) a feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it (Section 15088.5[a][3]); and 4) the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (*Mountain Lion Coalition v. Fish and Game Com.* (1989) 214 Cal.App.3d 1043) (Section 15088.5[a][4]).

When the original Draft EIR was released on December 5, 2020, replacement field locations were not selected by the District to mitigate significant impacts to recreation resulting from displacing four ballfields from the project site, and the DEIR concluded that recreation impacts were significant and unavoidable. The District subsequently identified two locations for replacement fields:

- Kwis Elementary School (1925 Kwis Avenue in Hacienda Heights). Replacement of one large and one small ballfield, both with sports lighting.

- Cedarlane Academy (16333 Cedarlane Drive in Hacienda Heights). Replacement of two small ballfields without lights.

This Recirculated Draft EIR has been prepared to evaluate environmental impacts that may result from the development and operation of the replacement ballfields as mitigation for impacts to recreation facilities pursuant to the CEQA Guidelines Section 15088.5(a)(1). The analysis is limited to environmental topics that could potentially have significant impact.

The District has identified two new alternatives: Alternative 2: New Expanded K-8 School and Two Baseball Fields Retention Alternative, which would retain two eastern baseball fields, construct a parking lot for the baseball fields, and expand the existing school to a K-8 school with 1,200 student capacity; and Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention Alternative, which would expand the existing school to a K-8 school with 1,200 student capacity, retain all four baseball fields, including a large field shared with the school during school hours, and construct a new parking lot for the baseball fields. These alternatives are considered significant new information pursuant to the CEQA Guidelines Section 15088.5(a)(3).

Data for this RDEIR derive from on-site field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature; and specialized environmental assessments—air quality assessment, noise assessment, traffic impact analysis, and VMT technical memo.

1.2 ENVIRONMENTAL PROCEDURES

This RDEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project and anticipated future discretionary actions and approvals. CEQA established six main objectives for an EIR:

1. Disclose to decision makers and the public the significant environmental effects of proposed activities.
2. Identify ways to avoid or reduce significant environmental impacts.
3. Prevent significant environmental impacts by requiring implementation of feasible alternatives or mitigation measures.
4. Disclose to the public reasons for agency approval of projects with significant environmental impacts.
5. Foster interagency coordination in the review of projects.
6. Enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis, and full disclosure of the environmental consequences of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the lead agency must consider the information in the EIR; determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the project's significant environmental impacts and alternatives; and adopt a statement of overriding considerations if significant impacts cannot be avoided.

1.2.1 EIR Format

Chapter 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this RDEIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Chapter 2. Introduction: Describes the purpose of this RDEIR, background on the project, the notice of preparation, the use of incorporation by reference, and Final EIR certification.

Chapter 3. Project Description: A detailed description of the project, including its objectives, its area and location, approvals anticipated to be required as part of the project, necessary environmental clearances, and the intended uses of this RDEIR.

Chapter 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the notice of preparation was published, from local and regional perspectives. These provide the baseline physical conditions from which the lead agency determines the significance of the project's environmental impacts.

Chapter 5. Environmental Analysis: Each environmental topic is analyzed in a separate section that discusses: the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance after mitigation is incorporated; and the potential cumulative impacts of the proposed project and other existing, approved, and proposed development in the area.

Chapter 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Chapter 7. Alternatives to the Proposed Project: Describes the alternatives and compares their impacts to the impacts of the proposed project. Alternatives include the no project alternative and a reduced intensity alternative.

Chapter 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this EIR.

Chapter 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the project.

Chapter 10. Growth-Inducing Impacts of the Project: Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Chapter 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this EIR.

Chapter 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this RDEIR for the proposed project.

Chapter 13. Bibliography: The technical reports and other sources used to prepare this RDEIR.

Appendices: The appendices for this document (in PDF format on a CD attached to the front cover) consist of these supporting documents:

- Appendix A Kwis ES Replacement Ballfields Lighting Plan
- Appendix B Replacement Ballfields Air Quality/GHG Emissions Data
- Appendix C Replacement Ballfields Noise Data
- Appendix D Replacement Ballfields TIA
- Appendix E VMT Technical Memo
- Appendix F Proposed Project TIA
- Appendix G Baseball Field Hazard Assessment: Wedgeworth E.S.

1.2.2 Type and Purpose of This RDEIR

This Recirculated Draft EIR (RDEIR) has been prepared as a "Project EIR," defined by Section 15161 of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3). This type of EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project—including planning, construction, and operation.

1.3 PROJECT LOCATION

Wedgeworth ES is at 16949 Wedgeworth Drive, Hacienda Heights, Los Angeles County (Assessor's Parcel Number 8209-001-901). It is bounded by the State Route (SR) 60 to the north, Wedgeworth Drive to the south, Eagle Park Road to the west, and Pepperbrook Channel to the east. Hacienda Heights is a community in unincorporated Los Angeles County. The cities of Whittier, La Habra Heights, Diamond Bar, and Industry and the unincorporated communities of Rowland Heights and North Whittier surround Hacienda Heights. Figure 3-1, *Regional Location*, illustrates the project site in regional context, and Figure 3-2, *Local Vicinity*, illustrates the project site in local context. The campus is currently accessed via an enter-only driveway on

Wedgeworth Drive and a full-access driveway on Eagle Park Road. The Eagle Park Road driveway also serves the baseball fields.

1.4 PROJECT SUMMARY

The District is proposing to redevelop the existing Wedgeworth Elementary School and four baseball fields on the 20-acre site to provide a new K-8 school on 10 acres and a residential development with up to 160 units. The existing school has capacity for 600 K-5 students, and the new school would have capacity for 1,200 K-8 students, an increase in enrollment capacity of 600 students.

The existing K-5 facilities are developed in the southeast corner of the project site, and the southwest corner is currently vacant; therefore, the existing K-5 school would continue to operate during construction of the new facilities. See Figure 3-3, *Aerial Photograph*. Once the new K-8 facilities are completed and the school population is relocated to the new facilities, the existing Wedgeworth ES facilities would be vacated and demolished before the potential residential development is constructed. Figure 3-4, *Conceptual Wedgeworth K-8 School and Residential Development Site Plan*, illustrates conceptual site plans for the new K-8 school and 160 residential units. As shown, the new K-8 campus would be constructed in the southwest corner of the project site, and the 160-unit development would border the K-8 school to the north and east.

Figure 3-5, *Proposed K-8 School Site Plan*, shows the latest site plan for the new K-8 school. It would consist of five buildings (Buildings A through E) for classrooms, multipurpose room, administrative space, and other school-supporting facilities such as playfields, hardcourts, kindergarten playground, central courtyard, and surface parking and drop-off areas. The school buildings would total 82,998 square feet and not exceed 30 feet in height, as shown in Figures 6a through 6e, *School Building Elevations*. Individual building square footages would be:

- Building A: 20,587 square feet
- Building B: 11,086 square feet
- Building C: 20,669 square feet
- Buildings D and E: 30,656 square feet

The school would be accessed from two driveways on Eagle Park Road for the main parking and bus drop-off, and three driveways on Wedgeworth Drive for parent drop-off and pick-up.

The District is working with the local baseball league and other local government agencies to identify locations for the displaced baseball fields. The proposed project would be implemented in stages—the school component of the proposed project would be developed first, and the residential component may be implemented at a later date. The K-8 school and the residential development construction would not be concurrent. A conceptual site plan has been developed to evaluate environmental effects based on a conservative development scenario. As shown in Figure 3-4, at buildout the new residential units would border the new K-8 school to the north and east and would be accessed from Eagle Park Road and Wedgeworth Drive. The residential units are envisioned as attached townhomes with two-car garages and guest parking to meet the County's parking requirements.

Project Phasing

The proposed project is scheduled to be developed in two phases. Phase 1 is anticipated to occur in two stages beginning in July 2021 and ending in December 2022. The first stage involves construction of new school facilities on the western portion of the project site, and the second stage involves relocation of the students to the new school. It was assumed that Phase 2 would be completed by 2026. Phase 2 would involve demolition of the existing Wedgeworth ES facilities and construction of a maximum of 160 units, conditioned on future approvals by the County of Los Angeles.

1.5 SUMMARY OF PROJECT ALTERNATIVES

The CEQA Guidelines (Section 15126.6[a]) states that an EIR must address "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives."

As described in Chapter 7, *Alternatives*, the no-project alternative and three development alternatives were identified and analyzed, and their impacts were compared to the impacts of the proposed project.

- Alternative 1: No Project/Existing School Improvement Alternative
- Alternative 2: New Expanded K-8 School and Two Baseball Fields Retention Alternative
- Alternative 3: New Replacement K-5 School and Residential Development Alternative
- Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention Alternative

Selection of the alternatives was based, in part, on their potential ability to reduce or eliminate significant impacts of the proposed project, which are recreation and transportation impacts.

Please refer to Chapter 7 for a complete discussion of how the alternatives were selected and the relative impacts associated with each alternative. The following summarizes each of the alternatives analyzed in the RDEIR. Project objectives are outlined in Section 3.2 and Section 7.1.2.

1.5.1 Alternative 1: No Project/Existing School Improvement Alternative

Under this alternative, the location of the existing Wedgeworth ES would not change, and no new expanded K-8 school facilities would be constructed. However, at least 12 of the existing buildings would need to be replaced due to their condition and age. Therefore, some demolition and construction would occur, but on a much smaller scale than the proposed project. The existing students would also need to be relocated to interim student housing during construction, requiring construction of temporary facilities on the project site and removal of these facilities once the existing buildings are replaced. No residential uses would be developed, and the baseball fields would not be removed but would continue to be used by the Little League teams.

1.5.2 Alternative 2: New Expanded K-8 School and Two Baseball Fields Retention Alternative

Under this alternative, two eastern small baseball fields would be retained, and no residential units would be developed. This alternative is intended to reduce the significant and unavoidable recreation impacts. The project site would be developed as a K-8 school with 1,200 students and would have the same design as the proposed project. Figure 7-1, *Alternative 2: New Expanded K-8 School and Two New Baseball Fields Retention Alternative*, shows the proposed layout for this alternative. As shown, K-8 school development on the 10-acre portion would occur as with the proposed project, and once the students are moved to the new school, the existing Wedgeworth ES facilities would be demolished to provide parking for the baseball field use. Perimeter fencing would be provided along the school boundary to separate the school from the baseball fields. The two eastern baseball fields to remain do not have sports lighting for evening use. Therefore, the fields would be used during daytime only. This alternative would require minor improvements to the existing ballfields for safety reasons per the "Baseball Field Hazard Assessment: Wedgeworth E.S." prepared by Keenan Associates.. This report is included as Appendix G to this RDEIR.

1.5.3 Alternative 3: New Replacement K-5 School and Residential Development Alternative

Under this alternative, the new school would not be expanded. Instead of adding 600 6th through 8th grade students, it would be developed with a maximum capacity of 600 K-5 students on the 10-acre portion of the project site, and the Phase 2 development would be developed as proposed with 160 units on the remaining 10 acres. Figure 7-2, *Alternative 3: New Replacement K-5 School and Residential Development Alternative*, illustrates this alternative. As with the proposed project, all four baseball fields would be displaced. With the maximum capacity of 600 students, it is assumed that two of the classroom buildings could be one story instead of two stories, since the number of classrooms could be reduced by approximately 50 percent. This alternative is intended to reduce the significant transportation impact.

1.5.4 Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention Alternative

Under this alternative, all four baseball fields would remain, and no residential units would be developed. The project site would be developed as a K-8 school with 1,200 students as with the proposed project, but the athletic fields and hardcourts design would be modified to maintain the existing four baseball fields. This alternative is intended to reduce the significant and unavoidable recreation impacts. Figure 7-3, *Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention (One Shared Field) Alternative,* shows the proposed layout for this alternative. As shown, the outfield of the western baseball field would be improved to serve a dual function as a soccer field during school hours. As with the proposed project, a stormwater retention basin would be constructed underneath the soccer field to capture and infiltrate stormwater from the new school. Perimeter fencing would be provided along the school boundary to separate the school from the baseball fields, and a gated access would be allowed for students during physical education (PE) classes. School parking and the student pick-up/drop-off area would not change from the proposed project.

However, a new 114-space replacement parking lot would be constructed for the baseball field use to replace the existing baseball field parking. A new driveway apron would also be provided from Eagle Park Road for the baseball fields. Because the baseball fields are owned by the District and the light poles would be within the boundaries of the school if they were to fall, the existing light poles on the two baseball fields would need to be updated to meet the current Division of State Architect codes for safety, even though the school will not be using the nighttime lighting. This alternative also requires updates to the rest of the baseball fields for safety reasons, as described in the Baseball Field Hazard Assessment: Wedgeworth E.S. in Appendix G of this RDEIR. This alternative would require off-site interim school housing because the existing Wedgeworth ES would need to be demolished for the soccer fields and parking lot construction.

It should be noted that the District is not financially responsible for the necessary improvements to maintain the functionality of the baseball fields, but only for the soccer field, to be constructed on one of the outfields, that students will have access to during school hours. The main campus would be fenced and gated so that school access is prohibited when school is not in session.

1.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to:

1. Whether this EIR adequately describes the environmental impacts of the project.
2. Whether the benefits of the project override the environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the proposed land use changes are compatible with the character of the existing area.
4. Whether the identified goals, policies, and mitigation measures should be adopted or modified.
5. Whether there are other mitigation measures that should be applied to the project besides the mitigation measures identified in the EIR.
6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the EIR must identify areas of controversy known to the lead agency, including issues raised by agencies and the public. Some community members have expressed concerns over displacement of the four baseball fields and the disparity between campuses across the District, some of which also need new facilities. Concerns over existing traffic congestion and lack of parking have also been raised by community members. The originally circulated DEIR took into consideration the comments received from the various agencies and jurisdictions in response to the Notice of Preparation (NOP). Written comments received during the NOP period, which extended from July 29, 2019,

to August 27, 2019, are in Appendix B of the originally circulated DEIR. This Recirculated DEIR evaluates environmental impacts associated with developing and operating replacement ballfields elsewhere to address concerns over displacement of the four baseball fields. The RDEIR also modified project alternatives to address areas of controversy by providing site plan options that retain all or two ballfields on-site.

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-1 summarizes the conclusions of the environmental analysis in the originally circulated DEIR and Section 5.7, Recreation and Section 5.8, Transportation, as modified under this recirculated DEIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also presented.

1. Executive Summary

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Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
5.1 AIR QUALITY				
Impact 5.1-1: The proposed project is consistent with the applicable air quality management plan.	Less Than Significant	No mitigation measures are required.		Not Applicable
Impact 5.1-2: Construction activities associated with the proposed project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	Potentially Significant	AQ-1	The Hacienda La Puente Unified School District (District) shall specify in the construction bid that the construction contractor(s) shall, at minimum, use equipment that meets the EPA's Tier 3 emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower for all building demolition, unless it can be demonstrated to District that such equipment is not available. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by Tier 3 emissions standards for a similarly sized engine, as defined by the California Air Resources Board's regulations. Prior to construction, the project engineer shall ensure that all building demolition plans clearly show the requirement for EPA Tier 3 emissions standards for construction equipment over 50 horsepower for the specific activities stated above. During construction, the construction contractor shall maintain a list of all operating equipment associated with building demolition in use on the site for verification by the District. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations.	Less Than Significant
		AQ-2	The Hacienda La Puente Unified School District (District) shall specify in the construction bid that the construction contractor(s) shall only use interior paints with a low VOC (volatile organic compound) content with a maximum concentration of 30 grams per liter (g/L) for residential building architectural coating to reduce VOC emissions. All building and site plans shall note use of paints with a low VOC content with a maximum concentration of 30 g/L. Prior to construction, the construction contractor(s) shall ensure that all construction plans submitted to the District's Director of Facilities and Maintenance, or designee, clearly show the requirement for use on interior paint with a low VOC content with a maximum concentration of 30 g/L for the specified buildings, herein.	

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.1-3: Long-term operation of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	Less Than Significant	No mitigation measures are required.	Not Applicable
Impact 5.1-4: Construction activities associated with the proposed project could expose sensitive receptors to substantial pollutant concentrations.	Potentially Significant	AQ-3 The Hacienda La Puente Unified School District (District) shall specify in the construction bid that the construction contractor(s) shall water exposed ground surfaces and disturbed areas three times per day during Phase 1 site preparation activities to minimize fugitive dust. Prior to construction, the construction contractor(s) shall ensure that all construction plans submitted to the District's Director of Facilities and Maintenance, or designee, clearly show the watering requirement to control fugitive dust.	Less Than Significant
Impact 5.1-5: Operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations.	Less Than Significant	No mitigation measures are required.	Not Applicable
5.2 ENERGY			
Impact 5.2-1: The proposed project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of electric power and natural gas energy resources.	Less Than Significant	No mitigation measures are required.	Not Applicable
5.3 GEOLOGY AND SOILS (Paleontological Resources)			
Impact 5.3-1: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Less Than Significant	No mitigation measures are required.	Not Applicable

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.4 GREENHOUSE GAS EMISSIONS			
Impact 5.4-1: Implementation of the proposed project would not generate a net increase in GHG emissions, either directly or indirectly, that would have a significant impact on the environment.	Less Than Significant	No mitigation measures are required.	Not Applicable
Impact 5.4-2: Implementation of the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	Less Than Significant	No mitigation measures are required.	Not Applicable
5.5 HYDROLOGY AND WATER QUALITY			
Impact 5.5-1: The proposed project would substantially alter the existing drainage pattern of the site or area through the addition of impervious surfaces, substantially increasing the rate or amount of surface runoff in a manner, therefore could result in flooding on- or offsite.	Potentially Significant	HYD-1 Prior to final grading plan for each phase of the proposed project, the Hacienda La Puente Unified School District and the Project Applicant for residential development shall submit a Low Impact Development (LID) Plan for review and approval by the Director of Public Works that provides a comprehensive, technical discussion of how the proposed project will comply with the requirements of the LID Ordinance and LID Standards Manual and that the proposed project maintains or reduces the project site's predevelopment runoff rates and volumes by using design features that infiltrates, filter, store, evaporate, and/or detain stormwater runoff. The LID Plan must include the following information: • Feasibility of infiltration including a percolation report as part of a geotechnical report prepared by a geotechnical engineer • Source control measure(s) proposed to be implemented • Calculation of the SWQDv • Discussion on whether stormwater runoff harvest and use is feasible • Stormwater quality control measure(s) proposed to be implemented • Proposed hydromodification controls and calculations (if deemed necessary by the Public Works Department) • Proposed maintenance plan (if deemed necessary by the Public Works Department)	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
5.6 NOISE				
Impact 5.6-1: Construction activities would result in a substantial temporary noise increase in ambient noise levels in the vicinity of the project site in excess of local standards.	Potentially Significant	N-1	Prior to issuance of demolition, grading and/or building permits, a note shall be provided on construction plans indicating that during grading, demolition, and construction, the project applicant shall be responsible for requiring contractors to implement the following measures to limit construction-related noise: • Per County of LA requirements, construction activity shall be limited to the hours of 7:00 AM and 7:00 PM on weekdays and Saturdays. Construction activity shall not occur on Sundays or holidays • During the entire active construction period, equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. • Require that impact tools (e.g., jack hammers and hoe rams) be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools. • Stationary equipment such as generators, air compressors shall be located as far as feasible from nearby noise-sensitive uses. • Stockpiling of materials shall be located as far as feasible from nearby noise-sensitive receptors. • At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the District's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the District. • Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the	Less Than Significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes. • During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws. • Erect temporary noise barriers (at least as high as the exhaust of equipment and breaking line-of-sight between noise sources and sensitive receptors) to maintain construction noise levels at or below the performance standard of 60 dBA at the property line of nearby sensitive receptors. Barriers shall be constructed with a solid material that has a density of at least 4 pounds per square foot with no gaps from the ground to the top of the barrier. Effective locations for barriers are shown in Figure 5.6-1, *Approximate Noise Barrier Locations*.	
Impact 5.6-2: Project implementation would not result in a substantial permanent increase in ambient noise levels in the vicinity of the project site in excess of local standards.	Less Than Significant	No mitigation measures are required.	Not Applicable
Impact 5.6-3: The proposed project would not create excessive groundborne vibration and groundborne noise.	Less Than Significant	No mitigation measures are required.	Not Applicable
5.7 RECREATION			
Impact 5.7-1: The proposed project could result in increased use of existing park and recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	Potentially Significant	REC-1 Prior to the opening of the Wedgeworth K-8 School, the Hacienda La Puente Unified School District (District) shall develop two lighted ballfields at the Kwis Elementary School, a Babe Ruth Baseball Field, a small ballfield, and a soccer field. The orientation of the fields, light pole locations, public path of travel for access, restroom/concession building, dugouts, backstops, and other improvements are shown on Figures 5.7-1, *Kwis ES Replacement Ballfields (MM REC-1)*. These fields shall be made available to Little League organizations subject to signed use agreement with the District, and students	Less than significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		from Kwis ES shall have priority access to the fields during school hours. As shown on Figure 5.7-1, the Babe Ruth field will be constructed at the northeast corner of the existing Kwis ES playfield, and public access would be available via a pedestrian pathway through the hardcourts from Kwis Avenue. A gated access shall be available to the adjoining Manzanita Park to the north. A new restroom/concession building shall be constructed near the backstop of the Babe Ruth field, and batting cages with synthetic turf, backstops, and dugouts shall also be provided. On-street parking is available along Kwis Avenue, and on-campus parking at Kwis ES shall be available for the Little League use. REC-2 Prior to the opening of the Wedgeworth K-8 School, the Hacienda-La Puente Unified School District (District) shall develop two small ballfields without lights at the Cedarlane Academy. The orientation of the fields, public path of travel for access, and other improvements are shown on Figure 5.7-2, *Cedarlane Academy Replacement Ballfields (MM REC-2)*. These fields shall be made available to Little League organizations subject to a signed use agreement with the District, and students from Cedarlane Academy shall have priority access to the fields during school hours. As shown on Figure 5.7-2, minor improvements, such as backstops, dugouts, and bleachers, shall be made to the existing Cedarlane Academy playfield to accommodate two small Little League fields without lights. Existing restrooms on the Cedarlane campus shall be made accessible during games and practice. Public access is available via a gate on Fieldgate Avenue. On-street parking is available along Fieldgate Avenue, and on-campus parking shall be available on two lots along Cedarlane Drive.	
Impact 5.7-2: Project implementation could result in environmental impacts to provide new recreational facilities which might have an adverse physical effect on the environment.	Potentially Significant	See Mitigation Measures REC-1 and REC-2	Less than significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.8 TRANSPORTATION			
Impact 5.8-1: The proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	Potentially Significant	TRAN-1 The following improvements shall be provided at intersection #13, Azusa Avenue and Pepper Brook Way. • At the eastbound approach, restripe the approach with one left-turn and one shared-left/thru/right turn lane. • Modify the phasing for the eastbound and westbound approaches to split phase. • Prohibit right turns on red at the westbound approach to avoid conflicts with vehicles making eastbound left turns into Azusa Avenue.	Significant and Unavoidable
Impact 5.8-2: The new K-8 school portion (Phase 1) of the proposed project would be consistent with CEQA Guidelines § 15064.3, subdivision (b), and the residential development portion (Phase 2) of the proposed project would be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).	Potentially Significant	No feasible mitigation measure is available.	Significant and unavoidable
Impact 5.8-3: The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Potentially Significant	TRAN-2 Prior to the opening of the school, Hacienda La Puente Unified School District (District) shall work with the County of Los Angeles to identify traffic signing and striping to be implemented in conjunction with detailed construction plans for the project. A recommended layout is presented in Figure 5.8-3, *Site Access Recommendations*, of the RDEIR. As shown in Figure 5.8-3, the existing signage that marks the existing student drop-off shall be eliminated, and new "No Stopping" should be placed in conformance with design standards from the California Manual of Uniform Traffic Control Devices for Streets and Highways and County of Los Angeles standards. Additionally, appropriate crosswalk and pavement marking shall be installed. The District shall implement signage to request that all motorists move as far forward in the queue as possible; keep small gaps between cars to reduce the queue lengths; provide clear pavement markings and white curb markings to delineate the drop-off/pick-up area; educate parents, students, and staff on drop-off/pick-up procedures; and encourage students to walk to school. TRAN-3 The Applicant of the residential development shall install a stop sign and stop	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			bar or similar traffic control feature at each of the access driveways on Wedgeworth Drive and Eagle Park Road.	
		TRAN-4	A site-specific construction worksite staging and traffic control plan shall be prepared and submitted to the County of Los Angeles and California Department of Transportation (Caltrans) for review prior to the start of any construction work. This plan shall include such elements as the location of any potential partial lane closures, hours during which lane closures (if any) would not be allowed, local traffic detours (if any), and protective devices and traffic controls (such as barricades, cones, flag persons, lights, warning beacons, temporary traffic signals, warning signs). The proposed project will be required to comply with the County-approved plan measures, or Caltrans-approved plan measures if any state facilities are affected.	
5.9 TRIBAL CULTURAL RESOURCES				
Impact 5.9-1: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant pursuant to criteria in Public Resources Code section 5024.1(c).	Potentially Significant	TRC-1	Prior to the issuance of any permits allowing ground-disturbing activities that cause excavation to depths greater than artificial fill, the Hacienda La Puente Unified School District and the Applicant for the residential development shall retain qualified Native American Monitor(s), approved by tribal group who is traditionally and culturally affiliates with the project site and has demonstrated, by a written material, that there is a reason to suggest that there could be a tribal cultural resource (TRC) within the project site, during construction-related ground disturbance activities. The monitor(s) shall be present on-site during construction that involve ground disturbing activities. The Native American monitor(s) shall be responsible for the following activities during the monitoring, as appropriate: • Complete monitoring logs on a daily basis, providing descriptions of the daily activities, including construction activities, locations, soil, and any cultural materials identified. • The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the tribal representatives and monitor have indicated that the site has a low potential for tribal cultural resources. • Upon discovery, the tribal and/or archaeological	Less Than Significant

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		monitor/consultant/consultant shall immediately divert work a minimum of 150 feet and place an exclusion zone around the burial. The monitor/consultant(s) shall then notify the tribe, the qualified lead archaeologist, and the construction manager who shall call the coroner. • Work will continue to be diverted while the coroner determines whether the remains are Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC, as mandated by state law, who will then appoint a Most Likely Descendent (MLD). • The designated MLD shall implement the following or similar treatment measures. • Prior to the continuation of ground-disturbing activities, the land owner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. • In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains shall be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. • The tribe shall make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that the burials will be removed. The tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. • If data recovery is approved by the tribe, documentation shall be taken that includes, at a minimum, detailed descriptive notes and sketches. Additional types of documentation shall be approved by the tribe for data recovery purposes. • Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a	

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the tribe and the NAHC. • Each occurrence of human remains and associated funerary objects shall be stored using opaque cloth bags. All human remains, funerary objects, sacred objects, and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.	
5.10 UTILITIES AND SERVICE SYSTEMS			
Impact 5.10-1: The proposed project would require relocation or construction of new or expanded electric power and natural gas facilities, but the construction or relocation of these facilities would not cause significant environmental effects.	Less Than Significant	No mitigation measures are required.	Not Applicable
Impact 5.10-2: The proposed project would result in a determination by the wastewater treatment provider that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less Than Significant	No mitigation measures are required.	Not Applicable

2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that governmental agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. This recirculated draft environmental impact report (RDEIR) has been prepared to satisfy CEQA and the CEQA Guidelines. The environmental impact report (EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental impacts of the proposed project, to indicate possible ways to reduce or avoid significant environmental impacts, and to identify alternatives or mitigation measures to lessen or avoid the significant impacts of a project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

The lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (CEQA § 21067). The Hacienda La Puente Unified School District (District) has the principal responsibility for carrying out of the Wedgeworth K-8 School and Residential Development Project. For this reason, the District is the CEQA lead agency for this project.

Pursuant to CEQA § 15088.5(a), a lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification.

The intent of the RDEIR is to provide sufficient information on the potential environmental impacts of the whole of the Wedgeworth K-8 School and Residential Development Project to allow the District to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the District are described in Section 3.4, *Intended Uses of the EIR*.

This RDEIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code, §§ 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (CEQA Guidelines), as amended (California Code of Regulations, §§ 15000 et seq.)

The overall purpose of this RDEIR is to inform the lead agency, responsible agencies, decision makers, and the general public about the environmental impacts of the development and operation of the Wedgeworth K-8

2. Introduction

School and Residential Development Project. This RDEIR addresses only the chapters that contain new information pursuant to Section 15088.5.

2.1.1 Notice of Preparation and Initial Study

The District determined that an EIR would be required for this project and issued a Notice of Preparation (NOP) and Initial Study on July 29, 2019 (see Appendix A of the original DEIR). The primary purpose of preparing the Initial Study was to scope the environmental analysis and evaluate potential environmental impacts that might result from project approval. The Initial Study was also used to scope out environmental issues that were determined to be "less than significant" or "no impact." Comments received during the initial study's public review period, from July 29 to August 27, 2019, are in Appendix B of the originally circulated Draft EIR, and Tables 2-1 and 2-2 of the Draft EIR summarize the comments and identify the sections of the Draft EIR where the issues are addressed.

2.1.2 Original Draft EIR

Based on the NOP process and the initial study for the project, the following environmental categories were identified as having the potential to result in significant impacts and were evaluated in the original Draft EIR.

- Air Quality
- Energy
- Geology and Soil
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Noise
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

The DEIR identified two significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. The District must prepare a "statement of overriding considerations" before it can approve the project, attesting that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits outweigh the adverse effects, and therefore the adverse effects are considered acceptable. The impacts found to be significant and unavoidable in the original DEIR were:

- Recreation
- Transportation

The original Draft EIR was prepared and circulated for public review for a period of 45 days from December 5, 2019, to January 21, 2020. The scope of the DEIR was determined based on the District's initial study and

comments received in response to the NOP. A scoping meeting was not conducted pursuant to CEQA Guidelines Section 21083.9, because the proposed project is not a project of statewide, regional, or areawide significance, and the Department of Transportation has not requested a meeting.

A total of 7 comment letters were received from government agencies and 26 comment letters were received from the public during the public review period. Response to these comments will be provided as part of the Final EIR after the Recirculated DEIR is circulated for public review.

2.1.3 Recirculated Draft EIR

A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. Pursuant to Section 15088.5(a) of the CEQA Guidelines, "significant new information" requiring recirculation includes, for example, a disclosure showing that 1) a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented (Section 15088.5[a][1]); 2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance (Section 15088.5[a][2]); 3) a feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it (Section 15088.5[a][3]); and 4) the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded (*Mountain Lion Coalition v. Fish and Game Com.* (1989) 214 Cal.App.3d 1043) (Section 15088.5[a][4]).

When the original Draft EIR was released on December 5, 2020, replacement field locations were not selected by the District to mitigate significant impacts to recreation resulting from displacing four ballfields from the project site, and the DEIR concluded recreation impacts were significant and unavoidable. The District subsequently identified two replacement field locations:

- **Kwis Elementary School (1925 Kwis Avenue in Hacienda Heights).** Replacement of one large and one small ballfield, both with sports lighting.
- **Cedarlane Academy (16333 Cedarlane Drive in Hacienda Heights).** Replacement of two small ballfields without lights.

This RDEIR has been prepared to evaluate environmental impacts that may result from the development and operation of the replacement ballfields as mitigation measures to reduce impacts to recreation facilities pursuant to the CEQA Guidelines Section 15088.5(a)(1). The analysis is limited to environmental topics that could potentially have significant impacts.

The District has also identified two new alternatives: Alternative 2: New Expanded K-8 School and Two Baseball Fields Retention Alternative, which would retain two eastern baseball fields, construct a parking lot for the baseball fields, and expand the existing school to a K-8 school with 1,200 student capacity; and Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention Alternative, which would expand the existing school to a K-8 school with 1,200 student capacity, retain all four baseball fields, including a large field shared

with the school during school hours, and construct a new parking lot for the baseball fields. These alternatives are considered significant new information pursuant to the CEQA Guidelines Section 15088.5(a)(3).

Since the circulation of the original DEIR, methane testing was conducted to evaluate the County of Los Angeles Public Works Department's NOP comment related to a potential oil well at the intersection of Wedgeworth Drive and Eagle Park Road and the methane mitigation system required by the Los Angeles County Building Code Section 110. The Methane Testing Report, included as Appendix H to this RDEIR, concluded that no methane was detected from the soil testing and it is probable that the location of the well depicted on the CalGEM Well Finder website is not the correct location of the former dry well. Therefore, the Methane Testing Report requested that the Los Angeles County Department of Public Works rescind its requirement for the proposed new school buildings to install a methane mitigation system. The County reviewed the Methane Testing Report and concurred with the conclusion, stating that the proposed project is not subject to the methane mitigation review. Therefore, this issue is not addressed further in the RDEIR.

As the lead agency, the District has the authority for preparation of this RDEIR and, after the comment/response process, certification of the Final Recirculated EIR and approval of the proposed project as described in this Recirculated Draft EIR.

2.2 INCORPORATION BY REFERENCE

Some documents are incorporated by reference into this RDEIR, consistent with Section 15150 of the CEQA Guidelines, and they are available for review at the Hacienda La Puente Unified School District Office at 15959 East Gale Avenue, City of Industry, CA 91716.

- Preliminary Environmental Assessment Report, PlaceWorks, May 2019.

2.3 FINAL EIR CERTIFICATION

This RDEIR is being recirculated for public review for 45 days. Interested agencies and members of the public are invited to provide written comments on the RDEIR to the District address shown on the title page of this document. Upon completion of the 45-day review period, the District will review all written comments timely received and prepare written responses for each. A Final EIR (FEIR) will incorporate the timely received comments, responses to the comments, and any changes to the RDEIR that result from comments. The FEIR will be presented to the Hacienda La Puente Unified School District Board of Education for potential certification as the environmental document for the project. All persons who comment on the RDEIR will be notified of the availability of the FEIR and the date of the public hearing before the District.

The RDEIR is available to the general public for review at various locations:

- Hacienda La Puente Unified School District Office at 15959 East Gale Avenue, City of Industry, CA 91716. (*Due to COVID-19, in-person review is by appointment only and must be scheduled by calling 626-933-3932 and asking for Joel Duarte, Director of Purchasing and Warehouse.*)

- District Website: WWW.HLPSCHOOLS.ORG/WSP

2.4 MITIGATION MONITORING

Public Resources Code, Section 21081.6, requires that agencies adopt a mitigation monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Section 21081. Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR.

The Mitigation Monitoring Program for the proposed project will be completed as part of the FEIR, prior to consideration of the project by the Hacienda La Puente Unified School District Board of Education.

2. Introduction

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3. Project Description

3.1 PROJECT LOCATION

Wedgeworth Elementary School (ES) is at 16949 Wedgeworth Drive, Hacienda Heights, Los Angeles County (Assessor's Parcel Number 8209-001-901). It is bounded by State Route 60 (SR-60) to the north, Wedgeworth Drive to the south, Eagle Park Road to the west, and Pepperbrook Channel to the east. Hacienda Heights is a community in unincorporated Los Angeles County. The cities of Whittier, La Habra Heights, Diamond Bar, and Industry and the unincorporated communities of Rowland Heights and North Whittier surround Hacienda Heights. Figure 3-1, *Regional Location*, illustrates the project site in regional context, and Figure 3-2, *Local Vicinity*, illustrates the project site in local context. The campus is currently accessed via an enter-only driveway on Wedgeworth Drive and a full-access driveway on Eagle Park Road. The Eagle Park Road driveway also serves the baseball fields.

3.2 STATEMENT OF OBJECTIVES

Objectives for the Wedgeworth K-8 School project will aid decision makers in their review of the project and associated environmental impacts:

1. Replace Wedgeworth Elementary School, built as a temporary facility and now in poor condition, with a modern, educationally appropriate campus for 1,200 K-8 students.

2. Avoid the need to move students off-site during construction by maintaining the existing campus until the new campus opens.

3. Demolish the existing campus.

4. Create value by seeking rezoning of the remaining property to R-3 (Limited Multiple Residence), which would provide a maximum of 160 dwelling units.

3.3 PROJECT CHARACTERISTICS

"Project," as defined by the CEQA Guidelines, means:

> ... the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700. (14 Cal. Code of Reg. § 15378[a])

3. Project Description

3.3.1 Description of the Project

The proposed project has not changed from that described in the original Draft EIR and is restated here for the reader's convenience.

The District is proposing to redevelop the existing Wedgeworth Elementary School and four baseball fields on the 20-acre site to provide an expanded K-8 school on 10 acres and 160 residential units. The existing school has capacity for 600 K-5 students, and the new school would have capacity for 1,200 K-8 students, an increased enrollment capacity for 600 students.

The existing K-5 facilities are developed in the southeast corner, and the southwest corner of the project site is currently vacant; therefore, the existing K-5 school would continue to operate during construction of the new facilities. See Figure 3-3, *Aerial Photograph*. Once the new K-8 facilities are completed and the school population is relocated to the new facilities, the existing Wedgeworth ES facilities would be vacated and demolished before the potential residential development is constructed. Figure 3-4, *Conceptual Wedgeworth K-8 School and Residential Development Site Plan*, illustrates conceptual site plans for the new K-8 school and 160 residential units. As shown, the new K-8 campus would be constructed in the southwest corner of the project site, and the 160-unit development would border the K-8 school to the north and east.

Figure 3-5, *Proposed K-8 School Site Plan*, shows site plan for the new expanded K-8 school. It would consist of five buildings (Buildings A through E) for classrooms, multipurpose room, administrative space, and other school-supporting facilities such as playfields, hardcourts, kindergarten playground, central courtyard, and surface parking and drop-off areas. The school buildings would total 82,998 square feet and not exceed 30 feet in height. Individual building square footages would be:

- Building A: 20,587 square feet
- Building B: 11,086 square feet
- Building C: 20,669 square feet
- Buildings D and E: 30,656 square feet

The overall bird's-eye perspective view of the proposed project is shown in Figure 3-6, and Figures 3-7 and 3-8 show perspective renderings of Building A (classroom building) and Building B (multipurpose building).

The school would be accessed from two driveways on Eagle Park Road for the main parking and bus drop-off, and three driveways on Wedgeworth Drive for parent drop-off. The school would provide a total of 107 parking spaces.

The proposed project would require displacement of four baseball fields used by the local baseball league, and the District has identified replacement field locations to mitigate the impacts of displacing the four fields. The proposed project would be implemented in stages—the school component of the project would be developed first, and the residential component may be implemented at an unknown later date. The K-8 school and the residential development construction would not be concurrent. As shown in Figure 3-4, at buildout, the new residential units would border the new K-8 school to the north and east and would be

accessed from Eagle Park Road and Wedgeworth Drive. The residential units are envisioned as attached townhomes with two-car garages and guest parking to meet the County's parking requirements.

3.3.1.1 PARKING

The proposed K-8 school provides 107 parking spaces. The County of Los Angeles Code of Ordinances, Section 22.112, Parking, provides minimum required parking spaces for schools. For schools up to grade 6, one space per classroom is required, and grades 7 and up require one space per classroom and one space per five persons based on the occupant load of the auditorium or largest assembly room. Considering 44 classrooms would be provided at the school and the occupant load of the multipurpose room, which would not exceed 300 persons, the minimum parking required per the County code is 104 spaces. Provision of 107 parking spaces would not result in inadequate parking capacity at the school.[1]

The residential development would be required to adhere to the County's minimum parking requirement, which is two covered standard parking spaces per unit for single-family residences. For two-family residences, three covered standard spaces and one covered or uncovered standard space per two-family residence are required. The residential development is anticipated to provide two garage spaces per unit, and therefore would meet the County's minimum parking standards.

3.3.1.2 PROJECT PHASING

The proposed project is scheduled to be developed in two phases. Phase 1 is anticipated to occur in two stages beginning in July 2021 and ending in December 2022. The first stage involves construction of new school facilities on the western portion of the project site, and the second stage involves relocation of the students to the new school. It was assumed that Phase 2 would be completed by 2026. Phase 2 would involve demolition of the existing Wedgeworth ES facilities and construction of a maximum of 160 units, conditioned on future approvals by the County of Los Angeles.

3.4 INTENDED USES OF THE EIR

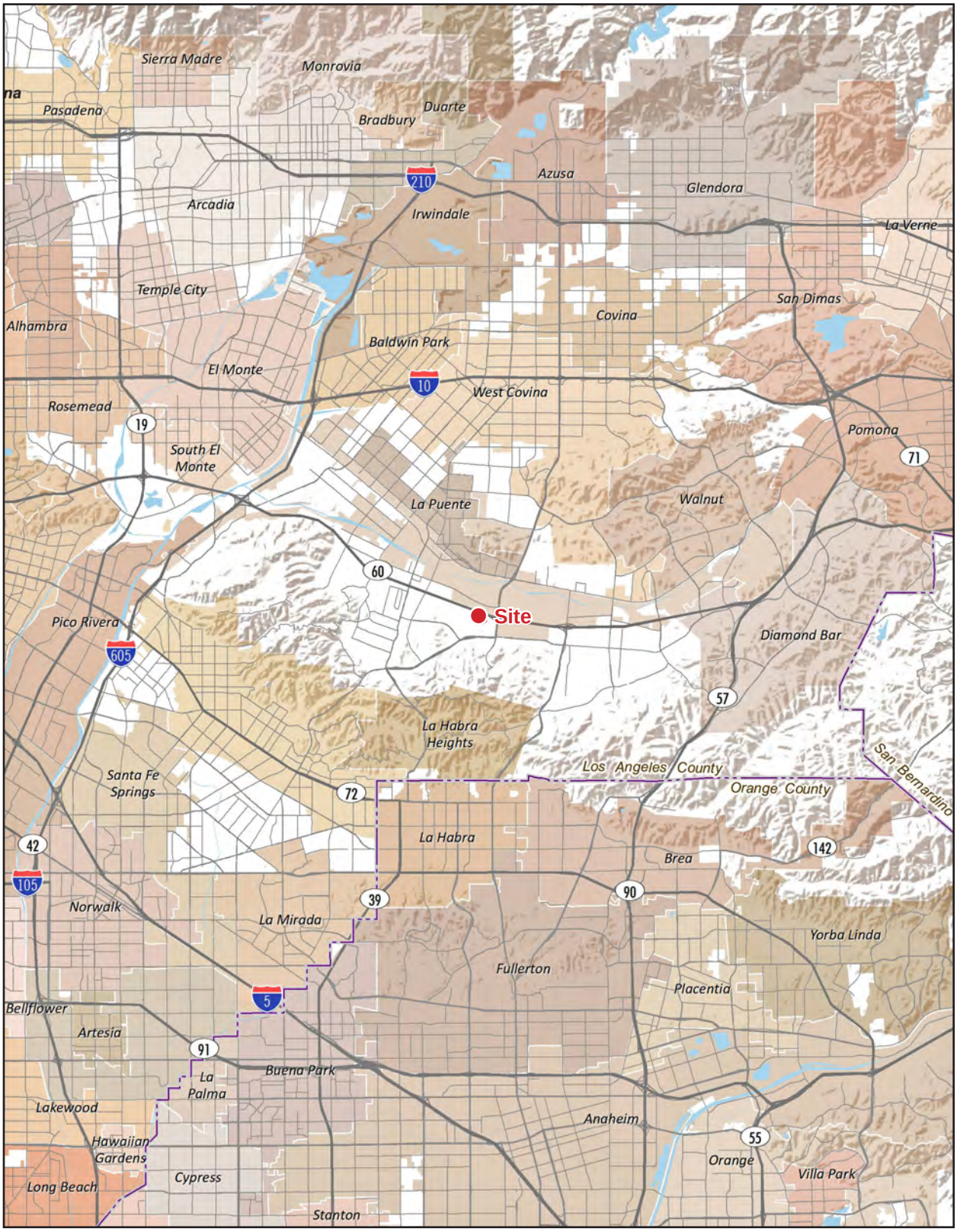
This RDEIR is a project EIR that examines the environmental impacts of the proposed project. This RDEIR also addresses various actions by the District and others to adopt and implement the proposed project. It is the intent of this RDEIR to evaluate the environmental impacts of the proposed project, thereby enabling the District, other responsible agencies, and interested parties to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are listed in the following table.

[1] The topics analyzed in this RDEIR are based on the Appendix G: Environmental Checklist Form of the CEQA Guidelines, and the topic of parking is not considered a physical environmental impact per the CEQA Guidelines. Therefore, parking impact is not addressed in this RDEIR.

3. Project Description

Lead Agency	Action
Hacienda La Puente Unified School District	■ Approve the proposed project. ■ Certify the EIR. ■ Adopt the Mitigated Monitoring and Reporting Program. ■ Approval of exemption of school site from local zoning per Government Code Section 53094 for Wedgeworth K-8 School and joint use ballfields (if applicable), Kwis Elementary School, and Cedarlane Academy.
Responsible Agencies	**Action**
Department of General Services, Division of State Architect	■ Approval of construction drawings
California Department of Education	■ Approval of Final Site Plan
Los Angeles Regional Water Quality Control Board	■ Issue a National Pollutant Discharge Elimination System Permit.
South Coast Air Quality Management District	■ Issue necessary air quality permits to construct: ■ SCAQMD Rule 201 (Permit to Construct) and SCAQMD Rule 203 (Permit to Operate): A permit is required to construct and operate any stationary equipment that generates new emissions (e.g., boiler or emergency generator). ■ SCAQMD Rule 403 (Large Operation Notification Form): The applicant/applicant's construction contractor is required to file a Large Operation Notification Form with SCAQMD for grading activities and prepare and implement a dust control plan.
Rowland Water District	■ Approval of water utility connection.
County of Los Angeles	■ Necessary approvals for the residential development. ■ Permit for curb, gutter, and other offsite improvement permits. ■ Approval of grading plans.
Los Angeles County Fire Department	■ Fire and emergency access.
County of Los Angeles Department of Transportation	■ Approval of construction-related haul route. ■ Approval of new curb cuts and various signage improvements.
Sanitation Districts of Los Angeles County	■ Approval of wastewater utility connection.
Southern California Edison	■ Off-site electrical improvements.

Figure 3-1 - Regional Location
3. Project Description



Note: Unincorporated county areas are shown in white.

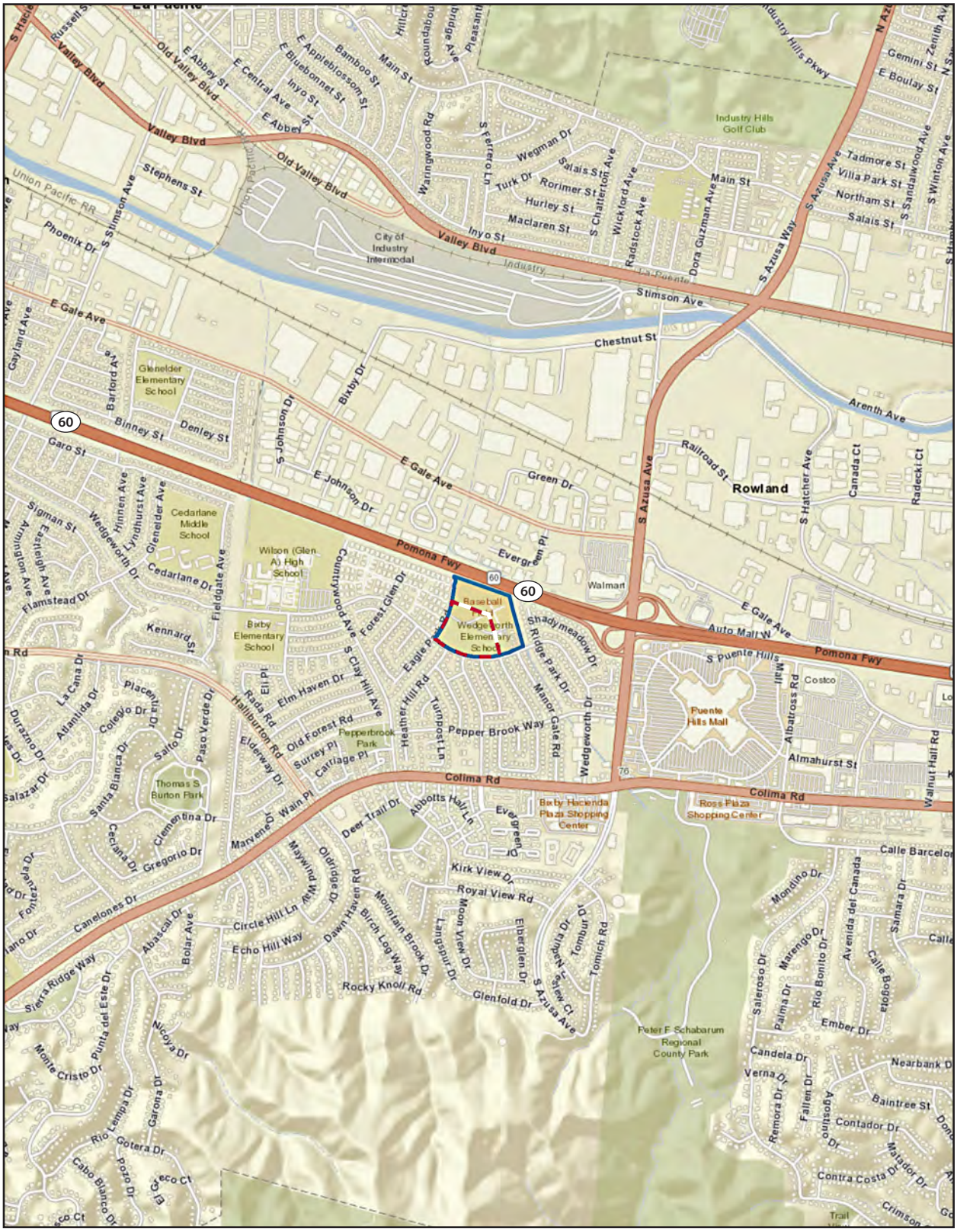
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Scale (Miles)

Source: ESRI, 2018

3. Project Description

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Figure 3-2 - Local Vicinity
3. Project Description



3. Project Description

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Figure 3-3 - Aerial Photograph
3. Project Description



Project Boundary

0 300
Scale (Feet)

Source: ESRI, 2021

3. Project Description

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Figure 3-4 - Conceptual Wedgeworth K-8 School and Residential Development Site Plan



Project Boundary

School Boundary

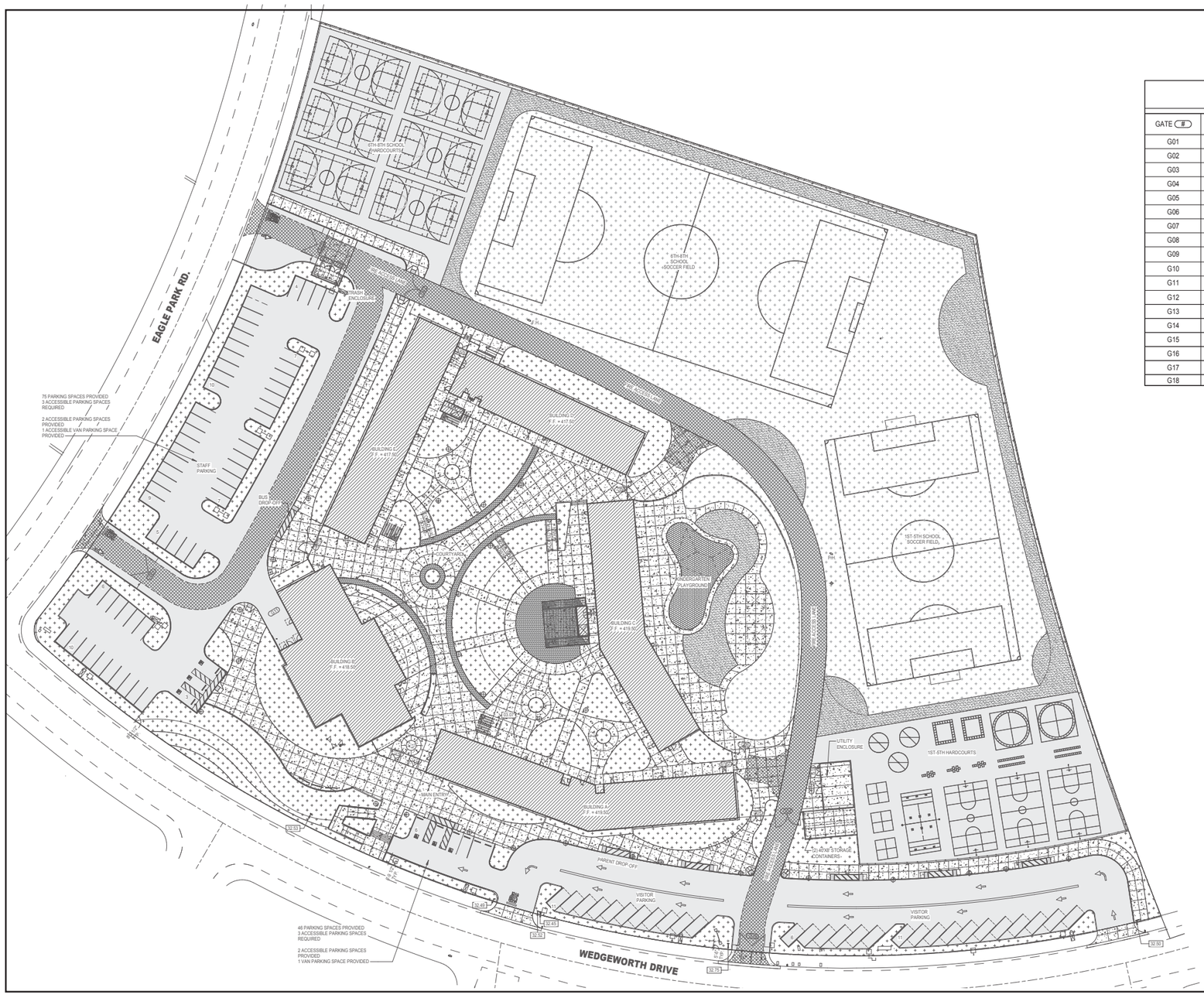
Source: Nearmap, 2019

0 130
Scale (Feet)

3. Project Description

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Figure 3-5 - Proposed K-8 School Site Plan



SITE GATE SCHEDULE

GATE #	SIZE (W X H)	MATERIAL	PANIC HARDWARE	HARDWARE GROUP	DETAIL	REMARKS
G01	(2) 10'-0" X 3'-0"	STEEL	NO	G-1		PIPE BARRIER GATES WITH KNOX BOX
G02	(2) 10'-0" X 3'-0"	STEEL	NO	G-1		PIPE BARRIER GATES WITH KNOX BOX
G03	(2) 10'-0" X 6'-0"	CHAIN LINK	NO	G-2		ACCESS GATE FOR FIRE DEPARTMENT
G04	(2) 10'-0" X 6'-0"	CHAIN LINK	NO	G-2		ACCESS GATE FOR FIRE DEPARTMENT
G05	(2) 4'-0" X 6'-0"	CHAIN LINK	YES	G-3		ACCESSIBLE CHAIN LINK DOUBLE SWING GATES
G06	(2) 4'-0" X 6'-0"	CHAIN LINK	NO	G-4		ACCESSIBLE CHAIN LINK DOUBLE SWING GATES
G07	(2) 4'-0" X 6'-0"	CHAIN LINK	YES	G-3		ACCESSIBLE CHAIN LINK DOUBLE SWING GATES
G08	(2) 4'-0" X 6'-0"	STEEL	YES	G-5		ACCESSIBLE ORNAMENTAL DOUBLE SWING GATES/ KNOX BOX FOR F.D.
G09	(2) 3'-6" X 6'-0"	STEEL	YES	G-5		ACCESSIBLE ORNAMENTAL DOUBLE SWING GATES/ KNOX BOX FOR F.D.
G10	(2) 10'-0" X 6'-0"	STEEL	NO	G-2A		ACCESSIBLE ORNAMENTAL DOUBLE SWING GATES/ KNOX BOX FOR F.D.
G11	(2) 6'-0" X 6'-0"	STEEL	NO	G-6		ACCESSIBLE ORNAMENTAL DOUBLE SWING GATES
G12	(2) 4'-0" X 6'-0"	STEEL	NO	G-4A		ACCESSIBLE ORNAMENTAL DOUBLE SWING GATES
G13	(2) 4'-0" X 6'-0"	STEEL	NO	G-4B		ACCESSIBLE ORNAMENTAL DOUBLE SWING GATES/ KNOX BOX FOR F.D.
G14	(2) 5'-0" X 8'-0"	STEEL	NO	G-6		METAL GATE, PAINTED TO MATCH CMU WALL
G15	(2) 3'-0" X 8'-0"	STEEL	YES	G-6		ACCESSIBLE METAL GATE, PAINTED TO MATCH CMU WALL
G16	(2) 4'-0" X 6'-0"	STEEL	NO	G-6		METAL GATE, PAINTED TO MATCH CMU WALL
G17	(2) 4'-0" X 6'-0"	STEEL	NO	G-6		METAL GATE, PAINTED TO MATCH CMU WALL
G18	(2) 10'-0" X 3'-0"	STEEL	NO	G-1		PIPE BARRIER GATES WITH KNOX BOX

CONSTRUCTION KEYED NOTES

#	Description
03.07	CONC. PAVING CONT. BELOW STAIRS
32.45	DO NOT ENTER SIGN PER 14/A1.21
32.49	STOP SIGN, PER DETAIL 8/A1.21
32.50	TOW AWAY SIGN, REFER TO DETAIL 19/A1.21
32.52	RIGHT TURN ONLY SIGN PER DETAIL 21/A1.21
32.53	TEMPORARY CONSTRUCTION SIGN PER DETAIL 16/A1.21
32.75	FIRE VEHICLULAR ENTRANCE/EXIT ONLY, SEE DETAIL 29/A1.21

SITE PLAN LEGEND

- PROPERTY LINE
- PROPOSED BUILDINGS
- LANDSCAPING, REFER TO LANDSCAPE
- CONC. PAVING, REFER TO CIVIL DWGS. REFER TO SITE PLAN FOR EXPANSION JOINT AND CONTROL JOINT LOCATIONS EJ: EXPANSION JOINT @ 24'-0" MAX., DETAIL DD/C004 CJ: CONTROL JOINT @ 8'-0" MAX., DETAIL BB/C004
- STABILIZED DECOMPOSED GRANITE (DG), REFER TO LANDSCAPE
- DECORATIVE PAVERS, REFER TO LANDSCAPE
- ASPHALT PAVING, REFER TO CIVIL
- RUBBER PLAYGROUND FLOORING

0 100
Scale (Feet)

Source: PBK, 2019

3. Project Description

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Figure 3-6 - Bird's Eye Perspective View
3. Project Description



Bird's-Eye View from South

Source: PBK, 2019

3. Project Description

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Figure 3-7 - Perspective View of the Front Entry
3. Project Description



Main Front Entry to South (View of Buildings A and B)

Source: PBK, 2019

3. Project Description

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Figure 3-8 - Perspective View of the MPR
3. Project Description



Courtyard View to MPR

Source: PBK, 2019

3. Project Description

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4. Environmental Setting

4.1 INTRODUCTION

This section provides a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, ... from both a local and a regional perspective" (Guidelines § 15125[a]), pursuant to provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines The environmental setting provides the baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project.

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

Project Site

Hacienda Heights is an 11.38-square-mile community in unincorporated Los Angeles County, approximately 20 miles east of downtown Los Angeles. The community is bounded by the City of Industry to the north, the cities of Whittier and La Habra Heights to the south, the unincorporated area of North Whittier to the west, and the unincorporated community of Rowland Heights to the east. Regional access is provided via State Route 60 (SR-60) to the north, with Interstate 605 (I-605) approximately 1.25 miles to the west. See Figure 3-1, *Regional Location*.

Mitigation Sites (Replacement Ballfields)

As stated in Chapter 2, *Introduction*, of this RDEIR, when the original DEIR was released on December 5, 2020, the District had not selected replacements sites for the displaced ballfields, and the impact to recreation was found to be significant and unavoidable. The District subsequently identified two District-owned properties, Kwis Elementary School and Cedarlane Academy, as feasible mitigation sites to construct replacement ballfields. As with the project site, these mitigation sites are also in Hacienda Heights, as shown in Figure 4-1, *Regional Location – Replacement Ballfields*.

4.2.2 Regional Planning Considerations

SCAG Regional Transportation Plan/Sustainable Communities Strategy

The Southern California Association of Governments (SCAG) represents Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is the federally recognized metropolitan planning organization for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development,

and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs.

The original DEIR used the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) adopted in April 2016 in the analysis (SCAG 2016). Major themes in the 2016 RTP/SCS include integrating strategies for land use and transportation; striving for sustainability; protecting and preserving existing transportation infrastructure; increasing capacity through improved systems managements; providing more transportation choices; leveraging technology; responding to demographic and housing market changes; supporting commerce, economic growth, and opportunity; promoting the links between public health, environmental protection, and economic opportunity; and incorporating the principles of social equity and environmental justice.

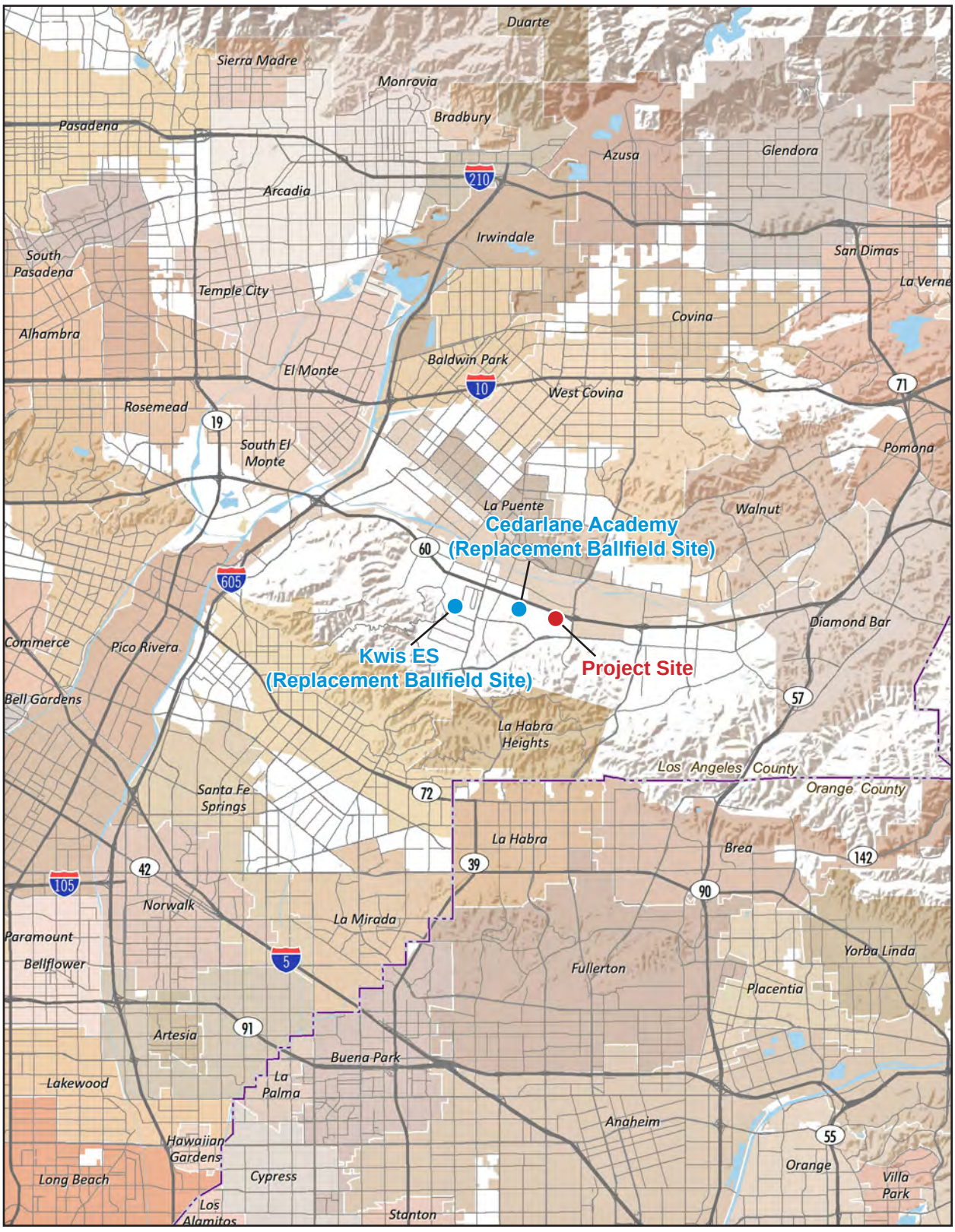
The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas (GHG) emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets identified by the California Air Resources Board. The SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives to governments and developers for consistency.

Since the preparation and circulation of the original DEIR, the Regional Council adopted Connect SoCal (2020-2045 RTP/SCS in September 2020. Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions (CTCs), tribal governments, non-profit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.

South Coast Air Basin Air Quality Management Plan

Hacienda Heights is in the South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District. Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law, and standards are detailed in the SoCAB's Air Quality Management Plan. Air pollutants for which ambient air quality standards (AAQS) have been developed are known as criteria air pollutants—ozone (O_3), carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide, coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead. VOC and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants, such as O_3, through chemical and photochemical reactions in the atmosphere. Air basins are classified as attainment/nonattainment areas for particular pollutants depending on whether they meet AAQS for that pollutant. Based on the SoCAB Air Quality Management Plan, the SoCAB is designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS.

Figure 4-1 - Regional Location - Replacement Ballfields



Note: Unincorporated county areas are shown in white.

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Scale (Miles)

Source: ESRI, 2018

4. Environmental Setting

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Greenhouse Gas Emissions Reduction Legislation

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S 03 05; Executive Order B-30-15; Assembly Bill 32 (AB 32), the Global Warming Solutions Act (2008); and Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act.

Executive Order S 03 05, signed June 1, 2005, set the following GHG reduction targets for the State of California:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

AB 32 was passed by the state legislature on August 31, 2006, to place the state on a course to reducing its contribution of GHG emissions. AB 32 follows the emissions reduction targets established in Executive Order S 3 05. Executive Order B-30-15 also established an interim goal of a 40 percent reduction below 1990 levels by 2030.

In 2008, SB 375 was adopted to connect GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled and vehicle trips. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035.

Regional Water Quality Control Board, Los Angeles

Under the Porter-Cologne Water Quality Act, California's water quality control law, the State Water Resources Control Board has ultimate control over water quality policy and allocation of state water resources. The State Board, through its nine Regional Water Quality Control Boards, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan. Hacienda Heights is in the Los Angeles Basin, Region 4.

The Los Angeles Regional Board's Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. It designates beneficial uses for surface and groundwater; sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy; and describes implementation programs to protect all waters in the region.

4.3 LOCAL ENVIRONMENTAL SETTING

4.3.1 Location and Land Use

Project Site

Wedgeworth ES is at 16949 Wedgeworth Drive, Hacienda Heights, unincorporated Los Angeles County (Assessor's Parcel Number 8209-001-901). It is bounded by SR-60 to the north, Wedgeworth Drive to the south, Eagle Park Road to the west, and Pepperbrook Channel to the east. The campus is currently accessed via an enter-only driveway on Wedgeworth Drive and a full-access driveway on Eagle Park Road. The Eagle Park Road driveway also serves the baseball fields.

The 20-acre project site is currently developed with the Wedgeworth ES facilities and a baseball park with four baseball fields. The main elementary school campus occupies the southeast corner of the project site; the baseball fields and related parking area occupy the northern half of the 20-acre site; and the remaining southwest portion of the project site (approximately 4 acres) is vacant. See Figure 3-3, *Aerial Photograph*. Wedgeworth ES has the maximum capacity to serve 600 students, and the 2018-19 school year enrollment was 542 K-5 students (CDE 2019). The school provides portable classroom buildings, hardcourts, turf playfield, and staff and visitor parking lots. The baseball park is not part of the Wedgeworth ES operation, and its four ballfields were constructed and operated by the Highlander Baseball organization. The project site is in the East San Gabriel Valley Planning Area, Hacienda Heights Community Plan.

The project site was used for agricultural purposes from at least the 1950s through the 1960s until the project site was developed with the existing uses.

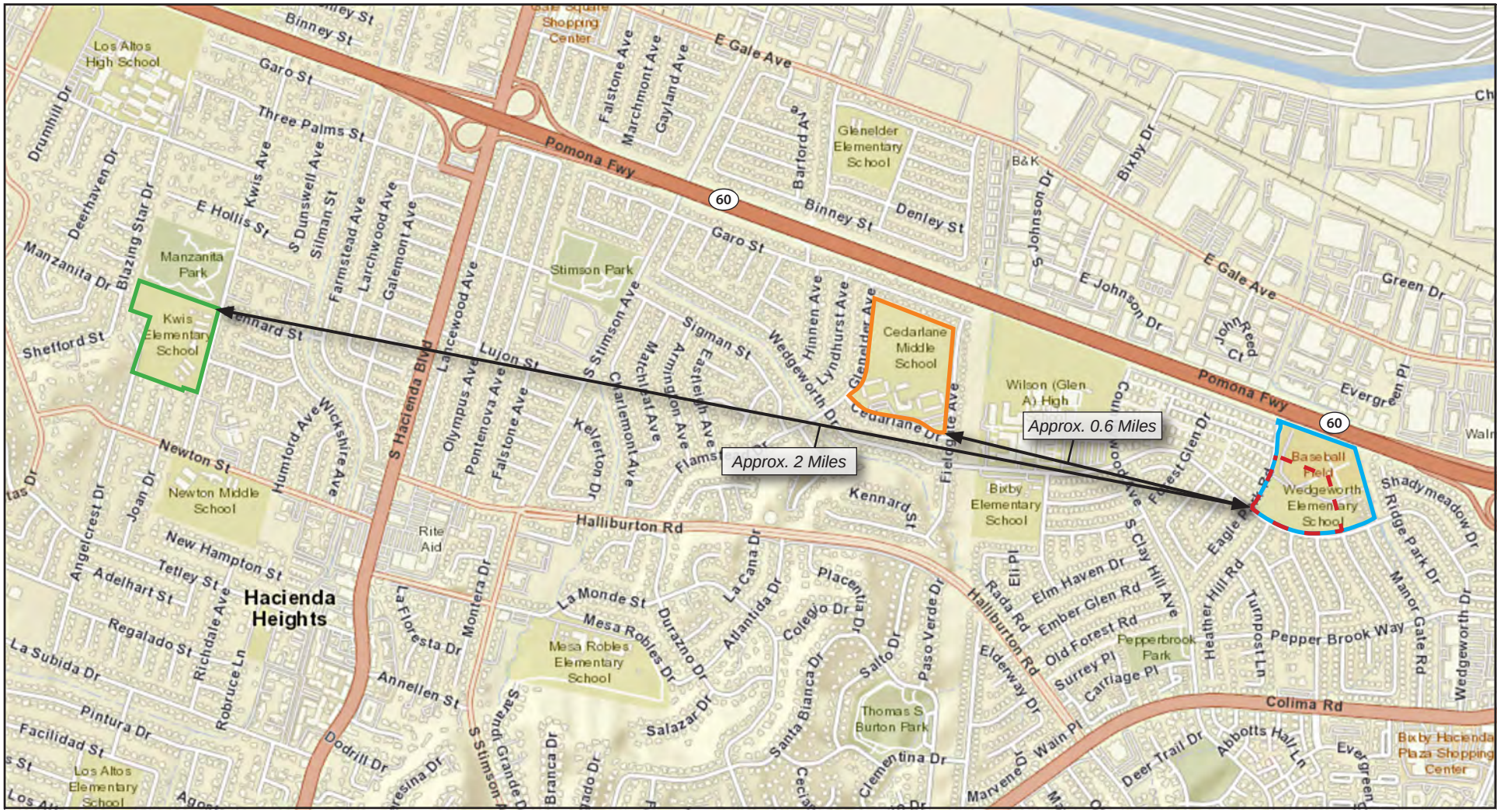
Mitigation Sites (Replacement Ballfields)

Kwis ES is at 1925 Kwis Avenue in Hacienda Heights, approximately two miles west of the project site. Kwis ES is approximately 14.2 acres and is surrounded by residential uses to the east, west, and south and Manzanita Park to the north. Access to Kwis ES is from Kwis Avenue via two driveways—one enter-only driveway to the north, and one exit-only driveway to the south. A gated emergency vehicle access driveway is also provided along the north boundary of the campus. Angelcrest Drive partially borders the campus to the west but only a gated pedestrian access is available. Figure 4-2, *Replacement Fields Location Map*, shows replacement field locations in relation to the project site, and Figure 4-3, *Aerial Photograph – Kwis Elementary School*, shows existing on-site and surrounding land uses.

Cedarlane Academy is 16333 Cedarlane Drive in Hacienda Heights, approximately 0.6 miles west of the project site. Cedarlane Academy is approximately 21.3 acres and is bordered by Fieldgate Avenue to the east, Glenelder Avenue to the west, Cedarlane Drive to the south, and residential units to the north. Residential units are also across the three streets that border Cedarlane Academy. Figure 4-4, *Aerial Photograph – Cedarlane Academy*, shows existing on-site and surrounding land uses.

Figure 4-2 - Replacement Ballfields Location Map

4. Environmental Setting



Source: ESRI, 2020

4. Environmental Setting

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Figure 4-3 - Aerial Photograph - Kwis Elementary School

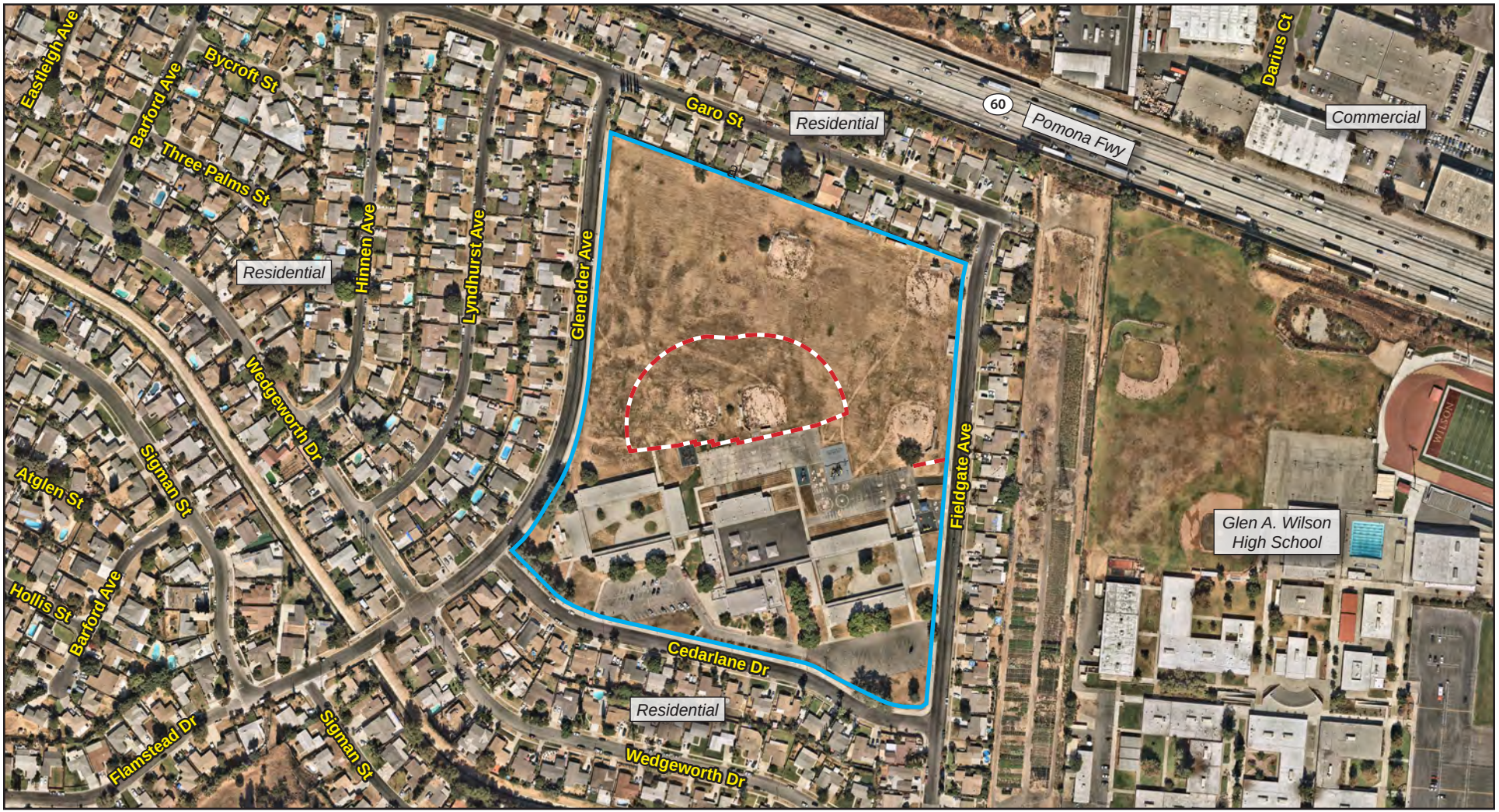


Source: Nearmap, 2020

4. Environmental Setting

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Figure 4-4 - Aerial Photograph - Cedarlane Academy
4. Environmental Setting



Cedarlane Academy

Area of Disturbance

0 350
Scale (Feet)

Source: Nearmap, 2020

4. Environmental Setting

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4.3.2 Surrounding Land Uses

The project site is surrounded by residential uses on three sides, and beyond SR-60 to the north are various business park uses—industrial, manufacturing, retail commercial, etc. Puente Hills Mall, approximately 1,450 feet to the east, has various retail commercial, restaurants, and entertainment uses. Glen A. Wilson High School, Bixby Elementary School, and Cedarlane Academy K-8 are approximately 0.3, 0.4, and 0.6 miles, respectively, to the west of the project site.

4.3.3 Public Services and Utilities

The project site is surrounded by urban development with existing public services and utilities, and the following service providers provide utilities services to the project site:

- Water – Rowland Water District
- Wastewater – Sanitation Districts of Los Angeles County
- Stormwater – Los Angeles County Flood Control District
- Solid Waste – Valley Vista Services
- Electricity – Southern California Edison
- Natural Gas – Southern California Gas Company
- School – Hacienda La Puente Unified School District
- Police – Los Angeles County Sheriff's Department
- Fire – Los Angeles County Fire Department

4.3.4 General Plan and Zoning

The project site is designated H5 Residential 5 (0–5 dwelling unit per acre) by the General Plan (Hacienda Heights Community Plan) and zoned R-A (Residential Agricultural).

The District plans to exempt the project site to be used for the school or joint use ballfields from local zoning regulations and/or development standards pursuant to its authority under Government Code 53094.

4.4 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where the project's incremental effects are cumulatively considerable. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts to be "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

Section 15130 [b][1] of the CEQA Guidelines states that the information utilized in an analysis of cumulative impacts should come from one of two sources:

4. Environmental Setting

- A list of past, present, and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency.
- A summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impact analysis in this RDEIR uses a combination of both methods. Generally, the growth projections used are those identified in the Los Angeles County General Plan for the general plan forecast year conditions. Table 4-1, *Cumulative Projects*, provides a list of cumulative projects obtained from the cities of Industry and La Puente and the County of Los Angeles.

Table 4-1 Cumulative Projects

Project Address	City/County	Project Type	Land Use	Unit
17110 A Colima Road	Los Angeles County	Services	Fast-Food Restaurant without Drive-Through Window	4,000 SF
17110 B Colima Road	Los Angeles County	Services	Fast-Food Restaurant without Drive-Through Window	1,000 SF
16234 Folger Street	Los Angeles County	Residential	Single-Family Detached Housing	86 DU
1085 Bixby Drive	Industry	Industrial	General Office Building	6,000 SF
1067 Larimore	La Puente	Residential	Multi-Family Housing (Low Rise)	5 DU
747 Del Valle	La Puente	Residential	Multi-Family Housing (Low Rise)	45 DU
15921 Sierra Vista	La Puente	Residential	Multi-Family Housing (Low Rise)	5 DU
335 Willow	La Puente	Residential	Single-Family Detached Housing	5 DU
14317 Beckner	La Puente	Residential	Multi-Family Housing (Low Rise)	5 DU

Depending on the environmental category, the cumulative impact analysis may use either the first or second source. Some impacts are site specific, such as cultural resources, and others may have impacts outside the community or county boundaries, such as regional air quality. Please refer to Chapter 5, *Environmental Analysis*, of this RDEIR for a discussion of the cumulative impacts associated with development and growth in the County and region for each environmental resource area.

5. Environmental Analysis

Chapter 5 examines the environmental setting of the proposed project, analyzes the proposed project's effects and the significance of its impacts, and recommends mitigation measures or alternatives to reduce or avoid significant impacts. This chapter only contains sections that are being recirculated, Sections 5.7, *Recreation*, and 5.8, *Transportation*.

The following environmental sections were evaluated in the originally circulated Draft EIR.

- 5.1 Air Quality
- 5.2 Energy
- 5.3 Geology and Soils
- 5.4 Greenhouse Gas Emissions
- 5.5 Hydrology and Water Quality
- 5.6 Noise
- 5.7 Recreation
- 5.8 Transportation
- 5.9 Tribal Cultural Resources
- 5.10 Utilities and Service Systems

This chapter provides a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure are also discussed. Section 5.7 also includes potential impacts associated with mitigation measures proposed for recreation. The mitigation impact analysis is limited to environmental topics that could potentially have significant impacts.

Organization of Environmental Analysis

To assist the reader with comparing information between environmental issues, the two section are organized under the following major headings:

- Environmental Setting
- Thresholds of Significance
- Plans, Programs, and Policies
- Environmental Impacts
- Cumulative Impacts
- Level of Significance Before Mitigation
- Mitigation Measures

5. Environmental Analysis

- Potential Impacts of Mitigation Measure (only for 5.7, *Recreation*)
- Level of Significance After Mitigation
- References

In addition, Chapter 1, *Executive Summary,* has a table that summarizes all impacts by environmental issue.

Terminology Used in This RDEIR

The level of significance is identified for each impact in this RDEIR. Although the criteria for determining significance are different for each topic area, the environmental analysis applies a uniform classification of the impacts based on definitions consistent with CEQA and the CEQA Guidelines:

- **No impact.** The project would not change the environment.
- **Less than significant.** The project would not cause any substantial, adverse change in the environment.
- **Less than significant with mitigation incorporated.** The EIR includes mitigation measures that avoid substantial adverse impacts on the environment.
- **Significant and unavoidable.** The project would cause a substantial adverse effect on the environment, and no feasible mitigation measures are available to reduce the impact to a less than significant level.

5.7 RECREATION

This section of the Recirculated Draft Environmental Impact Report (RDEIR) evaluates the potential for implementation of the proposed project to impact public parks and recreational facilities.

5.7.1 Environmental Setting

5.7.1.1 REGULATORY BACKGROUND

State

Quimby Act of 1975

The Quimby Act of 1975 (California Government Code § 66477) requires the dedication of land and/or fees for public park and recreational purposes as a condition of approval for a tentative map or parcel map. The Quimby Act establishes procedures that can be used by local jurisdictions to provide neighborhood and community parks and recreational facilities and services for new residential subdivisions. It allows cities and counties to require up to five acres of park for every 1,000 residents.

California Public Park Preservation Act

The primary instrument for protecting and preserving parkland is California's Public Park Preservation Act of 1971. Under the Public Resources Code, cities and counties may not acquire any real property that is in use as a public park for any nonpark use unless compensation, land, or both are provided to replace the parkland acquired. This ensures no net loss of parkland and facilities.

Local

Los Angeles County Code

Section 21.24.340, Residential Subdivisions-Local Park Space Obligation-Formula, requires the subdivider of a residential subdivision to provide local park space to serve the subdivision, pay a fee in lieu of the provision of such park land in accordance with the provisions of Section 21.28.140, provide local park space containing less than the required obligation but developed with amenities equal in value to the park fee, or do a combination of the above in accordance with the requirements of the County Code Title 21.

5.7.1.2 EXISTING CONDITIONS

Project Site

The project site is developed with the existing Wedgeworth Elementary School, four baseball fields used by Hacienda Heights Little League, and a vacant lot. Wedgeworth ES has hardcourts, a kindergarten playground, and turf playfields. The baseball fields and supporting facilities include small bleachers, two batting cages, dugouts, press boxes, storage containers, and parking, and two of the four baseball fields are equipped with nighttime lighting.

Hacienda Heights Little League originally played at Salto Field in the 1970s. However, when that District property was turned over to the County, baseball could no longer be played there. In April 1978, Hacienda Heights Little League was allowed access to the vacant field owned by the District until a new permanent school is constructed there, which is the current project site. Wedgeworth ES was constructed in the early 1970s as a temporary facility for instruction until a permanent school could be built. However, by the mid-1970s, student enrollment declined, and the decision to build a permanent facility was postponed. Since 1978 the District-owned fields have been used by Hacienda Heights Little League at no charge, with the initial understanding that field access would only be allowed until the District decides to build a permanent school facility. The project site is not zoned for public or recreational facilities, and the County's Parks and Recreation Department does not list these baseball fields as part of the County facilities.

Surrounding Area

There are four County park facilities within a one-mile radius of the project site:

- Pepperbrook Park (1701 South Countrywood Avenue, Hacienda Heights, CA 91745)
- Thomas S. Burton Park (16493 East Santa Bianca Drive, Hacienda Heights, CA 91745)
- Countrywood Park (16817 East Cooper Hill Road, Hacienda Heights, CA 91745)
- Peter F. Schabarum Regional County Park (17250 East Colima Road, Rowland Heights, CA 91748)

The following District facilities are in Hacienda Heights:

- Bixby Elementary School (16446 Wedgeworth Drive, Hacienda Heights, CA 91745)
- Grazide Elementary (K-5) (2850 Leopold Ave., Hacienda Heights, CA 91745)
- Kwis Elementary (K-5) (1925 S. Kwis Ave., Hacienda Heights, CA 91745)
- Los Altos Elementary (TK-5) (15565 Los Altos Dr., Hacienda Heights, CA 91745)
- Los Molinos Elementary (TK-5) (3112 Las Marias Dr., Hacienda Heights, CA 91745)
- Los Robles Academy (K-5) (1530 Ridley Ave., Hacienda Heights, CA 91745)
- Nelson Elementary (K-6) (330 N. California Ave., Hacienda Heights, CA 91745)
- Palm Elementary (TK-5) (14740 E. Palm. Ave., Hacienda Heights, CA 91745
- Stimson Learning Center (K-12) (1655 S Stimson Avenue, Hacienda Heights, CA 91745)
- Cedarlane Academy (16333 Cedarlane Drive, Hacienda Heights, CA 91745)
- Mesa Robles (16060 Mesa Robles Dr., Hacienda Heights, CA 91745)
- Newton Middle School (15616 Newton Street., Hacienda Heights, CA 91745)
- Orange Grove Middle School (6-8) (14505 Orange Grove Ave., Hacienda Heights, CA 91745)
- Glen A. Wilson High School (16455 Wedgeworth Drive, Hacienda Heights, CA 91745)
- Los Altos High (9-12) (15325 E. Los Robles Ave., Hacienda Heights, CA 9174)5

5.7.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

R-1 Would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

R-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.7.3 Plans, Programs, and Policies

Regulatory Requirement

RR REC-1 The applicant for the future Phase 2 residential development is required to comply with the Los Angeles County Code Section 21.24.340, Residential Subdivisions-Local Park Space Obligation-Formula, and pay a fee in lieu of the provision of local park in accordance with provisions of Section 21.28.140.

5.7.4 Environmental Impacts

5.7.4.1 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.7-1: The proposed project could result in increased use of existing park and recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. [Threshold R-1]

County parks in Hacienda Heights within approximately one mile from the project site are Pepperbrook Park, Thomas S. Burton Park, Countrywood Park, and the Peter F. Schabarum Regional County Park. Substantial physical deterioration or accelerated deterioration of existing parks or recreational facilities could occur if the number of park users increases in the area, generally due to increased population. The residential portion of the proposed project would result in population growth in the area, thereby potentially increasing use of these county parks or other county recreational facilities. The proposed development of 160 residential units could result in an increase of 464 residents in Hacienda Heights. However, considering that Hacienda Heights has experienced a decrease in population since the 2014 General Plan Update, it is anticipated that the existing county parks and recreation facilities could accommodate the increased park users resulting from the additional 160 units in Hacienda Heights. The County's 2014 General Plan projected an increase of 3,494 population in the Hacienda Heights Community Plan Area at buildout (post 2035), from 62,339 residents in 2014 to 65,833 residents. However, the current population in Hacienda Heights per the 2020 Census is 54,155, a decrease of 8,184 residents from the 2014 baseline population. Although increases in park users are proportional to increases in population, considering the number of available parks in the area and the decrease in population in recent years, it is anticipated that the projected population increase from the proposed project would not result in substantial physical deterioration or accelerate the deterioration of the existing recreation facilities. Additionally, as with other residential development projects in the unincorporated county, compliance with the Los Angeles County Code Sections 21.24.340 and 21.28.140 would be required. Section 21.24.340 requires the

developer of a residential subdivision to provide local park space to serve the subdivision or pay a fee in lieu of the provision of such park land in accordance with the provisions of Section 21.28.140, or provide local park space containing less than the required obligation but develop with amenities equal in value to the park fee, or do a combination of the listed options in accordance with the requirements of the County Code Title 21. Therefore, additional park facilities would be provided by the residential portion of the proposed project that would add value to the county recreation system without substantially impacting the existing recreation facilities. Impacts from the residential portion of the proposed project are less than significant.

The new K-8 school would include two soccer fields and hardcourts, thereby creating recreational value to the community. Increases in park usage are usually proportionate to population increases in the park service area, and the proposed development of expanded K-8 school would not result in population growth. However, Hacienda Heights Little League has been using and maintaining four District-owned ballfields, and displacement of these baseball fields would require Hacienda Heights Little League to find other baseball fields to play and practice on. All existing ballfields in the area that are owned by the County already have programs and could not readily accommodate the Little League teams. Any additional use by Little League could result in overuse of the existing recreational facilities, resulting in substantial physical deterioration. Therefore, recreation impacts related to displacement of four ballfields at the site are considered potentially significant.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.7-2: Project implementation could result in environmental impacts to provide new recreational facilities which might have an adverse physical effect on the environment. [Threshold R-2]

Demand for new recreational facilities is typically generated by population growth. Development of 160 residential units, or an increase of 464 residents, in Hacienda Heights could result in additional parkland demand for 1.86 acres. Pursuant to the Los Angeles County Code Sections 21.24.340 and 21.28.140, new recreational facilities may be provided on-site or elsewhere through the payment of in lieu fees. Environmental impacts from providing new off-site recreation facilities are speculative at this time because no sites have been identified; however, construction and operation may result in adverse physical impacts.

The new K-8 school would provide various recreational facilities, such as two soccer fields and hardcourts, and the potential environmental impacts associated with construction of these facilities are addressed throughout this RDEIR. Furthermore, the proposed project would displace four existing baseball fields from the project site (one large ballfield and one small ballfield with sports lighting, and two small ballfields without sport lighting). Demolition of four baseball fields would require the existing Little League baseball teams to relocate and practice and play on other fields in the area; therefore, provision of new and/or expanded baseball fields for the Little League could result in physical environmental impacts. Environmental impacts from construction and operation of the replacement fields are evaluated pursuant to CEQA Guidelines Section 15126.4(a)(1)(D) in Section 5.7.8, *Potential Impacts of Mitigation Measure REC-1*.

Level of Significance Before Mitigation: Potentially significant impact.

5.7.5 Cumulative Impacts

The area considered for cumulative impacts for recreation is the community of Hacienda Heights. Cumulative projects in Table 4-1, *Cumulative Projects*, include one residential and two nonresidential projects in Hacienda Heights, five residential projects in La Puente, and one nonresidential project in the City of Industry. Increases in park usage for existing recreation facilities and demand for new recreational facilities are typically generated by population growth in the area. Therefore, the three nonresidential projects were not considered in this cumulative analysis. And because the cumulative projects in La Puente are more than two miles north of the project site in an incorporated city, those residential projects were also not included in the cumulative analysis.

Impact on Existing Recreation Facilities

The residential portion of the proposed project combined with one cumulative residential project in Hacienda Heights would directly increase total population in Hacienda Heights, creating additional demand for the existing parks and recreational facilities. The proposed project and the cumulative project would result in 246 residential units, increasing the population in Hacienda Heights by 714 residents.[1] However, Hacienda Heights has experienced a decrease in population in recent years, with a 2020 population of 54,155—8,184 less than the 2014 population of 62,339 (County of Los Angeles 2014). The Hacienda Heights Community Plan assumed a total population of 65,833 residents at buildout (post 2035) from 62,339 residents in 2014. Although increases in park users are proportional to increases in population, considering the number of available parks in the area and the decrease in population in recent years, it is anticipated that the projected population increase from the proposed project, combined with the cumulative project, would not result in substantial physical deterioration or accelerate the deterioration of existing recreation facilities. Additionally, compliance with the Los Angeles County Code Sections 21.24.340 and 21.28.140 would require payment of appropriate park in-lieu fees to provide park facilities elsewhere if required parkland cannot be provided on-site. The 714 additional residents would result in demand for an additional 2.85 acres of parkland. Therefore, additional park facilities would be provided by the residential portion of the proposed project, adding value to the County recreation system without substantially impacting existing recreation facilities. The residential portion of the proposed project combined with the cumulative project would not result in a substantial increase in area population that could cause substantial physical deterioration of recreation facilities individually and cumulatively.

Expansion or construction of a public school is not a growth-inducing project, that is, it would not increase population growth and increase demand for existing recreational facilities. However, as discussed in Impact 5.7-1, displacement of four ballfields from the project site may overtax the existing county parks in the area, potentially resulting in accelerated deterioration of these facilities. When combined with the cumulative project, no added cumulative impact would occur. However, because this impact would be individually significant, it would also be cumulatively significant.

Impact of New Recreation Facilities

The residential development portion of the proposed project and the cumulative project are required to provide parkland within the subdivision or pay an in-lieu fee to provide additional park amenities elsewhere in

[1] 246 units x average of 2.9 persons per household = 713.4

compliance with the Los Angeles County Code Sections 21.24.340 and 21.28.140. It is anticipated that approximately 2.85 acres of combined parkland may need to be constructed for the residential development portion of the proposed project and when combined with cumulative projects, greater than 2.85 acres of parkland is necessary. However, no off-site parkland has been identified, and without a specific offsite park location, environmental impacts to provide new recreation facilities would be speculative and significant.

Displacement from the project site of four ballfields that the Little League baseball teams currently use would increase the use of other ballfields in the community and might result in the need for additional recreation facilities. Although the District is not required to comply with the Los Angeles County Code Sections 21.24.340 and 21.28.140 to provide additional facilities, the additional use may overtax existing fields, requiring development of additional facilities. The proposed project may result in a significant cumulative impact individually and cumulatively.

5.7.6 Level of Significance Before Mitigation

Without mitigation, the following impact would be **potentially significant**:

- **Impact 5.7-1** Displacement of the baseball fields could increase the use of other baseball fields or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

- **Impact 5.7-2:** Displacement of the baseball fields could result in environmental impacts to provide new and/or expanded recreational facilities which might have an adverse physical effect on the environment.

5.7.7 Mitigation Measures

The proposed project would displace four baseball fields at the project site, one large and one small field with nighttime sports lighting, and two small fields without sports lighting. The District reviewed its existing school campuses to determine if any were of sufficient size to accommodate the fields without compromising physical education and recreational needs of the schools. The District also considered existing county parks (including Manzanita Park, which is adjacent to Kwis Elementary School) until the County stated that it would not allow the reduction of its park space for this purpose. In addition, the large grade difference between Kwis Elementary School and Manzanita Park would make it infeasible to construct a field that straddles the boundary of the Kwis campus and Manzanita Park.

Upon careful review and consideration, the District identified Kwis ES and Cedarlane Academy as possible replacement ballfield locations. Kwis ES is at 1925 Kwis Avenue, approximately 2 miles west of the project site, and Cedarlane Academy at 16333 Cedarlane Drive, approximately 0.6 miles west of the project site. Figure 4-2, *Replacement Ballfields Location Map*, shows locations of the replacement fields in relation to the project site, and Figures 4-3 and 4-4 show aerial photographs of those locations.

5.7.7.1 KWIS ELEMENTARY SCHOOL REPLACEMENT BALLFIELDS

The District is considering development of one large baseball field and one small baseball field, both with sports lighting, on the existing Kwis Elementary School playfield (Kwis site or Kwis ES site), as shown in Figure 5.7-1, *Kwis Elementary School Replacement Ballfields (MM REC-1)*. The District would exempt the Kwis site from local zoning regulations and/or development standards pursuant to its authority under Government Code 53094 for this action. A soccer field would also be constructed at the northwest corner of the playfield. The construction of the replacement fields would displace three small ballfields on the Kwis ES playfield. It would disturb approximately 5.9 acres of the Kwis ES and require 6,020 cubic yards (cy) of soil import and 5,000 cy of cut/fill to balance the site.

The large baseball field would have eight light poles (four 80-foot-high poles and four 70-foot-high poles) with 55 luminaires, and its two southern poles would also light the small ballfield; four additional 70-foot light poles with 21 luminaires would be installed to light the small field. The light poles would use shielded LED luminaires. The lighting plan for the ballfields is in Appendix A to the RDEIR. Both fields would have 6- to 10-foot chain-link fencing around the field areas, 15- to 30-foot netting above, and dugouts and backstops. Kwis ES replacement ballfields would also provide a total of four batting cages with 8-foot fencing, portable bleachers, and an approximately 820-square-foot restroom/concession building. Pedestrian access would be available from Kwis Avenue via the existing driveway to the north and from the parking lot through the hardcourts area. Parking demands for the Little League teams would be accommodated by the on-street parking available along Kwis Avenue and the Kwis ES parking lot.

5.7.7.2 CEDARLANE ACADEMY REPLACEMENT BALLFIELDS

The District is also considering construction of two small ballfields without lights on the existing Cedarlane Academy playfield north of the hardcourts (Cedarlane site). See Figure 5.7-2, *Cedarlane Academy Replacement Ballfields (MM REC-2)*. The District would exempt the Cedarlane site from local zoning regulations and/or development standards pursuant to its authority under Government Code 53094 for this action. Construction of the fields would replace two existing ballfields that are in poor condition. It would disturb approximately 2.53 acres of the existing playfield and result in 1,280 cubic yards (cy) of soil import and 1,000 cy of cut/fill to balance the site. New backstops, dugouts, 6- to 10-foot chain-link fencing, and 15-foot netting above the chain-link fencing at the backstop would be provided. The existing Cedarlane Academy's restroom would be available during practices and games for the little league team's use. Public access would be available from Fieldgate Avenue to the east through a gated walkway. Street parking is available on Fieldgate Avenue. Cedarlane Academy's parking lots would also be available for the replacement ballfields use, and parking lot access is provided from Fieldgate Avenue and Cedarlane Drive.

5.7.7.3 IMPACTS 5.7-1 AND 5.7-2 MITIGATION MEASURES

MM REC-1 Prior to the opening of the Wedgeworth K-8 School, the Hacienda La Puente Unified School District (District) shall develop two lighted ballfields at the Kwis Elementary School, a Babe Ruth Baseball Field, a small ballfield, and a soccer field. The orientation of the fields, light pole locations, public path of travel for access, restroom/concession building, dugouts, backstops, and other improvements are shown on Figures 5.7-1, *Kwis ES Replacement Ballfields*

(MM REC-1). These fields shall be made available to Little League organizations subject to signed use agreement with the District, and students from Kwis ES shall have priority access to the fields during school hours. As shown on Figure 5.7-1, the Babe Ruth field will be constructed at the northeast corner of the existing Kwis ES playfield, and public access would be available via a pedestrian pathway through the hardcourts from Kwis Avenue. A gated access shall be available to the adjoining Manzanita Park to the north. A new restroom/concession building shall be constructed near the backstop of the Babe Ruth field, and batting cages with synthetic turf, backstops, and dugouts shall also be provided. On-street parking is available along Kwis Avenue, and on-campus parking at Kwis ES shall be available for the Little League use.

MM REC-2 Prior to the opening of the Wedgeworth K-8 School, the Hacienda-La Puente Unified School District (District) shall develop two small ballfields without lights at the Cedarlane Academy. The orientation of the fields, public path of travel for access, and other improvements are shown on Figure 5.7-2, *Cedarlane Academy Replacement Ballfields (MM REC-2)*. These fields shall be made available to Little League organizations subject to a signed use agreement with the District, and students from Cedarlane Academy shall have priority access to the fields during school hours. As shown on Figure 5.7-2, minor improvements, such as backstops, dugouts, and bleachers, shall be made to the existing Cedarlane Academy playfield to accommodate two small Little League fields without lights. Existing restrooms on the Cedarlane campus shall be made accessible during games and practice. Public access is available via a gate on Fieldgate Avenue. On-street parking is available along Fieldgate Avenue, and on-campus parking shall be available on two lots along Cedarlane Drive.

5.7.8 Potential Impacts of Mitigation Measures

The development and operation of replacement fields in other locations have the potential to create new significant impacts. Potential impacts that would result from implementation of mitigation measures must be discussed as provided in CEQA Guidelines §15126.4(a)(1)(D):

> If a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measures shall be discussed but in less detail than the significant effects of the project as proposed.

Figure 5.7-1 - Kwis ES Replacement Ballfields (MM REC-1)

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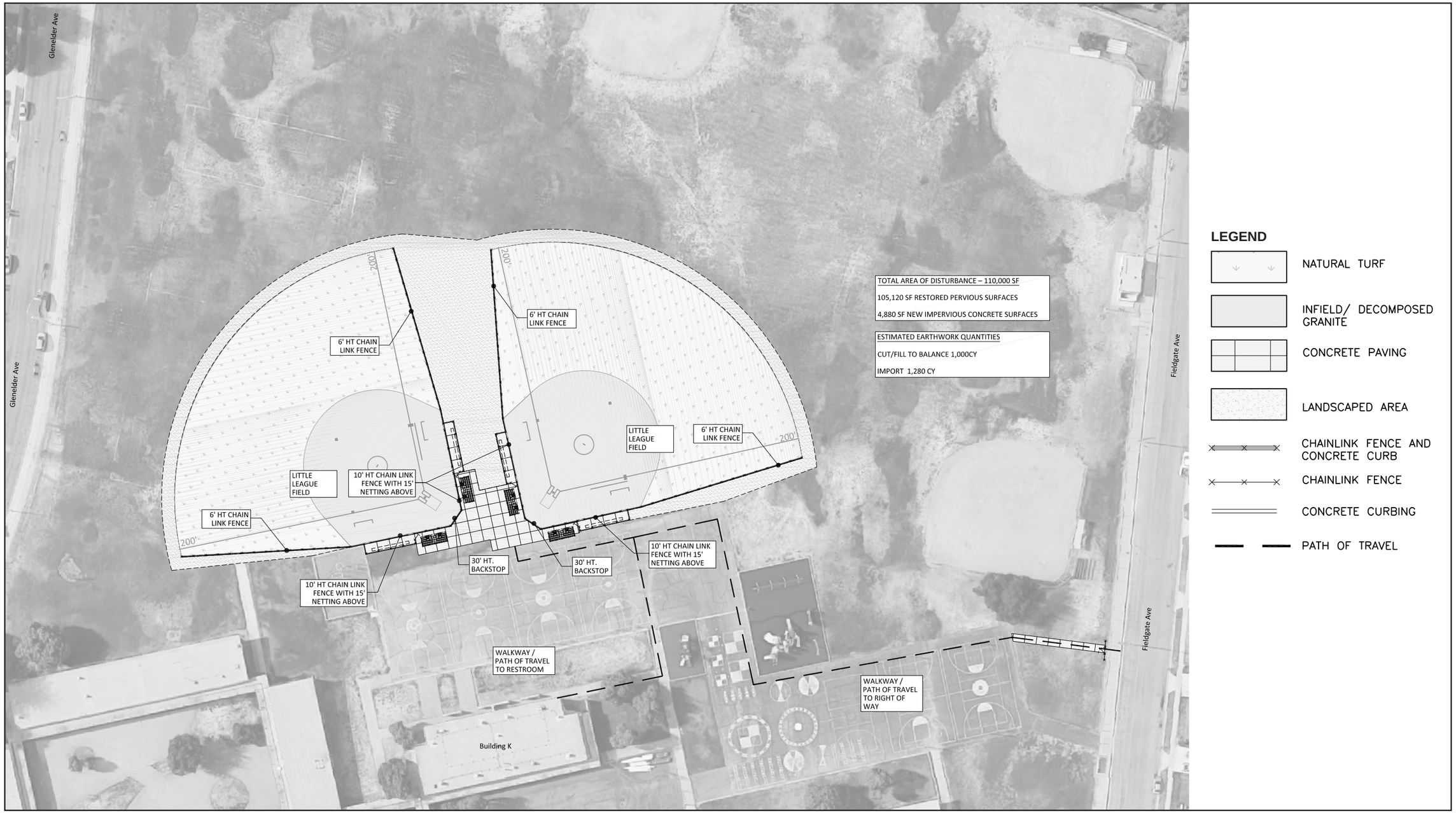


Source: Da Hogan, 2021

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RECREATION

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Figure 5.7-2 - Cedarlane Academy Replacement Ballfields (MM REC-2)



Source: Da Hogan, 2018

5. Environmental Analysis
RECREATION

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Therefore, potential environmental impacts from development of replacement fields as provided in Mitigation Measures REC-1 and REC-2 have been analyzed below. The analysis is limited to environmental topics that could potentially have significant impacts. Appendix G, Environmental Checklist Form, from the CEQA Guidelines was used to evaluate impacts from implementing each of the mitigation measure option.

5.7.8.1 AESTHETICS

Would the mitigation measure have a substantial adverse effect on a scenic vista?

Mitigation Measure REC-1

Implementation of Mitigation Measure REC-1 would replace two ballfields and add sports lighting at Kwis Elementary School (ES). Kwis ES is fully developed with school facilities, and its surrounding areas are developed with residential uses. There are no designated viewing points or viewsheds for a scenic vista. Kwis ES is approximately 0.5 miles south of SR-60, and SR-60 is not designated a scenic highway. Implementation of MM REC-1 would not obstruct any scenic viewshed or alter protected views in the area. No adverse effect on a scenic vista would occur.

Mitigation Measure REC 2

Implementation of MM REC-2 would replace two unlit ballfields at Cedarlane Academy. Cedarlane Academy is fully developed with school facilities, and its surrounding areas are developed with residential uses. There are no designated viewing points or viewsheds for a scenic vista. Cedarlane campus is approximately 300 feet south of SR-60, and SR-60 is not designated a scenic highway. Implementation of MM REC-2 would not obstruct any scenic viewshed or alter protected views in the area. No adverse effect on a scenic vista would occur.

In an urbanized area, would the mitigation measure conflict with applicable zoning and other regulations governing scenic quality?

Mitigation Measure REC-1

Kwis ES is designated H-5 (Residential 5 [0–5 du/ac]) by the Hacienda Heights Community Plan Land Use Map and R-A-10000 (Rural Agriculture) by the zoning map. Kwis campus is in an urbanized area, surrounded by residential uses on the east, west, and south and by Manzanita Park to the north. Manzanita Park is also surrounded by residential uses. The County Code permits a school use in the R-A zone with a conditional use permit (CUP) (LA County Code, Table 22.18.030-B: Principal Use Regulations for Residential Zones). However, the District plans to exempt the Kwis site from local zoning regulations and/or development standards pursuant to its authority under Government Code 53094, and a CUP is not required. Development of ballfields would not conflict with the existing school use, and there are no applicable regulations governing scenic quality.

Development of two ballfields and a soccer field at Kwis ES, as shown on Figure 5.7-1, would replace three existing ballfields at Kwis campus. There are no protected scenic views on-site or in the surrounding area. Although implementation of MM REC-1 would remove existing mature trees on-site, they are not native oak trees, and any tree removal would occur in compliance with the County's Urban Forestry Program Manual. The

mitigation measure would not conflict with any regulations governing scenic quality. Impacts would be less than significant.

Mitigation Measure REC-2

Cedarlane Academy is designated H-5 by the Hacienda Heights Community Plan Land Use Map and R-A (Rural Agriculture) by the zoning map. Cedarlane campus is in an urbanized area, surrounded by residential uses on all four sides. The County Code permits a K-8 school use in the R-A zone with a CUP (LA County Code, Table 22.18.030-B: Principal Use Regulations for Residential Zones). However, the District plans to exempt the Cedarlane site from local zoning regulations and/or development standards pursuant to its authority under Government Code 53094. As a state agency, the District does not need to comply with local zoning regulations and/or development standards, and a CUP is not required. Development of two ballfields at Cedarlane Academy, as shown on Figure 5.7-2, would be compatible with the existing school uses because the replacement ballfields would be constructed on the existing playfield. Cedarlane's playfield has five ballfields with backstops, and implementation of MM REC-2 would replace two of the existing ballfields. No trees will be removed. All ballfields at the Cedarlane campus are in very poor condition, with old and broken sprinkler systems and red-ant holes throughout the fields. Instead, the mitigation measure would improve the existing field condition by grading the fields and providing new chain-link fence, netting, backstops, and dugouts. The mitigation measure would not conflict with any regulations governing scenic quality. Impacts would be less than significant.

Would the mitigation measure create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Light and glare impacts are determined through a comparison of the existing light sources with the proposed lighting plan. If the project has the potential to generate spill light on adjacent sensitive receptors or generate glare at receptors in the vicinity of the site, mitigation measures can be provided to reduce potential impacts. The following provides relevant lighting assessment terminology used in this analysis.

Foot-candle. The unit of measure expressing the quantity of light on a surface. One foot-candle is the illuminance produced by a candle on a surface of one square foot from a distance of one foot. The general benchmarks for light levels are shown in Table 5.7-1.

Table 5.7-1 General Light Levels Benchmark

Outdoor Light	Foot-candles
Sunlight	10,000
Full Daylight	1,000
Overcast Day	100
Very Dark Day	10
Twilight	1
Deep Twilight	0.1
Full Moon	0.01
Quarter Moon	0.001
Starlight	0.0001
Overcast Night	0.00001
Gas station canopies	25–30
Typical neighborhood streetlight	1.0–5.0

Source: NOAO 2016.

Horizontal foot-candle. The amount of light received on a horizontal surface such as a roadway or parking lot pavement.

Vertical foot-candle. The amount of light received on a vertical surface such as a billboard or building façade.

Lumen. A unit of measure for quantifying the amount of light energy emitted by a light source. In other words, foot-candles measure the brightness of the light at the illuminated object, and lumens measure the amount of light radiated by the light source.

Spill light. Light from a lighting installation that falls outside the boundaries of the property for which it is intended.

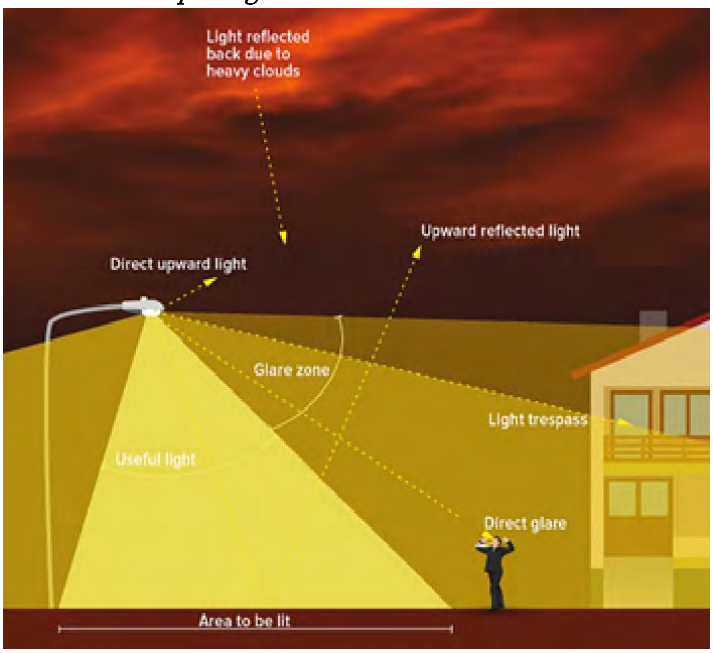
Light trespass. Spill light that, because of quantitative, directional, or type of light, causes annoyance, discomfort, or loss in visual performance and visibility. Light trespass is light cast where it is not wanted or needed, such as light from a streetlight or a floodlight that illuminates someone's bedroom at night, making it difficult to sleep. As a general rule, taller poles allow fixtures to be aimed more directly on the playing surface, which reduces the amount of light spillage into surrounding areas. Proper fixture angles ensure even light distribution across the playing area and reduce spill light.

Glare. Light that causes visual discomfort or disability or a loss of visual performance when a bright object appears against a dark background. Glare can be generated by building-exterior materials, surface-paving materials, vehicles traveling or parked on roads and driveways, and sports lights. Any highly reflective façade material is a concern because buildings can reflect bright sunrays.

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The concepts of spill light, direct glare, and light trespass are illustrated in Illustration A, *Spill Light and Glare*, below, from the International Dark-Sky Association (IDA 2020).

Illustration A. Spill Light and Glare



Spill light impact varies according to surrounding environmental characteristics. Areas that are more rural in character are more susceptible to impacts resulting from the installation of new artificial lighting sources, whereas urbanized areas are characterized by many existing artificial lighting sources and are less susceptible to adverse effects associated with new artificial lighting sources.

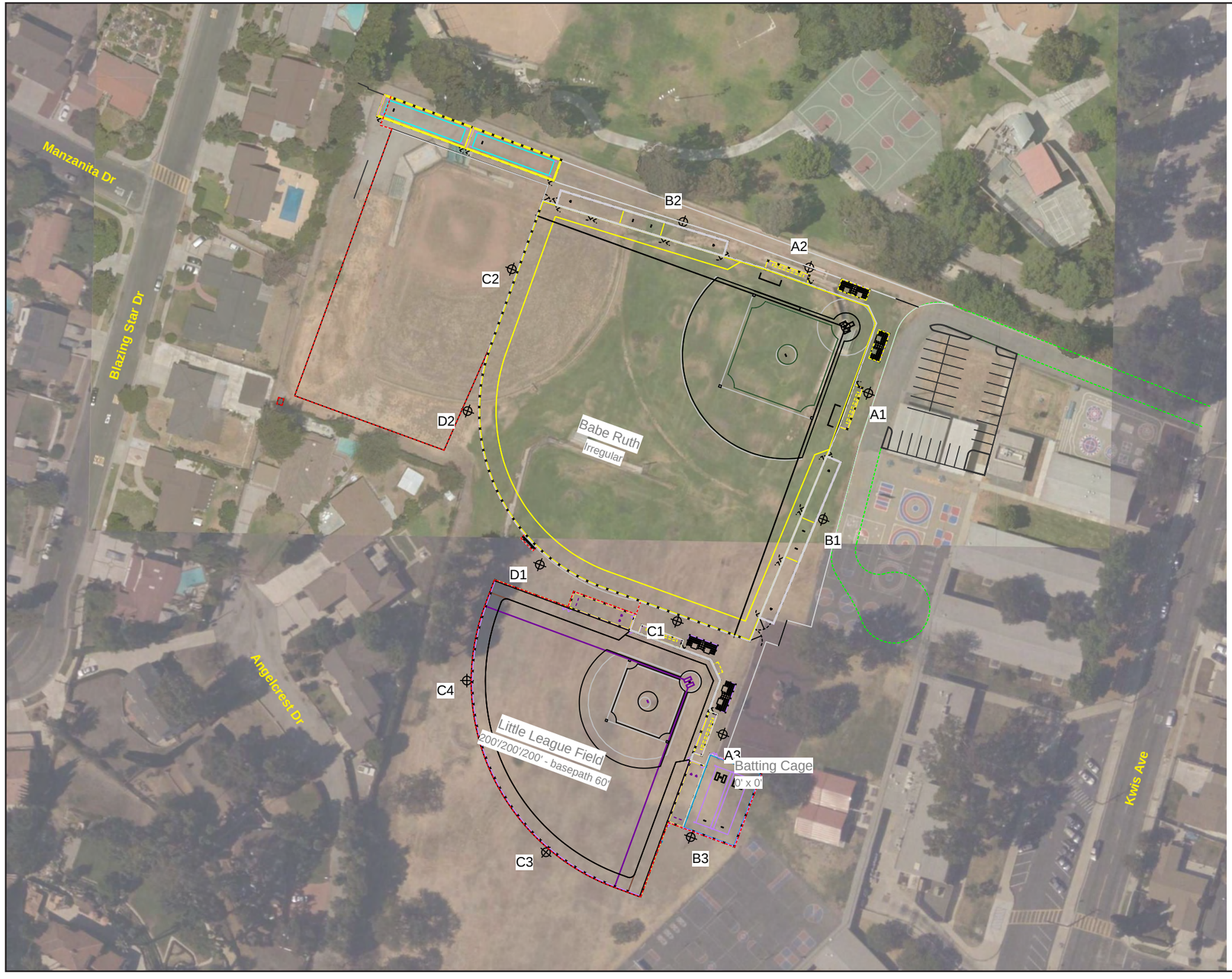
Mitigation Measure REC-1

Kwis ES is in an urbanized area and is surrounded by residential uses on three sides and Manzanita Park to the north. Manzanita Park has two ballfields, and the abutting ballfield to the north is equipped with six sports light poles. There are no other nighttime lighting sources on the existing playfield or the adjacent residences. Therefore, implementation of MM REC-1 would result in increased lighting levels.

It is anticipated that the lights would be on from sundown to 10 pm during use of the fields. Sundown times vary—as early as 4:30 pm during winter season and as late as 7:30 pm during summer. Regular Little League baseball season is during spring. However, it is assumed for the analysis that the fields would be lighted every day.

As shown on Figure 5.7-3, *Kwis ES Replacement Ballfields Sports Lighting Layout*, there would be a total of twelve light poles—eight 70-foot light poles and four 80-foot light poles—and 76 luminaires for the two fields. The proposed type of light fixtures, layout, and spill light levels are included in Appendix A, *Kwis ES Replacement Ballfields Lighting Plans*, to this RDEIR.

Figure 5.7-3 - Kwis ES Replacement Ballfields Sports Lighting Layout



EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	A1-A2	80'	-	15.5' 80'	TLC-BT-575 TLC-LED-1200	1 4
1	A3	70'	-	60' 15.5' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-900	2 1 3
2	B1-B2	80'	-	80' 70' 15.5' 80'	TLC-LED-1200 TLC-LED-400 TLC-BT-575 TLC-LED-1500	1 2 1 5
1	B3	70'	-	60' 15.5' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-900	2 1 4
1	C1	70'	-	70' 15.5' 60' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-400 TLC-LED-1200	3* 1/1* 1 3
1	C2	70'	-	15.5' 70'	TLC-BT-575 TLC-LED-1200	1 3
2	C3-C4	70'	-	15.5' 70'	TLC-BT-575 TLC-LED-900	1 3
1	D1	70'	-	70' 70' 15.5' 60' 70'	TLC-LED-600 TLC-LED-900 TLC-BT-575 TLC-LED-400 TLC-LED-1200	1 4* 1/1* 1 2
1	D2	70'	-	70' 15.5' 70'	TLC-LED-600 TLC-BT-575 TLC-LED-1200	1 1 2
12	TOTALS					76

* This structure utilizes a back-to-back mounting configuration

0 100
Scale (Feet)

Source: Musco, 2020

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Each light pole would have four to ten luminaires mounted at various heights—16 feet, 60 feet, 70 feet, or 80 feet. The infields would be illuminated at an average of approximately 51 foot-candles, and the outfields would be illuminated at an average of 31 fc. Spill light impacts could occur if light from the eight light poles falls outside the boundaries of the intended outfield areas. The County of Los Angeles does not have established standards for light levels in a residential area. For the purposes of this analysis, it was assumed that spill light impact would be potentially significant if the spill light levels exceed 0.5 fc near the adjacent sensitive receptors. Note that 0.5 fc would be between deep twilight (0.1 fc) to twilight (1 fc) (see Table 5.7-1, *General Light Levels Benchmark*) and would not result in substantial light nuisance.

As shown on Figure 5.7-4, *Kwis ES Replacement Ballfields Spill Light Levels (Horizonal fc at 3 feet above grade)*, the spill light levels along the western boundary closest to the residential units would be up to 0.4 fc except for a less than 200-square-foot area[2] at the northeast corner of the two residences (1906 Angelcrest Drive and 1908 Angelcrest Drive) closest to the large lit field, where light levels could range up to 1.0 fc. However, there are only shrubs and vegetation in this area, and it does not contain any habitable structure. Additionally, it should be noted that the light levels are modeled at three feet above grade, and as shown on Figures 5.7-5, *Kwis ES Replacement Ballfields Spill Light Levels (Horizontal fc at 9 feet above grade)*, when measured at 9 feet above grade, the maximum light levels at the residential boundary would be 0.25 fc. Furthermore, as shown in Figure 5.7-1, the District would provide perimeter trees along the corner of the two closest residences to further shield spill lights.

There is no established spill light threshold level for the County, and because only a small unoccupied area near the edge of residential property line would exceed 0.5 fc at three feet above grade and would be reduced to 0.25 fc along the property line at nine feet above grade, this spill light impact is considered less than significant. Spill light level would not exceed 0.5 fc in other areas near the sensitive receptors at three feet above grade.

The nearest sensitive receptors to the south are over 200 feet from the edge of the small replacement field, and the spill light levels at approximately 90 feet from the edge of the small replacement field would not exceed 0.1 fc. Therefore, negligible spill light impact is anticipated along the southern property line. Spill light levels ranging from 0.1 fc to 19 fc are anticipated along the northern property line abutting Manzanita Park. Manzanita Park fields also provides nighttime sports lighting and would not be adversely impacted by the replacement fields. Spill light impacts from Kwis ES replacement ballfields would be less than significant.

Glare is light that causes visual discomfort or disability or a loss of visual performance. It generally occurs when an individual is facing the light source so that the light from it directly enters the eye. Illustration A, above, shows the concept of direct glare impact. Glare differs from spill light because spill light is indirect; the viewer sees, not the source, but the objects illuminated by it. Implementation of MM REC-1 would provide 76 luminaires. Lower mounting heights is not advised because it gives the luminaire a wider angle and makes the bright parts of the lights more visible from outside the intended lighted area, creating greater spill light and glare impacts.

Kwis Avenue is over 300 feet from the replacement fields, and the fields would not be directly visible from this street. Viewers from the adjacent residences and from Manzanita Park could potentially look up to the

[2] Foot-candle levels shown on Figure 5.7-4 are spaced 10 feet by 10 feet, and each square represents approximately 100 square feet.

luminaires. However, the luminaires would be affixed at 70 to 80 feet, directed downward, and shielded to make a narrow beam angle to reduce glare impact. Manzanita Park also has nighttime sports lighting, and the proposed nighttime use of the replacement fields would not adversely impact the uses at Manzanita Park. The lights would be focused to the intended area, and the low spill light levels indicate that the glare impacts would also be minimized. There is no established glare impact threshold. Given the less than significant spill light impact and the downward angle and shielding for the luminaires, a less than significant glare impact is anticipated.

Mitigation Measure REC-2

Implementation of REC-2 would not create a new source of substantial light or glare. Two ballfields at Cedarlane campus would not include sports lighting. No light or glare impact would occur.

5.7.8.2 AIR QUALITY

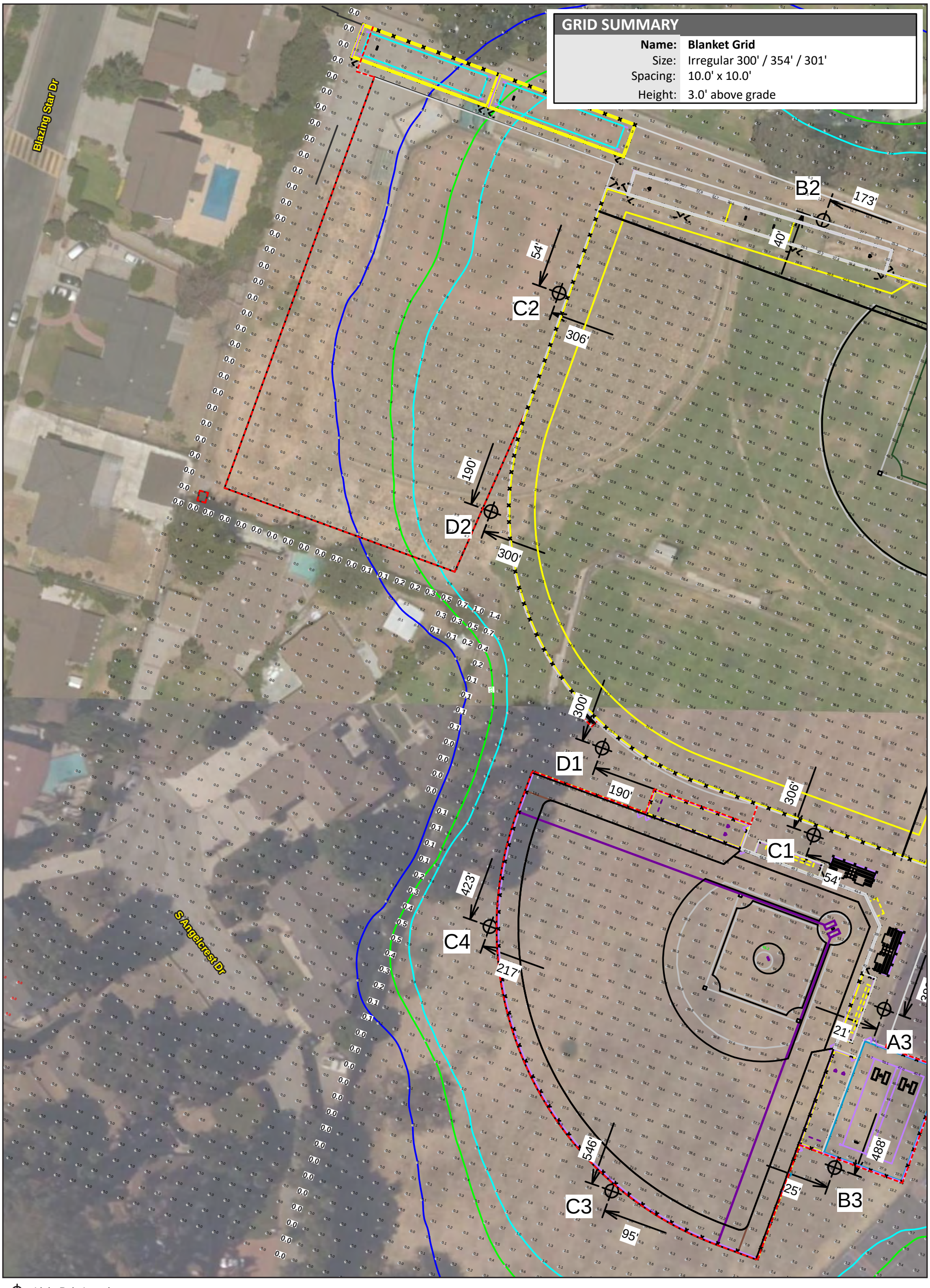
Would the mitigation measure result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Mitigation Measure REC-1

Regional Short-Term Construction Impacts

Implementation of Mitigation Measure REC-1 involves the construction and operation of one large and one small baseball field on the Kwis ES campus. The development of these two fields and a soccer field at Kwis campus is anticipated to disturb approximately six acres on the Kwis Elementary site and would involve asphalt demolition, site preparation, grading, trenching, lighting installation, ancillary building construction, architectural painting, and concrete and asphalt paving. Construction is anticipated to start in January 2022 and end in October 2022 for the Kwis Elementary School replacement fields. Construction emissions for this mitigation measure were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2.25, based on the construction duration and equipment mix data provided by the District. Modeling data are in Appendix B to this RDEIR. As seen in Table 5.7-2, the maximum daily emissions for VOC, NO_x, CO, SO_2, PM_{10}, and $PM_{2.5}$ from construction-related activities on the Kwis campus would be less than their respective South Coast Air Quality Management District (South Coast AQMD) regional significance threshold values. Therefore, short-term air quality impacts from construction activities associated with this mitigation measure would be less than significant.

Figure 5.7-4 - Kwis ES Replacement Ballfields Spill Light Levels (Horizontal fc at 3 feet above grade)
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Light Pole Locations

Note: Contour lines show cutoff at 1.0 fc , 0.5 fc , and 0.1 fc

Source: Musco, 2020

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Scale (Feet)

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Figure 5.7-5 - Kwis ES Replacement Ballfields Spill Light Levels (Horizontal fc at 9 feet above grade)



GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	9.0' above grade

Light Pole Locations

0 100
Scale (Feet)

Source: Musco, 2020

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Table 5.7-2 Maximum Daily Regional Construction Emissions

Construction Phase	Pollutants (lb/day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2022						
Asphalt Demolition, Debris Haul, and Site Preparation	2	23	23	<1	4	3
Site Preparation	2	17	16	<1	4	2
Site Preparation and Lighting Installation	2	21	19	<1	4	2
Lighting Installation, Grading and Soil Haul, and Trenching	3	31	22	<1	5	3
Lighting Installation, Grading and Soil Haul, Trenching, Ancillary Building Construction, and Fencing/Concrete Paving	3	38	31	<1	5	3
Lighting Installation, Ancillary Structure Building Construction, and Fencing/Concrete Paving	1	11	11	<1	1	1
Ancillary Structure Building Construction and Fencing/Concrete Paving	1	8	10	<1	1	0
Ancillary Structure Building Construction and Finishing/Landscaping	1	11	11	<1	1	1
Ancillary Structure Building Construction, Finishing/Landscaping and Asphalt Paving	2	17	20	<1	1	1
Ancillary Structure Building Construction and Asphalt Paving	1	8	10	<1	1	<1
Ancillary Structure Building Construction, Asphalt Paving, and Architectural Coating	8	10	13	<1	1	1
Synthetic Turf Surfacing	1	7	9	<1	1	<1
Maximum Daily Construction Emissions[3]						
Maximum Daily Emissions	8	38	31	<1	5	3
South Coast AQMD Regional Construction Threshold	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2016.3.2.25.

[1] Based on the preliminary information provided by the District. Where specific information regarding construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast AQMD of construction equipment.

[2] Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.

[3] Construction on the Cedarlane Academy site is anticipated to occur during the year 2021. Because a certain amount of older off-road equipment models are assumed to be phased out every year, on average, calendar year 2021 emission rates for off-road equipment can be slightly higher compared to calendar year 2022 emissions rates. However, because all criteria air pollutant emissions generated by construction on the Kwis Elementary School site are much lower than their respective thresholds, the additional emissions generated by construction on the Cedarlane Academy site would not cause an exceedance of these thresholds.

Long-Term Operation-Related Air Quality Impact

Typical long-term air pollutant emissions are generated by area sources (e.g., landscape fuel use, aerosols, architectural coatings, and asphalt pavement), energy use (natural gas), and mobile sources (i.e., on-road vehicles). Implementation of Mitigation Measures REC-1 would result in the replacement of two ballfields. These replacement ballfields would host the sporting events and programming currently occurring at the Wedgeworth Elementary School baseball fields that are designated for removal. Thus, because the anticipated events and programming anticipated for the replacement fields are currently occurring, implementation of

Mitigation Measure REC-1 would not generate new vehicle trips beyond those currently existing. Furthermore, operation of the ancillary structures on the Kwis Elementary School site would result in a nominal increase in energy use. Consequently, implementation of Mitigation Measure REC-1 would result in an overall minimal net change in emissions from existing conditions and would not exceed the South Coast AQMD regional operation-phase significance thresholds. Projects that do not exceed the South Coast AQMD regional significance thresholds would not result in an incremental increase in health impacts in the South Coast Air Basin (SoCAB) from project-related increases in criteria air pollutants. Therefore, impacts to the regional air quality associated with implementation of this mitigation measure in terms of operations would be less than significant.

Mitigation Measure REC-2

Regional Short-Term Construction Impacts

Implementation of Mitigation Measure REC-2 involves the construction and operation of two small ballfields on the Cedarlane Academy site. The development of these fields is anticipated to disturb approximately 2.53 acres and would involve site preparation, grading, fencing/concrete paving, and landscaping. Construction is anticipated to start in September 2021 and end December 2021. Because construction proposed under Mitigation Measure REC-2 for Cedarlane Academy would be less extensive than for the Kwis ES replacement ballfields under MM REC-1, no separate construction emissions modeling was performed for the Cedarlane Academy replacement ballfields. Because the construction activities associated with the Kwis site would generate emissions below the regional significance threshold, it is also reasonably anticipated that construction activities for the Cedarlane site would also not generate emissions that exceed any South Coast AQMD regional significance threshold values. Therefore, short-term air quality impacts from construction activities associated with this mitigation measure would be less than significant.

Long-Term Operation-Related Air Quality Impact

Typical long-term air pollutant emissions are generated by area sources (e.g., landscape fuel use, aerosols, architectural coatings, and asphalt pavement), energy use (natural gas), and mobile sources (i.e., on-road vehicles). Implementation of Mitigation Measure REC-2 would result in the replacement of two ballfields. These replacement ballfields would host the sporting events and programming currently occurring at the Wedgeworth ES ballfields that are designated for removal. Thus, because the anticipated events and programming anticipated for the replacement fields are currently occurring, implementation of Mitigation Measure REC-2 would not generate new vehicle trips beyond those currently existing. Consequently, implementation of MM REC-2 would result in an overall minimal net change in emissions from existing conditions and would not exceed the South Coast AQMD regional operation-phase significance thresholds. Projects that do not exceed the South Coast AQMD regional significance thresholds would not result in an incremental increase in health impacts in the South Coast Air Basin (SoCAB) from project-related increases in criteria air pollutants. Therefore, impacts to the regional air quality associated with implementation of this mitigation measure in terms of operations would be less than significant.

Would the mitigation measure expose sensitive receptors to substantial pollutant concentrations?

The following describes potential localized impacts from short-term construction activities and long-term operation of the proposed mitigation measure.

Mitigation Measures REC-1 and REC-2

Construction LSTs

Air pollutant emissions generated by construction activities would cause temporary increases in air pollutant concentrations. Table 5.7-3 shows that the maximum daily construction emissions (pounds per day) on the Kwis Elementary School site for NO_x, CO, PM_{10}, and $PM_{2.5}$ construction emissions would be less than their respective South Coast AQMD screening-level localized significance thresholds (LSTs). In addition, construction activities on the Cedarlane Academy site would be minimal and less extensive than those on the Kwis Elementary site and would not generate emissions that exceed the South Coast AQMD screening-level LSTs. Therefore, localized air quality impacts from construction activities would be less than significant.

Table 5.7-3 Localized Construction Emissions

Construction Activity	Pollutants(lbs/day)[1]			
	NO_X	CO	PM_{10}[2]	$PM_{2.5}$[2]
South Coast AQMD ≤1.00 Acre LST	83	673	5.00	4.00
Lighting Installation, Ancillary Structure Building Construction, and Fencing/Concrete Paving	11	11	0.53	0.49
Ancillary Structure Building Construction and Fencing/Concrete Paving	8	10	0.42	0.39
Ancillary Structure Building Construction and Finishing/Landscaping	11	10	0.49	0.47
Ancillary Structure Building Construction and Asphalt Paving	8	10	0.42	0.39
Ancillary Structure Building Construction, Asphalt Paving, and Architectural Coating	9	12	0.51	0.47
Synthetic Turf Surfacing	7	9	0.43	0.40
Exceeds LST?	No	No	No	No
South Coast AQMD 1.50-Acre LSTs	102	852	6.00	4.50
Ancillary Structure Building Construction, Finishing/Landscaping and Asphalt Paving	17	19	0.82	0.78
Exceeds LST?	No	No	No	No
South Coast AQMD 2.00-Acre LST	121	1,031	7.00	5.00
Site Preparation	17	16	3.67	2.23
Site Preparation and Lighting Installation	21	18	3.85	2.40
Lighting Installation, Grading and Soil Haul, and Trenching	21	18	3.85	2.40
Exceeds LST?	No	No	No	No
South Coast AQMD 2.50-Acre LSTs	131	1,161	8.16	5.67
Asphalt Demolition, Debris Haul, and Site Preparation	22	22	4.02	2.48

Table 5.7-3 Localized Construction Emissions

Construction Activity	Pollutants(lbs/day)[1]			
	NO_X	CO	PM_{10}[2]	$PM_{2.5}$[2]
Lighting Installation, Grading and Soil Haul, Trenching, Ancillary Building Construction, and Fencing/Concrete Paving	28	27	4.20	2.72
Exceeds LST?	No	No	No	No

Source: CalEEMod Version 2016.3.2.25. South Coast AQMD 2008 and 2011.
Notes: In accordance with South Coast AQMD methodology, only onsite stationary sources and mobile equipment are included in the analysis. The screening-level LSTs are based on receptors within 82 feet (25 meters) of the Kwis Elementary School baseball field site in SRA 11.
1 Where specific information for construction activities or processes was not available modeling was based on CalEEMod defaults. These defaults are based on construction surveys conducted by the South Coast AQMD.
2 Includes fugitive dust control measures required by South Coast AQMD under Rule 403, such as watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.

Construction Health Risk

Emissions from construction equipment primarily consist of diesel particulate matter (DPM). In 2015, the Office of Environmental Health Hazards Assessment (OEHHA) adopted guidance for preparation of health risk assessments, which included the development of a cancer risk factor and noncancer chronic reference exposure level for DPM over a 30-year time frame (OEHHA 2015). The proposed mitigation measures are anticipated to be completed in approximately 3 months for the Cedarlane Academy site and 10 months[3] for the Kwis Elementary School site. The relatively short construction durations would limit the exposure of on-site and off-site receptors. Furthermore, construction activities would not generate on-site exhaust emissions that would exceed the screening-level construction LSTs. Currently, South Coast AQMD does not require the evaluation of long-term excess cancer risk or chronic health impacts for a short-term project. Thus, construction emissions associated with implementation of Mitigation Measures REC-1 and REC-2 would not pose a health risk to on-site and off-site receptors, and construction health impacts associated with these two mitigation measures would be less than significant.

Operation LSTs

Operation of the baseball fields and ancillary structures would not generate substantial emissions from on-site stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions include industrial land uses, such as chemical processing and warehousing operations where truck idling would occur on-site and would require a permit from South Coast AQMD. Operation of four baseball fields does not fall within these categories of uses. Therefore, localized air quality impacts from implementation of Mitigation Measures REC-1 and REC-2 in terms of operations would be less than significant.

Carbon Monoxide Hotspots

The SoCAB has been designated attainment under both the national and California ambient air quality standards (AAQS) for CO. Under existing and future vehicle emission rates, a project would have to increase

[3] Construction modeling and analysis used preliminary data based on 6 months of construction activities on the Kwis Elementary School site. Latest construction data shows 10 months of construction at the Kwis Elementary School site.

traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—to generate a significant CO impact (BAAQMD 2017). The Kwis Elementary and Cedarlane Academy would generate 70 PM peak hour vehicle trips on weekdays and 90 PM peak hour trips on Saturday each. The trips for both sites associated with the mitigation measures would be minimal compared to the AAQS screening levels. The mitigation measure would not substantially increase CO hotspots at intersections, and impacts would be less than significant.

5.7.8.3 GREENHOUSE GAS EMISSIONS

Would the mitigation measure generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Mitigation Measures REC-1 and REC-2

Regional Short-Term Construction Impacts

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

Construction and operation of the four replacement baseball fields resulting from implementation of Mitigation Measures REC-1 and REC-2 would generate the GHG emissions shown in Table 5.7-4. Because these baseball fields are currently in operation on the Wedgeworth Elementary School project site, implementation of Mitigation Measures REC-1 and REC-2 would not generate additional trips compared to existing conditions and, therefore, would not generate GHG emissions from mobile sources. In addition, because there would be no changes from the baseball fields' current operations, it was assumed that GHG emissions from area, water, and solid waste would not increase. However, operation of the new ancillary structures would result in a nominal increase in energy use. Furthermore, GHG emissions associated with field lighting for the baseball fields on the Kwis Elementary School site would generate 21 MTCO2e per year. Construction-related GHG emissions would be generated from operation of off-road equipment and from vehicle trips associated with workers, vendors, and hauling operations. Annual average construction emissions were amortized over 30 years and included in the emissions inventory to account for one-time GHG emissions from the construction phase of the mitigation measure (South Coast AQMD 2009). Overall, development and operation of the replacement baseball fields would not generate annual emissions that exceed the South Coast AQMD bright-line threshold of 3,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year (South Coast AQMD 2010). Therefore, Mitigation Measures REC-1 and REC-2's cumulative contribution to GHG emissions would be less than significant.

Table 5.7-4 Mitigation Measure GHG Emissions

Source	GHG ($MTCO_2e$/Year)
Construction	
Year 2021[1]	200
Year 2022	200
Construction Total	400
Operation	
Energy[2]	21
30-Year Amortized Construction[3]	13
Operation Total	35
South Coast AQMD Bright-Line Threshold	3,000 $MTCO_2e$/Yr
Exceeds Bright-Line Threshold?	No

Source: CalEEMod, Version 2016.3.2.25.

Notes: MTons = metric tons; $MTCO_2e$ = metric ton of carbon dioxide equivalent

1 For the most conservative results, GHG emissions from construction of the baseball fields on the Kwis Elementary School site were used as an estimate for the Cedarlane Academy baseball field development in 2021.

2 Energy from the field lighting is based on the carbon intensity of Southern California Edison (SCE) and energy use identified in the Musco lighting study. Energy use is also based on operation of lighting on the Kwis Elementary School site of 4 hours per day on weekdays and Saturdays.

3 Total construction emission are amortized over 30 years per South Coast AQMD methodology.

Would the mitigation measure conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Applicable plans adopted for the purpose of reducing GHG emissions include the California Air Resources Board (CARB) Scoping Plan and Southern California Association of Government's (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). A consistency analysis with these plans is presented below.

Mitigation Measures REC-1 and REC-2

CARB Scoping Plan

CARB's Scoping Plan is California's GHG reduction strategy to achieve the state's GHG emissions reduction target established by AB 32, which is to return to 1990 emission levels by year 2020. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Since adoption of the 2008 Scoping Plan, state agencies have adopted programs identified in the plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the Corporate Average Fuel Economy standards, and other early action measures as necessary to ensure the state is on target to achieve the GHG emissions

reduction goals of AB 32. In addition, new buildings are required to comply with the latest applicable Building Energy Efficiency Standards and CALGreen. On December 24, 2017, CARB adopted the Final 2017 Climate Change Scoping Plan Update to address the new 2030 interim target to achieve a 40 percent reduction below 1990 levels by 2030, established by SB 32 (CARB 2017). While measures in the Scoping Plan apply to state agencies and not the proposed mitigation, the GHG emissions associated Mitigation Measures REC-1 and REC-2 would be reduced by statewide compliance with measures that have been adopted since AB 32 and SB 32 were adopted. In addition, because the mitigation measures would be replacing the baseball fields, the majority of emissions associated with the mitigation measures are already being generated at the current Wedgeworth Elementary project site. Therefore, implementation of Mitigation Measures REC-1 and REC-2 would not obstruct implementation of the CARB Scoping Plan, and impacts would be less than significant.

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SCAG adopted the 2020-2045 RTP/SCS (Connect SoCal) on September 3, 2020. Connect SoCal finds that land use strategies that focus on new housing and job growth in areas rich with destinations and mobility options would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in Connect SoCal is to plan for the southern California region to grow in more compact communities in transit priority areas and priority growth areas; provide neighborhoods with efficient and plentiful public transit; establish abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands and farmlands (SCAG 2020). Connect SoCal's transportation projects help more efficiently distribute population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network in Connect SoCal, would reduce per-capita GHG emissions related to vehicular travel and achieve the GHG reduction per capita targets for the SCAG region.

The Connect SoCal Plan does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. Mitigation Measures REC-1 and REC-2 would redevelop the baseball fields currently on the Wedgeworth project site at the Kwis Elementary School and Cedarlane Academy sites. The use of the facilities would not change from existing conditions and would continue to serve the community, thereby providing closer options for the local population. Therefore, these two mitigation measures would not interfere with SCAG's ability to implement the regional strategies outlined in the Connect SoCal Plan, and impacts would be less than significant.

5.7.8.4 NOISE

The analysis in this section is based in part on traffic data provided by Garland Associates and construction noise modeling using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). Calculations and data can be found in Appendix C of this RDEIR.

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on

people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." Based on these known adverse effects of noise, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

Existing Environment

Ambient Noise Survey

To characterize the existing ambient noise environment, noise monitoring was conducted by PlaceWorks staff at Kwis Elementary and Cedarlane Academy. Staff conducted noise monitoring at the Cedarlane Elementary site on Wednesday, October 21, and Thursday, December 3, 2020. At the Kwis Elementary site, staff conducted noise monitoring on Friday, October 30, 2020. All measurements were short term (for a duration of 15 minutes) and during the evening hours of 6:30 pm to 9:30 pm. Table 5.7-5 and Table 5.7-6 summarize the results of noise monitoring. A detailed summary of each location is in Appendix C to this RDEIR. Figure 5.7-6, *Approximate Noise Monitoring Locations - Kwis ES*, shows the approximate noise monitoring locations at the Kwis site, and Figure 5.7-7, *Approximate Noise Monitoring Locations - Cedarlane Academy*, shows the approximate noise monitoring locations at the Cedarlane site.

Table 5.7-5 Short-Term Ambient Noise Levels (dBA) at Kwis Elementary

Monitoring Location	Description	L_{eq}	L_{50}	L_{25}	L_8	L_2	L_{max}
ST-1	Hacienda Heights – near 1733 Kwis Avenue 10/30/2020 9:21 pm	61.4	58.8	60.7	65.7	69.4	74.3
ST-2	Hacienda Heights – Kwis Elementary near northwestern residential property line 10/30/2020 7:56 pm	57.1	55.5	57.7	59.3	62.9	71.3
ST-3	Hacienda Heights – Kwis Elementary near western residential property line 10/30/2020 7:36 pm	55.9	54.4	56.6	57.8	58.6	61.6

Table 5.7-6 Short-Term Ambient Noise Levels (dBA) at Cedarlane Academy

Monitoring Location	Description	L_{eq}	L_{50}	L_{25}	L_8	L_2	L_{max}
ST-1	Hacienda Heights – Cedarlane Academy near northeastern residential property line 10/21/2020 8:12 pm	53.3	53.0	53.5	54.4	56.7	59.4
ST-2	Hacienda Heights – Near 1426 Fieldgate Ave. 10/21/2020 8:41 pm	55.4	53.7	54.8	58.2	62.4	67.0
ST-3	Hacienda Heights – near 1733 Cedarlane Academy northwestern residential property line 12/3/2020 6:34 pm	60.5	59.7	60.7	62.9	65.4	71.2
ST-4	Hacienda Heights – near 1465 Glenelder Avenue 12/3/2020 7:07 pm	60.2	60.1	60.9	61.7	62.3	66.5

Figure 5.7-6 - Approximate Noise Monitoring Locations - Kwis ES
5. Environmental Analysis



● ST-X Short-Term Noise Measurement Locations (3)

Note: See Figure 3-12 Kwis Elementary School Replacement Ballfields Site Plan Details.

Source: Nearmap, 2021; Site Plan: tBP, 2020

0 180
Scale (Feet)

5. Environmental Analysis
RECREATION

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Figure 5.7-7 - Approximate Noise Monitoring Locations - Cedarlane Academy



● ST-X Short-Term Noise Measurement Locations (4)

Note: See Figure 3-13 Cedarlane Academy Replacement Ballfields Site Plan Details.

Source: Nearmap, 2020; Site Plan: tBP, 2020

0 200
Scale (Feet)

5. Environmental Analysis
RECREATION

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Construction Noise Standards

Los Angeles County Code Section 12.08.440 includes restrictions on construction noise. The County prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 7 pm and 7 am, or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line. The County also sets maximum noise level limits for mobile equipment (nonscheduled, intermittent, short-term operations for less than 10 days), as summarized in Table 5.7-7, *County Mobile Construction Equipment Noise Limits*.

Table 5.7-7 County Mobile Construction Equipment Noise Limits

	Single-Family Residential	Multifamily Residential	Semi-residential/ Commercial
Daily, except Sundays and legal holidays, 7 am to 8 pm	75 dBA	80 dBA	85 dBA
Daily, 8 pm to 7 am and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA

Source: County Code, Section 12.08.440. For non-scheduled, intermittent, short-term operations for less than 10 days.

Maximum noise levels from stationary equipment (repetitively scheduled and relatively long-term operations of 10 days or more) are summarized in Table 5.7-8, *County Stationary Construction Equipment Noise Limits*.

Table 5.7-8 County Stationary Construction Equipment Noise Limits

	Single-Family Residential	Multifamily Residential	Semi-residential/ Commercial
Daily, except Sundays and legal holidays, 7 am to 8 pm	60 dBA	65 dBA	70 dBA
Daily, 8 pm to 7 am and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: County Code, Section 12.08.440. For repetitively scheduled and relatively long-term operations of 10 days or more.

Noise Project Design Features

The following project design features (PDFs) will be implemented as part of the mitigation implementation if Mitigation Measures REC-1 and REC-2 were to be adopted. PDFs REC-1 through REC-3 are also identified in Section 5.6, *Noise*, of the originally circulated DEIR as PDF NOI-1, NOI-2, and NOI-4.

PDF REC-1 Project related construction activity will be limited to the hours of 7:00 AM to 7:00 PM weekdays. Construction is prohibited on Sundays or any holiday (same as PDF NOI-1 from the DEIR Section 5.6, *Noise*)

PDF REC-2 The project will comply with the County of Los Angeles' stationary construction equipment noise limits (same PDF NOI-2 from the DEIR Section 5.6, *Noise*).

PDF REC-3 The project will comply with the County of Los Angeles vibration standards and not exceed 80 VdB at the property boundary of a sensitive receptor or beyond (same as PDF NOI-4 from the DEIR Section 5.6, *Noise*)

PDF REC-4 The project construction contractor will use construction noise control strategies by controlling the noise at the source. This will require using the latest technological advances in the development of quieter equipment. A large part of the noise emitted is due to the intake and exhaust portions of the engine cycle. A remedy for controlling much of the engine noise is the specification and use of adequate muffler systems. The construction contractor will replace worn out mufflers and retrofit where mufflers are not in use. Using the appropriate muffler requirements can result in noise level reductions of 10 dBA or more (FHWA 2017).

Would the mitigation measure result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Mitigation Measure REC-1 (Kwis Replacement Fields)

Construction Vehicles

Construction generates temporary trips from workers, vendors and haul trips, incrementally increasing noise levels along local residential roadways. Individual construction vehicle pass-bys and haul trucks may create momentary noise levels of up to 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be temporary and short lived. Project construction is anticipated to generate up to 43 daily worker and vendor trips and up to 17 daily haul trips (not overlapping). Existing daily traffic volumes in the vicinity of Kwis ES range between 700 and 49,000 (Garland 2021). Therefore, when compared to the trips generated by worker, vendor, and haul trips, traffic noise would result in temporary noise increase of up to 0.3 dBA CNEL. This would be an indiscernible CNEL traffic noise increase, and impacts would be less than significant.

Construction Equipment

Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Each phase of construction involves the use of different construction equipment and therefore each phase has its own distinct noise characteristics. Noise levels from construction activities are dominated by the loudest piece of construction equipment. The dominant noise source is typically the engine, although work piece noise (such as dropping of materials) can also be noticeable.

Table 5.7-9 shows a list of construction equipment provided by the District to be used for implementation of MM REC-1. Table 5.7-9 also summarizes the associated, aggregate sound levels—grouped by construction activity—modeled for the equipment using RCNM.

Table 5.7-9 Project-Related Construction Noise Levels – Kwis Elementary Site

Construction Equipment	Sound Level at Various Distances from Construction Activities, dBA L_{eq}[2]					
	RCNM Reference, dBA L_{eq}	Manzanita Park - North	Residential - Northwest	Residential – Southwest	Residential - South	Residential - West
	50 feet	190 feet	760 feet	180 feet	670 feet	330 feet
Dozer	78	56	44	57	45	51
Tractor	80	58	46	59	47	54
Front End Loader	75	54	41	54	43	49
Grader	81	59	47	60	48	55
Crane	73	51	39	51	40	46
Man Lift/Forklift	68	46	34	47	35	41
Backhoe	74	52	40	52	41	47

Calculations performed with the FHWA's RCNM software are included in Appendix C.
[1] Distance measured from the acoustical center of construction site to sensitive receptor property line.
[2] 10 dBA attenuation with implementation of PDF REC-4.

As shown in Table 5.7-9, noise levels from construction equipment used during grading activities at distance measured from the center of construction site to the nearest residential property line would range from 41 dBA L_{eq} to 60 dBA L_{eq} with implementation of PDF REC-4. Grading activities at Kwis ES are anticipated to last more than 10 days; therefore, a construction noise standard of 60 dBA at receiving residential uses—as described in Table 5.7-8 for long-term stationary sources—was used to determine significance. Since the maximum level would not exceed 60 dBA L_{eq}, noise levels during grading would not exceed the County's construction noise threshold, and impacts would be less than significant.

During the demolition phase of construction, the use of a concrete saw is anticipated for asphalt demolition for one day. Noise from using a concrete saw could be up to 71 dBA at the nearest sensitive receptor property line. Based on the County's short-term (less than 10 days) construction noise standard of 75 dBA at residential uses for mobile sources, as described in Table 5.7-7, short-term use of a concrete saw would not exceed the County's construction noise threshold, and impacts would be less than significant.

Traffic Noise

Noise impacts can be broken down into three categories. The first is "audible" impacts, which refer to increases in noise level that are perceptible to humans. A change of 3 dBA is considered barely perceptible and an increase of 5 dBA is readily perceptible in exterior environments. The second category, "potentially audible" impacts, refers to a change in noise level between 1 and 3 dBA. The last category includes changes in noise level of less than 1 dBA that are typically "inaudible" to the human ear except under quiet conditions in controlled environments (indoor). For special events, such as periodic baseball games, a 5 dBA increase (readily perceptible) is considered potentially significant. Therefore, an increase of 5 dBA is used as a threshold for a substantial periodic noise increase with implementation of Mitigation Measure REC-1.

For traffic noise, existing average daily traffic (ADT) plus Kwis replacement fields is compared to the existing ADT in the immediate vicinity of Kwis Elementary. The traffic noise increases are calculated to be up to 0.4 dBA on weekdays and up to 1.7 dBA on Saturdays, which would not exceed the threshold of 5 dBA. Appendix

C includes traffic noise calculations. Therefore, impacts due to periodic traffic noise increase would be less than significant.

Stationary Noise

The ambient noise survey at Kwis ES indicates that existing noise levels exceed the County's exterior noise standards at the residential property lines. As shown in Table 5.7-5, ambient noise monitoring results in the vicinity of the Kwis ES show existing noise levels to be between 54.4 and 58.8 dBA $L_{50.}$ Section 12.08.390 of the County's Municipal Code states that the exterior noise standard is 50 dBA at residential property lines unless the ambient noise level exceeds this standard, at which time the measured ambient becomes the exterior noise standard.

The primary stationary noise generated by implementation of Mitigation Measure REC-1 would be from Little League games and practices on weekdays after school and on weekends. Noise sources would primarily include speech from spectators, coaches, and players, approximately 240 feet from the nearest residential property line to the bleachers. A single person shouting is approximately 72 dBA at a distance of 6 feet.[4] Ten people shouting at once would be approximately 82 dBA at 6 feet. At 240 feet, noise levels from spectators, coaches, and players would attenuate to approximately 50 dBA. This would not exceed measured ambient noise levels at the residential property line (between 54.4 and 58.8 dBA L_{50}). In addition, no amplified sound system is proposed. Section 12.08.570(C) of the County Code states that outdoor activities conducted on public or private school grounds, including but not limited to school athletic and school entertainment events, are exempt from the noise standards. Stationary noise impacts associated with the replacement ballfields at Kwis ES would be less than significant.

Mitigation Measure REC-2

Construction Vehicles

Construction generates temporary trips from workers, vendors, and haul trips, incrementally increasing noise levels along local residential roadways. Individual construction vehicle pass-bys and haul trucks may create momentary noise levels of up to 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be temporary and short lived. Project construction is anticipated to generate up to 43 daily worker and vendor trips and up to 17 daily haul trips (not overlapping). Existing daily traffic volumes in the vicinity of Kwis ES range between 1,000 and 20,000 (Garland 2021). Therefore, when compared to the trips generated by worker, vendor, and haul trips, traffic noise would result in a temporary noise increase of up to 0.2 dBA CNEL. This would be an indiscernible CNEL traffic noise increase, and impacts would be less than significant.

Construction Equipment

Table 5.7-10 shows a list of construction equipment to be used for the replacement ballfields at Cedarlane provided by the District. The associated, aggregate sound levels—grouped by construction activity—are modeled using RCNM and are summarized in Table 5.7-10.

[4] Engineering ToolBox, (2005). Voice Level at Distance. Accessed January 5, 2021. Available at: https://www.engineeringtoolbox.com/voice-level-d_938.html.

Table 5.7-10 Project-Related Construction Noise Levels – Cedarlane Academy Site

	Sound Level at Various Distances from Construction Activities, dBA L_{eq}[2]			
	RCNM Reference, dBA Leq	Residential - North	Residential - East	Residential - West
Construction Equipment	50 feet	480 feet	560 feet	390 feet
Dozer	78	48	47	50
Tractor	80	50	49	52
Front End Loader	75	45	44	47
Grader	81	51	50	53
Crane	73	43	42	45
Man Lift/Forklift	68	38	37	40
Backhoe	74	44	43	46

Calculations performed with the FHWA's RCNM software are included in Appendix C.
[1] Distance measured from the acoustical center of construction site to sensitive receptor property line.
[2] 10 dBA attenuation with implementation of PDF REC-4.

As shown in Table 5.7-10, noise levels from construction equipment used during grading activities at a distance measured from the center of the construction site to the nearest residential property line would range from 37 dBA L_{eq} to 53 dBA L_{eq} with implementation of PDF REC-4. Grading activities at Cedarlane Academy are anticipated to last more than 10 days; therefore, a construction noise standard of 60 dBA at receiving residential uses—as described in Table 5.7-8 for long-term stationary sources—was used determine significance. Since the maximum level would not exceed 60 dBA L_{eq}, noise levels during grading would not exceed the County's construction noise threshold, and impacts would be less than significant.

During the demolition phase of construction, the use of a concrete saw is anticipated for asphalt demolition for one day. Noise from using a concrete saw could be up to 65 dBA at the nearest sensitive receptor property line. Based on the County's short-term (less than 10 days) construction noise standard of 75 dBA at residential uses for mobile sources as described in Table 5.7-7, short-term use of a concrete saw would not exceed the County's construction noise threshold, and impacts would be less than significant.

Traffic Noise

As discussed above, an increase of 5 dBA is used as a threshold for a substantial periodic noise increase with implementation of Mitigation Measure REC-2.

To determine the traffic noise level increase due implementation of Mitigation Measure REC-2, existing plus Mitigation Measure REC-2 ADT is compared to the existing ADT in the immediate vicinity of the Cedarlane Academy (see Appendix C). Traffic noise increases are calculated to be up to 0.7 dBA on weekdays and 3.1 dBA on Saturdays. Therefore, impacts due to periodic traffic noise increase would be less than significant.

Stationary Noise

The ambient noise survey indicates that existing noise levels exceed the County's exterior noise standards at the residential property lines. As shown in Table 5.7-6, ambient noise monitoring results in the vicinity of the Cedarlane Academy site show existing noise levels to be between 53.0 and 60.1 dBA L_{50}. Section 12.08.390 of

the County Code states that the exterior noise standard is 50 dBA at residential property lines unless the ambient exceeds this standard. In this case, the measured ambient becomes the exterior noise standard.

The primary stationary noise generated by implementation of Mitigation Measure REC-2 would be from Little League games and practices on weekdays after school and on Saturdays. Noise sources would primarily include speech from spectators, players, and coaches approximately 330 feet from the nearest residential property line. A person shouting is approximately 72 dBA at a distance of 6 feet.[5] Ten people shouting at once would be approximately 82 dBA at 6 feet. At 330 feet, noise levels from spectators, players, and coaches would attenuate to approximately 47 dBA, which is below the measured ambient noise at the residential property line. In addition, no amplified sound is proposed. Section 12.08.570(C) of the County Code states that outdoor activities conducted on public or private school grounds, including school athletic events, are exempt from the noise standards. Noise impacts associated with the proposed ball fields at Cedarlane Academy would be less than significant.

Would the mitigation measure result in generation of excessive groundborne vibration or groundborne noise levels?

Potential vibration impacts associated with development projects are usually related to the use of heavy construction equipment during the demolition and grading phases of construction. Construction can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

Mitigation Measure REC-1

Vibration Annoyance

The County of Los Angeles has an established vibration threshold equivalent to 80 VdB. Table 5.7-11 shows vibration levels for equipment comparable to that used for grading and drilling for light pole installation. Vibration levels would not exceed 80 VdB at the nearest sensitive receptors. Therefore, impacts would be less than significant.

[5] Engineering ToolBox, (2005). Voice Level at Distance. Accessed January 5, 2021. Available at: https://www.engineeringtoolbox.com/voice-level-d_938.html.

Table 5.7-11 Vibration Annoyance Levels at Nearby Receptors – Kwis Elementary Site

	VdB Levels		
	FTA Reference	Residential - South	Residential - West
Equipment	25 feet	670 feet	330 feet
Large Bulldozer[1]	87	44	53
Small Bulldozer[1]	58	15	24
Equipment	25 feet	70 feet	70 feet
Caisson Drilling[2]	87	74	74

Source: FTA 2018.
[1] Distance measured from the acoustical center of construction site to sensitive receptor property line.
[2] Distance measured from the nearest proposed light pole to sensitive receptor property line.

Architectural Damage

For reference, a peak particle velocity of 0.2 in/sec PPV is used as the limit for nonengineered timber and masonry buildings (which would apply to the surrounding structures) (FTA 2018). Table 5.7-12 shows vibration levels for equipment comparable to that used for grading and drilling for light pole installation. As shown in the table, vibration levels would not exceed 0.2 in/sec PPV at the nearest sensitive receptors. Therefore, impacts would be less than significant.

Table 5.7-12 Vibration Damage Levels at Nearby Receptors – Kwis Elementary Site

	PPV in in/sec		
	FTA Reference	Residential - West	Residential - South
Equipment	25 feet	50 feet	250 feet
Large Bulldozer	0.089	0.027	0.003
Small Bulldozer	0.003	0.027	0.003
Caisson Drilling	0.089	<0.001	<0.001

Source: FTA 2018.
Note: Distance measured from the edge of grading to the nearest sensitive receptor structure and applied to proposed light pole locations for conservative analysis.

Mitigation Measure REC-2

Vibration Annoyance

Table 5.7-13 shows vibration levels for equipment comparable to that used for grading. Vibration levels would not exceed 80 VdB at the nearest sensitive receptors. Therefore, impacts would be less than significant.

Table 5.7-13 Vibration Annoyance Levels at Nearby Receptors – Cedarlane Academy Site

	VdB Levels			
	FTA Reference	R - North	Residential – East	Residential - West
Equipment	25 feet	380 feet	530 feet	145 feet
Large Bulldozer[1]	87	52	47	64
Small Bulldozer[1]	58	23	18	35

Source: FTA 2018.
[1] Distance measured from the acoustical center of construction site to sensitive receptor property line.

Architectural Damage

Table 5.7-14 shows vibration levels for equipment comparable to that used for grading. As shown in the table, vibration levels would not exceed 0.2 in/sec PPV at the nearest sensitive receptors. Therefore, impacts would be less than significant.

Table 5.7-14 Vibration Damage Levels at Nearby Receptors – Cedarlane Academy Site

	PPV in in/sec			
	FTA Reference	Park - North	Residential – East	Residential - West
Equipment	25 feet	380 feet	320 feet	200 feet
Large Bulldozer	0.089	0.002	0.002	0.004
Small Bulldozer	0.003	<0.001	<0.001	<0.001

Source: FTA 2018.
Note: Distance measured from the edge of grading to the nearest sensitive receptor structure.

5.7.8.5 RECREATION

Would the mitigation measure result in increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or accelerated?

Mitigation Measure REC-1

Implementation of MM REC-1 would remove three existing small ballfields with backstops on Kwis ES campus and construct a large baseball field and a small little league field, both with nighttime sports lighting, and a soccer field. Erika Terrazas, principal for Kwis, confirmed that Kwis ES students' existing programing needs (e.g., P.E. classes, recess, afterschool activities.) would not be adversely impacted by the replacement fields' construction provided that the replacement fields are accessible to the students during school hours. The soccer fields and the remaining playfield area would not be used by the Little League team. However, this mitigation alone would only replace two of the four displaced fields; therefore, the Little League team could potentially use other parks or recreational facilities in the area such that physical deterioration of those facilities could be accelerated.

Mitigation Measure REC-2

Implementation of MM REC-2 would provide two unlit Little League fields on the existing Cedarlane campus by improving two existing ballfields. The replacement fields would have the same field orientation as the existing fields and would not remove any of the existing ballfield area. The replacement fields would be accessible to the Cedarlane students during school hours. The remaining playfield area at Cedarlane campus would not be used by the Little League team. However, this mitigation alone would only replace two of the four displaced fields, and none of the replacement fields would be lighted. Therefore, the Little League team would need to use other parks or recreational facilities in the area such that physical deterioration of those facilities could be accelerated.

Would the mitigation measure include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Mitigation Measure REC-1

Kwis ES playfield currently has three small ballfields with backstops clustered near the northwestern corner of the campus. Implementation of MM REC-1 would remove these three existing small ballfields and replace with a large baseball field and a small Little League field, both with nighttime sports lighting, and a soccer field. The replacement ballfields would be equipped with backstops, dugouts, chain-link fence with netting above, and other supporting amenities such as a restroom/concession building and four batting cages. Erika Terrazas, principal for Kwis, confirmed that Kwis ES students' existing programing needs (e.g., P.E. classes, recess, after-school activities.) would not be adversely impacted by the replacement fields development provided the replacement fields are accessible to the students during school hours. The soccer field and the remaining playfield area would not be used by the Little League team. Although the replacement fields would increase the use of the fields at Kwis campus, they would not have an adverse physical effect on the environment. Potential environmental impacts related to aesthetics, air quality, GHG emissions, noise, and transportation are discussed under other headings in this section. As discussed, implementation of MM REC-1 would not result in a significant impact. No other neighborhood parks or recreational facilities would be impacted by the mitigation implementation. Therefore, recreation impacts would be less than significant.

Mitigation Measure REC-2

Cedarlane Academy has a large field area that accommodates five ballfields and one soccer field. The school does not use two northern fields close to the residential uses. According to the principal at Cedarlane Academy, all fields are in very poor condition, with broken irrigation system and numerous red-ant nests and holes throughout the fields. Only one softball field at the southeastern corner of the athletic field area nearest to Fieldgate Avenue and the soccer field near Glenelder Avenue are in safe condition for the students. K-8 students at Cedarlane use the fields throughout the day for recess, PE, after-school activities, and sports events. Implementation of MM REC-2 would provide minor improvements to the two western ballfields, such as backstops, dugouts, and bleachers, without displacing any of the existing fields. And the replacement fields would be available for the Cedarlane students during school hours for recess, PE, and sports events. All activities currently occurring at Cedarlane Academy would continue without any displacement. MM REC-2 would provide improvements to the Cedarlane Academy ballfields, and although it would increase its use, it would not have an adverse physical effect on the environment, as discussed under other headings in this section. No other neighborhood parks or recreational facilities would be impacted by the mitigation implementation. Therefore, recreation impacts would be less than significant.

5.7.8.6 TRANSPORTATION

Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

A Traffic Impact Analysis (TIA) has been conducted to evaluate the traffic impacts of the proposed replacement ballfields on the streets that provide access to the Kwis and Cedarlane campuses, and this TIA is

included as Appendix D to the RDEIR. The methodology for the TIA, in general, was to 1) establish the existing baseline traffic conditions on the traffic study area streets at each school, 2) project the future baseline traffic conditions for the anticipated year of opening for the ballfields, 3) estimate the levels of traffic that would be generated by the ballfields, 4) conduct a comparative analysis of traffic conditions with and without the ballfields, and 5) determine if any significant traffic deficiencies or impacts would occur as a result of the replacement ballfields. The analysis addresses the afternoon peak hour on a weekday and the mid-day peak hour on a Saturday.

The level of service traffic impacts were determined by quantifying the before-and-after traffic volumes, then determining the average delay values and levels of service at the traffic study area intersections for the "without project" and "with project" scenarios. Two scenarios were used as the baseline conditions for the intersection impact analysis: existing year 2020 conditions and the projected year 2023 conditions. The impact analysis, therefore, addresses four scenarios:

- Existing Traffic Conditions
- Existing plus Project Traffic Conditions
- Year 2023 without Project Traffic Conditions
- Year 2023 with Project Traffic Conditions

The levels of service values are based on the average vehicle delay values that were calculated for each intersection using the Highway Capacity Software. The relationship between the average delay values and levels of service is shown in Table 5.7-15, *Relationship Between Delay Values and Levels of Service.*

Table 5.7-15 Relationship Between Delay Values and Levels of Service

Level of Service	Delay Value (seconds) Signalized Intersections	Delay Value (seconds) Unsignalized Intersections
A	0.0 to 10.0	0.0 to 10.0
B	> 10.0 to 20.0	> 10.0 to 15.0
C	> 20.0 to 35.0	> 15.0 to 25.0
D	> 35.0 to 55.0	> 25.0 to 35.0
E	> 55.0 to 80.0	> 35.0 to 50.0
F	> 80.0	> 50.0

It should be noted that Senate Bill 743 eliminated auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. Pursuant to SB 743, the Governor's Office of Planning and Research (OPR) identified vehicle miles traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for identifying and mitigating transportation impacts under CEQA. Regulatory changes to the CEQA Guidelines that implement SB 743 were approved on December 28, 2018, and July 1, 2020 was the statewide implementation date. Consistent with SB 743, the California Court of Appeal held that traffic impacts based on LOS cannot be considered a significant impact on the environment under CEQA. Therefore, the following analysis and standards of significance based on intersection delays and LOS have been provided for disclosure purposes.

Standards of Significance

The County of Los Angeles' Traffic Impact Analysis Guidelines were updated in July 2020. According to the County Traffic Impact Analysis Guidelines, an intersection would be significantly impacted if the project would result in unacceptable queuing at a nearby intersection, and the guidelines indicate that LOS E or F represent unacceptable traffic conditions. Therefore, impacts would not be considered significant and a queuing analysis would not be required at intersections that are projected to operate at LOS A, B, C, or D after project completion.

According to the "Los Angeles County Congestion Management Program," an intersection would be significantly impacted if the project would increase traffic demand by 2 percent of capacity (volume/capacity ratio increase of 0.02 or greater) at an intersection that is projected to operate at LOS F.

Mitigation Measure REC-1 – Kwis ES Replacement Fields

Street Network

The traffic analysis focuses on the impacts at seven intersections in the vicinity of Kwis ES (MM REC-1) and 10 intersections in the vicinity of Cedarlane Academy (MM REC-2). The roadway network in the project vicinity of each school, the existing and future baseline traffic volumes, and the levels of service at the affected study area intersections are described below.

The streets that provide access to the Kwis Elementary School site include Kwis Avenue, Three Palms Street, Los Robles Avenue, Kennard Street, Newton Street, Turnbull Canyon Road, and Hacienda Boulevard. The traffic study area intersections and the type of traffic control at each intersection are listed in Table 5.7-16, *Traffic Study Area Intersections – Kwis Elementary School.*

Table 5.7-16 Traffic Study Area Intersections – Kwis Elementary School

Intersection	Traffic Control
Turnbull Canyon Road / Los Robles Avenue	Traffic Signal
Hacienda Boulevard / Three Palms Street	Traffic Signal
Hacienda Boulevard / Newton Street	Traffic Signal
Kwis Avenue / Three Palms Street	4-Way Stop Signs
Kwis Avenue / Los Robles Avenue	3-Way Stop Signs
Kwis Avenue / Kennard Street	3-Way Stop Signs
Kwis Avenue / Newton Street	3-Way Stop Signs

The following paragraphs provide a brief description of the characteristics of these streets. Figure 4, "Study Area Streets & Intersections," in Appendix D, *Replacement Ballfields TIA*, of the RDEIR shows the study area streets, the type of traffic control at each intersection, the lane configuration at each intersection, the number of lanes on each street segment, and the posted speed limits on each street.

Kwis Avenue is a two lane north-south street that abuts the east side of the school campus. Access to the school's parking lot is provided from Kwis Avenue. The speed limit on Kwis Avenue is 35 miles per hour (mph) between Three Palms Street and Newton Street and 25 mph north of Three Palms Street.

Three Palms Street is a two lane east-west street located approximately one-third mile north of the school campus. An off-ramp from the eastbound Pomona Freeway (State Route 60) intersects with Three Palms Street west of Hacienda Boulevard. The speed limit on Three Palms Street is 25 mph west of Kwis Avenue and 35 mph east of Kwis Avenue.

Los Robles Avenue is a two lane east-west street located approximately one-quarter mile north of the school campus. The speed limit on Los Robles Avenue is 25 mph between Kwis Avenue and Turnbull Canyon Road and 30 mph west of Turnbull Canyon Road.

Kennard Street is a two lane east-west street that intersects with Kwis Avenue at the northeast corner of the school campus. The speed limit on Kennard Street is 25 mph.

Newton Street is a two lane east-west street located approximately 600 feet south of the school campus. The speed limit on Newton Street is 35 mph.

Turnbull Canyon Road is a two to four lane north-south street located approximately one-half mile west of Kwis Avenue. It has two lanes south of Los Robles Avenue and four lanes north of Los Robles Avenue. The speed limit on Turnbull Canyon Road is 35 mph.

Hacienda Boulevard is a six lane north-south street located approximately one-third mile east of the school campus. It has an interchange with the Pomona Freeway northeast of the school site. The speed limit on Hacienda Boulevard is 35 mph north of Newton Street and 40 mph south of Newton Street.

Project Generated Traffic

The volumes of traffic that would be generated by the proposed replacement ballfields were estimated using the trip generation rates described below. The anticipated volumes of traffic that would be generated by the ballfields for a typical weekday and a Saturday are shown in Table 5.7-17. Table 5.7-17 indicates that the two replacement ballfields at Kwis ES would generate 140 vehicle trips during the weekday afternoon peak hour (70 inbound and 70 outbound). On a daily basis, the fields at Kwis ES would generate 560 trips per day. These trips represent the traffic that would be redirected to the Kwis ES from Wedgeworth ES.

Table 5.7-17 Kwis ES Project Generated Traffic – Weekday and Saturday

Land Use	PM Peak Hour (trips per hour)			Daily (trips per day)
	In	Out	Total	4 games/day)
WEEKDAY				
TRIP GENERATION RATES				
Ballfield (trips per field)	35	35	70	280
GENERATED TRAFFIC VOLUMES				
Ballfield (2 fields)	70	70	140	560
SATURDAY				
TRIP GENERATION RATES				
Ballfield (trips per field)	45	45	90	900
GENERATED TRAFFIC VOLUMES				
Ballfield (2 fields)	90	90	180	1,800

The trip generation rates that are typically used for a traffic impact study are from the Institute of Transportation Engineers' (ITE) Trip Generation Manual. However, the Manual does not include a ballfield land use category, so the project-generated traffic volumes were estimated using the following assumptions:

- 4 games per day on weekdays and 10 games per day on Saturdays for fields with lights
- 15 players per team
- A game would generate 1 vehicle trip per player (round trip)
- 2 teams per game per field
- 15 additional trips per game for officials and miscellaneous spectators on weekdays with lights

To quantify the increase in traffic at each intersection resulting from the replacement ballfields, the traffic volumes shown in Table 5.7-17 were geographically distributed onto the street network. The weekday afternoon peak hour and the Saturday midday peak hour volumes are shown on Figure 8, "Project Generated Traffic," in Appendix D, *Replacement Ballfields TIA*, of the RDEIR. The assumed directional distribution percentages for the project-generated traffic are based on the layout of the street network and the anticipated geographical distribution assumptions made based on the league boundaries map shown in the Hacienda Heights Little League's website.

Existing Traffic Volumes

Manual traffic counts were taken at the traffic study area intersections during the weekday afternoon peak period and the Saturday midday peak period in December 2020. These time periods were addressed because they coincide with the times that the ballfields would be active with Little League games and other leagues that might be using the fields. However, since the traffic volumes were lower than normal because of the COVID-19 pandemic, previous traffic volumes were obtained from the LA County "Traffic Counts" website to quantify the most recent traffic volumes that were recorded on the study area streets. The traffic counts that were taken in December 2020, which included turning movements at each of the study area intersections, were then adjusted by an expansion factor so that the traffic volumes used for the analysis matched or exceeded the traffic counts obtained from the LA County website and are representative of normal, not pandemic conditions.

The existing peak hour traffic volumes at each intersection are shown on Figure 6, Existing Traffic Volumes, in Appendix D, *Replacement Ballfields TIA*, of the RDEIR. The figure shows the weekday afternoon and Saturday midday peak hour traffic volumes and turning movements. The weekday afternoon peak hour represents the commuter peak, which typically occurs between 5:00 and 6:00 PM. The Saturday midday peak hour represents the highest one-hour period of traffic flow between 12:00 PM and 3:00 PM.

Levels of Service Analysis

Existing Conditions With and Without Project

To quantify the existing baseline traffic conditions, the traffic study area intersections were analyzed to determine their operating conditions during the weekday afternoon and Saturday midday peak periods. Based on the peak hour traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the average vehicle delay values and corresponding levels of service were determined at each intersection, as summarized in Table 5.7-18. The levels of service shown in Table 5.7-18 are based on the average vehicle delay values that were calculated for each intersection using the Highway Capacity Software. The relationship between the average delay values and levels of service is shown in Table 5.7-15. As shown in Table 5.7-18, all of the study area intersections currently operate at acceptable levels of service (LOS A through D) during the weekday afternoon and Saturday midday peak periods.

Table 5.7-18 Kwis ES Existing Conditions Level of Service With and Without Project

Intersection	Delay Value (sec/veh) – LOS		Increase In Delay (sec)	Significant Impact
	Existing Without Project	Existing With Project		
SIGNALIZED INTERSECTIONS				
Turnbull Canyon Rd / Los Robles Ave				
Weekday PM Peak Hour	12.4 – B	12.6 – B	0.2	No
Saturday Mid-Day Peak Hour	12.0 – B	12.3 – B	0.3	No
Hacienda Blvd / Three Palms Street				
Weekday PM Peak Hour	41.6 – D	41.9 – D	0.3	No
Saturday Mid-Day Peak Hour	19.3 – B	19.4 – B	0.1	No
Hacienda Blvd / Newton Street				
Weekday PM Peak Hour	24.0 – C	25.2 – C	1.2	No
Saturday Mid-Day Peak Hour	21.6 – C	22.3 – C	0.7	No
UNSIGNALIZED INTERSECTION				
Kwis Avenue / Three Palms Street				
Weekday PM Peak Hour	8.3 – A	8.6 – A	0.3	No
Saturday Mid-Day Peak Hour	8.2 – A	8.6 – A	0.4	No
Kwis Avenue / Los Robles Avenue				
Weekday PM Peak Hour	9.3 – A	9.9 – A	0.6	No
Saturday Mid-Day Peak Hour	8.9 – A	9.6 – A	0.7	No
Kwis Avenue / Kennard Street				
Weekday PM Peak Hour	8.1 – A	8.5 – A	0.4	No
Saturday Mid-Day Peak Hour	8.2 – A	8.8 – A	0.6	No
Kwis Avenue / Newton Street				
Weekday PM Peak Hour	10.6 – B	11.3 – B	0.7	No
Saturday Mid-Day Peak Hour	9.9 – A	10.7 – B	0.8	No

The before-and-after delay values and levels of service at each of the study area intersections for Kwis ES are summarized in Table 5.7-18 for the existing conditions baseline scenario. The table shows the existing traffic conditions, the traffic conditions with the addition of the ballfield-generated traffic, and the increase in delay values associated with the project. The final column in the table indicates if the intersection would be significantly impacted by the ballfield traffic according to the significance criteria outlined above. As shown in Table 5.7-18, all traffic study intersections would continue to operate at LOS D or better, and the traffic generated by the proposed ballfields at Kwis ES would not result in a significant impact at any of the study area intersections during the weekday PM peak hour or the Saturday midday peak hour according to the Los Angeles County and the CMP guidelines.

The intersection of Turnbull Canyon Road and Los Robles Avenue, for example, currently operates with an average delay value of 12.4 seconds and LOS B for existing conditions and would operate with an average delay value of 12.6 seconds and LOS B for the "existing plus project" scenario. Although the additional traffic generated by the ballfields would increase the average delay at the intersection by 0.2 seconds, the intersection would continue to operate at an acceptable LOS B, and impacts would not be considered significant.

Future Traffic Conditions With and Without Project

As the proposed ballfields are expected to be completed and operational in the year 2023, the existing traffic volumes were expanded by a growth factor of 3 percent (1 percent per year) to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area. According to the Los Angeles County Congestion Management Program, the annual growth rate for Regional Statistical Area 26, of which Hacienda Heights is a part, is 0.4 percent per year from 2020 to 2025. So the use of a 1 percent annual growth rate to project the year 2023 baseline traffic volumes is conservatively high.

The future baseline levels of service were calculated for each study area intersection based on the expanded peak hour traffic volumes, as summarized in Table 5.7-19, *Year 2023 Plus Kwis ES Replacement Fields Project Level of Service*. For the target year of 2023, all of the study area intersections are projected to operate at acceptable levels of service (LOS A through D) during the weekday afternoon and Saturday midday peak periods.

Table 5.7-19 Year 2023 Plus Kwis ES Replacement Fields Project Level of Service

Intersection	Delay Value (sec/veh) – LOS		Increase In Delay (sec)	Significant Impact
	2023 No Project	2023 Plus Project		
SIGNALIZED INTERSECTIONS				
Turnbull Canyon Road / Los Robles Avenue				
Weekday PM Peak Hour	12.5 – B	12.7 – B	0.2	No
Saturday Mid-Day Peak Hour	12.2 – B	12.4 – B	0.2	No
Hacienda Blvd / Three Palms Street				
Weekday PM Peak Hour	47.0 – D	47.5 – D	0.5	No
Saturday Mid-Day Peak Hour	21.7 – C	21.9 – C	0.2	No
Hacienda Blvd / Newton Street				
Weekday PM Peak Hour	25.2 – C	26.6 – C	1.4	No
Saturday Mid-Day Peak Hour	22.4 – C	23.1 – C	0.7	No

Table 5.7-19 Year 2023 Plus Kwis ES Replacement Fields Project Level of Service

Intersection	Delay Value (sec/veh) – LOS		Increase In Delay (sec)	Significant Impact
	2023 No Project	2023 Plus Project		
UNSIGNALIZED INTERSECTION				
Kwis Avenue / Three Palms Street				
Weekday PM Peak Hour	8.4 – A	8.7 – A	0.3	No
Saturday Mid-Day Peak Hour	8.3 – A	8.7 – A	0.4	No
Kwis Avenue / Los Robles Avenue				
Weekday PM Peak Hour	9.4 – A	10.1 – B	0.7	No
Saturday Mid-Day Peak Hour	9.0 – A	9.7 – A	0.7	No
Kwis Avenue / Kennard Street				
Weekday PM Peak Hour	8.1 – A	8.5 – A	0.4	No
Saturday Mid-Day Peak Hour	8.3 – A	8.9 – A	0.6	No
Kwis Avenue / Newton Street				
Weekday PM Peak Hour	10.8 – B	11.6 – B	0.7	No
Saturday Mid-Day Peak Hour	10.1 – B	11.0 – B	0.8	No

The before-and-after delay values and levels of service at each of the study area intersections for Kwis Elementary School are summarized in Table 5.7-19 for the year 2023 baseline scenario. As shown, all intersections would continue to operate at LOS D or better. Therefore, the traffic generated by the proposed ballfields would not result in a significant impact at any of the study area intersections during the weekday PM peak hour or the Saturday midday peak hour.

Mitigation Measure REC-2

Street Network – Cedarlane Academy

The traffic analysis focuses on the impacts at 10 intersections in the vicinity of Cedarlane Academy. The roadway network in the project vicinity of each school, the existing and future baseline traffic volumes, and the levels of service at the affected study area intersections are described below.

The streets that provide access to the Cedarlane Academy site include Cedarlane Drive, Fieldgate Avenue, Glenelder Avenue, Garo Street, Wedgeworth Drive, Flamstead Drive, Stimson Avenue, Sigman Street, Countrywood Avenue, and Colima Road. The traffic study area intersections and the type of traffic control at each intersection are listed in Table 5.7-20, *Study Area Intersections – Cedarlane Academy*.

Table 5.7-20 Study Area Intersections – Cedarlane Academy

Intersection	Traffic Control
Stimson Avenue / Garo Street	Traffic Signal
Stimson Avenue / Sigman Street	Traffic Signal
Colima Road / Countrywood Avenue	Traffic Signal
Glenelder Avenue / Garo Street	Stop Sign on Glenelder Avenue
Glenelder Avenue / Cedarlane Drive	Stop Sign on Cedarlane Drive
Glenelder Avenue / Wedgeworth Drive	4-Way Stop Signs
Flamstead Drive / Sigman Street	Stop Sign on Sigman Street
Fieldgate Avenue / Cedarlane Drive	Stop Sign on Cedarlane Drive
Fieldgate Avenue / Wedgeworth Drive	4-Way Stop Signs
Countrywood Avenue / Wedgeworth Drive	4-Way Stop Signs

The following paragraphs provide a brief description of the characteristics of these streets. Figure 5, Study Area Streets & Intersections, in Appendix D, *Replacement Ballfields TIA*, of the RDEIR, shows the study area streets, the type of traffic control at each intersection, the lane configuration at each intersection, the number of lanes on each street segment, and the posted speed limits on each street.

Cedarlane Drive is a two lane east-west street that abuts the south side of the school campus. Access to one of the school's parking lots is provided from Cedarlane Drive. The speed limit on Cedarlane Drive is 25 mph.

Fieldgate Avenue is a two lane north-south street that abuts the east side of the school campus. Access to the school's other parking lot is provided from Fieldgate Avenue. The speed limit on Fieldgate Avenue is 25 mph.

Glenelder Avenue is a two lane north-south street that abuts the west side of the school campus. The speed limit on Glenelder Avenue is 25 mph.

Garo Street is a two lane east-west street located approximately 120 feet north of the school's athletic fields. A row of houses runs between the fields and Garo Street. The speed limit on Garo Street is 25 mph.

Wedgeworth Drive is a two lane east-west street located approximately 300 feet south of the school campus. The speed limit on Wedgeworth Drive is 25 mph.

Flamstead Drive is a two-lane street that is the continuation of Glenelder Avenue southwest of Wedgeworth Drive. The speed limit on Flamstead Drive is 25 mph.

Stimson Avenue is a four lane north-south street located approximately one-half mile west of the school campus. The speed limit on Stimson Avenue is 40 mph.

Sigman Street is a two lane east-west street located approximately 700 feet southwest of the school campus. It extends from Flamstead Drive to Stimson Avenue. The speed limit on Sigman Street is 25 mph.

Countrywood Avenue is a two lane north-south street located approximately one-third mile east of the school campus. The speed limit on Countrywood Avenue is 25 mph.

Colima Road is a four lane east-west street located approximately three-quarters mile southeast of the school campus. The speed limit on Colima Road is 25 mph.

Project Generated Traffic

The volumes of traffic that would be generated by the proposed replacement ballfields were estimated using the below trip generation rates. The anticipated volumes of traffic that would be generated by the ballfields for a typical weekday and a Saturday are shown in Table 5.7-21, *Cedarlane Academy Project Generated Traffic – Weekday and Saturday*. Table 5.7-21 indicates that the two unlit ballfields at Cedarlane Academy would generate 280 vehicle trips on a weekday (70 inbound and 70 outbound) and 1,440 trips during the Saturday midday peak hour (90 inbound and 90 outbound). However, it should be noted that the project-generated traffic volumes shown do not represent new traffic on the roadway network, but the traffic that would be redirected to the Cedarlane Academy sites. This traffic is already being generated by the existing ballfields at Wedgeworth Elementary School.

Table 5.7-21 Cedarlane Academy Project Generated Traffic – Weekday and Saturday

	PM Peak Hour (trips per hour)			Daily (trips per day)
Land Use	In	Out	Total	4 games/day)
WEEKDAY				
TRIP GENERATION RATES				
Ballfield (trips per field)	35	35	70	140
GENERATED TRAFFIC VOLUMES				
Ballfield (2 fields)	70	70	140	280
SATURDAY				
TRIP GENERATION RATES				
Ballfield (trips per field)	45	45	90	720
GENERATED TRAFFIC VOLUMES				
Ballfield (2 fields)	90	90	180	1,440

The project generated traffic volumes were estimated using the following assumptions:

- 2 games per day on weekdays and 8 games per day on Saturdays for fields with no lights
- 15 players per team
- A game would generate 1 vehicle trip per player (round trip)
- 2 teams per game per field
- 5 additional trips per game for officials and miscellaneous spectators on weekdays with no lights

To quantify the increase in traffic at each intersection resulting from the replacement ballfields, the traffic volumes shown in Table 5.7-21 were geographically distributed onto the street network. The weekday afternoon peak hour and the Saturday midday peak hour volumes are shown in Figure 9, Project Generated Traffic, in Appendix D, *Replacement Ballfields TIA*, of the RDEIR. The assumed directional distribution percentages for the project-generated traffic are based on the layout of the street network and the anticipated geographical distribution assumptions are based on the League Boundaries Map shown in the Hacienda Heights Little League's website.

Existing Traffic Volumes

Manual traffic counts were taken at the traffic study area intersections during the weekday afternoon peak period and the Saturday midday peak period in December 2020. These time periods were addressed because they coincide with the times that the ballfields would be active with Little League games and other leagues that might be using the fields. However, since the traffic volumes were lower than normal because of the COVID-19 pandemic, previous traffic volumes were obtained from the LA County "Traffic Counts" website to quantify the most recent traffic volumes that were recorded on the study area streets. The traffic counts that were taken in December 2020, which included turning movements at each of the study area intersections, were then adjusted by an expansion factor so that the traffic volumes used for the analysis matched or exceeded the traffic counts obtained from the LA County website and are representative of normal, not pandemic conditions.

The existing peak hour traffic volumes at each intersection are shown on Figure 7, Existing Traffic Volumes, in Appendix D, *Replacement Ballfields TIA*, of the RDEIR. The figure shows the weekday afternoon and Saturday midday peak hour traffic volumes and turning movements. The weekday afternoon peak hour represents the commuter peak which typically occurs between 5:00 and 6:00 pm. The Saturday midday peak hour represents the highest one-hour period of traffic flow between 12:00 pm and 3:00 pm.

Levels of Service Analysis

Existing Conditions With and Without Project

To quantify the existing baseline traffic conditions, the traffic study area intersections were analyzed to determine their operating conditions during the weekday afternoon and Saturday midday peak periods. Based on the peak hour traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the average vehicle delay values and corresponding levels of service have been determined at each intersection, as summarized in Table 5.7-22, *Cedarlane Academy Existing Conditions Level of Service With and Without Project*. The levels of service shown in Table 5.7-22 are based on the average vehicle delay values that were calculated for each intersection using the Highway Capacity Software. The relationship between the average delay values and levels of service is shown in Table 5.7-15. As shown in Table 5.7-22, all of the study area intersections currently operate at acceptable LOS B or better during the weekday afternoon and Saturday midday peak periods and would continue to operate at LOS B or better after mitigation implementation.

Table 5.7-22 Cedarlane Academy Existing Conditions Level of Service With and Without Project

Intersection	Delay Value (sec/veh) – LOS		Increase In Delay (sec)	Significant Impact
	Existing Without Project	Existing With Project		
SIGNALIZED INTERSECTIONS				
Stimson Avenue / Garo Street				
Weekday PM Peak Hour	7.2 – A	7.5 – A	0.3	No
Saturday Mid-Day Peak Hour	6.9 – A	7.3 – A	0.4	No
Stimson Avenue / Sigman Street				
Weekday PM Peak Hour	5.3 – A	5.7 – A	0.4	No
Saturday Mid-Day Peak Hour	5.3 – A	5.7 – A	0.4	No
Colima Road / Countrywood Avenue				
Weekday PM Peak Hour	11.8 – B	12.1 – B	0.3	No
Saturday Mid-Day Peak Hour	10.5 – B	10.8 – B	0.3	No

Table 5.7-22 Cedarlane Academy Existing Conditions Level of Service With and Without Project

Intersection	Delay Value (sec/veh) – LOS		Increase In Delay (sec)	Significant Impact
	Existing Without Project	Existing With Project		
UNSIGNALIZED INTERSECTION				
Glenelder Avenue / Garo Street				
Weekday PM Peak Hour	11.1 – B	11.7 – B	0.6	No
Saturday Mid-Day Peak Hour	10.2 – B	10.7 – B	0.5	No
Glenelder Avenue / Cedarlane Drive				
Weekday PM Peak Hour	9.2 – A	9.8 – A	0.6	No
Saturday Mid-Day Peak Hour	9.0 – A	9.6 – A	0.6	No
Glenelder Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	8.9 – A	9.2 – A	0.3	No
Saturday Mid-Day Peak Hour	8.3 – A	8.6 – A	0.3	No
Flamstead Drive / Sigman Street				
Weekday PM Peak Hour	10.1 – B	10.2 – B	0.1	No
Saturday Mid-Day Peak Hour	9.6 – A	10.1 – B	0.5	No
Fieldgate Avenue / Cedarlane Drive				
Weekday PM Peak Hour	10.8 – B	11.2 – B	0.4	No
Saturday Mid-Day Peak Hour	9.7 – A	10.1 – B	0.4	No
Fieldgate Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	11.4 – B	12.3 – B	0.9	No
Saturday Mid-Day Peak Hour	9.2 – A	9.8 – A	0.6	No
Countrywood Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	12.1 – B	13.0 – B	0.9	No
Saturday Mid-Day Peak Hour	9.6 – A	10.2 – B	0.6	No

Future Traffic Conditions With and Without Project

As the proposed ballfields are expected to be completed and operational in the year 2023, the existing traffic volumes were expanded by a growth factor of 3 percent (1 percent per year) to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area. According to the Los Angeles County Congestion Management Program, the annual growth rate for Regional Statistical Area 26, of which Hacienda Heights is a part, is 0.4 percent per year from 2020 to 2025. So, the use of a 1 percent annual growth rate to project the year 2023 baseline traffic volumes is conservatively high.

The future baseline levels of service were calculated for each study area intersection based on the expanded peak hour traffic volumes, as summarized in Table 5.7-23, *Cedarlane Academy Year 2023 Level of Service With and Without Project*. For the target year of 2023, all the study area intersections are projected to operate at acceptable LOS B or better during the weekday afternoon and Saturday midday peak periods. And as shown in the same table, the before-and-after delay values and levels of service at each of the study area intersections show that the intersections would continue to operate at LOS B or better with implementation of MM REC-2. The traffic generated by the proposed ballfields would not result in a significant impact at any of the study area intersections during the weekday PM peak hour or the Saturday midday peak hour according to the guidelines. Impacts would be less than significant.

Table 5.7-23 Cedarlane Academy Year 2023 Level of Service With and Without Project

Intersection	Delay Value (sec/veh) – LOS		Increase In Delay (sec)	Significant Impact
	2023 Without Project	2023 With Project		
SIGNALIZED INTERSECTIONS				
Stimson Avenue / Garo Street				
Weekday PM Peak Hour	7.3 – A	7.7 – A	0.4	No
Saturday Mid-Day Peak Hour	7.0 – A	7.5 – A	0.5	No
Stimson Avenue / Sigman Street				
Weekday PM Peak Hour	5.4 – A	5.9 – A	0.5	No
Saturday Mid-Day Peak Hour	5.4 – A	5.8 – A	0.4	No
Colima Road / Countrywood Avenue				
Weekday PM Peak Hour	12.0 – B	12.4 – B	0.4	No
Saturday Mid-Day Peak Hour	10.7 – B	11.0 – B	0.3	No
UNSIGNALIZED INTERSECTION				
Glenelder Avenue / Garo Street				
Weekday PM Peak Hour	11.2 – B	11.9 – B	0.7	No
Saturday Mid-Day Peak Hour	10.2 – B	10.8 – B	0.6	No
Glenelder Avenue / Cedarlane Drive				
Weekday PM Peak Hour	9.2 – A	9.8 – A	0.6	No
Saturday Mid-Day Peak Hour	9.0 – A	9.7 – A	0.7	No
Glenelder Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	9.0 – A	9.3 – A	0.3	No
Saturday Mid-Day Peak Hour	8.4 – A	8.7 – A	0.3	No
Flamstead Drive / Sigman Street				
Weekday PM Peak Hour	10.2 – B	10.5 – B	0.3	No
Saturday Mid-Day Peak Hour	9.7 – A	10.1 – B	0.4	No
Fieldgate Avenue / Cedarlane Drive				
Weekday PM Peak Hour	10.9 – B	11.3 – B	0.4	No
Saturday Mid-Day Peak Hour	9.8 – A	10.1 – B	0.3	No
Fieldgate Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	11.8 – B	12.7 – B	0.9	No
Saturday Mid-Day Peak Hour	9.3 – A	9.9 – A	0.6	No
Countrywood Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	12.6 – B	13.5 – B	0.9	No
Saturday Mid-Day Peak Hour	9.8 – A	10.4 – B	0.6	No

Nonmotorized Transportation and Transit

Mitigation Measure REC-1 and REC-2

The replacement ballfields would generate an increased demand for nonmotorized transportation as some of the players, coaches, and spectators would travel to and from the schools as pedestrians or on bicycles. The streets in the vicinity of Kwis Elementary School have sidewalks along both sides of the street except for the north side of Three Palms Street between the freeway off-ramp and Hacienda Boulevard and the south side of Los Robles Avenue on a short segment west of Kwis Avenue. The streets in the vicinity of Cedarlane Academy have sidewalks along both sides of the street except for the north side of Garo Street east of Stimson Avenue and Flamstead Drive southwest of Sigman Street. The signalized intersections in the study area are equipped

with painted crosswalks and pedestrian crossing signals, and the unsignalized intersections near the schools have yellow painted crosswalks. These pedestrian amenities will accommodate and enhance pedestrian circulation and safety in the school areas.

Bike lanes are currently in place on Colima Road south of Cedarlane Academy, and the schools have bike racks on the campuses.

With regard to public transit, Foothill Transit operates Line 185 on Hacienda Boulevard and Colima Road; Line 282 on Hacienda Boulevard, Haliburton Road, and Colima Road; and Line 285 on Hacienda Boulevard. In addition, Lines 493 and 495 run along the Pomona Freeway, and a transit center is located at Puente Hills Mall approximately one mile east of Cedarlane Academy.

The proposed ballfields project would not adversely affect the performance or safety of any transit or nonmotorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these transportation modes. The ballfields are consistent with such plans and policies as sidewalks are in place along the streets near the schools, bike racks are provided at the schools, and bus routes operate near both school sites. Therefore, impacts would be less than significant.

Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).

CEQA Guidelines Section 15064.3, subdivision (b), pertains to criteria for analyzing transportation impacts and determining the significance of transportation impacts based on vehicle miles traveled (VMT). CEQA Guidelines Section 15064.3, subdivision (b)(4), states that a leady agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household, or in any other measure. A VMT analysis technical memo was prepared in January 2021 for the replacement ballfields at Kwis ES and Cedarlane Academy and is included as Appendix E, *VMT Technical Memo*, to the RDEIR. Figure 6 shows the two alternative locations of baseball fields and number of population (age from 5 to 17) with graduated color for TAZs within the Hacienda Heights Little League boundary. The weighted average trip length is calculated based on the related populations (age 5 to 17) of TAZs within the Hacienda Heights Little League boundary, and trip distances between these TAZs and Wedgeworth School, Kwis School, or Cedarlane Academy are based on the SCAG model distance skim. Attachment C of Appendix E, *VMT Technical Memo*, of this RDEIR, shows more details of the weighted average trip length calculation.

Mitigation Measure REC-1

Implementation of MM REC-1 would develop two lit ballfields at Kwis ES, which would generate 560 trips during weekday and 1,800 trips during Saturday, as shown in Table 5.7-17. The weighted average trip length for team players within the Hacienda Heights Little League boundary to Kwis ES is 2.25 miles (Attachment C of Appendix E). Daily trips generated by the four baseball fields at Wedgeworth ES are 840 during weekday and 3,240 trips during Saturday (see Attachment B of Appendix E). The weighted average trip length for team players within the Hacienda Heights Little League boundary to the Wedgeworth School is 3.16 miles. Table 5.7-24 summarizes the VMT for the existing four fields at Wedgeworth ES and the VMT for two replacement fields at Kwis ES. As shown, VMT for the existing four ballfields at Wedgeworth is 2,654 during weekdays and 10,238

VMT during Saturdays, and VMT for the Kwis ES replacement ballfields would be 1,260 for the weekdays and 4,050 for a Saturday, which represents a decreased VMT from the existing VMT at Wedgeworth fields by 1,394 VMT during weekdays and 6,188 during Saturdays. Therefore, implementation of MM REC-1 would not result in significant VMT impact.

Table 5.7-24 Total VMT for Kwis ES Replacement Fields

	Baseball Field	Daily Trip (Weekday)	Daily Trip (Saturday)	Weighted Average Trip Length (Mile)	Weekday VMT	Saturday VMT
Proposed Project	Wedgeworth Fields	840	3,240	3.16	2,654	10,238
MM REC-1	Kwis ES Replacement Fields	560	1,800	2.25	1,260	4,050
				Total Change	-1,394	-6,188,

Mitigation Measure REC-2

Implementation of MM REC-2 would develop two unlit ballfields at Cedarlane Academy, which would generate 280 trips during weekdays and 1,440 trips during a Saturday, as shown in Table 5.7-25. The weighted average trip length for team players within the Hacienda Heights Little League boundary to Cedarlane Academy is 2.36 miles. Therefore, VMT for the Cedarlane replacement ballfields would be 661 for the weekdays and 3,398 for a Saturday. Table 5.7-25 summarizes the VMT for the existing four fields at Wedgeworth ES and the two replacement fields at Cedarlane campus, which represent a decreased VMT from the existing VMT at Wedgeworth fields by 1,993 during weekdays and 6,840 VMT during Saturdays. Therefore, implementation of MM REC-2 would not result in significant VMT impact.

Table 5.7-25 Total VMT for Cedarlane Academy Replacement Fields

	Baseball Field	Daily Trip (Weekday)	Daily Trip (Saturday)	Weighted Average Trip Length (Mile)	Weekday VMT	Saturday VMT
Proposed Project	Wedgeworth Fields	840	3,240	3.16	2,654	10,238
MM REC-2	Cedarlane Academy Replacement Fields	280	1,440	2.36	661	3,398
				Total Change	-1,993	-6,840

Mitigation Measures REC-1 and REC-2

Provided that both MM REC-1 and REC-2 are implemented, the total VMT for the Kwis and Cedarlane replacement fields would be 1,921 (1,260 + 661) during weekdays, and 7,448 (4,050 + 3,398) during Saturdays. When compared to the existing VMT of 2,654 during weekdays and 10,238 during Saturdays at the Wedgeworth fields (project site), the replacement fields at Kwis and Cedarlane campuses would result in a net decrease of 733 VMT during weekdays and 2,790 VMT during Saturdays. Therefore, implementation of MM REC-1 and MM REC-2 would not result in a net increase in existing total VMT, and impacts would be less than significant.

Table 5.7-26 Total VMT for Kwis ES and Cedarlane Academy Replacement Fields

	Baseball Field	Daily Trip (Weekday)	Daily Trip (Saturday)	Weighted Average Trip Length (Mile)	Weekday VMT	Saturday VMT
MM REC-1	Kwis ES Replacement Fields	560	1,800	2.25	1,260	4,050
MM REC-2	Cedarlane Academy Replacement Fields	280	1,440	2.36	661	3,398
				Replacement Fields Subtotal	1,921	7,448
Proposed Project	Wedgeworth Fields	840	3,240	3.16	2,654	10,238
				Total Change	-733	-2,790

Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Mitigation Measures REC-1 and REC-2

The increased levels of traffic that would be generated by the ballfields, the increased number of pedestrians and bicyclists, and the increased number of vehicular turning movements at the school entrances and at the nearby intersections would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring during the days and hours when the schools are not in session. These impacts would not be significant, however, because the traffic study area streets, intersections, and driveways for both Kwis and Cedarlane sites are designed to accommodate the anticipated levels of vehicular and pedestrian activity as they are already operating as schools. There are no severe visibility constraints at the schools' access driveways associated with curves or hills, and the existing schools have been in operation at these locations for many years. The replacement ballfields as mitigation measures would, therefore, be a compatible use in the area and would not substantially increase hazards due to any design features.

Result in inadequate emergency access.

Mitigation Measures REC-1 and REC-2

The existing access and circulation features at the schools, including the on-site roadways, parking lots, and fire lanes, would accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. Site access would be provided via the driveways on Kwis Avenue for Kwis Elementary School and on Cedarlane Drive and Fieldgate Avenue for Cedarlane Academy. In addition, Cedarlane Academy has two gates with curb ramps on Fieldgate Avenue that provide direct access to the athletic fields for maintenance and emergency vehicles. The replacement ballfields as mitigation measures would not, therefore, result in inadequate emergency access at either of the two schools.

5.7.9 Level of Significance After Mitigation

Impact 5.7-1

Mitigation Measure REC-1

Implementation of Mitigation Measure REC-1 would replace two baseball fields for Little League team use, providing one large field and one small field with lights on Kwis ES campus. Implementation of Mitigation Measure REC-1 alone would not replace two of the existing ballfields and therefore, Impact 5.7-1 would remain significant and unavoidable under Mitigation Measure REC-1.

Mitigation Measure REC-2

Implementation of Mitigation Measure REC-2 would replace two replacement baseball fields for Little League use, providing two small fields without lights on Cedarlane campus. Implementation of Mitigation Measure REC-2 alone would not replace the two existing lighted ballfields and therefore, Impact 5.7-1 would remain significant and unavoidable under Mitigation Measure REC-2.

Mitigation Measures REC-1 and REC-2

Implementation of both MM REC-1 and MM REC-2 would replace all four displaced ballfields from the project site; therefore, Impact 5.7-1 would be reduced to a less than significant level.

Impact 5.7-2

Mitigation Measure REC-1

Implementation of Mitigation Measure REC-1 would replace two baseball fields for Little League team use, providing one large field and one small field with lights on Kwis ES campus. As discussed in Section 5.7.8, *Potential Impacts of Mitigation Measures*, pursuant to CEQA Guidelines Section 15126.4(a)(1)(D), the development and operation of two lit replacement ballfields at Kwis ES would not result in significant environmental impacts related to aesthetics, air quality, GHG emissions, noise, recreation, and transportation. Therefore, implementation of Mitigation Measure REC-1 would not result in adverse physical effect on the environment, and Impact 5.7-2 would be mitigated to a less than significant impact.

Mitigation Measure REC-2

Implementation of Mitigation Measure REC-2 would replace two baseball fields for Little League team use, providing two small field without lights on Cedarlane Academy. As discussed in Section 5.7.8, *Potential Impacts of Mitigation Measures*, pursuant to CEQA Guidelines Section 15126.4(a)(1)(D), the development and operation of two replacement ballfields at Cedarlane Academy would not result in significant environmental impacts related to aesthetics, air quality, GHG emissions, noise, recreation, and transportation. Therefore, implementation of Mitigation Measure REC-2 would not result in adverse physical effect on the environment, and Impact 5.7-2 would be mitigated to a less than significant impact.

Mitigation Measures REC-1 and REC-2

Implementation of Mitigation Measures REC-1 and REC-2 would replace four baseball fields for Little League team use at Kwis ES and Cedarlane Academy. As discussed in Section 5.7.8, *Potential Impacts of Mitigation Measures*, pursuant to CEQA Guidelines Section 15126.4(a)(1)(D), the development and operation of four replacement ballfields would not result in significant environmental impacts related to aesthetics, air quality, GHG emissions, noise, recreation, and transportation. Therefore, implementation of Mitigation Measures REC-1 and REC-2 would not result in adverse physical effect on the environment, and Impact 5.7-2 would be mitigated to a less than significant impact.

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5. Environmental Analysis
RECREATION

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5.8 TRANSPORTATION

This section of the recirculated draft environmental impact report (RDEIR) evaluates the potential for implementation of the proposed project to result in transportation and traffic impacts in Hacienda Heights and the adjacent City of Industry. The analysis in this section is based in part on the following technical reports:

- *Memorandum: VMT Analysis for the Wedgeworth K-8 School and Residential Development Project,* Kittelson & Associates, January 20, 2021 (Appendix E).
- *Traffic Impact Analysis for Wedgeworth K-8 School*, PlaceWorks, August 2019 (updated March 2020) (Appendix F).

Complete copies of these studies are in Appendices E and F to this RDEIR.

5.8.1 Environmental Setting

5.8.1.1 REGULATORY BACKGROUND

State

Senate Bill 743

On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analysis as part of CEQA compliance. The legislature found that with the adoption of SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of GHG emissions, as required by the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32).

SB 743 is intended to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions." When implemented, "traffic congestion shall not be considered a significant impact on the environment" within California Environmental Quality Act (CEQA) transportation analysis.

Therefore, SB 743 eliminates auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)).

SB 743 requires the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified VMT per capita, VMT per employee, and net VMT as new metrics for transportation analysis. Regulatory changes to the CEQA Guidelines that implement SB 743 were approved on December 28, 2018. July 1, 2020, was the

statewide implementation date. OPR released a December 2018 Technical Advisory with recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.

Consistent with SB 743, the California Court of Appeal held that traffic impacts based on LOS cannot be considered a significant impact on the environment under CEQA. In *Citizens for Positive Growth & Preservation v. City of Sacramento* (2019), the court stated that in enacting Public Resources Code Section 21099, the legislature directed that traffic analyses prepared to comply with CEQA move away from LOS to encourage infill development and focus CEQA traffic analyses on potential traffic-related environmental impacts rather than inconvenience associated with traffic congestion. Section 21099(b)(2) defines automobile delay as described solely by LOS as not "a significant impact on the environment pursuant to [CEQA] except in locations specifically identified in the guidelines." In 2018, the Secretary of the Natural Resources Agency certified CEQA Guidelines Section 15064.3 to implement Public Resources Code Section 21099(b)(2). Therefore, traffic impacts based on LOS cannot be considered a significant impact on the environment under CEQA.

The County of Los Angeles updated its Transportation Impact Analysis Guidelines to address elements of SB 743 and VMT on July 23, 2020.

Regional/County

Regional Transportation Plan/Sustainable Communities Strategy

The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) addresses the region's future needs for "mobility, economy, and sustainability." The RTP/SCS combines the need for mobility with a "sustainable future" through a reduction in the amount of emissions produced from transportation sources through the operation of low- or no-emission transportation systems by 2040. The RTP/SCS also focuses on the economy with expectations of shortening the gap between the regional transportation system and economic vitality.

To address the mobility challenge of the region's continuing roadway congestion, transportation investments will be made in transit; passenger and high-speed rail; active transportation; transportation demand management; transportation systems management; highways; arterials; goods movement; aviation and airport ground access; and operations and maintenance. These will indirectly create investment opportunities in the region. The RTP/SCS seeks to reduce GHG emissions; to create closer "high quality" transit for households; to decrease roadway congestion; to improve safety; and to generate average 539,900 jobs per year. This will improve and establish a platform for sustainable living situations for the region's existing and future population (SCAG 2016a).

Since the preparation and circulation of the original DEIR, the Regional Council adopted Connect SoCal (2020-2045 RTP/SCS) in September 2020. Connect SoCal is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura.

Congestion Management Program for Los Angeles County

The Los Angeles County Metropolitan Transportation Authority (Metro) has developed and implements the Congestion Management Program (CMP) for Los Angeles County. The CMP was last updated in 2010 and links transportation, land use, and air quality decisions in the county and addresses the impact of local growth on the regional transportation system. The CMP calls for (1) monitoring the CMP highway and roadway system; (2) a multimodal system performance analysis; (3) a transportation demand management program to promote alternative modes of transportation; (4) a land use analysis program; (5) a seven-year capital improvement program of proposed projects on the CMP highway and roadway system; and (6) a deficiency plan to maintain LOS standards.

Los Angeles County Mobility Element (General Plan Element)

The mobility element in the Los Angeles County General Plan 2035 provides the policy foundation for achieving a transportation system that balances the needs of all road users. It contains seven goals and multiple policies that provide specific steps to achieve each goal. The transportation goals in the LA County Mobility Element are:

- **M1:** Street designs that incorporate the needs of all users.
- **M2:** Interconnected and safe bicycle- and pedestrian-friendly streets, sidewalks, paths and trails that promote active transportation and transit use.
- **M3:** Streets that incorporate innovative designs.
- **M4:** An efficient multimodal transportation system that serves the needs of all residents.
- **M5:** Land use planning and transportation management that facilitates the use of transit.
- **M6:** The safe and efficient movement of goods.
- **M7:** Transportation networks that minimizes negative impacts to the environment and communities.

Goal M4's policy M4.7 sets minimum LOS standards: Maintain a minimum LOS D, where feasible; however, allow LOS below D on a case-by-case basis in order to further other General Plan goals and policies, such as those related to environmental protection, infill development, and active transportation.

The mobility element also introduces several implementation programs that will increase the safety and efficiency of the Los Angeles County roadway network:

- Parking Ordinance
- Community Pedestrian Plans
- Safe Routes to School Program
- Multimodal Transportation Planning Function

The mobility element was prepared in compliance with the Complete Streets Act of 2008 (Assembly Bill 1358), which requires local jurisdictions to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation.

Los Angeles County Code

Title 15, Vehicles and Traffic, of the Los Angeles County Code regulates traffic signs and signals; traffic on public and private roads; parking restrictions; turning movement restrictions; allowable speed limit under different circumstances; crosswalks and bicycle lanes; as well as many other chapters that deal with traffic restrictions within the county.

5.8.1.2 INTERSECTION LOS ANALYSIS AND IMPACT CRITERIA

Roadway capacity is generally limited by the ability to move vehicles through intersections. A level of service is a standard performance measurement to describe the operating characteristics of a street system in terms of the level of congestion or delay experienced by motorists. Service levels range from A through F to represent traffic conditions from best (uncongested, free-flowing conditions) to worst (total breakdown with stop-and-go operation).

Intersection LOS

In conformance with the City of Industry and Los Angeles County requirements, existing AM and PM peak-hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume-to-capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU value translates to an LOS grade. Descriptions of the LOS letter grades for signalized intersections and the relationships between the various V/C ratios are provided in Table 5.8-1, *Level of Service Definitions for Signalized Intersections*. To determine the LOS at the signalized intersections, the ICU calculations used a lane capacity of 1,600 vehicles per hour for left-turn, thru, and right-turn lanes, with a lost time of 10 seconds per cycle. Intersection operation was analyzed using the Vistro software, version 7.00-02. For Caltrans facilities, the methodology used to assess the operation of an intersections is based on the Highway Capacity Manual (HCM) based on delay measured in seconds per vehicle.

Table 5.8-1 Level of Service Definitions for Signalized Intersections

LOS	V/C	Delay Per Vehicle (Sec/Vehicle)	Definition
A	0.000–0.600	≤ 10	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601–0.700	> 10–20	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701–0.800	> 20–35	GOOD. Occasionally, drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801–0.900	> 35–55	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901–1.000	> 55–80	POOR. Represents the most vehicles that intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	Greater than 1.000	> 80	FAILURE. Backups from nearby intersections or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Sources: Transportation Research Board, Highway Capacity Manual, 6th edition; City of Industry General Plan.
Note: If volume-to-capacity (V/C) ratio is greater than 1.0 for the operation of a signalized or unsignalized intersection, the LOS is F regardless of the delay value.

The methodology used to assess the operation of an unsignalized intersections is based on the HCM. The peak hours selected for analysis are the highest volumes in four consecutive 15-minute periods from 7 to 9 am and from 4 to 6 pm on weekdays. Per the HCM methodology, overall average intersection delay at all-way-stop intersections was calculated, and the worst-case approach delay was calculated at cross-street-stop intersections. The level of service corresponds to the delay calculated. Table 5.8-2, *Unsignalized Intersections Level of Service Descriptions*, describes the level of service concept and the operating conditions expected under each level of service.

Table 5.8-2 Unsignalized Intersections Level of Service Descriptions

LOS	Description	Average Delay per Vehicle (seconds)
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	50.01 and up

Source: Transportation Research Board, Highway Capacity Manual, 6th edition.
Note: If volume-to-capacity (V/C) ratio is greater than 1.0 for the operation of a signalized or unsignalized intersection, the LOS is F regardless of the delay value.

The software PTV Vistro 7.00-02 was used to determine the LOS at the study area intersections. The HCM (6th edition) unsignalized intersection methodology presents LOS in terms of control delay (in seconds per vehicle).

Los Angeles County

The County of Los Angeles strives to maintain a peak-hour LOS D at intersections.[1] Significant impacts at signalized intersections are determined by comparing the final V/C ratio and project-related increase in V/C based on the level of service for with- and without-project buildout scenarios. Potential traffic impacts during the weekday peak hours would occur if:

- At intersections operating at LOS C (V/C ratio between 0.701 to 0.800) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.040.

[1] Metro updated its Transportation Impact Analysis Guidelines in July 2020 to use the VMT metric pursuant to SB 743. The updated guidelines also changed the methodology for calculating LOS from V/C to delay. The LOS analysis in this section of the RDEIR uses the V/C method and significance standards under the old guidelines, which are more conservative.

- At intersections operating at LOS D (V/C ratio between 0.801 to 0.900) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.020.
- At intersections operating at LOS E (V/C ratio between 0.901 to 1.00) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.010.
- At intersections operating at LOS F (V/C ratio greater than 1.00) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.010.

The impacted intersections should be mitigated to offset the ICU or V/C increment attributable to the project and bring the level of service back to pre-project or cumulative conditions.

Unsignalized intersections should be evaluated solely to determine the need for the installation of a traffic signal or other traffic control devices. Consideration for a traffic signal would be given if the intersection satisfies the Manual for Uniform Traffic Control Devices' Peak Hour and Daily Warrants for Traffic Signal Installation. If the installation of a traffic signal is warranted with the addition of project traffic, the installation will be the sole responsibility of the project. If it is warranted with cumulative traffic of the project and other related projects, mitigation would be required according with the project's fair share percentage.

City of Industry

The City of Industry strives to maintain a peak-hour LOS D at intersections. An impact would occur at City of Industry signalized intersections if the ICU value under With Project conditions is LOS E or F and the ICU increase attributable to the project is 0.020 or greater. The impacted intersections should be mitigated to offset the ICU or V/C increment attributable to the project and bring the level of service back to pre-project or cumulative conditions. There are no stop-controlled study intersections in the City of Industry's jurisdiction.

Mitigation measures must be identified for intersections that show a significant project impact. The LOS with mitigation must be improved to pre-project conditions or better.

Caltrans

Intersections within incorporated cities associated with freeway on- and off-ramps fall under Caltrans jurisdiction. Caltrans requires the use of the HCM methodology for the analysis of traffic conditions. Caltrans targets a minimum acceptable LOS at the transition between LOS C and LOS D, as discussed in Caltrans's Guide for the Preparation of Traffic Impact Studies (Caltrans 2002). However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Acceptable LOS for specific facilities are identified in the Caltrans "Transportation Concept Report." The Transportation Concept Report for SR-60 states that the segments in the study area are forecast to operate at LOS F and does not include a concept LOS for the route. Caltrans often defers to the target LOS allowed at local intersections. Intersections in Los Angeles County and the City of Industry have a target LOS D, and the Los Angeles CMP (see section 2.1.3.2) uses a target LOS E for its

facilities. Therefore, for the Caltrans SR-60 study intersection, LOS D is considered acceptable, and LOS E and F are unacceptable.

A significant impact would occur at a signalized study intersection when the project-related traffic causes:

- An intersection to degrade from an acceptable LOS to an unacceptable LOS; or
- Any increase in delay for intersections already operating at an unacceptable LOS.

Los Angeles County Congestion Management Plan

The Los Angeles County CMP was issued by Metro in December 2010 (Metro 2010). All freeways and selected arterial roadways are designated elements of the CMP Highway System. The CMP requires that individual development projects of potentially regional significance undergo a traffic impact analysis. Per the CMP TIA guidelines, a significant impact may result and a traffic impact analysis is required under these conditions:

- At CMP arterial monitoring intersections where the proposed project would add 50 or more vehicle trips during either morning or evening weekday peak hours.
- At CMP main-line freeway monitoring locations where the proposed project would add 150 or more vehicle trips, in either direction, during either morning or evening weekday peak hours.

The nearest CMP facility is SR-60, approximately 383 feet north of the project site. Two CMP intersections are in the study area:

- Azusa Avenue and SR-60 Westbound Ramps
- Azusa Avenue and SR-60 Eastbound Ramps

5.8.1.3 EXISTING CONDITIONS

Study Area Roadway Network

The traffic study-area roadways discussed below are in the California Highway System map (2018), which shows the major roadways surrounding the project site and their functional classifications.

Surrounding Street System

All roadway classifications are from the California Highway System Map. Roadways that will be used for project trips include:

- **Albatross Road.** This north-south, two- to four-lane, undivided roadway is classified as a local street There are paved sidewalks on both sides. Traffic signals control the study intersection of Albatross Road at Colima Road.

- **Azusa Avenue.** This north-south, eight-lane, divided roadway is classified as an "other principal arterial." It has paved sidewalks on both sides, with a posted speed limit of 45 mph.

- **Colima Road.** This east-west, four-lane, divided roadway is classified as an "other principal arterial." There are paved sidewalks on both sides. This roadway has traffic signals that control study intersections of Hacienda Boulevard, Stimson Avenue/Sierra Ridge Way, Halliburton Road/Dawn Have Road, and Albatross Road.

- **Countrywood Avenue.** This north-south two-lane roadway is a local street. There are paved sidewalks on both sides and a posted speed limit of 35 mph. Traffic signals control the study intersection of Countrywood Avenue at Colima Road.

- **Fullerton Road.** This north-south, four-lane, undivided roadway is classified as a minor arterial. It has paved sidewalks and a posted speed limit of 35 mph. Traffic signals control the study intersection of Fullerton Road at Colima Road.

- **Gale Avenue.** This east-west, four- to six-lane, undivided roadway is classified as a minor arterial. It has paved sidewalks and a posted speed limit of 45 mph. Traffic signals control the study intersection of Azusa Avenue at Gale Avenue.

- **Hacienda Boulevard.** This north-south, six-lane, divided roadway is classified an "other principal arterial." It has paved sidewalks on both sides, with a posted speed limit of 40 mph.

- **Halliburton Road.** This east-west, four-lane, undivided roadway is classified as a minor arterial. It has paved sidewalks, with a posted speed limit of 45 mph. Traffic signals control the study intersections of Hacienda Boulevard at Halliburton Road and Stimson Avenue at Halliburton Road.

- **Manor Gate Road.** This north-south, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

- **Park Lawn Road.** This north-south, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

- **Pepper Brook Way.** This east-west, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

- **Stimson Avenue/Sierra Ridge Way.** This north-south, four-lane, undivided roadway is classified as a minor arterial. It has paved sidewalks and a posted speed limit of 40 mph. Traffic signals control the study intersection of Stimson Avenue at Halliburton Road and Stimson Avenue at Colima Road.

- **Wedgeworth Drive.** This east-west, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

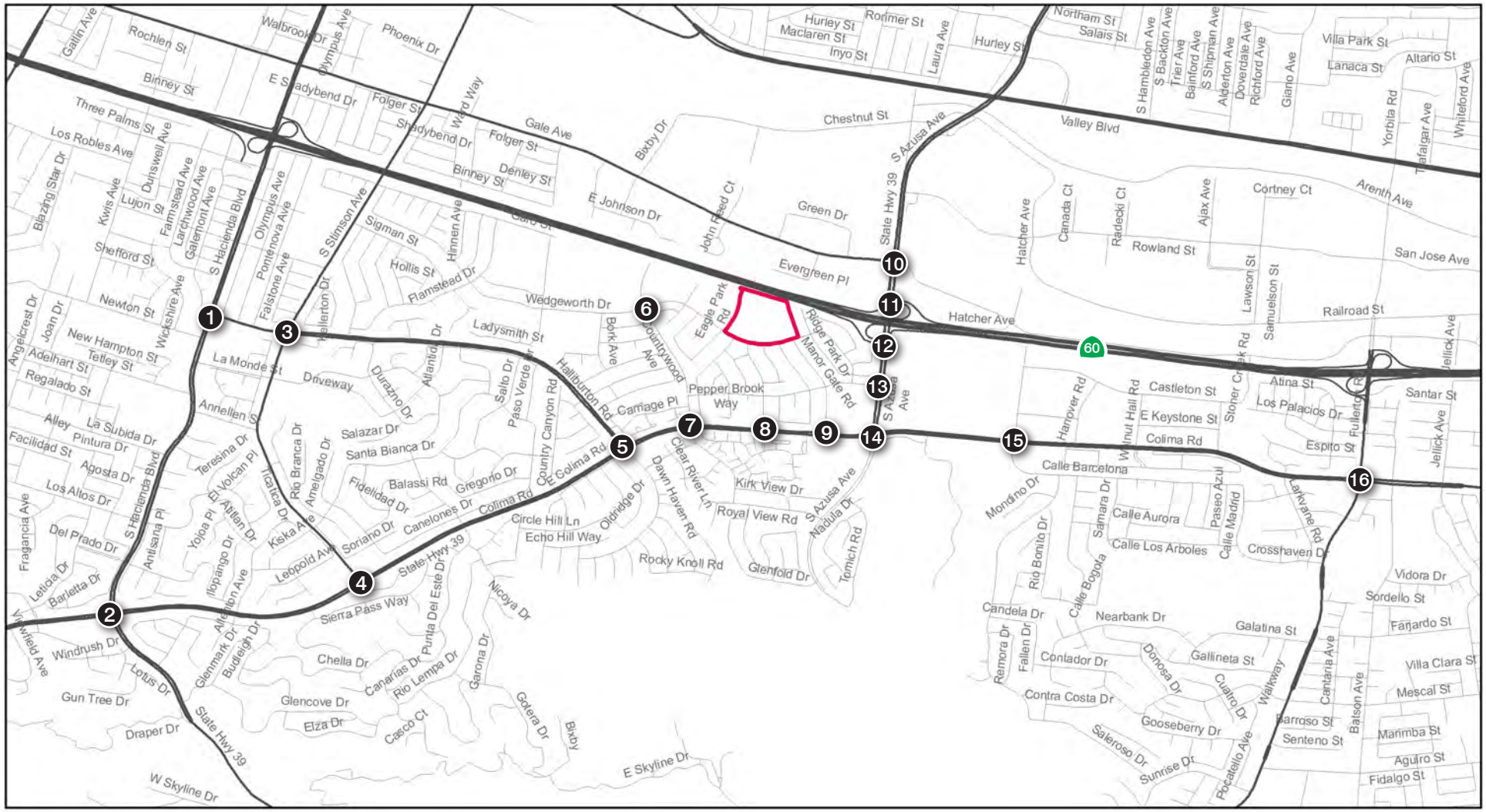
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Study Area Intersections

The roadway network and study intersections are shown in Figure 5.8-1, *Traffic Study Area Intersections*. Not every intersection and roadway in the study area was selected for analysis; however, the selected intersections and roadway segments represent general traffic conditions for other intersections and roadways in the area. The County traffic guidelines require intersections at streets with a classification of collector or higher to be studied when the project adds 50 or more peak hour trips. Based on the calculated project trip generation and distribution, the following intersections were analyzed:

1. Hacienda Boulevard at Halliburton Road (LA County)
2. Hacienda Boulevard and Colima Road (LA County)
3. Stimson Avenue and Halliburton Road (LA County)
4. Stimson Avenue / Sierra Ridge Way and Colima Road (LA County)
5. Halliburton Road / Dawn Haven Road and Colima Road (LA County)
6. Countrywood Avenue and Wedgeworth Drive (LA County)
7. Countrywood Avenue and Colima Road (LA County)
8. Park Lawn Road and Colima Road (LA County)
9. Manor Gate Road and Colima Road (LA County)
10. Azusa Avenue and Gale Avenue (Industry)
11. Azusa Avenue and Interstate 60 Westbound On-Ramp (Caltrans)
12. Azusa Avenue and Interstate 60 Eastbound On-Ramp (Caltrans)
13. Azusa Avenue and Pepper Brook Way (LA County / Industry)
14. Azusa Avenue and Colima Road (LA County / Industry)
15. Albatross Road and Colima Road (LA County / Industry)
16. Fullerton Road and Colima Road (LA County)

Figure 5.8-1 - Traffic Study Area Intersections
5. Environmental Analysis



Source: ESRI, 2018

5. Environmental Analysis
TRANSPORTATION

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5.8.1.4 EXISTING INTERSECTIONS OPERATIONS

Existing Traffic Volumes

Weekday AM and PM peak-hour turn movement volumes were collected at the study area intersections. The counts were collected on Tuesday, May 14, 2019. Traffic count worksheets and the existing AM and PM peak-hour turn-movement volumes are in Appendix A of the traffic impact analysis (TIA) for the proposed project (Appendix F to the RDEIR).

Existing Conditions Intersection Operations Analysis

The intersection operations analysis results are summarized in Appendix B of the TIA, Intersection LOS Worksheets, Existing Conditions. TIA Appendix B also includes the LOS calculation worksheets for existing conditions and identifies the existing intersection controls and turn lanes.

Table 5.8-3, *Existing Peak Hour Intersection Level of Service*, shows the levels of service during peak hours for all study intersection under existing conditions.

Table 5.8-3 Existing Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard and Halliburton Road	LA County	Signal	-	0.661	B	-	0.649	B
2. Hacienda Boulevard and Colima Road	LA County	Signal	-	1.046	F	-	1.219	F
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.755	C	-	0.620	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.724	C	-	0.703	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.684	B	-	0.682	B
6. Countrywood Avenue and Wedgeworth Drive	LA County	AWS	60.1	-	F	9.5	-	A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.706	C	-	0.657	B
8. Park Lawn Road and Colima Road	LA County	CSS	>100	-	F	>100	-	F
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.555	A	-	0.735	C
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.788	C	-	0.868	D
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	13.6	-	B	34.3	-	C
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	24.4	-	C	22.4	-	C
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	Signal	-	0.841	D	-	0.896	D

Table 5.8-3 Existing Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
14. Azusa Avenue and Colima Road	LA County/ Industry	Signal	-	0.835	D	-	0.938	E
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.636	B	-	0.838	D
16. Fullerton Road and Colima Road	LA County	Signal	-	0.753	C	-	0.936	E

Notes: LOS calculation worksheets included in Appendix B of the TIA (Appendix F to the RDEIR).
AWS = All-Way Stop, CSS = Cross Street Stop
Bold=deficient operations
Delay (veh/sec) is only shown for stop-controlled intersections and for Caltrans intersections.

All traffic study intersections are in unincorporated Los Angeles County, except for #13, #14, and #15 along the border of Los Angeles County and the City of Industry. Therefore, intersections #13, #14, and #15 are under both the County's and the City's jurisdiction, and intersections #11 and #12 are SR-60 freeway ramps and under the jurisdiction of Caltrans. As shown in Table 5.8-3, all except five study area intersections currently operate at acceptable LOS during the peak hours for existing traffic conditions. Those five are:

#2 Hacienda Boulevard and Colima Road (signalized) (LA County: AM and PM peak hours)

#6 Countrywood Avenue and Wedgeworth Drive (All-way-stop) (LA County: AM peak hour)

#8 Park Lawn Road and Colima Road (cross-street stop) (LA County: AM and PM peak hours)

#14 Azusa Avenue and Colima Road (signalized) (LA County / Industry: PM peak hour)

#16 Fullerton Road and Colima Road (signalized) (LA County: PM peak hour)

5.8.1.5 EXISTING SCHOOL DROP-OFF AND PICK-UP

Prior to COVID-19, classes began at 8:05 am and finished at 1:50 pm for grades K to 3 and at 2:05 pm for grades 4 and 5. Students entered and exited the school campus via the office area north of Manor Gate Road and at a pedestrian gate off Wedgeworth Drive, approximately 100 feet west of the main entrance. School monitors assisted students to get in and out of cars on a portion of the curb designated for student drop-off/pick-up along Wedgeworth Drive. All streets in the vicinity of the school have paved sidewalks on both sides of the road. No bicycle paths or dedicated bicycle lanes are along Wedgeworth Drive. Crossing guards facilitated pedestrians crossing the intersection of Wedgeworth Drive and Minor Gate Road during student arrival and dismissal periods.

A site visit was conducted on Thursday, February 13, 2020, between 1:30 and 2:30 pm during the afternoon student pick-up period to identify specific issues related to pedestrian and vehicular circulation. The site visit represents a typical school day. During the site visit, observations were made of the student pick-up area, vehicular circulation, and pedestrian travel patterns. It was observed that all cars picking up students arrived

from the south and west via Wedgeworth Drive and Minor Gate Drive. Most of the vehicular activity occurred for approximately 30 minutes between periods from 1:45 to 2:15 pm. Parents primarily utilized the sidewalk area on Wedgeworth Drive north of Manor Gate Road for student pick-ups. It was observed that most parents arriving with vehicles parked on both sides (north and south) of Wedgeworth Drive within approximately 500 feet of the school entrance, and to a lesser extent at Manor Gate Road, Ridge Park Drive, and Orchard Hill Lane. Parents on foot mostly came from the south and from the sidewalks along Wedgeworth Drive. Students and parents were observed to properly use the crosswalks and comply with the crossing guard instructions; no jaywalking was seen.

School buses currently utilize the curbside area on Wedgeworth Drive in an area marked as a red curb just north of Manor Gate Road. During the site visit two buses were seen picking up students. In addition, vans were observed to pick up students for after-school activities, and these vans were parked on Wedgeworth Drive.

The school also utilizes an area in the back of the school access from a driveway located east of the intersection of Manor Gate Road/Wedgeworth Drive along the eastern boundary of the school campus. This one-way vehicular pathway leads to a drop-off area in the rear of the school which exits on Eagle Park Road. This pathway is used for student drop-off in the mornings but closed for pick-up in the afternoons.

5.8.1.6 TRANSIT SERVICE AND NONMOTORIZED CIRCULATION

Foothill Transit operates public transit bus routes in the unincorporated community of Hacienda Heights. Lines 185 and 282 are the two closest bus routes to the project site. Line 185 runs north-south, serving Hacienda Heights, Industry, La Puente, West Covina, Irwindale, and Azusa, with an approximately one-hour interval. If taking Line 185, passengers can embark/disembark at Colima Road/Manor Gate Road or Colima Road/Countrywood Avenue, then enter the project site through Wedgeworth Drive. Line 282 runs southeast-northwest, serving El Monte and La Puente. Destinations include Rio Hondo Bike Path, Bassett Senior High School, Hacienda La Puente Adult Education School, and Bassett Adult School, with an approximate interval of up to 40 minutes. If taking Line 282, passengers can embark/disembark at Colima Road/Manor Gate Road or Colima Road/Countrywood Avenue.

5.8.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

T-2 Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-4 Result in inadequate emergency access.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold T-4

This impact will not be addressed in the following analysis.

5.8.3 Plans, Programs, and Policies

Project Design Features

PDF TRAN-1 As part of the project, the Hacienda La Puente Unified School District is required to coordinate with the County of Los Angeles to eliminate signage that marks the existing student drop-off areas along the north side of Wedgeworth Drive, and all student drop-off/pick-up will be required to occur on-site at the designated area of the parking lot.

5.8.4 Environmental Impacts

5.8.4.1 PROJECT TRIP GENERATION

The trip generation was calculated based on rates in the ITE Trip Generation Manual (10th edition) for land uses 520, Elementary School, and 200, Multi-Family (Low-Rise). It should be noted that the school would accommodate grades K-8. Because the grade breakdown may fluctuate over the years and because the AM peak hour trip rates for an elementary school are slightly higher than trip rates for a middle school, trip rates for an elementary school were used in this analysis. Table 5.8-4, *Trip Generation Rates*, shows the rates for the AM peak hour and PM peak hour. The PM peak hour occurs between 4 and 6 pm, which is the heaviest traffic time in the day and coincides with the commuter traffic period. It should be noted that the PM peak hour trip rates include all typical activities for a school, including after-school class programs and activities such as talent shows, family nights, parents' and teachers' association events, and more.

Table 5.8-4 Trip Generation Rates

			Trip Generation					
			AM Peak Hour			PM Peak Hour		
Land Use[1]	Unit	Daily	In	Out	Total	In	Out	Total
Elementary School	Students	1.89	0.36	0.31	0.67	0.08	0.09	0.17
Residential Development	Dwelling Units	7.32	0.11	0.35	0.46	0.35	0.21	0.56

[1] Used the trip generation rates of ITE Code 520 Elementary School and 220 Multi-Family Low-Rise from the ITE Trip Generation Manual 10th edition.

The proposed project is split into two phases, the expansion of the school, opening in 2023, and the residential development, preliminarily scheduled to open in 2026. As shown in Table 5.8-5, *Phase 1 Project Trip Generation*, the expansion of the school in Phase 1 is expected to generate up to 1,134 daily trips. During the peak hours, Phase 1 of the project is expected to generate 402 trips (217 inbound and 185 outbound) during the AM peak hour and 102 trips (49 inbound and 53 outbound) during the PM peak hour.

Table 5.8-5 Phase 1 Project Trip Generation

Land Use	Unit[1]	Daily	Trip Generation					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Elementary School	600	1,134	217	185	402	49	53	102

[1] 600 Students

Table 5.8-6, *Phase 2 Project Trip Generation*, shows that Phase 2 is expected to generate 2,205 daily trips with 441 trips (215 inbound and 226 outbound) during the AM peak hours and 182 trips (101 inbound and 81 outbound) during the PM peak hours. For Phase 2, an internal capture was included to deduct trips for students who will reside adjacent to the school. This development will be constructed in Phase 2 and is projected to generate 53 students, who would likely walk instead of drive to/from the school. Phase 2 represents the project buildout, which includes the Phase 1 plus Phase 2 development.

Table 5.8-6 Phase 2 Project Trip Generation

Land Use	Unit[1]	Daily	Trip Generation					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Elementary School	600	1,134	217	185	402	49	53	102
Residential Development	160	1,171	17	57	74	56	33	89
Internal Capture (0.33125 students/DU (0.33125x160=53)[2]	-53	-100	-19	-16	-35	-4	-5	-9
NET NEW TRIPS		2,205	215	226	441	101	81	182

[1] Units for school is students; for housing, units are dwelling units.
[2] The internal capture calculation is a reflection of future students walking to school from the proposed residential development. Based on the *Annual Enrollment Projection Report* for the Hacienda La Puente Unified School (Decision Insight 2017), the student generation rate is 0.51 student per dwelling unit for students in grades K-8. A conservative estimate of 0.333 (or 1 student for every 3 DUs) was utilized to calculate internal capture resulting from school-aged children that would reside at the project's 160 residential units.

Trip Distribution

The traffic that would be generated by the elementary school expansion and additional residential units was geographically distributed onto the street network by evaluating the layout of the study area roadway network and reviewing land uses designated in the area. The trip distribution was also prepared with feedback from Los Angeles County staff. Figures 6 through 9 in the TIA (Appendix F to the RDEIR) present the anticipated inbound and outbound vehicle trip distribution for the project.

Modal Split and Trip Assignment

The trip distribution percentages are applied to the project trip generation to determine the traffic volumes forecast to be added at each intersection (i.e., trip assignment).

5.8.4.2 FUTURE TRAFFIC CONDITIONS

Phase 1 of the project is anticipated to be completed and operational in September 2023 and Phase 2 in 2026. Per Los Angeles County guidelines, the CMP growth rate for the area is required to estimate ambient growth rate. The Los Angeles Country CMP identified the area in the vicinity of the project and the unincorporated area of Hacienda Heights as part of Regional Service Area 26, with a growth increase of 2.3 percent for the 5-year period between 2015 and 2020 and a 2 percent increase for the 5-year period between 2020 and 2025. For this analysis, a 1 percent traffic increase over existing conditions (between 2019 and 2021) was assumed to add ambient growth traffic in 2021. For 2026, a 3 percent increase over existing conditions (between 2019 and 2026) was assumed to add ambient growth traffic in 2026.

It should be noted that the traffic impact analysis in this section is based on the Phase 1 opening date of fall of 2021. However, as stated in a Memorandum dated January 21, 2021, by Kittelson & Associates, the delayed opening year for the school would not result in additional impacts to the studied intersections, and the traffic evaluation under 2021 opening year would still be valid. The memorandum substantiating using the 2021 for the LOS analysis is attached to Appendix F of this RDEIR.

Cumulative traffic is the traffic generated by the development of future projects that have been approved but not yet built or for which development applications have been filed and are under consideration. Cumulative projects in the vicinity of the school were obtained from the cities of Industry and La Puente and the County of Los Angeles. The list of cumulative projects and their associated trip generations are in Appendix C of the TIA (Appendix F to the RDEIR). For these cumulative projects, trip generation values were taken from the ITE Trip Generation Manual. Based on a review of the circulation system, the trip generation, location, and land use type, the cumulative projects shown on Figure 10 of the TIA, Cumulative Project Locations, would have the potential for directly adding measurable traffic to the study area street system. The cumulative development projects assumed in this traffic analysis are estimated to generate 3,088 average daily trips on weekdays, with approximately 230 vehicle trips during the AM peak hour and 274 vehicle trips during the PM peak hour.

This TIA assumes that all the cumulative projects are developed and operational when the proposed project is operational. This is the most conservative, worst-case approach, since it is possible that not all these projects will be operational when the proposed project begins operation. In addition, impacts for these cumulative projects would likely be subject to mitigation measures, which could reduce potential impacts. Under this analysis, however, future mitigation measures are not considered.

2021 Without Project Traffic

To assess future traffic conditions that correspond to when the Phase 1 project site will be operational in 2021, ambient growth was added to the existing traffic volumes plus traffic from cumulative projects at the time of project opening year. The intersection operations for the 2021 Without Project traffic conditions were calculated and are listed in Table 9, 2021 Without Project Peak Hour Intersection Levels of Service, of the TIA (Appendix F of the RDEIR). Figures showing the 2021 Without Project AM and PM peak hour intersection volumes are provided in Appendix E of the TIA.

All study area intersections would operate at acceptable levels of service during the peak hours for 2021 Without Project traffic conditions, except for the following intersections:

#2 Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

#6 Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

#8 Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

#13 Azusa Avenue and Pepper Brook Way (LA County / Industry: PM peak hour)

#14 Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)

#16 Fullerton Road and Colima Road (LA County: PM Peak Hour)

2026 Without Project Traffic

To assess future traffic conditions that correspond to when the Phase 2 project site will be operational in 2026, ambient growth was added to the existing traffic volumes plus traffic from cumulative projects at the time of project Phase 2 opening year. The intersection operations for the 2026 Without Project traffic conditions have been calculated and are listed in Table 10, 2026 Without Project Peak Hour Intersection Levels of Service, of the TIA. Figures showing the Future Without Project AM and PM peak hour intersection volumes are provided in Appendix E of the TIA.

All study area intersections would operate at acceptable levels of service during the peak hours for 2026 Without Project conditions, except for the following intersections:

#2 Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

#6 Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

#8 Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

#13 Azusa Avenue and Pepper Brook Way (LA County/ Industry: PM peak hour)

#14 Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)

#16 Fullerton Road and Colima Road (LA County: PM Peak Hour)

Parking

Pursuant to CEQA Section 15131(a), an EIR analyzes physical environmental impacts, and though parking deficits are an inconvenience to drivers and residents, they do not constitute as a significant physical impact on the environment. Therefore, parking impacts are not under the purview of CEQA analysis and are not included in the below analysis.

5.8.4.1 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.8-1: The proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. [Threshold T-1]

Consistency with the County's Mobility Element

As explained in Section 5.8.1.1 under "Senate Bill 743," the California Court of Appeal held that traffic impacts based on LOS cannot be considered a significant impact on the environment under CEQA. However, the original DEIR was circulated prior to this change in CEQA, and for that reason, the LOS impact analysis and related mitigation have been retained. Additionally, the LOS analysis provides a consistency analysis with mobility element policy M4.7 in the Los Angeles County General Plan.

- Goal M4 of the mobility element is to provide an efficient multimodal transportation system that serves the needs of all residents, and policy M4.7 establishes minimum LOS D as the level of service goal.

Existing Plus Project Impact

Existing Plus Project Phase 1 Traffic Conditions

To assess Existing Plus Project Phase 1 traffic conditions, existing traffic is combined with project traffic that would be generated by the school. The intersection operations for the Existing Plus Project Phase 1 traffic conditions have been calculated and are shown in Table 5.8-7, *Existing Plus Project Phase 1 Peak Hour Intersection Levels of Service*. Figures that show the Existing Plus Project Phase 1 AM and PM peak hour intersection volumes are provided in Appendix D of the TIA.

Table 5.8-7 Existing Plus Project Phase 1 Peak Hour Intersection Levels of Service

			Existing No Project		Existing Plus Project		Project Increase	
			AM Peak	PM Peak	AM Peak	PM Peak		
ID	Intersection	Jurisdiction	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	AM Peak (V/C)	PM Peak (V/C)
1	Hacienda Blvd. at Halliburton Rd.	LAC	0.661 – B	0.649 – B	0.669 – B	0.651 – B	0.008	0.002
2	Hacienda Blvd. and Colima Rd.	LAC	1.046 – F	1.219 – F	1.047 – F	1.219 – F	0.001	0
3	Stimson Ave. and Halliburton Rd.	LAC	0.755 – C	0.620 – B	0.761 – C	0.623 – B	0.006	0.003
4	Stimson Ave/ Sierra Ridge Way and Colima Rd.	LAC	0.724 – C	0.703 – C	0.733 – C	0.718 – C	0.009	0.015
5	Halliburton Rd./ Dawn Haven Rd. and Colima Rd.	LAC	0.684 – B	0.682 – B	0.714 – C	0.688 – B	0.030	0.006
6	Countrywood Ave and Wedgeworth Dr.	LAC	60.1 – F	9.5 – A	65.9 – F	9.5 – A	5.8	0
7	Countrywood Ave and Colima Rd	LAC	0.706 – C	0.657 – B	0.728 – C	0.664 – B	0.022	0.007

Table 5.8-7 Existing Plus Project Phase 1 Peak Hour Intersection Levels of Service

ID	Intersection	Jurisdiction	Existing No Project		Existing Plus Project		Project Increase	
			AM Peak	PM Peak	AM Peak	PM Peak		
			V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	AM Peak (V/C)	PM Peak (V/C)
8	Park Lawn Rd and Colima Rd	LAC	**>100 – F**	**>100 – F**	**>100 – F**	**>100 – F**	0	0
9	Manor Gate Rd and Colima Rd	LAC	0.555 – A	0.735 – C	0.558 – A	0.736 – C	0.003	0.001
10	Azusa Ave and Gale Ave	Industry	0.788 – C	0.868 – D	0.790 – C	0.869 – D	0.002	0.001
11	Azusa Ave and I-60 Westbound	Caltrans	13.6 sec/veh – B	34.3 sec/veh– C	13.9 sec/veh – B	34.8 sec/veh – C	0.3	0.5
12	Azusa Ave and I-60 Eastbound	Caltrans	24.4 sec/veh – C	22.4 sec/veh – C	24.4 sec/veh – C	22.8 sec/veh – C	0	0.4
13	Azusa Ave and Pepper Brook Way	LAC/ Industry	0.841 – D	0.896 – D	0.890 – D	**0.907 – E**	0.049	0.011
14	Azusa Ave and Colima Rd	LAC/ Industry	0.835 – D	**0.938 – E**	0.854 – D	**0.941 – E**	0.019	0.003
15	Albatross Rd and Colima Rd	LAC/ Industry	0.636 – B	0.838 – D	0.652 – B	0.841 – D	0.016	0.003
16	Fullerton Road and Colima Road	LAC	0.753 – C	**0.936 – E**	0.761 – C	**0.937 – E**	0.008	0.001

Notes: LOS calculation worksheets included in Appendix B and Appendix D of the TIA (Appendix F of the RDEIR).
Bold=deficient operations
Shade = Significant impact under the County of Los Angeles and/or City of Industry significance criteria.

All study area intersections would operate at acceptable LOS D or better during the peak hours for Existing Plus Project Phase 1 traffic conditions, except for the following intersections:

#2 Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

#6 Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

#8 Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

#13 Azusa Avenue and Pepper Brook Way (LA County/ Industry: PM peak hour)

#14 Azusa Avenue and Colima Road (LA County/ Industry: PM peak hour)

#16 Fullerton Road and Colima Road (LA County: PM peak hour)

The criteria for determining traffic impact are shown in Section 5.8.1.2, *Intersection Level of Service Analysis and Impact Criteria*.

Of the 16 study intersections, 10 intersections are in the County's jurisdiction, and 3 intersections are in both the County's and the City of Industry's jurisdiction. Per County of Los Angeles criteria, a significant impact would occur at one intersection:

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry: AM peak hour)

Note that intersection #13 is at the jurisdictional boundary of the County of Los Angeles and the City of Industry and that it would not exceed the significance threshold for the City of Industry. Of the 16 study intersections, 1 is in the City of Industry's jurisdiction, and 3 are in both the County's and the City of Industry's jurisdiction. Per City of Industry criteria, no significant impacts would occur.

There are two Caltrans study intersections—no intersections would degrade from an acceptable LOS to an unacceptable LOS, and no increase in delay would occur at intersections that are already operating at unacceptable LOS (E or F). Therefore, no impacts would occur under Caltrans significance criteria.

Existing Plus Project Phase 2 Traffic Conditions

To assess Existing Plus Project Phase 2 traffic conditions, existing traffic is combined with project traffic that will be generated by the school and residential development. Phase 2 represents the project buildout (Phase 1+Phase 2). The intersection operations for the Existing Plus Project Phase 2 traffic conditions have been calculated and are shown in Table 5.8-8, *Existing Plus Project Phase 2 Peak Hour Intersection Levels of Service*. Figures that show the Existing Plus Project Phase 2 AM and PM peak hour intersection volumes are provided in the TIA (Appendix F of the RDEIR).

Table 5.8-8 Existing Plus Project Phase 2 Peak Hour Intersection Levels of Service

			Existing No Project		Existing Plus Project		Project Increase	
			AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
ID	Intersection	Jurisdiction	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C	V/C
1	Hacienda Blvd. at Halliburton Rd.	LAC	0.661 – B	0.649 – B	0.668 – B	0.652 – B	0.007	0.003
2	Hacienda Blvd. and Colima Rd.	LAC	1.046 – F	1.219 – F	1.047 – F	1.220 – F	0.001	0.001
3	Stimson Ave. and Halliburton Rd.	LAC	0.755 – C	0.620 – B	0.761 – C	0.624 – B	0.006	0.004
4	Stimson Ave/ Sierra Ridge Way and Colima Rd.	LAC	0.724 – C	0.703 – C	0.733 – C	0.720 – C	0.009	0.017
5	Halliburton Rd./ Dawn Haven Rd. and Colima Rd.	LAC	0.684 – B	0.682 – B	0.713 – C	0.690 – B	0.029	0.008
6	Countrywood Ave and Wedgeworth Dr.	LAC	60.1 – F	9.5 – A	65.4 – F	9.5 – A	5.3	0
7	Countrywood Ave and Colima Rd	LAC	0.706 – C	0.657 – B	0.728 – C	0.665 – B	0.022	0.008
8	Park Lawn Rd and Colima Rd	LAC	>100 – F	>100 – F	>100 – F	>100 – F	0	0
9	Manor Gate Rd and Colima Rd	LAC	0.555 – A	0.735 – C	0.558 – A	0.739 – C	0.003	0.004

Table 5.8-8 Existing Plus Project Phase 2 Peak Hour Intersection Levels of Service

ID	Intersection	Jurisdiction	Existing No Project		Existing Plus Project		Project Increase	
			AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
			V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C	V/C
10	Azusa Ave and Gale Ave	Industry	0.788 – C	0.868 – D	0.790 – C	0.871 – D	0.002	0.003
11	Azusa Ave and I-60 Westbound	Caltrans	13.6 sec/veh – B	34.3 sec/veh– C	14.1 – B	34.7 – C	0.4	0.4
12	Azusa Ave and I-60 Eastbound	Caltrans	24.4 sec/veh – C	22.4 sec/veh – C	24.5 – C	22.8 – C	0.1	0.4
13	Azusa Ave and Pepper Brook Way	LAC/ Industry	0.841 – D	0.896 – D	**0.904 – E**	**0.932 – E**	0.063	0.036
14	Azusa Ave and Colima Rd	LAC/ Industry	0.835 – D	**0.938 – E**	0.851 – D	**0.945 – E**	0.016	0.007
15	Albatross Rd and Colima Rd	LAC/ Industry	0.636 – B	0.838 – D	0.651 – B	0.846 – D	0.015	0.008
16	Fullerton Road and Colima Road	LAC	0.753 – C	**0.936 – E**	0.760 – C	**0.939 – E**	0.007	0.003

Notes: LOS calculation worksheets included in Appendix B and Appendix D of the TIA (Appendix F of the DEIR).
Bold=deficient operations
Shade = Significant impact

All study area intersections would operate at acceptable levels of service during the peak hours for Existing Plus Project Phase 2 traffic conditions, except for:

#2 Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

#6 Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

#8 Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

#13 Azusa Avenue and Pepper Brook Way (LA County / Industry: AM and PM peak hour)

#14 Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)

#16 Fullerton Road and Colima Road (LA County: PM peak hour)

Of the 16 study intersections, 10 are in the County's jurisdiction, and 3 are in both the County's and the City of Industry's jurisdiction. Per County of Los Angeles criteria, significant impacts would occur at one intersection.

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry: AM peak hour)

Of the 16 study intersections, 1 is in the City of Industry's jurisdiction, and 3 are in both the County's and the City of Industry's jurisdiction. Per City of Industry criteria, a significant impact would occur at the same intersection #13, Azusa Avenue and Pepper Brook Way.

No impacts would occur under Caltrans significance criteria.

2021 Plus Project Impact

2021 Plus Project Phase 1 Traffic

To assess future traffic conditions with project Phase 1, school traffic is added to the 2021 Without Project conditions. The intersection operations for the 2021 With Project Phase 1 traffic conditions have been calculated and are listed in Table 5.8-9, *2021 Plus Project Phase 1 Peak Hour Intersection Levels of Service*. Figures showing the 2021 With Project Phase 1 AM and PM peak hour intersection volumes and LOS calculation worksheets are provided in Appendix F of the TIA (RDEIR Appendix F).

Table 5.8-9 2021 Plus Project Phase 1 Peak Hour Intersection Levels of Service

			2021 No Project		2021 Plus Project		Project Increase	
			AM Peak	PM Peak	AM Peak	PM Peak		
ID	Intersection	Jurisdiction	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	AM Peak (V/C)	PM Peak (V/C)
1	Hacienda Blvd. at Halliburton Rd.	LAC	0.667 – B	0.658 – B	0.675 – B	0.660 – B	0.008	0.002
2	Hacienda Blvd. and Colima Rd.	LAC	1.055 – F	1.232 – F	1.057 – F	1.232 – F	0.002	0
3	Stimson Ave. and Halliburton Rd.	LAC	0.763 – C	0.633 – B	0.768 – C	0.636 – B	0.005	0.003
4	Stimson Ave/ Sierra Ridge Way and Colima Rd.	LAC	0.735 – C	0.712 – C	0.743 – C	0.713 – C	0.008	0.001
5	Halliburton Rd./ Dawn Haven Rd. and Colima Rd.	LAC	0.700 – B	0.695 – B	0.727 – C	0.701 – C	0.027	0.006
6	Countrywood Ave and Wedgeworth Dr.	LAC	63.0 – F	9.6 – A	71.0 – F	9.6 – A	8	0
7	Countrywood Ave and Colima Rd	LAC	0.720 – C	0.676 – B	0.745 – C	0.683 – B	0.025	0.007
8	Park Lawn Rd and Colima Rd	LAC	>100 – F	>100 – F	>100 – F	>100 – F	0	0
9	Manor Gate Rd and Colima Rd	LAC	0.617 – B	0.819 – D	0.620 – B	0.803 – D	0.003	-0.016
10	Azusa Ave and Gale Ave	Industry	0.801 – D	0.884 – D	0.803 – D	0.885 – D	0.002	0.001
11	Azusa Ave and I-60 Westbound	Caltrans	14.1 – B	36.5 – D	14.4 – B	36.6 – D	0.3	0.1
12	Azusa Ave and I-60 Eastbound	Caltrans	20.1 – C	14.4 – B	20.1 – C	14.4 – B	0	0
13	Azusa Ave and Pepper Brook Way	LAC/ Industry	0.851 – D	0.906 – E	0.898 – D	0.916 – E	0.047	0.01
14	Azusa Ave and Colima Rd	LAC/ Industry	0.859 – D	0.963 – E	0.871 – D	0.967 – E	0.012	0.004

Table 5.8-9 2021 Plus Project Phase 1 Peak Hour Intersection Levels of Service

ID	Intersection	Jurisdiction	2021 No Project		2021 Plus Project		Project Increase	
			AM Peak	PM Peak	AM Peak	PM Peak		
			V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	AM Peak (V/C)	PM Peak (V/C)
15	Albatross Rd and Colima Rd	LAC/ Industry	0.651 – B	0.854 – D	0.663 – B	0.857 – D	0.012	0.003
16	Fullerton Road and Colima Road	LAC	0.764 – C	0.948 – E	0.770 – C	0.949 – E	0.006	0.001

Notes: LOS calculation worksheets included in Appendix B and Appendix D of the TIA (Appendix F of the RDEIR).
Bold=deficient operations
Shade = Significant impact

All study area intersections would operate at acceptable levels of service during the peak hours for 2021 With Project Phase 1 traffic conditions, except:

#2 Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

#6 Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

#8 Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

#13 Azusa Avenue and Pepper Brook Way (LA County / Industry: PM peak hour)

#14 Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)

#16 Fullerton Road and Colima Road (LA County: PM Peak Hour)

Of the 16 study intersections, 10 are in the County's jurisdiction, and 3 are in both the County's and the City of Industry's jurisdiction. Per County of Los Angeles criteria, significant impact would occur at one intersection:

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry: AM peak hour)

Intersection #13 is at the jurisdictional boundary of the County of Los Angeles and the City of Industry but would not exceed the significance threshold for the City of Industry. Of the 16 study intersections, 1 is in the City of Industry's jurisdiction, and 3 are in both the County's and the City of Industry's jurisdiction. Per City of Industry criteria, no significant impacts would occur.

There are two Caltrans study intersections—no intersections would degrade from an acceptable LOS to an unacceptable LOS, and no increase in delay would occur at intersections that are already operating at unacceptable LOS (E or F). Therefore, no impacts would occur under Caltrans significance criteria.

2026 Plus Project Impact

2026 Plus Project Phase 2 Traffic

To assess future traffic conditions with project Phase 2, school and residential traffic is added to the 2026 Without Project conditions. Phase 2 represents the project buildout, which includes Phase 1 plus Phase 2

development. The intersection operations for the 2026 With Project Phase 2 traffic conditions have been calculated and are listed in Table 5.8-10, *2026 Plus Project Phase 2 Peak Hour Intersection Levels of Service*. Figures showing the 2026 With Project Phase 2 AM and PM peak hour intersection volumes and LOS calculation worksheets are provided in Appendix F of the TIA (Appendix F of the DEIR).

Table 5.8-10 2026 Plus Project Phase 2 Peak Hour Intersection Levels of Service

			2026 No Project		2026 Plus Project Phase 2		Project Increase	
			AM Peak	PM Peak	AM Peak	PM Peak		
ID	Intersection	Jurisdiction	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	V/C or Average Delay – LOS	AM Peak (V/C)	PM Peak (V/C)
1	Hacienda Blvd. at Halliburton Rd.	LAC	0.678 – B	0.669 – B	0.686 – B	0.671 – B	0.008	0.002
2	Hacienda Blvd. and Colima Rd.	LAC	1.076 – F	1.254 – F	1.079 – F	1.256 – F	0.003	0.002
3	Stimson Ave. and Halliburton Rd.	LAC	0.776 – C	0.643 – B	0.782 – C	0.647 – B	0.006	0.004
4	Stimson Ave/ Sierra Ridge Way and Colima Rd.	LAC	0.747 – C	0.724 – C	0.757 – C	0.726 – C	0.01	0.002
5	Halliburton Rd./ Dawn Haven Rd. and Colima Rd.	LAC	0.713 – C	0.707 – B	0.740 – C	0.716 – C	0.027	0.009
6	Countrywood Ave and Wedgeworth Dr.	LAC	69.7 – F	9.7 – A	76.9 – F	9.7 – A	7.2	0
7	Countrywood Ave and Colima Rd	LAC	0.732 – C	0.688 – B	0.760 – C	0.695 – B	0.028	0.007
8	Park Lawn Rd and Colima Rd	LAC	>100 – F	>100 – F	>100 – F	>100 – F	0	0
9	Manor Gate Rd and Colima Rd	LAC	0.627 – B	0.817 – D	0.633 – B	0.821 – D	0.006	0.004
10	Azusa Ave and Gale Ave	Industry	0.814 – D	0.899 – D	0.818 – D	0.902 – E	0.004	0.003
11	Azusa Ave and I-60 Westbound	Caltrans	14.9 – B	39.5 – D	15.4 – B	39.9 – D	0.5	0.4
12	Azusa Ave and I-60 Eastbound	Caltrans	20.6 – C	14.7 – B	20.7 – C	15.1 – B	0.1	0.4
13	Azusa Ave and Pepper Brook Way	LAC/ Industry	0.865 – D	0.922 – E	0.934 – E	0.958 – E	0.069	0.036
14	Azusa Ave and Colima Rd	LAC/ Industry	0.874 – D	0.980 – E	0.888 – D	0.987 – E	0.014	0.007
15	Albatross Rd and Colima Rd	LAC/ Industry	0.661 – B	0.868 – D	0.675 – B	0.876 – D	0.014	0.008
16	Fullerton Road and Colima Road	LAC	0.776 – C	0.965 – E	0.783 – C	0.968 – E	0.007	0.003

Notes: LOS calculation worksheets included in Appendix E and Appendix J of the TIA (Appendix F of the RDEIR).
Bold=deficient operations
Shade = Significant impact under County of Los Angeles and/or City of Industry significance criteria.

All study area intersections would operate at acceptable levels of service during the peak hours for 2026 With Phase 2 traffic conditions, except for the following intersections:

#2 Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

#6 Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

#8 Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

#10 Azusa Avenue and Gale Avenue (Industry: PM peak hours)

#13 Azusa Avenue and Pepper Brook Way (LA County / Industry: AM and PM peak hours)

#14 Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)

#16 Fullerton Road and Colima Road (LA County: PM Peak Hour)

Per County of Los Angeles criteria, significant impact would occur at the following one intersection.

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry: AM peak hour

Of the 16 study intersections, 1 is in the City of Industry's jurisdiction, and 3 are in both the County's and the City of Industry's jurisdiction. Per City of Industry criteria, significant impact would occur at the same intersection, #13, Azusa Avenue and Pepper Brook Way.

There are two Caltrans study intersections; and no intersections would degrade from an acceptable LOS to an unacceptable LOS, and no increase in delay would occur at intersections that are already operating at unacceptable LOS (E or F). Therefore, no impacts would occur under Caltrans significance criteria.

Project Impact Summary

Existing Plus Project Phase 1 Conditions

County of Los Angeles Criteria

Project implementation would result in significant impact to the following traffic study intersection under the County of Los Angeles criteria:

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry) – AM peak hour

City of Industry and Caltrans Criteria

No traffic study intersections would exceed the City of Industry or Caltrans significance criteria.

Existing Plus Project Phase 2 Conditions

County of Los Angeles

Project implementation would result in a significant impact to the following traffic study intersection under the County of Los Angeles criteria:

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry) – AM and PM peak hours

City of Industry

Project implementation would result in significant impact to the following traffic study intersection under the City of Industry criteria:

- 13 Azusa Avenue and Pepper Brook Way (LA County / Industry) – AM and PM peak hours

Caltrans

No traffic study intersections would exceed Caltrans significance criteria.

Cumulative 2021 With Project Phase 1 Conditions

County of Los Angeles Criteria

Project implementation would result in significant impact to the following traffic study intersection under the County of Los Angeles criteria:

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry) – AM and PM peak hours

City of Industry and Caltrans Criteria

No traffic study intersections would exceed the City of Industry's and Caltrans significance criteria.

Cumulative 2026 With Project Phase 2 Conditions

County of Los Angeles

Project implementation would result in significant impact to the following traffic study intersection under the County of Los Angeles criteria:

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry) – AM and PM peak hours

City of Industry

Project implementation would result in significant impact to the following traffic study intersection under the City of Industry criteria:

- #13 Azusa Avenue and Pepper Brook Way (LA County / Industry) – PM peak hour

Caltrans

No traffic study intersections would exceed Caltrans' significance criteria.

Signal Warrants

Of the 16 traffic study intersections, 2 are unsignalized intersections—#6, Countrywood Avenue and Wedgeworth Drive, and #8, Park Lawn Road and Colima Road. As stated in Section 5.8.1.2, *Intersection LOS Analysis and Impact Criteria*, according to Los Angeles County Traffic Impact Analysis Report Guidelines,

unsignalized intersections are to be evaluated solely to determine the need for the installation of a traffic signal or other traffic control devices.

Signal warrants are a set of criteria used to evaluate the potential need for a traffic signal at an unsignalized or stop-controlled intersection. If one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized. The traffic analysis uses Warrant 3 criteria (based on traffic volumes entering the intersection during the peak hour). The following stop-controlled intersections have been evaluated for Phase 1 and Phase 2 conditions under Warrant 3 criteria, and the signal warrant calculations are included in Appendix G of the TIA, which is Appendix F to the RDEIR.

- **#6, Countrywood Avenue and Wedgeworth Drive.** The intersection of Countrywood Avenue and Wedgeworth Drive does not meet the requirement for Warrant 3 under any scenario during the AM and PM peak hours. This intersection currently is not warranted for a signal.

- **#8, Park Lawn Road and Colima Road.** Park Lawn Road and Colima Road currently does not meet the peak hour Warrant 3 criteria for a signal under existing AM and PM peak hours and is forecast not to meet the warrants under future, no project conditions. However, with project traffic condition under Phase 1 and Phase 2, this location would meet the warrants for a signal in the AM peak hour.

The traffic analysis only presents Warrant 3 criteria, which are based on traffic volumes entering the intersection during the peak hour. The Manual for Uniform Traffic Control Devices states that if one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized.

Colima Road is a principal arterial street, and the installation of traffic signals in close proximity to each other is not desired because they may degrade thru-traffic flows on an arterial street. The proposed project would primarily add traffic to the southbound approach of Park Lawn toward Colima Road. The traffic analysis indicates that a relatively small number of vehicles would be affected by longer delays on the southbound approach, and thru traffic on Colima Road would not be affected because east–west traffic does not stop at that intersection. In the event that delays are long on Park Lawn Road, drivers could take alternative routes via Countrywood Avenue and Manor Gate Road, where traffic signals are already installed that may provide a faster route. Given the small number of vehicles affected on the cross-street traffic on Park Lawn and because motorists are likely to use the nearby approaches at Countrywood Avenue and Manor Gate Road, although a traffic warrant is met, a signal at Park Lawn is not warranted.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.8-2: The new K-8 school portion (Phase 1) of the proposed project would be consistent with CEQA Guidelines § 15064.3, subdivision (b), and the residential development portion (Phase 2) of the proposed project would be inconsistent with CEQA Guidelines § 15064.3, subdivision (b). [Threshold T-2]

On December 28, 2018, the California Natural Resources Agency adopted revised CEQA Guidelines, one of which was the removal of vehicle delay and LOS from consideration under CEQA. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. It eliminates auto delay, LOS, and similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts. Transportation impacts will instead be evaluated based on a project's effect on VMT.

> Generally, VMT is the most appropriate measure of transportation impacts. For the purposes of this section, VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) … [regarding roadway capacity], a project's effect on automobile delay shall not constitute a significant environmental impact.

Compliance with the revised transportation guidelines pursuant to SB 743 became effective on July 1, 2020, and the County of Los Angeles adopted VMT methodologies and thresholds to evaluate projects in July 2020. A VMT technical memo was prepared in compliance with SB 743 in accordance with the County's updated Transportation Guidelines and is included as Appendix E, *VMT Technical Memo*, to the RDEIR.

For the Phase 1 school expansion portion of the proposed project, a potentially significant VMT impact would occur if the expanded school would result in a net increase in existing total VMT. The proposed project is not proposing a new school; instead, the capacity of the existing school is being expanded to accommodate students in middle school grades, thereby allowing elementary students to continue their education in the same school through middle grades. These students within the Wedgeworth ES boundaries would likely attend Cedarlane Academy after graduation, about a mile to the west. Therefore, the District, as the leady agency, determined that it would be reasonable to evaluate the school component of the project in terms of an overall net change in VMT associated with enrollment shifts, and not based on VMT per employee as the County's guidelines suggested.

The VMT from the school would primarily consist of VMT related to student drop-off and pick-up and VMT from school staff. Given that Cedarlane and Wedgeworth are in the same TAZ, the VMT per employee would not change, and any changes in VMT from the proposed project would be related to a change in trips related to student drop-off/pick-up. Currently, approximately 16 percent of the students attending Wedgeworth ES come from outside the District's attendance boundaries. The District would continue to allow students from outside its boundaries to attend its schools, and the project would not have an influence on VMT associated with students attending from outside District boundaries.

As shown in Table 5.8-11, *Total VMT for School Expansion,* the number of daily trips generated by the increased enrollment of 600 students is 1,278. The estimate is based on the trip rate for a Middle School/Junior High School of 2.13 vehicles/student from the ITE Trip Generation Manual, 10th edition. The weighted average trip length for these students within the Wedgeworth ES boundary to Wedgeworth ES

is 0.60 miles, and to Cedarlane Academy is 1.21 miles. The weighted average trip length is calculated based on the populations (age 5 to 17) of TAZs within the Wedgeworth school boundary and trip distances between these TAZs and Wedgeworth School or Cedarlane School. Figure 5 of the VMT Technical Memo (Appendix E to the RDEIR) shows the existing Wedgeworth ES boundary, and Attachment A of the VMT Technical Memo shows details of the weighted average trip length calculation. As shown in Table 5.8-11, the daily VMT before school expansion is 1,546, and the daily VMT after the school expansion would be 767, resulting in a net decrease in daily VMT of 779. Since the school expansion would not result in a net increase in existing total VMT, impacts would be less than significant.

Table 5.8-11 Total VMT for School Expansion

Assigned School	Students	ITE Trip Generation Rate (Daily)[1]	Daily Trip	Weighted Avg Trip Length (miles)	VMT
Cedarlane Academy (Before Expansion)	600 students	2.13	1,278	1.21	1,546
Wedgeworth K-8 School (After Expansion)	600 students	2.13	1,278	0.60	767
				Net Change in Existing Total VMT	-779

[1] Note that the ITE rate (ITE 522) used for the VMT analysis is different from the rate used in Table 5.8-4 for LOS analysis because the VMT analysis uses more conservative daily rate for a middle school which is higher than for an elementary school.

Phase 2, the residential development portion of the proposed project, was analyzed in accordance with the County's VMT guidelines, which uses a travel demand model to identify VMT per capita for the traffic analysis zone (TAZ) in which the project site is located. Under the County VMT guidelines, the project has a potentially significant VMT impact if the project's VMT per capita exceeds the VMT impact threshold of 10.6, thereby reducing the south County's baseline of 12.7 VMT by 16.8 percent. VMT from the Southern California Association of Governments' (SCAG) 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) model[2] are used to identify VMT per capita in the VMT analysis area. Figure 5.8-2, *VMT per Capita by TAZ*, shows VMT per capita of the TAZ where the project site is located. As shown, the VMT per capita of the TAZ for the project site is 17.0. Because the project site is in a TAZ that is higher than the VMT impact threshold of 10.6 (16.8 percent below area baseline VMT of 12.7), the residential development portion of the proposed project is considered to have a significant VMT impact.

Some of the mitigation strategies to reduce VMT for residential development include on- or off-site improvements to transit, pedestrian, and bicycle facilities; parking management strategies; and transportation demand management (TDM) measures as listed below.

- Increase affordable housing units
- Improve pedestrian networks beyond development frontage
- Provide bicycle parking
- Provide bicycle share programs
- Provide car share programs

[2] The use of the 2012 RTP/SCS model is consistent with the model used to develop the County's thresholds and it provides a fair comparison. The current 2016 base year model was released in the fall of 2020 after the County's thresholds were published.

- Provide subsidized transit program
- Increase transit frequency
- Upgrade transit routes serving the project

For land development projects, VMT-reducing measures that can be implemented by the developer are generally limited to what can be implemented on-site as project amenities or off-site in the vicinity of the project. It is anticipated that specific VMT-reducing measures would be identified at the time of residential development application submittal. The County already has existing requirements for providing bicycle parking and providing affordable housing through inclusionary housing ordinance. Therefore, these VMT reduction strategies would be required at the time of residential development Transit programs and improvements are off-site and not under the jurisdiction of the District or the future applicant of the residential project.

Guidance published by the California Air Pollution Control Officers Association (CAPCOA) forms the basis for much of the TDM and VMT mitigation research and policymaking in the state. According to CAPCOA, the maximum VMT reductions that can be achieved for projects in suburban settings is 15 percent. Therefore, even if all listed VMT reducing measures were to be implemented, the minimum VMT per capita that could be achieved for the project site would be 14.4 (15 percent reduction from VMT of 17.0 per capita). VMT impacts would remain significant and unavoidable.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.8-3:	The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). [Threshold T-3]

School Development

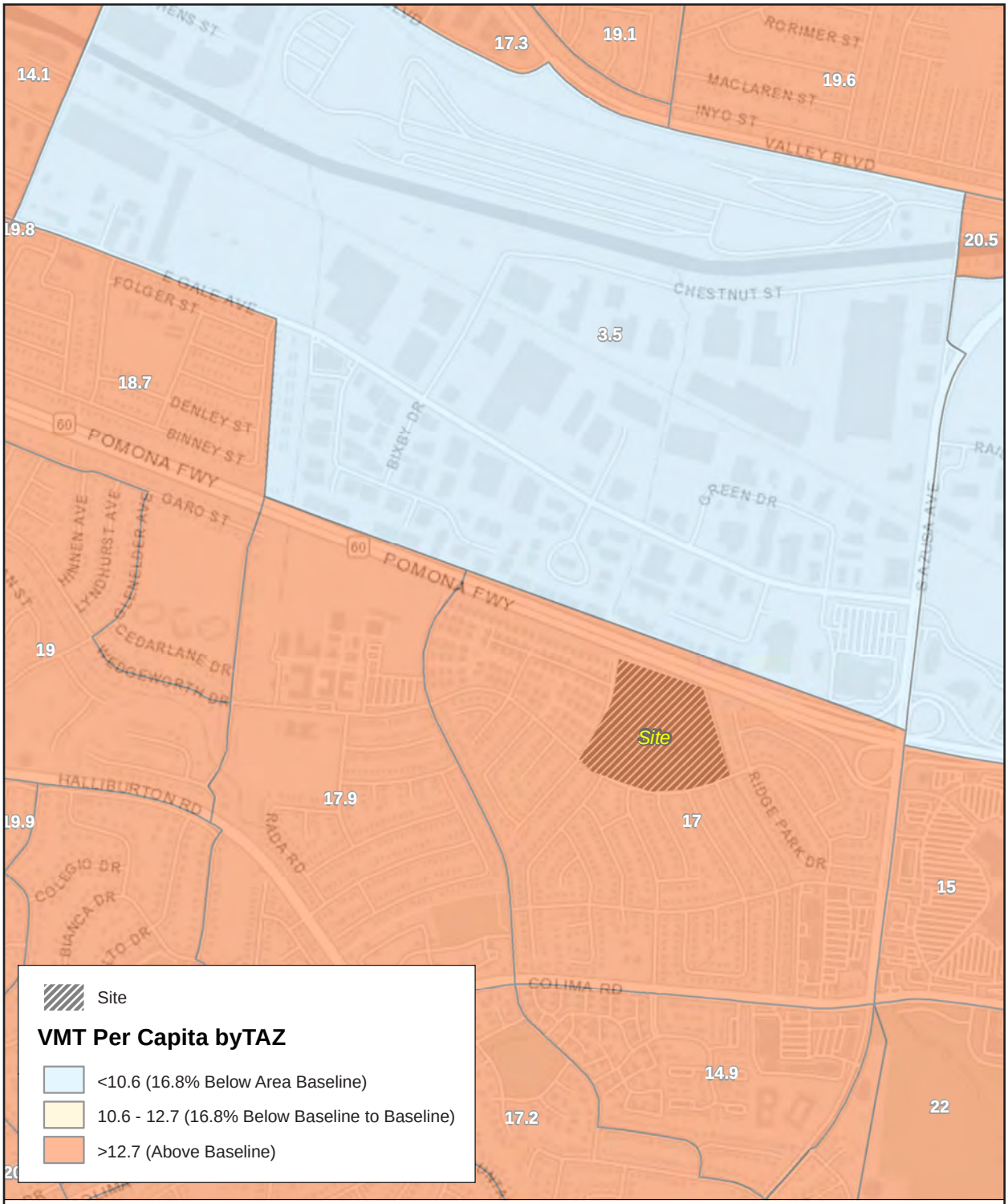
The K-8 school would be accessed from two driveways on Eagle Park Road for the main parking and bus drop-off, and three driveways on Wedgeworth Drive for parent drop-off/pick-up:

- **Southern Driveway / Eagle Park Road.** A 30-foot-wide driveway on the southwestern end of the project site along Eagle Park Road. This driveway would be designated for both passenger cars and school buses because it leads to staff parking and bus drop-off/pick-up.

- **Northern Driveway / Eagle Park Road.** A 45-foot-wide driveway on the western end of the project site along Eagle Park Road. This driveway would be designated for both passenger cars and school buses because it leads to staff parking and bus drop-off/pick-up. This driveway also connects to the fire access lane to Wedgeworth Drive.

- **Orchard Hill Lane / Wedgeworth Drive.** A 30-foot-wide driveway on the southeastern end of the project site along Wedgeworth Drive that would be used for drop-off/pick-up ingress. This driveway is primarily designed for passenger cars because it leads to visitor parking and parent drop-off/pick-up.

Figure 5.8-2 - VMT Per Capita by TAZ
5. Environmental Analysis



The South County VMT per Capita Baseline is 12.7
The VMT per Capita Criteria (16.8% below South County Baseline) is 10.6

0 300
Scale (Feet)

Source: Kittelson & Associates, 2020

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- **Park Lawn Road / Wedgeworth Drive.** A 30-foot-wide driveway on the south-central edge of the project site along Wedgeworth Drive that would be used for drop-off/pick-up.

- **Lark Tree Lane / Wedgeworth Drive.** A 30-foot-wide driveway on the southern edge of the project site, about halfway between the other two driveways along Wedgeworth Drive. This driveway is primarily designed for passenger cars as it leads to visitor parking and parent drop-off/pick-up. This driveway also connects the fire access lane to Eagle Park Road. During student drop-off and pick-up, this driveway would be closed in order to direct vehicles to egress via the western driveway at Park Lawn Road.

The proposed project would modify the student drop-off and pick-up locations and conditions. Student pick-up/drop-off would be relocated from its existing curbside location along Wedgeworth Drive to an off-street, on-site parking lot area north of Wedgeworth Drive and west of Minor Gate Road. The reconfigured school would allow student drop-off to occur off-street within the school property rather than curbside along a public street. A drop-off area and vehicular queuing off street would improve safety; a large number of pedestrian crossings on Wedgeworth Drive would be eliminated because students would no longer have to cross Wedgeworth Drive and local streets to reach their cars. In addition, school bus student drop-off and pick-up would be moved from curbside areas on Wedgeworth Drive to dedicated off-street parking lots on Eagle Park Road, improving safety and separating cars and bus drop-off areas. Additionally, the new drop-off lane egress driveway is restricted to right-out turns only during the student drop-off and pick-up hours. This restriction would be implemented with a sign at the egress driveway and pavement markings, and education efforts. The District will monitor operations and ease this restriction as appropriate depending on observations after school opening.

The project site is surrounded by residential uses, and there are no incompatible uses surrounding the proposed school and residential development. Schools and residential development are typically developed in residential areas. The project site is already operating as an elementary school with one driveway on Wedgeworth Drive and one on Eagle Park Road that accesses the baseball fields and connects to the elementary school. There are no visible slope or elevation changes along Eagle Park Road and Wedgeworth Drive, and there are no obstructions blocking the line of sight between thru traffic and the access driveways. Providing two driveways on Eagle Park Road and three driveways on Wedgeworth Drive would allow safe and orderly access to the school.

The District would coordinate with the County to eliminate the signage that marks the existing student drop-off areas along the north side of Wedgeworth Drive and install new signage, such as "No Stopping," along the south side of Wedgeworth Drive between Heather Hill Road and Orchard Hill Lane and on-site at the designated area of the parking lot. Not allowing curbside parking and loading/unloading would allow adequate two-way traffic flow on Wedgeworth Drive and promote a safe and orderly drop-off/pick-up environment.

The typical morning peak drop-off and afternoon pick-up activity lasts about 30 minutes, and any possible queue would dissipate immediately after the drop-off and pickup periods. Vehicular queues are anticipated to extend from the pick-up/drop-off loop to the residential streets in the vicinity of the school, such as Wedgeworth Drive, Orchard Hill Lane, and Park Lawn Road. According to the site visit conducted on

February 13, 2020, between 1:30 and 2:30 pm during dismissal times when pedestrian activities were heavy, queuing with approximately four vehicles was observed at the northbound and eastbound approaches to the intersection of Manor Gate Road/Wedgeworth Drive. The limited number of cars in the queue is because there are several routes to and from the school via Wedgeworth Drive, Manor Gate Road, Orchard Hill Lane, Park Lawn Road, Eagle Park Road, and other roads. Because the internal driveway for the proposed project would allow an on-site queue of approximately 400 feet, or approximately 20 cars, it is anticipated that the proposed project would not result in longer queues than the existing conditions. Queues would be limited to the local streets serving residential traffic at low speeds and volumes, and queues would not disrupt regional traffic on major roads. Therefore, the proposed project would not result in a significant impact by blocking any resident driveways for any extended period. The proposed project would not encourage speeding on any of the study area roadways. And as with the existing school operations, school monitors would continue to assist students and facilitate traffic flow during drop-off and pick-up hours.

Although the proposed project would increase pedestrian and vehicular traffic along the adjacent roadways, with recommended modifications, as shown in Figure 5.8-3, *Site Access Recommendations*, off-site queues would be minimized, and the proposed project would not substantially increase hazards due to a design feature. The proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses.

Residential Development

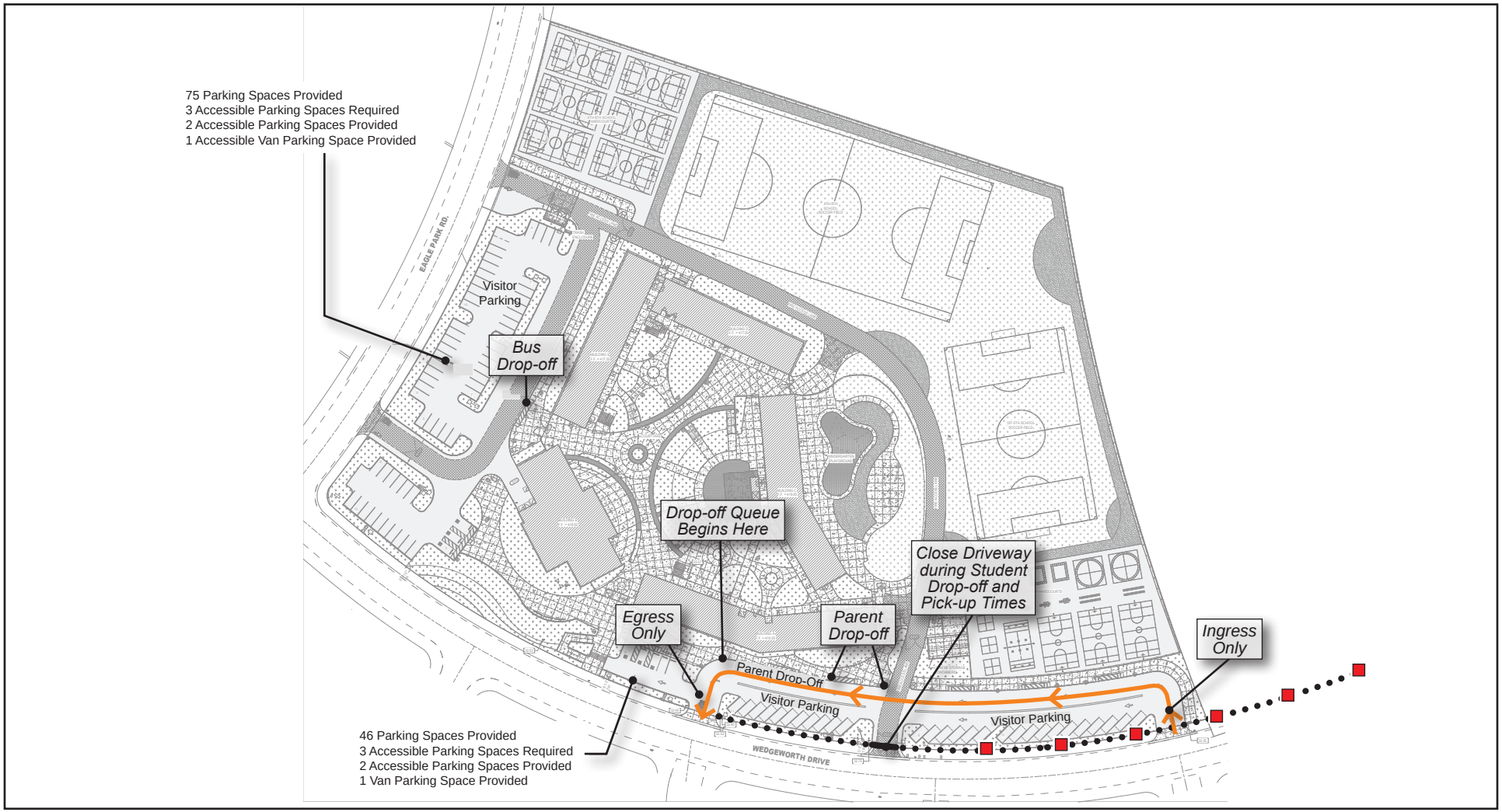
Although no detailed plan is available, it is assumed that the residential site would be accessed via one driveway east of the school on Wedgeworth Drive across from Manor Gate Road, and one driveway on Eagle Park Road north of the K-8 school's north driveway. Considering the low volumes generated by the residential site and local conditions, access driveways could be full access with no turn restrictions. However, the traffic study indicates that a stop sign and stop bar would be required at each driveway to reduce any potential conflict. Provided that a stop sign and stop bar are provided—so that the intersection of Wedgeworth Drive at Manor Gate/Residential access would become a 4-way-stop intersection and the vehicle access onto Eagle Park Road is controlled—no significant impact is anticipated.

Level of Significance Before Mitigation: Potentially significant.

5.8.5 Cumulative Impacts

Discussion in the 2026 Plus Project Impact subheading of Impact 5.8-1 evaluates cumulative traffic impacts measured in LOS. As shown in Table 5.8-10, the proposed project and cumulative projects in the area would result in potentially significant LOS impacts on one traffic study intersection individually and cumulatively. While level of service impact is no longer considered a significant impact on the environment under CEQA, as reported above, the DEIR was originally circulated prior to this change in CEQA, and for that reason the LOS impact analysis and related mitigation have been retained.

Figure 5.8-3 - Site Access Recommendations
5. Environmental Analysis



Source: PBK, 2019

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TRANSPORTATION

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As discussed in Impact 5.8-2, the Phase 1 school expansion of the proposed project would result in a net reduction in VMT, capturing students who otherwise would have attended Cedarlane Academy. However, when combined with the Phase 2 residential development of the proposed project and other cumulative development projects in the area, cumulative VMT impact is anticipated to be potentially significant. The project site and seven out of nine cumulative projects are in TAZs with above-baseline VMT per capita of 12.7 for the South County. Provided that the impact criteria for south Los Angeles County is 16.8 percent below the existing VMT per capita, and the maximum VMT reductions that can be achieved for projects located in suburban settings is 15 percent (according to CAPCOA), even with all available VMT reduction strategies, cumulative VMT impacts would remain significant.

Level of Significance Before Mitigation: Potentially significant.

5.8.6 Level of Significance Before Mitigation

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.8-1** The proposed project would result in potentially significant traffic impact at the intersection #13 Azusa Avenue and Pepper Brook Way under existing and cumulative plus project conditions.
- **Impact 5.8-2** The residential development portion of the proposed project would result in potentially significant VMT impact.
- **Impact 5.8-3** The proposed project could result in potentially significant transportation impact due to hazardous design features.

5.8.7 Mitigation Measures

Impact 5.8-1

2021 Phase 1 and 2026 Phase 2 Impact

MM TRAN-1 The following improvements shall be provided at intersection #13, Azusa Avenue and Pepper Brook Way.

- At the eastbound approach, restripe the approach with one left-turn and one shared-left/thru/right turn lane.
- Modify the phasing for the eastbound and westbound approaches to split phase.
- Prohibit right turns on red at the westbound approach to avoid conflicts with vehicles making eastbound left turns into Azusa Avenue.

Impact 5.8-2

There are no feasible mitigation measures available to reduce Impact 5.8-2 to a less than significant level.

Impact 5.8-3

MM TRAN-2 Prior to the opening of the school, Hacienda La Puente Unified School District (District) shall work with the County of Los Angeles to identify traffic signing and striping to be implemented in conjunction with detailed construction plans for the project. A recommended layout is presented in Figure 5.8-3, *Site Access Recommendations*, of the RDEIR. As shown in Figure 5.8-3, the existing signage that marks the existing student drop-off shall be eliminated, and new "No Stopping" should be placed in conformance with design standards from the California Manual of Uniform Traffic Control Devices for Streets and Highways and County of Los Angeles standards. Additionally, appropriate crosswalk and pavement marking shall be installed. The District shall implement signage to request that all motorists move as far forward in the queue as possible; keep small gaps between cars to reduce the queue lengths; provide clear pavement markings and white curb markings to delineate the drop-off/pick-up area; educate parents, students, and staff on drop-off/pick-up procedures; and encourage students to walk to school.

MM TRAN-3 The Applicant of the residential development shall install a stop sign and stop bar or similar traffic control feature at each of the access driveways on Wedgeworth Drive and Eagle Park Road.

MM TRAN-4 A site-specific construction worksite staging and traffic control plan shall be prepared and submitted to the County of Los Angeles and California Department of Transportation (Caltrans) for review prior to the start of any construction work. This plan shall include such elements as the location of any potential partial lane closures, hours during which lane closures (if any) would not be allowed, local traffic detours (if any), and protective devices and traffic controls (such as barricades, cones, flag persons, lights, warning beacons, temporary traffic signals, warning signs). The proposed project will be required to comply with the County-approved plan measures, or Caltrans-approved plan measures if any state facilities are affected.

5.8.8 Level of Significance After Mitigation

Impact 5.8-1

Table 5.8-12 shows the intersection LOS results for the impacted intersection with implementation of the above improvements. As shown, the proposed Mitigation Measure TRAN-1 would reduce the V/C to a level less than the pre-project condition under 2021 Phase 1 and 2026 Phase 2 scenarios.

Table 5.8-12 Project Impact With Mitigation Measure

	Pre-Project				Without Mitigation				With Mitigation			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
Intersection	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
2021 Phase 1												
13. Azusa Avenue and Pepper Brook Way	0.851	D	0.906	E	0.898	D	0.916	E	0.793	C	0.844	D
2026 Phase 2												
13. Azusa Avenue and Pepper Brook Way	0.865	D	0.922	E	0.934	E	0.958	E	0.793	C	0.844	D

Note: The proposed intersection configuration that would mitigate impacts may not be feasible.

However, implementation of the proposed mitigation is not under the jurisdiction of the District. The County of Los Angeles and the City of Industry may not allow this reconfiguration as an adequate design. Any improvements to the impacted intersection would be under the purview of the County of Los Angeles and the City of Industry, and the District has no jurisdiction over implementation of the recommended improvements. Therefore, although a mitigation measure has been identified, project impact would remain significant and unavoidable.

Impact 5.8-2

There is no feasible mitigation to reduce significant VMT impacts for the residential portion of the proposed project. Transportation impacts related to VMT would be significant and unavoidable.

Impact 5.8-3

Implementation of Mitigation Measure TRAN-3 through TRAN-4 would ensure that transportation impacts related to hazardous design features are reduced to a less than significant level.

Cumulative Impact

Mitigation Measure TRAN-1 would reduce cumulative LOS traffic impact for year 2026. However, implementation of the mitigation measure cannot be guaranteed because it is not under the jurisdiction of the District. Cumulative LOS impact would remain significant and unavoidable.

There is no feasible mitigation to reduce significant VMT impacts for the residential portion of the proposed project, individually or cumulatively. Cumulative VMT impact would remain significant and unavoidable.

5.8.9 References

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Transportation Research Board. 2016. Highway Capacity Manual. 6th edition.

6. Significant Unavoidable Adverse Impacts

Pursuant to Section 15126.2(b) of the CEQA Guidelines, this RDEIR considers the significant environmental effects which cannot be avoided if the proposed project is implemented. At the end of Chapter 1, *Executive Summary*, is a table that summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Mitigation measures would reduce the level of impact, but the following impacts would remain significant, unavoidable, and adverse:

6.1 TRANSPORTATION

- **Impact 5.8-1:** The proposed project could conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

The project-generated traffic volume would result in significant traffic impact at one intersection—#13, Azusa Avenue and Pepper Brook Way—which is under the jurisdiction of the County of Los Angeles and the City of Industry.

Existing Plus Project Phase 1 Conditions

Project implementation would result in a significant impact during the AM peak hour under the County of Los Angeles criteria.

Existing Plus Project Phase 2 Conditions

Project implementation would result in a significant impact during the AM and PM peak hours under the County of Los Angeles and the City of Industry criteria.

Cumulative 2021 With Project Phase 1 Conditions

Project implementation would result in a significant impact during the AM and PM peak hours under the County of Los Angeles criteria.

Cumulative 2026 With Project Phase 2 Conditions

Project implementation would result in a significant impact during the AM and PM peak hours under the County of Los Angeles criteria and during the PM peak hour under the City of Industry criteria.

Mitigation Measure

MM TRAN-1 The following improvements shall be provided at the intersection #13, Azusa Avenue and Pepper Brook Way:

6. Significant Unavoidable Adverse Impacts

- At the eastbound approach, restripe the approach with a one left turn and one shared left/thru/right turn lane.
- Modify the phasing for the eastbound and westbound approaches to split phase.
- Prohibit right turns on red at the westbound approach to avoid conflicts with vehicles making eastbound left turns into Azusa Avenue.

Level of Significance After Mitigation Measure MM TRAN-1

Implementation of Mitigation Measure TRAN-1 would reduce potentially significant traffic impact to a less than significant level. However, this intersection is not under the jurisdiction of the District, and the implementation cannot be guaranteed. Any improvements to the impacted intersection would be under the purview of the County of Los Angeles and the City of Industry, and the District has no jurisdiction over implementation of the recommended improvements. Therefore, Impact 5.8-1 would remain significant and unavoidable.

- **Impact 5.8-2:** The new K-8 school portion (Phase 1) of the proposed project would be consistent with CEQA Guidelines Section 15064.3(b), and the residential development portion (Phase 2) of the proposed project would be inconsistent with CEQA Guidelines Section 15064.3(b).

Mitigation Measure

There is no feasible mitigation measure to reduce VMT for the proposed project.

Level of Significance After Mitigation

Implementation of the residential development portion of the proposed project would provide bicycle parking and affordable housing as required by the existing County of Los Angeles regulation at the time of residential development application submittal and review. However, there are no feasible mitigation measures to reduce VMT per capita in the TAZ where the project site is located to meet the County's impact criteria of 16.8 percent below the existing VMT per capita. According to CAPCOA, the maximum VMT reductions that can be achieved for projects in suburban settings is 15 percent. Given that the VMT per capita of the study TAZ is 38 percent higher than the VMT impact threshold, even with implementation of all feasible reduction strategies, the proposed project would not be able to fully mitigate the VMT per capita of the study TAZ to below the VMT impact threshold. As a result, transportation impacts related to VMT are considered significant and unavoidable.

Additionally, seven out of nine cumulative projects are also in TAZ with above baseline VMT per capita of 12.7. Therefore, even if all cumulative projects were to implement and achieve maximum VMT reduction of 15 percent, the County impact criteria of 16.8 percent would still not be met, and cumulative VMT impact would remain significant and unavoidable.

7. Alternatives to the Proposed Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines § 15126.6[a]). As required by CEQA, this chapter identifies and evaluates potential alternatives to the proposed project.

Section 15126.6 of the CEQA Guidelines explains the foundation and legal requirements for the alternatives analysis in an EIR. Key provisions are:

- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (15126.6[b])

- "The specific alternative of 'no project' shall also be evaluated along with its impact." (15126.6[e][1])

- "The no project analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (15126.6[e][2])

- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." (15126.6[f])

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries…, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (15126.6[f][1]).

- "Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (15126.6[f][2][A])

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6[f][3])

For each development alternative, this analysis:

- Describes the alterative.
- Analyzes the impact of the alternative as compared to the proposed project.
- Identifies the impacts of the project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the basic project objectives.
- Evaluates the comparative merits of the alternative and the project.

According to Section 15126.6(d) of the CEQA Guidelines, "[i]f an alternative would cause…significant effects in addition those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

7.1.2 Project Objectives

As described in Section 3.2, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts.

1. Replace Wedgeworth Elementary School, built as a temporary facility and now in poor condition, with a modern, educationally appropriate campus for 1,200 K-8 students.
2. Avoid the need to move students off-site during construction by maintaining the existing campus until the new campus opens.
3. Demolish the existing campus.
4. Create value by seeking rezoning of the remaining property to R-3 (Limited Multiple Residence), which would provide a maximum of 160 dwelling units.

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

The following is a discussion of the land use alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this RDEIR.

7.2.1 Alternative Development Areas

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would feasibly attain most of the basic

objectives of the project but would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (CEQA Guidelines § 15126.6[a]).

The project site is already developed as an elementary school, and the proposed project is intended to replace this existing school, built as a temporary facility, while adding value to the District's excess property. Because the proposed project's two basic objectives relate to the project location—1) to replace the existing Wedgeworth ES, now in poor condition, with a modern, educationally appropriate campus; and 2) to avoid the need to move students off-site during construction by maintaining the existing campus until the new campus opens—an alternative development alternative was not considered. Additionally, development of a 1,200-student school facility and up to 160 units in any location near the attendance boundary of the existing Wedgeworth ES would have substantially the same environmental impacts, including potentially significant impacts related to transportation. Impacts would be similar because an elementary school is typically developed in a residential community which it serves, and the site must comply with the California Department of Education's (CDE) CCR Title 5 regulations related to school facilities construction.

Although site-specific impacts cannot be evaluated, project-related trips from construction of a 1,200 K-8 students capacity school and a 160-unit residential development would be similar or greater than the proposed project, because instead of adding 600 students to the existing 600-capacity ES under the proposed project, an alternative development site would likely result in traffic impacts from relocation of the existing 600 students plus the 600 new students. Trip generation from the 160-unit residential development would not change; therefore, an alternative site is unlikely to avoid or substantially lessen significant and unavoidable impact related to transportation.

The proposed project's impact related to elimination of the existing four baseball fields could be avoided with an alternative development site alternative; however, the impact has been reduced to less than significant with incorporation of mitigation measures that identified four replacement ballfields. An alternative development site would not attain two of the basic project objectives, and three of the four alternatives selected for further analysis would avoid or reduce recreation impacts, which would be considered a reasonable range of potentially feasible alternatives. Therefore, abandoning the project site and seeking an alternative location was not evaluated.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria discussed above, four alternatives were selected to represent a reasonable range of alternatives that could avoid or substantially lessen recreation and transportation impacts and that have the potential to feasibly attain most of the basic objectives of the project. These alternatives are summarized in Table 7-1 and analyzed in detail in the following sections.

- Alternative 1: No Project/Existing School Improvement Alternative
- Alternative 2: New Expanded K-8 School and Two Baseball Fields Retention Alternative
- Alternative 3: New Replacement K-5 School and Residential Development Alternative
- Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention Alternative

7. Alternatives to the Proposed Project

Table 7-1 Summarized Description of the Alternatives

Alternatives	Description
Alternative 1: No Project/Existing School Improvement Alternative	▪ Required by CEQA ▪ The existing Wedgeworth ES campus with 600 students would remain, but least 12 existing buildings would be replaced due to condition and age. ▪ Interim student housing would be necessary during construction. ▪ No residential development would occur. ▪ Four baseball fields would not be removed.
Alternative 2: New Expanded K-8 School and Two Baseball Fields Retention Alternative	▪ A new expanded 1,200-student K-8 School would be constructed on the 10-acre portion. No changes to the school design from the proposed project. ▪ Two western ballfields with nighttime lighting (one large and one small field) would be demolished, and the two eastern small ballfields would be retained. ▪ No residential development. ▪ Minor safety improvements would be provided per the "Baseball Field Hazard Assessment: Wedgeworth E.S." prepared by Keenan Associates (Appendix G to the RDEIR). ▪ A separate parking lot for the ballfields for the Little League teams would be provided at the southeast corner of the project site (current Wedgeworth ES area), accessed via Wedgeworth Drive.
Alternative 3: New Replacement K-5 School and Residential Development Alternative	▪ A 600-student capacity K-5 school would be constructed on the 10-acre portion of the project site. ▪ Reduction in total building area, and all buildings would be one story high. ▪ The remaining 10 acres would be developed with 160 residential units. ▪ All four baseball fields would be removed (one large and one small fields with lights and two small fields without lights).
Alternative 4: New Expanded K-8 School and Four Baseball Fields (including one shard field) Retention Alternative	▪ A new, expanded, 1,200-student K-8 School would be constructed on the 10-acre portion with modified design to accommodate one shared field. ▪ All four baseball fields would remain useable. ▪ The outfield for the western large field would be improved to accommodate a soccer field for the new school, thus serving a dual purpose. This shared large field would be updated per DSA standards for safety, including updates to the existing light poles. Students would have access to the shared field during normal school hours and Little League would have after-school and weekend access. ▪ Two additional soccer fields (one regular and one practice) would be provided on the east side of the school, separate from the soccer field to the north on the baseball outfield, allowing separation of the upper and lower grades during P.E. ▪ A stormwater retention system would be provided beneath the shared field in the outfield to capture all on-site runoff. ▪ A new parking lot for the baseball fields would be provided on the east side, accessed from Wedgeworth Drive. ▪ No residential development would occur.

An EIR must identify an "environmentally superior" alternative, and where the no-project alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. Section 7.7 identifies the

Environmentally Superior Alternative. The preferred land use alternative (proposed project) is analyzed in detail in Chapter 5 of the originally circulated DEIR for impacts related to air quality, energy, geology and soils, hydrology and water quality, noise, tribal cultural resources, and utilities and service system, and impacts to recreation and transportation are analyzed in Chapter 5 of this Recirculated DEIR.

While level of service (LOS) impact is no longer considered a significant impact on the environment under CEQA pursuant to Senate Bill (SB) 743 and the Public Resources Code Section 21099(b)(2), the DEIR was originally circulated prior to this change in CEQA and for that reason, the REIR retained LOS impact analysis and related mitigation.

7.4 ALTERNATIVE 1: NO PROJECT/EXISTING SCHOOL IMPROVEMENT ALTERNATIVE

Under this alternative, the location of the existing Wedgeworth ES would not change, and no new expanded K-8 school facilities would be constructed. However, at least 12 of the existing buildings would need to be replaced due to their condition and age. Therefore, some demolition and construction would occur, but on a much smaller scale than the proposed project. The existing students would also need to be relocated to interim student housing during construction, requiring construction of temporary facilities on the project site and removal of the temporary facilities once the existing buildings are replaced. No residential development would be developed, and the baseball fields would not be removed and would continue to be used by the Little League teams.

7.4.1 Air Quality

Limited construction and operational air quality impact would occur under this alternative. The existing Wedgeworth ES campus and the baseball fields would not be demolished, and no new K-8 school facilities and residential units would be developed. Therefore, construction-related air quality impacts from these earth-moving activities and construction equipment would not occur. Demolition- and construction-related emissions from the replacement buildings and interim housing would be significantly less than the proposed project due to the smaller scale. Without the school expansion, the project site would not generate any increase in vehicle trips or building energy use. Therefore, the No Project/Existing School Improvement Alternative would reduce regional and localized air quality impacts during construction and operation compared to the proposed project. Air quality impacts under this alternative would be reduced compared to the proposed project. However, the proposed project would not result in any significant and unavoidable air quality impacts.

7.4.2 Energy

The No Project/ Existing School Improvement Alternative would generate a temporary increase in energy and fuel use during construction activities. However, considering its limited size and scale compared to the proposed project, the impact would be substantially less than the proposed project. And this alternative would not generate a long-term increase in fuel use and energy during project operation because there would be no increase in student enrollment capacity. Compared to the proposed project, impacts on energy would be reduced. Energy impact is not a significant and unavoidable impact of the proposed project.

7.4.3 Geology and Soils

Limited construction activities, including grading, would occur under the No Project/Existing School Improvement Alternative. The new construction would be limited to replacement of existing buildings and placement and removal of portable buildings for interim housing. Therefore, this alternative would improve the seismic safety conditions at the existing Wedgeworth ES campus for the replaced 12 buildings. This alternative would not require grading or construction activities related to the residential development, and there would be no potential for residential structures to experience seismic ground shaking or other geologic hazards. Therefore, geologic and soils impacts would be reduced relative to the proposed project, but this is not a significant and unavoidable impact of the proposed project.

7.4.4 Greenhouse Gas Emissions

The No Project/Existing School Improvement Alternative would generate greenhouse gas (GHG) emissions related to limited construction but without the residential development; therefore, GHG emissions would be less than the proposed project. And because the enrollment capacity would remain the same, no increase in GHG emissions during operational is anticipated. Therefore, this alternative would reduce GHG emissions compared to the proposed project. However, this is not a significant and unavoidable impact of the proposed project.

7.4.5 Hydrology and Water Quality

Under this alternative, existing water quality conditions, groundwater supplies, drainage patterns, and runoff amounts would generally remain as is since no new residential development would occur and the replacement of the existing school buildings would occur within the same footprint. This alternative would not introduce additional impervious surfaces or new sources of water pollutants to the project area. Hydrology and water quality impacts would be less under this alternative, but this is not a significant and unavoidable impact of the proposed project.

7.4.6 Noise

Under the No Project/Existing School Improvement Alternative, the existing Wedgeworth ES location and capacity would not change, and no residential development would occur. Therefore, no new long-term traffic or stationary noise on-site would be introduced. Additionally, this alternative would reduce construction-related noise impacts. Reduced short-term construction and no long-term operational noise impacts would occur with this alternative. Therefore, compared to the proposed project, noise impact would be reduced. However, no significant operational noise impacts were identified with the proposed project.

7.4.7 Recreation

No residential development would occur under this alternative, and the project site would continue to operate as an elementary school and baseball fields for the community. Therefore, potential impacts to recreation would not occur, including elimination of four baseball fields and increased demands for recreation facility for the residential development. Under this alternative, no parks or recreational facilities would have increased use that

could result in physical deterioration. This alternative would result in less environmental impact related to recreation compared to the proposed project. However, recreation impacts of the proposed project are not significant and unavoidable with implementation of Mitigation Measures REC-1 and REC-2.

7.4.8 Transportation

The proposed project is anticipated to generate 2,205 total daily trips—1,137 daily trips for the additional 600 students and 1,171 trips for the 160-unit residential development minus internal trip capture of 100 trips—resulting in a total of 441 AM peak hour trips (215 inbound and 226 outbound) and 182 PM peak hour trips (101 inbound and 81 bound). Under this alternative, these trips would be eliminated. Under existing conditions, 6 out of 16 intersections operate at unacceptable LOS E or F: #2, Hacienda Boulevard and Colima Road; #6, Countrywood Avenue and Wedgeworth Drive; #8, Park Lawn Road and Colima Road; #13, Azusa Avenue and Pepper Brook Way; #14, Azusa Avenue and Colima Road; and #16, Fullerton Road and Colima Road. Under the proposed project, the same 6 intersections would operate at unacceptable LOS E or F, and there would be a potentially significant impact at #13, Azusa Avenue and Pepperbrook Way. Therefore, under this alternative, the potentially significant impact at intersection #13 would be eliminated, and significant LOS impacts would not occur.

Pursuant to SB 743, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled (VMT). Without any development except for improvements to the existing school facilities, no additional VMT would be created, and the significant VMT impact related to residential development under the proposed project would be eliminated. This alternative would eliminate significant and unavoidable impacts of the proposed project related to transportation.

7.4.9 Tribal Cultural Resources

The project site would remain in its existing conditions under the No Project/Existing School Improvement Alternative. Thus, ground-disturbing activities would be limited to the existing footings of the buildings to be replaced and interim housing locations. Therefore, impacts would be reduced in comparison to the proposed project. However, tribal cultural resources are not a significant and unavoidable impact of the proposed project.

7.4.10 Utilities and Service Systems

No residential development and no increase in student enrollment capacity would occur on the project site under this alternative. Therefore, there would be no increase in demand for potable water and recycled water, wastewater generation, or solid waste disposal. Overall, impacts would be reduced in comparison to the proposed project but would remain less than significant.

7.4.11 Conclusion

The No Project/Existing School Improvement Alternative would lessen environmental impacts in the areas of all environmental impacts addressed in this EIR—i.e., air quality, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, noise, recreation, transportation, tribal cultural resources, and utilities and service systems. Under this alternative, replacement ballfields development would not be necessary, and no

significant and unavoidable transportation impact would occur. This alternative is environmentally superior to the proposed project.

7.5 ALTERNATIVE 2: NEW EXPANDED K-8 SCHOOL AND TWO BASEBALL FIELDS RETENTION ALTERNATIVE

Under this alternative, two eastern small baseball fields would be retained, and no residential units would be developed. This alternative is intended to reduce the significant and unavoidable recreation impacts. The project site would be developed as a K-8 school with 1,200 students and would have the same design as the proposed project. Figure 7-1, *Alternative 2: New Expanded K-8 School and Two New Baseball Fields Retention Alternative,* shows the proposed layout for this alternative. As shown, K-8 school development on the 10-acre portion would occur as with the proposed project, and once the students are moved to the new school, the existing Wedgeworth ES facilities would be demolished to provide parking for the baseball field use. Perimeter fencing would be provided along the school boundary to separate the school from the baseball fields. The two eastern baseball fields that would remain do not have sports lighting for evening use. Therefore, the fields would be used during daytime only. This alternative would require minor improvements to the existing ballfields per the "Baseball Field Hazard Assessment: Wedgeworth E.S." prepared by Keenan Associates (Keenan Report) for safety reasons. This report is included as Appendix G to this RDEIR.

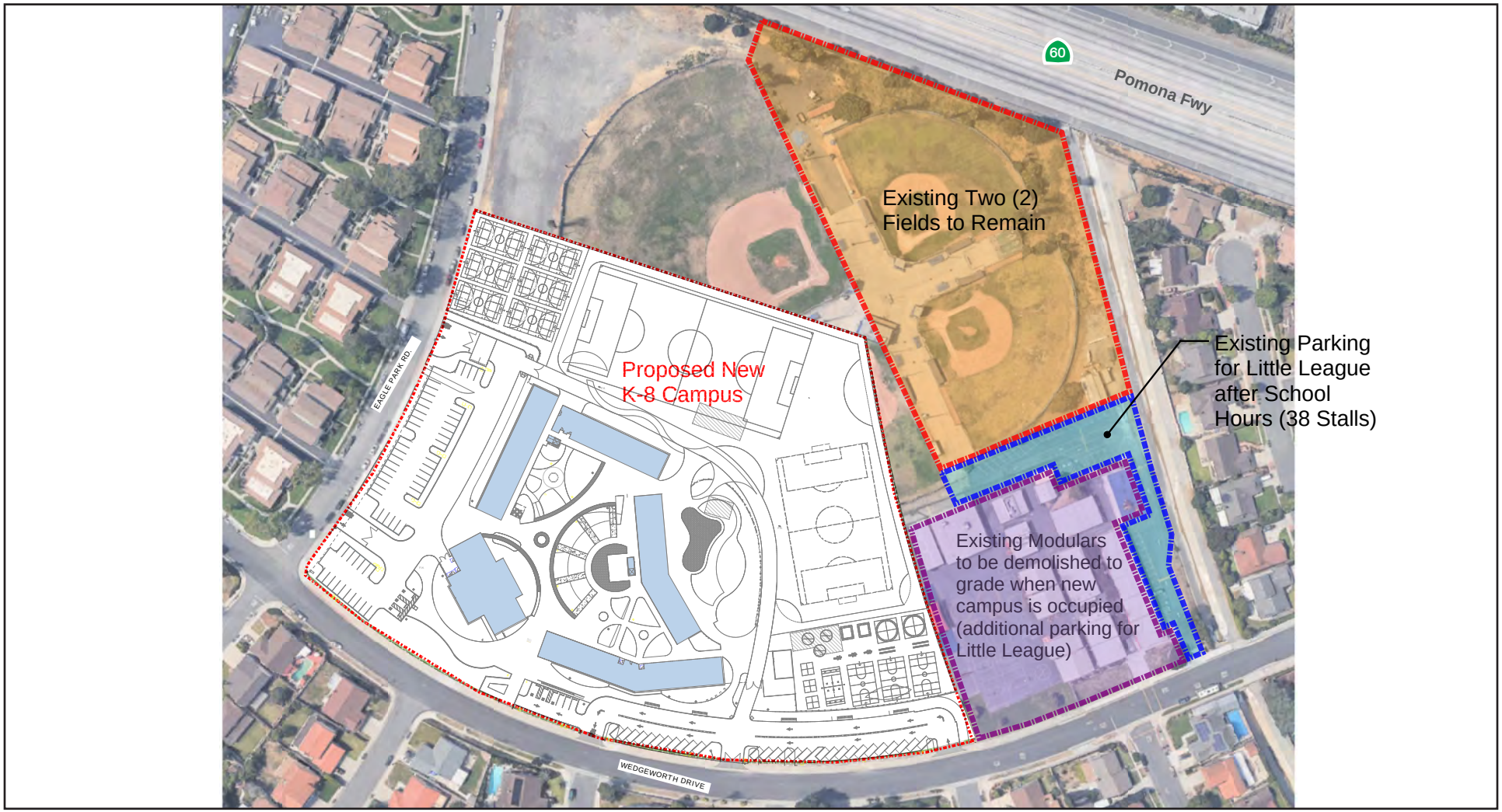
7.5.1 Air Quality

Under this alternative, construction and operational air quality impacts from Phase 2 development of the proposed project would be eliminated except for the demolition of the existing Wedgeworth ES. However, as shown in Table 5.1-10 in DEIR Section 5.1, *Air Quality*, the maximum daily emissions significance threshold for NOx emissions would continue to be exceeded, and this impact would require mitigation measures to reduce air quality impacts to a less than significant level. With elimination of the residential development, the potentially significant VOC emissions impact would be eliminated during the architectural-coating stage of Phase 2. Air quality impacts would be reduced during operation; however, as shown in Tables 5.1-11 and 5.1-12 in DEIR Section 5.1, *Air Quality*, no potentially significant operational air quality impacts have been identified. Overall, construction and operational air impacts would be reduced in comparison to the proposed project; however, mitigation measures would still be required during construction, and impacts would be less than significant. Air quality is not a significant and unavoidable impact of the proposed project.

7.5.2 Energy

Under this alternative, Phase 2 development would be eliminated except for the existing Wedgeworth ES demolition; therefore, there would be no residential demand for 808,816 kWh/year of electricity and 2,748,250 kBTU/year of natural gas. The reduction in energy consumption is from 1,447,255 kWh/year at buildout under the proposed project to 638,439 kWh/year, a decrease of 64 percent of electricity energy, and from 3,612,475 kBTU/year to 864,225 kBTU/year at buildout, a decrease of 82 percent of natural gas energy. This alternative would result in less environmental impact related to energy compared to the proposed project. However, energy impacts were determined to be less than significant. This impact is not a significant and unavoidable impact of the proposed project.

Figure 7-1 - Alternative 2: New Expanded K-8 School and Two New Baseball Fields Retention Alternative



Source: PBK, 2020

7. Alternatives to the Proposed Project

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7.5.3 Geology and Soils

This alternative would be required to comply with building and seismic codes and regulations, like the proposed project. However, under this alternative, less earth-moving activities would occur, and less building area would be constructed. Therefore, there would be less area to be impacted by seismic activities, including ground shaking. Geology and soil impacts of this alternative would be less than the proposed project. This is not a significant and unavoidable impact of the proposed project.

7.5.4 Greenhouse Gas Emissions

Under this alternative, the GHG emissions associated with the residential development would be eliminated, and GHG emissions would decrease from 2,037 $MTCO_2e$/year at buildout to 379 $MTCO_2e$/yr, an approximately 81 percent reduction, because there would be fewer vehicle trips and less building energy used during operation. Construction activities associated with this alternative would also have reduced GHG emissions. Therefore, this alternative would result in a reduction in construction and operational GHG emissions. Thus, impacts would be reduced compared to the proposed project and would be less than significant. However, this impact is not a significant and unavoidable impact of the proposed project.

7.5.5 Hydrology and Water Quality

Under this alternative, two eastern baseball fields would remain undisturbed. As with the proposed project, all on-site runoff would be retained on-site on the new soccer field area for the school, and no on-site stormwater would flow to the county stormwater system. This alternative would also result in reduced impervious area, since there would be no impervious surfaces associated with the residential units and driveways. Therefore, potential water quality impacts during construction would be reduced. Decreased impervious surface would result in decreased runoff volume, speed, and typical urban pollutants (oil, grease, fertilizers, etc.). Similar to the proposed project, implementation of this alternative would require compliance with the NPDES CGP requirements and implementation of various BMPs to reduce water quality impacts. Impacts to hydrology and water quality impacts of this alternative would be less than the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

7.5.6 Noise

Under this alternative, the residential development would not occur, and only the expanded school and the replacement parking lot for the baseball fields would be constructed; therefore, construction noise would be reduced. Operational noise associated with the residential development would also be eliminated because there would not be vehicle trips, HVAC systems, and other living noise associated with the residential development. There would be vehicle noise and field noise associated with the operation of two baseball fields during the daytime. However, no nighttime operational noise is anticipated because no nighttime sports lighting would be available. Therefore, operational noise impacts of this alternative would be reduced compared to the proposed project and would be less than significant. However, this impact is not a significant and unavoidable impact of the proposed project.

7.5.7 Recreation

Population-inducing projects such as residential development generate demands for recreational facilities. Therefore, elimination of residential development would reduce impacts on area recreational facilities compared to the proposed project. Provision of on-site parks or payment of in-leu park fees would not be required. Schools typically provide athletic facilities that could be used for recreational purpose by the general public in terms allowed by the Civic Center Act. Under this alternative, two eastern unlit small ballfields would be retained, and two lit ballfields (one large and one small fields) would be displaced. As with the proposed project, this alternative would require incorporation of Mitigation Measure REC-1, development of a large field and small field with sports lighting at Kwis ES. However, incorporation of Mitigation Measure REC-2 would not be necessary. Environmental impacts related to the development and operation of the replacement fields at Kwis ES are evaluated in Section 5.7.8 of this RDEIR. Therefore, recreation impacts under this alternative would be less than the proposed project. Recreation impact is not a significant and unavoidable impact of the proposed project with implementation of mitigation measures.

7.5.8 Transportation

Without the residential development, the daily 1,171 trips from the residential development would be removed from the traffic study area roadways, and only the additional 1,137 daily trips related to the school expansion would occur. The reduction in traffic associated with this alternative would lessen but not eliminate the significant LOS impact on Intersection #13, Azusa Avenue and Pepper Brook Way.

Pursuant to SB 743, transportation impact is to be analyzed in terms of VMT in a CEQA analysis. The school expansion portion of the proposed project would result in a net reduction in VMT compared to the existing conditions. As with the proposed project, this alternative would result in a reduced VMT impact for the school portion of the development. The project site is in a TAZ that is above baseline VMT per capita of 12.7 VMT per capita for the south county. Therefore, the residential portion of the proposed project would have needed to achieve 16.8 percent below the 12.7 VMT per capita baseline. No feasible mitigation measures were identified to reduce VMT impact for the proposed project. Under this alternative, the VMT related to the residential development would be eliminated; therefore, the significant VMT impact would be avoided. This alternative would result in less transportation impact compared to the proposed project.

7.5.9 Tribal Cultural Resources

Under this alternative, the area to be disturbed would be reduced from approximately 20 acres to 10 acres. Therefore, the potential for disturbing subsurface tribal cultural resources during ground excavation would be reduced. However, the same mitigation measure as the proposed project would be required to reduce tribal cultural resources impacts to a less than significant level. Impacts to tribal cultural resources of this alternative would be less than the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

7.5.10 Utilities and Service Systems

This alternative would generate less wastewater, consume less water, and generate less solid waste than the proposed project. Utilities and service systems impacts would be reduced compared to the proposed project and would be less than significant. However, this impact is not a significant and unavoidable impact of the proposed project.

7.5.11 Conclusion

This alternative would lessen environmental impacts in all areas evaluated in the EIR (air quality, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, noise, recreation, transportation, tribal cultural resources, and utilities and service systems). This alternative would reduce the impact on recreation, and only incorporation of Mitigation Measure REC-1 would be necessary. It would also eliminate the significant VMT transportation impact, but significant LOS impact would remain. This alternative is environmentally superior to the proposed project.

7.6 ALTERNATIVE 3: NEW REPLACEMENT K-5 SCHOOL AND RESIDENTIAL DEVELOPMENT ALTERNATIVE

Under this alternative, the new school would not be expanded but would be developed with a maximum capacity of 600 K-5 students on the 10-acre portion of the project site—that is, not adding 600 6th through 8th grade students—and the Phase 2 development would be developed as proposed, with 160 units on the remaining 10 acres. Figure 7-2, *Alternative 3: New Replacement K-5 School and Residential Development Alternative*, illustrates this alternative. As with the proposed project, all four baseball fields would be displaced. With the maximum capacity of 600 students, it is assumed that two of the classroom buildings could be one story instead of two stories, since the number of classrooms could be reduced by approximately 50 percent. This alternative is intended to reduce the significant transportation impact.

7.6.1 Air Quality

Under this alternative, construction air quality impacts from Phase 1 development of the proposed project would be reduced because the building square footage would be slightly reduced. It is anticipated that one of the buildings could be eliminated, or two of the two-story classroom buildings could be reduced to one story due to fewer classrooms. Assuming 27 students per class, it is anticipated that the number of necessary classrooms would decrease from 44 to 22 classrooms. Therefore, all other school-supporting facilities would also be reduced, and the overall construction air quality impacts would be less than the proposed project. However, the construction emissions threshold is evaluated in a maximum "daily" value. Since the area to be disturbed would not change and no changes to Phase 1 air quality impact would occur during site preparation, the maximum daily emissions significance threshold for NOx would continue to be exceeded in Phase 1, and mitigation measures would be required to reduce air quality impacts to a less than significant level during Phase 1 development. No changes to air emissions during Phase 2 would occur.

During operation, this alternative would reduce daily trips associated with the school development. No changes to Phase 2 vehicle trips would occur. Therefore, overall, operational air quality impacts would be less than the proposed project. No potentially significant operational air quality impacts have been identified. Both construction and operational impacts would be reduced in comparison to the proposed project; however, mitigation measures would still be required during construction to reduce impacts under this alternative. Air quality is not a significant and unavoidable impact of the proposed project.

7.6.2 Energy

Under this alternative, building energy demands from Phase 1 development would be reduced. Phase 1 constitutes approximately 44 percent of the proposed project's total electricity use and approximately 24 percent of the total natural gas consumption. No changes to Phase 2 energy use would occur. This alternative would result in less environmental impact related to energy compared to the proposed project. However, energy impacts were determined to be less than significant. This impact is not a significant and unavoidable impact of the proposed project.

7.6.3 Geology and Soils

This alternative would be required to comply with building and seismic codes and regulations, like the proposed project. However, under this alternative, less building square footage would be constructed; therefore, the number of structures and areas to be impacted by seismic activities, including ground shaking, would be reduced. Geology and soil impacts of this alternative would be less than the proposed project. This is not a significant and unavoidable impact of the proposed project.

7.6.4 Greenhouse Gas Emissions

Under this alternative, the GHG emissions related to mobile and energy sources would be reduced because the number of trips and building energy associated with the school development would be less than those of the proposed project. No changes to the Phase 2 development would occur. Construction activities associated with this alternative would also reduce GHG emissions because the construction size and duration would be less than the proposed project. Therefore, this alternative would result in a reduction in construction and operational GHG emissions, and impacts would be reduced compared to the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

7.6.5 Hydrology and Water Quality

As with the proposed project, all 20 acres of the project site would be disturbed for construction. Therefore, similar to the proposed project, implementation of this alternative would require compliance with the National Pollutant Discharge Elimination System Construction General Permit requirements and implementation of various BMPs to reduce water quality impacts. Hydrology and water quality impacts during construction would be similar to the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

Figure 7-2 - Alternative 3: New Replacement K-5 School and Residential Development Alternative



Project Boundary
School Boundary

Source: Nearmap, 2019

0 130
Scale (Feet)

7. Alternatives to the Proposed Project

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7.6.6 Noise

Under this alternative, duration of construction would be shortened during Phase 1 development, since only 22 classrooms and supporting facilities would be developed instead of 44 classrooms and supporting facilities. Therefore, construction noise would be slightly reduced. Operational noise associated with a 600-student school would also be less than the proposed 1,200-student school, since less noise would be generated by vehicle trips and building energy. Noise impacts of this alternative would be reduced compared to the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

7.6.7 Recreation

Population-inducing projects such as residential development generate demands for recreational facilities. As with the proposed project, the residential development would increase recreation demands in the area, and provision of parkland and/or payment of park in-leu fees would be required. Schools typically provide athletic facilities that could be used for recreational purposes by the general public, in terms allowed by the Civic Center Act. Reducing the proposed student enrollment capacity to 600 from the proposed 1,200 students would not, therefore, affect the demands for recreational facilities. Under this alternative, the proposed 160 units would be developed, and all four of the existing baseball fields would be displaced. Therefore, impacts to recreation of this alternative would be similar to the proposed project, and incorporation of Mitigation Measures REC-1 and REC-2 would be necessary to reduce recreation impact to a less than significant level. Environmental impacts related to the development and operation of the replacement fields are evaluated in Section 5.7.8 of this RDEIR. As with the proposed project, the significant recreation impact of this alternative could be eliminated if paired with Mitigation Measures REC-1 and REC-2 where four replacement ballfields are developed.

7.6.8 Transportation

Under this alternative, a 600-student school would be constructed, the same as the existing Wedgeworth ES. Therefore, there would be no change in traffic impact in Phase 1 of the development, and the potential impact to Intersection #13, Azusa Avenue and Pepper Brook Way, would be eliminated in school opening year. However, with up to 160 units of residential development in Phase 2, #13 intersection is anticipated to be impacted as with the proposed project. Significant LOS impact would not be eliminated.

Pursuant to SB 743, transportation impact is to be analyzed in terms of VMT in a CEQA analysis. The school expansion portion of the proposed project would result in a net reduction in VMT compared to the existing conditions. Therefore, without the expansion of the school as a K-8 school, students would need to drive slightly farther to attend a middle school, and the slight reduction in VMT under the proposed project would not be achieved. For the residential portion of the proposed project, no change in VMT would occur, and the significant and unavoidable VMT impact would not be eliminated. Therefore, although this alternative would result in a less overall transportation impact as it relates to LOS, the potentially significant impact at one traffic study intersection could not be avoided. Under this alternative, the VMT impact for the school portion of the proposed project would not be less than the proposed, and the significant VMT impact for the residential development could also not be avoided. Transportation impact is a significant and unavoidable impact of the proposed project.

7.6.9 Tribal Cultural Resources

Under this alternative, the area to be disturbed would not be reduced. Therefore, the potential for disturbing subsurface tribal cultural resources during ground excavation would be not be less than the proposed project. Impacts to tribal cultural resources of this alternative would be similar to the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

7.6.10 Utilities and Service Systems

This alternative would generate less wastewater, consume less water, and generate less solid waste than the proposed project at Phase 1 buildout, because the number of students would decrease from 1,200 to 600 students. No changes to Phase 2 development would occur. Utilities and service systems impacts would be less than the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

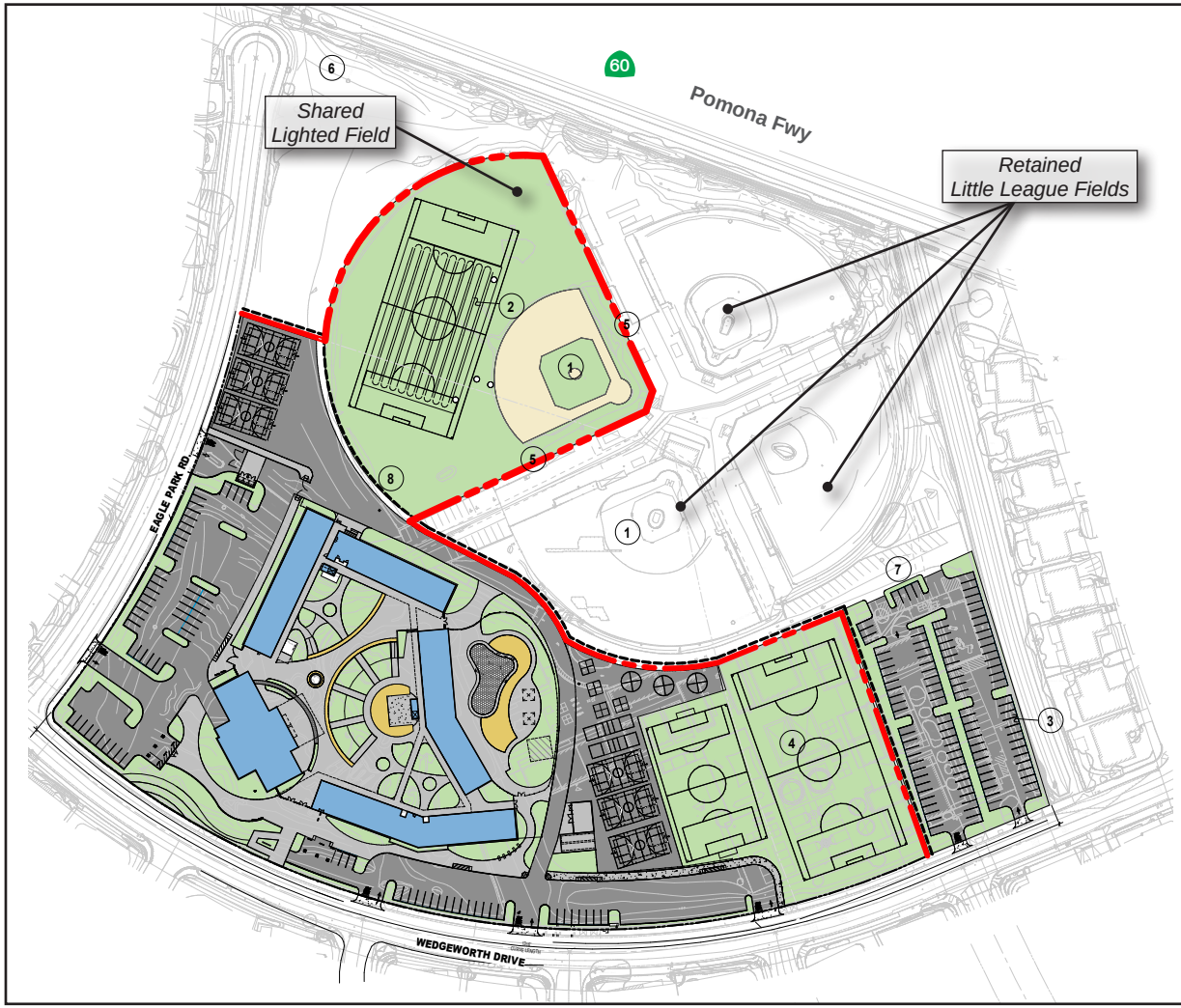
7.6.11 Conclusion

This alternative would lessen environmental impacts in the areas of all environmental impacts addressed in this EIR (i.e., air quality, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, noise, recreation, transportation, utilities and service systems) except for the tribal cultural resources, which would have similar impact as the proposed project. However, as with the proposed project, all four ballfields would need to be replaced and, as with the proposed project, incorporation of Mitigation Measures REC-1 and REC-2 would be necessary to fully mitigate the recreation impact. However, under this alternative, the significant and unavoidable transportation impacts would not be avoided. This alternative is an environmentally superior alternative to the proposed project.

7.7 ALTERNATIVE 4: NEW EXPANDED K-8 SCHOOL AND FOUR BASEBALL FIELDS RETENTION (INCLUDING ONE SHARED FIELD) ALTERNATIVE

Under this alternative, all four baseball fields would remain, and no residential units would be developed. The project site would be developed as a K-8 school with 1,200 students as with the proposed project, but the athletic fields and hardcourts design would be modified to maintain the existing four baseball fields. This alternative is intended to reduce the significant and unavoidable recreation impacts. Figure 7-3, *Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention (One Shared Field) Alternative,* shows the proposed layout for this alternative. As shown, the outfield of the western baseball field would be improved to serve dual function as a soccer field during school hours. As with the proposed project, a stormwater retention basin would be constructed underneath the soccer field to capture and infiltrate stormwater from the new school. Perimeter fencing would be provided along the school boundary to separate the school from the baseball fields, and a gated access would be allowed for students during physical education (PE) classes. School parking and the student pick-up/drop-off area would not change from the proposed project. However, a new 114-space parking lot would be constructed for the baseball field use to replace the existing baseball field parking.

Figure 7-3 - Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention (One Shared Field) Alternative



REQUIRED SCOPE OF WORK

1. REPLACE FIELD LIGHTING AT TWO BASEBALL FIELDS.
2. INSTALL UNDERGROUND WATER INFILTRATION TANKS (STORM DRAIN), AND REDO BASEBALL FIELD TURF.
3. CONSTRUCT NEW PARKING LOT (114 STALLS) FOR LITTLE LEAGUE.
4. CONSTRUCT TURF FIELD.
5. INSTALL GATES AT EXISTING DUGOUTS TO SEPARATE LITTLE LEAGUE COMPLEX FROM SCHOOL CAMPUS.
6. CONSTRUCT NEW DRIVE APRON FOR ACCESS.
7. MODIFY EXISTING PARKING TO PROVIDE ACCESSIBLE PARKING.
8. INSTALL GATE TO ACCESS LARGE BASEBALL FIELD FOR PHYSICAL EDUCATION CLASSES.

Chain Link Fence

0 230
Scale (Feet)

Source: PBK, 2020

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A new driveway apron would also be provided from Eagle Park Road for the baseball fields. Because the baseball fields are owned by the District and the light poles would be within the boundaries of the school if they were to fall, the existing light poles on two existing baseball fields would need to be updated to meet the current DSA codes for safety even though the school will not be using the nighttime lighting. This alternative also requires updates to the rest of the baseball fields for safety reasons, as described in the Keenan Report (see Appendix G to this RDEIR). This alternative would require off-site interim school housing because the existing Wedgeworth ES would need to be demolished for the soccer fields and parking lot construction.

It should be noted that the District is not financially responsible for the necessary improvements to maintain the functionality of the baseball fields, except for the soccer field—to be constructed on the outfield of one of the baseball fields—that students can access during school hours. The main campus would be fenced and gated so that school access is prohibited when school is not in session.

7.7.1 Air Quality

Under this alternative, construction and operational air quality impacts from Phase 2 development of the proposed project would be eliminated, except for the demolition of the existing Wedgeworth ES facilities. However, as shown in Table 5.1-10 in DEIR Section 5.1, *Air Quality*, the maximum daily emissions significance threshold for NOx emissions would continue to be exceeded, and this impact would require mitigation measures to reduce air quality impacts to a less than significant level. With elimination of the residential development, the potentially significant VOC emissions impact would be eliminated during the architectural-coating stage of Phase 2. Air quality impacts would be reduced during operation; however, as shown in Tables 5.1-11 and 5.1-12 in DEIR Section 5.1, *Air Quality*, no potentially significant operational air quality impacts have been identified. Overall, construction and operational air impacts would be reduced in comparison to the proposed project; however, mitigation measures would still be required during construction, and impacts would be less than significant. Air quality is not a significant and unavoidable impact of the proposed project.

7.7.2 Energy

Under this alternative, Phase 2 development would be eliminated except for the existing Wedgeworth ES demolition; therefore, demands for 808,816 kWh/year of electricity power and 2,748,250 kBTU/year of natural gas services for the residential operation would not occur. The reduction in energy consumption is from 1,447,255 kWh/year at buildout under the proposed project to 638,439 kWh/year, a decrease of 64 percent of electricity energy, and from 3,612,475 kBTU/year to 864,225 kBTU/year at buildout, a decrease of 82 percent of natural gas energy. This alternative would result in less environmental impact related to energy compared to the proposed project. However, energy impacts were determined to be less than significant. This impact is not a significant and unavoidable impact of the proposed project.

7.7.3 Geology and Soils

This alternative would be required to comply with building and seismic codes and regulations, like the proposed project. Since no residential units would be constructed, less earth-moving activities would occur, and less building area would be constructed compared to the proposed project. Therefore, there would be less area to

be impacted by seismic activities, including ground shaking. Geology and soil impacts of this alternative would be less than the proposed project. This is not a significant and unavoidable impact of the proposed project.

7.7.4 Greenhouse Gas Emissions

Under this alternative, the GHG emissions would decrease from 2,037 $MTCO_2e$/year at buildout to 379 $MTCO_2e$/yr, an approximately 81 percent reduction, because there would be fewer vehicle trips and less building energy during operation. Construction activities associated with this alternative would also have reduced GHG emissions. Therefore, this alternative would result in a reduction in construction and operational GHG emissions, and impacts would be reduced compared to the proposed project and would be less than significant. However, this impact is not a significant and unavoidable impact of the proposed project.

7.7.5 Hydrology and Water Quality

Under this alternative, three existing baseball fields would generally remain undisturbed. As with the proposed project, all on-site runoff would be retained on-site on the soccer field area to the north, and no on-site stormwater would flow to the county stormwater system. This alternative would also result in reduced impervious area, since there would be no impervious surfaces associated with the residential units and driveways. Therefore, potential water quality impacts during construction would be reduced. Decreased impervious surface would result in decreased runoff volume, speed, and typical urban pollutants (oil, grease, fertilizers, etc.). Similar to the proposed project, implementation of this alternative would require compliance with the NPDES CGP requirements and implementation of various BMPs to reduce water quality impacts. Impacts to hydrology and water quality impacts of this alternative would be less than the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

7.7.6 Noise

Under this alternative, only the expanded school and the replacement parking lot for the baseball fields would be constructed; therefore, construction noise associated with the residential development would be eliminated. Operational noise associated with the residential development would also be eliminated because there would not be vehicle trips, HVAC systems, and other living noise associated with the residential development. However, noise associated with the baseball fields would remain. The four existing fields would continue to hold games and practices for the Highlander Little League, generating field noise outside of school hours. Noise impacts of this alternative would be reduced compared to the proposed project and would be less than significant. However, this impact is not a significant and unavoidable impact of the proposed project.

7.7.7 Recreation

Population-inducing projects such as residential development generate demands for recreational facilities. Therefore, elimination of residential development would reduce impacts on area recreational facilities compared to the proposed project. Schools typically provide athletic facilities that could be used for recreational purpose by the general public, in terms allowed by the Civic Center Act. Under this alternative, the school's new soccer fields and hardcourts would be an addition to the area recreation opportunities and useable by the

community. Additionally, all four baseball fields would be retained, and no replacement baseball fields would be needed as mitigation. Environmental impacts related to the development and operation of the replacement fields as evaluated in Section 5.7.8 of this RDEIR would not occur. Under this alternative, no other parks or recreational facilities would be subject to increased use that could result in physical deterioration. This alternative would provide updated lighting on the two western fields per the Division of State Architect (DSA) standards. Therefore, under this alternative, the recreation impact would be eliminated, and no mitigation measures are necessary.

7.7.8 Transportation

Without the residential development, the daily 1,171 trips from the residential development would be removed from the traffic study area roadways, and only the additional 1,137 daily trips related to the school expansion would occur. As shown in Table 5.8-10, *2026 Plus Project Phase 2 Peak Hour Intersection Levels of Service*, Phase 2 development, which includes the residential development, would result in a potentially significant impact at one of the 16 intersections evaluated (i.e., #13, Azusa Ave and Pepper Brook Way). However, as shown in Table 5.8-9, *2021 Plus Project Phase 1 Peak Hour Intersection Levels of Service*, which only includes the proposed Wedgeworth K-8 School, the #13 Azusa Ave and Pepper Brook Way intersection would also be potentially impacted. Therefore, although this alternative would result in less overall transportation impact, the potentially significant LOS impact at one traffic study intersection could not be avoided.

Pursuant to SB 743, transportation impacts are to be evaluated based on a project's effect on VMT. As with the proposed project, the school expansion portion of the proposed project would result in a net reduction in VMT compared to the existing conditions. Without the residential development, the significant VMT impact from the residential development portion of the proposed project would be eliminated. This alternative would eliminate the significant and unavoidable impact of the proposed project related to transportation.

7.7.9 Tribal Cultural Resources

Under this alternative, the area to be disturbed would be reduced from 20 acres to 10 acres. Therefore, the potential for disturbing subsurface tribal cultural resources during ground excavation would be reduced. However, even with disturbance of 10 acres for Phase 1, school development, mitigation measures would be required to reduce impacts to a less than significant level. Impacts to tribal cultural resources of this alternative would be less than the proposed project. However, this impact is not a significant and unavoidable impact of the proposed project.

7.7.10 Utilities and Service Systems

Without the residential development, this alternative would generate less wastewater, consume less water, and generate less solid waste than the proposed project. Utilities and service systems impacts would be reduced compared to the proposed project and would be less than significant. However, this impact is not a significant and unavoidable impact of the proposed project.

7.7.11 Conclusion

This alternative would lessen environmental impacts in all areas evaluated in the EIR (air quality, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, noise, recreation, transportation, tribal cultural resources, and utilities and service systems). This alternative would lessen the recreation impact, and no replacement fields construction would be necessary as mitigation. This alternative would also eliminate the significant transportation impact related to VMT for the residential portion of the proposed project. However, significant LOS transportation impact would remain. This alternative is environmentally superior to the proposed project.

7.8 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative," and in cases where the "No Project" alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. The following four alternatives were identified for the proposed project, and as evaluated above, all four alternatives as identified would reduce environmental impacts associated with the proposed project.

- **Alternative 1:** No Project/Existing School Improvement Alternative
- **Alternative 2:** New Expanded K-8 School and Two Baseball Field Retention Alternative
- **Alternative 3:** New Replacement K-5 School and Residential Development Alternative
- **Alternative 4:** New Expanded K-8 School and Four Baseball Fields (including one shared field) Retention Alternative

Alternative 1: No Project/Existing School Improvement Alternative would have the least environmental impact and therefore has been identified as the "environmentally superior" development alternative to the proposed project. Because the "No Project" alternative is identified as the environmentally superior alternative, a development alternative, Alternative 4: New Expanded K-8 School and Four Baseball Fields (including one shared field) Retention Alternative, is identified as the environmentally superior alternative. This alternative would have the least impact to the environment compared to the proposed project among three development alternatives. "Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts" (CEQA Guidelines § 15126.6[c]).

7.8.1 Mitigation Measures REC-1 and REC-2

As explained in Section 5.7.9, *Level of Significance After Mitigation*, MM REC-1 and MM REC-2 would reduce or eliminate the significant impact on recreation. Table 7-2, *Alternatives and Recreation Mitigation Summary*, identifies each alternative's impact on recreation before mitigation, the residual impact after mitigation, and whether the combination of alternative and mitigation would reduce or eliminate the significant recreation impact. As

shown in Table 7-2 and listed below, the significant recreation impact under the proposed project and all four alternatives could be eliminated or reduced provided that the appropriate mitigation measure(s) is implemented.

- Proposed project with implementation of both MM REC-1 and MM REC-2
- Alternative 1 without any mitigation
- Alternative 2 with implementation of MM REC-1
- Alternative 3 with implementation of both MM REC-1 and MM REC-2
- Alternative 4 without any mitigation

Table 7-2 Alternatives and Recreation Mitigation Summary

Project/ Alternative	Site Plan	Ballfield Impact	Before Mitigation	Mitigation Measure	Residual Impact	After Mitigation
Proposed Project		4 Ballfields Displaced	Significant Impact	MM REC-1: Replacement of 2 lighted ballfields at Kwis ES (1 large ballfield and 1 small ballfield)	Net loss of 2 fields	Significant Impact
				MM REC-2: Replacement of 2 unlit small ballfields at Cedarlane	Net loss of 2 fields	Significant Impact
				MMs REC-1 and REC-2:	No loss of fields	Less Than Significant Impact
Alternative 1: No Project/ Existing School Improvement Alternative		4 Ballfields Retained	No impact	No mitigation required	No net loss of fields	Less Than Significant Impact
Alternative 2: New Expanded K-8 School and Two Baseball Fields Retention Alternative		2 Small Ballfields Retained	Impacts reduced but remain significant	MM REC-1: Replacement of 2 lighted ballfields at Kwis ES (1 large ballfield and 1 small ballfield)	No net loss of fields.	Less Than Significant Impact

7. Alternatives to the Proposed Project

Table 7-2 Alternatives and Recreation Mitigation Summary

Project/ Alternative	Site Plan	Ballfield Impact	Before Mitigation	Mitigation Measure	Residual Impact	After Mitigation
Alternative 3: New Replacement K-5 School and Residential Development Alternative		4 Ballfields Displaced	Significant Impact	MM REC-1: Replacement of 2 lighted ballfields at Kwis ES (1 large ballfield and 1 small ballfield)	Net loss of 2 fields	Significant Impact
				MM REC-2: Replacement of 2 unlit small ballfields at Cedarlane	Net loss of 2 fields	Significant Impact
				MMs REC-1 and REC-2:	No net loss of fields	Less Than Significant Impact
Alternative 4: New Expanded K-8 School and Four Baseball Fields Retention Alternative		4 Ballfields Retained (with 1 large field shared	No Significant Impact	No mitigation required.	No loss of fields	Less Than Significant Impact

Under the proposed project and Alternative 3 (New Replacement K-5 School and Residential Development Alternative), the significant impact on recreation would be eliminated with implementation of MM REC-1 and REC-2 combined. And under Alternative 1 (No Project/ Existing School Improvement Alternative) and Alternative 4 (New Expanded K-8 School and Four Baseball Fields Retention Alternative), no ballfields would be displaced; therefore, no mitigation measure is required. Under Alternative 2 (New Expanded K-8 School and Two Baseball Fields Retention Alternative), only two ballfields would be displaced, and the significant impact on recreation would be eliminated with implementation of MM REC-1.

7.8.2 Ability to Achieve Project Objectives

Table 7-3 identifies the ability of the proposed project and each alternative to achieve project objectives and avoid significant impacts. As shown, the proposed project achieves all project objectives and would not result in a significant and unavoidable recreation impact with implementation of MM REC-1 and REC-2. Because implementation of MM TRAN-1 is not under the jurisdiction of the District and its implementation cannot be guaranteed, transportation impact as it relates to intersection delays would remain significant and unavoidable. And because there is no feasible mitigation to reduce VMT impact, the proposed project's impact on transportation would remain significant and unavoidable.

Table 7-3 Ability of Each Alternative to Meet the Project Objectives and Avoid Significant Impacts

Objective	Proposed Project	Alternative 1: No Project/Existing School Improvement Alternative	Alternative 2: New Expanded K-8 School and Two Baseball Field Retention Alternative	Alternative 3: New Replacement K-5 School and Residential Development Alternative	Alternative 4: New Expanded K-8 School and Four Baseball Fields (including one shared field) Alternative
1. Replace Wedgeworth Elementary School, built as temporary facility and now in poor condition, with a modern, educationally-appropriate campus for 1,200 K-8 students.	Yes	No	Yes	Partially	Yes
2. Avoid the need to move students off-site during construction by maintaining the existing campus until the new campus opens.	Yes	No	Yes	Yes	Yes
3. Demolish the existing campus.	Yes	No	Yes	Yes	Yes
4. Create value by seeking rezoning of the remaining property to R-3 (Limited Multiple Residence), which would provide a maximum of 160 dwelling units.	Yes	No	No	Yes	No
Ability to avoid significant impact: ▪ Transportation - LOS - VMT	 No No	 Yes Yes	 No Yes	 No No	 No Yes

Alternative 1: No Project/Existing School Improvement Alternative would not create a significant environmental impact and no mitigation measures are necessary, but none of the project objectives would be achieved under this alternative. Significant LOS and VMT transportation impacts would be eliminated.

Alternative 2: New Expanded K-8 School and Two Baseball Field Retention Alternative would provide no residential development and would meet three of the four project objectives. This alternative would reduce the significant impact on recreation compared to the proposed project by retaining two unlit ballfields. Implementation of MM REC-1 would be required to reduce significant recreation impacts to a less than significant level. Significant LOS transportation impact would remain but significant VMT transportation impact would be eliminated.

Alternative 3: New Replacement K-5 School and Residential Development Alternative would partially meet all project objectives but not to the extent achievable by the proposed project. This alternative would not reduce or avoid the significant recreation impact compared to the proposed project. As with the proposed project, implementation of MM REC-1 and MM REC-2 would be required to reduce significant recreation impacts to

a less than significant level. Significant transportation impacts related to LOS and VMT would not be eliminated.

Alternative 4: New Expanded K-8 School and Four Baseball Fields (including one shared field) Alternative would provide no residential development and would meet three of the four project objectives. This alternative would eliminate significant and unavoidable impacts related to recreation. No mitigation measure related to recreation would be necessary. Significant LOS transportation impact would remain but significant VMT transportation impact would be eliminated.

8. Impacts Found Not to Be Significant

California Public Resources Code Section 21003 (f) states: "…it is the policy of the state that…[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the State California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant effects of the proposed project on the environment" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the EIR.

The Initial Study prepared for the proposed project in July 2019 determined that impacts listed below would be less than significant. Consequently, they have not been further analyzed in the RDEIR. Please refer to Appendix A of the originally circulated DEIR for explanation of the basis of these conclusions. Impact categories and questions below are summarized directly from the CEQA Environmental Checklist, as contained in the Initial Study.

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:	
a) Have a substantial adverse effect on a scenic vista?	No Impact.
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact.
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less Than Significant Impact.
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less Than Significant Impact.
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact.
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact.
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	No Impact.
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact.
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact.
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less Than Significant Impact.
IV. BIOLOGICAL RESOURCES. Would the project:	
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less Than Significant Impact.
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No Impact.
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact.
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less Than Significant Impact.

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact.
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact.
V. CULTURAL RESOURCES. Would the project:	
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	Less Than Significant Impact.
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	Less Than Significant Impact.
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	Less Than Significant Impact.
VI. ENERGY. Would the project:	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less Than Significant Impact.
VII. GEOLOGY AND SOILS. Would the project:	
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact.
ii) Strong seismic ground shaking?	Less Than Significant Impact.
iii) Seismic-related ground failure, including liquefaction?	Less Than Significant Impact.
iv) Landslides?	No Impact.
b) Result in substantial soil erosion or the loss of topsoil?	Less Than Significant Impact.
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less Than Significant Impact.
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Less Than Significant Impact.
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact.
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact.
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less Than Significant Impact.
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less Than Significant Impact.
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Less Than Significant Impact.
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	No Impact.

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact.
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact.
X. HYDROLOGY AND WATER QUALITY. Would the project:	
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less Than Significant Impact.
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less Than Significant Impact.
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	
i) result in a substantial erosion or siltation on- or off-site;	Less Than Significant Impact.
iv) impede or redirect flood flows?	Less Than Significant Impact.
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Less Than Significant Impact.
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less Than Significant Impact.
XI. LAND USE AND PLANNING. Would the project:	
a) Physically divide an established community?	No Impact.
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less Than Significant Impact.
XII. MINERAL RESOURCES. Would the project:	
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	No Impact.
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact.
XIII. NOISE. Would the project result in:	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	Less Than Significant Impact.
XIV. POPULATION AND HOUSING. Would the project:	
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Less Than Significant Impact.
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact.
XV. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	
a) Fire protection?	Less Than Significant Impact.
b) Police protection?	Less Than Significant Impact.
c) Schools?	Less Than Significant Impact.
d) Parks?	Less Than Significant Impact.
e) Other public facilities?	Less Than Significant Impact.

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
XVI. RECREATION.	
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less Than Significant Impact.
XVII. TRANSPORTATION. Would the project:	
d) Result in inadequate emergency access?	Less Than Significant Impact.
XVIII. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	Less Than Significant Impact.
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less Than Significant Impact.
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less Than Significant Impact.
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant Impact.
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No Impact.
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact.
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact.
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact.

8. Impacts Found Not to Be Significant

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9. Significant Irreversible Changes Due to the Proposed Project

Section 15126.2(d) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) describe any Significant Irreversible Environmental Changes Which Would be Caused by the Proposed Project Should it be Implemented.

Implementation of the proposed project would increase development intensity within the project site. Therefore, additional commitment of nonrenewable and/or slowly renewable energy resources, natural resources, and human resources would be necessary. Nonrenewable and slowly renewable construction materials would be consumed—such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metal, water, etc. Increased commitment of social services and public maintenance services would also be required—such as police, fire, schools, libraries, sewer, water, solid waste, natural gas services, etc. These energy and social service commitments would be long-term obligations. Once these commitments are made, it is improbable that the project area would revert to its current condition. A portion of the project site is currently development with elementary school facilities and its surrounding area is highly urbanized; therefore, the use of existing infrastructure is possible with some upgrades and improvements, and environmental impacts can be minimized. Additional development intensities can be more readily accommodated with minimal physical impact, relieving development pressure from other areas where more intensive use of nonrenewable resources would be necessary. Implementation of Mitigation Measures REC-1 and REC-2 would result in development and operation of replacement ballfield on the underutilized playfields at two existing schools. Although nonrenewable and/or slow renewable energy resources would be used during construction, the fields would continue to be used by the school for athletic and other outdoor programming for the students. The structures for the replacement fields would be limited to light poles, fences and netting, and a small restroom/concession stand, therefore, the changes related to replacement fields would not be significantly irreversible. Nonetheless, the proposed project would result in significant irreversible changes to the environment throughout the lifespan of the structures.

9. Significant Irreversible Changes Due to the Proposed Project

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10. Growth-Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(ed) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this RDEIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

As discussed in the Initial Study/Notice of Preparation (see Appendix A to the DEIR), no new major infrastructure facilities are required to develop this project as proposed. Extensions of existing utility facilities from surrounding roadways will provide a sufficient tie-in to the existing utility systems to accommodate the demands of this project at full buildout.

The school portion of the development would not require any changes to land use regulations. However, development of up to 160 units would require a general plan amendment to increase the allowable density as

the current General Plan designation for the project site allows up to 5 dwelling units per acre, and the proposed residential development would result in 16.16 dwelling units per acre. The approval and implementation of the proposed project would thus remove an existing regulatory obstacle to growth. The school development is not a growth-inducing project, but the residential portion of the project would be growth inducing because it would remove obstacles to growth on the project site.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

As discussed in the Initial Study, Section 3.15, *Public Services* (Appendix A to the DEIR), the proposed project would not necessitate the immediate expansion of public services (i.e., fire, police, school, park, and library) in order to maintain desired levels of service. The proposed project would not, therefore, have significant growth-inducing consequences with respect to public services.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

During construction of the proposed project, a number of design, engineering, and construction-related jobs would be created. This would be a temporary situation, lasting until construction is completed. This would be a direct, growth-inducing effect of the proposed project. As new homes are developed and occupied, residents would seek shopping, entertainment, employment, home improvement, auto maintenance, and other economic opportunities in the surrounding area. This would represent an increased demand for such economic goods and services, and therefore could encourage the creation of new businesses and/or the expansion of existing businesses that address these economic needs. Redevelopment of the existing elementary school to a K-8 school with increased student enrollment capacity would continue to serve the existing school population in the District boundary and would not facilitate economic effects that could affect the environment.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

The proposed project would increase residential dwelling units in Hacienda Heights by up to 160 units. Although amendments to the general plan and zoning would be required to increase allowable in the project site, the surrounding area is already fully developed, and the proposed project would not directly or indirectly influence zoning actions on nearby properties. Furthermore, n changes to existing zoning standards or to any of the County's building safety standards (i.e., building, grading, plumbing, mechanical, electrical, fire codes) are proposed or required to implement the proposed project. Therefore, the project would not involve any precedent-setting action that could facilitate other activities that could significantly affect the environment. The proposed mitigation measures are feasible and would ensure that environmental impacts are minimized.

Approval of the proposed project would not, therefore, involve a precedent-setting action that could be applied to other properties and thereby encourage or facilitate growth that would not otherwise occur.

11. Organizations and Persons Consulted

Hacienda La Puente Unified School District

Joel Duarte	Director of Purchasing and Warehouse
Belen Bobadilla	Director of Facilities
Erika Terrazas	Principal at Kwis Elementary School
Ellen Park	Principal at Cedarlane Academy

PBK

Marco Eacrett, AIA, LEED AP	Partner
Gilbert Baez	Principal
Xiang Liu Ra, LEED AP	Project Planner

tBP/Architecture

Carolyn Loughrey	Senior Project Manager
Hung Cheng	

DA Hogan & Associates

Robert Harding	Principal Landscape Architect

FPL and Associates, Inc.

Ron Canedy, LEED AP	Vice President Civil Engineering

Balfour Beatty

Arnold Arsenault	Senior Project Manager

Kittelson & Associates, Inc.

Fernando Sotelo, TE, PTP	Associate Engineer

11. Organizations and Persons Consulted

Southern California Edison

Phil Hung, PE	Senior Advisor

California Department of Conservation

Grace Brandt	Associate Oil and Gas Engineer

Los Angeles County Department of Public Works, Environmental Programs Division

Hossein Torabzadeh	Associate Civil Engineer

Los Angeles County Department of Public Works, Transportation Division

James Harris	Civil Engineering Assistant

12. Qualifications of Persons Preparing EIR

PLACEWORKS

Dwayne Mears, AICP
Principal, Environmental Services and School Facilities Planning

- BS California Polytechnic State University, San Luis Obispo, City and Regional Planning
- MRP, University of North Carolina, Chapel Hill, City and Regional Planning

Elizabeth Kim
Senior Associate

- BA University of California, Irvine, Environmental Analysis and Design
- MURP University of California, Irvine

John Vang
Senior Associate, Air Quality, GHG & Sustainability

- BA, Anthropology, University of California, Los Angeles
- MUPDD, Cleveland State University
- JD, Cleveland State University

Josh Carman
Senior Planner, Noise, Vibration & Acoustics

- BA Environmental Studies, University of California, Santa Cruz

Kristie Nguyen
Project Planner, Air Quality, GHG & Sustainability

- BS, University of California, Irvine, Biological Science
- MS, University of California, San Diego, Chemistry

Izzy Garcia
Project Planner, Noise, Vibration & Acoustics

- BS Acoustics, Columbia College, Chicago

Cary Nakama
Graphic Artist

- AA, Computer Design, Platt College of Computer Graphic Design
- BA, Business Administration, Data Processing and Marketing, California State University, Long Beach

12. Qualifications of Persons Preparing EIR

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Appendix A Kwis ES Replacement Ballfields Lighting Plan

Appendices

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[DSA] Kwis Elementary School Athletic Fields

Hacienda Heights,CA

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1-A2	80'	80'	4	TLC-LED-1200	4.68 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
A3	70'	70'	3	TLC-LED-900	2.67 kW	B
		60'	2	TLC-LED-900	1.78 kW	C
		16'	1	TLC-BT-575	0.58 kW	B
B1-B2	80'	80'	1	TLC-LED-1200	1.17 kW	A
		80'	5	TLC-LED-1500	7.15 kW	A
		70'	2	TLC-LED-400	0.80 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
B3	70'	70'	4	TLC-LED-900	3.56 kW	B
		60'	2	TLC-LED-900	1.78 kW	C
		16'	1	TLC-BT-575	0.58 kW	B
C1	70'	70'	3	TLC-LED-1200	3.51 kW	A
		70'	3	TLC-LED-900	2.67 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
		60'	1	TLC-LED-400	0.40 kW	B
		16'	1	TLC-BT-575	0.58 kW	A
C2	70'	70'	3	TLC-LED-1200	3.51 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
C3-C4	70'	70'	3	TLC-LED-900	2.67 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
D1	70'	70'	2	TLC-LED-1200	2.34 kW	A
		70'	1	TLC-LED-600	0.58 kW	A
		70'	4	TLC-LED-900	3.56 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
		60'	1	TLC-LED-400	0.40 kW	B
		16'	1	TLC-BT-575	0.58 kW	A
D2	70'	70'	2	TLC-LED-1200	2.34 kW	A
		70'	1	TLC-LED-600	0.58 kW	A
		70'	1	TLC-LED-600	0.58 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
12			***76***		***70.67 kW***	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Babe Ruth	45.06 kW	44
B	Little League	22.05 kW	28
C	Batting Cage	3.56 kW	4

Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	24
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>120,000	>120,000	>120,000	6
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	10
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	14
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	20
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	2

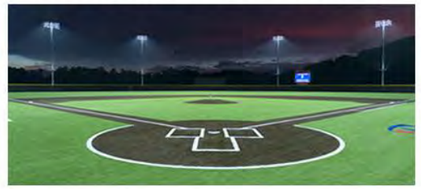
Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
BR 1st Base Bullpen	Horizontal	30.5	21	38	1.84	1.45	A	44
BR 3rd Base Bullpen	Horizontal	30.9	22	38	1.77	1.41	A	44
Babe Ruth (Infield)	Horizontal Illuminance	52.1	44	64	1.44	1.18	A	44
Babe Ruth (Outfield)	Horizontal Illuminance	31.9	21	40	1.90	1.52	A	44
Batting Cage	Horizontal	37	25	49	1.94	1.48	C	4
Blanket Grid	Horizontal	11.5	0	65	0.00		A,B,C	76
LL 1st Base Bullpen	Horizontal	33.1	28	37	1.29	1.18	B,C	32

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

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[DSA] Kwis Elementary School Athletic Fields

Hacienda Heights,CA

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1-A2	80'	80'	4	TLC-LED-1200	4.68 kW	A
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A3	70'	70'	3	TLC-LED-900	2.67 kW	B
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		16'	1	TLC-BT-575	0.58 kW	B
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		16'	1	TLC-BT-575	0.58 kW	B
		60'	1	TLC-LED-400	0.40 kW	B
		16'	1	TLC-BT-575	0.58 kW	A
C2	70'	70'	3	TLC-LED-1200	3.51 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
C3-C4	70'	70'	3	TLC-LED-900	2.67 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
D1	70'	70'	2	TLC-LED-1200	2.34 kW	A
		70'	1	TLC-LED-600	0.58 kW	A
		70'	4	TLC-LED-900	3.56 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
		60'	1	TLC-LED-400	0.40 kW	B
		16'	1	TLC-BT-575	0.58 kW	A
D2	70'	70'	2	TLC-LED-1200	2.34 kW	A
		70'	1	TLC-LED-600	0.58 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
12			***76***		***70.67 kW***	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Babe Ruth	45.06 kW	44
B	Little League	22.05 kW	28
C	Batting Cage	3.56 kW	4

Fixture Type Summary

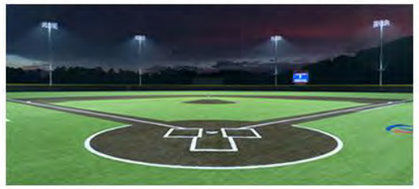
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	24
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>120,000	>120,000	>120,000	6
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	10
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	14
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	20
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	2

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
LL 3rd Base Bullpen	Horizontal	52.3	40	57	1.40	1.31	B,C	32
Little League Field (Infield)	Horizontal Illuminance	51	37	63	1.73	1.38	B,C	32
Little League Field (Outfield)	Horizontal Illuminance	31.3	20	40	2.05	1.56	B,C	32
Property Line Spill	Horizontal	0.03	0	0.25	0.00		A,B,C	76
Property Line Spill	Max Candela (by Fixture)	2391	62.8	12355	196.85	38.10	A,B,C	76
Property Line Spill	Max Vertical Illuminance Metric	0.07	0	0.44	798.07		A,B,C	76

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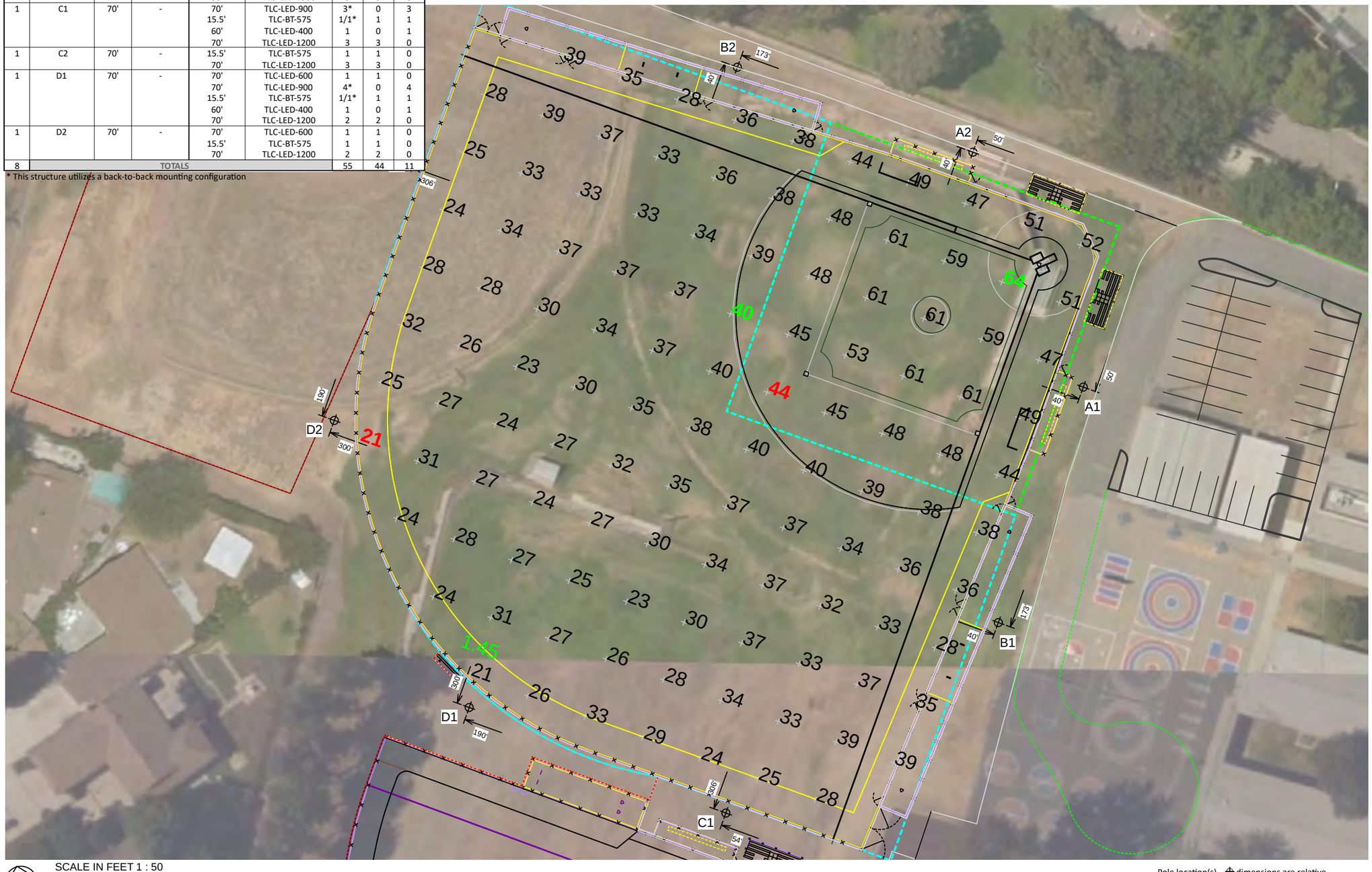


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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1200	4	4	0
2	B1-B2	80'	-	80'	TLC-LED-1200	1	1	0
				70'	TLC-LED-400	2	2	0
				15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	5	5	0
1	C1	70'	-	70'	TLC-LED-900	3*	0	3
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-400	1	0	1
				70'	TLC-LED-1200	3	3	0
1	C2	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	3	3	0
1	D1	70'	-	70'	TLC-LED-600	1	1	0
				70'	TLC-LED-900	4*	0	4
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-400	1	0	1
				70'	TLC-LED-1200	2	2	0
1	D2	70'	-	70'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	2	2	0
8	TOTALS					55	44	11

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

A-3

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**Babe Ruth**
Size:	Irregular 300' / 354' / 301'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	52.09	31.91
Maximum:	64	40
Minimum:	44	21
Avg / Min:	1.18	1.51
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.44	1.90
UG (adjacent pts):	1.27	1.45
CU:	0.76	
No. of Points:	25	88

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**44**
Total Load:	45.06 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1200	4	4	0
2	B1-B2	80'	-	80'	TLC-LED-1200	1	1	0
				70'	TLC-LED-400	2	2	0
				15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	5	5	0
1	C1	70'	-	70'	TLC-LED-900	3*	0	3
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-400	1	0	1
				70'	TLC-LED-1200	3	3	0
1	C2	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	3	3	0
1	D1	70'	-	70'	TLC-LED-600	1	1	0
				70'	TLC-LED-900	4*	0	4
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-400	1	0	1
				70'	TLC-LED-1200	2	2	0
1	D2	70'	-	70'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	2	2	0
8	TOTALS					55	44	11

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 20

0' 20' 40'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**BR 1st Base Bullpen**
Size:	Irregular 300' / 354' / 301'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	30.52
Maximum:	38
Minimum:	21
Avg / Min:	1.47
Guaranteed Max / Min:	**2.5**
Max / Min:	1.84
UG (adjacent pts):	1.29
CU:	0.02
No. of Points:	32

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**44**
Total Load:	45.06 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

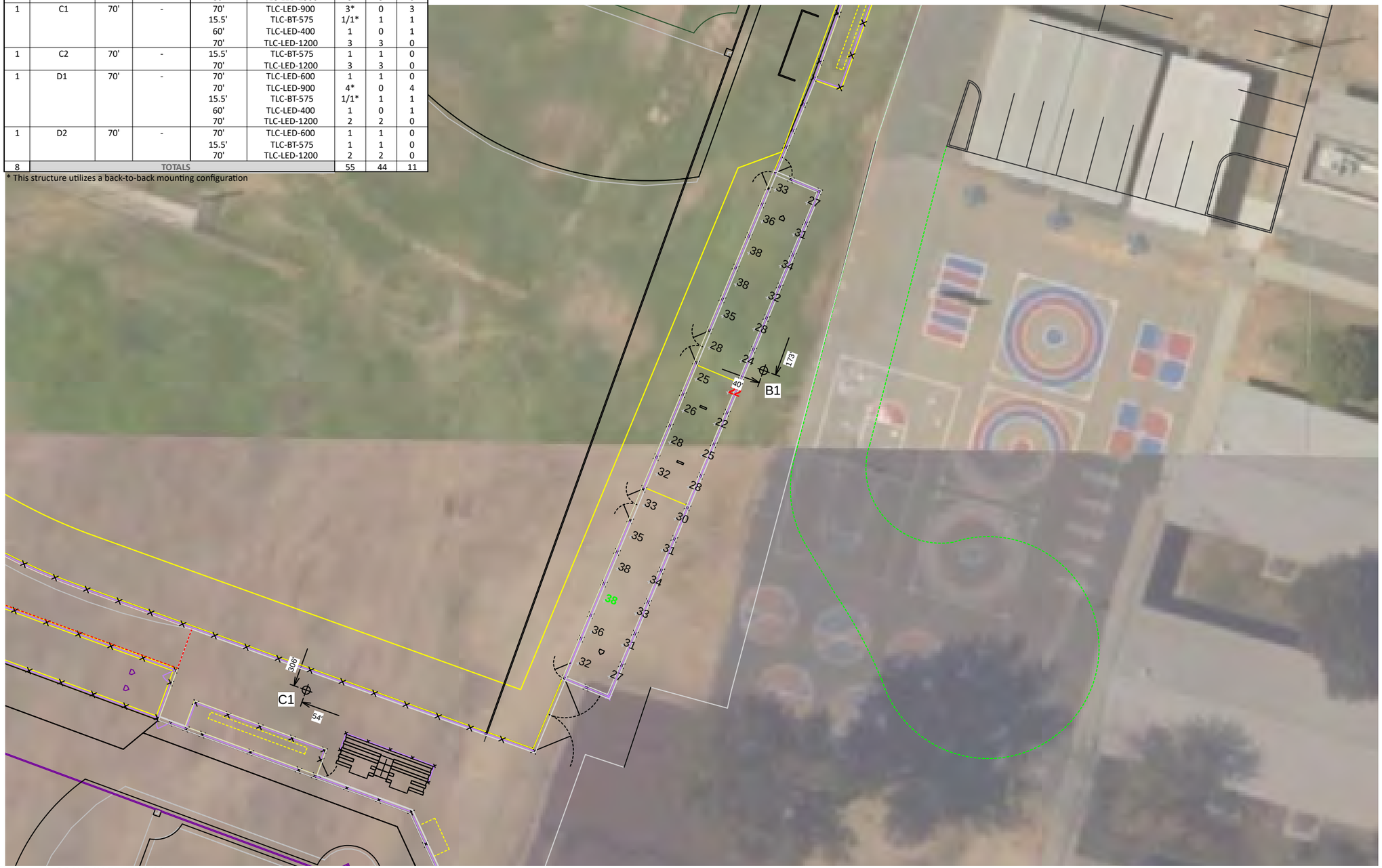
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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1200	4	4	0
2	B1-B2	80'	-	80'	TLC-LED-1200	1	1	0
				70'	TLC-LED-400	2	2	0
				15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	5	5	0
1	C1	70'	-	70'	TLC-LED-900	3*	0	3
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-400	1	0	1
				70'	TLC-LED-1200	3	3	0
1	C2	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	3	3	0
1	D1	70'	-	70'	TLC-LED-600	1	1	0
				70'	TLC-LED-900	4*	0	4
				15.5'	TLC-BT-575	1/1*	1	1
				60'	TLC-LED-400	1	0	1
				70'	TLC-LED-1200	2	2	0
1	D2	70'	-	70'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	2	2	0
8	TOTALS					55	44	11

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

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[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**BR 3rd Base Bullpen**
Size:	Irregular 300' / 354' / 301'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	30.93
Maximum:	38
Minimum:	22
Avg / Min:	1.42
Guaranteed Max / Min:	**2.5**
Max / Min:	1.77
UG (adjacent pts):	1.26
CU:	0.02
No. of Points:	32

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**44**
Total Load:	45.06 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

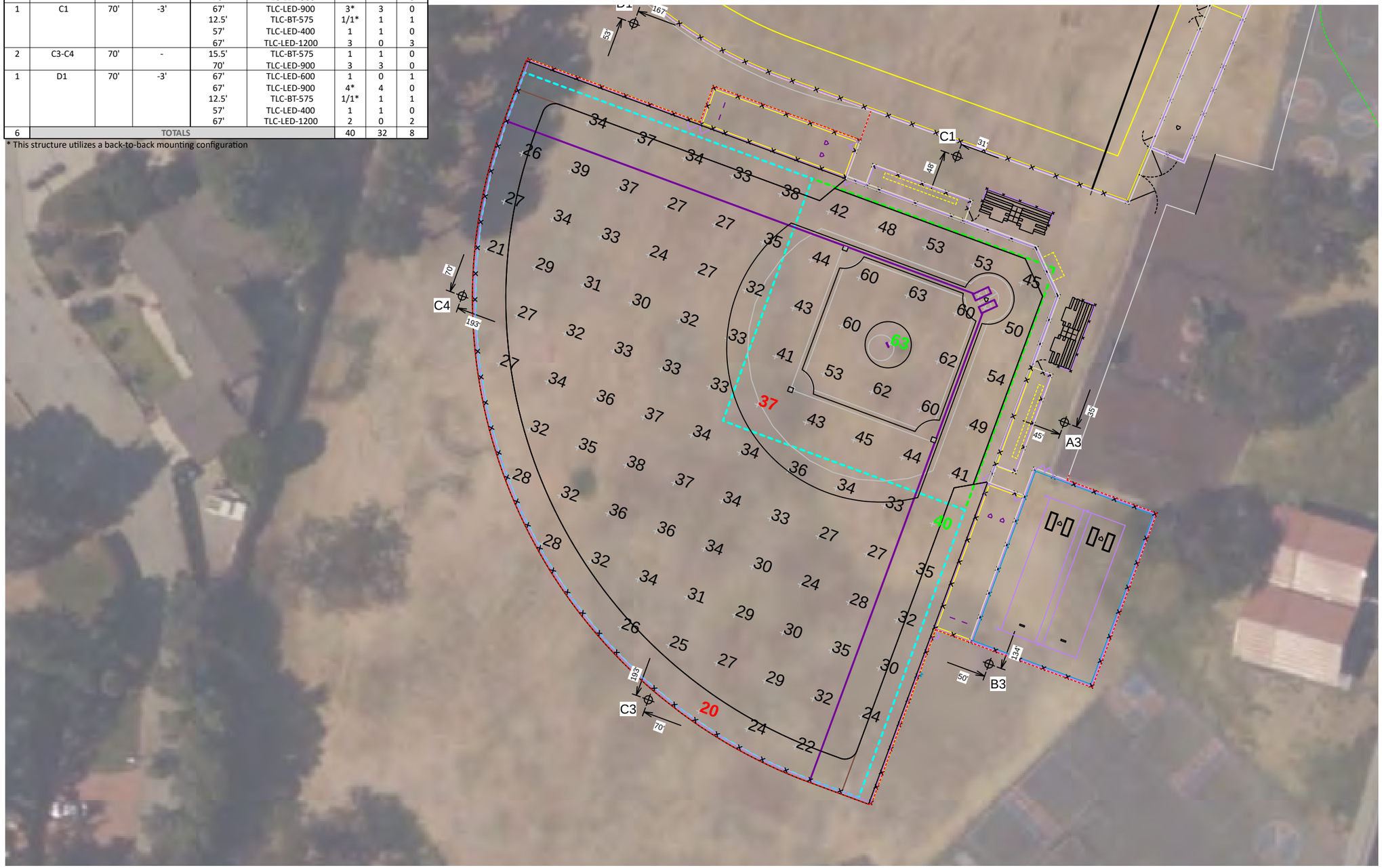
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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	3	3	0
1	B3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	C1	70'	-3'	67'	TLC-LED-900	3*	3	0
				12.5'	TLC-BT-575	1/1*	1	1
				57'	TLC-LED-400	1	1	0
				67'	TLC-LED-1200	3	0	3
2	C3-C4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	3	3	0
1	D1	70'	-3'	67'	TLC-LED-600	1	0	1
				67'	TLC-LED-900	4*	4	0
				12.5'	TLC-BT-575	1/1*	1	1
				57'	TLC-LED-400	1	1	0
				67'	TLC-LED-1200	2	0	2
6	TOTALS					40	32	8

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 40

0' 40' 80'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**Little League Field**
Size:	200'/200'/200' - basepath 60'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	50.96	31.27
Maximum:	63	40
Minimum:	37	20
Avg / Min:	1.39	1.59
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.73	2.05
UG (adjacent pts):	1.41	1.50
CU:	0.54	
No. of Points:	25	73

LUMINAIRE INFORMATION

Applied Circuits:	B, C
No. of Luminaires:	**32**
Total Load:	25.61 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

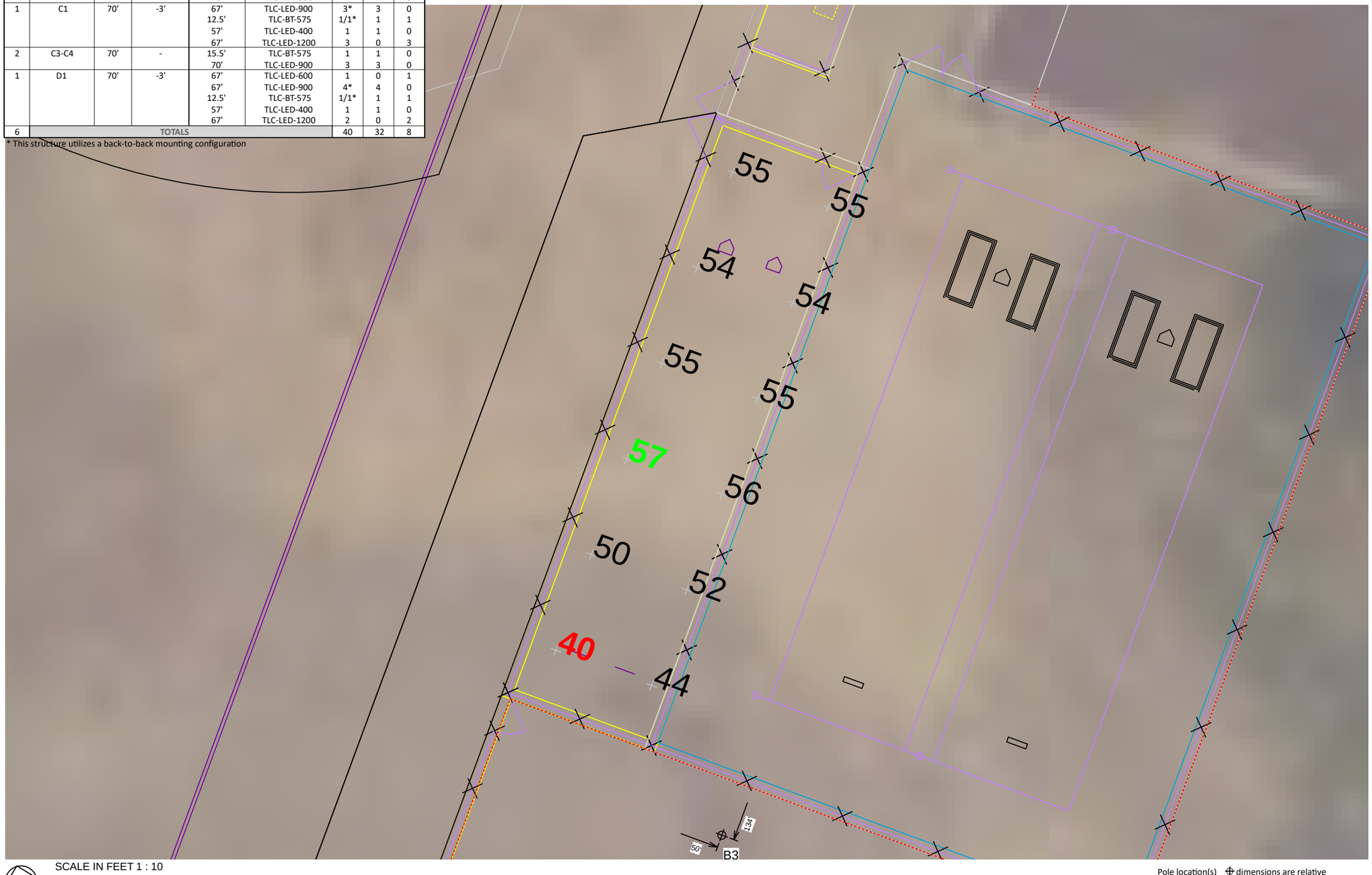
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	3	3	0
1	B3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	C1	70'	-3'	67'	TLC-LED-900	3*	3	0
				12.5'	TLC-BT-575	1/1*	1	1
				57'	TLC-LED-400	1	1	0
				67'	TLC-LED-1200	3	0	3
2	C3-C4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	3	3	0
1	D1	70'	-3'	67'	TLC-LED-600	1	0	1
				67'	TLC-LED-900	4*	4	0
				12.5'	TLC-BT-575	1/1*	1	1
				57'	TLC-LED-400	1	1	0
				67'	TLC-LED-1200	2	0	2
6	TOTALS					40	32	8

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 10

0' 20' 40'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

A-7

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**LL 3rd Base Bullpen**
Size:	200'/200'/200' - basepath 60'
Spacing:	10.0' x 10.0'
Height:	0.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	52.27
Maximum:	57
Minimum:	40
Avg / Min:	1.30
Guaranteed Max / Min:	**2.5**
Max / Min:	1.40
UG (adjacent pts):	1.23
CU:	0.02
No. of Points:	12

LUMINAIRE INFORMATION

Applied Circuits:	B, C
No. of Luminaires:	**32**
Total Load:	25.61 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

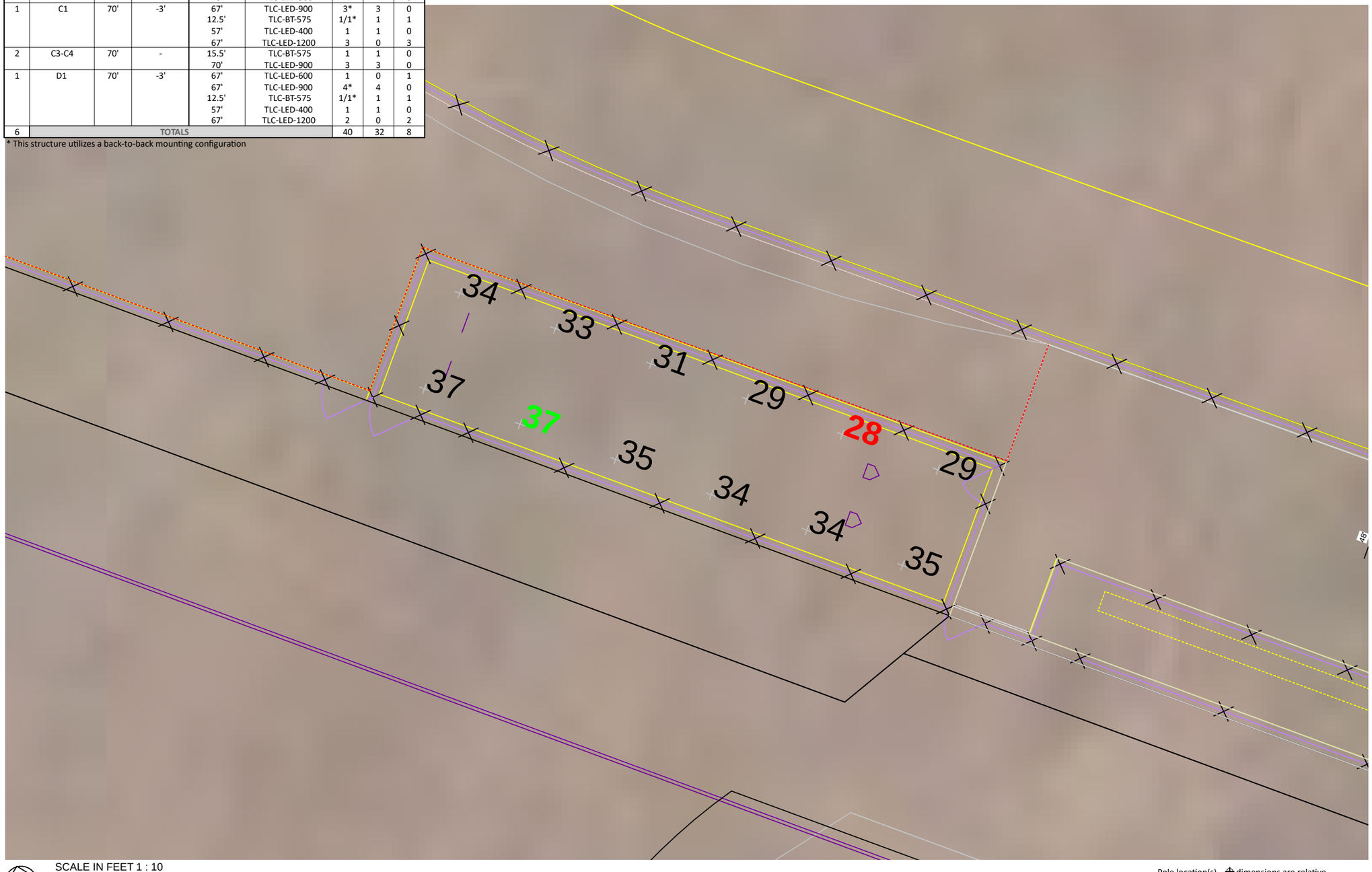
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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	3	3	0
1	B3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	C1	70'	-3'	67'	TLC-LED-900	3*	3	0
				12.5'	TLC-BT-575	1/1*	1	1
				57'	TLC-LED-400	1	1	0
				67'	TLC-LED-1200	3	0	3
2	C3-C4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	3	3	0
1	D1	70'	-3'	67'	TLC-LED-600	1	0	1
				67'	TLC-LED-900	4*	4	0
				12.5'	TLC-BT-575	1/1*	1	1
				57'	TLC-LED-400	1	1	0
				67'	TLC-LED-1200	2	0	2
6	TOTALS					40	32	8

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 10

0' 20' 40'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

A-8

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**LL 1st Base Bullpen**
Size:	200'/200'/200' - basepath 60'
Spacing:	10.0' x 10.0'
Height:	0.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	33.05
Maximum:	37
Minimum:	28
Avg / Min:	1.16
Guaranteed Max / Min:	**2.5**
Max / Min:	1.29
UG (adjacent pts):	1.20
CU:	0.02
No. of Points:	12

LUMINAIRE INFORMATION

Applied Circuits:	B, C
No. of Luminaires:	**32**
Total Load:	25.61 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

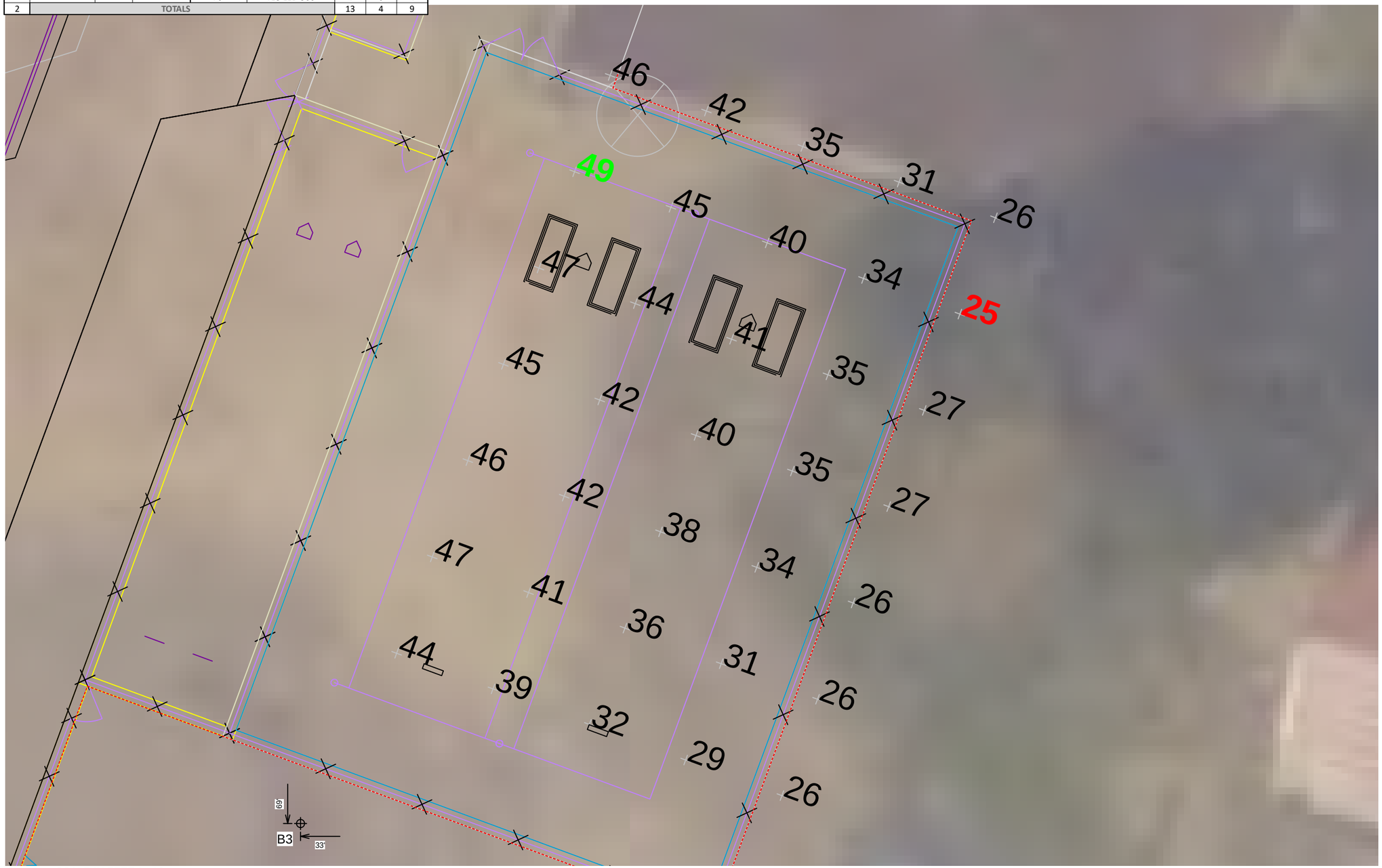
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	0	1
				70'	TLC-LED-900	3	0	3
1	B3	70'	-	60'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	1	0	1
				70'	TLC-LED-900	4	0	4
2	TOTALS					13	4	9



SCALE IN FEET 1 : 10

0' 20' 40'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

A-9

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**Batting Cage**
Size:	0' x 0'
Spacing:	10.0' x 10.0'
Height:	0.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**35**
Scan Average:	36.97
Maximum:	49
Minimum:	25
Avg / Min:	1.47
Guaranteed Max / Min:	**2.5**
Max / Min:	1.94
UG (adjacent pts):	1.34
CU:	0.37
No. of Points:	35

LUMINAIRE INFORMATION

Applied Circuits:	C
No. of Luminaires:	**4**
Total Load:	3.56 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

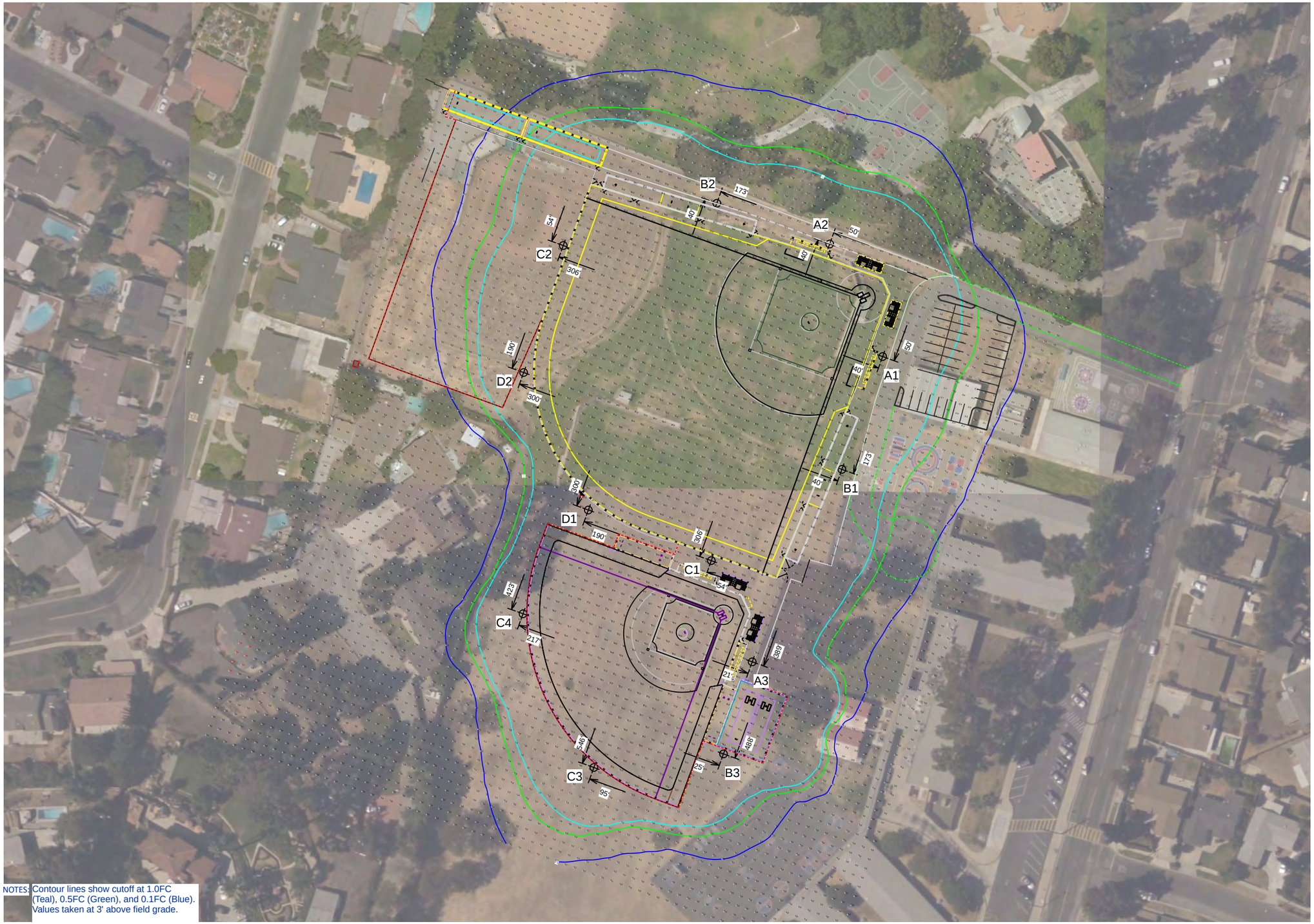
Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Brendon Guler · File #203889C · 30-Dec-20

A-10

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**Blanket Grid**
Size:	Irregular 300' / 354' / 301'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**11.51**
Maximum:	65
Minimum:	0
Avg / Min:	-
Max / Min:	**-**
UG (adjacent pts):	15.74
CU:	0.90
No. of Points:	5865

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C
No. of Luminaires:	**76**
Total Load:	70.67 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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NOTES: Values taken with a +6' elevation (9' above field grade)

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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A-11

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	9.0' above grade

ILLUMINATION SUMMARY

HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	0.0304
Maximum:	0.25
Minimum:	0.00
No. of Points:	31

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C
No. of Luminaires:	**76**
Total Load:	70.67 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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NOTES: Values taken with a +6' elevation (9' above field grade)

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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A-12

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	9.0' above grade

ILLUMINATION SUMMARY

MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	0.0689
Maximum:	0.44
Minimum:	0.00
No. of Points:	31

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C
No. of Luminaires:	**76**
Total Load:	70.67 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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NOTES: Values taken with a +6' elevation (9' above field grade)

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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A-13

[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	9.0' above grade

ILLUMINATION SUMMARY

CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	2390.8984
Maximum:	12354.82
Minimum:	62.76
No. of Points:	31

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C
No. of Luminaires:	**76**
Total Load:	70.67 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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[DSA] Kwis Elementary School Athletic Fields
Hacienda Heights,CA

EQUIPMENT LAYOUT

INCLUDES:
- Babe Ruth
- Batting Cage
- Little League Field

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	A1-A2	80'	-	15.5' 80'	TLC-BT-575 TLC-LED-1200	1 4
1	A3	70'	-	60' 15.5' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-900	2 1 3
2	B1-B2	80'	-	80' 70' 15.5' 80'	TLC-LED-1200 TLC-LED-400 TLC-BT-575 TLC-LED-1500	1 2 1 5
1	B3	70'	-	60' 15.5' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-900	2 1 4
1	C1	70'	-	70' 15.5' 60' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-400 TLC-LED-1200	3* 1/1* 1 3
1	C2	70'	-	15.5' 70'	TLC-BT-575 TLC-LED-1200	1 3
2	C3-C4	70'	-	15.5' 70'	TLC-BT-575 TLC-LED-900	1 3
1	D1	70'	-	70' 70' 15.5' 60' 70'	TLC-LED-600 TLC-LED-900 TLC-BT-575 TLC-LED-400 TLC-LED-1200	1 4* 1/1* 1 2
1	D2	70'	-	70' 15.5' 70'	TLC-LED-600 TLC-BT-575 TLC-LED-1200	1 1 2
12	TOTALS					76

* This structure utilizes a back-to-back mounting configuration

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9	1.5

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Appendix B Replacement Ballfields Air Quality/GHG Emissions Data

Appendices

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Air Quality and Greenhouse Gas Modeling

Emissions Worksheet

Regional Construction Emissions Worksheet:

Asphalt Demolition and Site Preparation

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Winter						
	Fugitive Dust						2.80	1.44
	Off-Road		2.26	21.67	21.78	0.03	1.10	1.03
	Total		**2.26**	**21.67**	**21.78**	**0.03**	**3.91**	**2.47**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.01	0.18	0.05	0.00	0.01	0.00
	Worker		0.07	0.04	0.51	0.00	0.16	0.04
	Total		**0.07**	**0.23**	**0.56**	**0.00**	**0.17**	**0.05**
TOTAL			***2.33***	***21.90***	***22.34***	***0.03***	***4.07***	***2.51***
Onsite		**2022**						
	Fugitive Dust		0.00	0.00	0.00	0.00	2.80	1.44
	Off-Road		2.26	21.67	21.78	0.03	1.10	1.03
	Total		**2.26**	**21.67**	**21.78**	**0.03**	**3.91**	**2.47**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.01	0.18	0.05	0.00	0.01	0.00
	Worker		0.07	0.04	0.51	0.00	0.16	0.04
	Total		**0.07**	**0.23**	**0.56**	**0.00**	**0.17**	**0.05**
TOTAL			***2.33***	***21.90***	***22.34***	***0.03***	***4.07***	***2.51***

Asphalt Demolition Debris Haul

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Winter						
	Fugitive Dust						0.11	0.02
	Off-Road		0.00	0.00	0.00	0.00	0.00	0.00
	Total		**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.02**
Offsite								
	Hauling		0.04	1.16	0.33	0.00	0.10	0.03
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.00	0.00	0.00	0.00	0.00	0.00
	Total		**0.04**	**1.16**	**0.33**	**0.00**	**0.10**	**0.03**
TOTAL			***0.04***	***1.16***	***0.33***	***0.00***	***0.21***	***0.05***
Onsite		**2022**						
	Fugitive Dust		0.00	0.00	0.00	0.00	0.11	0.02
	Off-Road		0.00	0.00	0.00	0.00	0.00	0.00
	Total		**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.02**
Offsite								
	Hauling		0.04	1.16	0.33	0.00	0.10	0.03
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.00	0.00	0.00	0.00	0.00	0.00
	Total		**0.04**	**1.16**	**0.33**	**0.00**	**0.10**	**0.03**
TOTAL			***0.04***	***1.16***	***0.33***	***0.00***	***0.21***	***0.05***

Site Preparation

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Winter						
	Fugitive Dust						2.80	1.44
	Off-Road		1.74	17.19	15.88	0.02	0.86	0.80
	Total		**1.74**	**17.19**	**15.88**	**0.02**	**3.67**	**2.23**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.01	0.18	0.05	0.00	0.01	0.00
	Worker		0.04	0.03	0.34	0.00	0.10	0.03
	Total		**0.05**	**0.21**	**0.39**	**0.00**	**0.12**	**0.03**
TOTAL			***1.79***	***17.40***	***16.27***	***0.02***	***3.78***	***2.27***
Onsite		**2022**						
	Fugitive Dust		0.00	0.00	0.00	0.00	2.80	1.44
	Off-Road		1.74	17.19	15.88	0.02	0.86	0.80
	Total		**1.74**	**17.19**	**15.88**	**0.02**	**3.67**	**2.23**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.01	0.18	0.05	0.00	0.01	0.00
	Worker		0.04	0.03	0.34	0.00	0.10	0.03
	Total		**0.05**	**0.21**	**0.39**	**0.00**	**0.12**	**0.03**
TOTAL			***1.79***	***17.40***	***16.27***	***0.02***	***3.78***	***2.27***

Site Preparation and Lighting Installation

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total

Onsite		**2022** Winter					
	Fugitive Dust					2.80	1.44
	Off-Road	2.10	21.05	18.13	0.03	1.04	0.96
	Total	**2.10**	**21.05**	**18.13**	**0.03**	**3.85**	**2.40**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.28	0.08	0.00	0.02	0.01
	Worker	0.08	0.05	0.58	0.00	0.18	0.05
	Total	**0.09**	**0.33**	**0.66**	**0.00**	**0.20**	**0.05**
TOTAL		***2.18***	***21.38***	***18.79***	***0.03***	***4.04***	***2.45***
Onsite		**2022**					
	Fugitive Dust	0.00	0.00	0.00	0.00	2.80	1.44
	Off-Road	2.10	21.05	18.13	0.03	1.04	0.96
	Total	**2.10**	**21.05**	**18.13**	**0.03**	**3.85**	**2.40**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.28	0.08	0.00	0.02	0.01
	Worker	0.08	0.05	0.58	0.00	0.18	0.05
	Total	**0.09**	**0.33**	**0.66**	**0.00**	**0.20**	**0.05**
TOTAL		***2.18***	***21.38***	***18.79***	***0.03***	***4.04***	***2.45***

Grading Import Haul

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Winter					
	Fugitive Dust					0.01	0.00
	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**
Offsite							
	Hauling	0.35	9.62	2.77	0.03	0.84	0.26
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.35**	**9.62**	**2.77**	**0.03**	**0.84**	**0.26**
TOTAL		***0.35***	***9.62***	***2.77***	***0.03***	***0.85***	***0.26***
Onsite		**2022**					
	Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00
	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**
Offsite							
	Hauling	0.35	9.62	2.77	0.03	0.84	0.26
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.35**	**9.62**	**2.77**	**0.03**	**0.84**	**0.26**
TOTAL		***0.35***	***9.62***	***2.77***	***0.03***	***0.85***	***0.26***

Lighting Installation, Grading, and Trenching

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2022** Winter					
	Fugitive Dust					2.80	1.44
	Off-Road	2.10	21.05	18.13	0.03	1.04	0.96
	Total	**2.10**	**21.05**	**18.13**	**0.03**	**3.85**	**2.40**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.28	0.08	0.00	0.02	0.01
	Worker	0.08	0.05	0.58	0.00	0.18	0.05
	Total	**0.09**	**0.33**	**0.66**	**0.00**	**0.20**	**0.05**
TOTAL		***2.18***	***21.38***	***18.79***	***0.03***	***4.04***	***2.45***
Onsite		**2022**					
	Fugitive Dust	0.00	0.00	0.00	0.00	2.80	1.44
	Off-Road	2.10	21.05	18.13	0.03	1.04	0.96
	Total	**2.10**	**21.05**	**18.13**	**0.03**	**3.85**	**2.40**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.28	0.08	0.00	0.02	0.01
	Worker	0.08	0.05	0.58	0.00	0.18	0.05
	Total	**0.09**	**0.33**	**0.66**	**0.00**	**0.20**	**0.05**
TOTAL		***2.18***	***21.38***	***18.79***	***0.03***	***4.04***	***2.45***

Fencing/Concrete Paving

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022** Winter						
	Off-Road	0.63	6.41	8.45	0.01	0.33	0.31
	Paving	0.01				0.00	0.00
	Total	**0.65**	**6.41**	**8.45**	**0.01**	**0.33**	**0.31**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.04	0.03	0.34	0.00	0.10	0.03
	Total	**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL		***0.69***	***6.44***	***8.79***	***0.01***	***0.44***	***0.33***
Onsite	**2022**						
	Off-Road	0.63	6.41	8.45	0.01	0.33	0.31
	Paving	0.01	0.00	0.00	0.00	0.00	0.00
	Total	**0.65**	**6.41**	**8.45**	**0.01**	**0.33**	**0.31**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.04	0.03	0.34	0.00	0.10	0.03
	Total	**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL		***0.69***	***6.44***	***8.79***	***0.01***	***0.44***	***0.33***

Lighting Installation, Grading, Trenching, and Ancillary Structure Building Construction

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022** Winter						
	Fugitive Dust					2.80	1.44
	Off-Road	2.12	21.32	18.42	0.03	1.06	0.98
	Total	**2.12**	**21.32**	**18.42**	**0.03**	**3.86**	**2.42**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.28	0.08	0.00	0.02	0.01
	Worker	0.08	0.05	0.58	0.00	0.18	0.05
	Total	**0.09**	**0.33**	**0.66**	**0.00**	**0.20**	**0.05**
TOTAL		***2.21***	***21.64***	***19.08***	***0.03***	***4.06***	***2.47***
Onsite	**2022**						
	Fugitive Dust	0.00	0.00	0.00	0.00	2.80	1.44
	Off-Road	2.12	21.32	18.42	0.03	1.06	0.98
	Total	**2.12**	**21.32**	**18.42**	**0.03**	**3.86**	**2.42**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.28	0.08	0.00	0.02	0.01
	Worker	0.08	0.05	0.58	0.00	0.18	0.05
	Total	**0.09**	**0.33**	**0.66**	**0.00**	**0.20**	**0.05**
TOTAL		***2.21***	***21.64***	***19.08***	***0.03***	***4.06***	***2.47***

Lighting Installation and Ancillary Structure Building Construction

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022** Winter						
	Off-Road	0.39	4.13	2.54	0.01	0.20	0.18
	Total	**0.39**	**4.13**	**2.54**	**0.01**	**0.20**	**0.18**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.18	0.05	0.00	0.01	0.00
	Worker	0.01	0.01	0.10	0.00	0.03	0.01
	Total	**0.02**	**0.19**	**0.15**	**0.00**	**0.04**	**0.01**
TOTAL		***0.41***	***4.32***	***2.70***	***0.01***	***0.24***	***0.19***
Onsite	**2022**						
	Off-Road	0.39	4.13	2.54	0.01	0.20	0.18
	Total	**0.39**	**4.13**	**2.54**	**0.01**	**0.20**	**0.18**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.01	0.18	0.05	0.00	0.01	0.00
	Worker	0.01	0.01	0.10	0.00	0.03	0.01
	Total	**0.02**	**0.19**	**0.15**	**0.00**	**0.04**	**0.01**
TOTAL		***0.41***	***4.32***	***2.70***	***0.01***	***0.24***	***0.19***

Ancillary Structure Building Construction (Oct)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022 Winter**						
Off-Road		0.16	1.57	1.39	0.00	0.09	0.08
Total		**0.16**	**1.57**	**1.39**	**0.00**	**0.09**	**0.08**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.09	0.03	0.00	0.01	0.00
Worker		0.00	0.00	0.03	0.00	0.01	0.00
Total		**0.01**	**0.10**	**0.06**	**0.00**	**0.02**	**0.00**
TOTAL		***0.17***	***1.66***	***1.45***	***0.00***	***0.11***	***0.09***
Onsite	**2022**						
Off-Road		0.16	1.57	1.39	0.00	0.09	0.08
Total		**0.16**	**1.57**	**1.39**	**0.00**	**0.09**	**0.08**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.09	0.03	0.00	0.01	0.00
Worker		0.00	0.00	0.03	0.00	0.01	0.00
Total		**0.01**	**0.10**	**0.06**	**0.00**	**0.02**	**0.00**
TOTAL		***0.17***	***1.66***	***1.45***	***0.00***	***0.11***	***0.09***

Ancillary Structure Building Construction and Finishing/Landscaping

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022 Winter**						
Off-Road		1.22	10.60	10.50	0.02	0.49	0.47
Total		**1.22**	**10.60**	**10.50**	**0.02**	**0.49**	**0.47**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.09	0.03	0.00	0.01	0.00
Worker		0.07	0.05	0.54	0.00	0.17	0.05
Total		**0.07**	**0.14**	**0.57**	**0.00**	**0.17**	**0.05**
TOTAL		***1.29***	***10.74***	***11.07***	***0.02***	***0.66***	***0.52***
Onsite	**2022**						
Off-Road		1.22	10.60	10.50	0.02	0.49	0.47
Total		**1.22**	**10.60**	**10.50**	**0.02**	**0.49**	**0.47**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.09	0.03	0.00	0.01	0.00
Worker		0.07	0.05	0.54	0.00	0.17	0.05
Total		**0.07**	**0.14**	**0.57**	**0.00**	**0.17**	**0.05**
TOTAL		***1.29***	***10.74***	***11.07***	***0.02***	***0.66***	***0.52***

Asphalt Paving

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022** Winter						
Off-Road		0.63	6.41	8.45	0.01	0.33	0.31
Paving		0.02				0.00	0.00
Total		**0.65**	**6.41**	**8.45**	**0.01**	**0.33**	**0.31**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.04	0.03	0.34	0.00	0.10	0.03
Total		**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL		***0.70***	***6.44***	***8.79***	***0.01***	***0.44***	***0.33***
Onsite	**2022**						
Off-Road		0.63	6.41	8.45	0.01	0.33	0.31
Paving		0.02	0.00	0.00	0.00	0.00	0.00
Total		**0.65**	**6.41**	**8.45**	**0.01**	**0.33**	**0.31**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.04	0.03	0.34	0.00	0.10	0.03
Total		**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL		***0.70***	***6.44***	***8.79***	***0.01***	***0.44***	***0.33***

Ancillary Structure Building Construction (Nov)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022 Winter**						
Off-Road		0.16	1.57	1.39	0.00	0.09	0.08
Total		**0.16**	**1.57**	**1.39**	**0.00**	**0.09**	**0.08**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.09	0.03	0.00	0.01	0.00
Worker		0.00	0.00	0.03	0.00	0.01	0.00
Total		**0.01**	**0.10**	**0.06**	**0.00**	**0.02**	**0.00**
TOTAL		***0.17***	***1.66***	***1.45***	***0.00***	***0.11***	***0.09***
Onsite	**2022**						
Off-Road		0.16	1.57	1.39	0.00	0.09	0.08
Total		**0.16**	**1.57**	**1.39**	**0.00**	**0.09**	**0.08**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.09	0.03	0.00	0.01	0.00
Worker		0.00	0.00	0.03	0.00	0.01	0.00
Total		**0.01**	**0.10**	**0.06**	**0.00**	**0.02**	**0.00**
TOTAL		***0.17***	***1.66***	***1.45***	***0.00***	***0.11***	***0.09***

Architectural Coating

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022** Winter						
Archit. Coating		6.67				0.00	0.00
Off-Road		0.20	1.41	1.81	0.00	0.08	0.08
Total		**6.88**	**1.41**	**1.81**	**0.00**	**0.08**	**0.08**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.10	0.06	0.75	0.00	0.23	0.06
Total		**0.10**	**0.06**	**0.75**	**0.00**	**0.23**	**0.06**
TOTAL		***6.97***	***1.47***	***2.56***	***0.01***	***0.31***	***0.14***
Onsite	**2022**						
Archit. Coating		6.67	0.00	0.00	0.00	0.00	0.00
Off-Road		0.20	1.41	1.81	0.00	0.08	0.08
Total		**6.88**	**1.41**	**1.81**	**0.00**	**0.08**	**0.08**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.10	0.06	0.75	0.00	0.23	0.06
Total		**0.10**	**0.06**	**0.75**	**0.00**	**0.23**	**0.06**
TOTAL		***6.97***	***1.47***	***2.56***	***0.01***	***0.31***	***0.14***

Synthetic Turf Surfacing

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022** Winter						
Off-Road		0.79	7.37	8.77	0.01	0.43	0.40
Total		**0.79**	**7.37**	**8.77**	**0.01**	**0.43**	**0.40**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.04	0.03	0.34	0.00	0.10	0.03
Total		**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL		***0.84***	***7.40***	***9.11***	***0.01***	***0.53***	***0.43***
Onsite	**2022**						
Off-Road		0.79	7.37	8.77	0.01	0.43	0.40
Total		**0.79**	**7.37**	**8.77**	**0.01**	**0.43**	**0.40**
Offsite							
Hauling		0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.04	0.03	0.34	0.00	0.10	0.03
Total		**0.04**	**0.03**	**0.34**	**0.00**	**0.10**	**0.03**
TOTAL		***0.84***	***7.40***	***9.11***	***0.01***	***0.53***	***0.43***

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Asphalt Demolition, Debris Haul, and Site Preparation	*2*	*23*	*23*	*0.04*	*4*	*3*
Site Preparation	*2*	*17*	*16*	*0.02*	*4*	*2*
Site Preparation and Lighting Installation	*2*	*21*	*19*	*0.03*	*4*	*2*
Lighting Installation, Grading and Soil Haul, and Trenching	*3*	*31*	*22*	*0.06*	*5*	*3*
Lighting Installation, Grading and Soil Haul, Trenching, Ancillary Building Construction, and Fencing/Concrete Paving	*3*	*38*	*31*	*0.08*	*5*	*3*
Lighting Installation, Ancillary Structure Building Construction, and Fencing/Concrete Paving	*1*	*11*	*11*	*0.02*	*1*	*1*
Ancillary Structure Building Construction and Fencing/Concrete Paving	*1*	*8*	*10*	*0.02*	*1*	*0*
Ancillary Structure Building Construction and Finishing/Landscaping	*1*	*11*	*11*	*0.02*	*1*	*1*
Ancillary Structure Building Construction, Finishing/Landscaping and Asphalt Paving	*2*	*17*	*20*	*0.04*	*1*	*1*
Ancillary Structure Building Construction and Asphalt Paving	*1*	*8*	*10*	*0.02*	*1*	*0.42*
Ancillary Structure Building Construction, Asphalt Paving, and Architectural Coating	*8*	*10*	*13*	*0.02*	*1*	*1*
Synthetic Turf Surfacing	*1*	*7*	*9*	*0.01*	*1*	*0.43*
MAX DAILY (Kwis)	**8**	**38**	**31**	**0.08**	**5**	**3**

Construction LST Worksheet:

Asphalt Demolition and Site Preparation					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Fugitive Dust				2.80	1.44
Off-Road		21.67	21.78	1.10	1.03
Total		**21.67**	**21.78**	**3.91**	**2.47**
TOTAL		***21.67***	***21.78***	***3.91***	***2.47***
Onsite	**2022**				
Fugitive Dust		0.00	0.00	2.80	1.44
Off-Road		21.67	21.78	1.10	1.03
Total		**21.67**	**21.78**	**3.91**	**2.47**
TOTAL		***21.67***	***21.78***	***3.91***	***2.47***

Asphalt Demolition Debris Haul					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Fugitive Dust				0.11	0.02
Off-Road		0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.11**	**0.02**
TOTAL		***0.00***	***0.00***	***0.11***	***0.02***
Onsite	**2022**				
Fugitive Dust		0.00	0.00	0.11	0.02
Off-Road		0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.11**	**0.02**
TOTAL		***0.00***	***0.00***	***0.11***	***0.02***

Site Preparation					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Fugitive Dust				2.80	1.44
Off-Road		17.19	15.88	0.86	0.80
Total		**17.19**	**15.88**	**3.67**	**2.23**
TOTAL		***17.19***	***15.88***	***3.67***	***2.23***
Onsite	**2022**				
Fugitive Dust		0.00	0.00	2.80	1.44
Off-Road		17.19	15.88	0.86	0.80
Total		**17.19**	**15.88**	**3.67**	**2.23**
TOTAL		***17.19***	***15.88***	***3.67***	***2.23***

Site Preparation and Lighting Installation					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Fugitive Dust				2.80	1.44
Off-Road		21.05	18.13	1.04	0.96
Total		**21.05**	**18.13**	**3.85**	**2.40**
TOTAL		***21.05***	***18.13***	***3.85***	***2.40***
Onsite	**2022**				
Fugitive Dust		0.00	0.00	2.80	1.44
Off-Road		21.05	18.13	1.04	0.96
Total		**21.05**	**18.13**	**3.85**	**2.40**
TOTAL		***21.05***	***18.13***	***3.85***	***2.40***

Grading Import Haul					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Fugitive Dust				0.01	0.00
Off-Road		0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.01**	**0.00**
TOTAL		***0.00***	***0.00***	***0.01***	***0.00***
Onsite	**2022**				
Fugitive Dust		0.00	0.00	0.01	0.00
Off-Road		0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.01**	**0.00**
TOTAL		***0.00***	***0.00***	***0.01***	***0.00***

Lighting Installation, Grading, and Trenching

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Fugitive Dust				2.80	1.44
Off-Road		21.05	18.13	1.04	0.96
Total		**21.05**	**18.13**	**3.85**	**2.40**
TOTAL		***21.05***	***18.13***	***3.85***	***2.40***
Onsite	**2022**				
Fugitive Dust		0.00	0.00	2.80	1.44
Off-Road		21.05	18.13	1.04	0.96
Total		**21.05**	**18.13**	**3.85**	**2.40**
TOTAL		***21.05***	***18.13***	***3.85***	***2.40***

Fencing/Concrete Paving

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Off-Road		6.41	8.45	0.33	0.31
Paving				0.00	0.00
Total		**6.41**	**8.45**	**0.33**	**0.31**
TOTAL		***6.41***	***8.45***	***0.33***	***0.31***
Onsite	**2022**				
Off-Road		6.41	8.45	0.33	0.31
Paving		0.00	0.00	0.00	0.00
Total		**6.41**	**8.45**	**0.33**	**0.31**
TOTAL		***6.41***	***8.45***	***0.33***	***0.31***

Lighting Installation, Grading, Trenching, and Ancillary Structure Building Construction

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Fugitive Dust				2.80	1.44
Off-Road		21.32	18.42	1.06	0.98
Total		**21.32**	**18.42**	**3.86**	**2.42**
TOTAL		***21.32***	***18.42***	***3.86***	***2.42***
Onsite	**2022**				
Fugitive Dust		0.00	0.00	2.80	1.44
Off-Road		21.32	18.42	1.06	0.98
Total		**21.32**	**18.42**	**3.86**	**2.42**
TOTAL		***21.32***	***18.42***	***3.86***	***2.42***

Lighting Installation and Ancillary Structure Building Construction

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Off-Road		4.13	2.54	0.20	0.18
Total		**4.13**	**2.54**	**0.20**	**0.18**
TOTAL		***4.13***	***2.54***	***0.20***	***0.18***
Onsite	**2022**				
Off-Road		4.13	2.54	0.20	0.18
Total		**4.13**	**2.54**	**0.20**	**0.18**
TOTAL		***4.13***	***2.54***	***0.20***	***0.18***

Ancillary Structure Building Construction (Oct)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Off-Road		1.57	1.39	0.09	0.08
Total		**1.57**	**1.39**	**0.09**	**0.08**
TOTAL		***1.57***	***1.39***	***0.09***	***0.08***
Onsite	**2022**				
Off-Road		1.57	1.39	0.09	0.08
Total		**1.57**	**1.39**	**0.09**	**0.08**
TOTAL		***1.57***	***1.39***	***0.09***	***0.08***

Ancillary Structure Building Construction and Finishing/Landscaping

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Off-Road		10.60	10.50	0.49	0.47
Total		**10.60**	**10.50**	**0.49**	**0.47**
TOTAL		***10.60***	***10.50***	***0.49***	***0.47***
Onsite	**2022**				
Off-Road		10.60	10.50	0.49	0.47
Total		**10.60**	**10.50**	**0.49**	**0.47**
TOTAL		***10.60***	***10.50***	***0.49***	***0.47***

Asphalt Paving

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Off-Road		6.41	8.45	0.33	0.31
Paving				0.00	0.00
Total		**6.41**	**8.45**	**0.33**	**0.31**
TOTAL		***6.41***	***8.45***	***0.33***	***0.31***
Onsite	**2022**				
Off-Road		6.41	8.45	0.33	0.31
Paving		0.00	0.00	0.00	0.00
Total		**6.41**	**8.45**	**0.33**	**0.31**
TOTAL		***6.41***	***8.45***	***0.33***	***0.31***

Ancillary Structure Building Construction (Nov)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Off-Road		1.57	1.39	0.09	0.08
Total		**1.57**	**1.39**	**0.09**	**0.08**
TOTAL		***1.57***	***1.39***	***0.09***	***0.08***
Onsite	**2022**				
Off-Road		1.57	1.39	0.09	0.08
Total		**1.57**	**1.39**	**0.09**	**0.08**
TOTAL		***1.57***	***1.39***	***0.09***	***0.08***

Architectural Coating

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Archit. Coating				0.00	0.00
Off-Road		1.41	1.81	0.08	0.08
Total		**1.41**	**1.81**	**0.08**	**0.08**
TOTAL		***1.41***	***1.81***	***0.08***	***0.08***
Onsite	**2022**				
Archit. Coating		0.00	0.00	0.00	0.00
Off-Road		1.41	1.81	0.08	0.08
Total		**1.41**	**1.81**	**0.08**	**0.08**
TOTAL		***1.41***	***1.81***	***0.08***	***0.08***

Synthetic Turf Surfacing

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2022**				
Off-Road		7.37	8.77	0.43	0.40
Total		**7.37**	**8.77**	**0.43**	**0.40**
TOTAL		***7.37***	***8.77***	***0.43***	***0.40***
Onsite	**2022**				
Off-Road		7.37	8.77	0.43	0.40
Total		**7.37**	**8.77**	**0.43**	**0.40**
TOTAL		***7.37***	***8.77***	***0.43***	***0.40***

	NOx	CO	PM10 Total	PM2.5 Total
Asphalt Demolition, Debris Haul, and Site Preparation	*22*	*22*	*4.02*	*2.48*
2.50 Acre LST	*131*	*1,161*	*8.16*	*5.67*
Exceeds LST?	*no*	*no*	*no*	*no*
Site Preparation	*17*	*16*	*3.67*	*2.23*
2.00 Acre LST	*121*	*1,031*	*7.00*	*5.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Site Preparation and Lighting Installation	*21*	*18*	*3.85*	*2.40*
2.00 Acre LST	*121*	*1,031*	*7.00*	*5.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Lighting Installation, Grading and Soil Haul, and Trenching	*21*	*18*	*3.85*	*2.40*
2.00 Acre LST	*121*	*1,031*	*7.00*	*5.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Lighting Installation, Grading and Soil Haul, Trenching, Ancillary Building Construction, and Fencing/Concrete Paving	*28*	*27*	*4.20*	*2.72*
2.50 Acre LST	*131*	*1,161*	*8.16*	*5.67*
Exceeds LST?	*no*	*no*	*no*	*no*
Lighting Installation, Ancillary Structure Building Construction, and Fencing/Concrete Paving	*11*	*11*	*0.53*	*0.49*
≤ 1.00 Acre LST	*83*	*673*	*5.00*	*4.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Ancillary Structure Building Construction and Fencing/Concrete Paving	*8*	*10*	*0.42*	*0.39*
≤ 1.00 Acre LST	*83*	*673*	*5.00*	*4.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Ancillary Structure Building Construction and Finishing/Landscaping	*11*	*10*	*0.49*	*0.47*
≤ 1.00 Acre LST	*83*	*673*	*5.00*	*4.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Ancillary Structure Building Construction, Finishing/Landscaping and Asphalt Paving	*17*	*19*	*0.82*	*0.78*
1.50 Acre LST	*102*	*852*	*6.00*	*4.50*
Exceeds LST?	*no*	*no*	*no*	*no*
Ancillary Structure Building Construction and Asphalt Paving	*8*	*10*	*0.42*	*0.39*
≤ 1.00 Acre LST	*83*	*673*	*5.00*	*4.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Ancillary Structure Building Construction, Asphalt Paving, and Architectural Coating	*9*	*12*	*0.51*	*0.47*
≤ 1.00 Acre LST	*83*	*673*	*5.00*	*4.00*
Exceeds LST?	*no*	*no*	*no*	*no*
Synthetic Turf Surfacing	*7*	*9*	*0.43*	*0.40*
≤ 1.00 Acre LST	*83*	*673*	*5.00*	*4.00*
Exceeds LST?	*no*	*no*	*no*	*no*

GHG Emissions Inventory

Proposed Project Buildout

Construction

	$MTCO_2e$ Total Project*	
2022	200	
Kwis Baseball Fields GHG Emissions	**200**	
Total Number of Construction Projects	**2**	
Total Construction GHG Emissions**	**400**	
Amortized Construction Emissions***	13	$MTCO_2e$/Year

*CalEEMod, Version 2016.3.2.25

**accounts for emissions from Kwis and Cedarlane baseball field construction.

*** Total construction emissions are amortized over 30 years per SCAQMD methodology; SCAQMD. 2009, November 19. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 14. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-14/ghg-meeting-14-main-presentation.pdf?sfvrsn=2.

Operation*

Energy**	21	$MTCO_2e$/Year***
Amortized Construction Emissions	13	
Total GHG Emissions	35	
SCAQMD Bright-Line Screening Threshold	3,000	$MTCO_2e$/Year
Exceed Threshold?	**No**	

*CalEEMod, Version 2016.3.2.25

** Energy use is based on operation of lighting on the Kwis site 4 hours per day on weekdays and Saturdays.

*** $MTCO_2e$=metric tons of carbon dioxide equivalent.

Assumptions Worksheet

CalEEMod Inputs -Wedgeworth Elementary School Field Replacement Project (Kwis), Construction

Name:	Wedgeworth Elementary School Field Replacement Project (Kwis)
Project Number:	HLPU-01
Project Location:	925 Kwis Ave, Hacienda Heights, CA
County/Air Basin:	Los Angeles
Climate Zone:	9
Land Use Setting:	Urban
Operational Year:	2022-23
Utility Company:	Southern California Edison
Air Basin:	SoCAB
Air District:	SCAQMD
SRA:	11

Proiect Site Acreage	6
Disturbed Site Acreage	6.00

Project Components	SQFT	Acres	Tons
Demolition			
Existing Asphalt Demo			60.00
New Construction			**Building Footprint (sqft)**
Ancillary Structures	820	0.01882	
Other Asphalt Surfaces	7,070	0.16	
Other Non-Asphalt Surfaces*	253,470	5.82	

* includes 20,300 sf of hardscape, 207,780 sf of landscaping, and additional assumed 25,390 sf to meet 6 acres of distrubed area

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage*	Land Use Square Feet
Recreational	City Park	0.820	1000 sqft	0.02	820
Parking	Other Asphalt Surfaces	7.070	1000 sqft	0.16	7,070
Parking	Other Non-asphalt Surfaces	253.470	1000 sqft	5.82	253,470
				6.00	

Demolition

Component	Amount to be Demolished (Tons)	Haul Truck Capacity (tons)1	Haul Distance (miles)	Total Trip Ends	Duration (days)
Total Asphalt Demo	60	15	60	10	5
Total	60			10	

Soil Haul

Construction Activities	Haul Truck Capacity (cy)	Import Volume (CY)	No. of total one-way import haul (trip ends)	No. of total one-way haul (trip ends/day)	Total Days
Grading Import Soil Haul	22	6,000	545	17	33

Export Haul Travel Distance (1-Way): 60

Building Construction and Architectural Coating Worker and Vendor Trip Calculations

Construction Activity	Unit Amount	Unit	CalEEMod Appendix A Worker Trip Rates*	Number of Worker Trips Per Day	CalEEMod Appendix A Vendor Trip Rates*	Number of Vendor Trips Per Day
Ancillary Building Construction	0.820	1000 sqft	0.420	1	0.164	1

** CalEEMod Appendix A Trip Rates for Worker and Vendor Trip*

Lighting Fixture Installation

Construction Activities	Number of Light Fixtures	Total Days	No. of total one-way import haul (trip ends)*	No. of total one-way worker trips (trip ends/day)	No. of total one-way vendor trips (trip ends/day)
Lighting Fixture Installation	78	67	156	2	1

**assuming 2 trips per light fixture installation*

*** based on ratio of vendor trip rate to worker trip rate*

Architectural Coating

Percentage of Proposed Buildings' Interior Painted: 100%

Percentage of Proposed Buildings' Exterior Painted: 100%

Rule 1113

Interior Paint VOC content: 50 grams per liter

Exterior Paint VOC content: 50 grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
Ancillary Baseball Field Structures	820	2.0	1,640	1,230	410
			1,640	1,230	410
Asphalt/Non-Asphalt Area[3]	260,540	6%	15,632		15,632
			15,632		15,632

[1] CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.

[3] assumes that all asphalt and non-asphalt area would be painted

Construction Mitigation

SCAQMD Rule 403

Replace Ground Cover	PM10:	5	% Reduction
Replace Ground Cover	PM2.5:	5	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction
Unpaved Roads	Vehicle Speed:	15	mph
SCAQMD Rule 1186	Clean Paved Road	9	% PM Reduction

Southern California Edison Carbon Intensity Factors

	lbs/MWh
CO2:[1,2]	531.44
CH4:[3]	0.029
N2O:[3]	0.00617

[1] Based on CO_2e intensity factor of 534 pounds per megawatt hour; Southern California Edison. 2019, May. 2018 Sustainability Report. https://www.edison.com/content/dam/eix/documents/sustainability/eix-2019-sustainability-report.pdf.

[2] Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007.

[3] CalEEMod default values.

Global Warming Potentials (GWP)		
	AR4	**AR5**
CO_2	1	1
CH_4	25	28
N_2O	298	265

Based on Intergovernmental Panel on Climate Change Fourth Assessment Report global warming potentials for CH4 and N2O; Intergovernmental Panel on Climate Change (IPCC).

Lighting (Electricity Use)

Electricity:

	Total Average kW/Event *	Events/Year**	Hours***	Kwh (Annual)
Practices/Games (Kwis)	70.67	313	4	88,479
			Total Annual kWh	88,479

Calculation of GHGs from Field Lighting

CO_2****	CH_4****	N_2O****	CO_2e	CO_2e
lbs/Mwh	lbs/Mwh	lbs/Mwh	lbs/Mwh	MT/Kwh
531.43634	0.02900	0.00617	531.47	0.000241
				MT/Year
			CO_2e from Lighting	**21.33**

**Based on Musco Lighting Plan for the proposed Kwis baseball field as provided by the District.*

***Assuming only weekday and Saturday use*

****Based on worst case estimate*

*****California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod), Version 2016.3.2. Based on the California Air Resources Board (CARB) Local Government Operations Protocol (LGO) for CO_2 and E-Grid values for CH_4 and N_2O. Appendix D, Default Data Tables. Table 1.2, Electrical Utility Emission Factors of GHGs.*

Construction Activities and Schedule Assumptions: Wedgeworth Elementary School Field Replacement Project

Based on construction duration provided by the District

		Construction Schedule		
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Asphalt Demolition	Demolition	6/29/2022	7/5/2022	5
Asphalt Demolition Debris Haul	Demolition	6/29/2022	7/5/2022	5
Site Preparation	Site Preparation	6/29/2022	8/14/2022	33
Grading	Grading	8/15/2022	9/28/2022	33
Grading Import Haul	Grading	8/15/2022	9/28/2022	33
Utility Trenching	Trenching	8/15/2022	9/28/2022	33
Ancillary Structure Building Construction	Building Construction	9/15/2022	12/15/2022	66
Lighting Installation	Building Construction	7/14/2022	10/16/2022	67
Asphalt Paving	Paving	11/15/2022	12/15/2022	23
Architectural Coating	Architectural Coating	12/1/2022	12/8/2022	6
Fencing/Concrete Paving	Paving	9/15/2022	10/31/2022	33
Finishing/Landscaping	Trenching	11/1/2022	11/15/2022	11
Synthetic Turf Surfacing	Trenching	12/20/2022	12/27/2022	6

Overlapping Construction Activities

		Construction Schedule		
Overlapping Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Asphalt Demolition and Site Preparation	Site Preparation	6/29/2022	7/5/2022	5
Asphalt Demolition Debris Haul	Demolition	6/29/2022	7/5/2022	5
Site Preparation	Site Preparation	7/6/2022	7/13/2022	6
Site Preparation and Lighting Installation	Site Preparation	7/14/2022	8/14/2022	22
Grading Import Haul	Grading	8/15/2022	9/28/2022	33
Lighting Installation, Grading, and Trenching	Grading	8/15/2022	9/14/2022	23
Fencing/Concrete Paving	Paving	9/15/2022	10/31/2022	33
Lighting Installation, Grading, Trenching, and Ancillary Structure Building Construction	Grading	9/15/2022	9/28/2022	10
Lighting Installation and Ancillary Structure Building Construction	Building Construction	9/29/2022	10/16/2022	12
Ancillary Structure Building Construction (Oct)	Building Construction	10/17/2022	10/31/2022	11
Ancillary Structure Building Construction and Finishing/Landscaping	Building Construction	11/1/2022	11/15/2022	11
Asphalt Paving	Paving	11/15/2022	12/15/2022	23
Ancillary Structure Building Construction (Nov)	Building Construction	11/16/2022	12/15/2022	22
Architectural Coating	Architectural Coating	12/1/2022	12/8/2022	6
Synthetic Turf Surfacing	Trenching	12/20/2022	12/27/2022	6

CalEEMod Construction Off-Road Equipment Inputs

**Based on construction equipment mix provided by the District. Where information was not available, CalEEMod defaults were used.*

General Construction Hours: 8 hours btwn 7:00 AM to 4:00 PM (with 1 hr break), Mon-Fri

Construction Equipment Details							
Equipment	**model**	**# of Equipment**	**hr/day**	**hp**	**load factor***	**Tier Rating**	**total trips**
Demolition and Site Preparation							
Concrete/Industrial Saws		1	8	81	0.73		
Rubber Tired Dozers		1	8	255	0.4		
Graders		1	8	174	0.41		
Tractor/Loaders/Backhoes		3	8	97	0.37		
Worker Trips							15
Vendor Trips							0
Hauling Trips							0
Water Trucks							2
Demolition Debris Haul							
no additional equipment required for Demo Haul							
Worker Trips							0
Vendor Trips							0
Hauling Trips							10
Water Trucks							
Site Preparation							
Graders		1	8	174	0.41		
Rubber Tired Dozer		1	8	255	0.4		
Tractor/Loader/Backhoes		2	8	97	0.37		
Worker Trips							10
Vendor Trips							0
Hauling Trips							0
Water Trucks							2
Site Preparation and Lighting Installation							
Cranes		1	6	226	0.29		
Forklifts		1	6	89	0.2		
Graders		1	8	174	0.41		
Rubber Tired Dozer		1	8	255	0.4		
Tractor/Loader/Backhoes		2	8	97	0.37		
Worker Trips							17
Vendor Trips							1
Hauling Trips							0
Water Trucks							2
Grading Soil Haul							
no additional equipment required for Grading Soil Haul							
Worker Trips							0
Vendor Trips							0
Hauling Trips							545
Lighting Installation, Grading, and Trenching							
Graders		1	8	174	0.41		
Rubber Tired Dozer		1	8	255	0.4		
Tractor/Loader/Backhoes		2	8	97	0.37		
Cranes		1	6	226	0.29		
Forklifts		1	6	89	0.2		
Worker Trips							17
Vendor Trips							1
Hauling Trips							0
Water Trucks							2
Fencing/Concrete Paving							
Pavers		1	6	125	0.42		
Paving Equipment		1	8	130	0.36		
Rollers		1	7	80	0.38		
Tractors/Loaders/Backhoes		1	8	97	0.3685		
Worker Trips							10
Vendor Trips							0
Hauling Trips							0
Lighting Installation, Grading, Trenching, and Ancillary Structure Building Construction							
Graders		1	8	174	0.41		
Rubber Tired Dozer		1	8	255	0.4		
Tractor/Loader/Backhoes		2	8	97	0.37		
Cranes		1	6	226	0.29		
Forklifts		1	8	89	0.2		
Worker Trips							17
Vendor Trips							1
Hauling Trips							0
Water Trucks							2
Lighting Installation and Ancillary Structure Building Construction							
Cranes		1	6	226	0.29		
Forklifts		1	8	89	0.2		
Worker Trips							3
Vendor Trips							2
Hauling Trips							0

Ancillary Structure Building Construction (Oct)								
	Cranes		1	1	226	0.29		
	Forklifts		1	8	89	0.2		
	Worker Trips							1
	Vendor Trips							1
	Hauling Trips							0
Ancillary Structure Building Construction and Finishing/Landscaping								
	Cranes		1	1	226	0.29		
	Rubber Tired Loaders		1	8	199	0.36		
	Forklifts		1	8	89	0.2		
	Generator Sets		1	8	84	0.74		
	Welders		1	8	46	0.45		
	Tractors/Loaders/Backhoes		1	8	97	0.37		
	Worker Trips							16
	Vendor Trips							1
	Hauling Trips							0
Asphalt Paving								
	Pavers		1	6	125	0.42		
	Paving Equipment		1	8	130	0.36		
	Rollers		1	7	80	0.38		
	Tractors/Loaders/Backhoes		1	8	97	0.3685		
	Worker Trips							10
	Vendor Trips							0
	Hauling Trips							0
Ancillary Structure Building Construction (Nov)								
	Cranes		1	1	226	0.29		
	Forklifts		1	8	89	0.2		
	Worker Trips							1
	Vendor Trips							1
	Hauling Trips							0
Architectural Coating (surface lots, etc…)								
	Air Compressors		1	6	78	0.48		
	Worker Trips							22
	Vendor Trips							0
	Hauling Trips							0
Synthetic Turf Layout								
	Synthetic Turf Forklift/Gator		1	8	80	0.201		
	Synthetic Turf Spreaders*		1	8	80	0.3685		
	Synthetic Turf Laymoor**		1	8	80	0.4556		
	Synthetic Turf Generator		1	8	80	0.74		
	Worker Trips							10
	Vendor Trips							0
	Hauling Trips							0

*using loader as proxy for spreader

*using sweeper as proxy for laymoor

CalEEMod Construction Model

Wedgeworth Elementary School Field Replacement Project (Kwis)

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.07	1000sqft	0.16	7,070.00	0
Other Non-Asphalt Surfaces	253.47	1000sqft	5.82	253,470.00	0
City Park	0.02	Acre	0.02	819.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	531.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2019 SCE Sustainability Report

Land Use - based on info provided by district

Construction Phase - overlapping construction phases based on info from District

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment -

Off-road Equipment - based on info from District

Off-road Equipment - no additional equipment required for Demo Haul

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - no additional equipment required for Grading Soil Haul

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from District

Off-road Equipment - based on info from District

Off-road Equipment - using sweeper as proxy for Laymoor and loader as proxy for spreader. Assumes that turf spreader would not require fuel for operation

Trips and VMT - assumes 2 vt/water truck/day. assumes there are additional 2 wt and 1 vt per day for lighting installation (see assump file for calculations)

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Construction Off-road Equipment Mitigation - SCAQMD Rules 403 and 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	6.00
tblConstructionPhase	NumDays	230.00	11.00
tblConstructionPhase	NumDays	230.00	11.00
tblConstructionPhase	NumDays	230.00	22.00
tblConstructionPhase	NumDays	230.00	12.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	23.00

tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	10.00	22.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	871.20	819.80
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	187.00	174.00
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tblOffRoadEquipment	HorsePower	247.00	255.00
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tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	89.00	80.00
tblOffRoadEquipment	HorsePower	84.00	80.00
tblOffRoadEquipment	HorsePower	187.00	174.00
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tblOffRoadEquipment	HorsePower	203.00	199.00
tblOffRoadEquipment	HorsePower	64.00	80.00

tblOffRoadEquipment	HorsePower	97.00	80.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	UsageHours	7.00	1.00
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tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	531.44
tblTripsAndVMT	HaulingTripLength	20.00	60.00
tblTripsAndVMT	HaulingTripLength	20.00	60.00
tblTripsAndVMT	HaulingTripNumber	6.00	10.00
tblTripsAndVMT	HaulingTripNumber	750.00	545.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
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tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	43.00	2.00
tblTripsAndVMT	WorkerTripNumber	110.00	1.00

tblTripsAndVMT	WorkerTripNumber	110.00	16.00
tblTripsAndVMT	WorkerTripNumber	110.00	1.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	110.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.8236	39.2932	38.6825	0.0783	13.4097	1.4316	15.3816	6.8165	1.3184	8.6426	0.0000	8,013.3606	8,013.3606	1.4948	0.0000	8,050.7313
Maximum	**7.8236**	**39.2932**	**38.6825**	**0.0783**	**13.4097**	**1.4316**	**15.3816**	**6.8165**	**1.3184**	**8.6426**	**0.0000**	**8,013.3606**	**8,013.3606**	**1.4948**	**0.0000**	**8,050.7313**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.8236	39.2932	38.6825	0.0783	5.8838	1.4316	7.8557	2.9549	1.3184	4.7811	0.0000	8,013.3606	8,013.3606	1.4948	0.0000	8,050.7313
Maximum	**7.8236**	**39.2932**	**38.6825**	**0.0783**	**5.8838**	**1.4316**	**7.8557**	**2.9549**	**1.3184**	**4.7811**	**0.0000**	**8,013.3606**	**8,013.3606**	**1.4948**	**0.0000**	**8,050.7313**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.12**	**0.00**	**48.93**	**56.65**	**0.00**	**44.68**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt Demolition Debris Haul	Demolition	6/29/2022	7/5/2022	5	5	b
2	Asphalt Demolition and Site Preparation	Site Preparation	6/29/2022	7/5/2022	5	5	a
3	Site Preparation	Site Preparation	7/6/2022	7/13/2022	5	6	c
4	Site Preparation and Lighting Installation	Site Preparation	7/14/2022	8/12/2022	5	22	d
5	Grading Import Haul	Grading	8/15/2022	9/28/2022	5	33	e
6	Lighting Installation, Grading, and Trenching	Grading	8/15/2022	9/14/2022	5	23	f
7	Lighting Installation, Grading, Trenching, and Ancillary Structure	Grading	9/15/2022	9/28/2022	5	10	h
8	Fencing/Concrete Paving	Paving	9/15/2022	10/31/2022	5	33	g
9	Lighting Installation and Ancillary Structure Building Construction	Building Construction	9/29/2022	10/16/2022	5	12	i
10	Ancillary Structure Building Construction (Oct)	Building Construction	10/17/2022	10/31/2022	5	11	j
11	Ancillary Structure Building Construction and	Building Construction	11/1/2022	11/15/2022	5	11	k
12	Asphalt Paving	Paving	11/15/2022	12/15/2022	5	23	l
13	Ancillary Structure Building Construction (Nov)	Building Construction	11/16/2022	12/15/2022	5	22	m
14	Architectural Coating	Architectural Coating	12/1/2022	12/8/2022	5	6	n
15	Synthetic Turf Surfacing	Trenching	12/20/2022	12/27/2022	5	6	o

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 0

Acres of Paving: 5.98

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,230; Non-Residential Outdoor: 410; Striped Parking Area: 15,632

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt Demolition and Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt Demolition and Site Preparation	Graders	1	8.00	174	0.41
Asphalt Demolition and Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Asphalt Demolition and Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition Debris Haul	Excavators	0	8.00	158	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation and Lighting Installation	Cranes	1	6.00	226	0.29
Site Preparation and Lighting Installation	Forklifts	1	6.00	89	0.20
Site Preparation and Lighting Installation	Graders	1	8.00	174	0.41
Site Preparation and Lighting Installation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation and Lighting Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading Import Haul	Excavators	0	8.00	158	0.38
Grading Import Haul	Graders	0	8.00	187	0.41
Grading Import Haul	Rubber Tired Dozers	0	8.00	247	0.40
Grading Import Haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Lighting Installation, Grading, and Trenching	Cranes	1	6.00	226	0.29
Lighting Installation, Grading, and Trenching	Excavators	0	8.00	158	0.38
Lighting Installation, Grading, and Trenching	Forklifts	1	6.00	89	0.20
Lighting Installation, Grading, and Trenching	Graders	1	8.00	174	0.41
Lighting Installation, Grading, and Trenching	Rubber Tired Dozers	1	8.00	255	0.40
Lighting Installation, Grading, and Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Fencing/Concrete Paving	Pavers	1	6.00	125	0.42
Fencing/Concrete Paving	Paving Equipment	1	8.00	130	0.36
Fencing/Concrete Paving	Rollers	1	7.00	80	0.38
Fencing/Concrete Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Lighting Installation, Grading, Trenching, and Ancillary Structure	Cranes	1	6.00	226	0.29
Lighting Installation, Grading, Trenching, and Ancillary Structure	Excavators	0	8.00	158	0.38
Lighting Installation, Grading, Trenching, and Ancillary Structure	Forklifts	1	8.00	89	0.20
Lighting Installation, Grading, Trenching, and Ancillary Structure	Graders	1	8.00	174	0.41
Lighting Installation, Grading, Trenching, and Ancillary Structure	Rubber Tired Dozers	1	8.00	255	0.40
Lighting Installation, Grading, Trenching, and Ancillary Structure	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Lighting Installation and Ancillary Structure Building Construction	Cranes	1	6.00	226	0.29
Lighting Installation and Ancillary Structure Building Construction	Forklifts	1	8.00	89	0.20
Lighting Installation and Ancillary Structure Building Construction	Generator Sets	0	8.00	84	0.74
Lighting Installation and Ancillary Structure Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Lighting Installation and Ancillary Structure Building Construction	Welders	0	8.00	46	0.45
Ancillary Structure Building Construction (Oct)	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction (Oct)	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction (Oct)	Generator Sets	0	8.00	84	0.74
Ancillary Structure Building Construction (Oct)	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Ancillary Structure Building Construction (Oct)	Welders	0	8.00	46	0.45
Ancillary Structure Building Construction and Finishing/Landscaping	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction and Finishing/Landscaping	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction and Finishing/Landscaping	Generator Sets	1	8.00	84	0.74
Ancillary Structure Building Construction and Finishing/Landscaping	Rubber Tired Loaders	1	8.00	199	0.36
Ancillary Structure Building Construction and Finishing/Landscaping	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Ancillary Structure Building Construction and Finishing/Landscaping	Welders	1	8.00	46	0.45
Asphalt Paving	Pavers	1	6.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	7.00	80	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Ancillary Structure Building Construction (Nov)	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction (Nov)	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction (Nov)	Generator Sets	0	8.00	84	0.74
Ancillary Structure Building Construction (Nov)	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Ancillary Structure Building Construction (Nov)	Welders	0	8.00	46	0.45

Architectural Coating	Air Compressors	1	6.00	78	0.48
Synthetic Turf Surfacing	Forklifts	1	8.00	80	0.20
Synthetic Turf Surfacing	Generator Sets	1	8.00	80	0.74
Synthetic Turf Surfacing	Sweepers/Scrubbers	1	8.00	80	0.46
Synthetic Turf Surfacing	Tractors/Loaders/Backhoes	1	8.00	80	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Asphalt Demolition and Site Preparation	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition Debris Haul	0	0.00	0.00	10.00	14.70	6.90	60.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Lighting Installation	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading Import Haul	0	0.00	0.00	545.00	14.70	6.90	60.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation, Grading, and Fencing/Concrete Paving	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation, Grading, Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation and Ancillary Structure	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	2	3.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	2	1.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	6	16.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	1.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Synthetic Turf Surfacing	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Asphalt Demolition Debris Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2568	0.0000	0.2568	0.0389	0.0000	0.0389			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.2568**	**0.0000**	**0.2568**	**0.0389**	**0.0000**	**0.0389**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0417	1.1341	0.3291	4.2000e-003	0.1048	4.1800e-003	0.1090	0.0287	3.9900e-003	0.0327		456.5034	456.5034	0.0281		457.2052
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0417**	**1.1341**	**0.3291**	**4.2000e-003**	**0.1048**	**4.1800e-003**	**0.1090**	**0.0287**	**3.9900e-003**	**0.0327**		**456.5034**	**456.5034**	**0.0281**		**457.2052**

Mitigated Construction On-Site

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

Category	lb/day										lb/day					
Fugitive Dust					0.1098	0.0000	0.1098	0.0166	0.0000	0.0166			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1098**	**0.0000**	**0.1098**	**0.0166**	**0.0000**	**0.0166**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0417	1.1341	0.3291	4.2000e-003	0.0977	4.1800e-003	0.1019	0.0270	3.9900e-003	0.0310		456.5034	456.5034	0.0281		457.2052
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0417**	**1.1341**	**0.3291**	**4.2000e-003**	**0.0977**	**4.1800e-003**	**0.1019**	**0.0270**	**3.9900e-003**	**0.0310**		**456.5034**	**456.5034**	**0.0281**		**457.2052**

3.3 Asphalt Demolition and Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2600	21.6671	21.7800	0.0307		1.1046	1.1046		1.0283	1.0283		2,960.7908	2,960.7908	0.7982		2,980.7466
Total	**2.2600**	**21.6671**	**21.7800**	**0.0307**	**6.5523**	**1.1046**	**7.6570**	**3.3675**	**1.0283**	**4.3958**		**2,960.7908**	**2,960.7908**	**0.7982**		**2,980.7466**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7100e-003	0.1847	0.0480	5.1000e-004	0.0128	3.5000e-004	0.0132	3.6900e-003	3.3000e-004	4.0200e-003		54.4972	54.4972	3.1300e-003		54.5754
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0659**	**0.2246**	**0.6054**	**2.1600e-003**	**0.1805**	**1.6600e-003**	**0.1821**	**0.0482**	**1.5400e-003**	**0.0497**		**219.3040**	**219.3040**	**7.6800e-003**		**219.4959**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.2600	21.6671	21.7800	0.0307		1.1046	1.1046		1.0283	1.0283	0.0000	2,960.7908	2,960.7908	0.7982		2,980.7465
Total	**2.2600**	**21.6671**	**21.7800**	**0.0307**	**2.8011**	**1.1046**	**3.9058**	**1.4396**	**1.0283**	**2.4679**	**0.0000**	**2,960.7908**	**2,960.7908**	**0.7982**		**2,980.7465**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7100e-003	0.1847	0.0480	5.1000e-004	0.0120	3.5000e-004	0.0123	3.4900e-003	3.3000e-004	3.8200e-003		54.4972	54.4972	3.1300e-003		54.5754
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0659**	**0.2246**	**0.6054**	**2.1600e-003**	**0.1665**	**1.6600e-003**	**0.1682**	**0.0447**	**1.5400e-003**	**0.0463**		**219.3040**	**219.3040**	**7.6800e-003**		**219.4959**

3.4 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.7376	17.1903	15.8774	0.0213		0.8644	0.8644		0.7952	0.7952		2,066.8872	2,066.8872	0.6685		2,083.5991
Total	**1.7376**	**17.1903**	**15.8774**	**0.0213**	**6.5523**	**0.8644**	**7.4167**	**3.3675**	**0.7952**	**4.1627**		**2,066.8872**	**2,066.8872**	**0.6685**		**2,083.5991**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7100e-003	0.1847	0.0480	5.1000e-004	0.0128	3.5000e-004	0.0132	3.6900e-003	3.3000e-004	4.0200e-003		54.4972	54.4972	3.1300e-003		54.5754
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		109.8712	109.8712	3.0300e-003		109.9470

Total	**0.0459**	**0.2113**	**0.4196**	**1.6100e-003**	**0.1246**	**1.2200e-003**	**0.1258**	**0.0333**	**1.1400e-003**	**0.0345**		**164.3684**	**164.3684**	**6.1600e-003**		**164.5224**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	1.7376	17.1903	15.8774	0.0213		0.8644	0.8644		0.7952	0.7952	0.0000	2,066.8872	2,066.8872	0.6685		2,083.5991
Total	**1.7376**	**17.1903**	**15.8774**	**0.0213**	**2.8011**	**0.8644**	**3.6655**	**1.4396**	**0.7952**	**2.2348**	**0.0000**	**2,066.8872**	**2,066.8872**	**0.6685**		**2,083.5991**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7100e-003	0.1847	0.0480	5.1000e-004	0.0120	3.5000e-004	0.0123	3.4900e-003	3.3000e-004	3.8200e-003		54.4972	54.4972	3.1300e-003		54.5754
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.0459**	**0.2113**	**0.4196**	**1.6100e-003**	**0.1150**	**1.2200e-003**	**0.1162**	**0.0310**	**1.1400e-003**	**0.0321**		**164.3684**	**164.3684**	**6.1600e-003**		**164.5224**

3.5 Site Preparation and Lighting Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607		2,587.9612	2,587.9612	0.8370		2,608.8862
Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**6.5523**	**1.0442**	**7.5966**	**3.3675**	**0.9607**	**4.3282**		**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5600e-003	0.2770	0.0720	7.6000e-004	0.0192	5.2000e-004	0.0197	5.5300e-003	5.0000e-004	6.0300e-003		81.7458	81.7458	4.6900e-003		81.8630
Worker	0.0683	0.0452	0.6317	1.8700e-003	0.1900	1.4900e-003	0.1915	0.0504	1.3700e-003	0.0518		186.7811	186.7811	5.1600e-003		186.9100
Total	**0.0768**	**0.3222**	**0.7038**	**2.6300e-003**	**0.2092**	**2.0100e-003**	**0.2112**	**0.0559**	**1.8700e-003**	**0.0578**		**268.5269**	**268.5269**	**9.8500e-003**		**268.7730**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607	0.0000	2,587.9612	2,587.9612	0.8370		2,608.8862

Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**2.8011**	**1.0442**	**3.8454**	**1.4396**	**0.9607**	**2.4003**	**0.0000**	**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5600e-003	0.2770	0.0720	7.6000e-004	0.0180	5.2000e-004	0.0185	5.2300e-003	5.0000e-004	5.7300e-003		81.7458	81.7458	4.6900e-003		81.8630
Worker	0.0683	0.0452	0.6317	1.8700e-003	0.1752	1.4900e-003	0.1766	0.0467	1.3700e-003	0.0481		186.7811	186.7811	5.1600e-003		186.9100
Total	**0.0768**	**0.3222**	**0.7038**	**2.6300e-003**	**0.1931**	**2.0100e-003**	**0.1951**	**0.0520**	**1.8700e-003**	**0.0538**		**268.5269**	**268.5269**	**9.8500e-003**		**268.7730**

3.6 Grading Import Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0206	0.0000	0.0206	3.1100e-003	0.0000	3.1100e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0206**	**0.0000**	**0.0206**	**3.1100e-003**	**0.0000**	**3.1100e-003**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3439	9.3651	2.7172	0.0347	0.8657	0.0345	0.9001	0.2372	0.0330	0.2702		3,769.6112	3,769.6112	0.2318		3,775.4067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3439**	**9.3651**	**2.7172**	**0.0347**	**0.8657**	**0.0345**	**0.9001**	**0.2372**	**0.0330**	**0.2702**		**3,769.6112**	**3,769.6112**	**0.2318**		**3,775.4067**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7900e-003	0.0000	8.7900e-003	1.3300e-003	0.0000	1.3300e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.7900e-003**	**0.0000**	**8.7900e-003**	**1.3300e-003**	**0.0000**	**1.3300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3439	9.3651	2.7172	0.0347	0.8067	0.0345	0.8412	0.2228	0.0330	0.2558		3,769.6112	3,769.6112	0.2318		3,775.4067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3439**	**9.3651**	**2.7172**	**0.0347**	**0.8067**	**0.0345**	**0.8412**	**0.2228**	**0.0330**	**0.2558**		**3,769.6112**	**3,769.6112**	**0.2318**		**3,775.4067**

3.7 Lighting Installation, Grading, and Trenching - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607		2,587.9612	2,587.9612	0.8370		2,608.8862
Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**6.5523**	**1.0442**	**7.5966**	**3.3675**	**0.9607**	**4.3282**		**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5600e-003	0.2770	0.0720	7.6000e-004	0.0192	5.2000e-004	0.0197	5.5300e-003	5.0000e-004	6.0300e-003		81.7458	81.7458	4.6900e-003		81.8630
Worker	0.0683	0.0452	0.6317	1.8700e-003	0.1900	1.4900e-003	0.1915	0.0504	1.3700e-003	0.0518		186.7811	186.7811	5.1600e-003		186.9100
Total	**0.0768**	**0.3222**	**0.7038**	**2.6300e-003**	**0.2092**	**2.0100e-003**	**0.2112**	**0.0559**	**1.8700e-003**	**0.0578**		**268.5269**	**268.5269**	**9.8500e-003**		**268.7730**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607	0.0000	2,587.9612	2,587.9612	0.8370		2,608.8862
Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**2.8011**	**1.0442**	**3.8454**	**1.4396**	**0.9607**	**2.4003**	**0.0000**	**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5600e-003	0.2770	0.0720	7.6000e-004	0.0180	5.2000e-004	0.0185	5.2300e-003	5.0000e-004	5.7300e-003		81.7458	81.7458	4.6900e-003		81.8630
Worker	0.0683	0.0452	0.6317	1.8700e-003	0.1752	1.4900e-003	0.1766	0.0467	1.3700e-003	0.0481		186.7811	186.7811	5.1600e-003		186.9100
Total	**0.0768**	**0.3222**	**0.7038**	**2.6300e-003**	**0.1931**	**2.0100e-003**	**0.1951**	**0.0520**	**1.8700e-003**	**0.0538**		**268.5269**	**268.5269**	**9.8500e-003**		**268.7730**

3.8 Lighting Installation, Grading, Trenching, and Ancillary

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000

Off-Road	2.1248	21.3155	18.4197	0.0271		1.0617	1.0617		0.9768	0.9768		2,624.9689	2,624.9689	0.8490		2,646.1931
Total	**2.1248**	**21.3155**	**18.4197**	**0.0271**	**6.5523**	**1.0617**	**7.6141**	**3.3675**	**0.9768**	**4.3443**		**2,624.9689**	**2,624.9689**	**0.8490**		**2,646.1931**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5600e-003	0.2770	0.0720	7.6000e-004	0.0192	5.2000e-004	0.0197	5.5300e-003	5.0000e-004	6.0300e-003		81.7458	81.7458	4.6900e-003		81.8630
Worker	0.0683	0.0452	0.6317	1.8700e-003	0.1900	1.4900e-003	0.1915	0.0504	1.3700e-003	0.0518		186.7811	186.7811	5.1600e-003		186.9100
Total	**0.0768**	**0.3222**	**0.7038**	**2.6300e-003**	**0.2092**	**2.0100e-003**	**0.2112**	**0.0559**	**1.8700e-003**	**0.0578**		**268.5269**	**268.5269**	**9.8500e-003**		**268.7730**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.1248	21.3155	18.4197	0.0271		1.0617	1.0617		0.9768	0.9768	0.0000	2,624.9689	2,624.9689	0.8490		2,646.1931
Total	**2.1248**	**21.3155**	**18.4197**	**0.0271**	**2.8011**	**1.0617**	**3.8628**	**1.4396**	**0.9768**	**2.4164**	**0.0000**	**2,624.9689**	**2,624.9689**	**0.8490**		**2,646.1931**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5600e-003	0.2770	0.0720	7.6000e-004	0.0180	5.2000e-004	0.0185	5.2300e-003	5.0000e-004	5.7300e-003		81.7458	81.7458	4.6900e-003		81.8630
Worker	0.0683	0.0452	0.6317	1.8700e-003	0.1752	1.4900e-003	0.1766	0.0467	1.3700e-003	0.0481		186.7811	186.7811	5.1600e-003		186.9100
Total	**0.0768**	**0.3222**	**0.7038**	**2.6300e-003**	**0.1931**	**2.0100e-003**	**0.1951**	**0.0520**	**1.8700e-003**	**0.0538**		**268.5269**	**268.5269**	**9.8500e-003**		**268.7730**

3.9 Fencing/Concrete Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059		1,240.3824	1,240.3824	0.4012		1,250.4115
Paving	0.0127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6476**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**		**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Unmitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.0402**	**0.0266**	**0.3716**	**1.1000e-003**	**0.1118**	**8.7000e-004**	**0.1127**	**0.0296**	**8.1000e-004**	**0.0305**		**109.8712**	**109.8712**	**3.0300e-003**		**109.9470**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059	0.0000	1,240.3824	1,240.3824	0.4012		1,250.4115
Paving	0.0127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6476**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**	**0.0000**	**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.0402**	**0.0266**	**0.3716**	**1.1000e-003**	**0.1030**	**8.7000e-004**	**0.1039**	**0.0275**	**8.1000e-004**	**0.0283**		**109.8712**	**109.8712**	**3.0300e-003**		**109.9470**

3.10 Lighting Installation and Ancillary Structure Building

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3873	4.1252	2.5423	5.7600e-003		0.1974	0.1974		0.1816	0.1816		558.0817	558.0817	0.1805		562.5941
Total	**0.3873**	**4.1252**	**2.5423**	**5.7600e-003**		**0.1974**	**0.1974**		**0.1816**	**0.1816**		**558.0817**	**558.0817**	**0.1805**		**562.5941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7100e-003	0.1847	0.0480	5.1000e-004	0.0128	3.5000e-004	0.0132	3.6900e-003	3.3000e-004	4.0200e-003		54.4972	54.4972	3.1300e-003		54.5754
Worker	0.0121	7.9800e-003	0.1115	3.3000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		32.9614	32.9614	9.1000e-004		32.9841
Total	**0.0178**	**0.1926**	**0.1595**	**8.4000e-004**	**0.0463**	**6.1000e-004**	**0.0470**	**0.0126**	**5.7000e-004**	**0.0132**		**87.4586**	**87.4586**	**4.0400e-003**		**87.5595**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3873	4.1252	2.5423	5.7600e-003		0.1974	0.1974		0.1816	0.1816	0.0000	558.0817	558.0817	0.1805		562.5940

Total	**0.3873**	**4.1252**	**2.5423**	**5.7600e-003**		**0.1974**	**0.1974**		**0.1816**	**0.1816**	**0.0000**	**558.0817**	**558.0817**	**0.1805**		**562.5940**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7100e-003	0.1847	0.0480	5.1000e-004	0.0120	3.5000e-004	0.0123	3.4900e-003	3.3000e-004	3.8200e-003		54.4972	54.4972	3.1300e-003		54.5754
Worker	0.0121	7.9800e-003	0.1115	3.3000e-004	0.0309	2.6000e-004	0.0312	8.2500e-003	2.4000e-004	8.4900e-003		32.9614	32.9614	9.1000e-004		32.9841
Total	**0.0178**	**0.1926**	**0.1595**	**8.4000e-004**	**0.0429**	**6.1000e-004**	**0.0435**	**0.0117**	**5.7000e-004**	**0.0123**		**87.4586**	**87.4586**	**4.0400e-003**		**87.5595**

3.11 Ancillary Structure Building Construction (Oct) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838		216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**		**216.3726**	**216.3726**	**0.0700**		**218.1221**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	6.4000e-003	1.7000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	4.0200e-003	2.6600e-003	0.0372	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.9871	10.9871	3.0000e-004		10.9947
Total	**6.8700e-003**	**0.0950**	**0.0612**	**3.6000e-004**	**0.0176**	**2.6000e-004**	**0.0179**	**4.8000e-003**	**2.5000e-004**	**5.0500e-003**		**38.2357**	**38.2357**	**1.8600e-003**		**38.2824**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838	0.0000	216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**	**0.0000**	**216.3726**	**216.3726**	**0.0700**		**218.1221**

Mitigated Construction Off-Site

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

Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	5.9900e-003	1.7000e-004	6.1700e-003	1.7400e-003	1.7000e-004	1.9100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	4.0200e-003	2.6600e-003	0.0372	1.1000e-004	0.0103	9.0000e-005	0.0104	2.7500e-003	8.0000e-005	2.8300e-003		10.9871	10.9871	3.0000e-004		10.9947
Total	**6.8700e-003**	**0.0950**	**0.0612**	**3.6000e-004**	**0.0163**	**2.6000e-004**	**0.0166**	**4.4900e-003**	**2.5000e-004**	**4.7400e-003**		**38.2357**	**38.2357**	**1.8600e-003**		**38.2824**

3.12 Ancillary Structure Building Construction and

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2163	10.5988	10.4959	0.0206		0.4915	0.4915		0.4691	0.4691		1,941.8539	1,941.8539	0.4139		1,952.2003
Total	**1.2163**	**10.5988**	**10.4959**	**0.0206**		**0.4915**	**0.4915**		**0.4691**	**0.4691**		**1,941.8539**	**1,941.8539**	**0.4139**		**1,952.2003**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	6.4000e-003	1.7000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	0.0642	0.0426	0.5946	1.7600e-003	0.1788	1.4000e-003	0.1802	0.0474	1.2900e-003	0.0487		175.7940	175.7940	4.8500e-003		175.9153
Total	**0.0671**	**0.1349**	**0.6186**	**2.0100e-003**	**0.1852**	**1.5700e-003**	**0.1868**	**0.0493**	**1.4600e-003**	**0.0507**		**203.0426**	**203.0426**	**6.4100e-003**		**203.2030**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2163	10.5988	10.4959	0.0206		0.4915	0.4915		0.4691	0.4691	0.0000	1,941.8539	1,941.8539	0.4139		1,952.2003
Total	**1.2163**	**10.5988**	**10.4959**	**0.0206**		**0.4915**	**0.4915**		**0.4691**	**0.4691**	**0.0000**	**1,941.8539**	**1,941.8539**	**0.4139**		**1,952.2003**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	5.9900e-003	1.7000e-004	6.1700e-003	1.7400e-003	1.7000e-004	1.9100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	0.0642	0.0426	0.5946	1.7600e-003	0.1649	1.4000e-003	0.1663	0.0440	1.2900e-003	0.0453		175.7940	175.7940	4.8500e-003		175.9153
Total	**0.0671**	**0.1349**	**0.6186**	**2.0100e-003**	**0.1708**	**1.5700e-003**	**0.1724**	**0.0457**	**1.4600e-003**	**0.0472**		**203.0426**	**203.0426**	**6.4100e-003**		**203.2030**

3.13 Asphalt Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059		1,240.3824	1,240.3824	0.4012		1,250.4115

Paving	0.0182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6532**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**		**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.0402**	**0.0266**	**0.3716**	**1.1000e-003**	**0.1118**	**8.7000e-004**	**0.1127**	**0.0296**	**8.1000e-004**	**0.0305**		**109.8712**	**109.8712**	**3.0300e-003**		**109.9470**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059	0.0000	1,240.3824	1,240.3824	0.4012		1,250.4115
Paving	0.0182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6532**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**	**0.0000**	**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.0402**	**0.0266**	**0.3716**	**1.1000e-003**	**0.1030**	**8.7000e-004**	**0.1039**	**0.0275**	**8.1000e-004**	**0.0283**		**109.8712**	**109.8712**	**3.0300e-003**		**109.9470**

3.14 Ancillary Structure Building Construction (Nov) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838		216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**		**216.3726**	**216.3726**	**0.0700**		**218.1221**

Unmitigated Construction Off-Site

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

Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	6.4000e-003	1.7000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	4.0200e-003	2.6600e-003	0.0372	1.1000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.9871	10.9871	3.0000e-004		10.9947
Total	**6.8700e-003**	**0.0950**	**0.0612**	**3.6000e-004**	**0.0176**	**2.6000e-004**	**0.0179**	**4.8000e-003**	**2.5000e-004**	**5.0500e-003**		**38.2357**	**38.2357**	**1.8600e-003**		**38.2824**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838	0.0000	216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**	**0.0000**	**216.3726**	**216.3726**	**0.0700**		**218.1221**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8500e-003	0.0923	0.0240	2.5000e-004	5.9900e-003	1.7000e-004	6.1700e-003	1.7400e-003	1.7000e-004	1.9100e-003		27.2486	27.2486	1.5600e-003		27.2877
Worker	4.0200e-003	2.6600e-003	0.0372	1.1000e-004	0.0103	9.0000e-005	0.0104	2.7500e-003	8.0000e-005	2.8300e-003		10.9871	10.9871	3.0000e-004		10.9947
Total	**6.8700e-003**	**0.0950**	**0.0612**	**3.6000e-004**	**0.0163**	**2.6000e-004**	**0.0166**	**4.4900e-003**	**2.5000e-004**	**4.7400e-003**		**38.2357**	**38.2357**	**1.8600e-003**		**38.2824**

3.15 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.8759**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0586	0.8175	2.4300e-003	0.2459	1.9200e-003	0.2478	0.0652	1.7700e-003	0.0670		241.7167	241.7167	6.6700e-003		241.8835
Total	**0.0883**	**0.0586**	**0.8175**	**2.4300e-003**	**0.2459**	**1.9200e-003**	**0.2478**	**0.0652**	**1.7700e-003**	**0.0670**		**241.7167**	**241.7167**	**6.6700e-003**		**241.8835**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.8759**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0586	0.8175	2.4300e-003	0.2267	1.9200e-003	0.2286	0.0605	1.7700e-003	0.0623		241.7167	241.7167	6.6700e-003		241.8835
Total	**0.0883**	**0.0586**	**0.8175**	**2.4300e-003**	**0.2267**	**1.9200e-003**	**0.2286**	**0.0605**	**1.7700e-003**	**0.0623**		**241.7167**	**241.7167**	**6.6700e-003**		**241.8835**

3.16 Synthetic Turf Surfacing - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7940	7.3726	8.7799	0.0134		0.4277	0.4277		0.4047	0.4047		1,282.5927	1,282.5927	0.2511		1,288.8702
Total	**0.7940**	**7.3726**	**8.7799**	**0.0134**		**0.4277**	**0.4277**		**0.4047**	**0.4047**		**1,282.5927**	**1,282.5927**	**0.2511**		**1,288.8702**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.0402**	**0.0266**	**0.3716**	**1.1000e-003**	**0.1118**	**8.7000e-004**	**0.1127**	**0.0296**	**8.1000e-004**	**0.0305**		**109.8712**	**109.8712**	**3.0300e-003**		**109.9470**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7940	7.3726	8.7799	0.0134		0.4277	0.4277		0.4047	0.4047	0.0000	1,282.5927	1,282.5927	0.2511		1,288.8702
Total	**0.7940**	**7.3726**	**8.7799**	**0.0134**		**0.4277**	**0.4277**		**0.4047**	**0.4047**	**0.0000**	**1,282.5927**	**1,282.5927**	**0.2511**		**1,288.8702**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0402	0.0266	0.3716	1.1000e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		109.8712	109.8712	3.0300e-003		109.9470
Total	**0.0402**	**0.0266**	**0.3716**	**1.1000e-003**	**0.1030**	**8.7000e-004**	**0.1039**	**0.0275**	**8.1000e-004**	**0.0283**		**109.8712**	**109.8712**	**3.0300e-003**		**109.9470**

Wedgeworth Elementary School Field Replacement Project (Kwis)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.07	1000sqft	0.16	7,070.00	0
Other Non-Asphalt Surfaces	253.47	1000sqft	5.82	253,470.00	0
City Park	0.02	Acre	0.02	819.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	531.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2019 SCE Sustainability Report

Land Use - based on info provided by district

Construction Phase - overlapping construction phases based on info from District

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment -

Off-road Equipment - based on info from District

Off-road Equipment - no additional equipment required for Demo Haul

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - no additional equipment required for Grading Soil Haul

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from District

Off-road Equipment - based on info from District

Off-road Equipment - using sweeper as proxy for Laymoor and loader as proxy for spreader. Assumes that turf spreader would not require fuel for operation

Trips and VMT - assumes 2 vt/water truck/day. assumes there are additional 2 wt and 1 vt per day for lighting installation (see assump file for calculations)

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Construction Off-road Equipment Mitigation - SCAQMD Rules 403 and 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	6.00
tblConstructionPhase	NumDays	230.00	11.00
tblConstructionPhase	NumDays	230.00	11.00
tblConstructionPhase	NumDays	230.00	22.00
tblConstructionPhase	NumDays	230.00	12.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	23.00

tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	10.00	22.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	871.20	819.80
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	187.00	174.00
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tblOffRoadEquipment	HorsePower	130.00	125.00
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tblOffRoadEquipment	HorsePower	132.00	130.00
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tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
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tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
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tblOffRoadEquipment	HorsePower	84.00	80.00
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tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	203.00	199.00
tblOffRoadEquipment	HorsePower	64.00	80.00

tblOffRoadEquipment	HorsePower	97.00	80.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	531.44
tblTripsAndVMT	HaulingTripLength	20.00	60.00
tblTripsAndVMT	HaulingTripLength	20.00	60.00
tblTripsAndVMT	HaulingTripNumber	6.00	10.00
tblTripsAndVMT	HaulingTripNumber	750.00	545.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	43.00	2.00
tblTripsAndVMT	WorkerTripNumber	110.00	1.00

tblTripsAndVMT	WorkerTripNumber	110.00	16.00
tblTripsAndVMT	WorkerTripNumber	110.00	1.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	110.00	3.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.8390	39.2993	38.6117	0.0779	13.4097	1.4318	15.3816	6.8165	1.3186	8.6426	0.0000	7,969.6451	7,969.6451	1.4978	0.0000	8,007.0892
Maximum	**7.8390**	**39.2993**	**38.6117**	**0.0779**	**13.4097**	**1.4318**	**15.3816**	**6.8165**	**1.3186**	**8.6426**	**0.0000**	**7,969.6451**	**7,969.6451**	**1.4978**	**0.0000**	**8,007.0892**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	7.8390	39.2993	38.6117	0.0779	5.8838	1.4318	7.8557	2.9549	1.3186	4.7811	0.0000	7,969.6451	7,969.6451	1.4978	0.0000	8,007.0892
Maximum	**7.8390**	**39.2993**	**38.6117**	**0.0779**	**5.8838**	**1.4318**	**7.8557**	**2.9549**	**1.3186**	**4.7811**	**0.0000**	**7,969.6451**	**7,969.6451**	**1.4978**	**0.0000**	**8,007.0892**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	56.12	0.00	48.93	56.65	0.00	44.68	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt Demolition Debris Haul	Demolition	6/29/2022	7/5/2022	5	5	b
2	Asphalt Demolition and Site Preparation	Site Preparation	6/29/2022	7/5/2022	5	5	a
3	Site Preparation	Site Preparation	7/6/2022	7/13/2022	5	6	c
4	Site Preparation and Lighting Installation	Site Preparation	7/14/2022	8/12/2022	5	22	d
5	Grading Import Haul	Grading	8/15/2022	9/28/2022	5	33	e
6	Lighting Installation, Grading, and Trenching	Grading	8/15/2022	9/14/2022	5	23	f
7	Lighting Installation, Grading, Trenching, and Ancillary Structure	Grading	9/15/2022	9/28/2022	5	10	h
8	Fencing/Concrete Paving	Paving	9/15/2022	10/31/2022	5	33	g
9	Lighting Installation and Ancillary Structure Building Construction	Building Construction	9/29/2022	10/16/2022	5	12	i
10	Ancillary Structure Building Construction (Oct)	Building Construction	10/17/2022	10/31/2022	5	11	j
11	Ancillary Structure Building Construction and	Building Construction	11/1/2022	11/15/2022	5	11	k
12	Asphalt Paving	Paving	11/15/2022	12/15/2022	5	23	l
13	Ancillary Structure Building Construction (Nov)	Building Construction	11/16/2022	12/15/2022	5	22	m
14	Architectural Coating	Architectural Coating	12/1/2022	12/8/2022	5	6	n
15	Synthetic Turf Surfacing	Trenching	12/20/2022	12/27/2022	5	6	o

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 0

Acres of Paving: 5.98

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,230; Non-Residential Outdoor: 410; Striped Parking Area: 15,632

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt Demolition and Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt Demolition and Site Preparation	Graders	1	8.00	174	0.41
Asphalt Demolition and Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Asphalt Demolition and Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition Debris Haul	Excavators	0	8.00	158	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation and Lighting Installation	Cranes	1	6.00	226	0.29
Site Preparation and Lighting Installation	Forklifts	1	6.00	89	0.20
Site Preparation and Lighting Installation	Graders	1	8.00	174	0.41
Site Preparation and Lighting Installation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation and Lighting Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading Import Haul	Excavators	0	8.00	158	0.38
Grading Import Haul	Graders	0	8.00	187	0.41
Grading Import Haul	Rubber Tired Dozers	0	8.00	247	0.40
Grading Import Haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Lighting Installation, Grading, and Trenching	Cranes	1	6.00	226	0.29
Lighting Installation, Grading, and Trenching	Excavators	0	8.00	158	0.38
Lighting Installation, Grading, and Trenching	Forklifts	1	6.00	89	0.20
Lighting Installation, Grading, and Trenching	Graders	1	8.00	174	0.41
Lighting Installation, Grading, and Trenching	Rubber Tired Dozers	1	8.00	255	0.40
Lighting Installation, Grading, and Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Fencing/Concrete Paving	Pavers	1	6.00	125	0.42
Fencing/Concrete Paving	Paving Equipment	1	8.00	130	0.36
Fencing/Concrete Paving	Rollers	1	7.00	80	0.38
Fencing/Concrete Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Lighting Installation, Grading, Trenching, and Ancillary Structure	Cranes	1	6.00	226	0.29
Lighting Installation, Grading, Trenching, and Ancillary Structure	Excavators	0	8.00	158	0.38
Lighting Installation, Grading, Trenching, and Ancillary Structure	Forklifts	1	8.00	89	0.20
Lighting Installation, Grading, Trenching, and Ancillary Structure	Graders	1	8.00	174	0.41
Lighting Installation, Grading, Trenching, and Ancillary Structure	Rubber Tired Dozers	1	8.00	255	0.40
Lighting Installation, Grading, Trenching, and Ancillary Structure	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Lighting Installation and Ancillary Structure Building Construction	Cranes	1	6.00	226	0.29
Lighting Installation and Ancillary Structure Building Construction	Forklifts	1	8.00	89	0.20
Lighting Installation and Ancillary Structure Building Construction	Generator Sets	0	8.00	84	0.74
Lighting Installation and Ancillary Structure Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Lighting Installation and Ancillary Structure Building Construction	Welders	0	8.00	46	0.45
Ancillary Structure Building Construction (Oct)	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction (Oct)	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction (Oct)	Generator Sets	0	8.00	84	0.74
Ancillary Structure Building Construction (Oct)	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Ancillary Structure Building Construction (Oct)	Welders	0	8.00	46	0.45
Ancillary Structure Building Construction and Finishing/Landscaping	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction and Finishing/Landscaping	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction and Finishing/Landscaping	Generator Sets	1	8.00	84	0.74
Ancillary Structure Building Construction and Finishing/Landscaping	Rubber Tired Loaders	1	8.00	199	0.36
Ancillary Structure Building Construction and Finishing/Landscaping	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Ancillary Structure Building Construction and Finishing/Landscaping	Welders	1	8.00	46	0.45
Asphalt Paving	Pavers	1	6.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	7.00	80	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Ancillary Structure Building Construction (Nov)	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction (Nov)	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction (Nov)	Generator Sets	0	8.00	84	0.74
Ancillary Structure Building Construction (Nov)	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Ancillary Structure Building Construction (Nov)	Welders	0	8.00	46	0.45

Architectural Coating	Air Compressors	1	6.00	78	0.48
Synthetic Turf Surfacing	Forklifts	1	8.00	80	0.20
Synthetic Turf Surfacing	Generator Sets	1	8.00	80	0.74
Synthetic Turf Surfacing	Sweepers/Scrubbers	1	8.00	80	0.46
Synthetic Turf Surfacing	Tractors/Loaders/Backhoes	1	8.00	80	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Asphalt Demolition and Site Preparation	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition Debris Haul	0	0.00	0.00	10.00	14.70	6.90	60.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Lighting Installation	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading Import Haul	0	0.00	0.00	545.00	14.70	6.90	60.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation, Grading, and Fencing/Concrete Paving	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation, Grading, Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation and Ancillary Structure	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	2	3.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	2	1.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	6	16.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	1.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Synthetic Turf Surfacing	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Asphalt Demolition Debris Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2568	0.0000	0.2568	0.0389	0.0000	0.0389			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.2568**	**0.0000**	**0.2568**	**0.0389**	**0.0000**	**0.0389**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0420	1.1647	0.3349	4.1700e-003	0.1048	4.2000e-003	0.1090	0.0287	4.0200e-003	0.0328		453.5797	453.5797	0.0285		454.2910
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0420**	**1.1647**	**0.3349**	**4.1700e-003**	**0.1048**	**4.2000e-003**	**0.1090**	**0.0287**	**4.0200e-003**	**0.0328**		**453.5797**	**453.5797**	**0.0285**		**454.2910**

Mitigated Construction On-Site

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

Category	lb/day										lb/day					
Fugitive Dust					0.1098	0.0000	0.1098	0.0166	0.0000	0.0166			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1098**	**0.0000**	**0.1098**	**0.0166**	**0.0000**	**0.0166**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0420	1.1647	0.3349	4.1700e-003	0.0977	4.2000e-003	0.1019	0.0270	4.0200e-003	0.0310		453.5797	453.5797	0.0285		454.2910
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0420**	**1.1647**	**0.3349**	**4.1700e-003**	**0.0977**	**4.2000e-003**	**0.1019**	**0.0270**	**4.0200e-003**	**0.0310**		**453.5797**	**453.5797**	**0.0285**		**454.2910**

3.3 Asphalt Demolition and Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2600	21.6671	21.7800	0.0307		1.1046	1.1046		1.0283	1.0283		2,960.7908	2,960.7908	0.7982		2,980.7466
Total	**2.2600**	**21.6671**	**21.7800**	**0.0307**	**6.5523**	**1.1046**	**7.6570**	**3.3675**	**1.0283**	**4.3958**		**2,960.7908**	**2,960.7908**	**0.7982**		**2,980.7466**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9900e-003	0.1842	0.0532	5.0000e-004	0.0128	3.6000e-004	0.0132	3.6900e-003	3.4000e-004	4.0300e-003		52.9941	52.9941	3.3300e-003		53.0773
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0732**	**0.2283**	**0.5619**	**2.0600e-003**	**0.1805**	**1.6700e-003**	**0.1821**	**0.0482**	**1.5500e-003**	**0.0497**		**208.1795**	**208.1795**	**7.6000e-003**		**208.3696**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.2600	21.6671	21.7800	0.0307		1.1046	1.1046		1.0283	1.0283	0.0000	2,960.7908	2,960.7908	0.7982		2,980.7465
Total	**2.2600**	**21.6671**	**21.7800**	**0.0307**	**2.8011**	**1.1046**	**3.9058**	**1.4396**	**1.0283**	**2.4679**	**0.0000**	**2,960.7908**	**2,960.7908**	**0.7982**		**2,980.7465**

Mitigated Construction Off-Site

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

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9900e-003	0.1842	0.0532	5.0000e-004	0.0120	3.6000e-004	0.0123	3.4900e-003	3.4000e-004	3.8300e-003		52.9941	52.9941	3.3300e-003		53.0773
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0732**	**0.2283**	**0.5619**	**2.0600e-003**	**0.1665**	**1.6700e-003**	**0.1682**	**0.0447**	**1.5500e-003**	**0.0463**		**208.1795**	**208.1795**	**7.6000e-003**		**208.3696**

3.4 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.7376	17.1903	15.8774	0.0213		0.8644	0.8644		0.7952	0.7952		2,066.8872	2,066.8872	0.6685		2,083.5991
Total	**1.7376**	**17.1903**	**15.8774**	**0.0213**	**6.5523**	**0.8644**	**7.4167**	**3.3675**	**0.7952**	**4.1627**		**2,066.8872**	**2,066.8872**	**0.6685**		**2,083.5991**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9900e-003	0.1842	0.0532	5.0000e-004	0.0128	3.6000e-004	0.0132	3.6900e-003	3.4000e-004	4.0300e-003		52.9941	52.9941	3.3300e-003		53.0773
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		103.4570	103.4570	2.8500e-003		103.5282

Total	**0.0508**	**0.2136**	**0.3923**	**1.5400e-003**	**0.1246**	**1.2300e-003**	**0.1258**	**0.0333**	**1.1500e-003**	**0.0345**		**156.4510**	**156.4510**	**6.1800e-003**		**156.6055**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	1.7376	17.1903	15.8774	0.0213		0.8644	0.8644		0.7952	0.7952	0.0000	2,066.8872	2,066.8872	0.6685		2,083.5991
Total	**1.7376**	**17.1903**	**15.8774**	**0.0213**	**2.8011**	**0.8644**	**3.6655**	**1.4396**	**0.7952**	**2.2348**	**0.0000**	**2,066.8872**	**2,066.8872**	**0.6685**		**2,083.5991**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9900e-003	0.1842	0.0532	5.0000e-004	0.0120	3.6000e-004	0.0123	3.4900e-003	3.4000e-004	3.8300e-003		52.9941	52.9941	3.3300e-003		53.0773
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.0508**	**0.2136**	**0.3923**	**1.5400e-003**	**0.1150**	**1.2300e-003**	**0.1163**	**0.0310**	**1.1500e-003**	**0.0321**		**156.4510**	**156.4510**	**6.1800e-003**		**156.6055**

3.5 Site Preparation and Lighting Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607		2,587.9612	2,587.9612	0.8370		2,608.8862
Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**6.5523**	**1.0442**	**7.5966**	**3.3675**	**0.9607**	**4.3282**		**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9900e-003	0.2762	0.0797	7.4000e-004	0.0192	5.4000e-004	0.0197	5.5300e-003	5.1000e-004	6.0400e-003		79.4911	79.4911	5.0000e-003		79.6160
Worker	0.0761	0.0501	0.5766	1.7600e-003	0.1900	1.4900e-003	0.1915	0.0504	1.3700e-003	0.0518		175.8768	175.8768	4.8400e-003		175.9979
Total	**0.0851**	**0.3263**	**0.6563**	**2.5000e-003**	**0.2092**	**2.0300e-003**	**0.2113**	**0.0559**	**1.8800e-003**	**0.0578**		**255.3679**	**255.3679**	**9.8400e-003**		**255.6139**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607	0.0000	2,587.9612	2,587.9612	0.8370		2,608.8862

Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**2.8011**	**1.0442**	**3.8454**	**1.4396**	**0.9607**	**2.4003**	**0.0000**	**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9900e-003	0.2762	0.0797	7.4000e-004	0.0180	5.4000e-004	0.0185	5.2300e-003	5.1000e-004	5.7400e-003		79.4911	79.4911	5.0000e-003		79.6160
Worker	0.0761	0.0501	0.5766	1.7600e-003	0.1752	1.4900e-003	0.1766	0.0467	1.3700e-003	0.0481		175.8768	175.8768	4.8400e-003		175.9979
Total	**0.0851**	**0.3263**	**0.6563**	**2.5000e-003**	**0.1931**	**2.0300e-003**	**0.1952**	**0.0520**	**1.8800e-003**	**0.0539**		**255.3679**	**255.3679**	**9.8400e-003**		**255.6139**

3.6 Grading Import Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0206	0.0000	0.0206	3.1100e-003	0.0000	3.1100e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0206**	**0.0000**	**0.0206**	**3.1100e-003**	**0.0000**	**3.1100e-003**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3470	9.6176	2.7652	0.0345	0.8657	0.0347	0.9003	0.2372	0.0332	0.2704		3,745.4690	3,745.4690	0.2349		3,751.3425
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3470**	**9.6176**	**2.7652**	**0.0345**	**0.8657**	**0.0347**	**0.9003**	**0.2372**	**0.0332**	**0.2704**		**3,745.4690**	**3,745.4690**	**0.2349**		**3,751.3425**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7900e-003	0.0000	8.7900e-003	1.3300e-003	0.0000	1.3300e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**8.7900e-003**	**0.0000**	**8.7900e-003**	**1.3300e-003**	**0.0000**	**1.3300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3470	9.6176	2.7652	0.0345	0.8067	0.0347	0.8414	0.2228	0.0332	0.2559		3,745.4690	3,745.4690	0.2349		3,751.3425
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3470**	**9.6176**	**2.7652**	**0.0345**	**0.8067**	**0.0347**	**0.8414**	**0.2228**	**0.0332**	**0.2559**		**3,745.4690**	**3,745.4690**	**0.2349**		**3,751.3425**

3.7 Lighting Installation, Grading, and Trenching - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607		2,587.9612	2,587.9612	0.8370		2,608.8862
Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**6.5523**	**1.0442**	**7.5966**	**3.3675**	**0.9607**	**4.3282**		**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9900e-003	0.2762	0.0797	7.4000e-004	0.0192	5.4000e-004	0.0197	5.5300e-003	5.1000e-004	6.0400e-003		79.4911	79.4911	5.0000e-003		79.6160
Worker	0.0761	0.0501	0.5766	1.7600e-003	0.1900	1.4900e-003	0.1915	0.0504	1.3700e-003	0.0518		175.8768	175.8768	4.8400e-003		175.9979
Total	**0.0851**	**0.3263**	**0.6563**	**2.5000e-003**	**0.2092**	**2.0300e-003**	**0.2113**	**0.0559**	**1.8800e-003**	**0.0578**		**255.3679**	**255.3679**	**9.8400e-003**		**255.6139**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.0964	21.0518	18.1313	0.0267		1.0442	1.0442		0.9607	0.9607	0.0000	2,587.9612	2,587.9612	0.8370		2,608.8862
Total	**2.0964**	**21.0518**	**18.1313**	**0.0267**	**2.8011**	**1.0442**	**3.8454**	**1.4396**	**0.9607**	**2.4003**	**0.0000**	**2,587.9612**	**2,587.9612**	**0.8370**		**2,608.8862**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9900e-003	0.2762	0.0797	7.4000e-004	0.0180	5.4000e-004	0.0185	5.2300e-003	5.1000e-004	5.7400e-003		79.4911	79.4911	5.0000e-003		79.6160
Worker	0.0761	0.0501	0.5766	1.7600e-003	0.1752	1.4900e-003	0.1766	0.0467	1.3700e-003	0.0481		175.8768	175.8768	4.8400e-003		175.9979
Total	**0.0851**	**0.3263**	**0.6563**	**2.5000e-003**	**0.1931**	**2.0300e-003**	**0.1952**	**0.0520**	**1.8800e-003**	**0.0539**		**255.3679**	**255.3679**	**9.8400e-003**		**255.6139**

3.8 Lighting Installation, Grading, Trenching, and Ancillary

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000

Off-Road	2.1248	21.3155	18.4197	0.0271		1.0617	1.0617		0.9768	0.9768		2,624.9689	2,624.9689	0.8490		2,646.1931
Total	**2.1248**	**21.3155**	**18.4197**	**0.0271**	**6.5523**	**1.0617**	**7.6141**	**3.3675**	**0.9768**	**4.3443**		**2,624.9689**	**2,624.9689**	**0.8490**		**2,646.1931**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9900e-003	0.2762	0.0797	7.4000e-004	0.0192	5.4000e-004	0.0197	5.5300e-003	5.1000e-004	6.0400e-003		79.4911	79.4911	5.0000e-003		79.6160
Worker	0.0761	0.0501	0.5766	1.7600e-003	0.1900	1.4900e-003	0.1915	0.0504	1.3700e-003	0.0518		175.8768	175.8768	4.8400e-003		175.9979
Total	**0.0851**	**0.3263**	**0.6563**	**2.5000e-003**	**0.2092**	**2.0300e-003**	**0.2113**	**0.0559**	**1.8800e-003**	**0.0578**		**255.3679**	**255.3679**	**9.8400e-003**		**255.6139**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8011	0.0000	2.8011	1.4396	0.0000	1.4396			0.0000			0.0000
Off-Road	2.1248	21.3155	18.4197	0.0271		1.0617	1.0617		0.9768	0.9768	0.0000	2,624.9689	2,624.9689	0.8490		2,646.1931
Total	**2.1248**	**21.3155**	**18.4197**	**0.0271**	**2.8011**	**1.0617**	**3.8628**	**1.4396**	**0.9768**	**2.4164**	**0.0000**	**2,624.9689**	**2,624.9689**	**0.8490**		**2,646.1931**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9900e-003	0.2762	0.0797	7.4000e-004	0.0180	5.4000e-004	0.0185	5.2300e-003	5.1000e-004	5.7400e-003		79.4911	79.4911	5.0000e-003		79.6160
Worker	0.0761	0.0501	0.5766	1.7600e-003	0.1752	1.4900e-003	0.1766	0.0467	1.3700e-003	0.0481		175.8768	175.8768	4.8400e-003		175.9979
Total	**0.0851**	**0.3263**	**0.6563**	**2.5000e-003**	**0.1931**	**2.0300e-003**	**0.1952**	**0.0520**	**1.8800e-003**	**0.0539**		**255.3679**	**255.3679**	**9.8400e-003**		**255.6139**

3.9 Fencing/Concrete Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059		1,240.3824	1,240.3824	0.4012		1,250.4115
Paving	0.0127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6476**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**		**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Unmitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.0448**	**0.0295**	**0.3392**	**1.0400e-003**	**0.1118**	**8.7000e-004**	**0.1127**	**0.0296**	**8.1000e-004**	**0.0305**		**103.4570**	**103.4570**	**2.8500e-003**		**103.5282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059	0.0000	1,240.3824	1,240.3824	0.4012		1,250.4115
Paving	0.0127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6476**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**	**0.0000**	**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.0448**	**0.0295**	**0.3392**	**1.0400e-003**	**0.1030**	**8.7000e-004**	**0.1039**	**0.0275**	**8.1000e-004**	**0.0283**		**103.4570**	**103.4570**	**2.8500e-003**		**103.5282**

3.10 Lighting Installation and Ancillary Structure Building

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3873	4.1252	2.5423	5.7600e-003		0.1974	0.1974		0.1816	0.1816		558.0817	558.0817	0.1805		562.5941
Total	**0.3873**	**4.1252**	**2.5423**	**5.7600e-003**		**0.1974**	**0.1974**		**0.1816**	**0.1816**		**558.0817**	**558.0817**	**0.1805**		**562.5941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9900e-003	0.1842	0.0532	5.0000e-004	0.0128	3.6000e-004	0.0132	3.6900e-003	3.4000e-004	4.0300e-003		52.9941	52.9941	3.3300e-003		53.0773
Worker	0.0134	8.8400e-003	0.1018	3.1000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		31.0371	31.0371	8.5000e-004		31.0585
Total	**0.0194**	**0.1930**	**0.1549**	**8.1000e-004**	**0.0463**	**6.2000e-004**	**0.0470**	**0.0126**	**5.8000e-004**	**0.0132**		**84.0311**	**84.0311**	**4.1800e-003**		**84.1358**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3873	4.1252	2.5423	5.7600e-003		0.1974	0.1974		0.1816	0.1816	0.0000	558.0817	558.0817	0.1805		562.5940

Total	**0.3873**	**4.1252**	**2.5423**	**5.7600e-003**		**0.1974**	**0.1974**		**0.1816**	**0.1816**	**0.0000**	**558.0817**	**558.0817**	**0.1805**		**562.5940**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9900e-003	0.1842	0.0532	5.0000e-004	0.0120	3.6000e-004	0.0123	3.4900e-003	3.4000e-004	3.8300e-003		52.9941	52.9941	3.3300e-003		53.0773
Worker	0.0134	8.8400e-003	0.1018	3.1000e-004	0.0309	2.6000e-004	0.0312	8.2500e-003	2.4000e-004	8.4900e-003		31.0371	31.0371	8.5000e-004		31.0585
Total	**0.0194**	**0.1930**	**0.1549**	**8.1000e-004**	**0.0429**	**6.2000e-004**	**0.0435**	**0.0117**	**5.8000e-004**	**0.0123**		**84.0311**	**84.0311**	**4.1800e-003**		**84.1358**

3.11 Ancillary Structure Building Construction (Oct) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838		216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**		**216.3726**	**216.3726**	**0.0700**		**218.1221**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	6.4000e-003	1.8000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	4.4800e-003	2.9500e-003	0.0339	1.0000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.3457	10.3457	2.8000e-004		10.3528
Total	**7.4800e-003**	**0.0950**	**0.0605**	**3.5000e-004**	**0.0176**	**2.7000e-004**	**0.0179**	**4.8000e-003**	**2.5000e-004**	**5.0500e-003**		**36.8427**	**36.8427**	**1.9500e-003**		**36.8915**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838	0.0000	216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**	**0.0000**	**216.3726**	**216.3726**	**0.0700**		**218.1221**

Mitigated Construction Off-Site

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

Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	5.9900e-003	1.8000e-004	6.1700e-003	1.7400e-003	1.7000e-004	1.9100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	4.4800e-003	2.9500e-003	0.0339	1.0000e-004	0.0103	9.0000e-005	0.0104	2.7500e-003	8.0000e-005	2.8300e-003		10.3457	10.3457	2.8000e-004		10.3528
Total	**7.4800e-003**	**0.0950**	**0.0605**	**3.5000e-004**	**0.0163**	**2.7000e-004**	**0.0166**	**4.4900e-003**	**2.5000e-004**	**4.7400e-003**		**36.8427**	**36.8427**	**1.9500e-003**		**36.8915**

3.12 Ancillary Structure Building Construction and

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2163	10.5988	10.4959	0.0206		0.4915	0.4915		0.4691	0.4691		1,941.8539	1,941.8539	0.4139		1,952.2003
Total	**1.2163**	**10.5988**	**10.4959**	**0.0206**		**0.4915**	**0.4915**		**0.4691**	**0.4691**		**1,941.8539**	**1,941.8539**	**0.4139**		**1,952.2003**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	6.4000e-003	1.8000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	0.0717	0.0471	0.5427	1.6600e-003	0.1788	1.4000e-003	0.1802	0.0474	1.2900e-003	0.0487		165.5311	165.5311	4.5600e-003		165.6451
Total	**0.0747**	**0.1392**	**0.5693**	**1.9100e-003**	**0.1852**	**1.5800e-003**	**0.1868**	**0.0493**	**1.4600e-003**	**0.0507**		**192.0281**	**192.0281**	**6.2300e-003**		**192.1837**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2163	10.5988	10.4959	0.0206		0.4915	0.4915		0.4691	0.4691	0.0000	1,941.8539	1,941.8539	0.4139		1,952.2003
Total	**1.2163**	**10.5988**	**10.4959**	**0.0206**		**0.4915**	**0.4915**		**0.4691**	**0.4691**	**0.0000**	**1,941.8539**	**1,941.8539**	**0.4139**		**1,952.2003**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	5.9900e-003	1.8000e-004	6.1700e-003	1.7400e-003	1.7000e-004	1.9100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	0.0717	0.0471	0.5427	1.6600e-003	0.1649	1.4000e-003	0.1663	0.0440	1.2900e-003	0.0453		165.5311	165.5311	4.5600e-003		165.6451
Total	**0.0747**	**0.1392**	**0.5693**	**1.9100e-003**	**0.1708**	**1.5800e-003**	**0.1724**	**0.0457**	**1.4600e-003**	**0.0472**		**192.0281**	**192.0281**	**6.2300e-003**		**192.1837**

3.13 Asphalt Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059		1,240.3824	1,240.3824	0.4012		1,250.4115

Paving	0.0182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6532**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**		**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.0448**	**0.0295**	**0.3392**	**1.0400e-003**	**0.1118**	**8.7000e-004**	**0.1127**	**0.0296**	**8.1000e-004**	**0.0305**		**103.4570**	**103.4570**	**2.8500e-003**		**103.5282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6349	6.4108	8.4529	0.0128		0.3326	0.3326		0.3059	0.3059	0.0000	1,240.3824	1,240.3824	0.4012		1,250.4115
Paving	0.0182					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6532**	**6.4108**	**8.4529**	**0.0128**		**0.3326**	**0.3326**		**0.3059**	**0.3059**	**0.0000**	**1,240.3824**	**1,240.3824**	**0.4012**		**1,250.4115**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.0448**	**0.0295**	**0.3392**	**1.0400e-003**	**0.1030**	**8.7000e-004**	**0.1039**	**0.0275**	**8.1000e-004**	**0.0283**		**103.4570**	**103.4570**	**2.8500e-003**		**103.5282**

3.14 Ancillary Structure Building Construction (Nov) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838		216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**		**216.3726**	**216.3726**	**0.0700**		**218.1221**

Unmitigated Construction Off-Site

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

Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	6.4000e-003	1.8000e-004	6.5800e-003	1.8400e-003	1.7000e-004	2.0100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	4.4800e-003	2.9500e-003	0.0339	1.0000e-004	0.0112	9.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.3457	10.3457	2.8000e-004		10.3528
Total	**7.4800e-003**	**0.0950**	**0.0605**	**3.5000e-004**	**0.0176**	**2.7000e-004**	**0.0179**	**4.8000e-003**	**2.5000e-004**	**5.0500e-003**		**36.8427**	**36.8427**	**1.9500e-003**		**36.8915**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1592	1.5666	1.3852	2.2300e-003		0.0911	0.0911		0.0838	0.0838	0.0000	216.3726	216.3726	0.0700		218.1221
Total	**0.1592**	**1.5666**	**1.3852**	**2.2300e-003**		**0.0911**	**0.0911**		**0.0838**	**0.0838**	**0.0000**	**216.3726**	**216.3726**	**0.0700**		**218.1221**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0000e-003	0.0921	0.0266	2.5000e-004	5.9900e-003	1.8000e-004	6.1700e-003	1.7400e-003	1.7000e-004	1.9100e-003		26.4970	26.4970	1.6700e-003		26.5387
Worker	4.4800e-003	2.9500e-003	0.0339	1.0000e-004	0.0103	9.0000e-005	0.0104	2.7500e-003	8.0000e-005	2.8300e-003		10.3457	10.3457	2.8000e-004		10.3528
Total	**7.4800e-003**	**0.0950**	**0.0605**	**3.5000e-004**	**0.0163**	**2.7000e-004**	**0.0166**	**4.4900e-003**	**2.5000e-004**	**4.7400e-003**		**36.8427**	**36.8427**	**1.9500e-003**		**36.8915**

3.15 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**6.8759**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0985	0.0648	0.7462	2.2800e-003	0.2459	1.9200e-003	0.2478	0.0652	1.7700e-003	0.0670		227.6053	227.6053	6.2700e-003		227.7620
Total	**0.0985**	**0.0648**	**0.7462**	**2.2800e-003**	**0.2459**	**1.9200e-003**	**0.2478**	**0.0652**	**1.7700e-003**	**0.0670**		**227.6053**	**227.6053**	**6.2700e-003**		**227.7620**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**6.8759**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0985	0.0648	0.7462	2.2800e-003	0.2267	1.9200e-003	0.2286	0.0605	1.7700e-003	0.0623		227.6053	227.6053	6.2700e-003		227.7620
Total	**0.0985**	**0.0648**	**0.7462**	**2.2800e-003**	**0.2267**	**1.9200e-003**	**0.2286**	**0.0605**	**1.7700e-003**	**0.0623**		**227.6053**	**227.6053**	**6.2700e-003**		**227.7620**

3.16 Synthetic Turf Surfacing - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7940	7.3726	8.7799	0.0134		0.4277	0.4277		0.4047	0.4047		1,282.5927	1,282.5927	0.2511		1,288.8702
Total	**0.7940**	**7.3726**	**8.7799**	**0.0134**		**0.4277**	**0.4277**		**0.4047**	**0.4047**		**1,282.5927**	**1,282.5927**	**0.2511**		**1,288.8702**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.0448**	**0.0295**	**0.3392**	**1.0400e-003**	**0.1118**	**8.7000e-004**	**0.1127**	**0.0296**	**8.1000e-004**	**0.0305**		**103.4570**	**103.4570**	**2.8500e-003**		**103.5282**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7940	7.3726	8.7799	0.0134		0.4277	0.4277		0.4047	0.4047	0.0000	1,282.5927	1,282.5927	0.2511		1,288.8702
Total	**0.7940**	**7.3726**	**8.7799**	**0.0134**		**0.4277**	**0.4277**		**0.4047**	**0.4047**	**0.0000**	**1,282.5927**	**1,282.5927**	**0.2511**		**1,288.8702**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0448	0.0295	0.3392	1.0400e-003	0.1030	8.7000e-004	0.1039	0.0275	8.1000e-004	0.0283		103.4570	103.4570	2.8500e-003		103.5282
Total	**0.0448**	**0.0295**	**0.3392**	**1.0400e-003**	**0.1030**	**8.7000e-004**	**0.1039**	**0.0275**	**8.1000e-004**	**0.0283**		**103.4570**	**103.4570**	**2.8500e-003**		**103.5282**

Wedgeworth Elementary School Field Replacement Project (Kwis)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.07	1000sqft	0.16	7,070.00	0
Other Non-Asphalt Surfaces	253.47	1000sqft	5.82	253,470.00	0
City Park	0.02	Acre	0.02	819.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	531.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2019 SCE Sustainability Report

Land Use - based on info provided by district

Construction Phase - overlapping construction phases based on info from District

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment -

Off-road Equipment - based on info from District

Off-road Equipment - no additional equipment required for Demo Haul

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - no additional equipment required for Grading Soil Haul

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from district

Off-road Equipment - based on info from District

Off-road Equipment - based on info from District

Off-road Equipment - using sweeper as proxy for Laymoor and loader as proxy for spreader. Assumes that turf spreader would not require fuel for operation

Trips and VMT - assumes 2 vt/water truck/day. assumes there are additional 2 wt and 1 vt per day for lighting installation (see assump file for calculations)

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Construction Off-road Equipment Mitigation - SCAQMD Rules 403 and 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	6.00
tblConstructionPhase	NumDays	230.00	11.00
tblConstructionPhase	NumDays	230.00	11.00
tblConstructionPhase	NumDays	230.00	22.00
tblConstructionPhase	NumDays	230.00	12.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	20.00	23.00

tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	10.00	22.00
tblGrading	MaterialImported	0.00	6,000.00
tblLandUse	LandUseSquareFeet	871.20	819.80
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	130.00	125.00
tblOffRoadEquipment	HorsePower	130.00	125.00
tblOffRoadEquipment	HorsePower	132.00	130.00
tblOffRoadEquipment	HorsePower	132.00	130.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	89.00	80.00
tblOffRoadEquipment	HorsePower	84.00	80.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	187.00	174.00

tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	203.00	199.00
tblOffRoadEquipment	HorsePower	64.00	80.00
tblOffRoadEquipment	HorsePower	97.00	80.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	531.44
tblTripsAndVMT	HaulingTripLength	20.00	60.00
tblTripsAndVMT	HaulingTripLength	20.00	60.00
tblTripsAndVMT	HaulingTripNumber	6.00	10.00
tblTripsAndVMT	HaulingTripNumber	750.00	545.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
tblTripsAndVMT	VendorTripNumber	43.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	43.00	2.00
tblTripsAndVMT	WorkerTripNumber	110.00	1.00
tblTripsAndVMT	WorkerTripNumber	110.00	16.00
tblTripsAndVMT	WorkerTripNumber	110.00	1.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	15.00	17.00
tblTripsAndVMT	WorkerTripNumber	110.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1319	1.1804	1.0516	2.1900e-003	0.2436	0.0511	0.2947	0.1184	0.0472	0.1656	0.0000	199.0833	199.0833	0.0436	0.0000	200.1732
Maximum	**0.1319**	**1.1804**	**1.0516**	**2.1900e-003**	**0.2436**	**0.0511**	**0.2947**	**0.1184**	**0.0472**	**0.1656**	**0.0000**	**199.0833**	**199.0833**	**0.0436**	**0.0000**	**200.1732**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1318	1.1804	1.0516	2.1900e-003	0.1174	0.0511	0.1685	0.0543	0.0472	0.1015	0.0000	199.0832	199.0832	0.0436	0.0000	200.173
Maximum	**0.1318**	**1.1804**	**1.0516**	**2.1900e-003**	**0.1174**	**0.0511**	**0.1685**	**0.0543**	**0.0472**	**0.1015**	**0.0000**	**199.0832**	**199.0832**	**0.0436**	**0.0000**	**200.1730**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.01**	**0.00**	**0.00**	**0.00**	**51.82**	**0.00**	**42.84**	**54.18**	**0.00**	**38.74**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-29-2022**	**9-28-2022**	1.0786	1.0786
2	**9-29-2022**	**9-30-2022**	0.0085	0.0085
		Highest	1.0786	1.0786

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt Demolition Debris Haul	Demolition	6/29/2022	7/5/2022	5	5	b
2	Asphalt Demolition and Site Preparation	Site Preparation	6/29/2022	7/5/2022	5	5	a
3	Site Preparation	Site Preparation	7/6/2022	7/13/2022	5	6	c
4	Site Preparation and Lighting Installation	Site Preparation	7/14/2022	8/12/2022	5	22	d
5	Grading Import Haul	Grading	8/15/2022	9/28/2022	5	33	e
6	Lighting Installation, Grading, and Trenching	Grading	8/15/2022	9/14/2022	5	23	f
7	Lighting Installation, Grading, Trenching, and Ancillary	Grading	9/15/2022	9/28/2022	5	10	h
8	Fencing/Concrete Paving	Paving	9/15/2022	10/31/2022	5	33	g
9	Lighting Installation and Ancillary Structure Building Construction	Building Construction	9/29/2022	10/16/2022	5	12	i
10	Ancillary Structure Building Construction (Oct)	Building Construction	10/17/2022	10/31/2022	5	11	j
11	Ancillary Structure Building Construction and	Building Construction	11/1/2022	11/15/2022	5	11	k
12	Asphalt Paving	Paving	11/15/2022	12/15/2022	5	23	l
13	Ancillary Structure Building Construction (Nov)	Building Construction	11/16/2022	12/15/2022	5	22	m
14	Architectural Coating	Architectural Coating	12/1/2022	12/8/2022	5	6	n
15	Synthetic Turf Surfacing	Trenching	12/20/2022	12/27/2022	5	6	o

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 0

Acres of Paving: 5.98

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,230; Non-Residential Outdoor: 410; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt Demolition and Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt Demolition and Site Preparation	Graders	1	8.00	174	0.41
Asphalt Demolition and Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Asphalt Demolition and Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demolition Debris Haul	Excavators	0	8.00	158	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation and Lighting Installation	Cranes	1	6.00	226	0.29
Site Preparation and Lighting Installation	Forklifts	1	6.00	89	0.20
Site Preparation and Lighting Installation	Graders	1	8.00	174	0.41
Site Preparation and Lighting Installation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation and Lighting Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading Import Haul	Excavators	0	8.00	158	0.38
Grading Import Haul	Graders	0	8.00	187	0.41
Grading Import Haul	Rubber Tired Dozers	0	8.00	247	0.40
Grading Import Haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Lighting Installation, Grading, and Trenching	Cranes	1	6.00	226	0.29
Lighting Installation, Grading, and Trenching	Excavators	0	8.00	158	0.38
Lighting Installation, Grading, and Trenching	Forklifts	1	6.00	89	0.20
Lighting Installation, Grading, and Trenching	Graders	1	8.00	174	0.41

Lighting Installation, Grading, and Trenching	Rubber Tired Dozers	1	8.00	255	0.40
Lighting Installation, Grading, and Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Fencing/Concrete Paving	Pavers	1	6.00	125	0.42
Fencing/Concrete Paving	Paving Equipment	1	8.00	130	0.36
Fencing/Concrete Paving	Rollers	1	7.00	80	0.38
Fencing/Concrete Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Lighting Installation, Grading, Trenching, and Ancillary Structure	Cranes	1	6.00	226	0.29
Lighting Installation, Grading, Trenching, and Ancillary Structure	Excavators	0	8.00	158	0.38
Lighting Installation, Grading, Trenching, and Ancillary Structure	Forklifts	1	8.00	89	0.20
Lighting Installation, Grading, Trenching, and Ancillary Structure	Graders	1	8.00	174	0.41
Lighting Installation, Grading, Trenching, and Ancillary Structure	Rubber Tired Dozers	1	8.00	255	0.40
Lighting Installation, Grading, Trenching, and Ancillary Structure	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Lighting Installation and Ancillary Structure Building Construction	Cranes	1	6.00	226	0.29
Lighting Installation and Ancillary Structure Building Construction	Forklifts	1	8.00	89	0.20
Lighting Installation and Ancillary Structure Building Construction	Generator Sets	0	8.00	84	0.74
Lighting Installation and Ancillary Structure Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Lighting Installation and Ancillary Structure Building Construction	Welders	0	8.00	46	0.45
Ancillary Structure Building Construction (Oct)	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction (Oct)	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction (Oct)	Generator Sets	0	8.00	84	0.74
Ancillary Structure Building Construction (Oct)	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Ancillary Structure Building Construction (Oct)	Welders	0	8.00	46	0.45
Ancillary Structure Building Construction and	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction and	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction and	Generator Sets	1	8.00	84	0.74
Ancillary Structure Building Construction and	Rubber Tired Loaders	1	8.00	199	0.36
Ancillary Structure Building Construction and	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Ancillary Structure Building Construction and	Welders	1	8.00	46	0.45
Asphalt Paving	Pavers	1	6.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36

Asphalt Paving	Rollers	1	7.00	80	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Ancillary Structure Building Construction (Nov)	Cranes	1	1.00	226	0.29
Ancillary Structure Building Construction (Nov)	Forklifts	1	8.00	89	0.20
Ancillary Structure Building Construction (Nov)	Generator Sets	0	8.00	84	0.74
Ancillary Structure Building Construction (Nov)	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Ancillary Structure Building Construction (Nov)	Welders	0	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Synthetic Turf Surfacing	Forklifts	1	8.00	80	0.20
Synthetic Turf Surfacing	Generator Sets	1	8.00	80	0.74
Synthetic Turf Surfacing	Sweepers/Scrubbers	1	8.00	80	0.46
Synthetic Turf Surfacing	Tractors/Loaders/Backhoes	1	8.00	80	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Asphalt Demolition and Site Preparation	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition Debris Haul	0	0.00	0.00	10.00	14.70	6.90	60.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Lighting Installation	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading Import Haul	0	0.00	0.00	545.00	14.70	6.90	60.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation, Grading, and Fencing/Concrete Paving	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation, Grading, Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Installation and Ancillary Structure	6	17.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	2	1.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	6	16.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Ancillary Structure Building Construction	2	1.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

Synthetic Turf Surfacing		4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix		HDT_Mix		HHDT			

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Asphalt Demolition Debris Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.4000e-004	0.0000	6.4000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**6.4000e-004**	**0.0000**	**6.4000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	2.9700e-003	8.3000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0326	1.0326	6.0000e-005	0.0000	1.0342
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-004**	**2.9700e-003**	**8.3000e-004**	**1.0000e-005**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**1.0326**	**1.0326**	**6.0000e-005**	**0.0000**	**1.0342**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	2.9700e-003	8.3000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	1.0326	1.0326	6.0000e-005	0.0000	1.0342
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-004**	**2.9700e-003**	**8.3000e-004**	**1.0000e-005**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**1.0326**	**1.0326**	**6.0000e-005**	**0.0000**	**1.0342**

3.3 Asphalt Demolition and Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0164	0.0000	0.0164	8.4200e-003	0.0000	8.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6500e-003	0.0542	0.0545	8.0000e-005		2.7600e-003	2.7600e-003		2.5700e-003	2.5700e-003	0.0000	6.7150	6.7150	1.8100e-003	0.0000	6.7602
Total	**5.6500e-003**	**0.0542**	**0.0545**	**8.0000e-005**	**0.0164**	**2.7600e-003**	**0.0191**	**8.4200e-003**	**2.5700e-003**	**0.0110**	**0.0000**	**6.7150**	**6.7150**	**1.8100e-003**	**0.0000**	**6.7602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.7000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1222	0.1222	1.0000e-005	0.0000	0.1224
Worker	1.5000e-004	1.1000e-004	1.3100e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3578	0.3578	1.0000e-005	0.0000	0.3581
Total	**1.6000e-004**	**5.8000e-004**	**1.4400e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4800**	**0.4800**	**2.0000e-005**	**0.0000**	**0.4804**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					7.0000e-003	0.0000	7.0000e-003	3.6000e-003	0.0000	3.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6500e-003	0.0542	0.0545	8.0000e-005		2.7600e-003	2.7600e-003		2.5700e-003	2.5700e-003	0.0000	6.7150	6.7150	1.8100e-003	0.0000	6.7602
Total	**5.6500e-003**	**0.0542**	**0.0545**	**8.0000e-005**	**7.0000e-003**	**2.7600e-003**	**9.7600e-003**	**3.6000e-003**	**2.5700e-003**	**6.1700e-003**	**0.0000**	**6.7150**	**6.7150**	**1.8100e-003**	**0.0000**	**6.7602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.7000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1222	0.1222	1.0000e-005	0.0000	0.1224
Worker	1.5000e-004	1.1000e-004	1.3100e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3578	0.3578	1.0000e-005	0.0000	0.3581
Total	**1.6000e-004**	**5.8000e-004**	**1.4400e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4800**	**0.4800**	**2.0000e-005**	**0.0000**	**0.4804**

3.4 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2100e-003	0.0516	0.0476	6.0000e-005		2.5900e-003	2.5900e-003		2.3900e-003	2.3900e-003	0.0000	5.6252	5.6252	1.8200e-003	0.0000	5.6706

Total	**5.2100e-003**	**0.0516**	**0.0476**	**6.0000e-005**	**0.0197**	**2.5900e-003**	**0.0223**	**0.0101**	**2.3900e-003**	**0.0125**	**0.0000**	**5.6252**	**5.6252**	**1.8200e-003**	**0.0000**	**5.6706**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.6000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1466	0.1466	1.0000e-005	0.0000	0.1468
Worker	1.2000e-004	9.0000e-005	1.0500e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2863	0.2863	1.0000e-005	0.0000	0.2864
Total	**1.4000e-004**	**6.5000e-004**	**1.2000e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.4329**	**0.4329**	**2.0000e-005**	**0.0000**	**0.4333**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.4000e-003	0.0000	8.4000e-003	4.3200e-003	0.0000	4.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2100e-003	0.0516	0.0476	6.0000e-005		2.5900e-003	2.5900e-003		2.3900e-003	2.3900e-003	0.0000	5.6251	5.6251	1.8200e-003	0.0000	5.6706
Total	**5.2100e-003**	**0.0516**	**0.0476**	**6.0000e-005**	**8.4000e-003**	**2.5900e-003**	**0.0110**	**4.3200e-003**	**2.3900e-003**	**6.7100e-003**	**0.0000**	**5.6251**	**5.6251**	**1.8200e-003**	**0.0000**	**5.6706**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.6000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1466	0.1466	1.0000e-005	0.0000	0.1468
Worker	1.2000e-004	9.0000e-005	1.0500e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2863	0.2863	1.0000e-005	0.0000	0.2864
Total	**1.4000e-004**	**6.5000e-004**	**1.2000e-003**	**0.0000**	**3.4000e-004**	**0.0000**	**3.5000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.4329**	**0.4329**	**2.0000e-005**	**0.0000**	**0.4333**

3.5 Site Preparation and Lighting Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0721	0.0000	0.0721	0.0370	0.0000	0.0370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0231	0.2316	0.1994	2.9000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	25.8254	25.8254	8.3500e-003	0.0000	26.0342
Total	**0.0231**	**0.2316**	**0.1994**	**2.9000e-004**	**0.0721**	**0.0115**	**0.0836**	**0.0370**	**0.0106**	**0.0476**	**0.0000**	**25.8254**	**25.8254**	**8.3500e-003**	**0.0000**	**26.0342**

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.0900e-003	8.4000e-004	1.0000e-005	2.1000e-004	1.0000e-005	2.1000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8063	0.8063	5.0000e-005	0.0000	0.8075
Worker	7.5000e-004	5.7000e-004	6.5200e-003	2.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.4000e-004	2.0000e-005	5.6000e-004	0.0000	1.7843	1.7843	5.0000e-005	0.0000	1.7855
Total	**8.5000e-004**	**3.6600e-003**	**7.3600e-003**	**3.0000e-005**	**2.2600e-003**	**3.0000e-005**	**2.2800e-003**	**6.0000e-004**	**3.0000e-005**	**6.3000e-004**	**0.0000**	**2.5906**	**2.5906**	**1.0000e-004**	**0.0000**	**2.5930**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0308	0.0000	0.0308	0.0158	0.0000	0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0231	0.2316	0.1994	2.9000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	25.8253	25.8253	8.3500e-003	0.0000	26.0341
Total	**0.0231**	**0.2316**	**0.1994**	**2.9000e-004**	**0.0308**	**0.0115**	**0.0423**	**0.0158**	**0.0106**	**0.0264**	**0.0000**	**25.8253**	**25.8253**	**8.3500e-003**	**0.0000**	**26.0341**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.0900e-003	8.4000e-004	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	6.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8063	0.8063	5.0000e-005	0.0000	0.8075
Worker	7.5000e-004	5.7000e-004	6.5200e-003	2.0000e-005	1.8900e-003	2.0000e-005	1.9100e-003	5.1000e-004	2.0000e-005	5.2000e-004	0.0000	1.7843	1.7843	5.0000e-005	0.0000	1.7855

Total	**8.5000e-004**	**3.6600e-003**	**7.3600e-003**	**3.0000e-005**	**2.0800e-003**	**3.0000e-005**	**2.1100e-003**	**5.7000e-004**	**3.0000e-005**	**5.8000e-004**	**0.0000**	**2.5906**	**2.5906**	**1.0000e-004**	**0.0000**	**2.5930**

3.6 Grading Import Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4000e-004	0.0000	3.4000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.4000e-004**	**0.0000**	**3.4000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-003	0.1616	0.0451	5.7000e-004	0.0140	5.7000e-004	0.0146	3.8500e-003	5.5000e-004	4.4000e-003	0.0000	56.2738	56.2738	3.4900e-003	0.0000	56.3611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.7000e-003**	**0.1616**	**0.0451**	**5.7000e-004**	**0.0140**	**5.7000e-004**	**0.0146**	**3.8500e-003**	**5.5000e-004**	**4.4000e-003**	**0.0000**	**56.2738**	**56.2738**	**3.4900e-003**	**0.0000**	**56.3611**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5000e-004	0.0000	1.5000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-003	0.1616	0.0451	5.7000e-004	0.0131	5.7000e-004	0.0137	3.6200e-003	5.5000e-004	4.1700e-003	0.0000	56.2738	56.2738	3.4900e-003	0.0000	56.3611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.7000e-003**	**0.1616**	**0.0451**	**5.7000e-004**	**0.0131**	**5.7000e-004**	**0.0137**	**3.6200e-003**	**5.5000e-004**	**4.1700e-003**	**0.0000**	**56.2738**	**56.2738**	**3.4900e-003**	**0.0000**	**56.3611**

3.7 Lighting Installation, Grading, and Trenching - 2022

Unmitigated Construction On-Site

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

Fugitive Dust					0.0754	0.0000	0.0754	0.0387	0.0000	0.0387	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0241	0.2421	0.2085	3.1000e-004		0.0120	0.0120		0.0111	0.0111	0.0000	26.9992	26.9992	8.7300e-003	0.0000	27.2175
Total	**0.0241**	**0.2421**	**0.2085**	**3.1000e-004**	**0.0754**	**0.0120**	**0.0874**	**0.0387**	**0.0111**	**0.0498**	**0.0000**	**26.9992**	**26.9992**	**8.7300e-003**	**0.0000**	**27.2175**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.2300e-003	8.7000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.2000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8429	0.8429	5.0000e-005	0.0000	0.8442
Worker	7.9000e-004	5.9000e-004	6.8100e-003	2.0000e-005	2.1400e-003	2.0000e-005	2.1600e-003	5.7000e-004	2.0000e-005	5.8000e-004	0.0000	1.8654	1.8654	5.0000e-005	0.0000	1.8667
Total	**8.9000e-004**	**3.8200e-003**	**7.6800e-003**	**3.0000e-005**	**2.3600e-003**	**3.0000e-005**	**2.3800e-003**	**6.3000e-004**	**3.0000e-005**	**6.5000e-004**	**0.0000**	**2.7083**	**2.7083**	**1.0000e-004**	**0.0000**	**2.7109**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0322	0.0000	0.0322	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0241	0.2421	0.2085	3.1000e-004		0.0120	0.0120		0.0111	0.0111	0.0000	26.9992	26.9992	8.7300e-003	0.0000	27.2175
Total	**0.0241**	**0.2421**	**0.2085**	**3.1000e-004**	**0.0322**	**0.0120**	**0.0442**	**0.0166**	**0.0111**	**0.0276**	**0.0000**	**26.9992**	**26.9992**	**8.7300e-003**	**0.0000**	**27.2175**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.2300e-003	8.7000e-004	1.0000e-005	2.0000e-004	1.0000e-005	2.1000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8429	0.8429	5.0000e-005	0.0000	0.8442
Worker	7.9000e-004	5.9000e-004	6.8100e-003	2.0000e-005	1.9800e-003	2.0000e-005	1.9900e-003	5.3000e-004	2.0000e-005	5.4000e-004	0.0000	1.8654	1.8654	5.0000e-005	0.0000	1.8667
Total	**8.9000e-004**	**3.8200e-003**	**7.6800e-003**	**3.0000e-005**	**2.1800e-003**	**3.0000e-005**	**2.2000e-003**	**5.9000e-004**	**3.0000e-005**	**6.1000e-004**	**0.0000**	**2.7083**	**2.7083**	**1.0000e-004**	**0.0000**	**2.7109**

3.8 Lighting Installation, Grading, Trenching, and Ancillary

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0328	0.0000	0.0328	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.1066	0.0921	1.4000e-004		5.3100e-003	5.3100e-003		4.8800e-003	4.8800e-003	0.0000	11.9067	11.9067	3.8500e-003	0.0000	12.0029
Total	**0.0106**	**0.1066**	**0.0921**	**1.4000e-004**	**0.0328**	**5.3100e-003**	**0.0381**	**0.0168**	**4.8800e-003**	**0.0217**	**0.0000**	**11.9067**	**11.9067**	**3.8500e-003**	**0.0000**	**12.0029**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.4100e-003	3.8000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3665	0.3665	2.0000e-005	0.0000	0.3670
Worker	3.4000e-004	2.6000e-004	2.9600e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.5000e-004	0.0000	0.8110	0.8110	2.0000e-005	0.0000	0.8116
Total	**3.8000e-004**	**1.6700e-003**	**3.3400e-003**	**1.0000e-005**	**1.0200e-003**	**1.0000e-005**	**1.0400e-003**	**2.8000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**1.1775**	**1.1775**	**4.0000e-005**	**0.0000**	**1.1786**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0140	0.0000	0.0140	7.2000e-003	0.0000	7.2000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.1066	0.0921	1.4000e-004		5.3100e-003	5.3100e-003		4.8800e-003	4.8800e-003	0.0000	11.9066	11.9066	3.8500e-003	0.0000	12.0029
Total	**0.0106**	**0.1066**	**0.0921**	**1.4000e-004**	**0.0140**	**5.3100e-003**	**0.0193**	**7.2000e-003**	**4.8800e-003**	**0.0121**	**0.0000**	**11.9066**	**11.9066**	**3.8500e-003**	**0.0000**	**12.0029**

Mitigated Construction Off-Site

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

Vendor	4.0000e-005	1.4100e-003	3.8000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3665	0.3665	2.0000e-005	0.0000	0.3670
Worker	3.4000e-004	2.6000e-004	2.9600e-003	1.0000e-005	8.6000e-004	1.0000e-005	8.7000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.8110	0.8110	2.0000e-005	0.0000	0.8116
Total	**3.8000e-004**	**1.6700e-003**	**3.3400e-003**	**1.0000e-005**	**9.5000e-004**	**1.0000e-005**	**9.6000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.1775**	**1.1775**	**4.0000e-005**	**0.0000**	**1.1786**

3.9 Fencing/Concrete Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.1058	0.1395	2.1000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	18.5667	18.5667	6.0000e-003	0.0000	18.7169
Paving	2.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0107**	**0.1058**	**0.1395**	**2.1000e-004**		**5.4900e-003**	**5.4900e-003**		**5.0500e-003**	**5.0500e-003**	**0.0000**	**18.5667**	**18.5667**	**6.0000e-003**	**0.0000**	**18.7169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.7500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5744	1.5744	4.0000e-005	0.0000	1.5754
Total	**6.7000e-004**	**5.0000e-004**	**5.7500e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.5744**	**1.5744**	**4.0000e-005**	**0.0000**	**1.5754**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.1058	0.1395	2.1000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	18.5667	18.5667	6.0000e-003	0.0000	18.7168
Paving	2.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0107**	**0.1058**	**0.1395**	**2.1000e-004**		**5.4900e-003**	**5.4900e-003**		**5.0500e-003**	**5.0500e-003**	**0.0000**	**18.5667**	**18.5667**	**6.0000e-003**	**0.0000**	**18.7168**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.7500e-003	2.0000e-005	1.6700e-003	1.0000e-005	1.6800e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5744	1.5744	4.0000e-005	0.0000	1.5754
Total	**6.7000e-004**	**5.0000e-004**	**5.7500e-003**	**2.0000e-005**	**1.6700e-003**	**1.0000e-005**	**1.6800e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.5744**	**1.5744**	**4.0000e-005**	**0.0000**	**1.5754**

3.10 Lighting Installation and Ancillary Structure Building

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3200e-003	0.0248	0.0153	3.0000e-005		1.1800e-003	1.1800e-003		1.0900e-003	1.0900e-003	0.0000	3.0377	3.0377	9.8000e-004	0.0000	3.0623
Total	**2.3200e-003**	**0.0248**	**0.0153**	**3.0000e-005**		**1.1800e-003**	**1.1800e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**3.0377**	**3.0377**	**9.8000e-004**	**0.0000**	**3.0623**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.1300e-003	3.0000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2932	0.2932	2.0000e-005	0.0000	0.2936
Worker	7.0000e-005	5.0000e-005	6.3000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1718	0.1718	0.0000	0.0000	0.1719
Total	**1.0000e-004**	**1.1800e-003**	**9.3000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.4650**	**0.4650**	**2.0000e-005**	**0.0000**	**0.4655**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3200e-003	0.0248	0.0153	3.0000e-005		1.1800e-003	1.1800e-003		1.0900e-003	1.0900e-003	0.0000	3.0377	3.0377	9.8000e-004	0.0000	3.0623

Total	**2.3200e-003**	**0.0248**	**0.0153**	**3.0000e-005**		**1.1800e-003**	**1.1800e-003**		**1.0900e-003**	**1.0900e-003**	**0.0000**	**3.0377**	**3.0377**	**9.8000e-004**	**0.0000**	**3.0623**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.1300e-003	3.0000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2932	0.2932	2.0000e-005	0.0000	0.2936
Worker	7.0000e-005	5.0000e-005	6.3000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1718	0.1718	0.0000	0.0000	0.1719
Total	**1.0000e-004**	**1.1800e-003**	**9.3000e-004**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.4650**	**0.4650**	**2.0000e-005**	**0.0000**	**0.4655**

3.11 Ancillary Structure Building Construction (Oct) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8000e-004	8.6200e-003	7.6200e-003	1.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	1.0796	1.0796	3.5000e-004	0.0000	1.0883
Total	**8.8000e-004**	**8.6200e-003**	**7.6200e-003**	**1.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.0796**	**1.0796**	**3.5000e-004**	**0.0000**	**1.0883**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.2000e-004	1.4000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1344	0.1344	1.0000e-005	0.0000	0.1346
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0525	0.0525	0.0000	0.0000	0.0525
Total	**4.0000e-005**	**5.4000e-004**	**3.3000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1869**	**0.1869**	**1.0000e-005**	**0.0000**	**0.1871**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8000e-004	8.6200e-003	7.6200e-003	1.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	1.0796	1.0796	3.5000e-004	0.0000	1.0883
Total	**8.8000e-004**	**8.6200e-003**	**7.6200e-003**	**1.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.0796**	**1.0796**	**3.5000e-004**	**0.0000**	**1.0883**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.2000e-004	1.4000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1344	0.1344	1.0000e-005	0.0000	0.1346
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0525	0.0525	0.0000	0.0000	0.0525
Total	**4.0000e-005**	**5.4000e-004**	**3.3000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1869**	**0.1869**	**1.0000e-005**	**0.0000**	**0.1871**

3.12 Ancillary Structure Building Construction and

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.6900e-003	0.0583	0.0577	1.1000e-004		2.7000e-003	2.7000e-003		2.5800e-003	2.5800e-003	0.0000	9.6889	9.6889	2.0600e-003	0.0000	9.7405
Total	**6.6900e-003**	**0.0583**	**0.0577**	**1.1000e-004**		**2.7000e-003**	**2.7000e-003**		**2.5800e-003**	**2.5800e-003**	**0.0000**	**9.6889**	**9.6889**	**2.0600e-003**	**0.0000**	**9.7405**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.2000e-004	1.4000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1344	0.1344	1.0000e-005	0.0000	0.1346

Worker	3.6000e-004	2.7000e-004	3.0700e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.6000e-004	1.0000e-005	2.6000e-004	0.0000	0.8397	0.8397	2.0000e-005	0.0000	0.8402
Total	**3.8000e-004**	**7.9000e-004**	**3.2100e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0100e-003**	**2.7000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.9740**	**0.9740**	**3.0000e-005**	**0.0000**	**0.9748**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.6900e-003	0.0583	0.0577	1.1000e-004		2.7000e-003	2.7000e-003		2.5800e-003	2.5800e-003	0.0000	9.6889	9.6889	2.0600e-003	0.0000	9.7405
Total	**6.6900e-003**	**0.0583**	**0.0577**	**1.1000e-004**		**2.7000e-003**	**2.7000e-003**		**2.5800e-003**	**2.5800e-003**	**0.0000**	**9.6889**	**9.6889**	**2.0600e-003**	**0.0000**	**9.7405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.2000e-004	1.4000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1344	0.1344	1.0000e-005	0.0000	0.1346
Worker	3.6000e-004	2.7000e-004	3.0700e-003	1.0000e-005	8.9000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.8397	0.8397	2.0000e-005	0.0000	0.8402
Total	**3.8000e-004**	**7.9000e-004**	**3.2100e-003**	**1.0000e-005**	**9.2000e-004**	**1.0000e-005**	**9.3000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.9740**	**0.9740**	**3.0000e-005**	**0.0000**	**0.9748**

3.13 Asphalt Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.3000e-003	0.0737	0.0972	1.5000e-004		3.8200e-003	3.8200e-003		3.5200e-003	3.5200e-003	0.0000	12.9404	12.9404	4.1900e-003	0.0000	13.0451
Paving	2.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5100e-003**	**0.0737**	**0.0972**	**1.5000e-004**		**3.8200e-003**	**3.8200e-003**		**3.5200e-003**	**3.5200e-003**	**0.0000**	**12.9404**	**12.9404**	**4.1900e-003**	**0.0000**	**13.0451**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.0100e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0973	1.0973	3.0000e-005	0.0000	1.0980
Total	**4.6000e-004**	**3.5000e-004**	**4.0100e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0973**	**1.0973**	**3.0000e-005**	**0.0000**	**1.0980**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Off-Road	7.3000e-003	0.0737	0.0972	1.5000e-004		3.8200e-003	3.8200e-003		3.5200e-003	3.5200e-003	0.0000	12.9404	12.9404	4.1900e-003	0.0000	13.0451
Paving	2.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5100e-003**	**0.0737**	**0.0972**	**1.5000e-004**		**3.8200e-003**	**3.8200e-003**		**3.5200e-003**	**3.5200e-003**	**0.0000**	**12.9404**	**12.9404**	**4.1900e-003**	**0.0000**	**13.0451**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.0100e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1700e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0973	1.0973	3.0000e-005	0.0000	1.0980
Total	**4.6000e-004**	**3.5000e-004**	**4.0100e-003**	**1.0000e-005**	**1.1600e-003**	**1.0000e-005**	**1.1700e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0973**	**1.0973**	**3.0000e-005**	**0.0000**	**1.0980**

3.14 Ancillary Structure Building Construction (Nov) - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7500e-003	0.0172	0.0152	2.0000e-005		1.0000e-003	1.0000e-003		9.2000e-004	9.2000e-004	0.0000	2.1592	2.1592	7.0000e-004	0.0000	2.1767
Total	**1.7500e-003**	**0.0172**	**0.0152**	**2.0000e-005**		**1.0000e-003**	**1.0000e-003**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**2.1592**	**2.1592**	**7.0000e-004**	**0.0000**	**2.1767**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0300e-003	2.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2688	0.2688	2.0000e-005	0.0000	0.2692
Worker	4.0000e-005	3.0000e-005	3.8000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1050	0.1050	0.0000	0.0000	0.1050
Total	**7.0000e-005**	**1.0600e-003**	**6.6000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3737**	**0.3737**	**2.0000e-005**	**0.0000**	**0.3742**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7500e-003	0.0172	0.0152	2.0000e-005		1.0000e-003	1.0000e-003		9.2000e-004	9.2000e-004	0.0000	2.1592	2.1592	7.0000e-004	0.0000	2.1767
Total	**1.7500e-003**	**0.0172**	**0.0152**	**2.0000e-005**		**1.0000e-003**	**1.0000e-003**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**2.1592**	**2.1592**	**7.0000e-004**	**0.0000**	**2.1767**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0300e-003	2.8000e-004	0.0000	6.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2688	0.2688	2.0000e-005	0.0000	0.2692
Worker	4.0000e-005	3.0000e-005	3.8000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1050	0.1050	0.0000	0.0000	0.1050
Total	**7.0000e-005**	**1.0600e-003**	**6.6000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.3737**	**0.3737**	**2.0000e-005**	**0.0000**	**0.3742**

3.15 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0200					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2300e-003	5.4400e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	0.7660	0.7660	5.0000e-005	0.0000	0.7672
Total	**0.0206**	**4.2300e-003**	**5.4400e-003**	**1.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**5.0000e-005**	**0.0000**	**0.7672**

Unmitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.0000e-004	2.3000e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6297	0.6297	2.0000e-005	0.0000	0.6302
Total	**2.7000e-004**	**2.0000e-004**	**2.3000e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6297**	**0.6297**	**2.0000e-005**	**0.0000**	**0.6302**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0200					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2300e-003	5.4400e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	0.7660	0.7660	5.0000e-005	0.0000	0.7672
Total	**0.0206**	**4.2300e-003**	**5.4400e-003**	**1.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**5.0000e-005**	**0.0000**	**0.7672**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.0000e-004	2.3000e-003	1.0000e-005	6.7000e-004	1.0000e-005	6.7000e-004	1.8000e-004	1.0000e-005	1.8000e-004	0.0000	0.6297	0.6297	2.0000e-005	0.0000	0.6302

Total	**2.7000e-004**	**2.0000e-004**	**2.3000e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.7000e-004**	**1.8000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.6297**	**0.6297**	**2.0000e-005**	**0.0000**	**0.6302**

3.16 Synthetic Turf Surfacing - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3800e-003	0.0221	0.0263	4.0000e-005		1.2800e-003	1.2800e-003		1.2100e-003	1.2100e-003	0.0000	3.4907	3.4907	6.8000e-004	0.0000	3.5077
Total	**2.3800e-003**	**0.0221**	**0.0263**	**4.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**3.4907**	**3.4907**	**6.8000e-004**	**0.0000**	**3.5077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	1.0500e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2863	0.2863	1.0000e-005	0.0000	0.2864
Total	**1.2000e-004**	**9.0000e-005**	**1.0500e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2863**	**0.2863**	**1.0000e-005**	**0.0000**	**0.2864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3800e-003	0.0221	0.0263	4.0000e-005		1.2800e-003	1.2800e-003		1.2100e-003	1.2100e-003	0.0000	3.4906	3.4906	6.8000e-004	0.0000	3.5077
Total	**2.3800e-003**	**0.0221**	**0.0263**	**4.0000e-005**		**1.2800e-003**	**1.2800e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**3.4906**	**3.4906**	**6.8000e-004**	**0.0000**	**3.5077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	1.0500e-003	0.0000	3.0000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2863	0.2863	1.0000e-005	0.0000	0.2864
Total	**1.2000e-004**	**9.0000e-005**	**1.0500e-003**	**0.0000**	**3.0000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2863**	**0.2863**	**1.0000e-005**	**0.0000**	**0.2864**

Construction LST Worksheet

Construction Localized Significance Thresholds: Asphalt Demolition, Debris Haul, and Site Preparation

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	2.50	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	3	1.5
NOx	**131**	Graders	0.5	0.0625	8	1	0.5
CO	**1,161**	Dozers	0.5	0.0625	8	1	0.5
PM10	**8.16**	Scrapers	1	0.125			0
PM2.5	**5.67**					**Acres**	2.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	2	121	118	126	147	206
	3	142	137	145	165	219
		131	128	136	156	213
CO	2	1031	1143	1554	2660	7530
	3	1292	1423	1886	3115	8134
		1162	1283	1720	2887	7832
PM10	2	7	22	37	68	162
	3	9	29	44	76	170
		8	26	41	72	166
PM2.5	2	5	8	12	24	89
	3	6	9	14	27	94
		6	9	13	26	92

South San Gabriel Valley

2.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	131	128	136	156	213
CO	1162	1283	1720	2887	7832
PM10	8	26	41	72	166
PM2.5	6	9	13	26	92

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	2	11	3
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Site Preparation

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	2.00	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**121**	Graders	0.5	0.0625	8	1	0.5
CO	**1,031**	Dozers	0.5	0.0625	8	1	0.5
PM10	**7.00**	Scrapers	1	0.125			0
PM2.5	**5.00**					**Acres**	2.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	2	121	118	126	147	206
	2	121	118	126	147	206
		121	118	126	147	206
CO	2	1031	1143	1554	2660	7530
	2	1031	1143	1554	2660	7530
		1031	1143	1554	2660	7530
PM10	2	7	22	37	68	162
	2	7	22	37	68	162
		7	22	37	68	162
PM2.5	2	5	8	12	24	89
	2	5	8	12	24	89
		5	8	12	24	89

South San Gabriel Valley

2.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	121	118	126	147	206
CO	1031	1143	1554	2660	7530
PM10	7	22	37	68	162
PM2.5	5	8	12	24	89

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	2	11	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Site Preparation and Lighting Installation

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	2.00	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**121**	Graders	0.5	0.0625	8	1	0.5
CO	**1,031**	Dozers	0.5	0.0625	8	1	0.5
PM10	**7.00**	Scrapers	1	0.125			0
PM2.5	**5.00**					**Acres**	2.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	2	121	118	126	147	206
	2	121	118	126	147	206
		121	118	126	147	206
CO	2	1031	1143	1554	2660	7530
	2	1031	1143	1554	2660	7530
		1031	1143	1554	2660	7530
PM10	2	7	22	37	68	162
	2	7	22	37	68	162
		7	22	37	68	162
PM2.5	2	5	8	12	24	89
	2	5	8	12	24	89
		5	8	12	24	89

South San Gabriel Valley

2.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	121	118	126	147	206
CO	1031	1143	1554	2660	7530
PM10	7	22	37	68	162
PM2.5	5	8	12	24	89

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	2	11	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Lighting Installation, Grading and Soil Haul, and Trenching

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	2.00	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**121**	Graders	0.5	0.0625	8	1	0.5
CO	**1,031**	Dozers	0.5	0.0625	8	1	0.5
PM10	**7.00**	Scrapers	1	0.125			0
PM2.5	**5.00**					**Acres**	2.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	2	121	118	126	147	206
	2	121	118	126	147	206
		121	118	126	147	206
CO	2	1031	1143	1554	2660	7530
	2	1031	1143	1554	2660	7530
		1031	1143	1554	2660	7530
PM10	2	7	22	37	68	162
	2	7	22	37	68	162
		7	22	37	68	162
PM2.5	2	5	8	12	24	89
	2	5	8	12	24	89
		5	8	12	24	89

South San Gabriel Valley

2.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	121	118	126	147	206
CO	1031	1143	1554	2660	7530
PM10	7	22	37	68	162
PM2.5	5	8	12	24	89

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	2	11	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Lighting Installation, Grading and Soil Haul, Trenching, Ancillary Building Construction, and Fencing/Concrete Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	2.50	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	3	1.5
NOx	**131**	Graders	0.5	0.0625	8	1	0.5
CO	**1,161**	Dozers	0.5	0.0625	8	1	0.5
PM10	**8.16**	Scrapers	1	0.125			0
PM2.5	**5.67**					**Acres**	2.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	2	121	118	126	147	206
	3	142	137	145	165	219
		131	128	136	156	213
CO	2	1031	1143	1554	2660	7530
	3	1292	1423	1886	3115	8134
		1162	1283	1720	2887	7832
PM10	2	7	22	37	68	162
	3	9	29	44	76	170
		8	26	41	72	166
PM2.5	2	5	8	12	24	89
	3	6	9	14	27	94
		6	9	13	26	92

South San Gabriel Valley

2.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	131	128	136	156	213
CO	1162	1283	1720	2887	7832
PM10	8	26	41	72	166
PM2.5	6	9	13	26	92

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	2	11	3
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Lighting Installation, Ancillary Building Construction, and Fencing/Concrete Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	0.50	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**83**	Graders	0.5	0.0625			0
CO	**673**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	83	84	96	123	193
	1	83	84	96	123	193
		83	84	96	123	193
CO	1	673	760	1113	2110	6884
	1	673	760	1113	2110	6884
		673	760	1113	2110	6884
PM10	1	5	13	29	60	153
	1	5	13	29	60	153
		5	13	29	60	153
PM2.5	1	4	5	9	20	83
	1	4	5	9	20	83
		4	5	9	20	83

South San Gabriel Valley

0.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	83	84	96	123	193
CO	673	760	1113	2110	6884
PM10	5	13	29	60	153
PM2.5	4	5	9	20	83

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	1	11	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Ancillary Building Construction and Fencing/Concrete Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	0.50	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**83**	Graders	0.5	0.0625			0
CO	**673**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	83	84	96	123	193
	1	83	84	96	123	193
		83	84	96	123	193
CO	1	673	760	1113	2110	6884
	1	673	760	1113	2110	6884
		673	760	1113	2110	6884
PM10	1	5	13	29	60	153
	1	5	13	29	60	153
		5	13	29	60	153
PM2.5	1	4	5	9	20	83
	1	4	5	9	20	83
		4	5	9	20	83

South San Gabriel Valley

0.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	83	84	96	123	193
CO	673	760	1113	2110	6884
PM10	5	13	29	60	153
PM2.5	4	5	9	20	83

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	1	11	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Ancillary Building Construction and Finishing/Landscaping

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	1.00	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**83**	Graders	0.5	0.0625			0
CO	**673**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	83	84	96	123	193
	1	83	84	96	123	193
		83	84	96	123	193
CO	1	673	760	1113	2110	6884
	1	673	760	1113	2110	6884
		673	760	1113	2110	6884
PM10	1	5	13	29	60	153
	1	5	13	29	60	153
		5	13	29	60	153
PM2.5	1	4	5	9	20	83
	1	4	5	9	20	83
		4	5	9	20	83

South San Gabriel Valley

1.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	83	84	96	123	193
CO	673	760	1113	2110	6884
PM10	5	13	29	60	153
PM2.5	4	5	9	20	83

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	1	11	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Ancillary Structure Building Construction, Finishing/Landscaping and Asphalt Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	1.50	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	3	1.5
NOx	**102**	Graders	0.5	0.0625			0
CO	**852**	Dozers	0.5	0.0625			0
PM10	**6.00**	Scrapers	1	0.125			0
PM2.5	**4.50**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	83	84	96	123	193
	2	121	118	126	147	206
		102	101	111	135	200
CO	1	673	760	1113	2110	6884
	2	1031	1143	1554	2660	7530
		852	952	1334	2385	7207
PM10	1	5	13	29	60	153
	2	7	22	37	68	162
		6	18	33	64	158
PM2.5	1	4	5	9	20	83
	2	5	8	12	24	89
		5	7	11	22	86

South San Gabriel Valley

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	102	101	111	135	200
CO	852	952	1334	2385	7207
PM10	6	18	33	64	158
PM2.5	5	7	11	22	86

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	1	11	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Ancillary Structure Building Construction and Asphalt Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	1.00	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**83**	Graders	0.5	0.0625			0
CO	**673**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	83	84	96	123	193
	1	83	84	96	123	193
		83	84	96	123	193
CO	1	673	760	1113	2110	6884
	1	673	760	1113	2110	6884
		673	760	1113	2110	6884
PM10	1	5	13	29	60	153
	1	5	13	29	60	153
		5	13	29	60	153
PM2.5	1	4	5	9	20	83
	1	4	5	9	20	83
		4	5	9	20	83

South San Gabriel Valley

1.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	83	84	96	123	193
CO	673	760	1113	2110	6884
PM10	5	13	29	60	153
PM2.5	4	5	9	20	83

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	1	11	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Ancillary Structure Building Construction, Asphalt Paving, and Architectural Coating

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	1.00	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	2	1
NOx	**83**	Graders	0.5	0.0625			0
CO	**673**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	83	84	96	123	193
	1	83	84	96	123	193
		83	84	96	123	193
CO	1	673	760	1113	2110	6884
	1	673	760	1113	2110	6884
		673	760	1113	2110	6884
PM10	1	5	13	29	60	153
	1	5	13	29	60	153
		5	13	29	60	153
PM2.5	1	4	5	9	20	83
	1	4	5	9	20	83
		4	5	9	20	83

South San Gabriel Valley

1.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	83	84	96	123	193
CO	673	760	1113	2110	6884
PM10	5	13	29	60	153
PM2.5	4	5	9	20	83

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	1	11	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Synthetic Turf Surfacing

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
11	0.50	25	82	6

Source Receptor	**South San Gabriel Valley**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**83**	Graders	0.5	0.0625			0
CO	**673**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	83	84	96	123	193
	1	83	84	96	123	193
		83	84	96	123	193
CO	1	673	760	1113	2110	6884
	1	673	760	1113	2110	6884
		673	760	1113	2110	6884
PM10	1	5	13	29	60	153
	1	5	13	29	60	153
		5	13	29	60	153
PM2.5	1	4	5	9	20	83
	1	4	5	9	20	83
		4	5	9	20	83

South San Gabriel Valley

0.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	83	84	96	123	193
CO	673	760	1113	2110	6884
PM10	5	13	29	60	153
PM2.5	4	5	9	20	83

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
11	1	11	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Appendix C Replacement Ballfields Noise Data

Appendices

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Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level

± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology

except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual*. Prepared by ICF International.

Evening Ambient Noise Survey

To characterize the existing ambient noise environment, noise monitoring was conducted by PlaceWorks staff during the evening hours at both sites. Staff conducted noise monitoring at Cedarlane Academy on Wednesday, October 21 and Thursday, December 3, 2020. At Kwis Elementary, staff conducted noise monitoring on Friday, October 30, 2020. All measurements were for a duration of 15-minutes during the evening hours of 6:30 PM to 9:30 PM.

Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be representative of the typical conditions for the season. Generally, conditions included clear skies with temperatures varying between 59 and 67 degrees Fahrenheit (°F) with calm winds averaging less than 1 mile per hour (mph). The sound level meter was equipped with a windscreen during measurements.

The sound level meter used for noise monitoring (Larson Davis LxT) satisfies the American National Standards Institute (ANSI) standard for Type 1 instrumentation.1 The sound level meter was set to "slow" response and "A" weighting (dBA). The meter was calibrated prior to and after the monitoring periods. All measurements were at least 5 feet above the ground and away from reflective surfaces.

[1] Monitoring of ambient noise was performed using Larson-Davis model LxT sound level meters.

Noise monitoring on October 30, 2020 at Kwis Elementary:

» **Short-Term Location 1 (ST-1)** was near 1733 Kwis Avenue, approximately 18 feet from the northbound travel lane centerline. A 15-minute noise measurement began at 9:21 PM on Friday, October 30, 2020. The noise environment is characterized primarily by traffic noise from Kwis Avenue and Pomona Freeway. Noise levels from Kwis traffic generally ranged from 66 to 73 dBA. Background noise levels were generally around 57 dBA in the absence of local traffic. Noise from Pomona Freeway generally ranged between 55 to 57 dBA. No aircraft overflights occurred during the measurement period.

» **Short-Term Location 2 (ST-2)** was at Kwis Elementary near the western property line between Kwis Elementary and the residence at 1804 Blazing Star Drive. A 15-minute noise measurement began at 7:56 PM on Friday, October 30, 2020. The noise environment is characterized primarily by traffic noise from Pomona Freeway, approximately 0.53 miles to the north. Noise levels from Pomona Freeway generally ranged from 52 to 54 dBA. A motorcycle was observed to reach up to 68 dBA from the freeway. Aircraft overflights were also present during the ST-2 noise measurement and ranged between 59 to 62 dBA.

» **Short-Term Location 3 (ST-3)** was at Kwis Elementary near the western property line between Kwis Elementary and the residence at 1908 Angelcrest Drive. A 15-minute noise measurement began at 7:36 PM on Friday, October 30, 2020. The noise environment is characterized primarily by traffic noise from Pomona Freeway, approximately 0.55 miles to the north. Noise levels from Pomona Freeway generally ranged from 54 to 58 dBA. There were three aircraft overflights during the measurement period which were observed to reach up to 60 dBA.

Noise monitoring on October 21, 2020 at Cedarlane Elementary

» **Short-Term Location 1 (ST-1)** was on-site near the northeastern property line of the proposed ball field, adjacent to single family homes and approximately 200 feet west of Fieldgate Avenue. A 15-minute noise measurement began at 8:12 PM on Wednesday, October 21, 2020. The noise environment is characterized primarily by traffic noise from Pomona Freeway, approximately 300 feet to the north. Noise levels generally ranged from 52 to 54 dBA. Secondary noise sources included aircraft overflights, observed to range between 54 to 56 dBA.

» **Short-Term Location 2 (ST-2)** was in front of 1426 Fieldgate Avenue. A 15-minute noise measurement began at 8:41 PM on Wednesday, October 21, 2020. The noise environment is characterized primarily by traffic noise from Pomona Freeway, approximately 450 feet to the north and traffic on Fieldgate Avenue. Noise levels from Pomona Freeway generally ranged from 52 to 53 dBA and noise levels from Fieldgate Avenue ranged from 60 to 67 dBA. Secondary noise sources included aircraft overflights, observed to range between 54 to 60 dBA.

Noise monitoring on December 3, 2020 at Cedarlane Elementary:

» **Short-Term Location 3 (ST-3)** was on-site near the northwestern property line with existing residences, north of the proposed ball fields. A 15-minute noise measurement began at 6:34 PM on Thursday, December 3, 2020. The noise environment is characterized primarily by traffic noise from Pomona Freeway, approximately 300 feet to the north. Noise levels generally ranged from 58 to 61 dBA from traffic. Secondary noise sources included aircraft overflights and dogs barking. Aircraft overflights, though audible, were not observed to be above traffic noise levels. Dog barking noise levels ranged from 66 - 68 dBA.

» **Short-Term Location 4 (ST-4)** was in front of 1465 Glenelder Avenue, west of the proposed ball fields and approximately 20 feet from the nearest southbound travel lane centerline. A 15-minute

noise measurement began at 7:07 PM on Thursday, December 3, 2020. The noise environment is characterized primarily by traffic noise from Pomona Freeway, approximately 860 feet to the north. Traffic along Glenelder Avenue was minimal with only one car pass-by observed during the measurement period. Noise levels from Pomona Freeway generally ranged from 58 to 60 dBA and noise levels from secondary noise sources included aircraft overflights, which were not observed to be above traffic noise levels.

Table 4 Ambient Noise Levels (dBA) at Kwis Elementary

Monitoring Location	Description	Leq	L50	L25	L8	L2	Lmax
ST-1	Hacienda Heights – near 1733 Kwis Avenue 10/30/2020 9:21 PM	61.4	58.8	60.7	65.7	69.4	74.3
ST-2	Hacienda Heights – Kwis Elementary near north western residential property line 10/30/2020 7:56 PM	57.1	55.5	57.7	59.3	62.9	71.3
ST-3	Hacienda Heights – Kwis Elementary near western residential property line 10/30/2020 7:36 PM	55.9	54.4	56.6	57.8	58.6	61.6

Table 5 Ambient Noise Levels (dBA) at Cedarlane Academy

Monitoring Location	Description	Leq	L50	L25	L8	L2	Lmax
ST-1	Hacienda Heights – Cedarlane Academy near northeastern residential property line 10/21/2020 8:12 PM	53.3	53.0	53.5	54.4	56.7	59.4
ST-2	Hacienda Heights – Near 1426 Fieldgate Ave. 10/21/2020 8:41 PM	55.4	53.7	54.8	58.2	62.4	67.0
ST-3	Hacienda Heights – near 1733 Cedarlane Academy northwestern residential property line 12/3/2020 6:34 PM	60.5	59.7	60.7	62.9	65.4	71.2
ST-4	Hacienda Heights – near 1465 Glenelder Avenue 12/3/2020 7:07 PM	60.2	60.1	60.9	61.7	62.3	66.5

APPLICABLE STANDARDS

Los Angeles County Municipal Code

The County's noise ordinance is designed to protect people from objectionable non-transportation noise sources. The noise standards in Table 6, *County of Los Angeles Exterior Noise Standards*, apply to all properties within a designated noise zone unless otherwise indicated.

Table 6 County of Los Angeles Exterior Noise Standards

Zone	Time Period	Exterior Noise Level, dBA[1,2]				
		L_{50}	L_{25}	L_8	L_2	L_{max}
Noise-sensitive area	Anytime	45	50	55	60	65
Residential properties	10 PM – 7 AM	45	50	55	60	65
	7 AM – 10 PM	50	55	60	65	70
Commercial properties	10 PM – 7 AM	55	60	65	70	75
	7 AM - 10 PM	60	65	70	75	80
Industrial properties	Anytime	70	75	80	85	90

Source: County of Los Angeles Municipal Code, Section 12.08.390.

[1] According to Section 12.08.390, if the ambient noise levels exceed the exterior noise standards above, then the ambient noise level becomes the noise standard. Per Section 12.08.410, if the source of noise emits a pure tone or impulsive noise, the exterior noise levels limits shall be reduced by five decibels.

[2] If the measurement location is on a boundary property between two different zones, the noise limit shall be the arithmetic mean of the maximum permissible noise level limits of the subject zones; except as provided for above, when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level shall be the daytime exterior noise level for the subject receptor property.

Construction Noise Standards

The County prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 7:00 PM and 7:00 AM on weekdays or at any time on Sundays or holidays except for emergency work of public service utilities or by variance.

Noise levels for long-term operations (10 days or more) from "stationary" construction equipment are summarized in Table 7, *County of Los Angeles Stationary Construction Equipment Noise Limits*.

Table 7 County of Los Angeles Stationary Construction Equipment Noise Limits

Time Period	Single-Family Residential	Multifamily Residential	Semi-residential/ Commercial
Daily, except Sundays and legal holidays, 7 AM to 8 PM	60 dBA	65 dBA	70 dBA
Daily, 8 PM to 7 AM and all-day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: County of Los Angeles Municipal Code, Section 12.08.440. For repetitively scheduled and relatively long-term operations of 10 days or more.

Note: All mobile and stationary internal-combustion-powered equipment or machinery shall be equipped with suitable exhaust and air intake silences in proper working order.

As stated in the project description, above, construction is scheduled to be developed in two phases. Phase 1 is anticipated to occur in two stages beginning in March 2020 and ending in July 2021 and phase 2 would depend on the sale of the surplus site and would be developed by a private developer upon approval of necessary permits by the County of Los Angeles. For the purpose of the EIR, it was assumed that Phase 2 would be completed by 2026.

County Vibration Standards

The County of Los Angeles Code, Section 12.08.560, prohibits the operation of any device that creates motion velocity of 0.01 inches/second (in/sec) or greater at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public right-of-way. This criterion is equivalent to 80 VdB (root-mean-square vibration decibel level).

Exempt Activities

Section 12.08.570 of the Municipal Code exempts noise from activities conducted on public and private playgrounds or school grounds.

CONSTRUCTION NOISE MODELING DATA

Site: Kwis, Architectural Damage

Equipment Type	FTA Reference PPV at 25 Feet	Residential - South	Residential - West	
feet	*25*	*55*	*250*	
Large Bulldozer	0.089	0.027	0.003	
Caisson Drilling	0.089	0.027	0.003	
Small Bulldozer	0.003	0.001	0.000	

Site: Cedarlane Architectural Damage

Equipment Type	FTA Reference PPV at 25 Feet	Residential - North	Residential - East	Residential - West
feet	*25*	*380*	*320*	*200*
Large Bulldozer	0.089	0.002	0.002	0.004
Small Bulldozer	0.003	0.000	0.000	0.000

Project: HLPU-01 - Kwis/Cedarlane Construction Noise

Construction Activity at Kwis	RCNM Outputs, dBA Leq	Park - North	NA	Residential - South	Residential - West
feet	50	190	NA	670	330
Grading	84	73	NA	62	68
feet	50	100	NA	70	70
Auger Drill Rig	77	71	NA	74	74
Construction Activity at Cedarlane	**RCNM Outputs, dBA Leq**	**Residential - North**	**Residential - East**	**Residential - South**	**Residential - West**
feet	50	480	560	640	390
Grading	84	64	63	62	66

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

Site: Kwis Vibration Annoyance

Grading	FTA Reference VdB	VdB N	VdB S	VdB W
feet	*25*	*190*	*670*	*330*
Large Bulldozer	87	61	44	53
Small Bulldozer	58	32	15	24
feet	*25*	*100*	*70*	*70*
Caisson Drilling	87	69	74	74

Site: Cedarlane Vibration Annoyance

Grading	FTA Reference VdB	VdB N	VdB S	VdB W
feet	*25*	*345*	*530*	*145*
Large Bulldozer	87	61	44	53
Small Bulldozer	58	32	15	24
feet	*25*	*480*	*640*	*390*
Caisson Drilling	87	69	74	74

TRAFFIC NOISE MODELING DATA

Cedarlane Saturday

dBA CNEL

Street Segment	Existing (2020) ADT	Project Traffic	Existing + Project	Future ADT (2023)	Future with Project	Project Noise Increase	Cumulative Increase	Project Cumulative Contribution
Cedarlane Drive								
Glenelder Ave to Fieldgate Ave	900	920	1,820	930	1,850	3.1	3.1	3.0
Glenelder Avenue								
Garo St to Cedarlane Dr	900	445	1,345	930	1,375	1.7	1.8	1.7
Cedarlane Dr to Wedgeworth Dr	950	475	1,425	980	1,455	1.8	1.9	1.7
Flamstead Drive								
Wedgeworth Dr to Sigman St	1,600	460	2,060	1,650	2,110	1.1	1.2	1.1
South of Sigman St	1,200	30	1,230	1,240	1,270	0.1	0.2	0.1
Fieldgate Avenue								
Garo St to Cedarlane Dr	2,900	520	3,420	2,990	3,510	0.7	0.8	0.7
Cedarlane Dr to Wedgeworth Dr	2,900	520	3,420	2,990	3,510	0.7	0.8	0.7
South of Wedgeworth Dr	1,600	15	1,615	1,650	1,665	0.0	0.2	0.0
Garo Street								
West of Stimson Ave	1,700	15	1,715	1,750	1,765	0.0	0.2	0.0
Stimson Ave to Glenelder Ave	3,500	445	3,945	3,610	4,055	0.5	0.6	0.5
Glenelder Ave to Fieldgate Ave	2,700	200	2,900	2,780	2,980	0.3	0.4	0.3
Wedgeworth Drive								
West of Glenelder Ave	1,800	15	1,815	1,850	1,865	0.0	0.2	0.0
Glenelder Ave to Fieldgate Ave	3,100	15	3,115	3,190	3,205	0.0	0.1	0.0
Fieldgate Ave to Countrywood Ave	5,100	505	5,605	5,250	5,755	0.4	0.5	0.4
East of Countrywood Ave	3,200	215	3,415	3,300	3,515	0.3	0.4	0.3
Stimson Avenue								
North of Garo St	16,700	430	17,130	17,200	17,630	0.1	0.2	0.1
South of Sigman St	15,300	430	15,730	15,760	16,190	0.1	0.2	0.1
Sigman Street								
Stimson Ave to Flamstead Dr	2,600	430	3,030	2,680	3,110	0.7	0.8	0.6
Countrywood Avenue								
Wedgeworth Dr to Colima Rd	4,800	290	5,090	4,940	5,230	0.3	0.4	0.2
South of Colima Rd	2,100	70	2,170	2,160	2,230	0.1	0.3	0.1
Colima Road								
West of Countrywood Ave	16,700	150	16,850	17,200	17,350	0.0	0.2	0.0
East of Countrywood Ave	17,000	70	17,070	17,510	17,580	0.0	0.1	0.0

Cedarlane Weekday

dBA CNEL

Street Segment	Existing (2020) ADT	Project Traffic	Existing + Project	Future ADT (2023)	Future with Project	Project Noise Increase	Cumulative Increase	Project Cumulative Contribution
Cedarlane Drive								
Glenelder Ave to Fieldgate Ave	1,000	180	1,180	1,030	1,210	0.7	0.8	0.7
Glenelder Avenue								
Garo St to Cedarlane Dr	1,000	90	1,090	1,030	1,120	0.4	0.5	0.4
Cedarlane Dr to Wedgeworth Dr	1,100	95	1,195	1,130	1,225	0.4	0.5	0.4
Flamstead Drive								
Wedgeworth Dr to Sigman St	1,900	90	1,990	1,960	2,050	0.2	0.3	0.2
South of Sigman St	1,400	5	1,405	1,440	1,445	0.0	0.1	0.0
Fieldgate Avenue								
Garo St to Cedarlane Dr	3,400	105	3,505	3,500	3,605	0.1	0.3	0.1
Cedarlane Dr to Wedgeworth Dr	3,400	105	3,505	3,500	3,605	0.1	0.3	0.1
South of Wedgeworth Dr	1,900	5	1,905	1,960	1,965	0.0	0.1	0.0
Garo Street								
West of Stimson Ave	2,000	5	2,005	2,060	2,065	0.0	0.1	0.0
Stimson Ave to Glenelder Ave	4,100	90	4,190	4,220	4,310	0.1	0.2	0.1
Glenelder Ave to Fieldgate Ave	3,200	40	3,240	3,300	3,340	0.1	0.2	0.1
Wedgeworth Drive								
West of Glenelder Ave	2,100	5	2,105	2,160	2,165	0.0	0.1	0.0
Glenelder Ave to Fieldgate Ave	3,400	5	3,405	3,500	3,505	0.0	0.1	0.0
Fieldgate Ave to Countrywood Ave	5,700	100	5,800	5,870	5,970	0.1	0.2	0.1
East of Countrywood Ave	3,400	40	3,440	3,500	3,540	0.1	0.2	0.0
Stimson Avenue								
North of Garo St	19,700	85	19,785	20,290	20,375	0.0	0.1	0.0
South of Sigman St	18,000	85	18,085	18,540	18,625	0.0	0.1	0.0
Sigman Street								
Stimson Ave to Flamstead Dr	3,100	85	3,185	3,190	3,275	0.1	0.2	0.1
Countrywood Avenue								
Wedgeworth Dr to Colima Rd	5,700	60	5,760	5,870	5,930	0.0	0.2	0.0
South of Colima Rd	2,600	15	2,615	2,680	2,695	0.0	0.2	0.0
Colima Road								
West of Countrywood Ave	19,600	30	19,630	20,200	20,230	0.0	0.1	0.0
East of Countrywood Ave	20,000	15	20,015	20,600	20,615	0.0	0.1	0.0

Kwis Saturday

dBA CNEL

Street Segment	Existing (2020) ADT	Project Traffic	Existing + Project	Future ADT (2023)	Future with Project	Project Noise Increase	Cumulative Increase	Project Cumulative Contribution
Kwis Avenue								
North of Three Palms St	500	20	520	520	540	0.2	0.3	0.2
Three Palms St to Los Robles Ave	2,700	580	3,280	2,780	3,360	0.8	0.9	0.8
Los Robles Ave to Kennard St	2,200	940	3,140	2,270	3,210	1.5	1.6	1.5
Kennard St to School Parking Lot	2,000	990	2,990	2,060	3,050	1.7	1.8	1.7
School Parking Lot to Newton St	2,000	810	2,810	2,060	2,870	1.5	1.6	1.4
Three Palms Street								
West of China Lake Blvd	700	20	720	720	740	0.1	0.2	0.1
Kwis Ave to Freeway Off-Ramp	3,000	540	3,540	3,100	3,640	0.7	0.8	0.7
Freeway Off-Ramp to Hacienda Blvd	18,600	450	19,050	19,200	19,650	0.1	0.2	0.1
Los Robles Avenue								
West of Turnbull Canyon Rd	4,200	90	4,290	4,330	4,420	0.1	0.2	0.1
Turnbull Canyon Rd to Kwis Ave	4,400	360	4,760	4,530	4,890	0.3	0.5	0.3
Kennard Street								
East of Kwis Ave	800	50	850	820	870	0.3	0.4	0.3
Newton Street								
West of Kwis Ave	2,800	270	3,070	2,880	3,150	0.4	0.5	0.4
Kwis Ave to Hacienda Blvd	5,100	540	5,640	5,250	5,790	0.4	0.6	0.4
Turnbull Canyon Road								
North of Los Robles Ave	8,200	180	8,380	8,450	8,630	0.1	0.2	0.1
South of Los Robles Ave	8,100	90	8,190	8,340	8,430	0.0	0.2	0.0
Hacienda Boulevard								
North of Three Palms St	44,100	450	44,550	45,400	45,850	0.0	0.2	0.0
North of Newton St	40,400	270	40,670	41,600	41,870	0.0	0.2	0.0
South of Newton St	37,400	270	37,670	38,500	38,770	0.0	0.2	0.0

Kwis Weekday

dBA CNEL

Street Segment	Existing (2020) ADT	Project Traffic	Existing + Project	Future ADT (2023)	Future with Project	Project Noise Increase	Cumulative Increase	Project Cumulative Contribution
Kwis Avenue								
North of Three Palms St	700	5	705	720	725	0.0	0.2	0.0
Three Palms St to Los Robles Ave	3,900	180	4,080	4,020	4,200	0.2	0.3	0.2
Los Robles Ave to Kennard St	3,100	290	3,390	3,190	3,480	0.4	0.5	0.4
Kennard St to School Parking Lot	2,900	305	3,205	2,990	3,295	0.4	0.6	0.4
School Parking Lot to Newton St	2,900	255	3,155	2,990	3,245	0.4	0.5	0.4
Three Palms Street								
West of China Lake Blvd	1,000	5	1,005	1,030	1,035	0.0	0.1	0.0
Kwis Ave to Freeway Off-Ramp	4,300	170	4,470	4,430	4,600	0.2	0.3	0.2
Freeway Off-Ramp to Hacienda Blvd	20,700	140	20,840	21,320	21,460	0.0	0.2	0.0
Los Robles Avenue								
West of Turnbull Canyon Rd	6,000	30	6,030	6,180	6,210	0.0	0.1	0.0
Turnbull Canyon Rd to Kwis Ave	6,300	110	6,410	6,490	6,600	0.1	0.2	0.1
Kennard Street								
East of Kwis Ave	1,100	15	1,115	1,130	1,145	0.1	0.2	0.1
Newton Street								
West of Kwis Ave	4,100	85	4,185	4,220	4,305	0.1	0.2	0.1
Kwis Ave to Hacienda Blvd	7,300	170	7,470	7,520	7,690	0.1	0.2	0.1
Turnbull Canyon Road								
North of Los Robles Ave	11,100	55	11,155	11,430	11,485	0.0	0.1	0.0
South of Los Robles Ave	11,200	30	11,230	11,540	11,570	0.0	0.1	0.0
Hacienda Boulevard								
North of Three Palms St	49,000	140	49,140	50,470	50,610	0.0	0.1	0.0
North of Newton St	44,900	85	44,985	46,250	46,335	0.0	0.1	0.0
South of Newton St	39,800	85	39,885	40,990	41,075	0.0	0.1	0.0

Appendix D Replacement Ballfields TIA

Appendices

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TRAFFIC & ACCESS ANALYSIS

FOR THE PROPOSED REPLACEMENT BALLFIELDS

KWIS ELEMENTARY SCHOOL & CEDARLANE ACADEMY

HACIENDA HEIGHTS

Prepared for

HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT
&
PLACEWORKS

Prepared by

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I.
INTRODUCTION AND PROJECT DESCRIPTION

This report summarizes the results of a traffic and access analysis that was conducted for ballfields that are proposed at Kwis Elementary School and Cedarlane Academy in Hacienda Heights. As a development and expansion project at Wedgeworth Elementary School would displace four existing ballfields, the Hacienda La Puente Unified School District is proposing to provide replacement ballfields at these two nearby schools. Two fields with lights would be provided at Kwis Elementary School and two fields without lights would be provided at Cedarlane Academy.

Kwis Elementary School is located on the west side of Kwis Avenue immediately south of Manzanita Park. The campus is north of Newton Street and south of Kennard Street. Cedarlane Academy is located on the north side of Cedarlane Drive between Glenelder Avenue and Fieldgate Avenue. A map showing the location of the two schools as well as Wedgeworth Elementary School is provided on Figure 1 in the Appendix. All three schools are located south of the Pomona Freeway (State Route 60). Site plans showing the two schools that are being addressed and the proposed layouts of the ballfields are provided on Figure 2 and Figure 3 for Kwis Elementary School and Cedarlane Academy, respectively.

An analysis has been conducted to evaluate the traffic impacts of the proposed ballfields on the streets that provide access to the school sites. The methodology for the traffic study, in general, was to 1) establish the existing baseline traffic conditions on the study area streets at each school, 2) project the future baseline traffic conditions for the anticipated year of opening for the ballfields, 3) estimate the levels of traffic that would be generated by the ballfields, 4) conduct a comparative analysis of traffic conditions with and without the ballfields, and 5) determine if any significant traffic deficiencies or impacts would occur as a result of the ballfields. The analysis addresses the afternoon peak hour on a weekday and the mid-day peak hour on a Saturday.

The traffic analysis focuses on the impacts at seven intersections in the vicinity of Kwis Elementary School and 10 intersections in the vicinity of Cedarlane Academy. The study area intersections and the type of traffic control at each intersection are listed in Table 1 for Kwis ES and in Table 2 for Cedarlane Academy.

TABLE 1
STUDY AREA INTERSECTIONS – KWIS ELEMENTARY SCHOOL

Intersection	Traffic Control
Turnbull Canyon Road / Los Robles Avenue	Traffic Signal
Hacienda Boulevard / Three Palms Street	Traffic Signal
Hacienda Boulevard / Newton Street	Traffic Signal
Kwis Avenue / Three Palms Street	4-Way Stop Signs
Kwis Avenue / Los Robles Avenue	3-Way Stop Signs
Kwis Avenue / Kennard Street	3-Way Stop Signs
Kwis Avenue / Newton Street	3-Way Stop Signs

The traffic impact analysis is based on an evaluation of the levels of service at the affected study area intersections. Level of service (LOS) is an industry standard by which the operating conditions of a roadway segment or an intersection are measured. LOS is defined on a scale of A through F with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS A is characterized as having free flowing traffic conditions with no restrictions on maneuvering or operation speeds, where traffic volumes are low and travel speeds are high. LOS F is characterized as having forced flow with many stoppages and low operating speeds.

According to Los Angeles County standards, LOS A through D represents acceptable conditions, while LOS E and F represent congested, over-capacity conditions. According to the Los Angeles County Congestion Management Program, LOS A through E represents acceptable conditions while LOS F represents unacceptable conditions. The levels of service at the study area intersections were determined by using the Highway Capacity Manual methodology, which is consistent with the guidelines for traffic impact studies from the Los Angeles County "Transportation Impact Analysis Guidelines" (July 23, 2020).

TABLE 2
STUDY AREA INTERSECTIONS – CEDARLANE ACADEMY

Intersection	**Traffic Control**
Stimson Avenue / Garo Street	Traffic Signal
Stimson Avenue / Sigman Street	Traffic Signal
Colima Road / Countrywood Avenue	Traffic Signal
Glenelder Avenue / Garo Street	Stop Sign on Glenelder Avenue
Glenelder Avenue / Cedarlane Drive	Stop Sign on Cedarlane Drive
Glenelder Avenue / Wedgeworth Drive	4-Way Stop Signs
Flamstead Drive / Sigman Street	Stop Sign on Sigman Street
Fieldgate Avenue / Cedarlane Drive	Stop Sign on Cedarlane Drive
Fieldgate Avenue / Wedgeworth Drive	4-Way Stop Signs
Countrywood Avenue / Wedgeworth Drive	4-Way Stop Signs

II.
EXISTING AND FUTURE BASELINE TRAFFIC CONDITIONS

The roadway network in the project vicinity of each school, the existing and future baseline traffic volumes, and the levels of service at the affected study area intersections are described below.

Street Network

Kwis Elementary School

The streets that provide access to the Kwis Elementary School site include Kwis Avenue, Three Palms Street, Los Robles Avenue, Kennard Street, Newton Street, Turnbull Canyon Road, and Hacienda Boulevard. The following paragraphs provide a brief description of the characteristics of these streets. Figure 4 in the Appendix shows the study area streets, the type of traffic control at each intersection, the lane configuration at each intersection, the number of lanes on each street segment, and the posted speed limits on each street.

Kwis Avenue is a two lane north-south street that abuts the east side of the school campus. Access to the school's parking lot is provided from Kwis Avenue. The speed limit on Kwis Avenue is 35 miles per hour (mph) between Three Palms Street and Newton Street and 25 mph north of Three Palms Street.

Three Palms Street is a two lane east-west street located approximately one-third mile north of the school campus. An off-ramp from the eastbound Pomona Freeway (State Route 60) intersects with Three Palms Street west of Hacienda Boulevard. The speed limit on Three Palms Street is 25 mph west of Kwis Avenue and 35 mph east of Kwis Avenue.

Los Robles Avenue is a two lane east-west street located approximately one-quarter mile north of the school campus. The speed limit on Los Robles Avenue is 25 mph between Kwis Avenue and Turnbull Canyon Road and 30 mph west of Turnbull Canyon Road.

Kennard Street is a two lane east-west street that intersects with Kwis Avenue at the northeast corner of the school campus. The speed limit on Kennard Street is 25 mph.

Newton Street is a two lane east-west street located approximately 600 feet south of the school campus. The speed limit on Newton Street is 35 mph.

Turnbull Canyon Road is a two to four lane north-south street located approximately one-half mile west of Kwis Avenue. It has two lanes south of Los Robles Avenue and four lanes north of Los Robles Avenue. The speed limit on Turnbull Canyon Road is 35 mph.

Hacienda Boulevard is a six lane north-south street located approximately one-third mile east of the school campus. It has an interchange with the Pomona Freeway northeast of the school site. The speed limit on Hacienda Boulevard is 35 mph north of Newton Street and 40 mph south of Newton Street.

Cedarlane Academy

The streets that provide access to the Cedarlane Academy site include Cedarlane Drive, Fieldgate Avenue, Glenelder Avenue, Garo Street, Wedgeworth Drive, Flamstead Drive, Stimson Avenue, Sigman Street, Countrywood Avenue, and Colima Road. The following paragraphs provide a brief description of the characteristics of these streets. Figure 5 in the Appendix shows the study area streets, the type of traffic control at each intersection, the lane configuration at each intersection, the number of lanes on each street segment, and the posted speed limits on each street.

Cedarlane Drive is a two lane east-west street that abuts the south side of the school campus. Access to one of the school's parking lots is provided from Cedarlane Drive. The speed limit on Cedarlane Drive is 25 mph.

Fieldgate Avenue is a two lane north-south street that abuts the east side of the school campus. Access to the school's other parking lot is provided from Fieldgate Avenue. The speed limit on Fieldgate Avenue is 25 mph.

Glenelder Avenue is a two lane north-south street that abuts the west side of the school campus. The speed limit on Glenelder Avenue is 25 mph.

Garo Street is a two lane east-west street located approximately 120 feet north of the school's athletic fields. A row of houses runs between the fields and Garo Street. The speed limit on Garo Street is 25 mph.

Wedgeworth Drive is a two lane east-west street located approximately 300 feet south of the school campus. The speed limit on Wedgeworth Drive is 25 mph.

Flamstead Drive is a two lane street that is the continuation of Glenelder Avenue southwest of Wedgeworth Drive. The speed limit on Flamstead Drive is 25 mph.

Stimson Avenue is a four lane north-south street located approximately one-half mile west of the school campus. The speed limit on Stimson Avenue is 40 mph.

Sigman Street is a two lane east-west street located approximately 700 feet southwest of the school campus. It extends from Flamstead Drive to Stimson Avenue. The speed limit on Sigman Street is 25 mph.

Countrywood Avenue is a two lane north-south street located approximately one-third mile east of the school campus. The speed limit on Countrywood Avenue is 25 mph.

Colima Road is a four lane east-west street located approximately three-quarters mile southeast of the school campus. The speed limit on Colima Road is 25 mph.

Existing Traffic Volumes

Manual traffic counts were taken at the study area intersections during the weekday afternoon peak period and the Saturday mid-day peak period in December 2020. These time periods were addressed because they coincide with the times that the ballfields would be active with Little

League games and other leagues that might be using the fields. However, since the traffic volumes were lower than normal because of the COVID-19 pandemic, previous traffic volumes were obtained from the LA County "Traffic Counts" website to quantify the most recent traffic volumes that were recorded on the study area streets. The traffic counts that were taken in December 2020, which included turning movements at each of the study area intersections, were then adjusted by an expansion factor so that the traffic volumes used for the analysis matched or exceeded the traffic counts obtained from the LA County website and are representative of normal non-pandemic conditions.

The existing peak hour traffic volumes at each intersection are shown on Figure 6 for the Kwis Elementary School study area and on Figure 7 for the Cedarlane Academy study area. The figures show the weekday afternoon and Saturday mid-day peak hour traffic volumes and turning movements. The weekday afternoon peak hour represents the commuter peak which typically occurs between 5:00 and 6:00 PM. The Saturday mid-day peak hour represents the highest one-hour period of traffic flow between 12:00 and 3:00 PM.

Existing Intersection Levels of Service

To quantify the existing baseline traffic conditions, the study area intersections were analyzed to determine their operating conditions during the weekday afternoon and Saturday mid-day peak periods. Based on the peak hour traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the average vehicle delay values and corresponding levels of service have been determined at each intersection, as summarized in Table 3 for the Kwis Elementary School study area and Table 4 for the Cedarlane Academy study area.

TABLE 3
EXISTING INTERSECTION LEVELS OF SERVICE – KWIS ELEMENTARY SCHOOL

Intersection	*Delay Value (seconds/vehicle) & Level of Service*	
	Weekday PM Peak Hour	*Saturday Mid-Day Peak Hour*
SIGNALIZED INTERSECTIONS		
Turnbull Canyon Road / Los Robles Avenue	12.4 – B	12.0 – B
Hacienda Boulevard / Three Palms Street	41.6 – D	19.3 – B
Hacienda Boulevard / Newton Street	24.0 – C	21.6 – C
INTERSECTION WITH STOP SIGNS		
Kwis Avenue / Three Palms Street	8.3 – A	8.2 – A
Kwis Avenue / Los Robles Avenue	9.3 – A	8.9 – A
Kwis Avenue / Kennard Street	8.1 – A	8.2 – A
Kwis Avenue / Newton Street	10.6 – B	9.9 – A

TABLE 4 EXISTING INTERSECTION LEVELS OF SERVICE – CEDARLANE ACADEMY		
Intersection	*Delay Value (seconds/vehicle) & Level of Service*	
	Weekday PM Peak Hour	*Saturday Mid-Day Peak Hour*
SIGNALIZED INTERSECTIONS		
Stimson Avenue / Garo Street	7.2 – A	6.9 – A
Stimson Avenue / Sigman Street	5.3 – A	5.3 – A
Colima Road / Countrywood Avenue	11.8 – B	10.5 – B
INTERSECTION WITH STOP SIGNS		
Glenelder Avenue / Garo Street	11.1 – B	10.2 – B
Glenelder Avenue / Cedarlane Drive	9.2 – A	9.0 – A
Glenelder Avenue / Wedgeworth Drive	8.9 – A	8.3 – A
Flamstead Drive / Sigman Street	10.1 – B	9.6 – A
Fieldgate Avenue / Cedarlane Drive	10.8 – B	9.7 – A
Fieldgate Avenue / Wedgeworth Drive	11.4 – B	9.2 – A
Countrywood Avenue / Wedgeworth Drive	12.1 – B	9.6 – A

The levels of service shown in Tables 3 and 4 are based on the average vehicle delay values that were calculated for each intersection using the Highway Capacity Software. The relationship between the average delay values and levels of service is shown in Table 5.

TABLE 5 RELATIONSHIP BETWEEN DELAY VALUES & LEVELS OF SERVICE		
Level of Service	*Delay Value (seconds) Signalized Intersections*	*Delay Value (seconds) Unsignalized Intersections*
A	0.0 to 10.0	0.0 to 10.0
B	> 10.0 to 20.0	> 10.0 to 15.0
C	> 20.0 to 35.0	> 15.0 to 25.0
D	> 35.0 to 55.0	> 25.0 to 35.0
E	> 55.0 to 80.0	> 35.0 to 50.0
F	> 80.0	> 50.0

Future Baseline Traffic Conditions

As the proposed ballfields are expected to be completed and operational in the year 2023, the existing traffic volumes were expanded by a growth factor of three percent (one percent per year) to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area. According to the Los Angeles County Congestion Management Program, the annual growth rate for Regional Statistical Area 26, of which Hacienda Heights is a part, is 0.4 percent per year from 2020 to 2025. So the use of a one percent annual growth rate to project the year 2023 baseline traffic volumes is conservatively high.

The future baseline levels of service were calculated for each study area intersection based on the

expanded peak hour traffic volumes, as summarized in Table 6 for the Kwis Elementary School study area and Table 7 for the Cedarlane Academy study area. For the target year of 2023, all of the study area intersections are projected to operate at acceptable levels of service (LOS A through D) during the weekday afternoon and Saturday mid-day peak periods.

TABLE 6
YEAR 2023 INTERSECTION LEVELS OF SERVICE – KWIS ELEMENTARY SCHOOL

Intersection	*Delay Value (seconds/vehicle) & Level of Service*	
	Weekday PM Peak Hour	*Saturday Mid-Day Peak Hour*
SIGNALIZED INTERSECTIONS		
Turnbull Canyon Road / Los Robles Avenue	12.5 – B	12.2 – B
Hacienda Boulevard / Three Palms Street	47.0 – D	21.7 – C
Hacienda Boulevard / Newton Street	25.2 – C	22.4 – C
INTERSECTION WITH STOP SIGNS		
Kwis Avenue / Three Palms Street	8.4 – A	8.3 – A
Kwis Avenue / Los Robles Avenue	9.4 – A	9.0 – A
Kwis Avenue / Kennard Street	8.1 – A	8.3 – A
Kwis Avenue / Newton Street	10.8 – B	10.1 – B

TABLE 7
YEAR 2023 INTERSECTION LEVELS OF SERVICE – CEDARLANE ACADEMY

Intersection	*Delay Value (seconds/vehicle) & Level of Service*	
	Weekday PM Peak Hour	*Saturday Mid-Day Peak Hour*
SIGNALIZED INTERSECTIONS		
Stimson Avenue / Garo Street	7.3 – A	7.0 – A
Stimson Avenue / Sigman Street	5.4 – A	5.4 – A
Colima Road / Countrywood Avenue	12.0 – B	10.7 – B
INTERSECTION WITH STOP SIGNS		
Glenelder Avenue / Garo Street	11.2 – B	10.2 – B
Glenelder Avenue / Cedarlane Drive	9.2 – A	9.0 – A
Glenelder Avenue / Wedgeworth Drive	9.0 – A	8.4 – A
Flamstead Drive / Sigman Street	10.2 – B	9.7 – A
Fieldgate Avenue / Cedarlane Drive	10.9 – B	9.8 – A
Fieldgate Avenue / Wedgeworth Drive	11.8 – B	9.3 – A
Countrywood Avenue / Wedgeworth Drive	12.6 – B	9.8 – A

III.
TRAFFIC IMPACT ANALYSIS

This section summarizes the analysis of the project's impacts on study area traffic conditions. First is a discussion of project generated traffic volumes. This is followed by an analysis of the impacts of the proposed school expansion on traffic volumes and intersection levels of service.

Standards of Significance

According to the Los Angeles County "Traffic Impact Analysis Guidelines," an intersection would be significantly impacted if the project would result in unacceptable queuing at a nearby intersection and the guidelines indicate that LOS E or F represent unacceptable traffic conditions. The impacts would not be significant and a queuing analysis would not be required at locations that are projected to operate at LOS A, B, C, or D after project completion.

According to the "Los Angeles County Congestion Management Program," an intersection would be significantly impacted if the project would increase traffic demand by 2 percent of capacity (volume/capacity ratio increase of 0.02 or greater) at an intersection that is projected to operate at LOS F.

Project Generated Traffic

The volumes of traffic that would be generated by the proposed ballfields were determined to estimate the impacts of the project on the study area streets and intersections. The trip generation rates and the anticipated volumes of traffic that would be generated by the ballfields are shown in Table 8 for a typical weekday and Table 9 for a Saturday.

TABLE 8
PROJECT GENERATED TRAFFIC - WEEKDAY

	PM Peak Hour (trips per hour)			*Daily (trips per day)*	
Land Use	*In*	*Out*	*Total*	*Cedarlane (No lights – 2 games/day)*	*Kwis ES (With lights – 4 games/day)*
TRIP GENERATION RATES					
Ballfield (trips per field)	35	35	70	140	280
GENERATED TRAFFIC VOLUMES					
Ballfield (2 fields)	70	70	140	280	560

The assumptions that were used to quantify the volumes of traffic that would be generated by the ballfields are as follows:

- 2 games per day on weekdays and 8 games per day on Saturdays for fields with no lights
- 4 games per day on weekdays and 10 games per day on Saturday for fields with lights
- 15 players per team

- A game would generate 1 vehicle trip per player (round trip)
- 2 teams per game per field
- 5 additional trips per game for officials and miscellaneous spectators on weekdays with no lights
- 15 additional trips per game for officials and miscellaneous spectators on weekdays with lights

TABLE 9
PROJECT GENERATED TRAFFIC - SATURDAY

	Mid-Day Peak Hour (trips per hour)			*Daily (trips per day)*	
Land Use	***In***	***Out***	***Total***	***Cedarlane (No lights – 8 games/day)***	***Kwis ES (With lights – 10 games/day)***
TRIP GENERATION RATES					
Ballfield (trips per field)	45	45	90	720	900
GENERATED TRAFFIC VOLUMES					
Ballfield (2 fields)	90	90	180	1,440	1,800

The trip generation rates that are typically used for a traffic impact study are from the Institute of Transportation Engineers *Trip Generation Manual*. As this document does not include a ballfield land use category, the project generated traffic volumes were estimated using the assumptions outlined above.

Table 8 indicates that the two ballfields at each school would generate 140 vehicle trips during the weekday afternoon peak hour (70 inbound and 70 outbound). On a daily basis, the fields at Cedarlane Academy would generate 280 trips per day and the fields at Kwis Elementary School would generate 560 trips per day.

Table 9 indicates that the two ballfields at each school would generate 180 vehicle trips during the Saturday mid-day peak hour (90 inbound and 90 outbound). On a daily basis, the fields at Cedarlane Academy would generate 1,440 trips per day and the fields at Kwis Elementary School would generate 1,800 trips per day.

It should be noted that the project generated traffic volumes shown in Tables 8 and 9 do not represent new traffic on the roadway network, but instead represent the traffic that would be redirected to the Kwis Elementary School and Cedarlane Academy sites. This traffic is already being generated by the existing ballfields at Wedgeworth Elementary School.

To quantify the increase in traffic at each intersection resulting from the proposed ballfields, the project generated traffic volumes shown in Tables 8 and 9 were geographically distributed onto the street network for the traffic impact analysis. The volumes of traffic that would be generated by the ballfields are shown on Figure 8 for the study area streets and intersections at Kwis

Elementary School and on Figure 9 for the streets and intersections at Cedarlane Academy. The weekday afternoon peak hour and the Saturday mid-day peak hour are shown on the figures.

The assumed directional distribution percentages for the project generated traffic that are shown on Figures 8 and 9 are based on the layout of the street network and the anticipated geographical distribution of the players' residences. The information that was used to develop the distribution percentages was the "League Boundaries" map provided by Hacienda Heights Little League.

Projected Traffic Volumes with Ballfields

For purposes of evaluating the impacts of the proposed ballfields, the traffic analysis considers two baseline scenarios. One is the project's impacts on existing conditions and the other is the project's impacts on the projected year 2023 conditions. To quantify the impacts on existing conditions, the project generated traffic volumes shown on Figures 8 and 9 were added to the existing traffic volumes. The resulting "existing plus project" traffic volumes are shown on Figures10 and 11.

The total volumes of traffic projected for the year 2023 traffic conditions for the "with project" scenario were determined by adding the project generated traffic to the future baseline traffic volumes, which were calculated by expanding the existing volumes shown on Figures 6 and 7 by a growth factor of three percent.

Intersection Impact Analysis

An analysis of traffic impacts was conducted by quantifying the before-and-after traffic volumes, then determining the average delay values and levels of service at the study area intersections for the "without project" and "with project" scenarios. Two scenarios were used as the baseline conditions for the intersection impact analysis: existing year 2020 conditions and the projected year 2023 conditions. The year 2023 was used as the target year for future conditions as that is the first year that the ballfields would be operational. The impact analysis, therefore, addresses the following four scenarios.

- Existing Traffic Conditions
- Existing plus Project Traffic Conditions
- Year 2023 without Project
- Year 2023 with Project.

The before-and-after delay values and levels of service at each of the study area intersections for Kwis Elementary School are summarized in Table 10 for the existing conditions baseline scenario. The table shows the existing traffic conditions, the traffic conditions with the addition of the ballfield-generated traffic, and the increase in delay values associated with the project. The final column in the table indicates if the intersection would be significantly impacted by the ballfield traffic according to the significance criteria outlined above.

TABLE 10
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
EXISTING CONDITIONS AS BASELINE – KWIS ELEMENTARY SCHOOL

Intersection	Delay Value (seconds/vehicle) & Level of Service		Increase In Delay (sec)	Significant Impact
	Existing Conditions	Existing Plus Project		
SIGNALIZED INTERSECTIONS				
Turnbull Canyon Road / Los Robles Avenue				
Weekday PM Peak Hour	12.4 – B	12.6 – B	0.2	No
Saturday Mid-Day Peak Hour	12.0 – B	12.3 – B	0.3	No
Hacienda Blvd / Three Palms Street				
Weekday PM Peak Hour	41.6 – D	41.9 – D	0.3	No
Saturday Mid-Day Peak Hour	19.3 – B	19.4 – B	0.1	No
Hacienda Blvd / Newton Street				
Weekday PM Peak Hour	24.0 – C	25.2 – C	1.2	No
Saturday Mid-Day Peak Hour	21.6 – C	22.3 – C	0.7	No
UNSIGNALIZED INTERSECTION				
Kwis Avenue / Three Palms Street				
Weekday PM Peak Hour	8.3 – A	8.6 – A	0.3	No
Saturday Mid-Day Peak Hour	8.2 – A	8.6 – A	0.4	No
Kwis Avenue / Los Robles Avenue				
Weekday PM Peak Hour	9.3 – A	9.9 – A	0.6	No
Saturday Mid-Day Peak Hour	8.9 – A	9.6 – A	0.7	No
Kwis Avenue / Kennard Street				
Weekday PM Peak Hour	8.1 – A	8.5 – A	0.4	No
Saturday Mid-Day Peak Hour	8.2 – A	8.8 – A	0.6	No
Kwis Avenue / Newton Street				
Weekday PM Peak Hour	10.6 – B	11.3 – B	0.7	No
Saturday Mid-Day Peak Hour	9.9 – A	10.7 – B	0.8	No

The intersection of Turnbull Canyon Road and Los Robles Avenue, for example, currently operates with an average delay value of 12.4 seconds and LOS B for existing conditions and would operate with an average delay value of 12.6 seconds and LOS B for the "existing plus project" scenario. The additional traffic generated by the ballfields would increase the average delay at the intersection by 0.2 seconds and the intersection would not be significantly impacted based on the criteria outlined previously because the intersection would continue to operate at an acceptable LOS B.

Table 10 indicates that the traffic generated by the proposed ballfields would not result in a significant impact at any of the study area intersections during the weekday PM peak hour or the Saturday mid-day peak hour according to the Los Angeles County and the Congestion Management Program guidelines.

The before-and-after delay values and levels of service at each of the study area intersections for Cedarlane Academy are summarized in Table 11 for the existing conditions baseline scenario. As shown, the traffic generated by the proposed ballfields would not result in a significant impact at

any of the study area intersections during the weekday PM peak hour or the Saturday mid-day peak hour according to the guidelines.

TABLE 11
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
EXISTING CONDITIONS AS BASELINE – CEDARLANE ACADEMY

Intersection	*Delay Value (seconds/vehicle) & Level of Service*		*Increase In Delay (sec)*	*Significant Impact*
	Existing Conditions	*Existing Plus Project*		
SIGNALIZED INTERSECTIONS				
Stimson Avenue / Garo Street				
Weekday PM Peak Hour	7.2 – A	7.5 – A	0.3	No
Saturday Mid-Day Peak Hour	6.9 – A	7.3 – A	0.4	No
Stimson Avenue / Sigman Street				
Weekday PM Peak Hour	5.3 – A	5.7 – A	0.4	No
Saturday Mid-Day Peak Hour	5.3 – A	5.7 – A	0.4	No
Colima Road / Countrywood Avenue				
Weekday PM Peak Hour	11.8 – B	12.1 – B	0.3	No
Saturday Mid-Day Peak Hour	10.5 – B	10.8 – B	0.3	No
UNSIGNALIZED INTERSECTION				
Glenelder Avenue / Garo Street				
Weekday PM Peak Hour	11.1 – B	11.7 – B	0.6	No
Saturday Mid-Day Peak Hour	10.2 – B	10.7 – B	0.5	No
Glenelder Avenue / Cedarlane Drive				
Weekday PM Peak Hour	9.2 – A	9.8 – A	0.6	No
Saturday Mid-Day Peak Hour	9.0 – A	9.6 – A	0.6	No
Glenelder Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	8.9 – A	9.2 – A	0.3	No
Saturday Mid-Day Peak Hour	8.3 – A	8.6 – A	0.3	No
Flamstead Drive / Sigman Street				
Weekday PM Peak Hour	10.1 – B	10.2 – B	0.1	No
Saturday Mid-Day Peak Hour	9.6 – A	10.1 – B	0.5	No
Fieldgate Avenue / Cedarlane Drive				
Weekday PM Peak Hour	10.8 – B	11.2 – B	0.4	No
Saturday Mid-Day Peak Hour	9.7 – A	10.1 – B	0.4	No
Fieldgate Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	11.4 – B	12.3 – B	0.9	No
Saturday Mid-Day Peak Hour	9.2 – A	9.8 – A	0.6	No
Countrywood Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	12.1 – B	13.0 – B	0.9	No
Saturday Mid-Day Peak Hour	9.6 – A	10.2 – B	0.6	No

The before-and-after delay values and levels of service at each of the study area intersections for Kwis Elementary School are summarized in Table 12 for the year 2023 baseline scenario. As shown, the traffic generated by the proposed ballfields would not result in a significant impact at

any of the study area intersections during the weekday PM peak hour or the Saturday mid-day peak hour according to the guidelines.

TABLE 12
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
YEAR 2023 AS BASELINE – KWIS ELEMENTARY SCHOOL

Intersection	*Delay Value (seconds/vehicle) & Level of Service*		*Increase In Delay (sec)*	*Significant Impact*
	2023 Without Project Conditions	*2023 Plus Project*		
SIGNALIZED INTERSECTIONS				
Turnbull Canyon Road / Los Robles Avenue				
Weekday PM Peak Hour	12.5 – B	12.7 – B	0.2	No
Saturday Mid-Day Peak Hour	12.2 – B	12.4 – B	0.2	No
Hacienda Blvd / Three Palms Street				
Weekday PM Peak Hour	47.0 – D	47.5 – D	0.5	No
Saturday Mid-Day Peak Hour	21.7 – C	21.9 – C	0.2	No
Hacienda Blvd / Newton Street				
Weekday PM Peak Hour	25.2 – C	26.6 – C	1.4	No
Saturday Mid-Day Peak Hour	22.4 – C	23.1 – C	0.7	No
UNSIGNALIZED INTERSECTION				
Kwis Avenue / Three Palms Street				
Weekday PM Peak Hour	8.4 – A	8.7 – A	0.3	No
Saturday Mid-Day Peak Hour	8.3 – A	8.7 – A	0.4	No
Kwis Avenue / Los Robles Avenue				
Weekday PM Peak Hour	9.4 – A	10.1 – B	0.7	No
Saturday Mid-Day Peak Hour	9.0 – A	9.7 – A	0.7	No
Kwis Avenue / Kennard Street				
Weekday PM Peak Hour	8.1 – A	8.5 – A	0.4	No
Saturday Mid-Day Peak Hour	8.3 – A	8.9 – A	0.6	No
Kwis Avenue / Newton Street				
Weekday PM Peak Hour	10.8 – B	11.6 – B	0.7	No
Saturday Mid-Day Peak Hour	10.1 – B	11.0 – B	0.8	No

The before-and-after delay values and levels of service at each of the study area intersections for Cedarlane Academy are summarized in Table 13 for the year 2023 baseline scenario. As shown, the traffic generated by the proposed ballfields would not result in a significant impact at any of the study area intersections during the weekday PM peak hour or the Saturday mid-day peak hour according to the guidelines.

TABLE 13
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
YEAR 2023 AS BASELINE – CEDARLANE ACADEMY

Intersection	Delay Value (seconds/vehicle) & Level of Service		Increase In Delay (sec)	Significant Impact
	2023 Without Project	2023 Plus Project		
SIGNALIZED INTERSECTIONS				
Stimson Avenue / Garo Street				
Weekday PM Peak Hour	7.3 – A	7.7 – A	0.4	No
Saturday Mid-Day Peak Hour	7.0 – A	7.5 – A	0.5	No
Stimson Avenue / Sigman Street				
Weekday PM Peak Hour	5.4 – A	5.9 – A	0.5	No
Saturday Mid-Day Peak Hour	5.4 – A	5.8 – A	0.4	No
Colima Road / Countrywood Avenue				
Weekday PM Peak Hour	12.0 – B	12.4 – B	0.4	No
Saturday Mid-Day Peak Hour	10.7 – B	11.0 – B	0.3	No
UNSIGNALIZED INTERSECTION				
Glenelder Avenue / Garo Street				
Weekday PM Peak Hour	11.2 – B	11.9 – B	0.7	No
Saturday Mid-Day Peak Hour	10.2 – B	10.8 – B	0.6	No
Glenelder Avenue / Cedarlane Drive				
Weekday PM Peak Hour	9.2 – A	9.8 – A	0.6	No
Saturday Mid-Day Peak Hour	9.0 – A	9.7 – A	0.7	No
Glenelder Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	9.0 – A	9.3 – A	0.3	No
Saturday Mid-Day Peak Hour	8.4 – A	8.7 – A	0.3	No
Flamstead Drive / Sigman Street				
Weekday PM Peak Hour	10.2 – B	10.5 – B	0.3	No
Saturday Mid-Day Peak Hour	9.7 – A	10.1 – B	0.4	No
Fieldgate Avenue / Cedarlane Drive				
Weekday PM Peak Hour	10.9 – B	11.3 – B	0.4	No
Saturday Mid-Day Peak Hour	9.8 – A	10.1 – B	0.3	No
Fieldgate Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	11.8 – B	12.7 – B	0.9	No
Saturday Mid-Day Peak Hour	9.3 – A	9.9 – A	0.6	No
Countrywood Avenue / Wedgeworth Drive				
Weekday PM Peak Hour	12.6 – B	13.5 – B	0.9	No
Saturday Mid-Day Peak Hour	9.8 – A	10.4 – B	0.6	No

Non-motorized Transportation and Transit

The proposed ballfields would generate an increased demand for non-motorized transportation as some of the players, coaches, and spectators would travel to and from the schools as pedestrians or on bicycles. The streets in the vicinity of Kwis Elementary School have sidewalks along both sides of the street except for the north side of Three Palms Street between the freeway off-ramp and Hacienda Boulevard and the south side of Los Robles Avenue on a short segment west of Kwis Avenue. The streets in the vicinity of Cedarlane Academy have sidewalks along both sides of the street except for the north side of Garo Street east of Stimson Avenue and Flamstead Drive

southwest of Sigman Street. The signalized intersections in the study area are equipped with painted crosswalks and pedestrian crossing signals and the unsignalized intersections near the schools have yellow painted crosswalks. These pedestrian amenities will accommodate and enhance pedestrian circulation and safety in the school areas.

Bike lanes are currently in place on Colima Road south of Cedarlane Academy and the schools have bike racks on the campuses. With regard to public transit, Foothill Transit operates Line 185 on Hacienda Boulevard and Colima Road; Line 282 on Hacienda Boulevard, Haliburton Road, and Colima Road; and Line 285 on Hacienda Boulevard. In addition, Lines 493 and 495 run along the Pomona Freeway and a transit center is located at Puente Hills Mall approximately one mile east of Cedarlane Academy.

The proposed ballfields project would not adversely affect the performance or safety of any transit or non-motorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these alternative transportation modes. The ballfields are consistent with such plans and policies as sidewalks are in place along the streets near the schools, bike racks are provided at the schools, and bus routes operate near both school sites.

Traffic Hazards and Incompatible Uses

The increased levels of traffic that would be generated by the ballfields, the increased number of pedestrians and bicyclists, and the increased number of vehicular turning movements at the school entrances and at the nearby intersections would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring during the days and hours when the schools are not in session. These impacts would not be significant, however, because the study area streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity. There are no severe visibility constraints at the schools' access driveways associated with curves or hills and the existing schools have been in operation at these locations for many years. The proposed ballfields would, therefore, be a compatible use in the area and would not substantially increase hazards due to any design features.

Emergency Access

The existing access and circulation features at the schools, including the on-site roadways, parking lots, and fire lanes, would accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. Site access would be provided via the driveways on Kwis Avenue for Kwis Elementary School and on Cedarlane Drive and Fieldgate Avenue for Cedarlane Academy. In addition, Cedarlane Academy has two gates with curb ramps on Fieldgate Avenue that provide direct access to the athletic fields for maintenance and emergency vehicles. The project would not, therefore, result in inadequate emergency access at either of the two schools.

Recommended Mitigation Measures and Access Improvements

As the project would not result in any significant adverse traffic impacts and as the existing access and circulation features at and near the schools would adequately accommodate the proposed ballfield activities, no mitigation measures or access improvements would be needed.

IV.
SUMMARY OF IMPACTS & FINDINGS

The key findings of the traffic impact analysis are presented below.

- The proposed ballfields would generate 140 vehicle trips during the afternoon peak hour at each school site on a weekday (70 inbound and 70 outbound) and 180 trips during the Saturday mid-day peak hour (90 inbound and 90 outbound).

- At Kwis Elementary School, where the fields would not have lights, the ballfields would generate an estimated 280 vehicle trips per day on a weekday (based on a usage level of two games per field per day) and 1,440 trips per day on a Saturday (based on a usage level of eight games per field per day).

- At Cedarlane Academy, where the fields would be lighted, the ballfields would generate an estimated 560 trips per day on a weekday (based on a usage level of four games per field per day) and 1,800 trips per day on a Saturday (based on a usage level of 10 games per field per day).

- The traffic generated by the ballfields would not result in a significant impact at any of the study area streets and intersections according to the Los Angeles County and the Congestion Management Program guidelines.

- The proposed ballfields would not adversely affect the performance or safety of any transit or non-motorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these alternative transportation modes.

- The ballfields would not substantially increase hazards due to a design feature or incompatible uses and would not result in inadequate emergency access.

- As the project would not result in any significant adverse traffic impacts and as the existing access and circulation features at and near the schools would adequately accommodate the proposed ballfield activities, no mitigation measures or access improvements would be needed.

APPENDIX

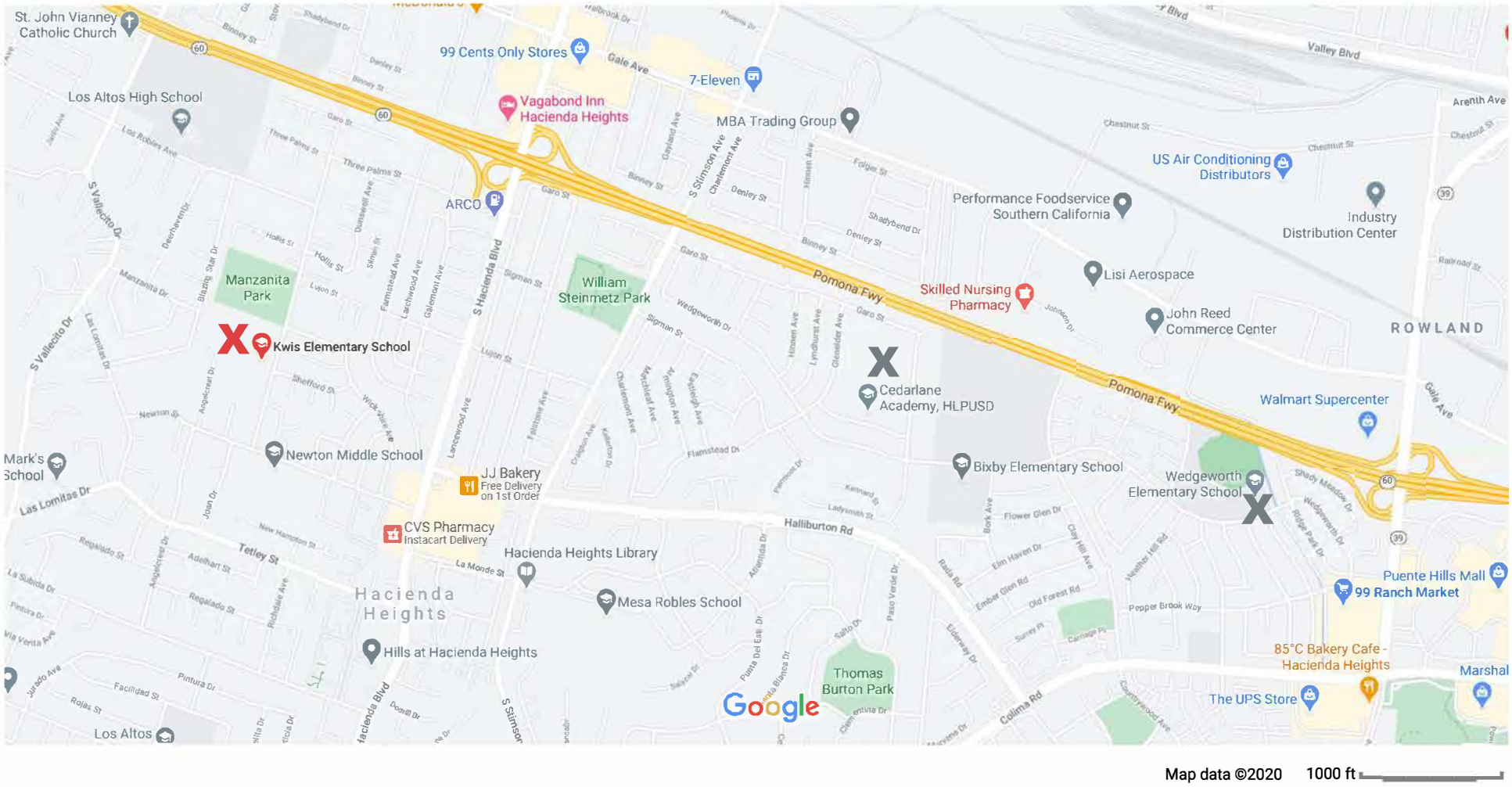


FIGURE 1
LOCATION MAP
KWIS ELEMENTARY SCHOOL & CEDARLANE ACADEMY BALLFIELDS

MANZANITA PARK

EXISTING PARK AND WALKWAY

ACCESS TO PARK WITH GATE

FIRE LANE

BATTING CAGES WITH 8' SURROUND FENCE

10' HT CHAIN LINK FENCE WITH 15' NETTING ABOVE

10' HT CHAIN LINK FENCE WITH 30' NETTING ABOVE

40' HT BACKSTOP

WALKWAY / PATH OF TRAVEL TO RIGHT OF WAY

LIMIT OF WORK

RESTROOM/ CONCESSION

FIELD LIGHTING

WATER LINE

SOCCER FIELD 150' X 250' (U-8/U-9)

BASEBALL FIELD

EXISTING PORTABLES TO REMAIN

SCHOOL BUILDINGS

EXISTING FIRE LANE

R32'

Kwis Ave

6' HT CHAIN LINK FENCE

WALKWAY / PATH OF TRAVEL TO RIGHT OF WAY

LIMIT OF WORK

10' HT CHAIN LINK FENCE WITH 15' NETTING ABOVE

30' HT BACKSTOP

SCHOOL BUILDING

Blazing Star Dr

10' HT CHAIN LINK FENCE WITH 15' NETTING ABOVE

BATTING CAGES WITH 8' HT FENCING SURROUND

LITTLE LEAGUE FIELD

6' HT CHAIN LINK FENCE

EXISTING 6' HT CHAIN LINK FENCE

6' HT CHAIN LINK FENCE

FIELD LIGHTING

TOTAL AREA OF DISTURBANCE – 257,000 SF

229,630 SF RESTORED PERVIOUS SURFACES

27,370 SF NEW IMPERVIOUS SURFACES

ESTIMATED EARTHWORK QUANTITIES

CUT/FILL TO BALANCE 5,000CY

IMPORT 6,020 CY

LAYOUT LEGEND

- NATURAL TURF
- SYNTHETIC TURF AND PERMEABLE AGGREGATE
- STABILIZED DECOMPOSED GRANITE
- INFIELD SOIL
- CONCRETE PAVING
- LANDSCAPED AREA
- CHAINLINK FENCE AND CONCRETE CURB
- CHAINLINK FENCE
- CONCRETE CURBING
- LIMIT OF SYNTHETIC TURF AND CONCRETE EDGE ANCHOR
- PATH OF TRAVEL

FIGURE 2
SITE PLAN
KWIS ELEMENTARY SCHOOL BALLFIELDS

NORTH

0 40' 80'

SCALE: 1" = 40'

tBP architecture planning interiors

HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT

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architect

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consultant

LICENSED LANDSCAPE ARCHITECT
Robert S. Harding No. 2490
Registered
12-31-21
Renewal Date
Date
STATE OF CALIFORNIA

KWIS ELEMENTARY SCHOOL
BASEBALL AND LITTLE LEAGUE FIELDS

HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT
1925 S. KWIS AVENUE
HACIENDA HEIGHTS, CALIFORNIA 91745

owner

tBP project number : 20922.19

file name:

drawn by: CPW checked by: RSH

date: 04-01-2020

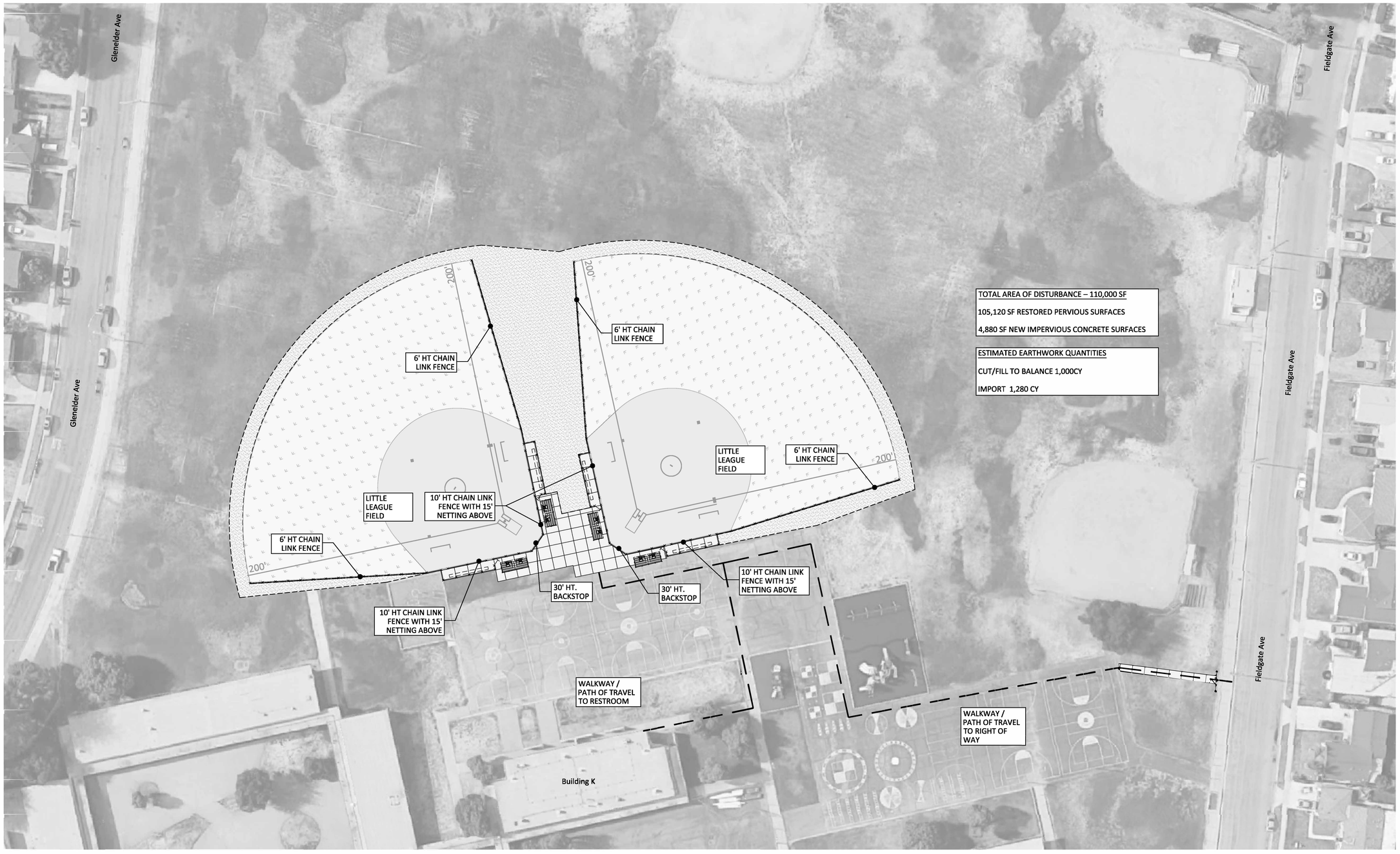
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drawing title:
SITE OVERVIEW

drawing no.:
F-1.0

drawing of



LAYOUT LEGEND

- NATURAL TURF
- INFIELD/ DECOMPOSED GRANITE
- CONCRETE PAVING
- LANDSCAPED AREA
- CHAINLINK FENCE AND CONCRETE CURB
- CHAINLINK FENCE
- CONCRETE CURBING
- PATH OF TRAVEL

NORTH

0 30' 60'

SCALE: 1" = 30'

FIGURE 3
SITE PLAN
CEDARLANE ACADEMY BALLFIELDS

tBP
architecture
planning
interiors

HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT 1920

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Exp. 08-31-2024
STATE OF CALIFORNIA

CEDARLANE ACADEMY
LITTLE LEAGUE FIELDS

HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT
1925 S. KWIS AVENUE
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owner

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SITE PLAN

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F-1.0
drawing of

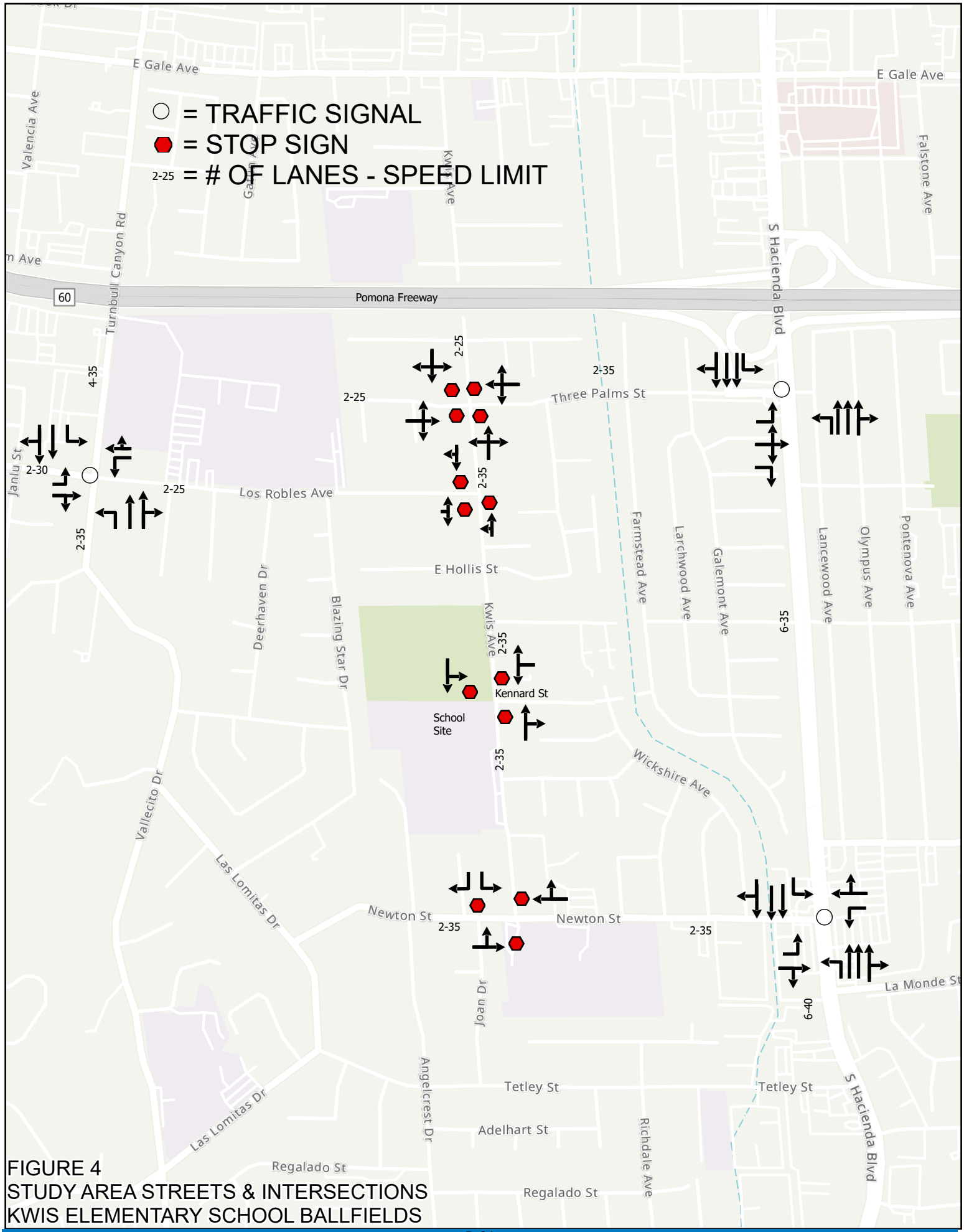


FIGURE 4
STUDY AREA STREETS & INTERSECTIONS
KWIS ELEMENTARY SCHOOL BALLFIELDS

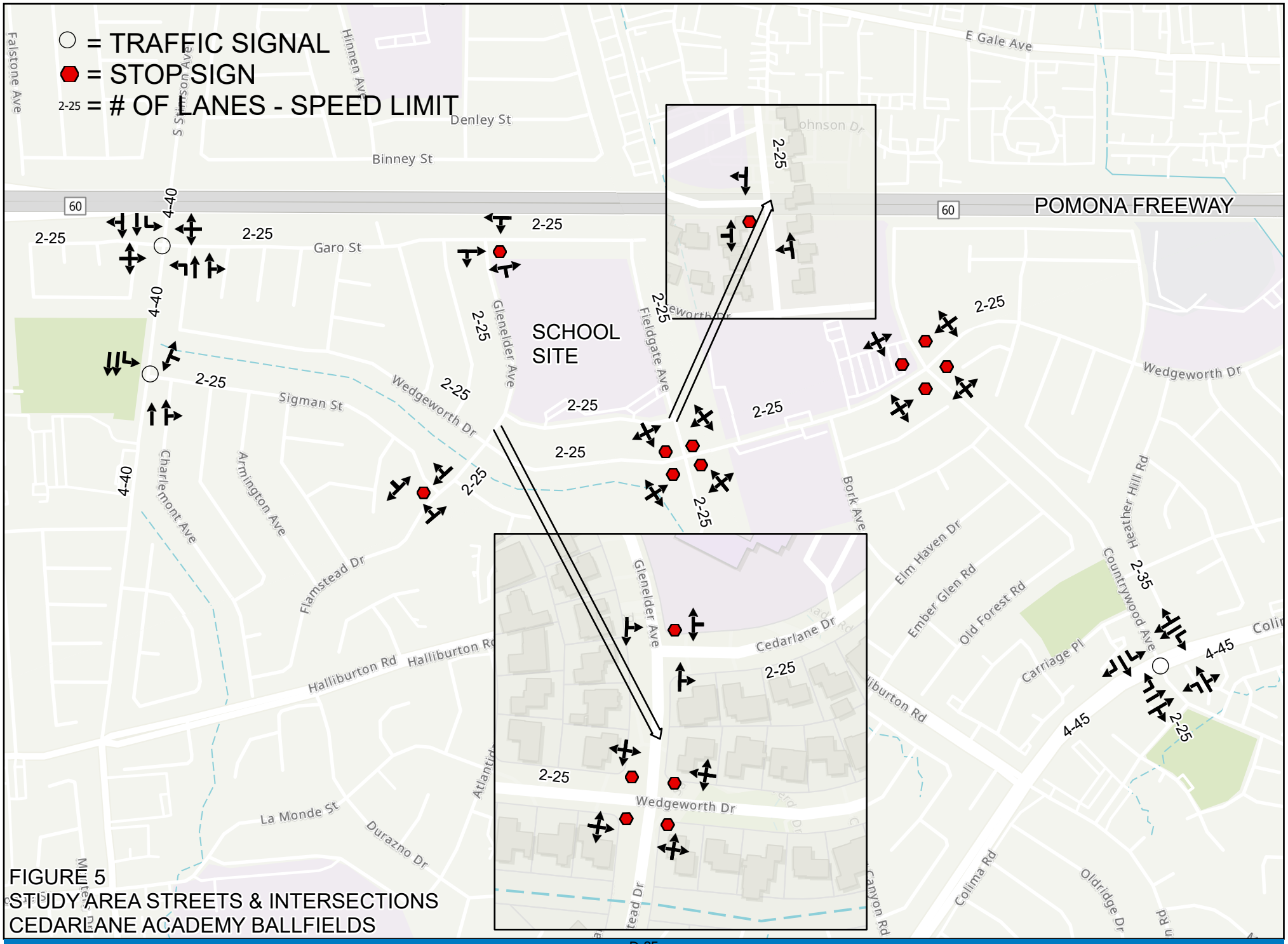


FIGURE 5
STUDY AREA STREETS & INTERSECTIONS
CEDARLANE ACADEMY BALLFIELDS

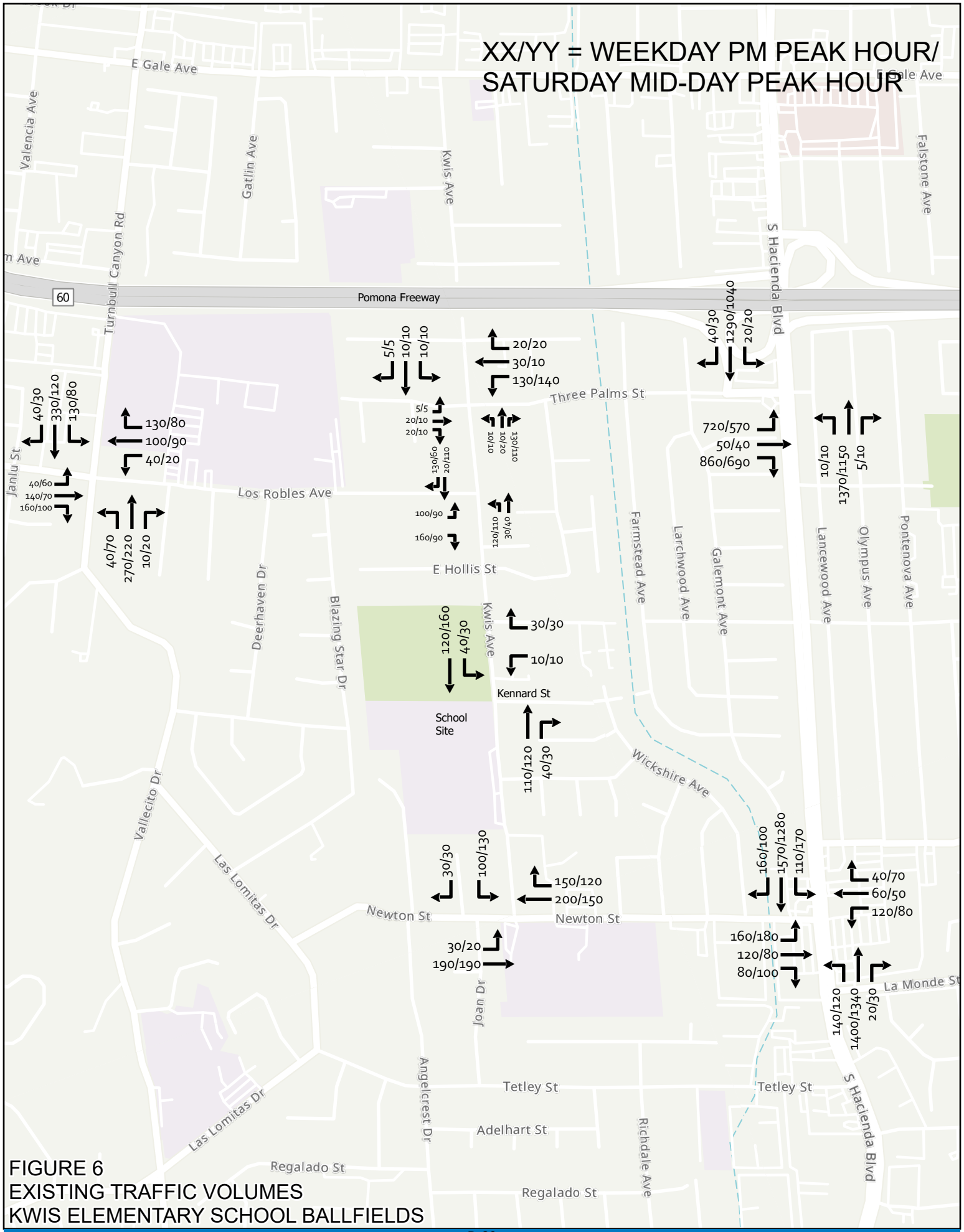


FIGURE 6
EXISTING TRAFFIC VOLUMES
KWIS ELEMENTARY SCHOOL BALLFIELDS

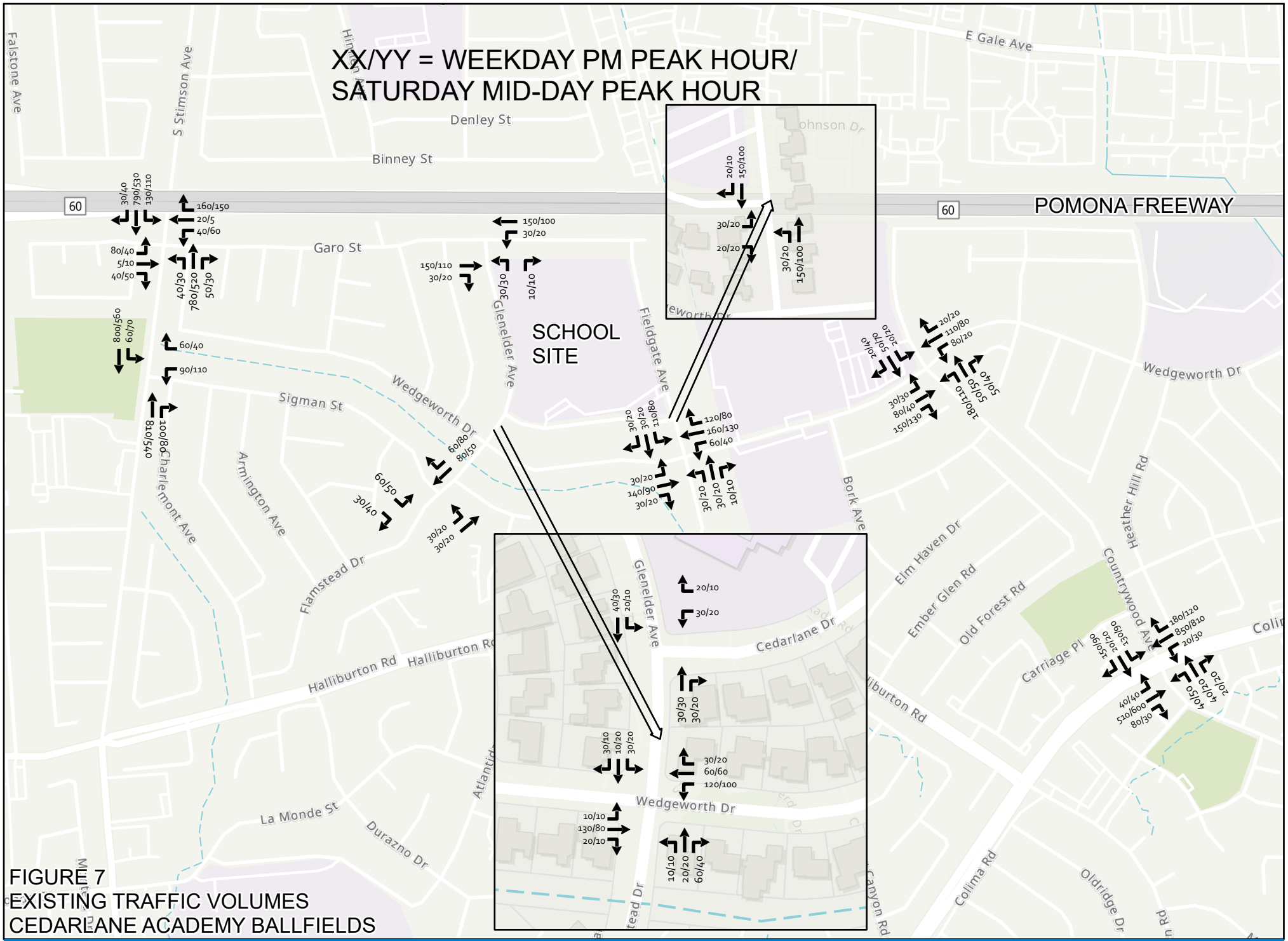


FIGURE 7
EXISTING TRAFFIC VOLUMES
CEDARLANE ACADEMY BALLFIELDS

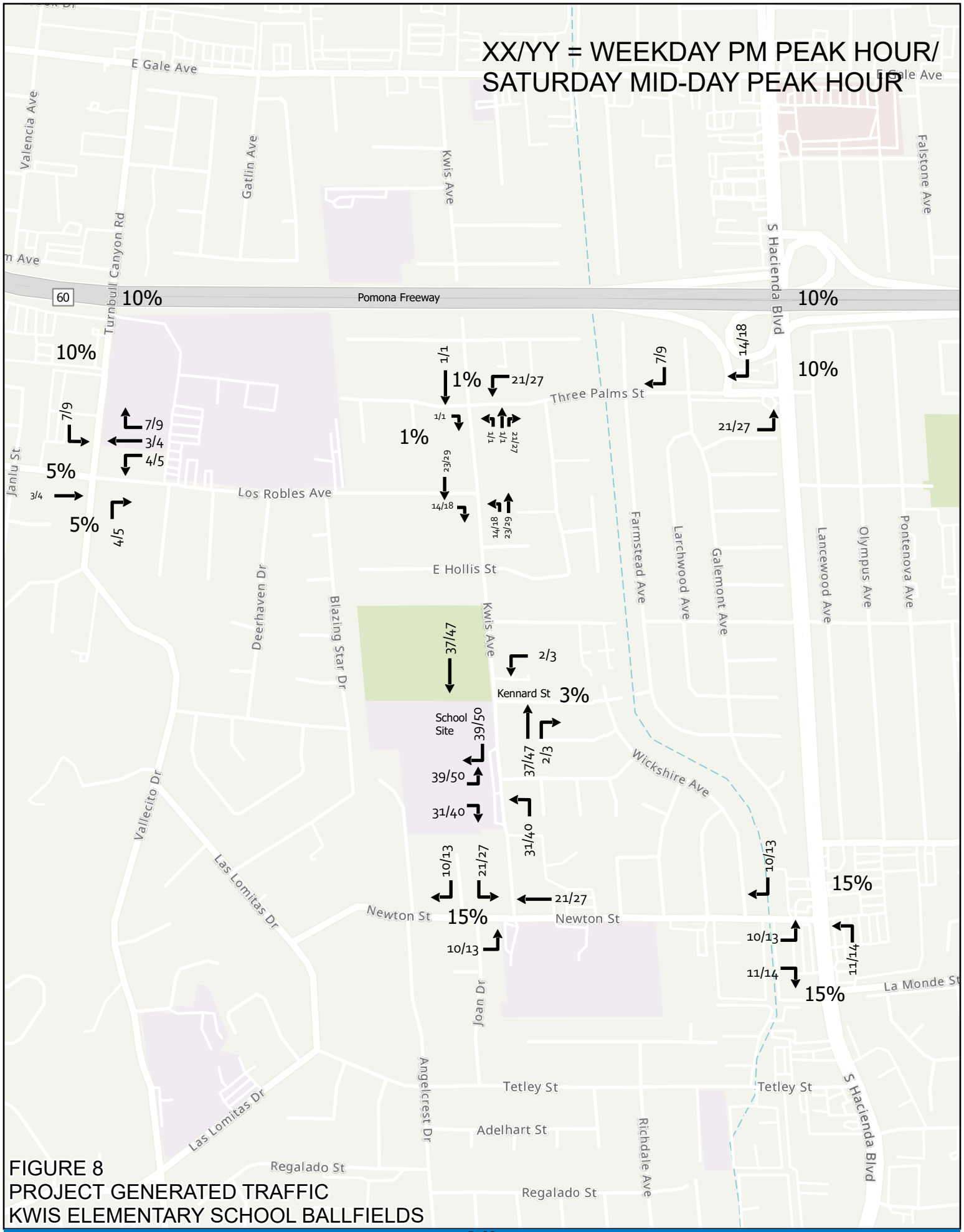


FIGURE 8
PROJECT GENERATED TRAFFIC
KWIS ELEMENTARY SCHOOL BALLFIELDS

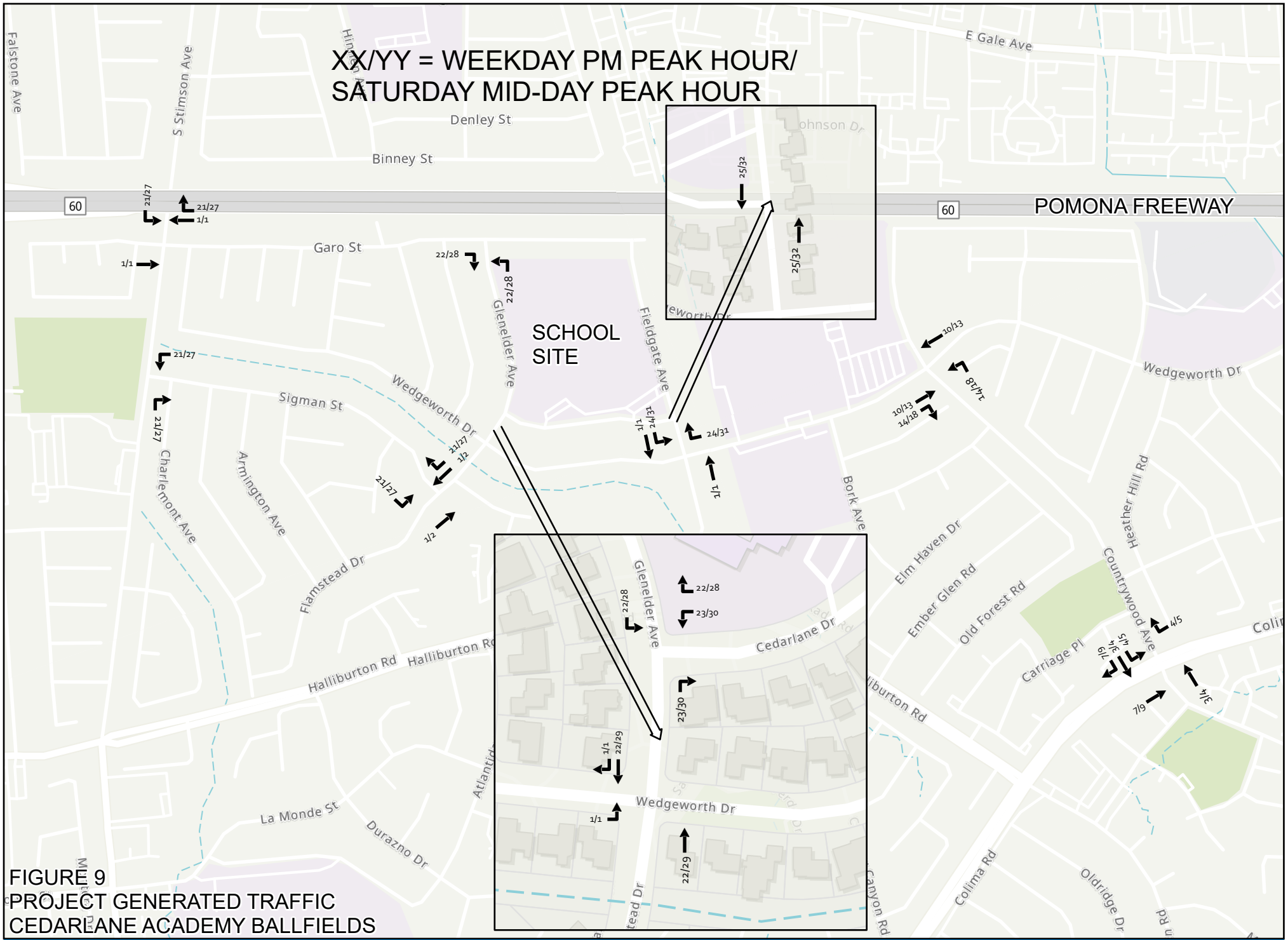


FIGURE 9
PROJECT GENERATED TRAFFIC
CEDARLANE ACADEMY BALLFIELDS

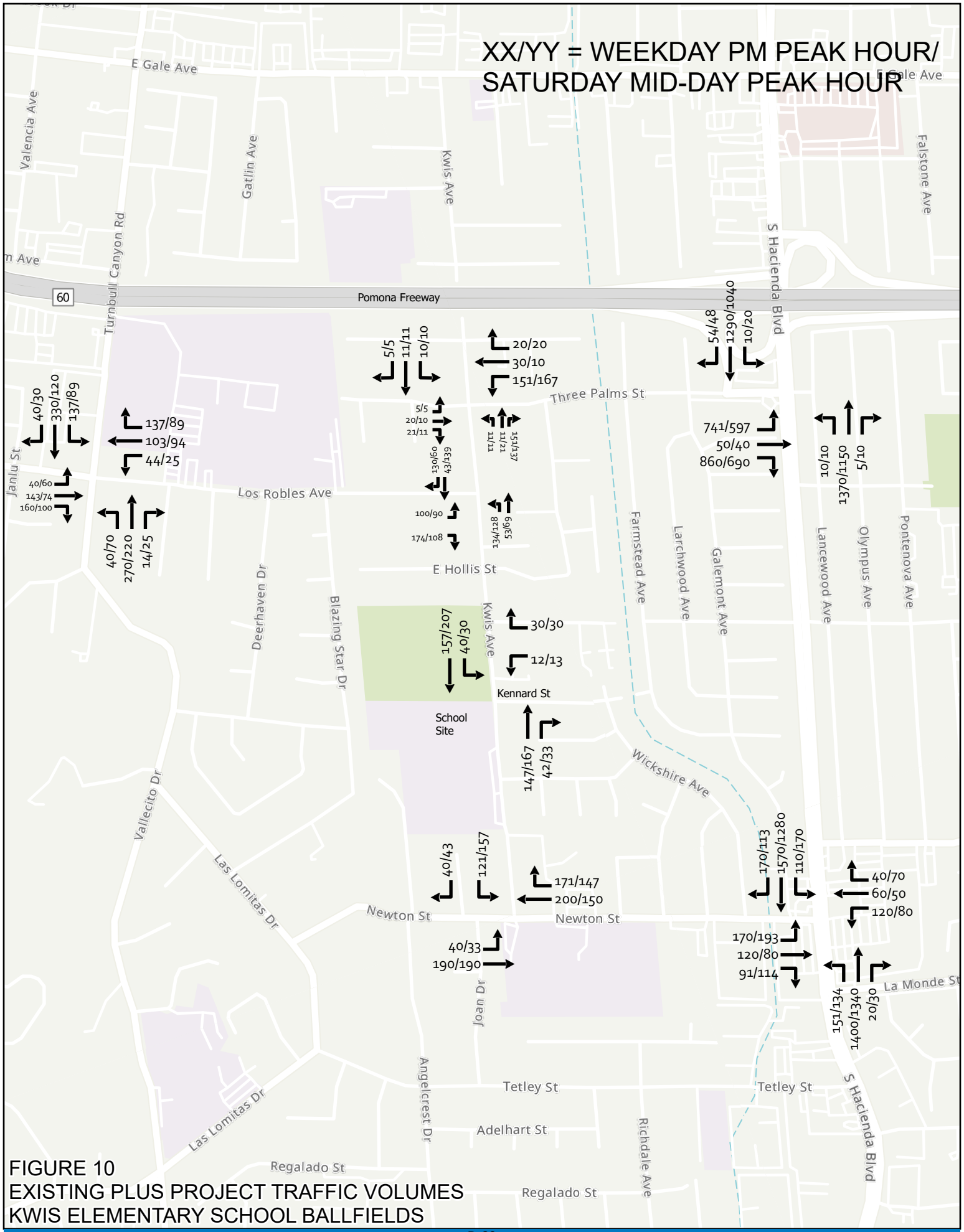


FIGURE 10
EXISTING PLUS PROJECT TRAFFIC VOLUMES
KWIS ELEMENTARY SCHOOL BALLFIELDS

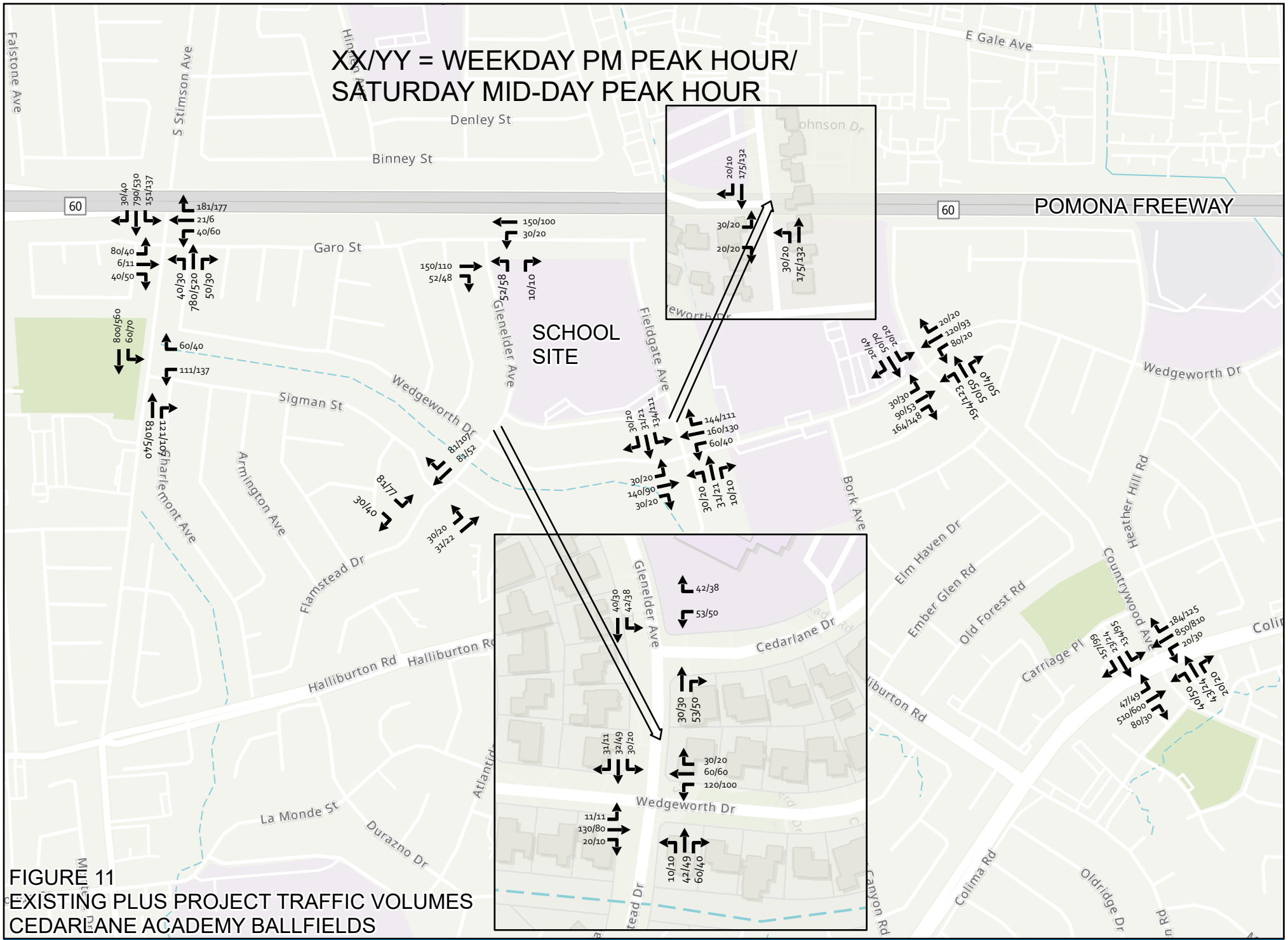


FIGURE 11
EXISTING PLUS PROJECT TRAFFIC VOLUMES
CEDARLANE ACADEMY BALLFIELDS

Appendix E VMT Technical Memo

Appendices

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KITTELSON & ASSOCIATES
750 THE CITY DRIVE, SUITE 410
ORANGE, CA 92868
P 714.468.1997

MEMORANDUM

Date:	January 20, 2021	Project #: 24922
To:	Elizabeth Kim and Dwayne Mears PlaceWorks	
From:	Fernando Sotelo, Damian Stefanakis and Miao Gao, Kittelson & Associates, Inc.	
Project:	Wedgeworth School Project	
Subject:	VMT Analysis for the Wedgeworth K-8 School and Residential Development Project	

INTRODUCTION

In February 2020, PlaceWorks and Kittelson prepared a traffic impact analysis (TIA) to assess transportation impacts related to the Wedgeworth K-8 School and Residential Development Project. The project site is a 20-acre parcel at 16949 Wedgeworth Drive in the unincorporated community of Hacienda Heights, in Los Angeles County The proposed project consists of redeveloping the existing Wedgeworth Elementary School and four baseball fields on the 20-acre site to provide a new K-8 school and rezone approximately 10 acres to allow the development of up to 160 residential units. The overall purpose of the TIA was to inform the Hacienda-La Puente Unified School District (District) and the general public whether the proposed project would result in any significant transportation impacts. At that time, the California Environmental Quality Act (CEQA) required that impacts from land development projects to the circulation system were assessed in terms of delay and/or capacity at roadways and intersections.

Since then Senate Bill 743 (SB 743) eliminated auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. Now, impacts to the circulation system are to be evaluated in terms on vehicles miles travelled (VMT). For land use and transportation projects, SB 743-compliant CEQA analysis becomes mandatory on July 1, 2020. The District, which is the lead agency processing the project has not adopted VMT criteria to evaluate projects under CEQA. The project is located in Los Angeles County, which may process a future application to develop the residential site at the time it is developed. Los Angeles County has adopted VMT methodologies and thresholds to evaluate projects in July 2020.

Therefore, this memorandum summarizes the VMT analysis for the project to comply with the updated requirements to evaluate transportation impacts under CEQA. The analysis presented in this

memorandum is separated into three parts: project description, the VMT criteria and impact analysis, and summary. The following sections are included in this memorandum:

- Project Description
- VMT Analysis
    - VMT Criteria
    - VMT Impact Analysis Findings
    - Mitigation Measures
- Summary and Conclusions

The VMT analyses are consistent with requirements to analyze VMT impacts included in the Los Angeles County ("County") Public Works' *Transportation Impact Analysis Guidelines* (July 2020).

PROJECT DESCRIPTION

Wedgeworth Elementary School is at 16949 Wedgeworth Drive, Hacienda Heights, Los Angeles County (Assessor's Parcel Number 8209-001-901). It is bounded by the State Route 60 (SR-60) to the north, Wedgeworth Drive to the south, Eagle Park Road to the west, and Pepperbrook Channel to the east. Hacienda Heights is a community in unincorporated Los Angeles County.

The project would:

1. Replace Wedgeworth Elementary School, built as a temporary facility and now in poor condition, with a modern, educationally appropriate campus. The existing school has capacity for 600 K-5 students, and the new school would have capacity for 1,200 K-8 students, an increased enrollment capacity for 600 students.
2. Demolish four baseball fields in the Wedgeworth Elementary School and construct two baseball fields in Kwis Elementary School and another two baseball fields in Cedarlane Academy as replacements.
3. Rezone the remaining property to R-3 (Limited Multiple Residence), which would provide a maximum of 160 dwelling units.

Figure 1, the proposed K-8 School Site Plan, shows the latest site plan for the new K-8 school. It would consist of five buildings for classrooms, multipurpose room, and administrative space, and other school-supporting facilities such as playfields, hardcourts, kindergarten playground, central courtyard, and surface parking and drop-off areas. The school would be accessed from two driveways on Eagle Park Road for the main parking and bus drop-off, and three driveways on Wedgeworth Drive for parent drop-off. The school would provide a total of 107 parking spaces. The total school site size is 10.1 acres and the residential site size is 9.9 acres.

The two proposed locations for baseball fields replacements are Kwis Elementary School and Cedarlane Academy. The baseball replacement site plans are shown in Figure 2 and Figure 3.

Figure 1 Conceptual Project Site Plan



Source: PlaceWorks, 2020

Figure 2 Baseball Replacement Site Plan - Kwis Elementary School



Source: tBP and Da Hogan, 2020

Figure 3 Baseball Replacement Site Plan - Cedarlane Academy



Source: tBP and Da Hogan, 2020

VMT ANALYSIS

Criteria to Evaluate Development Projects

CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed under SB 743. It states that in general transportation impacts are best measured by evaluating the project's vehicle miles traveled. For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact (OPR 2018). As previously discussed, Los Angeles County has adopted VMT methodologies and thresholds to evaluate projects in July 2020. The County's guidelines provides opportunities to "screen out" projects so they may be exempted from a detailed VMT analysis. Screening applies to projects that generate less than 110 daily trips, that are located near a high-quality transit corridor or a major transit stop, or for residential projects that are set aside for lower income households. A review of the project characteristics indicate that the project would not be screened out under these criteria and therefore require a detailed VMT analysis.

For this analysis, the project is evaluated for each component. The County's VMT thresholds that are relevant to the components of this project are:

- **Residential :** The project has a potentially significant VMT impact if the project's residential VMT per capita would not be 16.8% below the existing residential VMT per capita for the Baseline Area in which the project is located. For the project site the threshold for residential developments is 10.6 VMT per capita, which is 16.8% below the South County's 12.7 VMT per capita baseline.
- **School:** Section 3.1.4.1 of the County's Guidelines suggest that K-12 schools impact evaluation should be conducted as an office land use type. For offices, a significant VMT impact would occur if the project's VMT per employee would not be 16.8% below the existing VMT per employee for the Baseline Area in which the project is located. For the project site the threshold for offices is 12.7 VMT per capita, which is 16.8% below the South County's 15.3 VMT/employee baseline. However, for schools a substantial number of trips are related to student drop-off and pick-ups. In addition, the project is not proposing a new school. Instead, the capacity of the existing school is being expanded to accommodate students in middle school grades. The District has experienced an overall decline in enrollment in the last years, the project would primarily allow elementary students that attend the Wedgeworth school to continue their education in the same school through middle grades. These students would no longer have to attend other schools such as nearby Cedarlane Academy located approximately 1 mile to the west after completing 5th grade. Therefore it is more appropriate to evaluate the school component of the project in terms of an overall net change in VMT associated with enrollment shifts. Therefore for this analysis, a potentially significant VMT impact would occur if the school component of the project would result in a net increase in existing total VMT. For this analysis, the VMT change would primarily result from the change in local students in grades 6 to 8 within District boundaries attending Wedgeworth compared to another school.
- **Baseball Fields Relocation:** The baseball field component of the project is a unique land use that does not fit into one of the land use categories listed in the County's guidelines (or even in OPR's recommendations). For this project component a customized approach is utilized to estimate VMT and to evaluate potential impacts based on the net change in VMT. The baseball field component of the project has a potentially significant VMT impact if the project would result in a net increase in existing total VMT.

In summary, the residential project component will be evaluated as a residential project using efficiency metrics (VMT per capita), and the school expansion and baseball replacement components will be evaluated based on the criterion of a net increase in existing total VMT.

VMT Calculation Methodology

VMT provides an indication of the amount of travel in the roadway system by multiplying the number of trips by the distance travelled. For example, 10 vehicles taking 10-mile trips each would result in a total of 100 VMT. The County's guidance has provided recommendations pertaining to the appropriate methodology for analyzing impacts related to residential, office, retail, and other land use projects.

For the residential project component, a travel demand model was utilized to identify VMT per capita for the traffic analysis zone (TAZ) in which the project is located. Modeling results from the Southern California Association of Governments (SCAG) 2012[1] Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) model are used to identify VMT per capita in the study area.

For the school expansion and baseball field replacement, net changes in the existing VMT are estimated based on weighted average trip distances and estimated number of trips generated by students and baseball players.

VMT per Capita for The Residential Development

Figure 4 shows VMT per capita of the TAZ where the project site is located. The VMT per capita of the study TAZ is 17.0 which is higher than the VMT impact threshold, 10.6 (16.8% below Area Baseline), therefore, the project's residential component will result in **a significant impact**.

Measures to reduce VMT can include modifying project characteristics, implementing on- or off-site improvements to transit, pedestrian and bicycle facilities, parking management strategies, and Transportation Demand Management (TDM) measures.

VMT mitigation measures that can be implemented for residential developments may include:

- Increase affordable housing units
- Improve pedestrian networks beyond development frontage
- Provide bicycle parking
- Provide bicycle share programs
- Provide car share programs
- Provide subsidized transit program
- Increase transit frequency
- Upgrade transit routes serving the project

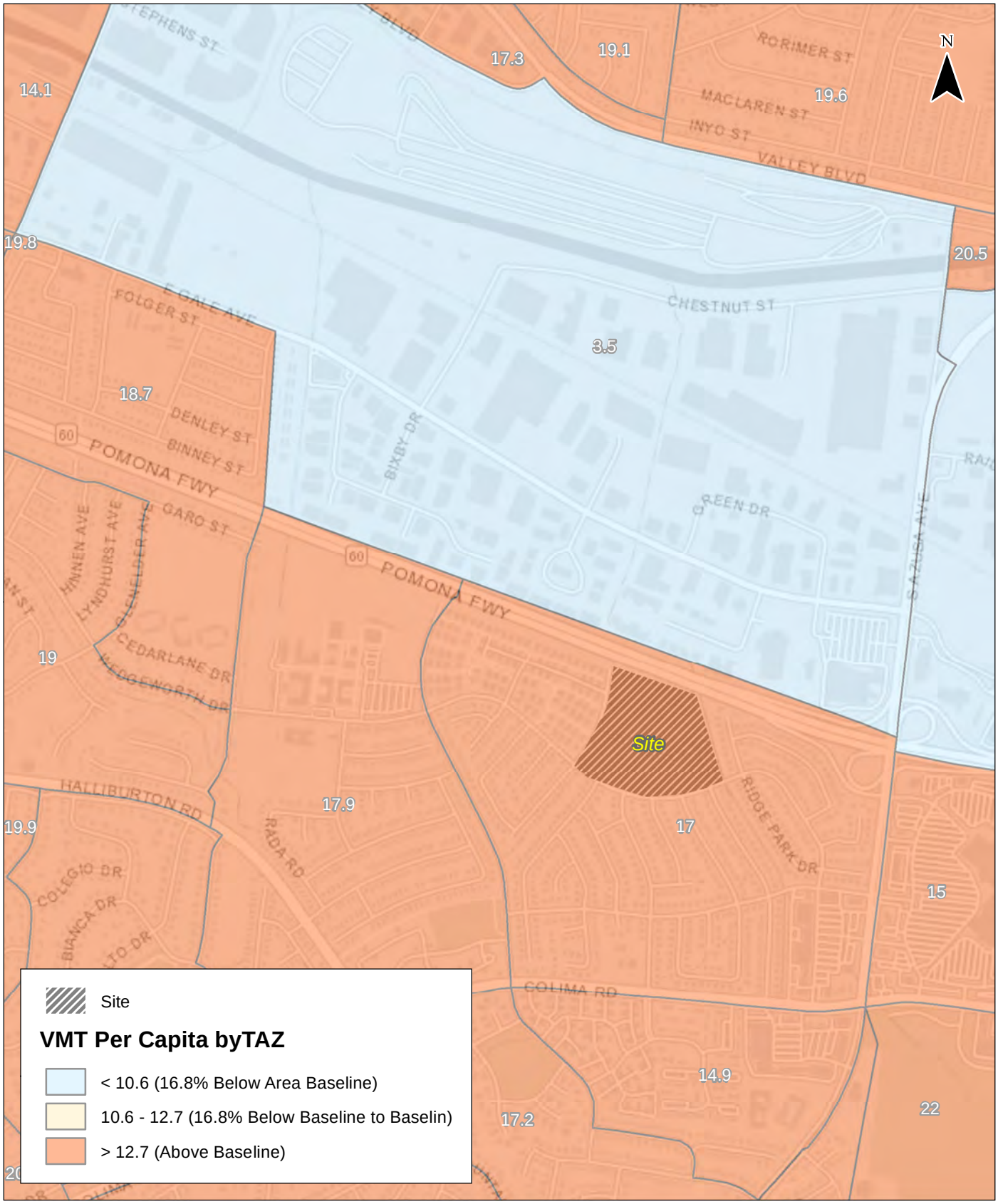
While some of these measures, such as increasing affordable housing units and providing bicycle parking, can be implemented by the developer, upgrading transit and providing pedestrian networks beyond the development frontage cannot be implemented by the developer or the lead agency (District). Currently

[1] The use of the 2012 model was used for consistency with the model used to develop the County's thresholds to provide a fair comparison. The current 2016 base year model was released in the fall of 2020 after the thresholds were published.

there are no mechanisms to acquiring credit to offset VMT impacts elsewhere. For example, mitigation banks may function as a monetary instrument for developers to acquire VMT reduction credits to offset VMT impacts from their project. These programs are currently being explored by cities and regional agencies for implementation but have not yet been implemented. For land development projects VMT reducing measures that can be implemented by the developer are generally limited to what can be implemented on-site as project amenities or off-site in the vicinity of the project.

Guidance published by the California Air Pollution Control Officers Association (CAPCOA)[2] forms the basis for much of the TDM and VMT mitigation research and policymaking in the state. According to CAPCOA, the maximum VMT reductions that can be achieved for projects located in suburban settings is 15%. With all feasible mitigation measures the minimum VMT per capita that could be achieved for the project would be 14.4. Given that the VMT per capita of the study TAZ is 38% higher than the VMT impact threshold, mitigation measurements would not be able to fully mitigate the VMT per capita of the study TAZ to below the VMT impact threshold. Therefore, even with all feasible mitigation measures that can be applied to a residential land development project, the VMT impacts would remain significant and unavoidable.

[2] *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures, CAPCOA, August 2010.*



The South County VMT per Capita Baseline is 12.7
The VMT per Capita Criteria (16.8% below South County Baseline) is 10.6

Figure 4

C:\Users\mgao\Desktop\SCAG VMT\VMT_SANDAG_Lawndale.mxd - mgao - 12:48 PM 12/17/2020

KITTELSON & ASSOCIATES

Coordinate System: NAD83 California zone 6 ftUS
Data Source: Delete if there isn't one.

Net VMT Change for School Expansion

The District is proposing to redevelop the existing Wedgeworth Elementary School to provide an expanded K-8 school. The existing school has capacity for 600 K-5 students, and the new school would have capacity for 1,200 K-8 students, an increased enrollment capacity for 600 students. Since the school boundary of Wedgeworth School after expansion is unknown, it is assumed that these 600 students who should go to Cedarlane Academy before the school expansion will be enrolled in Wedgeworth K-8 School after the school expansion. The Wedgeworth Elementary School boundary is shown in Figure 5.

The VMT from the school would primarily consist of VMT related to student drop-off and pick-up and VMT from school staff. Given that Cedarlane and Wedgeworth are in the same area, and in the same model TAZ, the VMT/employee would not change. Currently approximately 16% of the students attending Wedgeworth Elementary School come from outside the District's attendance boundaries. The District would continue to allow students from outside its boundaries to attend its schools, the project would not have an influence in VMT associated from students attending from outside District boundaries. . Any changes in VMT would be primarily related to a change in trips related to students drop-off/pick-up. The number of daily trips generated by the increased enrollment of 600 students is 1,278. The estimate is based on trip rates for a Middle School/Junior High School is 2.13 vehicles/student from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th edition*. The weighted average trip length for these students within the Wedgeworth School boundary to Wedgeworth School is 0.60 miles, and to Cedarlane Academy is 1.21 miles. Therefore, the calculated daily VMT (trips x average distance) before school expansion is 1,546 and the daily VMT after the school expansion is 767, so there would be a net decrease in daily VMT of 779. Since the school expansion will not result in a net increase in existing total VMT, it **will not** result in a significant project impact (less than significant). Please see Table 1 for details.

The weighted average trip length is calculated based on the populations (age 5 to 17) of TAZs within the Wedgeworth school boundary and trip distances between these TAZs and Wedgeworth School or Cedarlane School. Attachment A shows more details of the weighted average trip length calculation.

Table 1: Total VMT for School Expansion

Assigned School	Student	ITE Trip Generation Rate (Daily)*	Daily Trip	Weighted Average Trip Length (Mile)	VMT
Cedarlane Academy (Before Expansion)	600	2.13	1,278	1.21	1,546
Wedgeworth School (After Expansion)				0.60	767
	Net increase in existing total VMT				**-779**

*Middle School/Junior High School (ITE 522) daily average rate is 2.13 vehicles/student.

Source: Kittelson & Associates, Inc., 2021



Wedgeworth School Boundary | **Figure 5**

H:\24\24922 - Wedgeworth School TIA Response Comments\VMT\GIS\mxd\TotalVMT_Wedgeworth_Cedarlane.mxd - mgao - 4:12 PM 12/30/2020

KITTELSON & ASSOCIATES

Coordinate System: NAD83 California zone 6 ftUS
Data Source: Delete if there isn't one.

Net VMT Change for Baseball Field Replacement

The District is proposing to demolish the four existing Wedgeworth Elementary School baseball fields, and build two baseball fields in Kwis Elementary School and another two baseball fields in Cedarlane Academy as replacements. **Figure 6** shows the two alternative locations of baseball fields, and number of population (age from 5 to 17) with graduated color for TAZs within the Hacienda Heights Little League boundary.

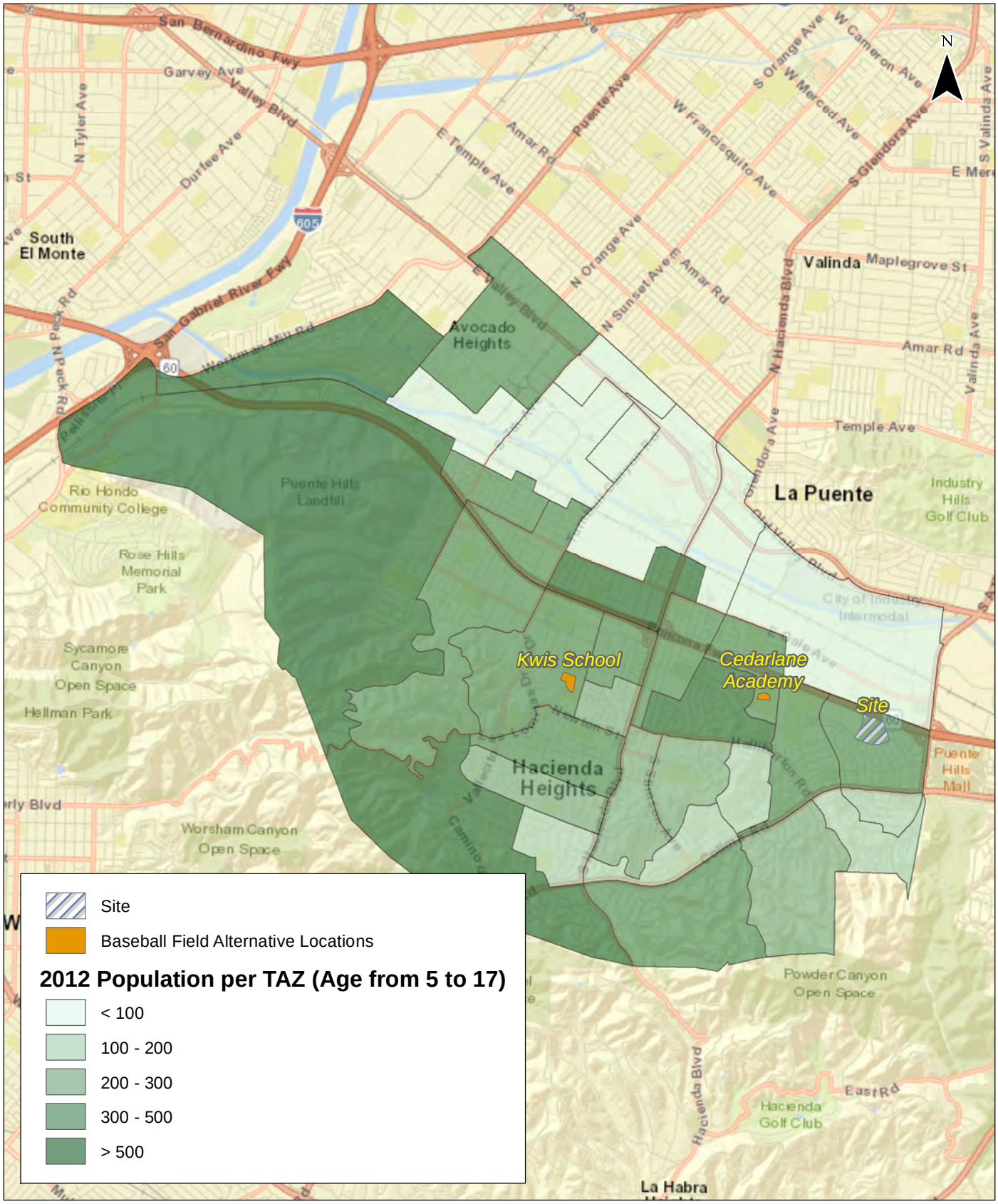
Daily trips generated by four baseball fields (two fields with lights and two fields with no lights) at Wedgeworth Elementary School are 840 during weekday and 3,240 trips during Saturday. Daily trips generated by two baseball fields with lights at Kwis Elementary School are 560 trips during weekday and 1,800 trips during Saturday, and daily trips generated by two baseball fields without lights at Cedarlane Academy are 280 trips during weekday and 1,440 trips during weekday. The weighted average trip length for team players within the Hacienda Heights Little League boundary to the Wedgeworth School is 3.16 miles, and to Kwis Elementary School is 2.25 miles and the Cedarlane Academy is 2.36 miles. Therefore, VMT before replacement is 2,654 and VMT after replacement is 1,921 (1,260 + 661) during weekday, and VMT before replacement is 10,238 and VMT after replacement is 7,448 (4,050 + 3,398) during Saturday. There would be a net decrease in daily VMT of 733 during weekday and 2,790 during Saturday. Since baseball field replacement will not result in a net increase in existing total VMT, it **will not** result in a significant project impact (less than significant). Please see Table 2 for details. The detailed project trip generation can be found in Attachment B.

The weighted average trip length is calculated based on the related populations (age 5 to 17) of TAZs within the Hacienda Heights Little League boundary, and trip distances between these TAZs and Wedgeworth School, Kwis School or Cedarlane Academy are based on the SCAG model distance computation (skim). Attachment C shows more details of the weighted average trip length calculation.

Table 2: Total VMT for Baseball Field Replacements

Baseball Field	Number of Fields	Daily Trip (Weekday)	Daily Trip (Saturday)	Weighted Average Trip Length (Mile)	VMT (Weekday)	VMT (Saturday)
Wedgeworth Elementary School (Before Replacement)	4 Fields (2 Fields with Light and 2 Fields with No Lights	840	3,240	3.16	2,654	10,238
Kwis Elementary School (After Replacement)	2 Fields with Lights	560	1,800	2.25	1,260	4,050
Cedarlane Academy (After Replacement)	2 Fields No Lights	280	1,440	2.36	661	3,398
Net increase in existing total VMT					**- 733**	**- 2,790**

Source: Kittelson & Associates, Inc., 2020



Wedgeworth School Baseball Fields Alternative Locations | **Figure 6**

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KITTELSON & ASSOCIATES

Coordinate System: NAD83 California zone 6 ftUS
Data Source: Delete if there isn't one.

SUMMARY AND CONCLUSION

This technical memorandum provides a VMT analysis to support CEQA review for the Wedgeworth K-8 School and Residential Development project. VMT analyses has been conducted for the residential development, school expansion and baseball field replacement separately.

The following summarizes the findings of the VMT analysis:

- For the residential development, the VMT per capita of the project TAZ is 17.0, which is higher than the threshold of 10.6. A 38% reduction would be required to eliminate the VMT impact from the residential component of the project. Measures to reduce VMT can include modifying project characteristics, implementing on- or off-site improvements to transit, pedestrian and bicycle facilities, parking management strategies, and Transportation Demand Management (TDM) measures. Due to the project's location and mix of uses, the maximum feasible VMT reductions that can be achieved for this project is 15%. With all feasible mitigation measures, the minimum VMT per capita that could be achieved for the project would be 14.4. Therefore, the residential element will result in **a significant VMT impact**.
- For the school component, there would be a net decrease in daily VMT of 779. Since the school expansion will not result in a net increase in existing total VMT, it **will not** result in a significant VMT impact (**less than significant** for VMT).
- For the baseball fields replacement, there would be a net decrease in daily VMT of 733 on weekdays and 2,790 on Saturdays. Since the baseball field replacement will not result in a net increase in existing total VMT, it **will not** result in a significant VMT impact (**less than significant** for VMT).

Attachment A: Weighted Average Trip Length for the School Expansion

Weighted Average Distance to Wedgeworth School

TAZ	Average Distance	Population (Age 5 to 17)	Weight Average Distance
22305200	1.20	177	**0.60**
22305300	0.70	172	
22308100	0.30	419	

Weighted Average Distance to Cedarlane School

TAZ	Average Distance	Population (Age 5 to 17)	Weight Average Distance
22305200	1.60	177	**1.21**
22305300	1.30	172	
22308100	1.00	419	

Note: Average Distance are measured by using Google map.

Population (age 5 to 17) data are from the SCAG 2012 Model

Attachment B: Trip Generation for Baseball Fields

BASEBALL FIELDS
PROJECT GENERATED TRAFFIC - WEEKDAY

Land Use	Daily (trips per day)		
	Cedarlane (No lights 2 games/day, 2 fields)	**Kwis (With lights 4 games/day, 2 fields)**	**Wedgeworth (2 fields with lights, 2 fields no lights)**
TRIP GENERATION RATES			
Baseball Field (trips per field)	140	280	140/280
GENERATED TRAFFIC VOLUMES			
Baseball Field	280	560	840

BASEBALL FIELDS
PROJECT GENERATED TRAFFIC - SATURDAY

Land Use	Daily (trips per day)		
	Cedarlane (No lights 2 games/day, 2 fields)	**Kwis (With lights 4 games/day, 2 fields)**	**Wedgeworth (2 fields with lights, 2 fields no lights)**
TRIP GENERATION RATES			
Baseball Field (trips per field)	720	900	720/900
GENERATED TRAFFIC VOLUMES			
Baseball Field	1,440	1,800	3,240

Assumptions:

2 games per day on weekdays and 8 games per day on Saturdays for fields with no lights
4 games per day on weekdays and 10 games per day on Saturday for fields with lights
15 players per team
A game would generate 1 vehicle trip per player (round trip)
2 teams per game per field
5 additional trips per game for officials and miscellaneous spectators on weekdays
15 additional trips per game for officials and miscellaneous spectators on weekdays

Attachment C: Weighted Average Trip Length for the Baseball Field Replacement

Weighted Average Distance to Wedgewroth School

TAZ	Average Distance	Population (Age 5 to 17)	Weight Average Distance (Mile)
22258100	7.03	736	**3.16**
22259100	3.93	445	
22259200	4.60	528	
22265100	3.09	287	
22265200	2.71	159	
22265300	3.65	528	
22266100	5.58	312	
22266200	5.41	79	
22268100	4.17	390	
22268200	5.15	394	
22272100	2.57	344	
22272200	2.20	287	
22272300	2.61	407	
22272400	3.61	388	
22275100	4.80	12	
22275200	4.67	24	
22275300	4.94	15	
22278100	3.43	689	
22284100	2.22	204	
22284200	2.33	266	
22284300	1.69	200	
22285100	3.99	12	
22285200	3.44	6	
22287100	1.85	459	
22293100	2.45	354	
22293200	2.25	622	
22293300	2.56	359	
22298100	0.91	301	
22298200	1.11	153	
22304100	1.95	0	
22305100	0.92	255	
22305200	0.96	177	
22305300	0.48	172	
22308100	0.24	419	

Weighted Average Distance to Kwis School

TAZ	Average Distance	Population (Age 5 to 17)	Weight Average Distance (Mile)
22258100	4.21	736	**2.25**
22259100	0.78	445	
22259200	1.46	528	
22265100	1.31	287	
22265200	2.10	159	
22265300	1.47	528	
22266100	2.93	312	
22266200	2.43	79	
22268100	1.11	390	
22268200	2.17	394	
22272100	2.16	344	
22272200	1.79	287	
22272300	1.18	407	
22272400	0.39	388	
22275100	2.46	12	
22275200	1.74	24	
22275300	2.06	15	
22278100	1.39	689	
22284100	2.30	204	
22284200	2.41	266	
22284300	2.88	200	
22285100	1.65	12	
22285200	2.81	6	
22287100	3.23	459	
22293100	2.47	354	
22293200	2.33	622	
22293300	2.24	359	
22298100	2.98	301	
22298200	3.18	153	
22304100	3.00	0	
22305100	3.43	255	
22305200	3.57	177	
22305300	3.63	172	
22308100	3.61	419	

Weighted Average Distance to Cedarlane School

TAZ	Average Distance	Population (Age 5 to 17)	Weight Average Distance (Mile)
22258100	4.60	736	**2.36**
22259100	2.84	445	
22259200	2.85	528	
22265100	2.64	287	
22265200	2.69	159	
22265300	3.45	528	
22266100	3.24	312	
22266200	3.08	79	
22268100	1.83	390	
22268200	2.81	394	
22272100	1.51	344	
22272200	1.52	287	
22272300	2.16	407	
22272400	2.47	388	
22275100	2.46	12	
22275200	2.34	24	
22275300	2.60	15	
22278100	1.09	689	
22284100	1.79	204	
22284200	1.90	266	
22284300	2.55	200	
22285100	1.65	12	
22285200	1.10	6	
22287100	2.71	459	
22293100	0.35	354	
22293200	1.30	622	
22293300	0.91	359	
22298100	2.46	301	
22298200	2.66	153	
22304100	0.69	0	
22305100	2.92	255	
22305200	2.51	177	
22305300	2.28	172	
22308100	2.45	419	

Appendix F Proposed Project TIA

Appendices

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P 714.468.1997

MEMORANDUM

Date: January 21, 2021 Project #: 24922

To: Elizabeth Kim and Dwayne Mears
PlaceWorks

From: Fernando Sotelo, Kittelson & Associates, Inc.

Project: Wedgeworth School Project

Subject: Project Opening Year Traffic Assessment

In October 2019 (updated March 2020), PlaceWorks and Kittelson updated a traffic impact analysis (TIA) to assess transportation impacts related to the Wedgeworth K-8 School and Residential Development Project. The project site is a 20-acre parcel at 16949 Wedgeworth Drive in the unincorporated community of Hacienda Heights, in Los Angeles County The proposed project consists of redeveloping the existing Wedgeworth Elementary School and four baseball fields on the 20-acre site to provide a new K-8 school and rezone approximately 10 acres to allow the development of up to 160 residential units. The overall purpose of the TIA was to inform the Hacienda-La Puente Unified School District (District) and the general public whether the proposed project would result in any significant transportation impacts.

The proposed project is scheduled to be developed in two phases, Phase 1 for the development of the K-8 School and Phase 2 for the development of up to 160 residential units. The TIA analyzed the effects of project traffic to the circulation system at existing, Phase 1 Opening year, and Phase 2/Project completion. At the time the TIA was initiated, Phase 1 was anticipated to occur in 2021 and Phase 2 in 2026. The revised project schedule anticipates Phase 1 to be completed in 2023 and Phase 2 in 2026.

The traffic forecasts were developed based on:

- traffic counts collected on May 14, 2019.
- traffic generated by the development of future projects in Industry, La Puente and the County of Los Angeles that have been approved but not yet built or for which development applications have been filed and are under consideration
- ambient growth traffic (1% for Phase 1, and 3% for Phase 2)

Per Los Angeles County guidelines, a growth rate adjustment factor is required to estimate ambient growth rate for the area. The Los Angeles Country Congestion Management Plan (CMP) identified the area in the vicinity of the project and the unincorporated area of Hacienda Heights as part of Regional

Service Area 26, with a growth increase of 2.3 percent for the 5-year period between 2015 and 2020 and a 2 percent increase for the 5-year period between 2020 and 2025. For the TIA, a 1 percent traffic increase over existing conditions (between 2019 and 2021) was assumed to add ambient growth traffic in 2021. For 2026, a 3 percent increase over existing conditions (between 2019 and 2026) was assumed to add ambient growth traffic in 2026.

Since Phase 1 of the project is anticipated to occur in 2023, an adjustment of 2 percent would be appropriate to account for ambient growth from 2019 to 2023. Therefore a 2 percent ambient growth factor would be appropriate to represent 2023 phase 1 traffic conditions (without and with the project). As previously stated, background traffic conditions for 2026 were calculated with a 3 percent ambient growth factor. The TIA identified that a significant impact would occur at intersection 13, Azusa Avenue and Pepper Brook Way, in Project Phase 1 (2021) and in Project Phase 2 (2026). No other impacts were identified. Using a 2 percent adjustment for ambient growth would and Phase 1 traffic volumes would not result in higher volumes than the ones identified in the TIA for 2026 conditions. The 2026 scenarios assume higher traffic volumes higher than what a 2023 condition. Therefore, no additional impacts (other than the intersection at Azusa Avenue and Pepper Brook Way) to the project Phase 1 occurring in 2023 would occur.

March 2020 | Technical Report

TRAFFIC IMPACT ANALYSIS

for Wedgeworth K-8 School

Prepared for:

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HLPU-01.0

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1. Executive Summary

This Traffic Impact Analysis (TIA) has been prepared to analyze the potential traffic impacts for the Hacienda La Puente Unified School District's (District) proposed Wedgeworth K-8 School and Residential Development Project. The overall purpose of this TIA is to inform the District's decision makers and the general public whether the proposed project would result in any significant impacts.

The project site is existing Wedgeworth Elementary School, 16949 Wedgeworth Drive, Hacienda Heights in the Los Angeles County (see Figure 1, *Regional Location*). The new K-8 school is scheduled to open in September 2021, and the traffic analysis assumes that the residential development would be completed by 2026 (see section 2.1 for project description). Phase 1 would develop the school from its current capacity of 600 students to 1,200 students, an increase enrollment capacity for 600 students. Phase 2 for the development would develop up to 160 residential units. The school (Phase 1 of the project) is expected to generate 1,134 daily trips, 402 trips during the AM peak hour, and 102 trips during the PM peak hour. Phase 2 is expected to generate 2,205 daily trips, with 441 trips during the AM peak hour and 182 trips during the PM peak hour.

Sixteen intersections have been included in this analysis:

1. Hacienda Boulevard at Halliburton Road (LA County Jurisdiction)
2. Hacienda Boulevard and Colima Road (LA County Jurisdiction)
3. Stimson Avenue and Halliburton Road (LA County Jurisdiction)
4. Stimson Avenue/ Sierra Ridge Way and Colima Road (LA County Jurisdiction)
5. Halliburton Road/ Dawn Haven Road and Colima Road (LA County Jurisdiction)
6. Countrywood Avenue and Wedgeworth Drive (LA County Jurisdiction)
7. Countrywood Avenue and Colima Road (LA County Jurisdiction)
8. Park Lawn Road and Colima Road (LA County Jurisdiction)
9. Manor Gate Road and Colima Road (LA County Jurisdiction)
10. Azusa Avenue and Gale Avenue (Industry Jurisdiction)
11. Azusa Avenue and Interstate 60 Westbound (LA County/ Industry/ Caltrans Jurisdiction)
12. Azusa Avenue and Interstate 60 Eastbound (LA County/ Industry/ Caltrans Jurisdiction)
13. Azusa Avenue and Pepper Brook Way (LA County/ Industry Jurisdiction)
14. Azusa Avenue and Colima Road (LA County/ Industry Jurisdiction)
15. Albatross Road and Colima Road (LA County/ Industry Jurisdiction)
16. Fullerton Road and Colima Road (LA County Jurisdiction)

The traffic conditions were analyzed for the following conditions based on the project phasing:

- Existing Plus Project Phase 1
- Existing Plus Project Phase 2

1. Executive Summary

- 2021 Without Project
- 2026 Without Project
- 2021 With Project Phase 1
- 2026 With Project Phase 2

The intersection analysis identified that a significant impact would occur at intersection 13, Azusa Avenue and Pepper Brook Way, in Project Phase 1 and in Project Phase 2. The following improvements have been recommended at the this intersection: (1) restripe the eastbound approach with one left turn and one shared left/thru/right turn lane; (2) the phasing for the eastbound and westbound approaches would have to be modified to be split phase; and (3) right turns on red shall be prohibited at the westbound approach to avoid conflicts with vehicles making eastbound left turns into Azusa Avenue. With these improvements, the intersection would operate better than in pre-project conditions. However, it is not clear if the intersection geometry will accommodate this configuration, and County of Los Angeles and the City of Industry may not allow this reconfiguration as an adequate design and implement them. Because the District does not have jurisdiction over traffic improvements at this intersection, for the purpose of this analysis, this impact would be considered significant and unavoidable.

Signal warrants calculations were performed to evaluate the potential need for a traffic signal at stop-controlled intersections in the study area, which are Countrywood Avenue and Wedgeworth Drive (intersection 6), and Park Lawn Road and Colima Road (intersection 8). The intersection of Countrywood Avenue and Wedgeworth Drive would not be warranted for a traffic signal. Park Lawn Road and Colima Road currently does not meet the peak hour Warrant 3 for a signal under existing AM and PM peak hours and is forecast not to meet the warrants under future no project conditions. With project traffic under Phase 1 and Phase 2, this location would meet the warrants for a signal in the AM peak hour. The traffic analysis only presents Warrant 3 criteria, which are based on traffic volumes entering the intersection during the peak hour. Per state guidance, if one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized. Colima Road is a principal arterial street; the installation of traffic signals in close proximity to each other is not desired because they may degrade thru traffic flows on an arterial street. The project would primarily add traffic to the southbound approach of Park Lawn toward Colima Road. Our review indicates that a relatively small number of vehicles would be affected by higher delays on the southbound approach, and thru traffic on Colima Road would not be affected because east-west traffic does not stop at that intersection. Drivers would likely take alternative routes via Countrywood Avenue and Manor Gate Road, where traffic signals are already installed. Therefore, given the small number of vehicles affected on the cross-street traffic on Park Lawn and because motorists may use the nearby approaches at Countrywood Avenue and Manor Gate Road, a signal at Park Lawn is not justified.

The project site would be accessed via driveways on Eagle Park Road and Wedgeworth Drive. The school would be accessed from driveways on Eagle Park Road for the main parking and bus drop-off, and driveways on Wedgeworth Drive for parent drop-off. Based on field observations and a review of aerial photography, Eagle Park Road and Wedgeworth Drive are relatively flat, and there are no obstructions blocking the line of sight between thru traffic and the access driveways. To promote safety and orderly drop-off, several recommendations for school access are presented in Section 10.

2. Introduction

2.1 PROJECT OVERVIEW

The project site is a 20-acre parcel at 16949 Wedgeworth Drive in the unincorporated community of Hacienda Heights, in Los Angeles County (see Figure 1, *Regional Location,* Figure 2, L*ocal Vicinity,* and Figure 3, *Aerial Photograph*). The District is proposing to redevelop the existing Wedgeworth Elementary School and four baseball fields on the 20-acre site to provide a new K-8 school on 10 acres and sell the remaining 10 acres to residential developers to construct up to 160 residential units. The existing school has capacity for 600 K-5 students, and the new school would have capacity for 1,200 K-8 students, an increase enrollment capacity for 600 students. The current enrollment at the Wedgeworth ES is 542 K-5 students (CDE 2019).

The proposed project is scheduled to be developed in two phases, Phase 1 for the development of the K-8 School and Phase 2 for the development of up to 160 residential units. Phase 1 is anticipated to occur in two stages beginning in March 2020 and ending in July 2021 for the September 2021 school opening. The first stage involves construction of new school facilities on the western portion of the project site, and the second stage involves relocation of the students from the existing Wedgeworth ES. The actual Phase 2 schedule would depend on sale of the 10-acre surplus site (see Figure 4), but for the purposes of this traffic impact analysis, it is assumed that Phase 2 would be completed by 2026. No site plan is available for the residential development, which would be developed by a private developer, and further review and approval of necessary permits by the County of Los Angeles would be required. Demolition of the existing Wedgeworth ES facilities would occur during Phase 2.

Access to the new K-8 school would be provided via new driveways at Wedgeworth Drive and Eagle Park Road. The driveways at Wedgeworth Drive would lead to parent drop-off and visitor parking, with 46 parking spaces, and the northern and southern driveways would lead to staff parking, with 75 parking spaces and a bus drop-off.

2.1.1 Methodology

The study area includes facilities in the City of Industry and the County of Los Angeles. The County of Los Angeles has published traffic impact study requirements and thresholds of significance. The methodology used for the preparation of this TIA is consistent with the County of Los Angeles and City of Industry requirements. Los Angeles County Public Works staff was consulted to establish the methodologies and key assumptions for the preparation of this traffic study.

2.1.2 Definition of Level of Service

Roadway capacity is generally limited by the ability to move vehicles through intersections. A level of service (LOS) is a standard performance measurement to describe the operating characteristics of a street system in

2. Introduction

terms of the level of congestion or delay experienced by motorists. Service levels range from A through F to represent traffic conditions from best (uncongested, free-flowing conditions) to worst (total breakdown with stop-and-go operation).

2.1.2.1 INTERSECTION LOS

In conformance with the City of Industry and Los Angeles County requirements, existing AM and PM peak-hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization method. The ICU technique is intended for signalized intersection analysis and estimates the volume-to-capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU value translates to an LOS grade. Descriptions of the LOS letter grades for signalized intersections and the relationships between the various V/C ratios are provided in Table 1, *Level of Service Definitions for Signalized Intersections*. To determine the LOS at the signalized intersections, the ICU calculations used a lane capacity of 1,600 vehicles per hour for left-turn, thru, and right-turn lanes, with a lost time of 10 seconds per cycle. Intersection operation was analyzed using the Vistro software, version 7.00-02. For Caltrans facilities the methodology used to assess the operation of an intersections is based on the Highway Capacity Manual (HCM) based on delay measured in seconds per vehicle.

Table 1 Level of Service Definitions for Signalized Intersections

Level Of Service	Volume/ Capacity Ratio	Delay Per Vehicle (Sec/Vehicle)	Definition
A	0.000–0.600	≤ 10	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601–0.700	> 10–20	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701–0.800	> 20–35	GOOD. Occasionally, drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801–0.900	> 35–55	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901–1.000	> 55–80	POOR. Represents the most vehicles that intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	Greater than 1.000	> 80	FAILURE. Backups from nearby intersections or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Sources: Transportation Research Board, Highway Capacity Manual, 6th edition; City of Industry General Plan.
Note: If volume-to-capacity (V/C) ratio is greater than 1.0 for the operation of a signalized or unsignalized intersection, the LOS is F regardless of the delay value.

The methodology used to assess the operation of an unsignalized intersections is based on the HCM. The peak hours selected for analysis are the highest volumes in four consecutive 15-minute periods from 7 to 9 AM and from 4 to 6 PM on weekdays. Per the HCM methodology, overall average intersection delay at all-way-stop intersections was calculated, and the worst-case approach delay was calculated at cross-street-stop intersections. The level of service corresponds to the delay calculated. Table 2, *Unsignalized Intersections Level of Service Description*s, describes the level of service concept and the operating conditions expected under each level of service.

Table 2 Unsignalized Intersections Level of Service Descriptions

LOS	Description	Average Delay per Vehicle (seconds)
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	50.01 and up

Source: Transportation Research Board, Highway Capacity Manual, 6th edition.
Note: If volume-to-capacity (V/C) ratio is greater than 1.0 for the operation of a signalized or unsignalized intersection, the LOS is F regardless of the delay value.

The software PTV Vistro 7.00-02 was used to determine the LOS at the study area intersections. The HCM (6th edition) unsignalized intersection methodology presents LOS in terms of control delay (in seconds per vehicle).

2.1.3 Acceptable LOS and Thresholds of Significance

Los Angeles County

The County of Los Angeles strives to maintain a peak-hour LOS D at intersections. Significant impacts at signalized intersections are determined by comparing the final V/C ratio and project-related increase in V/C

based on the level of service for with- and without-project buildout scenarios. Potential traffic impacts would occur if, during the weekday peak hours:

- At intersections operating at LOS C (V/C ratio between 0.701 to 0.800) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.040.
- At intersections operating at LOS D (V/C ratio between 0.801 to 0.900) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.020.
- At intersections operating at LOS E (V/C ratio between 0.901 to 1.00) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.010.
- At intersections operating at LOS F (V/C ratio greater than 1.00) under pre-project conditions, the addition of development project trips would increase the V/C by equal to or greater than 0.010.

The impacted intersections should be mitigated to offset the ICU or V/C increment attributable to the project and bring the level of service back to pre-project or cumulative conditions.

According to Los Angeles County Traffic Impact Analysis Report Guidelines, unsignalized intersections should be evaluated solely to determine the need for the installation of a traffic signal or other traffic control devices. Consideration for a traffic signal would be given if the intersection satisfies the Manual for Uniform Traffic Control Devices (MUTCD) Peak Hour and Daily Warrants for Traffic Signal Installation. If the installation of a traffic signal is warranted with the addition of project traffic, the installation will be the sole responsibility of the project. If it is warranted with cumulative traffic of the project and other related projects, mitigation would be required according with the project's fair share percentage.

Caltrans

Intersections within incorporated cities associated with freeway on- and off-ramps fall under Caltrans jurisdiction. Caltrans requires the use of the HCM methodology for the analysis of traffic conditions. Caltrans targets a minimum acceptable LOS at the transition between LOS C and LOS D, as discussed in Caltrans's Guide for the Preparation of Traffic Impact Studies (Caltrans 2002). However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Acceptable level of service is identified from the Caltrans "Transportation Concept Report" and is the Caltrans target facility LOS. The Transportation Concept Report for SR-60 states that the segments in the study area are forecast to operate at LOS F and does not include a concept LOS for the route. Caltrans often defers to the target LOS allowed at local intersections. Intersections in Los Angeles County and the City of Industry have a target LOS D, and the Los Angeles Congestion Management Plan (see section 2.1.3.2) uses a target LOS E for its facilities. Therefore, for the Caltrans SR-60 study intersection, LOS D is considered acceptable, and LOS E and F unacceptable.

A significant impact would occur at a signalized study intersection when the project-related traffic causes:

- An intersection to degrade from an acceptable LOS to an unacceptable LOS; or

- Any increase in delay for intersections already operating at an unacceptable LOS.

City of Industry

The City of Industry strives to maintain a peak-hour LOS D at intersections. An impact would occur at City of Industry signalized intersections if the ICU value under With Project conditions is LOS E or F and the ICU increase attributable to the project is 0.020 or greater. The impacted intersections should be mitigated to offset the ICU or V/C increment attributable to the project and bring the level of service back to pre-project or cumulative conditions.

There are no stop-controlled study intersections in the City of Industry's jurisdiction.

Mitigation measures must be identified for intersections that show a significant project impact. The LOS with mitigation must be improved to pre-project conditions or better.

2.1.3.2 LOS ANGELES COUNTY CONGESTION MANAGEMENT PLAN

The Los Angeles County Congestion Management Program (CMP) was issued by Metro in December 2010 (Metro 2010). All freeways and selected arterial roadways are designated elements of the CMP Highway System. The CMP requires that individual development projects of potentially regional significance undergo a traffic impact analysis. Per the CMP TIA guidelines, a significant impact may result and a traffic impact analysis is required under these conditions:

- At CMP arterial monitoring intersections where the proposed project would add 50 or more vehicle trips during either morning or evening weekday peak hours.

- At CMP main-line freeway monitoring locations where the proposed project would add 150 or more vehicle trips, in either direction, during either morning or evening weekday peak hours.

The nearest CMP facility is SR-60, approximately 383 feet north of the project site. Two CMP intersections are in the study area:

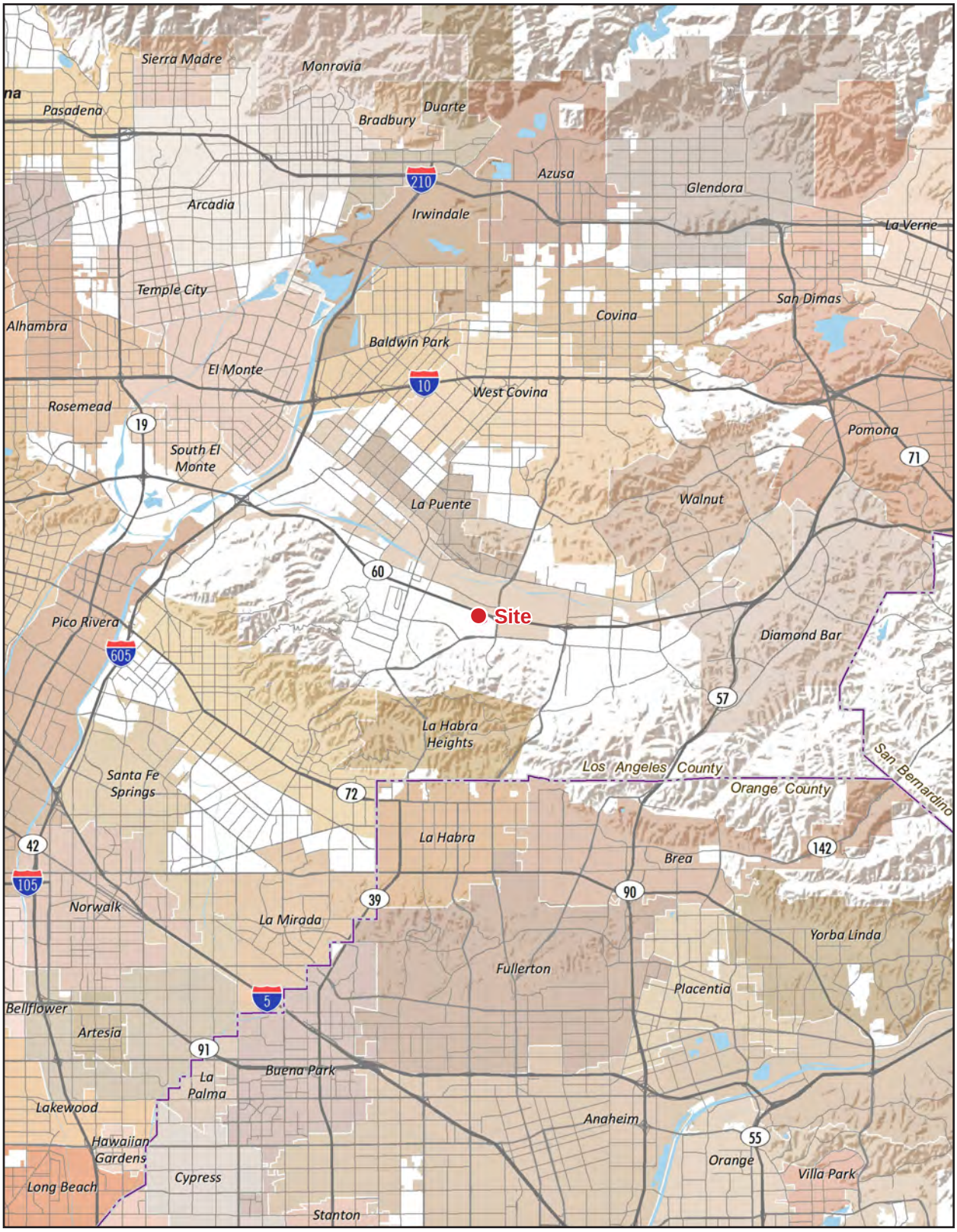
- Azusa Avenue and SR-60 Westbound Ramps

- Azusa Avenue and SR-60 Eastbound Ramps

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Figure 1 - Regional Location



Note: Unincorporated county areas are shown in white.

0 3
Scale (Miles)

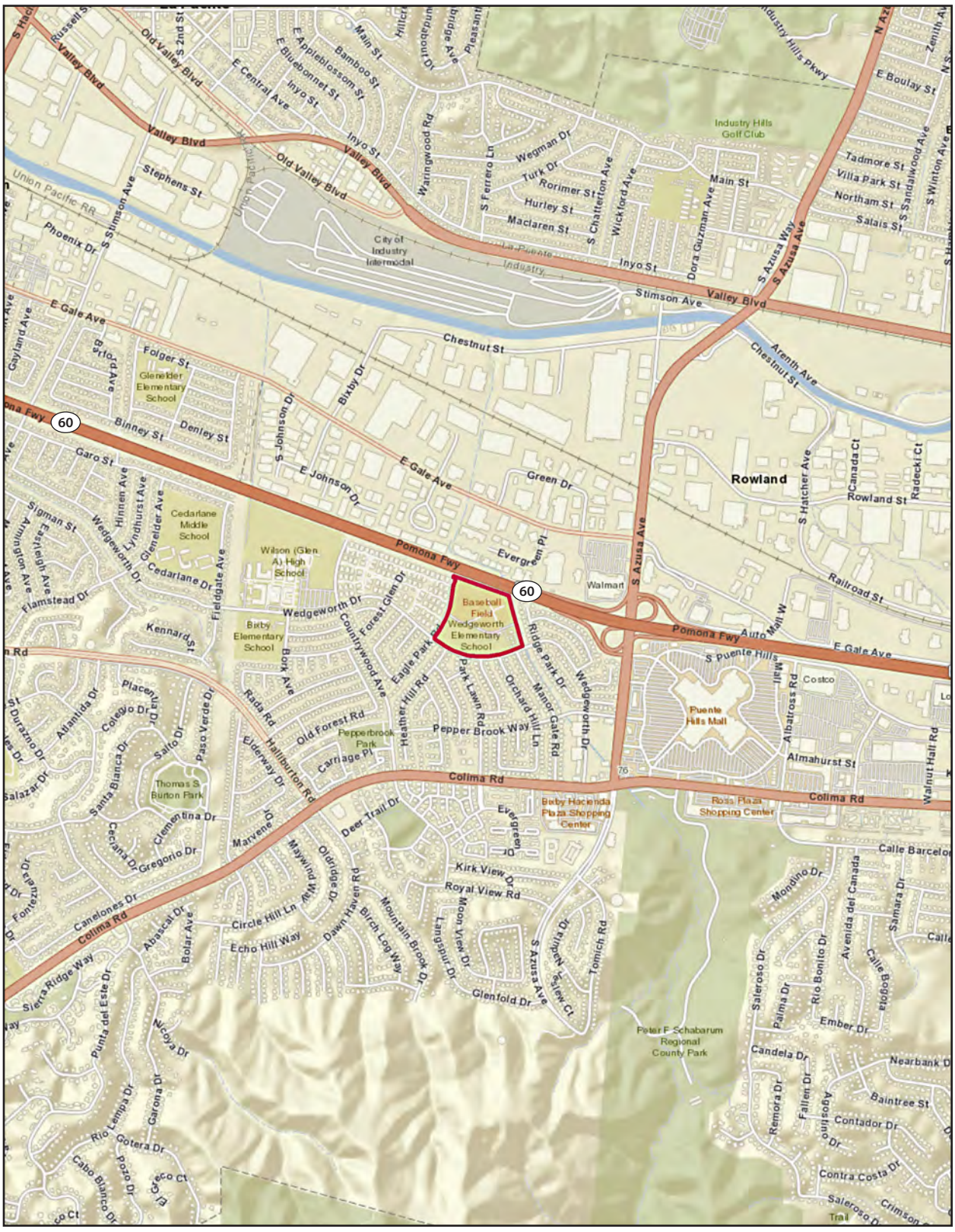
Source: ESRI, 2018

PlaceWorks

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Figure 2 - Local Vicinity



Source: ESRI, 2018

PlaceWorks

2. Introduction

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Figure 3 - Aerial Photograph



Project Boundary

School Boundary

0 300

Scale (Feet)

Source: ESRI, 2018

2. Introduction

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Figure 4 - Site Plan



Project Boundary

0 200
Scale (Feet)

Source: Google Earth Pro, 2019

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3. Existing Conditions

3.1 STUDY AREA ROADWAY NETWORK

3.1.1 General Plan Circulation Network

The study-area roadways discussed below are in the California Highway System map (2018), which shows the major roadways in the surrounding the project site and the roadways' functional classifications.

3.1.1.1 SURROUNDING STREET SYSTEM

All roadway classifications are from the California Highway System Map. Roadways that will be utilized for project trips include:

- **Albatross Road.** This north-south, two- to four-lane, undivided roadway is classified as a local street There are paved sidewalks on both sides. Traffic signals control the study intersection of Albatross Road at Colima Road.

- **Azusa Avenue.** This north-south, eight-lane, divided roadway is classified as an "other principal arterial." It contains paved sidewalks on both sides, with a posted speed limit of 45 mph.

- **Colima Road.** This east-west, four-lane, divided roadway is classified as an "other principal arterial." There are paved sidewalks on both sides. This roadway has traffic signals that control study intersections of Hacienda Boulevard, Stimson Avenue/Sierra Ridge Way, Halliburton Road/Dawn Have Road, and Albatross Road.

- **Countrywood Avenue.** This north-south two-lane roadway is a local street. There are paved sidewalks on both sides and a posted speed limit of 35 mph. Traffic signals control the study intersection of Countrywood Avenue at Colima Road.

- **Fullerton Road.** This north-south, four-lane, undivided roadway is classified as a minor arterial. It contains paved sidewalks and a posted speed limit of 35 mph. Traffic signals control the study intersection of Fullerton Road at Colima Road.

- **Gale Avenue.** This east-west, four- to six-lane, undivided roadway is classified as a minor arterial. It contains paved sidewalks and a posted speed limit of 45 mph. Traffic signals control the study intersection of Azusa Avenue at Gale Avenue.

- **Hacienda Boulevard.** This north-south, six-lane, divided roadway is classified an "other principal arterial." It contains paved sidewalks on both sides, with a posted speed limit of 40 mph.

3. Existing Conditions

- **Halliburton Road.** This east-west, four-lane, undivided roadway is classified as a minor arterial. It contains paved sidewalks, with a posted speed limit of 45 mph. Traffic signals control the study intersections of Hacienda Boulevard at Halliburton Road and Stimson Avenue at Halliburton Road.

- **Manor Gate Road.** This north-south, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

- **Park Lawn Road.** This north-south, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

- **Pepper Brook Way.** This east-west, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

- **Stimson Avenue/Sierra Ridge Way.** This north-south, four-lane, undivided roadway is classified as a minor arterial. It contains paved sidewalks and a posted speed limit of 40 mph. Traffic signals control the study intersection of Stimson Avenue at Halliburton Road and Stimson Avenue at Colima Road.

- **Wedgeworth Drive.** This east-west, two-lane roadway is a local street. There are paved sidewalks and curbside parking on both sides.

3.1.1.2 STUDY AREA INTERSECTIONS

The study area was defined in an MOU and consultation with County of Los Angeles Public Works' staff. The roadway network and study intersections are shown in Figure 5, *Study Intersections*. The guidelines require intersections at streets with a classification of collector or higher to be studied when the project adds 50 or more peak hour trips. Based on the calculated project trip generation and distribution, the following intersections were analyzed:

1. Hacienda Boulevard at Halliburton Road (LA County)
2. Hacienda Boulevard and Colima Road (LA County)
3. Stimson Avenue and Halliburton Road (LA County)
4. Stimson Avenue/ Sierra Ridge Way and Colima Road (LA County)
5. Halliburton Road/ Dawn Haven Road and Colima Road (LA County)
6. Countrywood Avenue and Wedgeworth Drive (LA County)
7. Countrywood Avenue and Colima Road (LA County)
8. Park Lawn Road and Colima Road (LA County)
9. Manor Gate Road and Colima Road (LA County)
10. Azusa Avenue and Gale Avenue (Industry)
11. Azusa Avenue and Interstate 60 Westbound On-Ramp (Caltrans)
12. Azusa Avenue and Interstate 60 Eastbound On-Ramp (Caltrans)
13. Azusa Avenue and Pepper Brook Way (LA County/ Industry)
14. Azusa Avenue and Colima Road (LA County/ Industry)
15. Albatross Road and Colima Road (LA County/ Industry)

16. Fullerton Road and Colima Road (LA County)

3.2 EXISTING INTERSECTIONS OPERATIONS

3.2.1 Existing Traffic Volumes

Weekday AM and PM peak-hour turn movement volumes were collected at the study area intersections. The counts were collected on Tuesday, May 14, 2019. Traffic count worksheets and the existing AM and PM peak hour turn-movement volumes are presented in Appendix A.

3.2.2 Existing Conditions Intersection Operations Analysis

The intersection operations analysis results are summarized in Appendix B, *Intersection LOS Worksheets, Existing Conditions*. LOS calculation worksheets for existing conditions are also included in Appendix B. Appendix B also identifies the existing intersection controls and turn lanes.

Table 3 shows the levels of service during peak hours for all study intersection under existing conditions.

Table 3 Existing Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard and Halliburton Road	LA County	Signal	-	0.661	B	-	0.649	B
2. Hacienda Boulevard and Colima Road	LA County	Signal	-	1.046	F	-	1.219	F
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.755	C	-	0.620	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.724	C	-	0.703	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.684	B	-	0.682	B
6. Countrywood Avenue and Wedgeworth Drive	LA County	AWS	60.1	-	F	9.5	-	A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.706	C	-	0.657	B
8. Park Lawn Road and Colima Road	LA County	CSS	>100	-	F	>100	-	F
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.555	A	-	0.735	C
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.788	C	-	0.868	D
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	13.6	-	B	34.3	-	C
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	24.4	-	C	22.4	-	C
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	Signal	-	0.841	D	-	0.896	D

Table 3 Existing Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
14. Azusa Avenue and Colima Road	LA County/ Industry	Signal	-	0.835	D	-	**0.938**	E
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.636	B	-	0.838	D
16. Fullerton Road and Colima Road	LA County	Signal	-	0.753	C	-	**0.936**	E

Notes: LOS calculation worksheets included in Appendix B.
AWS = All-Way Stop, CSS = Cross Street Stop
Bold=deficient operations
Delay (veh/sec) is only shown for stop-controlled intersections and for Caltrans intersections.

All study intersections are under Los Angeles County jurisdiction, with Intersection 14 along the border of Los Angeles County and the City of Industry. All study area intersections currently operate at acceptable LOS during the peak hours for existing traffic conditions, except for:

2. Hacienda Boulevard and Colima Road (signalized) (LA County: AM and PM peak hours)
6. Countrywood Avenue and Wedgeworth Drive (All-way-stop) (LA County: AM peak hour)
8. Park Lawn Road and Colima Road (cross street stop) (LA County: AM and PM peak hours)
14. Azusa Avenue and Colima Road (signalized) (LA County/ Industry: PM peak hour)
16. Fullerton Road and Colima Road (signalized) (LA County: PM peak hour)

3.3 TRANSIT SERVICE AND NONMOTORIZED CIRCULATION

Foothill Transit operates public transit bus routes in the unincorporated community of Hacienda Heights. Lines 185 and 282 are the two closest bus routes to the project site. Line 185 runs north-south, serving Hacienda Heights, Industry, La Puente, West Covina, Irwindale, and Azusa, with an approximately one-hour interval. If taking Line 185, passengers can embark/disembark at Colima Road/Manor Gate Road or Colima Road/Countrywood Avenue, then enter the project site through Wedgeworth Drive. Line 282 runs southeast-northwest, serving El Monte and La Puente. Destinations include Rio Hondo Bike Path, Bassett Senior High School, Hacienda La Puente Adult Education School, and Bassett Adult School, with an approximate interval of up to 40 minutes. If taking Line 282, passengers can embark/disembark at Colima Road/Manor Gate Road or Colima Road/Countrywood Avenue.

3.4 EXISTING SCHOOL DROP-OFF AND PICK UP

Classes begin at 8:05 AM and finish at 1:50 PM for grades K to 3 and at 2:05 PM for grades 4 and 5. Students enter and exit the school campus via the office area north of Manor Gate Road and at a pedestrian gate off Wedgeworth Drive approximately 100 feet west of the main entrance. School monitors assist students to get in and out of cars on a portion of the curb designated for student drop-off/pick-up along Wedgeworth Drive. All streets in the vicinity of the school have paved sidewalks on both sides of the road. No bicycle paths or dedicated bicycle lanes were observed in the area. Crossing guards facilitate pedestrians crossing the intersection of Wedgeworth Drive and Minor Gate Road during student arrival and dismissal periods.

A site visit was conducted on Thursday, February 13, 2020, during the afternoon student pick-up period to identify specific issues related to pedestrian and vehicular circulation. The site visit was conducted between 1:30 and 2:30 PM on a typical school day. During the site visit, observations were made of the student pick-up area, vehicular circulation, and pedestrian travel patterns. It was observed that all cars dropping off students arrived from the south and west via Wedgeworth Drivbe and Minor Gate Drive. Most of the vehicular activity occurred for approximately 30 minutes between periods from 1:45 to 2:15 PM. Parents primarily utilize the sidewalk area on Wedgeworth Drive in front of Manor Gate for student pickup. It was observed that most parents that drive mostly park on both sides (north and south) of Wedgeworth Drive within approximately 500 feet of the school entrance, and to a lesser extent at Manor Gate Road, Ridge Park Drive and Orchard Hill Lane. It was observed that most pedestrians arrived at the campus from the south and from the sidewalks along Wedgeworth Drive. Students and parents were observed to properly use the crosswalks and comply with the crossing guard instructions; no jaywalking was seen. During the site visit it was observed that minor queuing with approximately 4 vehicles occurred at the northbound and eastbound approaches at the intersection of Manor Gate Road/Wedgeworth Drive at the dismissal times when pedestrian activities were heavy. As there are several routes to and from the school via Wedgeworth Drive, Manor Gate Road, Orchard Hills, Park Lawn Eagle Park and other roads, generally vehicular queues were observed to be limited to no more than 4 vehicles at the intersection of Manor Gate Road/Wedgeworth Drive.

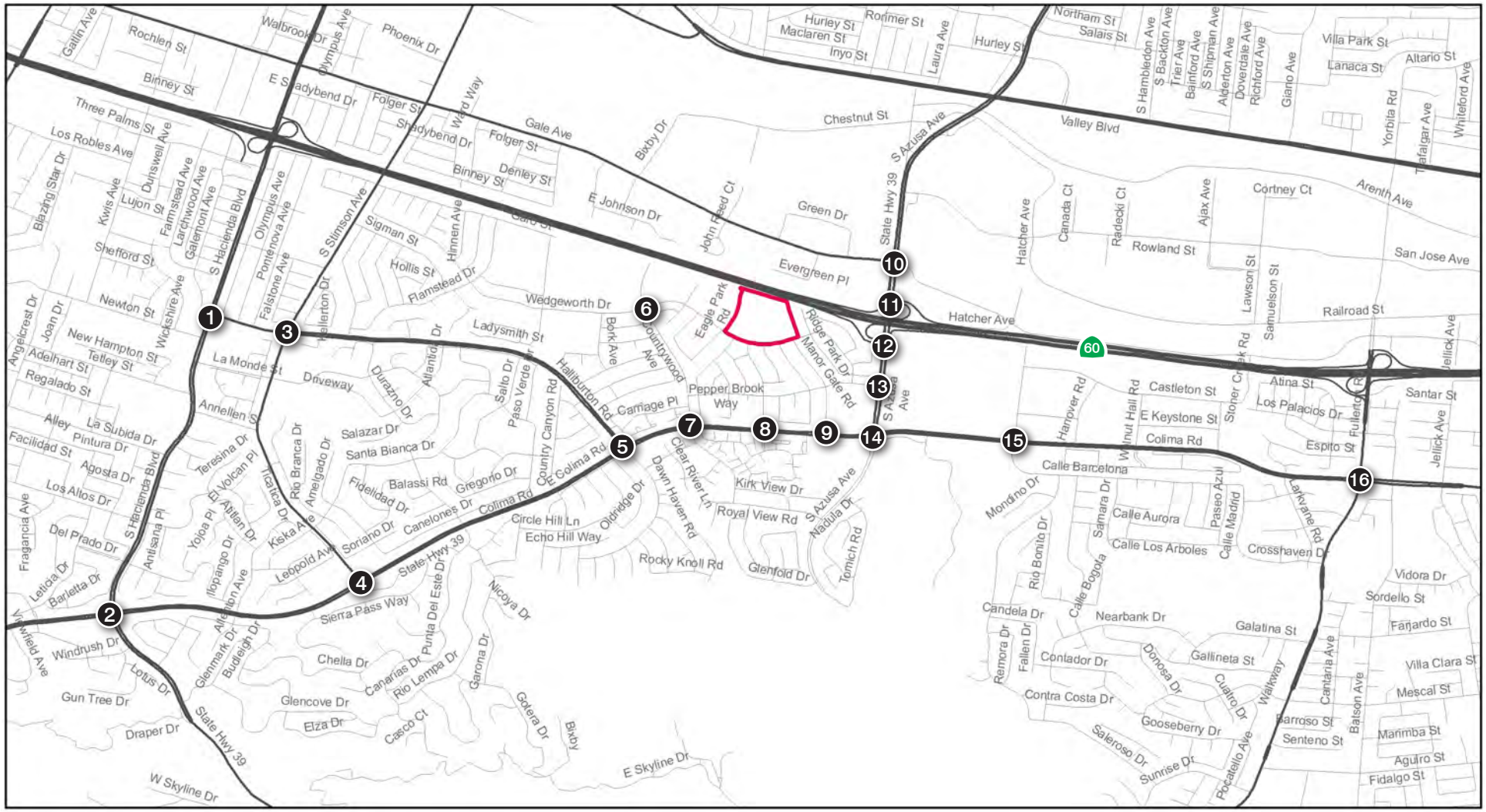
School buses currently utilize the curbside area on Wedgeworth Drive in an area marked as a red curb just north of Minor Gate Drive. During the site visit two buses were seen picking up students. In addition, vans were observed to pickup students for after school activities, these vans were parked on Wedgeworth Drive.

The school also utilizes an area in the back of the school access from a driveway located east of the intersection of Manor Gate Road/Wedgeworth Drive along the eastern boundary of the school campus. This one-way vehicular pathway leads to a drop-off area in the rear of the school which exits on Eagle Park Road. This pathway is used for student drop-off in the mornings but closed for pick-up in the afternoons.

3. Existing Conditions

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Figure 5 - Study Intersections



Source: ESRI, 2018

PlaceWorks

3. Existing Conditions

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4. Project Traffic

4.1 TRIP GENERATION

The trip generation was calculated based on rates in the ITE Trip Generation Manual (10th edition) for land uses 520, Elementary School, and 200, Multi-Family (Low-Rise). It should be noted that the school would accommodate grades K-8. Because the grade breakdown may fluctuate over the years and because the trip rates for an elementary school are slightly higher than trip rates for a middle school, trip rates for elementary school were used in this analysis. Table 4 shows the trip generation rates for the AM peak hour and PM peak hour.

Table 4 Trip Generation Rates

			Trip Generation					
			AM Peak Hour			PM Peak Hour		
Land Use[1]	Unit	Daily	In	Out	Total	In	Out	Total
Elementary School	Students	1.89	0.36	0.31	0.67	0.08	0.09	0.17
Residential Development	Dwelling Units	7.32	0.11	0.35	0.46	0.35	0.21	0.56

[1] Used the trip generation rates of ITE Code 520 Elementary School and 220 Multi-Family Low-Rise from the ITE Trip Generation Manual 10th edition.

As discussed in Section 2.1, the project is split into two phases, the expansion of the school, opening in 2021, and the residential development, preliminarily scheduled to open in 2026. Phase 1 would develop the school from its current capacity of 600 students to 1,200 students, an increase enrollment capacity for 600 students. Phase 2 for the development would develop up to 160 residential units. As shown in Table 5, the expansion of the school in Phase 1 is expected to generate up to 1,134 daily trips. During the peak hours, Phase 1 of the project is expected to generate 402 trips (217 inbound and 185 outbound) during the AM peak hour and 102 trips (49 inbound and 53 outbound) during the PM peak hour.

Table 5 Phase 1 Project Trip Generation

			Trip Generation					
			AM Peak Hour			PM Peak Hour		
Land Use	Unit[1]	Daily	In	Out	Total	In	Out	Total
Elementary School	600	1,134	217	185	402	49	53	102

[1] 600 Students

Table 6 shows that Phase 2 is expected to generate 2,205 daily trips with 441 trips (215 inbound and 226 outbound) during the AM peak hours and 182 trips (101 inbound and 81 outbound) during the PM peak hours. For Phase 2, an internal capture was included to deduct trips for students that will reside adjacent to the school. This development will be constructed in Phase 2 and is projected to generate 53 students, who would likely walk instead of drive to/from the school.

Table 6 Phase 2 Project Trip Generation

			Trip Generation					
			AM Peak Hour			PM Peak Hour		
Land Use	Unit[1]	Daily	In	Out	Total	In	Out	Total
Elementary School	600	1,134	217	185	402	49	53	102
Residential Development	160	1,171	17	57	74	56	33	89
Internal Capture (0.33125 students/DU or 0.33125x160=53)[2]	-53	-100	-19	-16	-35	-4	-5	-9
NET NEW TRIPS		2,205	215	226	441	101	81	182

[1] Units for school is students; for housing, units are dwelling units.
[2] The internal capture calculation is a reflection of future students walking to school from the proposed residential development. Based on the *Annual Enrollment Projection Report* for the Hacienda La Puente Unified School (Decision Insight 2017), the student generation rate is 0.51 student per dwelling unit for students in grades K-8. A conservative estimate of 0.333 (or 1 student for every 3 DUs) was utilized to calculate internal capture resulting from school-aged children that would reside at the project's 160 residential units.

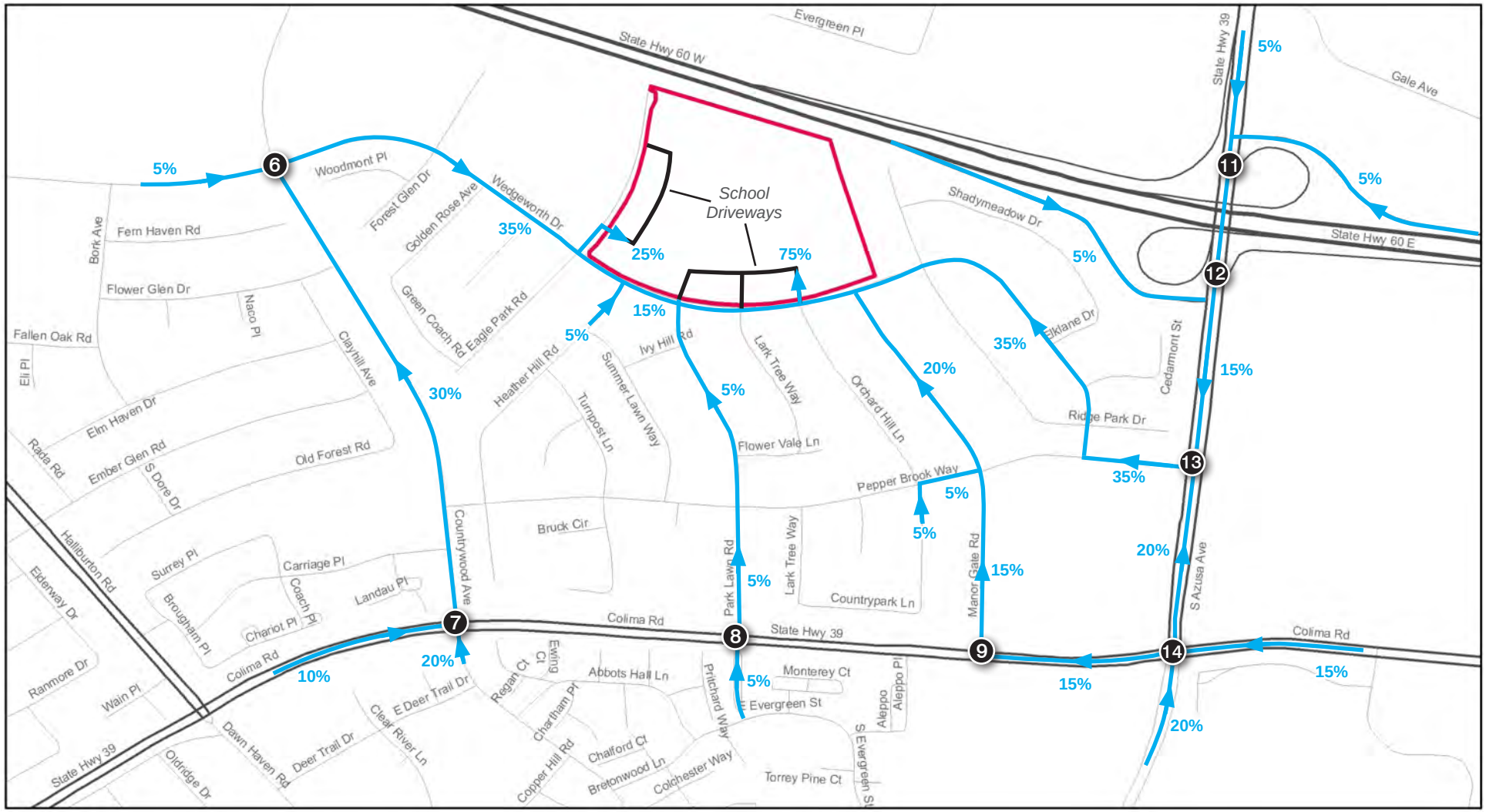
4.2 TRIP DISTRIBUTION

The traffic that would be generated by the elementary school expansion and additional residential units was geographically distributed onto the street network by evaluating the layout of the study area roadway network and reviewing land uses designated in the area. The trip distribution was also prepared with feedback from Los Angeles County staff. Figure 6 through Figure 9 present the anticipated inbound and outbound trip distribution for the project for vehicles.

4.3 MODAL SPLIT AND TRIP ASSIGNMENT

The trip distribution percentages are applied to the project trip generation to determine the traffic volumes forecast to be added at each intersection (i.e., trip assignment).

Figure 6 - School Inbound Trip Distribution



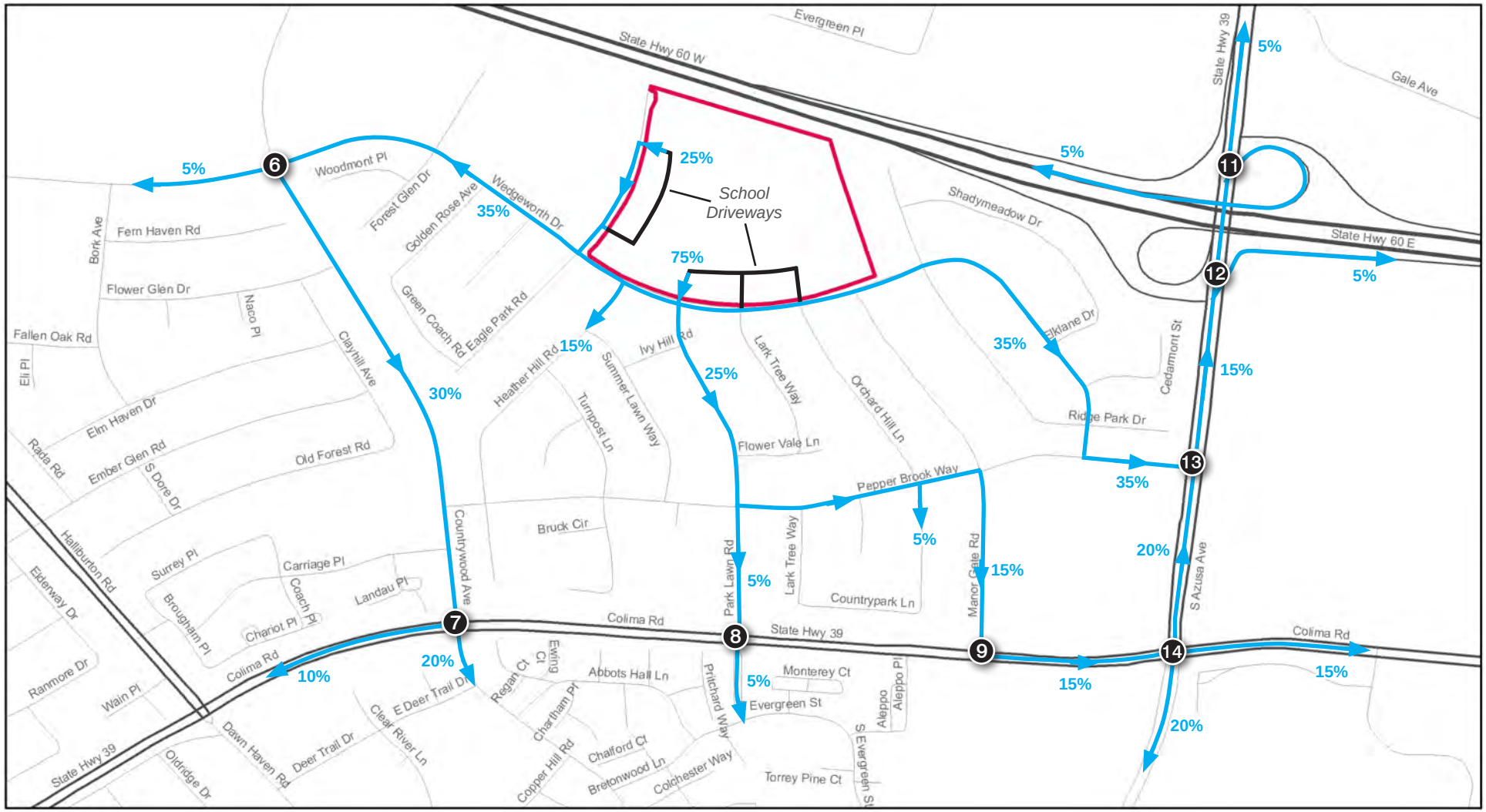
Source: ESRI, 2018

PlaceWorks

4. Project Traffic

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Figure 7 - School Outbound Trip Distribution



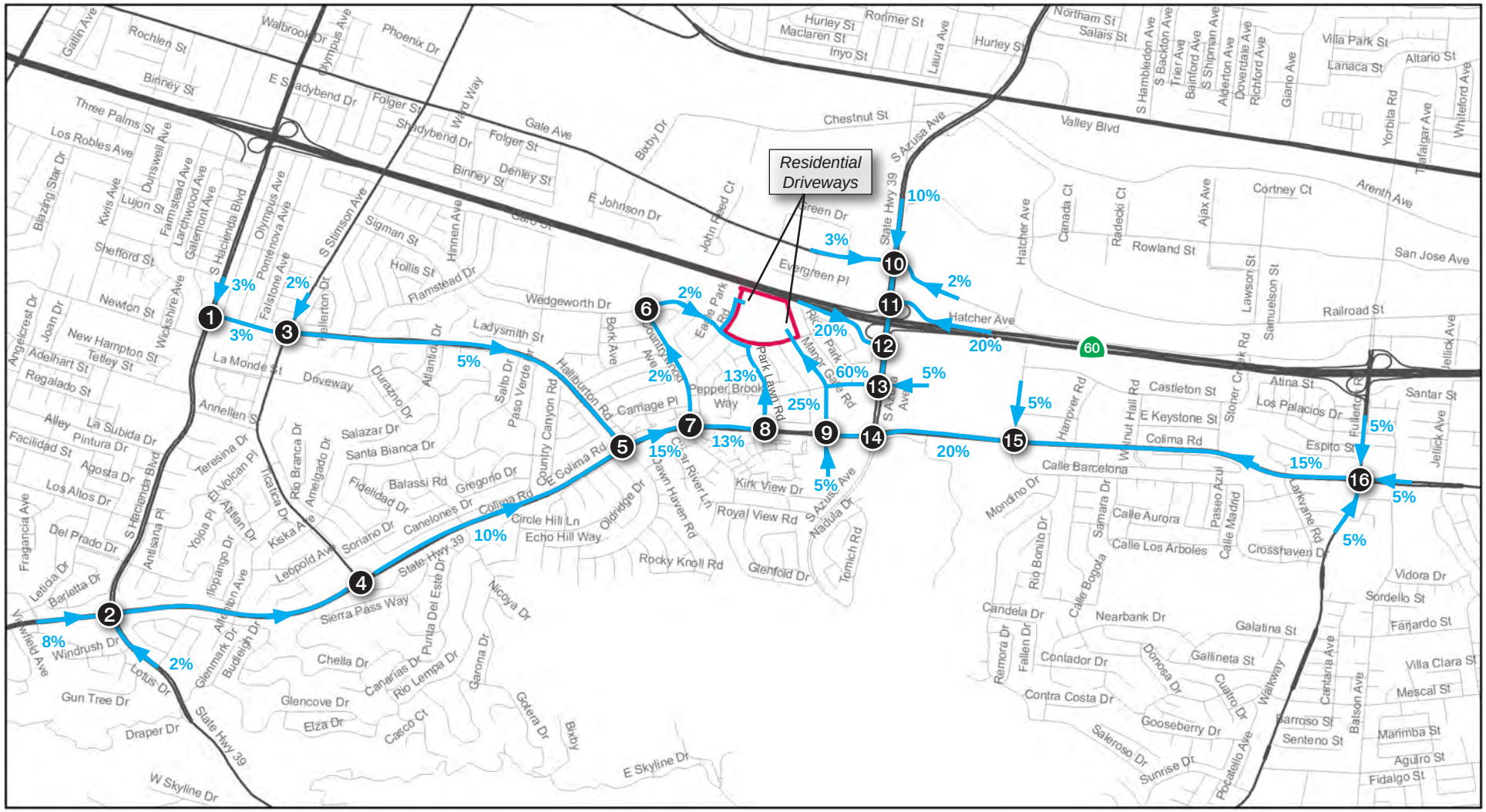
Source: ESRI, 2018

PlaceWorks

4. Project Traffic

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Figure 8 - Residential Inbound Trip Distribution



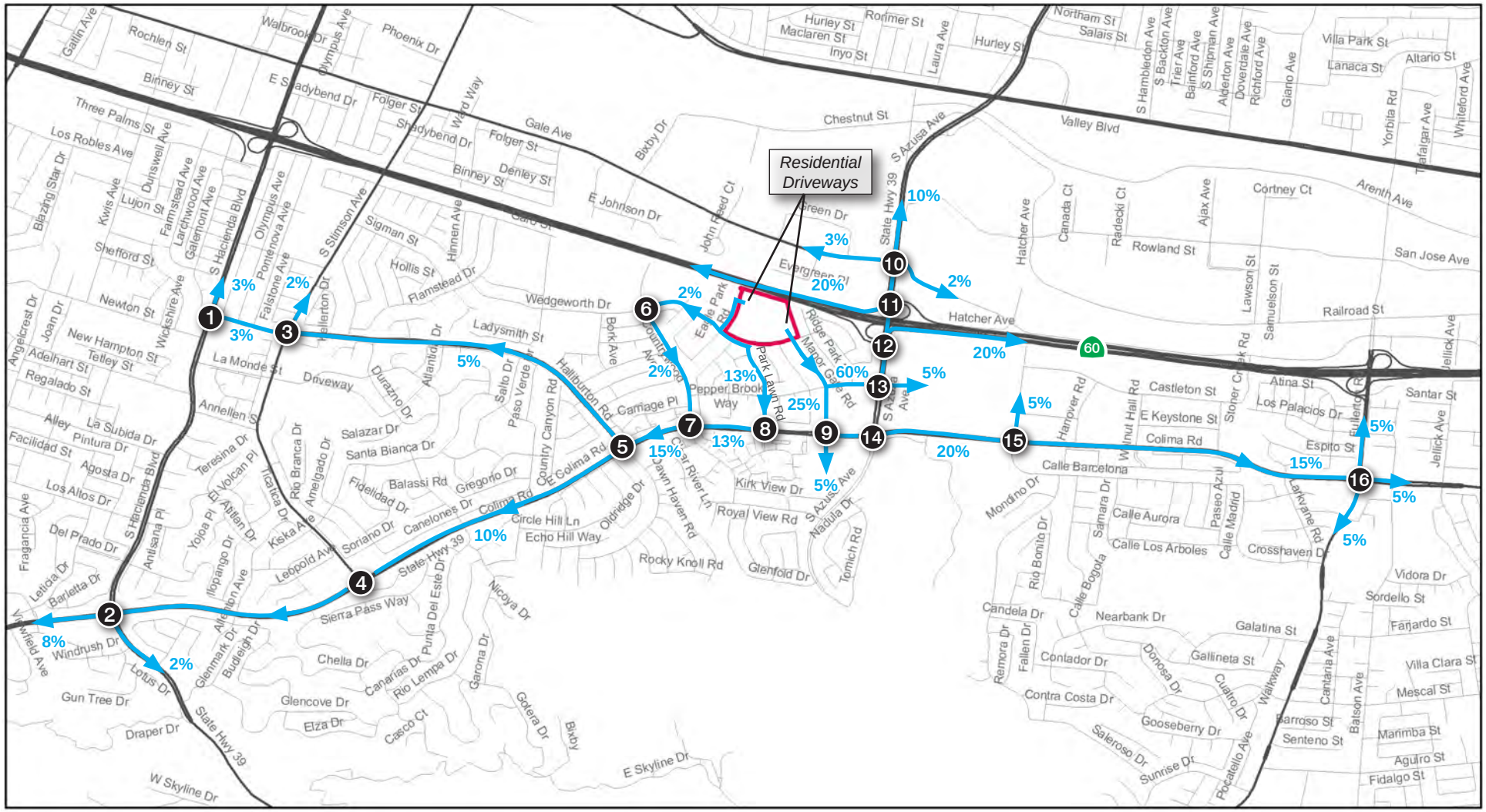
Source: ESRI, 2018

PlaceWorks

4. Project Traffic

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Figure 9 - Residential Outbound Trip Distribution



Source: ESRI, 2018

PlaceWorks

4. Project Traffic

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5. Future Traffic Conditions

In conformance with Los Angeles County, Caltrans, and City of Industry guidelines, the following scenarios were evaluated in addition to Existing traffic conditions described previously:

- Existing Plus Project Phase 1
- Existing Plus Project Phase 2
- 2021 Without Project
- 2026 Without Project
- 2021 With Project Phase 1
- 2026 With Project Phase 2

The scenarios above were analyzed for the purpose of environmental review considering the impacts of project traffic in the environment with the project, and with reasonable and foresable projects in cumulative conditions. Phase 1 of the project is anticipated to be completed and operational in September 2021 and Phase 2 in 2026. Per Los Angeles County guidelines, the CMP growth rate for the area is required to estimate ambient growth rate. The Los Angeles Country CMP identified the area in the vicinity of the project and the unincorporated area of Hacienda Heights as part of Regional Service Area 26, with a growth increase of 2.3 percent for the 5-year period between 2015 and 2020 and a 2 percent increase for the 5-year period between 2020 and 2025. For this analysis, a 1 percent traffic increase over existing conditions (between 2019 and 2021) was assumed to add ambient growth traffic in 2021. For 2026, a 3 percent increase over existing conditions (between 2019 and 2026) was assumed to add ambient growth traffic in 2026.

Cumulative traffic is the traffic generated by the development of future projects that have been approved but not yet built or for which development applications have been filed and are under consideration. Cumulative projects in the vicinity of the school were obtained from the cities of Industry and La Puente and the County of Los Angeles. The list of cumulative projects and their associated trip generations are included in Appendix C. For these cumulative projects, trip generation values were taken from the ITE Trip Generation Manual. Based on a review of the circulation system, the trip generation, location, and land use type, the cumulative projects shown on Figure 10, *Cumulative Project Locations,* would have the potential for directly adding measurable traffic to the study area street system. The cumulative development projects assumed in this traffic analysis are estimated to generate 3,088 average daily trips on weekdays, with approximately 230 vehicle trips during the AM peak hour and 274 vehicle trips during the PM peak hour.

This TIA assumes that all the cumulative projects are developed and operational when the proposed project is operational. This is the most conservative, worst-case approach, since it is possible that not all these projects will be operational when the proposed project begins operations. In addition, impacts for these cumulative projects would likely be subject to mitigation measures, which could reduce potential impacts. Under this analysis, however, those future mitigation measures are not considered.

5.1 EXISTING PLUS PROJECT PHASE 1 TRAFFIC CONDITIONS

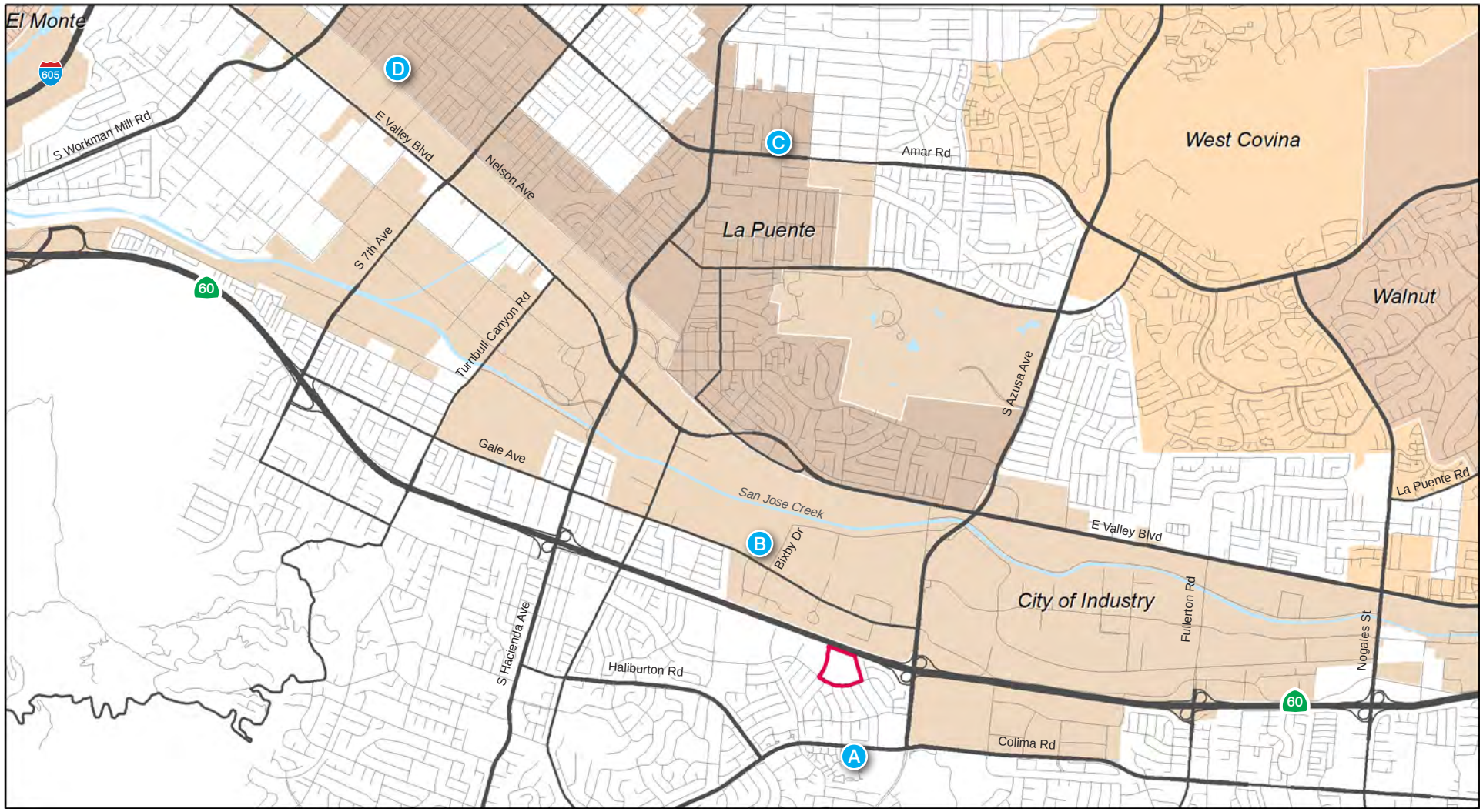
To assess Existing Plus Project Phase 1 traffic conditions, existing traffic is combined with project traffic that would be generated by the school. The intersection operations for the Existing Plus Project Phase 1 traffic conditions have been calculated and are shown in Table 7, *Existing Plus Project Phase 1 Peak Hour Intersection Levels of Service*. Figures that show the Existing Plus Project Phase 1 AM and PM peak hour intersection volumes are provided in Appendix D. Phase 1 Project traffic intersection peak hour turn movement volumes are also included in Appendix D.

Table 7 Existing Plus Project Phase 1 Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard at Halliburton Road	LA County	Signal	-	0.669	B	-	0.651	B
2. Hacienda Boulevard and Colima Road	LA County	Signal	-	**1.047**	**F**	-	**1.219**	**F**
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.761	C	-	0.623	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.733	C	-	0.718	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.714	C	-	0.688	B
6. Countrywood Avenue and Wedgeworth Drive	LA County	AWS	**65.9**	-	**F**	9.5	-	A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.728	C	-	0.664	B
8. Park Lawn Road and Colima Road	LA County	CSS	**>100**	-	**F**	**>100**	-	**F**
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.558	A	-	0.736	C
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.790	C	-	0.869	D
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	13.9	-	B	34.8	-	C
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	24.4	-	C	22.8	-	C
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	Signal	-	0.890	D	-	**0.907**	**E**
14. Azusa Avenue and Colima Road	LA County/ Industry	Signal	-	0.854	D	-	**0.941**	**E**
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.652	B	-	0.841	D
16. Fullerton Road and Colima Road	LA County	Signal	-	0.761	C	-	**0.937**	**E**

Notes: LOS calculation worksheets included in Appendix D.
Bold=deficient operations

Figure 10 - Cumulative Project Locations



Project Boundary

A Cumulative Projects

Note: Unincorporated county areas are shown in white.

Source: ESRI, 2019

0 3,000
Scale (Feet)

5. Future Traffic Conditions

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All study area intersections would operate at acceptable levels of service during the peak hours for Existing Plus Project Phase 1 traffic conditions, except for the following intersections:

2. Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

6. Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

8. Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: PM peak hour)

14. Azusa Avenue and Colima Road (LA County/ Industry: PM peak hour)

16. Fullerton Road and Colima Road (LA County: PM peak hour)

5.2 EXISTING PLUS PROJECT PHASE 2 TRAFFIC CONDITIONS

To assess Existing Plus Project Phase 2 traffic conditions, existing traffic is combined with project traffic that will be generated by the school and residential development. The intersection operations for the Existing Plus Project Phase 2 traffic conditions have been calculated and are shown in Table 8, *Existing Plus Project Phase 2 Peak Hour Intersection Levels of Service*. Figures that show the Existing Plus Project Phase 2 AM and PM peak hour intersection volumes are provided in Appendix D. Phase 2 Project traffic intersection peak hour turn movement volumes are also included in Appendix D.

Table 8 Existing Plus Project Phase 2 Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard at Halliburton Road	LA County	Signal	-	0.668	B	-	0.652	B
2. Hacienda Boulevard and Colima Road	LA County	Signal	-	1.047	F	-	1.220	F
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.761	C	-	0.624	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.733	C	-	0.720	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.713	C	-	0.690	B
6. Countrywood Avenue and Wedgeworth Drive	LA County	AWS	65.4	-	F	9.5		A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.728	C	-	0.665	B
8. Park Lawn Road and Colima Road	LA County	CSS	>100	-	F	>100	-	F

Table 8 Existing Plus Project Phase 2 Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.558	A	-	0.739	C
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.790	C	-	0.871	D
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	14.1	-	B	34.7	-	C
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	24.5	-	C	22.8	-	C
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	Signal	-	0.904	E	-	0.932	E
14. Azusa Avenue and Colima Road	LA County/ Industry	Signal	-	0.851	D	-	0.945	E
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.651	B	-	0.846	D
16. Fullerton Road and Colima Road	LA County	Signal	-	0.760	C	-	0.939	E

Notes: LOS calculation worksheets included in Appendix D.
Bold=deficient operations

All study area intersections would operate at acceptable levels of service during the peak hours for Existing Plus Project Phase 2 traffic conditions, except for the following intersections:

2. Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

6. Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

8. Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: AM and PM peak hour)

14. Azusa Avenue and Colima Road (LA County/ Industry: PM peak hour)

16. Fullerton Road and Colima Road (LA County: PM peak hour)

5.3 2021 WITHOUT PROJECT TRAFFIC

To assess future traffic conditions, which correspond to when the Phase 1 project site will be operational in 2021, ambient growth was added to the existing traffic volumes plus traffic from cumulative projects at the time of project opening year. The intersection operations for the 2021 Without Project traffic conditions have been calculated and are listed in Table 9, *2021 Without Project Peak Hour Intersection Levels of Service*. Figures showing the 2021 Without Project AM and PM peak hour intersection volumes are provided in Appendix E.

Table 9 2021 Without Project Peak Hour Intersection Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard at Halliburton Road	LA County	Signal	-	0.667	B	-	0.658	B
2. Hacienda Boulevard and Colima Road	LA County	Signal	-	1.055	F	-	1.232	F
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.763	C	-	0.633	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.735	C	-	0.712	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.700	B	-	0.695	B
6. Countrywood Avenue and Wedgeworth Drive	LA County	AWS	63.0	-	F	9.6	-	A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.720	C	-	0.676	B
8. Park Lawn Road and Colima Road	LA County	CSS	>100	-	F	>100	-	F
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.617	B	-	0.819	D
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.801	D	-	0.884	D
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	14.1	-	B	36.5	-	D
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	20.1	-	C	14.4	-	B
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	Signal	-	0.851	D	-	0.906	E
14. Azusa Avenue and Colima Road	LA County/ Industry	Signal	-	0.859	D	-	0.963	E
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.651	B	-	0.854	D
16. Fullerton Road and Colima Road	LA County	Signal	-	0.764	C	-	0.948	E

Notes: LOS calculation worksheets included in Appendix E.
Bold=deficient operations

All study area intersections would operate at acceptable levels of service during the peak hours for 2021 Without Project traffic conditions, except for the following intersections:

2. Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

6. Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

8. Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: PM peak hour)

14. Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)

16. Fullerton Road and Colima Road (LA County: PM Peak Hour)

5.4 2026 WITHOUT PROJECT TRAFFIC

To assess future traffic conditions that correspond to when the Phase 2 project site will be operational in 2026, ambient growth was added to the existing traffic volumes plus traffic from cumulative projects at the time of project Phase 2 opening year. The intersection operations for the 2026 Without Project traffic conditions have been calculated and are listed in Table 10, *2026 Without Project Peak Hour Intersection Levels of Service*. Figures showing the Future Without Project AM and PM peak hour intersection volumes are provided in Appendix E.

Table 10 2026 Without Project Peak Hour Intersections Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard at Halliburton Road	LA County	Signal	-	0.678	B	-	0.669	B
2. Hacienda Boulevard and Colima Road	LA County	Signal	-	1.076	F	-	1.254	F
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.776	C	-	0.643	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.747	C	-	0.724	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.713	C	-	0.707	B
6. Countrywood Avenue and Wedgeworth Drive	LA County	AWS	69.7	1.087	F	9.7	0.327	A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.732	C	-	0.688	B
8. Park Lawn Road and Colima Road	LA County	CSS	>100	0.237	F	>100	3.050	F
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.627	B	-	0.817	D
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.814	D	-	0.899	D
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	14.9		B	39.5		D
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	20.6		C	14.7		B
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	Signal	-	0.865	D	-	0.922	E
14. Azusa Avenue and Colima Road	LA County/ Industry	Signal	-	0.874	D	-	0.980	E

Table 10 2026 Without Project Peak Hour Intersections Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.661	B	-	0.868	D
16. **Fullerton Road and Colima Road**	LA County	Signal	-	0.776	C	-	0.965	E

Notes: LOS calculation worksheets included in Appendix E.
Bold=deficient operations

All study area intersections would operate at acceptable levels of service during the peak hours for 2026 Without Project conditions, except for the following intersections:

2. Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)
6. Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)
8. Park Lawn Road and Colima Road (LA County: AM and PM peak hours)
13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: PM peak hour)
14. Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)
16. Fullerton Road and Colima Road (LA County: PM Peak Hour)

5.5 2021 WITH PROJECT PHASE 1 TRAFFIC

To assess future traffic conditions with project Phase 1, school traffic is added to the 2021 Without Project conditions discussed in Section 5.3 for 2021. The intersection operations for the 2021 With Project Phase 1 traffic conditions have been calculated and are listed in Table 11. Figures showing the 2021 With Project Phase 1 AM and PM peak hour intersection volumes and LOS calculation worksheets are provided in Appendix F. Phase 1 Project traffic intersection peak hour turn movement volumes are also included in Appendix F.

5. Future Traffic Conditions

Table 11 2021 With Project Phase 1 Peak Hour Intersections Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard at Halliburton Road	LA County	Signal	-	0.675	B	-	0.660	B
2. **Hacienda Boulevard and Colima Road**	LA County	Signal	-	**1.057**	**F**	-	**1.232**	**F**
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.768	C	-	0.636	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.743	C	-	0.713	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.727	C	-	0.701	C
6. **Countrywood Avenue and Wedgeworth Drive**	LA County	AWS	71.0	**1.085**	**F**	9.6	0.321	A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.745	C	-	0.683	B
8. **Park Lawn Road and Colima Road**	LA County	CSS	>100	**4.771**	**F**	>100	**4.703**	**F**
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.620	B	-	0.803	D
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.803	D	-	0.885	D
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	14.4	-	B	36.6	-	D
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	20.1	-	C	14.4	-	B
13. **Azusa Avenue and Pepper Brook Way**	LA County/ Industry	Signal	-	0.898	D	-	**0.916**	**E**
14. **Azusa Avenue and Colima Road**	LA County/ Industry	Signal	-	0.871	D	-	**0.967**	**E**
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.663	B	-	0.857	D
16. **Fullerton Road and Colima Road**	LA County	Signal	-	0.770	C	-	**0.949**	**E**

Notes: LOS calculation worksheets included in Appendix F.
Bold=deficient operations

All study area intersections would operate at acceptable levels of service during the peak hours for 2021 With Project Phase 1 traffic conditions, except for the following intersections:

2. Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)
6. Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)
8. Park Lawn Road and Colima Road (LA County: AM and PM peak hours)
13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: PM peak hour)
14. Azusa Avenue and Colima Road (LA County / Industry: PM peak hour)

16. Fullerton Road and Colima Road (LA County: PM Peak Hour)

5.6 2026 WITH PROJECT PHASE 2 TRAFFIC

To assess future traffic conditions with project Phase 2, school and residential traffic is added to the 2026 Without Project conditions discussed in section 5.4 for 2026. The intersection operations for the 2026 With Project Phase 2 traffic conditions have been calculated and are listed in Table 12. Figures showing the 2026 With Project Phase 2 AM and PM peak hour intersection volumes and LOS calculation worksheets are provided in Appendix F. Phase 2 Project traffic intersection peak hour turn movement volumes are also included in Appendix F.

Table 12 2026 With Project Phase 2 Peak Hour Intersections Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS
1. Hacienda Boulevard at Halliburton Road	LA County	Signal	-	0.686	B	-	0.671	B
2. Hacienda Boulevard and Colima Road	LA County	Signal	-	1.079	F	-	1.256	F
3. Stimson Avenue and Halliburton Road	LA County	Signal	-	0.782	C	-	0.647	B
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	Signal	-	0.757	C	-	0.726	C
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	Signal	-	0.740	C	-	0.716	C
6. Countrywood Avenue and Wedgeworth Drive	LA County	AWS	76.9	1.115	F	9.7	0.329	A
7. Countrywood Avenue and Colima Road	LA County	Signal	-	0.760	C	-	0.695	B
8. Park Lawn Road and Colima Road	LA County	CSS	>100	5.333	F	>100	7.663	F
9. Manor Gate Road and Colima Road	LA County	Signal	-	0.633	B	-	0.821	D
10. Azusa Avenue and Gale Avenue	Industry	Signal	-	0.818	D	-	0.902	E
11. Azusa Avenue and Interstate 60 Westbound	Caltrans	Signal	15.4	-	B	39.9	-	D
12. Azusa Avenue and Interstate 60 Eastbound	Caltrans	Signal	20.7	-	C	15.1	-	B
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	Signal	-	0.934	E	-	0.958	E
14. Azusa Avenue and Colima Road	LA County/ Industry	Signal	-	0.888	D	-	0.987	E
15. Albatross Road and Colima Road	LA County/ Industry	Signal	-	0.675	B	-	0.876	D
16. Fullerton Road and Colima Road	LA County	Signal	-	0.783	C	-	0.968	E

5. Future Traffic Conditions

Table 12 2026 With Project Phase 2 Peak Hour Intersections Levels of Service

Intersection	Jurisdiction	Intersection Control	AM Peak Hour			PM Peak Hour		
			Average Delay (sec/veh)	V/C	LOS	Average Delay (sec/veh)	V/C	LOS

Notes: LOS calculation worksheets included in Appendix F.
Bold=deficient operations

All study area intersections would operate at acceptable levels of service during the peak hours for 2026 With Phase 2 traffic conditions, except for the following intersections:

2. Hacienda Boulevard and Colima Road (LA County: AM and PM peak hours)

6. Countrywood Avenue and Wedgeworth Drive (LA County: AM peak hour)

8. Park Lawn Road and Colima Road (LA County: AM and PM peak hours)

10. Azusa Avenue and Gale Avenue (Industry: PM peak hours)

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: AM and PM peak hours)

14. Azusa Avenue and Colima Road (LA County/ Industry: PM peak hour)

16. Fullerton Road and Colima Road (LA County: PM Peak Hour)

6. Signal Warrants

Signal warrants are a set of criteria used to evaluate the potential need for a traffic signal at an unsignalized or stop-controlled intersection. The methodology for the signal warrant analysis is included in the 2014 California Manual on Uniform Traffic Control Devices (MUTCD). The manual states that if one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized. The traffic analysis uses Warrant 3 criteria (based on traffic volumes entering the intersection during the peak hour). The signal warrant calculations are included in Appendix G. In this TIA, the following stop-controlled intersections have been evaluated for Phase 1 and Phase 2 conditions under Warrant 3 criteria:

- **6. Countrywood Avenue and Wedgeworth Drive.** The intersection of Countrywood Avenue and Wedgeworth Drive does not meet the requirement for Warrant 3 under any scenario during the AM and PM peak hours. This intersection currently is not warranted for a signal.

- **8. Park Lawn Road and Colima Road.** Park Lawn Road and Colima Road currently does not meet the peak hour Warrant 3 criteria for a signal under existing AM and PM peak hours and is forecast not to meet the warrants under future, no project conditions.

With project traffic under Phase 1 and Phase 2, this location would meet the warrants for a signal in the AM peak hour. The traffic analysis only presents Warrant 3 criteria, which are based on traffic volumes entering the intersection during the peak hour. The MUTCD states that if one or more of the criteria for signal warrants is met, an engineering study is required to evaluate other factors to determine if an intersection must be signalized. Colima Road is a principal arterial street; the installation of traffic signals in close proximity to each other is not desired because they may degrade thru-traffic flows on an arterial street. The project would primarily add traffic to the southbound approach of Park Lawn toward Colima Road. Our review indicates that a relatively small number of vehicles would be affected by higher delays on the southbound approach, and thru traffic on Colima Road would not be affected because east-west traffic does not stop at that intersection. Drivers would likely take alternative routes via Countrywood Avenue and Manor Gate Road, where traffic signals are already installed. Therefore, given the small number of vehicles affected on the cross-street traffic on Park Lawn and because motorists may use the nearby approaches at Countrywood Avenue and Manor Gate Road, a signal at Park Lawn is not justified.

6. Signal Warrants

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7. Impacts

Significant impacts are determined by comparing the pre-project LOS and project-related increase in V/C based on the LOS for with- and without-project scenarios. As shown in Section 2.1.3, potential traffic impacts would occur according to the following criteria.

7.1 THRESHOLDS

7.1.1 County of Los Angeles

Signalized intersections:

- At intersections operating at LOS C (V/C ratio between 0.701 to 0.800) under pre-project conditions, the addition of development project trips that increase the V/C by equal to or greater than 0.040.
- At intersections operating at LOS D (V/C ratio between 0.801 to 0.900) under pre-project conditions, the addition of development project trips that increase the V/C by equal to or greater than 0.020.
- At intersections operating at LOS E (V/C ratio between 0.901 to 1.00) under pre-project conditions, the addition of development project trips that increase the V/C by equal to or greater than 0.010.
- At intersections operating at LOS F (V/C ratio greater than 1.00) under pre-project conditions, the addition of development project trips that increase the V/C by equal to or greater than 0.010.

Unsignalized intersections should be evaluated solely to determine the need for the installation of a traffic signal or other traffic control devices.

7.1.2 City of Industry

An impact would occur at a City of Industry signalized intersections if the ICU value under With Project conditions is LOS E or F *and* the ICU increase attributable to the project is 0.020 or greater.

7.1.3 Caltrans

For the Caltrans SR-60 study intersections, LOS D is considered acceptable and LOS E and F unacceptable. A significant impact would occur at a signalized study intersection when the project-related traffic causes:

- An intersection to degrade from an acceptable LOS to an unacceptable LOS; or
- Any increase in delay for intersections already operating at an unacceptable LOS.

7. Impacts

7.2 EXISTING PLUS PROJECT IMPACTS

7.2.1 Existing Plus Project Phase 1 Conditions (E+Phase1)

Table 13 identifies potential impacts to intersections under the County of Los Angeles jurisdiction. Per County of Los Angeles criteria, without mitigation a significant impact would occur at:

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: AM peak hour)

Table 13 E+P (Phase 1) Impact Summary, County of Los Angeles Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		Pre-project LOS	Project Increase	Pre-project LOS	Project Increase
1. Hacienda Boulevard at Halliburton Road	LA County	B	0.008	B	0.002
2. Hacienda Boulevard and Colima Road	LA County	F	0.001	F	0.000
3. Stimson Avenue and Halliburton Road	LA County	C	0.006	B	0.003
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	C	0.009	C	0.015
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	B	0.030	B	0.006
7. Countrywood Avenue and Colima Road	LA County	C	0.022	B	0.007
8. Manor Gate Road and Colima Road	LA County	A	0.003	C	0.001
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	D	0.049	D	0.011
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.019	E	0.003
15. Albatross Road and Colima Road	LA County/ Industry	B	0.016	D	0.003
16. Fullerton Road and Colima Road	LA County	C	0.008	E	0.001

Notes: Shaded cells = Impact
Intersections 6 and 8 are stop-controlled and therefore impacts are analyzed according to signal warrants.

Table 14 identifies potential impacts to intersections under the City of Industry's jurisdiction. Per City of Industry criteria, no significant impacts would occur.

Table 14 E+P (Phase 1) Impact Summary, City of Industry Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		With Project LOS	Project Increase	With Project LOS	Project Increase
10. Azusa Avenue and Gale Avenue	Industry	C	0.002	D	0.001
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	D	0.049	D	0.011
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.019	E	0.003
15. Albatross Road and Colima Road	LA County/ Industry	B	0.016	D	0.003

At Caltrans intersections, no intersections would degrade from an acceptable LOS to an unacceptable LOS, and no increase in delay would occur at intersections that are already operating at unacceptable LOS (E or F). Therefore, no impacts would occur under project Phase 1 conditions at Caltrans intersections according to their criteria.

7.2.2 Existing Plus Project Phase 2 Conditions (E+Phase2)

Table 15 identifies potential impacts to intersections under the County of Los Angeles jurisdiction. Per County of Los Angeles criteria, without mitigation a significant impact would occur at:

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: AM and PM peak hours)

Table 15 E+P (Phase 2) Impact Summary, County of Los Angeles Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		Pre-Project LOS	Project Increase	Pre-Project LOS	Project Increase
1. Hacienda Boulevard at Halliburton Road	LA County	B	0.007	B	0.003
2. Hacienda Boulevard and Colima Road	LA County	F	0.001	F	0.001
3. Stimson Avenue and Halliburton Road	LA County	C	0.006	B	0.004
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	C	0.009	C	0.017
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	B	0.029	B	0.008

7. Impacts

Table 15 E+P (Phase 2) Impact Summary, County of Los Angeles Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		Pre-Project LOS	Project Increase	Pre-Project LOS	Project Increase
7. Countrywood Avenue and Colima Road	LA County	C	0.022	B	0.008
9. Manor Gate Road and Colima Road	LA County	A	0.003	C	0.004
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	D	0.063	D	0.036
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.016	E	0.007
15. Albatross Road and Colima Road	LA County/ Industry	B	0.015	D	0.008
17. Fullerton Road and Colima Road	LA County	C	0.007	E	0.003

Notes: Shaded cells = Impact
Intersections 6 and 8 are stop-controlled and therefore impacts are analyzed according to signal warrants.

Table 16 identifies potential impacts to intersections under the City of Industry jurisdiction; without mitigation a significant impact would occur at:

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: AM and PM peak hours)

Table 16 E+P (Phase 2) Impact Summary, City of Industry Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		With Project LOS	Project Increase	With Project LOS	Project Increase
10. Azusa Avenue and Gale Avenue	Industry	C	0.002	D	0.003
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	E	0.063	E	0.036
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.016	E	0.007
15. Albatross Road and Colima Road	LA County/ Industry	B	0.015	D	0.008

Shaded cells = Impact

7.3 CUMULATIVE IMPACTS, PROJECT PHASE 1 IN 2021

7.3.1 2021 With Project Phase 1 Conditions

Table 17 identifies potential impacts to intersections under the County of Los Angeles jurisdiction. Per County of Los Angeles criteria, without mitigation a significant impact would occur at:

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: AM and PM peak hours)

Table 17 2021 With Project Phase 1 Impact Summary, County of Los Angeles Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		Pre-Project LOS	Project Increase	Pre-Project LOS	Project Increase
1. Hacienda Boulevard at Halliburton Road	LA County	B	0.008	B	0.002
2. Hacienda Boulevard and Colima Road	LA County	F	0.002	F	0.000
3. Stimson Avenue and Halliburton Road	LA County	C	0.005	B	0.003
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	C	0.008	C	0.001
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	B	0.027	B	0.006
7. Countrywood Avenue and Colima Road	LA County	C	0.025	B	0.007
9. Manor Gate Road and Colima Road	LA County	B	0.003	D	0.000
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	D	0.047	E	0.010
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.012	E	0.004
15. Albatross Road and Colima Road	LA County/ Industry	B	0.012	D	0.003
16. Fullerton Road and Colima Road	LA County	C	0.006	E	0.001

Notes: Shaded cells = Impact
Intersections 6 and 8 are stop-controlled and therefore impacts are analyzed according to signal warrants.

Table 18 identifies potential impacts to intersections under the City of Industry jurisdiction. Per City of Industry Criteria, no significant impacts would occur.

7. Impacts

Table 18 2021 With Project Phase 1 Impact Summary, City of Industry Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		With Project LOS	Project Increase	With Project LOS	Project Increase
10. Azusa Avenue and Gale Avenue	Industry	C	0.002	D	0.001
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	D	0.047	E	0.010
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.012	E	0.004
15. Albatross Road and Colima Road	LA County/ Industry	B	0.012	D	0.003

Notes: Shaded cells = Impact

At Caltrans intersections, no intersections would degrade from an acceptable LOS to an unacceptable LOS, and no increase in delay would occur at intersections that are already operating at unacceptable LOS (E or F). Therefore, no impacts would occur under project Phase 1 conditions at Caltrans intersections according to Caltrans criteria.

7.4 CUMULATIVE IMPACTS, PROJECT PHASE 2 IN 2026

7.4.1 2026 With Project Phase 2 Conditions

Table 20 identifies potential impacts to intersections under the County of Los Angeles jurisdiction. Per County of Los Angeles criteria, without mitigation a significant impact would occur at:

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: AM and PM peak hours)

Table 20 2026 With Project Phase 2 Impact Summary, County of Los Angeles Criteria

Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
		Pre-Project LOS	Project Increase	Pre-Project LOS	Project Increase
1. Hacienda Boulevard at Halliburton Road	LA County	B	0.008	B	0.002
2. Hacienda Boulevard and Colima Road	LA County	F	0.003	F	0.002
3. Stimson Avenue and Halliburton Road	LA County	C	0.006	B	0.004
4. Stimson Avenue/ Sierra Ridge Way and Colima Road	LA County	C	0.010	C	0.002
5. Halliburton Road/ Dawn Haven Road and Colima Road	LA County	C	0.027	C	0.009
7. Countrywood Avenue and Colima Road	LA County	C	0.028	B	0.007

9. Manor Gate Road and Colima Road	LA County	B	0.006	D	0.004
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	D	0.069	E	0.036
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.014	E	0.007
15. Albatross Road and Colima Road	LA County/ Industry	B	0.014	D	0.008
16. Fullerton Road and Colima Road	LA County	C	0.007	E	0.003

Notes: Shaded cells = Impact
Intersections 6 and 8 are stop-controlled and therefore impacts are analyzed according to signal warrants.

Table 21 identifies potential impacts to intersections under the City of Industry jurisdiction; without mitigation a significant impact would occur at:

13. Azusa Avenue and Pepper Brook Way (LA County/ Industry: PM peak hour)

Table 21 2026 With Project Phase 2 Conditions Impact Summary, City of Industry Criteria

		AM Peak Hour		PM Peak Hour	
Intersection	Jurisdiction	With Project LOS	Project Increase	With Project LOS	Project Increase
10. Azusa Avenue and Gale Avenue	Industry	D	0.004	D	0.003
13. Azusa Avenue and Pepper Brook Way	LA County/ Industry	D	0.069	E	0.036
14. Azusa Avenue and Colima Road	LA County/ Industry	D	0.014	E	0.007
15. Albatross Road and Colima Road	LA County/ Industry	B	0.014	D	0.008

Notes: Shaded cells = Impact

At Caltrans intersections, no intersections would degrade from an acceptable LOS to an unacceptable LOS, and no increase in delay would occur at intersections that are already operating at unacceptable LOS (E or F). Therefore, no impacts would occur under project Phase 2 conditions at Caltrans intersections according to Caltrans criteria.

7.5 MITIGATION MEASURE

7.5.1 Phase 1 Cumulative Impact in 2021

Based on a review of the impact analysis for cumulative impact in 2021 to address intersection operational deficiencies under project Phase 1, the following mitigation measure would reduce impacts to a less than significant level.

13. The following improvements shall be provided at the intersection of **Azusa Avenue and Pepper Brook Way** (LA County/ Industry):

(1) At the eastbound approach restripe the approach with a one left turn and one shared left/thru/right turn lane.

(2) The phasing for the eastbound and westbound approaches would have to be modified to be split phase.

(3) Right turns on red shall be prohibited at the westbound approach to avoid conflicts with vehicles making eastbound left turns into Azusa Avenue.

Table 19 shows the intersection LOS results for the impacted intersection with implementation of the above improvements. With these improvements as mitigation the intersection would operate better than pre-project conditions.

Table 19 Project Phase 1 with Mitigation Measures

Intersection	AM Peak Hour		PM Peak Hour	
	V/C	LOS	V/C	LOS
13. Azusa Avenue and Pepper Brook Way	0.793	C	0.844	D

Note: The proposed intersection configuration that would mitigate impacts may not be feasible.

7.5.2 Phase 2 Cumulative Impact in 2026

Based on a review of the impact analysis for cumulative impact in 2026 to address intersection operational deficiencies under project Phase 2, the following mitigation measure would reduce impacts to a less than significant level.

13. The following improvements shall be provided at the intersection of **Azusa Avenue and Pepper Brook Way** (LA County/ Industry):

(1) At the eastbound approach restripe the approach with a one left turn and one shared left/thru/right turn lane.

(2) The phasing for the eastbound and westbound approaches would have to be modified to be split phase.

(3) Right turns on red shall be prohibited at the westbound approach to avoid conflicts with vehicles making eastbound left turns into Azusa Avenue.

Table 22 shows the intersection LOS results for the impacted intersection with implementation of above listed improvements. With these improvements as mitigation, the intersection would operate better than pre-project conditions.

Table 22 Project Phase 2 with Mitigation Measures

Intersection	AM Peak Hour		PM Peak Hour	
	V/C	LOS	V/C	LOS
13. Azusa Avenue and Pepper Brook Way	0.793	C	0.844	D

Note: The proposed intersection configuration that would mitigate impacts may not be feasible.

7. Impacts

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8. Fair Share Calculation

As described in Section 7.3.2, *Project Phase 1 Impact Summary* and Section 7.4.2, *Project Phase 2 Impact Summary intersection,* intersection 13. Azusa Avenue at Pepper Brook Way would be impacted by the proposed project and improvements have been recommended to reduce impacts to an acceptable level. Although it is uncertain that these improvements are feasible and accepted by the County of Los Angeles and the City of Industry, the following calculations have been prepared to estimate a proportional "fair share" of the improvement costs, in the event that the County and the City of Industry find the recommended improvements as acceptable. The project fair share percentage equals the project traffic divided by the difference of future traffic and existing traffic at all approaches entering the intersection:

$$Project\ Fair\ Share\ \% = \frac{Project\ Traffic}{(Future\ Traffic\ Volume - Existing\ Traffic\ Volume)}$$

Table 23 presents a summary of the project's fair share percentages in the AM and PM peak hour for the impacted intersection of Azusa Avenue and Pepper Brook Way under Phases 1 and 2. The fair share percentage ranges from 33.3 to 65.4 percent in Phase 1, and from 47.8 to 39.8 percent in Phase 2. The project fair share is lower in Phase 2 because project traffic as a percentage of the total is proportionally lower than in Phase 1. It should be noted that these percentages are not absolute and may change upon review by the County and the City of Industry.

Table 23 Fair Share Calculations for Intersection 13, Azusa Avenue and Pepper Brook Way

Phase	Period	Existing Volumes	Project Traffic	Future With Project	New Traffic	Fair Share
Phase 1	AM	3,266	108	3,431	165	65.4%
	PM	4,103	29	4,190	87	33.3%
Phase 2	AM	3,266	128	3,534	268	47.8%
	PM	4,103	94	4,339	236	39.8%

8. Fair Share Calculations

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9. Congestion Management Plan Conformance

Los Angeles County Metropolitan Transportation Authority (Metro) serves as the county's congestion management agency. The Los Angeles County Congestion Management Program was issued by Metro in December 2010 (Metro 2010). All freeways and selected arterial roadways are designated elements of the CMP Highway System. The LOS standard in Los Angeles County is LOS E, except where base year LOS is worse than E. In such cases, the base year LOS is the standard. A 1992 base year has been established for Los Angeles County. The CMP statute states that deficiency plans are required when LOS standards are not met on portions of the CMP highway system. A deficiency is defined as an intersection or segment of a highway or roadway that has a reduction in LOS that exceeds the minimum standard of LOS E.

The CMP requires that individual development projects of potentially regional significance undergo a traffic impact analysis. Per the CMP Transportation Impact Analysis guidelines, a significant impact may result and a traffic impact analysis is required under the following conditions:

- At CMP arterial monitoring intersections where the proposed project would add 50 or more vehicle trips during either morning or evening weekday peak hours.
- At CMP main-line freeway monitoring locations where the proposed project would add 150 or more vehicle trips, in either direction, during either morning or evening weekday peak hours.

The nearest freeway to the project site is the Pomona Freeway (SR-60). As shown in Figures 5 to 8, it is anticipated that 5 percent of school trips and 20 percent of the residential trips would use SR-60. Applying the trip generation for the school and residential components presented in Table 6, the proposed project would result in a maximum of 33 trips during weekday AM peak hours. Based on the CMP threshold previously discussed, buildout of the project would not generate enough trips during the weekday peak hours to exceed the 150 peak-hour trips.

The nearest CMP arterial intersections to the project site are #2 Colima Road and Hacienda Boulevard and #14 Azusa and Colima Road. The project (Phase 1 + Phase 2) would generate 16 AM and 13 PM peak hour trips through intersection 2, which is below the threshold of 50 or more vehicle trips during peak hours.

At intersection 14 the project would add 56 AM and 27 PM peak hour trips, exceeding the 50 trips thresholds and potentially resulting in a significant impact. Per the CMP Transportation Impact Analysis guidelines, a traffic impact analysis is required at locations where the threshold is exceeded. This analysis shows that while the project would add more than 50 peak hour trips at this intersection, it is forecast to operate at LOS E (see Tables 11 and 12), which is acceptable per CMP standards.

9. Congestion Management Plan Conformance

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10. Site Access and Internal Circulation

The residential and school sites would be accessed via driveways on Eagle Park Road and Wedgeworth Drive. The following discuss site access for the school site in project Phase 1 and the residential site in project Phase 2.

10.1 SCHOOL SITE

The school would be accessed from driveways on Eagle Park Road for the main parking and bus drop-off, and driveways on Wedgeworth Drive for parent drop-off (see Figure 4, *Site Plan*). The parking area with access from Wedgeworth Drive would have 46 spaces, and the parking area with access from Eagle Park Road would have 75 spaces, for a total of 121 spaces. Parent drop-off would occur at the southern parking lot adjacent to Wedgeworth Drive. The proposed project would modify the student drop-off and pick-up locations and conditions. Student pick-up/drop-off would be relocated from its existing curbside location along Wedgeworth Drive to an off-street, onsite parking lot area north of Wedgeworth Drive and west of Minor Gate Road. The reconfigured school would allow student drop-off to occur off-street within the school property rather than curbside along a public street. With a drop-off area and vehicular queuing off street would improve safety, as a large number of pedestrian crossings on Wedgeworth Drive would be eliminated, as students would no longer have to cross Wedgeworth Drive and local streets to reach their cars. In addition, school bus student drop-off and pick up would be moved from curbside areas on Wedgeworth Drive to dedicated off-street parking lots on Eagle Park Road, improving safety and separating cars and bus drop-off areas. To improve operations it is recommended that the drop-off lane egress driveway is restricted to right-out turns only during the student drop-off and pick-up hours. This restriction would be implemented with a sign at the egress driveway and pavement markings, and education efforts. The School District shall monitor operations and may chose to ease this restriction depending on observations after school opening. The parking lot adjacent to Eagle Park Road would be for staff use and for school bus drop-off.

- **Southern Driveway/Eagle Park Road**: A 30-foot-wide driveway on the southwestern end of the project site along Eagle Park Road. This driveway will be designated for both passenger cars and school buses because it leads to staff parking and bus drop-off.

- **Northern Driveway/Eagle Park Road:** A 45-foot-wide driveway on the western end of the project site along Eagle Park Road. This driveway will be designated for both passenger cars and school buses because it leads to staff parking and bus drop-off. This driveway also connects to the fire access lane to Wedgeworth Drive.

- **Orchard Hill Lane/Wedgeworth Drive:** A 30-foot-wide driveway on the southeastern end of the project site along Wedgeworth Drive, which will be used for drop-off ingress. This driveway is primarily designed for passenger cars because it leads to visitor parking and parent drop-off.

- **Park Lawn Road / Wedgeworth Drive:** A 30-foot-wide driveway on the south-central edge of the project site along Wedgeworth Drive, which will be used for drop-off.

- **Lark Tree Lane/Wedgeworth Drive:** A 30-foot-wide driveway on the southern edge of the project site, about halfway between the other two driveways along Wedgeworth Drive. This driveway is primarily designed for passenger cars as it leads to visitor parking and parent drop-off. This driveway also connects the fire access lane to Eagle Park Road. During student drop-off and pick-up, this driveway will be closed in order to direct vehicles to egress via the western driveway at Park Lawn Road.

Based on field observations and a review of aerial photography, Eagle Park Road and Wedgeworth Drive are relatively flat, and there are no obstructions blocking the line of sight between thru traffic and the access driveways. To promote safety and orderly drop-off, all student drop-off/pick-up shall occur at the new parking lot. No drop-off shall occur on Wedgeworth Drive. The signage that marks the existing student drop-off areas along the north side of Wedgeworth Drive shall be eliminated. Given the street width, to allow adequate two-way traffic flow on Wedgeworth Drive, curbside parking shall be prohibited, and "No Stopping" signs shall be placed along the south side of Wedgeworth Drive between Heather Hill Road and Orchard Hill Lane from 7 to 9 AM and from 1 to 3 PM on school days. Finally, to keep the vehicular queues on-site as much as feasible, drop-off will primarily take place on the western portion of the lot by Building A, between the fire access road and the egress driveway. The internal driveway would allow an on-site queue of approximately 400 feet, or approximately 20 cars. Recommendations for school access are presented in Figure 11.

10.2 RESIDENTIAL SITE

The residential site would have one driveway east of the school on Wedgeworth Drive across from Manor Gate Road, and one driveway on Eagle Park Road north of the school. Due to the low volumes generated by the residential site and local conditions, access driveways may be full access with no turn restrictions. A stop sign and stop bar would be required at each driveway. The intersection of Wedgeworth Drive at Manor Gate/Residential access would become a 4-way-stop intersection.

Figure 11 - Recommendations for School Access



PlaceWorks

10. Site Access and Internal Circulation

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11. References

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Los Angeles County Metropolitan Transportation Authority. 2010. Congestion Management Program. http://media.metro.net/docs/cmp_final_2010.pdf.

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11. References

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Appendix A. Traffic Counts

Appendices

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Counts Unlimited
PO Box 1178
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City of Hacienda Heights
N/S: Hacienda Boulevard
E/W: Halliburton Road
Weather: Clear

File Name : 01_HHS_Hacienda_Halliburton AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

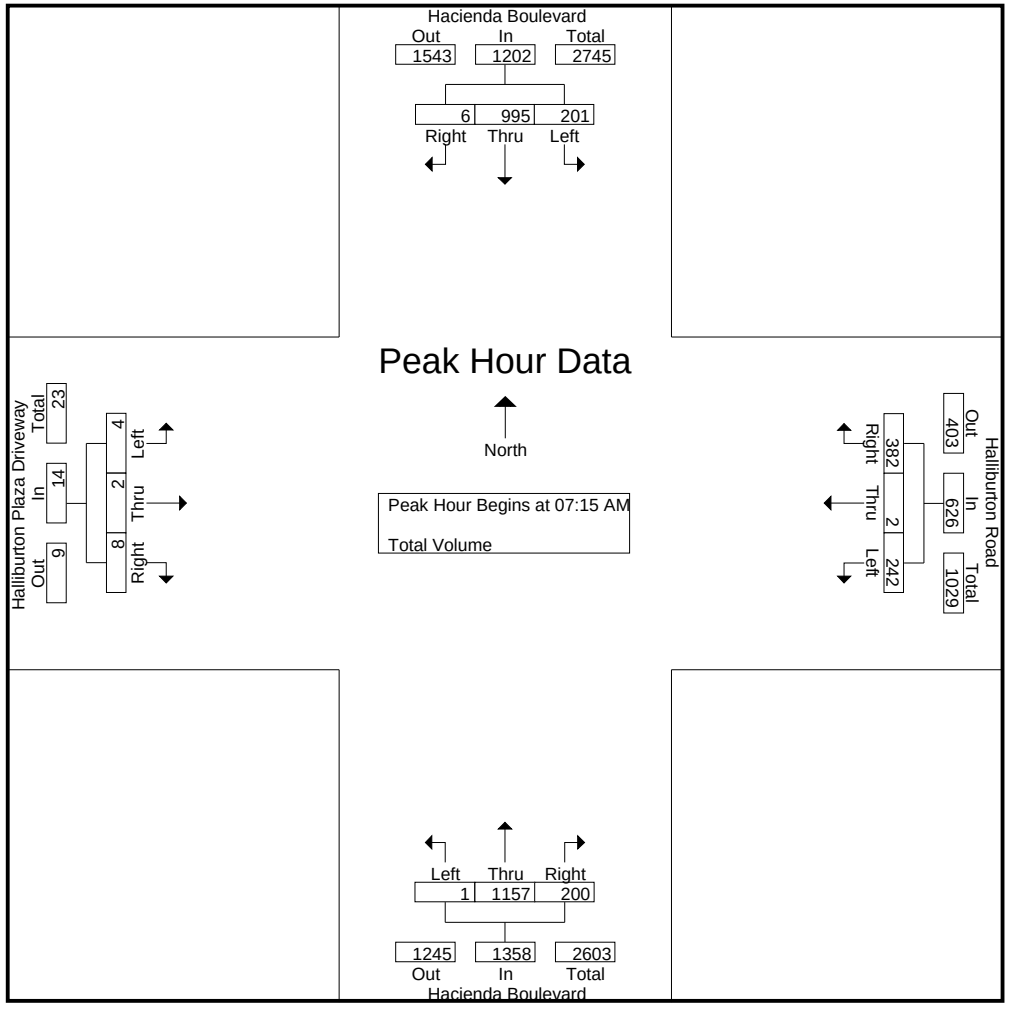
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Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	23	214	0	0	237	33	1	88	22	122	0	184	23	4	207	1	0	2	0	3	26	569	595
07:15 AM	37	245	1	0	283	43	0	88	49	131	0	263	38	12	301	0	1	1	0	2	61	717	778
07:30 AM	62	273	1	0	336	79	1	90	50	170	1	274	65	3	340	2	1	0	0	3	53	849	902
07:45 AM	59	250	1	0	310	64	1	107	50	172	0	333	52	7	385	2	0	6	0	8	57	875	932
Total	181	982	3	0	1166	219	3	373	171	595	1	1054	178	26	1233	5	2	9	0	16	197	3010	3207
08:00 AM	43	227	3	0	273	56	0	97	37	153	0	287	45	6	332	0	0	1	0	1	43	759	802
08:15 AM	38	241	1	0	280	43	0	84	57	127	1	247	46	7	294	1	0	0	0	1	64	702	766
08:30 AM	39	238	0	0	277	41	1	71	37	113	2	204	48	7	254	2	1	0	0	3	44	647	691
08:45 AM	51	175	1	0	227	32	0	70	32	102	1	198	31	2	230	3	2	0	0	5	34	564	598
Total	171	881	5	0	1057	172	1	322	163	495	4	936	170	22	1110	6	3	1	0	10	185	2672	2857
Grand Total	352	1863	8	0	2223	391	4	695	334	1090	5	1990	348	48	2343	11	5	10	0	26	382	5682	6064
Apprch %	15.8	83.8	0.4			35.9	0.4	63.8			0.2	84.9	14.9			42.3	19.2	38.5					
Total %	6.2	32.8	0.1		39.1	6.9	0.1	12.2		19.2	0.1	35	6.1		41.2	0.2	0.1	0.2		0.5	6.3	93.7	

	Hacienda Boulevard Southbound				Halliburton Road Westbound				Hacienda Boulevard Northbound				Halliburton Plaza Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	37	245	1	283	43	0	88	131	0	263	38	301	0	**1**	1	2	717
07:30 AM	**62**	**273**	1	**336**	**79**	**1**	90	170	**1**	274	**65**	340	**2**	1	0	3	849
07:45 AM	59	250	1	310	64	1	**107**	**172**	0	**333**	52	**385**	2	0	**6**	**8**	**875**
08:00 AM	43	227	**3**	273	56	0	97	153	0	287	45	332	0	0	1	1	759
Total Volume	201	995	6	1202	242	2	382	626	1	1157	200	1358	4	2	8	14	3200
% App. Total	16.7	82.8	0.5		38.7	0.3	61		0.1	85.2	14.7		28.6	14.3	57.1		
PHF	.810	.911	.500	.894	.766	.500	.893	.910	.250	.869	.769	.882	.500	.500	.333	.438	.914

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City of Hacienda Heights
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Page No : 3

	Hacienda Boulevard Southbound				Halliburton Road Westbound				Hacienda Boulevard Northbound				Halliburton Plaza Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:15 AM				07:15 AM				07:00 AM				
+0 mins.	37	245	1	283	43	0	88	131	0	263	38	301	1	0	2	3	
+15 mins.	**62**	**273**	1	**336**	**79**	**1**	90	170	**1**	274	**65**	340	0	**1**	1	2	
+30 mins.	59	250	1	310	64	1	**107**	**172**	0	**333**	52	**385**	**2**	1	0	3	
+45 mins.	43	227	**3**	273	56	0	97	153	0	287	45	332	2	0	**6**	**8**	
Total Volume	201	995	6	1202	242	2	382	626	1	1157	200	1358	5	2	9	16	
% App. Total	16.7	82.8	0.5		38.7	0.3	61		0.1	85.2	14.7		31.2	12.5	56.2		
PHF	.810	.911	.500	.894	.766	.500	.893	.910	.250	.869	.769	.882	.625	.500	.375	.500	

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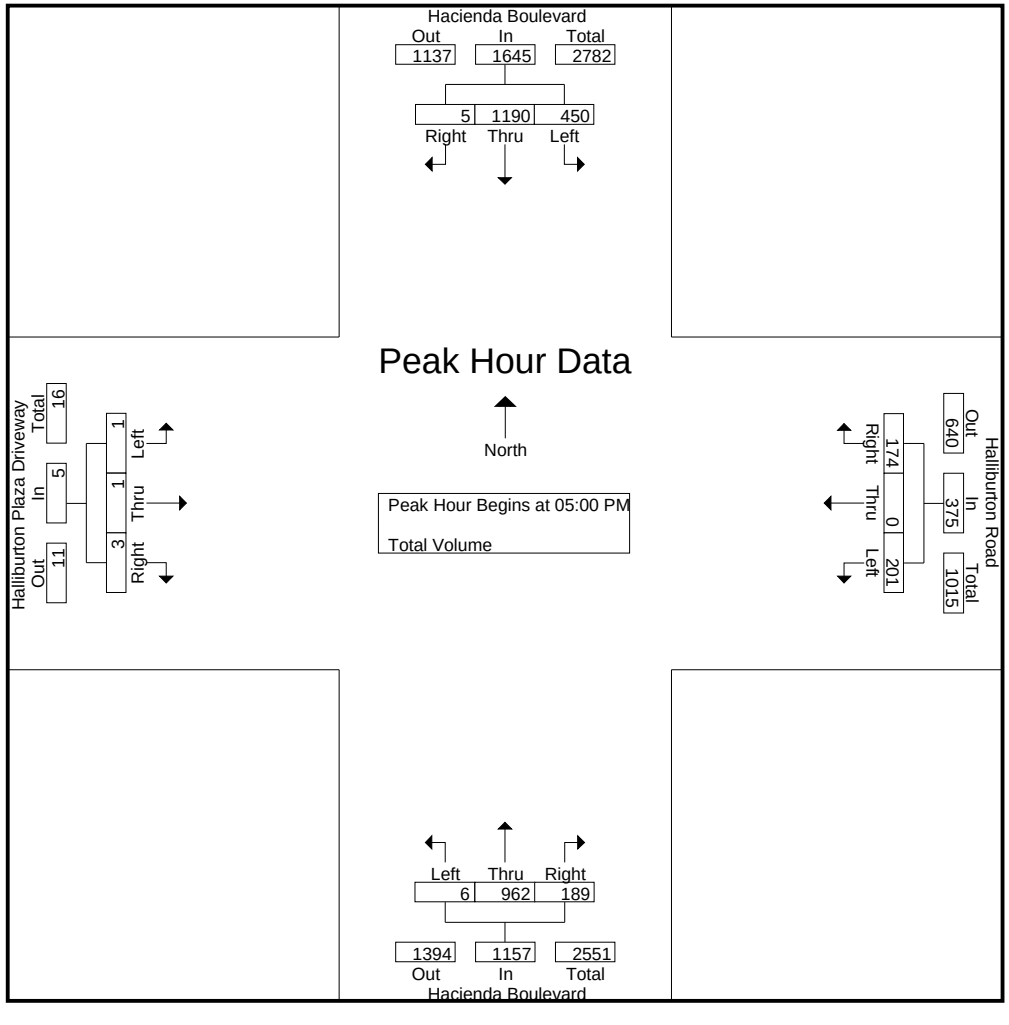
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Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	56	294	3	0	353	42	0	33	23	75	0	252	38	11	290	3	0	0	0	3	34	721	755
04:15 PM	90	313	2	0	405	36	1	43	23	80	2	251	39	9	292	2	0	0	0	2	32	779	811
04:30 PM	102	273	0	0	375	45	0	32	26	77	1	258	43	9	302	0	0	0	0	0	35	754	789
04:45 PM	89	295	1	0	385	44	1	32	18	77	1	260	35	0	296	1	0	0	0	1	18	759	777
Total	337	1175	6	0	1518	167	2	140	90	309	4	1021	155	29	1180	6	0	0	0	6	119	3013	3132
05:00 PM	100	259	1	0	360	37	0	40	29	77	1	260	39	6	300	0	0	1	1	1	36	738	774
05:15 PM	99	340	3	1	442	46	0	47	18	93	2	249	46	9	297	0	0	1	0	1	28	833	861
05:30 PM	113	282	0	0	395	56	0	43	21	99	1	265	58	16	324	1	1	0	0	2	37	820	857
05:45 PM	138	309	1	0	448	62	0	44	25	106	2	188	46	11	236	0	0	1	0	1	36	791	827
Total	450	1190	5	1	1645	201	0	174	93	375	6	962	189	42	1157	1	1	3	1	5	137	3182	3319
Grand Total	787	2365	11	1	3163	368	2	314	183	684	10	1983	344	71	2337	7	1	3	1	11	256	6195	6451
Apprch %	24.9	74.8	0.3			53.8	0.3	45.9			0.4	84.9	14.7			63.6	9.1	27.3					
Total %	12.7	38.2	0.2		51.1	5.9	0	5.1		11	0.2	32	5.6		37.7	0.1	0	0		0.2	4	96	

	Hacienda Boulevard Southbound				Halliburton Road Westbound				Hacienda Boulevard Northbound				Halliburton Plaza Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	100	259	1	360	37	0	40	77	1	260	39	300	0	0	**1**	1	738
05:15 PM	99	**340**	**3**	442	46	0	**47**	93	**2**	249	46	297	0	0	1	1	**833**
05:30 PM	113	282	0	395	56	0	43	99	1	**265**	**58**	**324**	**1**	**1**	0	**2**	820
05:45 PM	**138**	309	1	**448**	**62**	0	44	**106**	2	188	46	236	0	0	1	1	791
Total Volume	450	1190	5	1645	201	0	174	375	6	962	189	1157	1	1	3	5	3182
% App. Total	27.4	72.3	0.3		53.6	0	46.4		0.5	83.1	16.3		20	20	60		
PHF	.815	.875	.417	.918	.810	.000	.926	.884	.750	.908	.815	.893	.250	.250	.750	.625	.955

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	Hacienda Boulevard Southbound				Halliburton Road Westbound				Hacienda Boulevard Northbound				Halliburton Plaza Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				04:45 PM				04:00 PM				
+0 mins.	100	259	1	360	37	0	40	77	1	260	35	296	**3**	0	0	**3**	
+15 mins.	99	**340**	**3**	442	46	0	**47**	93	1	260	39	300	2	0	0	2	
+30 mins.	113	282	0	395	56	0	43	99	**2**	249	46	297	0	0	0	0	
+45 mins.	**138**	309	1	**448**	**62**	0	44	**106**	1	**265**	**58**	**324**	1	0	0	1	
Total Volume	450	1190	5	1645	201	0	174	375	5	1034	178	1217	6	0	0	6	
% App. Total	27.4	72.3	0.3		53.6	0	46.4		0.4	85	14.6		100	0	0		
PHF	.815	.875	.417	.918	.810	.000	.926	.884	.625	.975	.767	.939	.500	.000	.000	.500	

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Weather: Clear

File Name : 02_HHS_Hacienda_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

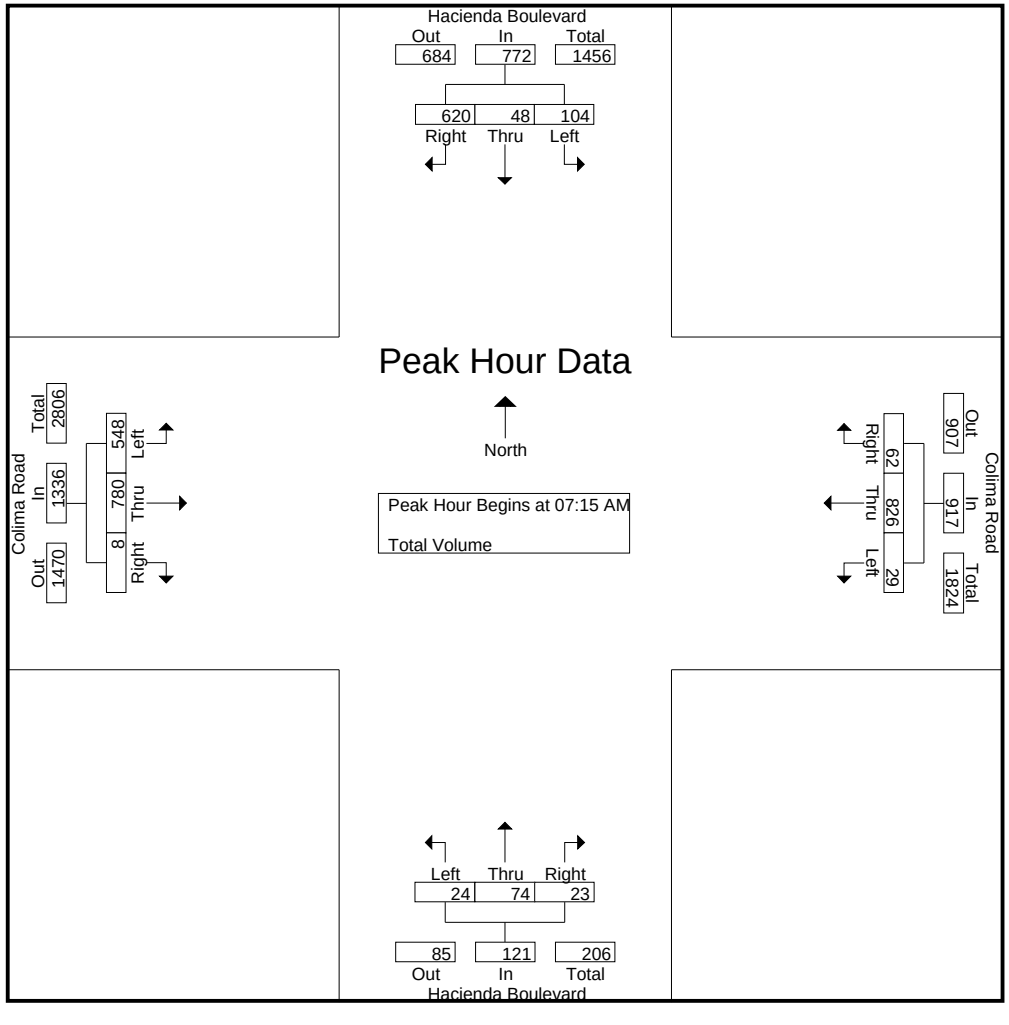
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Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	12	8	188	102	208	4	314	8	1	326	5	12	1	1	18	104	140	1	1	245	105	797	902
07:15 AM	20	8	179	101	207	3	251	6	0	260	7	19	3	3	29	142	183	4	3	329	107	825	932
07:30 AM	28	11	165	102	204	4	171	19	5	194	7	25	11	8	43	152	211	2	1	365	116	806	922
07:45 AM	28	12	134	52	174	14	172	21	2	207	2	17	4	2	23	115	170	1	0	286	56	690	746
Total	88	39	666	357	793	25	908	54	8	987	21	73	19	14	113	513	704	8	5	1225	384	3118	3502
08:00 AM	28	17	142	77	187	8	232	16	1	256	8	13	5	4	26	139	216	1	1	356	83	825	908
08:15 AM	22	20	163	78	205	12	196	17	2	225	8	25	3	3	36	115	157	3	2	275	85	741	826
08:30 AM	34	25	190	121	249	10	235	9	1	254	11	20	4	2	35	100	138	2	0	240	124	778	902
08:45 AM	15	28	139	58	182	9	211	10	1	230	6	22	6	5	34	114	139	7	2	260	66	706	772
Total	99	90	634	334	823	39	874	52	5	965	33	80	18	14	131	468	650	13	5	1131	358	3050	3408
Grand Total	187	129	1300	691	1616	64	1782	106	13	1952	54	153	37	28	244	981	1354	21	10	2356	742	6168	6910
Apprch %	11.6	8	80.4			3.3	91.3	5.4			22.1	62.7	15.2			41.6	57.5	0.9					
Total %	3	2.1	21.1		26.2	1	28.9	1.7		31.6	0.9	2.5	0.6		4	15.9	22	0.3		38.2	10.7	89.3	

	Hacienda Boulevard Southbound				Colima Road Westbound				Hacienda Boulevard Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	20	8	**179**	**207**	3	**251**	6	**260**	7	19	3	29	142	183	**4**	329	**825**
07:30 AM	**28**	11	165	204	4	171	19	194	7	**25**	**11**	**43**	**152**	211	2	**365**	806
07:45 AM	28	12	134	174	**14**	172	**21**	207	2	17	4	23	115	170	1	286	690
08:00 AM	28	**17**	142	187	8	232	16	256	**8**	13	5	26	139	**216**	1	356	825
Total Volume	104	48	620	772	29	826	62	917	24	74	23	121	548	780	8	1336	3146
% App. Total	13.5	6.2	80.3		3.2	90.1	6.8		19.8	61.2	19		41	58.4	0.6		
PHF	.929	.706	.866	.932	.518	.823	.738	.882	.750	.740	.523	.703	.901	.903	.500	.915	.953

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	Hacienda Boulevard Southbound				Colima Road Westbound				Hacienda Boulevard Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	08:00 AM				07:00 AM				08:00 AM				07:15 AM				
+0 mins.	28	17	142	187	4	**314**	8	**326**	8	13	5	26	142	183	**4**	329	
+15 mins.	22	20	163	205	3	251	6	260	8	**25**	3	**36**	**152**	211	2	**365**	
+30 mins.	**34**	25	**190**	**249**	4	171	19	194	**11**	20	4	35	115	170	1	286	
+45 mins.	15	**28**	139	182	**14**	172	**21**	207	6	22	**6**	34	139	**216**	1	356	
Total Volume	99	90	634	823	25	908	54	987	33	80	18	131	548	780	8	1336	
% App. Total	12	10.9	77		2.5	92	5.5		25.2	61.1	13.7		41	58.4	0.6		
PHF	.728	.804	.834	.826	.446	.723	.643	.757	.750	.800	.750	.910	.901	.903	.500	.915	

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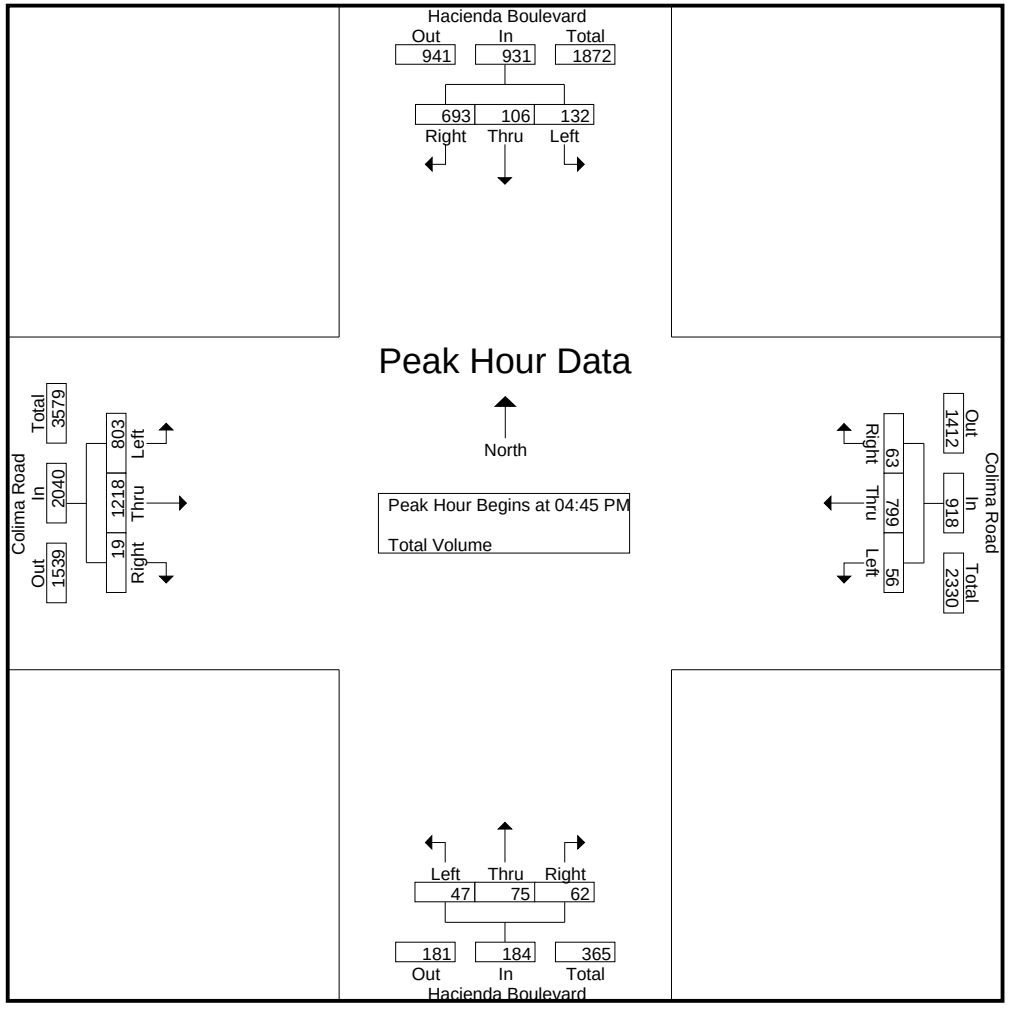
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Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	31	32	201	128	264	22	205	16	6	243	19	18	13	9	50	186	237	5	2	428	145	985	1130
04:15 PM	31	22	190	110	243	9	193	18	1	220	9	13	10	5	32	195	279	8	0	482	116	977	1093
04:30 PM	41	25	186	110	252	14	212	22	1	248	20	17	9	4	46	197	249	10	1	456	116	1002	1118
04:45 PM	32	25	175	113	232	14	202	15	4	231	12	19	17	10	48	215	362	7	1	584	128	1095	1223
Total	135	104	752	461	991	59	812	71	12	942	60	67	49	28	176	793	1127	30	4	1950	505	4059	4564
05:00 PM	31	32	148	92	211	14	184	19	1	217	13	18	22	10	53	184	268	3	0	455	103	936	1039
05:15 PM	28	23	180	109	231	18	234	15	0	267	13	16	8	4	37	201	291	2	1	494	114	1029	1143
05:30 PM	41	26	190	113	257	10	179	14	2	203	9	22	15	7	46	203	297	7	4	507	126	1013	1139
05:45 PM	46	24	161	84	231	7	202	15	2	224	7	11	11	8	29	197	334	8	4	539	98	1023	1121
Total	146	105	679	398	930	49	799	63	5	911	42	67	56	29	165	785	1190	20	9	1995	441	4001	4442
Grand Total	281	209	1431	859	1921	108	1611	134	17	1853	102	134	105	57	341	1578	2317	50	13	3945	946	8060	9006
Apprch %	14.6	10.9	74.5			5.8	86.9	7.2			29.9	39.3	30.8			40	58.7	1.3					
Total %	3.5	2.6	17.8		23.8	1.3	20	1.7		23	1.3	1.7	1.3		4.2	19.6	28.7	0.6		48.9	10.5	89.5	

	Hacienda Boulevard Southbound				Colima Road Westbound				Hacienda Boulevard Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	32	25	175	232	14	202	15	231	12	19	17	48	**215**	**362**	**7**	**584**	**1095**
05:00 PM	31	**32**	148	211	14	184	**19**	217	**13**	18	**22**	**53**	184	268	3	455	936
05:15 PM	28	23	180	231	**18**	**234**	15	**267**	13	16	8	37	201	291	2	494	1029
05:30 PM	**41**	26	**190**	**257**	10	179	14	203	9	**22**	15	46	203	297	7	507	1013
Total Volume	132	106	693	931	56	799	63	918	47	75	62	184	803	1218	19	2040	4073
% App. Total	14.2	11.4	74.4		6.1	87	6.9		25.5	40.8	33.7		39.4	59.7	0.9		
PHF	.805	.828	.912	.906	.778	.854	.829	.860	.904	.852	.705	.868	.934	.841	.679	.873	.930

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City of Hacienda Heights
N/S: Hacienda Boulevard
E/W: Colima Road
Weather: Clear

File Name : 02_HHS_Hacienda_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
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City of Hacienda Heights
N/S: Hacienda Boulevard
E/W: Colima Road
Weather: Clear

File Name : 02_HHS_Hacienda_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
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	Hacienda Boulevard Southbound				Colima Road Westbound				Hacienda Boulevard Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:00 PM				04:30 PM				04:30 PM				04:45 PM				
+0 mins.	31	**32**	**201**	**264**	14	212	**22**	248	**20**	17	9	46	**215**	**362**	**7**	**584**	
+15 mins.	31	22	190	243	14	202	15	231	12	**19**	17	48	184	268	3	455	
+30 mins.	**41**	25	186	252	14	184	19	217	13	18	**22**	**53**	201	291	2	494	
+45 mins.	32	25	175	232	**18**	**234**	15	**267**	13	16	8	37	203	297	7	507	
Total Volume	135	104	752	991	60	832	71	963	58	70	56	184	803	1218	19	2040	
% App. Total	13.6	10.5	75.9		6.2	86.4	7.4		31.5	38	30.4		39.4	59.7	0.9		
PHF	.823	.813	.935	.938	.833	.889	.807	.902	.725	.921	.636	.868	.934	.841	.679	.873	

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City of Hacienda Heights
N/S: Stimson Avenue
E/W: Halliburton Road
Weather: Clear

File Name : 03_HHS_Stimson_Halliburton AM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

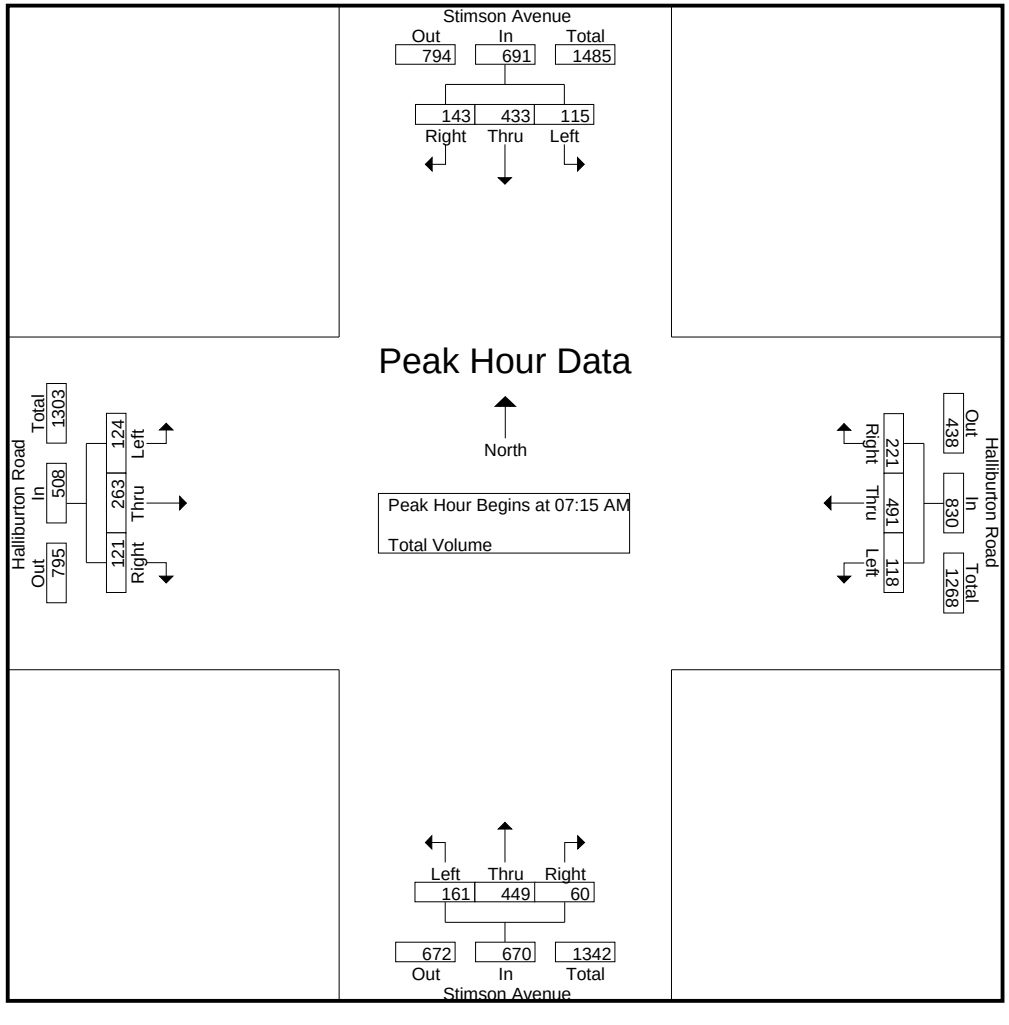
	Stimson Avenue Southbound					Halliburton Road Westbound					Stimson Avenue Northbound					Halliburton Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	9	51	20	9	80	11	88	27	4	126	22	58	11	6	91	16	26	10	5	52	24	349	373
07:15 AM	8	129	29	4	166	21	105	34	4	160	34	84	7	4	125	21	42	22	17	85	29	536	565
07:30 AM	53	99	43	8	195	40	128	67	15	235	36	110	21	8	167	32	96	34	18	162	49	759	808
07:45 AM	40	88	46	14	174	35	154	78	9	267	49	120	12	5	181	28	80	31	13	139	41	761	802
Total	110	367	138	35	615	107	475	206	32	788	141	372	51	23	564	97	244	97	53	438	143	2405	2548
08:00 AM	14	117	25	5	156	22	104	42	7	168	42	135	20	12	197	43	45	34	19	122	43	643	686
08:15 AM	6	69	24	9	99	8	81	45	7	134	38	126	14	8	178	23	54	14	6	91	30	502	532
08:30 AM	24	76	25	8	125	5	80	44	7	129	26	81	7	3	114	38	58	11	7	107	25	475	500
08:45 AM	15	47	22	6	84	11	89	42	5	142	24	68	9	7	101	23	37	15	7	75	25	402	427
Total	59	309	96	28	464	46	354	173	26	573	130	410	50	30	590	127	194	74	39	395	123	2022	2145
Grand Total	169	676	234	63	1079	153	829	379	58	1361	271	782	101	53	1154	224	438	171	92	833	266	4427	4693
Apprch %	15.7	62.7	21.7			11.2	60.9	27.8			23.5	67.8	8.8			26.9	52.6	20.5					
Total %	3.8	15.3	5.3		24.4	3.5	18.7	8.6		30.7	6.1	17.7	2.3		26.1	5.1	9.9	3.9		18.8	5.7	94.3	

	Stimson Avenue Southbound				Halliburton Road Westbound				Stimson Avenue Northbound				Halliburton Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	8	**129**	29	166	21	105	34	160	34	84	7	125	21	42	22	85	536
07:30 AM	**53**	99	43	**195**	**40**	128	67	235	36	110	**21**	167	32	**96**	**34**	**162**	759
07:45 AM	40	88	**46**	174	35	**154**	**78**	**267**	**49**	120	12	181	28	80	31	139	**761**
08:00 AM	14	117	25	156	22	104	42	168	42	**135**	20	**197**	**43**	45	34	122	643
Total Volume	115	433	143	691	118	491	221	830	161	449	60	670	124	263	121	508	2699
% App. Total	16.6	62.7	20.7		14.2	59.2	26.6		24	67	9		24.4	51.8	23.8		
PHF	.542	.839	.777	.886	.738	.797	.708	.777	.821	.831	.714	.850	.721	.685	.890	.784	.887

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Weather: Clear

File Name : 03_HHS_Stimson_Halliburton AM
Site Code : 22119289
Start Date : 5/14/2019
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City of Hacienda Heights
N/S: Stimson Avenue
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File Name : 03_HHS_Stimson_Halliburton AM
Site Code : 22119289
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	Stimson Avenue Southbound				Halliburton Road Westbound				Stimson Avenue Northbound				Halliburton Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:15 AM				07:30 AM				07:30 AM				
+0 mins.	8	**129**	29	166	21	105	34	160	36	110	**21**	167	32	**96**	**34**	**162**	
+15 mins.	**53**	99	43	**195**	**40**	128	67	235	**49**	120	12	181	28	80	31	139	
+30 mins.	40	88	**46**	174	35	**154**	**78**	**267**	42	**135**	20	**197**	**43**	45	34	122	
+45 mins.	14	117	25	156	22	104	42	168	38	126	14	178	23	54	14	91	
Total Volume	115	433	143	691	118	491	221	830	165	491	67	723	126	275	113	514	
% App. Total	16.6	62.7	20.7		14.2	59.2	26.6		22.8	67.9	9.3		24.5	53.5	22		
PHF	.542	.839	.777	.886	.738	.797	.708	.777	.842	.909	.798	.918	.733	.716	.831	.793	

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City of Hacienda Heights
N/S: Stimson Avenue
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File Name : 03_HHS_Stimson_Halliburton PM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

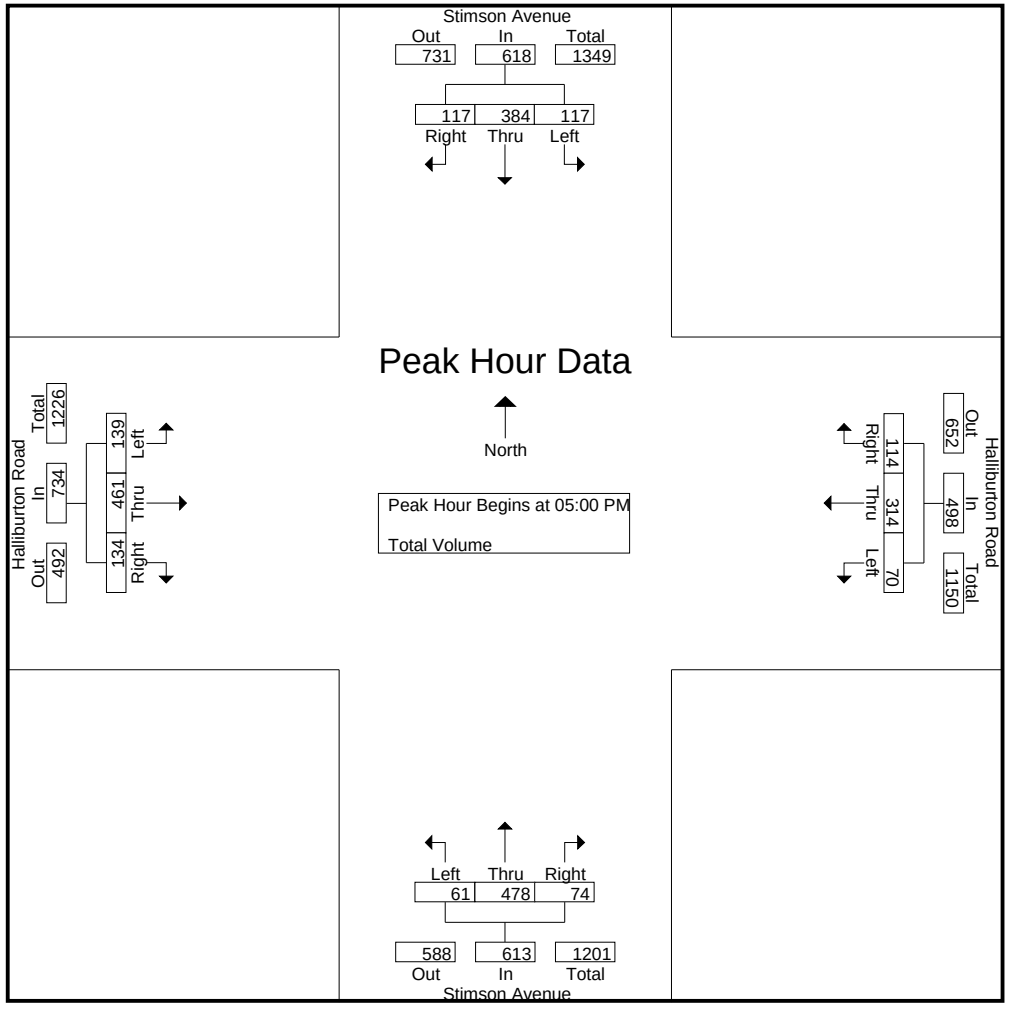
	Stimson Avenue Southbound					Halliburton Road Westbound					Stimson Avenue Northbound					Halliburton Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	23	81	28	5	132	15	73	22	1	110	16	97	14	9	127	30	79	23	12	132	27	501	528
04:15 PM	14	72	22	9	108	15	70	22	3	107	10	108	13	5	131	27	92	25	9	144	26	490	516
04:30 PM	27	68	29	5	124	7	67	33	1	107	13	83	15	6	111	26	122	27	16	175	28	517	545
04:45 PM	25	65	29	13	119	16	62	22	9	100	19	93	11	3	123	23	92	30	13	145	38	487	525
Total	89	286	108	32	483	53	272	99	14	424	58	381	53	23	492	106	385	105	50	596	119	1995	2114
05:00 PM	23	105	24	4	152	18	78	31	3	127	20	106	20	7	146	26	104	28	6	158	20	583	603
05:15 PM	24	96	28	4	148	18	73	24	3	115	9	114	14	5	137	32	109	32	15	173	27	573	600
05:30 PM	31	86	30	8	147	23	84	32	3	139	18	145	15	3	178	47	125	38	13	210	27	674	701
05:45 PM	39	97	35	5	171	11	79	27	3	117	14	113	25	8	152	34	123	36	10	193	26	633	659
Total	117	384	117	21	618	70	314	114	12	498	61	478	74	23	613	139	461	134	44	734	100	2463	2563
Grand Total	206	670	225	53	1101	123	586	213	26	922	119	859	127	46	1105	245	846	239	94	1330	219	4458	4677
Apprch %	18.7	60.9	20.4			13.3	63.6	23.1			10.8	77.7	11.5			18.4	63.6	18					
Total %	4.6	15	5		24.7	2.8	13.1	4.8		20.7	2.7	19.3	2.8		24.8	5.5	19	5.4		29.8	4.7	95.3	

	Stimson Avenue Southbound				Halliburton Road Westbound				Stimson Avenue Northbound				Halliburton Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	23	**105**	24	152	18	78	31	127	**20**	106	20	146	26	104	28	158	583
05:15 PM	24	96	28	148	18	73	24	115	9	114	14	137	32	109	32	173	573
05:30 PM	31	86	30	147	**23**	**84**	**32**	**139**	18	**145**	15	**178**	**47**	**125**	**38**	**210**	**674**
05:45 PM	**39**	97	**35**	**171**	11	79	27	117	14	113	**25**	152	34	123	36	193	633
Total Volume	117	384	117	618	70	314	114	498	61	478	74	613	139	461	134	734	2463
% App. Total	18.9	62.1	18.9		14.1	63.1	22.9		10	78	12.1		18.9	62.8	18.3		
PHF	.750	.914	.836	.904	.761	.935	.891	.896	.763	.824	.740	.861	.739	.922	.882	.874	.914

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Weather: Clear

File Name : 03_HHS_Stimson_Halliburton PM
Site Code : 22119289
Start Date : 5/14/2019
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City of Hacienda Heights
N/S: Stimson Avenue
E/W: Halliburton Road
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File Name : 03_HHS_Stimson_Halliburton PM
Site Code : 22119289
Start Date : 5/14/2019

	Stimson Avenue Southbound				Halliburton Road Westbound				Stimson Avenue Northbound				Halliburton Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	23	**105**	24	152	18	78	31	127	**20**	106	20	146	26	104	28	158	
+15 mins.	24	96	28	148	18	73	24	115	9	114	14	137	32	109	32	173	
+30 mins.	31	86	30	147	**23**	**84**	**32**	**139**	18	**145**	15	**178**	**47**	**125**	**38**	**210**	
+45 mins.	**39**	97	**35**	**171**	11	79	27	117	14	113	**25**	152	34	123	36	193	
Total Volume	117	384	117	618	70	314	114	498	61	478	74	613	139	461	134	734	
% App. Total	18.9	62.1	18.9		14.1	63.1	22.9		10	78	12.1		18.9	62.8	18.3		
PHF	.750	.914	.836	.904	.761	.935	.891	.896	.763	.824	.740	.861	.739	.922	.882	.874	

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City of Hacienda Heights
N/S: Stimson Avenue/Sierra Ridge Way
E/W: Colima Road
Weather: Clear

File Name : 04_HHS_Stimson_Sierra Ridge_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

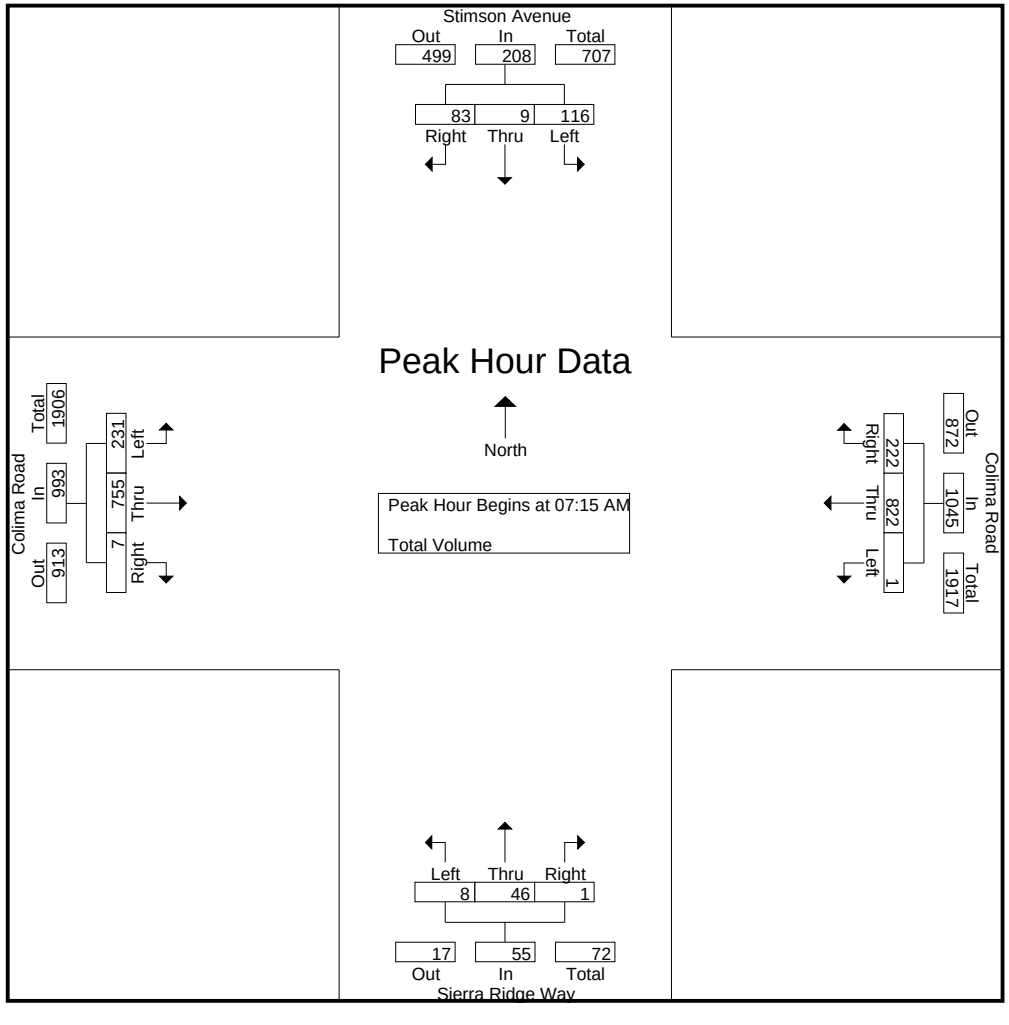
	Stimson Avenue Southbound					Colima Road Westbound					Sierra Ridge Way Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	8	3	20	19	31	0	274	29	7	303	5	6	1	1	12	31	140	2	1	173	28	519	547
07:15 AM	15	0	27	20	42	1	231	33	9	265	0	6	1	1	7	50	168	3	0	221	30	535	565
07:30 AM	26	2	14	13	42	0	166	55	12	221	1	19	0	0	20	63	208	1	0	272	25	555	580
07:45 AM	37	5	11	9	53	0	217	69	18	286	5	12	0	0	17	53	180	1	0	234	27	590	617
Total	86	10	72	61	168	1	888	186	46	1075	11	43	2	2	56	197	696	7	1	900	110	2199	2309
08:00 AM	38	2	31	21	71	0	208	65	14	273	2	9	0	0	11	65	199	2	0	266	35	621	656
08:15 AM	38	3	24	17	65	1	196	32	5	229	4	6	0	0	10	37	151	2	0	190	22	494	516
08:30 AM	18	0	32	23	50	0	233	28	5	261	0	1	0	0	1	31	155	0	0	186	28	498	526
08:45 AM	18	2	28	23	48	1	209	17	5	227	2	2	0	0	4	43	138	2	1	183	29	462	491
Total	112	7	115	84	234	2	846	142	29	990	8	18	0	0	26	176	643	6	1	825	114	2075	2189
Grand Total	198	17	187	145	402	3	1734	328	75	2065	19	61	2	2	82	373	1339	13	2	1725	224	4274	4498
Apprch %	49.3	4.2	46.5			0.1	84	15.9			23.2	74.4	2.4			21.6	77.6	0.8					
Total %	4.6	0.4	4.4		9.4	0.1	40.6	7.7		48.3	0.4	1.4	0		1.9	8.7	31.3	0.3		40.4	5	95	

	Stimson Avenue Southbound				Colima Road Westbound				Sierra Ridge Way Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	15	0	27	42	**1**	**231**	33	265	0	6	**1**	7	50	168	**3**	221	535
07:30 AM	26	2	14	42	0	166	55	221	1	**19**	0	**20**	63	**208**	1	**272**	555
07:45 AM	37	**5**	11	53	0	217	**69**	**286**	**5**	12	0	17	53	180	1	234	590
08:00 AM	**38**	2	**31**	**71**	0	208	65	273	2	9	0	11	**65**	199	2	266	**621**
Total Volume	116	9	83	208	1	822	222	1045	8	46	1	55	231	755	7	993	2301
% App. Total	55.8	4.3	39.9		0.1	78.7	21.2		14.5	83.6	1.8		23.3	76	0.7		
PHF	.763	.450	.669	.732	.250	.890	.804	.913	.400	.605	.250	.688	.888	.907	.583	.913	.926

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Site Code : 22119289
Start Date : 5/14/2019

	Stimson Avenue Southbound				Colima Road Westbound				Sierra Ridge Way Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:45 AM				07:00 AM				07:30 AM				07:15 AM				
+0 mins.	37	**5**	11	53	0	**274**	29	**303**	1	**19**	0	**20**	50	168	**3**	221	
+15 mins.	**38**	2	31	**71**	**1**	231	33	265	**5**	12	0	17	63	**208**	1	**272**	
+30 mins.	38	3	24	65	0	166	55	221	2	9	0	11	53	180	1	234	
+45 mins.	18	0	**32**	50	0	217	**69**	286	4	6	0	10	**65**	199	2	266	
Total Volume	131	10	98	239	1	888	186	1075	12	46	0	58	231	755	7	993	
% App. Total	54.8	4.2	41		0.1	82.6	17.3		20.7	79.3	0		23.3	76	0.7		
PHF	.862	.500	.766	.842	.250	.810	.674	.887	.600	.605	.000	.725	.888	.907	.583	.913	

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City of Hacienda Heights
N/S: Stimson Avenue/Sierra Ridge Way
E/W: Colima Road
Weather: Clear

File Name : 04_HHS_Stimson_Sierra Ridge_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

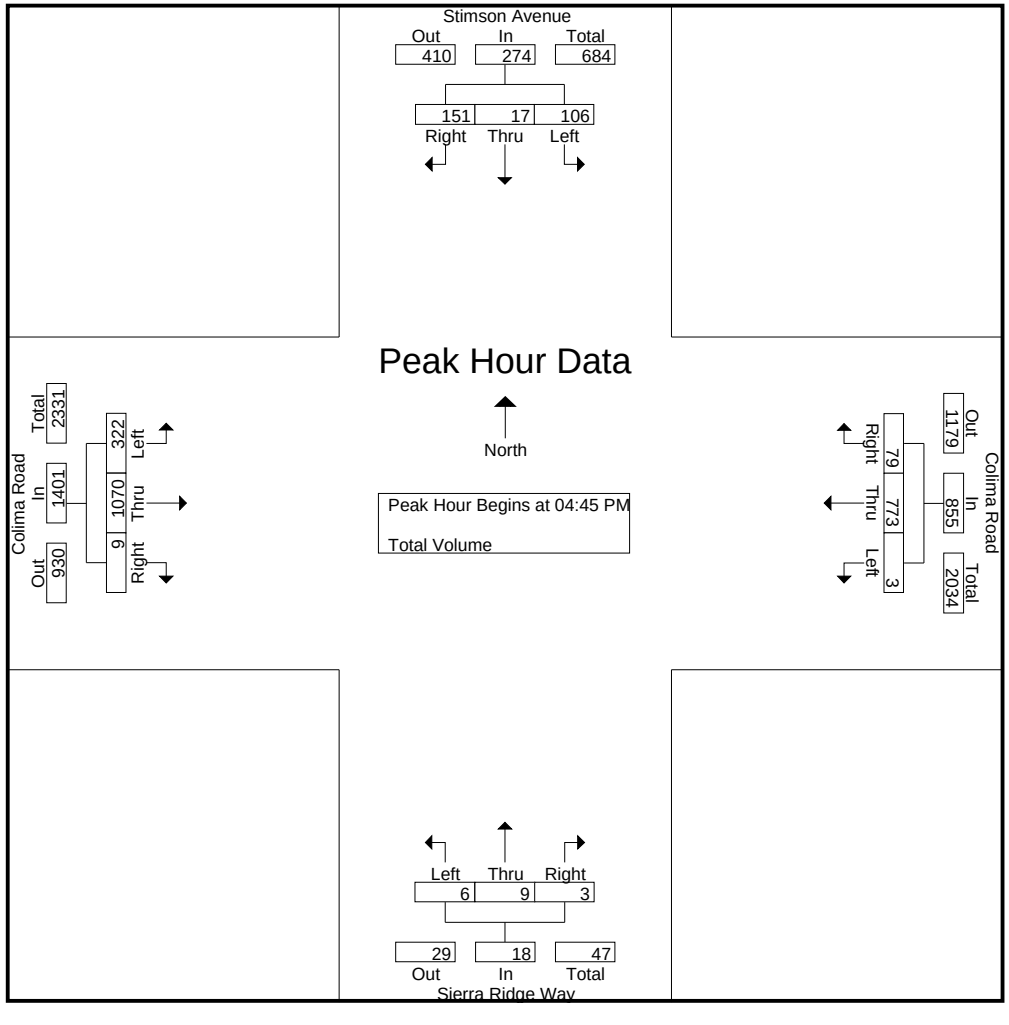
	Stimson Avenue Southbound					Colima Road Westbound					Sierra Ridge Way Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	16	4	37	23	57	0	205	19	6	224	3	1	0	0	4	68	223	0	0	291	29	576	605
04:15 PM	18	3	38	34	59	3	183	27	3	213	3	2	2	2	7	67	230	0	0	297	39	576	615
04:30 PM	16	1	37	32	54	0	211	18	0	229	1	4	0	0	5	55	228	1	0	284	32	572	604
04:45 PM	29	4	42	31	75	0	197	17	2	214	4	3	2	1	9	78	301	2	0	381	34	679	713
Total	79	12	154	120	245	3	796	81	11	880	11	10	4	3	25	268	982	3	0	1253	134	2403	2537
05:00 PM	23	3	35	26	61	1	184	17	2	202	2	1	0	0	3	72	267	5	0	344	28	610	638
05:15 PM	21	5	42	31	68	1	223	25	1	249	0	3	0	0	3	79	224	2	0	305	32	625	657
05:30 PM	33	5	32	28	70	1	169	20	1	190	0	2	1	0	3	93	278	0	0	371	29	634	663
05:45 PM	26	4	32	22	62	0	195	30	3	225	1	1	2	2	4	84	273	1	0	358	27	649	676
Total	103	17	141	107	261	3	771	92	7	866	3	7	3	2	13	328	1042	8	0	1378	116	2518	2634
Grand Total	182	29	295	227	506	6	1567	173	18	1746	14	17	7	5	38	596	2024	11	0	2631	250	4921	5171
Apprch %	36	5.7	58.3			0.3	89.7	9.9			36.8	44.7	18.4			22.7	76.9	0.4					
Total %	3.7	0.6	6		10.3	0.1	31.8	3.5		35.5	0.3	0.3	0.1		0.8	12.1	41.1	0.2		53.5	4.8	95.2	

	Stimson Avenue Southbound				Colima Road Westbound				Sierra Ridge Way Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	29	4	**42**	**75**	0	197	17	214	**4**	**3**	**2**	**9**	78	**301**	2	**381**	**679**
05:00 PM	23	3	35	61	**1**	184	17	202	2	1	0	3	72	267	**5**	344	610
05:15 PM	21	**5**	42	68	1	**223**	**25**	**249**	0	3	0	3	79	224	2	305	625
05:30 PM	**33**	5	32	70	1	169	20	190	0	2	1	3	**93**	278	0	371	634
Total Volume	106	17	151	274	3	773	79	855	6	9	3	18	322	1070	9	1401	2548
% App. Total	38.7	6.2	55.1		0.4	90.4	9.2		33.3	50	16.7		23	76.4	0.6		
PHF	.803	.850	.899	.913	.750	.867	.790	.858	.375	.750	.375	.500	.866	.889	.450	.919	.938

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City of Hacienda Heights
N/S: Stimson Avenue/Sierra Ridge Way
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Weather: Clear

File Name : 04_HHS_Stimson_Sierra Ridge_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 2



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City of Hacienda Heights
N/S: Stimson Avenue/Sierra Ridge Way
E/W: Colima Road
Weather: Clear

File Name : 04_HHS_Stimson_Sierra Ridge_Colima PM
Site Code : 22119289
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Page No : 3

	Stimson Avenue Southbound				Colima Road Westbound				Sierra Ridge Way Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				04:30 PM				04:00 PM				04:45 PM				
+0 mins.	29	4	**42**	**75**	0	211	18	229	3	1	0	4	78	**301**	2	**381**	
+15 mins.	23	3	35	61	0	197	17	214	3	2	**2**	7	72	267	**5**	344	
+30 mins.	21	**5**	42	68	**1**	184	17	202	1	**4**	0	5	79	224	2	305	
+45 mins.	**33**	5	32	70	1	**223**	**25**	**249**	**4**	3	2	**9**	**93**	278	0	371	
Total Volume	106	17	151	274	2	815	77	894	11	10	4	25	322	1070	9	1401	
% App. Total	38.7	6.2	55.1		0.2	91.2	8.6		44	40	16		23	76.4	0.6		
PHF	.803	.850	.899	.913	.500	.914	.770	.898	.688	.625	.500	.694	.866	.889	.450	.919	

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City of Hacienda Heights
N/S: Halliburton Road/Dawn Haven Road
E/W: Colima Road
Weather: Clear

File Name : 05_HHS_Halliburton_Dawn Haven_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

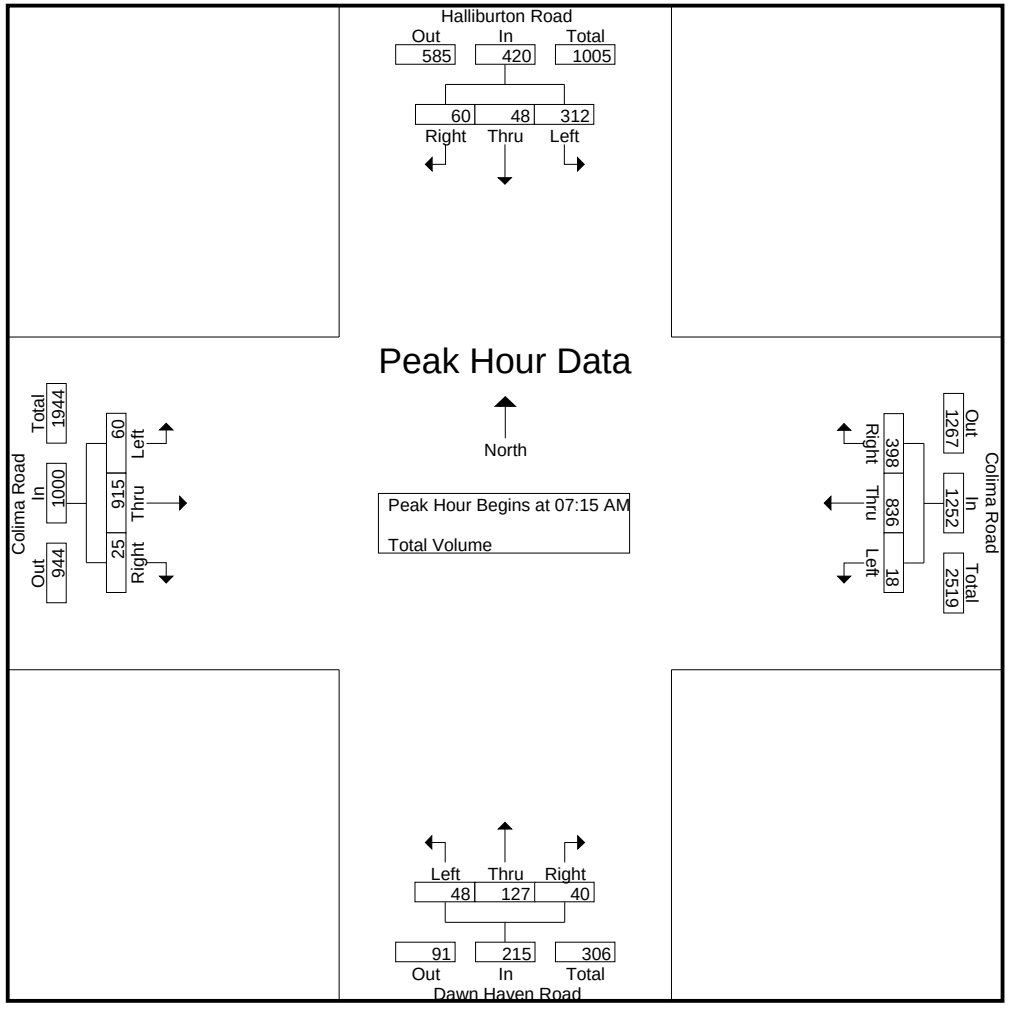
	Halliburton Road Southbound					Colima Road Westbound					Dawn Haven Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	28	4	10	6	42	1	263	53	8	317	7	21	6	3	34	4	178	0	0	182	17	575	592
07:15 AM	43	4	9	2	56	5	229	79	28	313	11	43	13	3	67	13	201	5	2	219	35	655	690
07:30 AM	89	16	12	8	117	3	188	127	26	318	5	42	7	0	54	22	245	4	1	271	35	760	795
07:45 AM	106	19	22	5	147	3	231	112	33	346	20	19	7	2	46	16	243	10	2	269	42	808	850
Total	266	43	53	21	362	12	911	371	95	1294	43	125	33	8	201	55	867	19	5	941	129	2798	2927
08:00 AM	74	9	17	10	100	7	188	80	18	275	12	23	13	2	48	9	226	6	2	241	32	664	696
08:15 AM	53	3	7	4	63	5	208	79	10	292	2	18	13	5	33	6	228	4	0	238	19	626	645
08:30 AM	78	10	6	2	94	8	223	75	14	306	5	18	14	7	37	3	173	2	1	178	24	615	639
08:45 AM	48	6	9	3	63	2	227	69	9	298	4	17	19	10	40	3	176	3	2	182	24	583	607
Total	253	28	39	19	320	22	846	303	51	1171	23	76	59	24	158	21	803	15	5	839	99	2488	2587
Grand Total	519	71	92	40	682	34	1757	674	146	2465	66	201	92	32	359	76	1670	34	10	1780	228	5286	5514
Apprch %	76.1	10.4	13.5			1.4	71.3	27.3			18.4	56	25.6			4.3	93.8	1.9					
Total %	9.8	1.3	1.7		12.9	0.6	33.2	12.8		46.6	1.2	3.8	1.7		6.8	1.4	31.6	0.6		33.7	4.1	95.9	

	Halliburton Road Southbound				Colima Road Westbound				Dawn Haven Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	43	4	9	56	5	229	79	313	11	**43**	**13**	**67**	13	201	5	219	655
07:30 AM	89	16	12	117	3	188	**127**	318	5	42	7	54	**22**	**245**	4	**271**	760
07:45 AM	**106**	**19**	**22**	**147**	3	**231**	112	**346**	**20**	19	7	46	16	243	**10**	269	**808**
08:00 AM	74	9	17	100	**7**	188	80	275	12	23	13	48	9	226	6	241	664
Total Volume	312	48	60	420	18	836	398	1252	48	127	40	215	60	915	25	1000	2887
% App. Total	74.3	11.4	14.3		1.4	66.8	31.8		22.3	59.1	18.6		6	91.5	2.5		
PHF	.736	.632	.682	.714	.643	.905	.783	.905	.600	.738	.769	.802	.682	.934	.625	.923	.893

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City of Hacienda Heights
N/S: Halliburton Road/Dawn Haven Road
E/W: Colima Road
Weather: Clear

File Name : 05_HHS_Halliburton_Dawn Haven_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 2



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City of Hacienda Heights
N/S: Halliburton Road/Dawn Haven Road
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File Name : 05_HHS_Halliburton_Dawn Haven_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
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	Halliburton Road Southbound				Colima Road Westbound				Dawn Haven Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:00 AM				07:15 AM				07:30 AM				
+0 mins.	89	16	12	117	1	**263**	53	317	11	**43**	**13**	**67**	**22**	**245**	4	**271**	
+15 mins.	**106**	**19**	**22**	**147**	**5**	229	79	313	5	42	7	54	16	243	**10**	269	
+30 mins.	74	9	17	100	3	188	**127**	318	**20**	19	7	46	9	226	6	241	
+45 mins.	53	3	7	63	3	231	112	**346**	12	23	13	48	6	228	4	238	
Total Volume	322	47	58	427	12	911	371	1294	48	127	40	215	53	942	24	1019	
% App. Total	75.4	11	13.6		0.9	70.4	28.7		22.3	59.1	18.6		5.2	92.4	2.4		
PHF	.759	.618	.659	.726	.600	.866	.730	.935	.600	.738	.769	.802	.602	.961	.600	.940	

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City of Hacienda Heights
N/S: Halliburton Road/Dawn Haven Road
E/W: Colima Road
Weather: Clear

File Name : 05_HHS_Halliburton_Dawn Haven_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

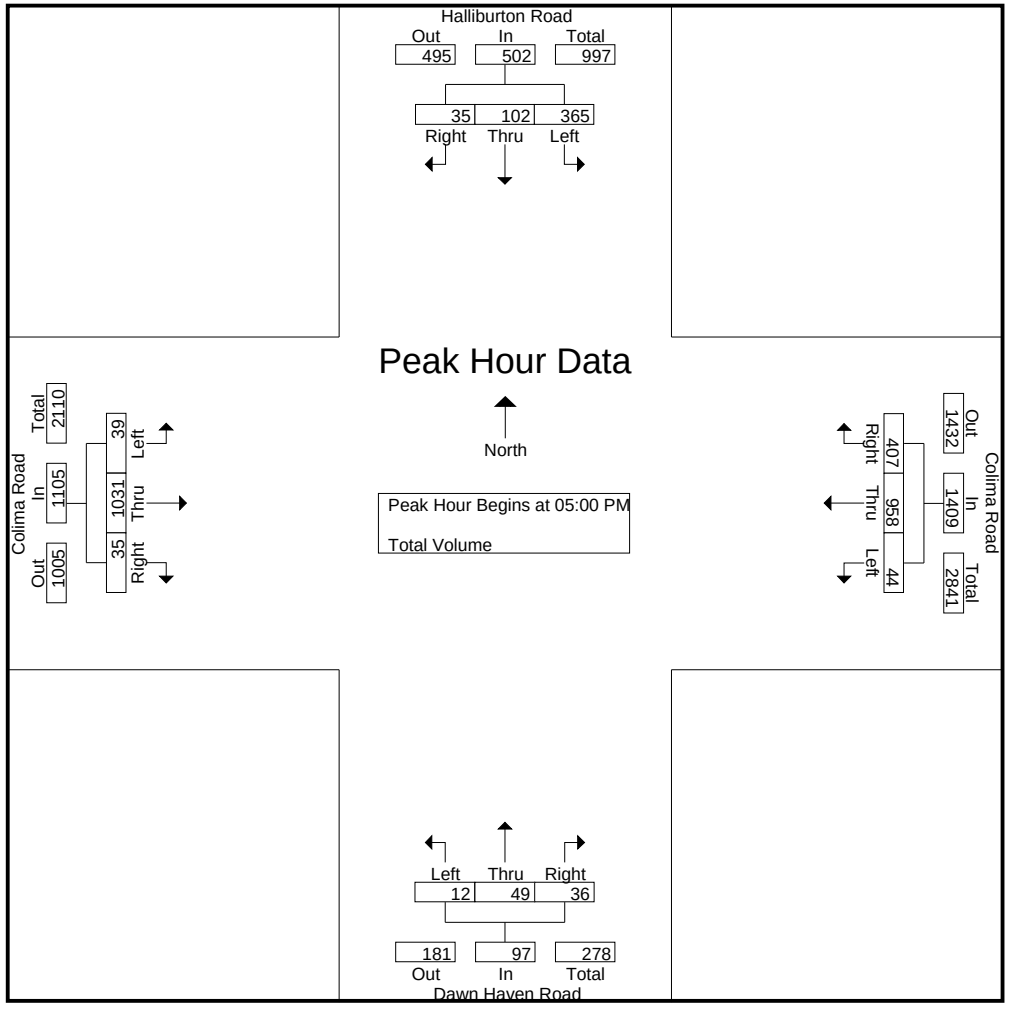
	Halliburton Road Southbound					Colima Road Westbound					Dawn Haven Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	71	18	14	4	103	11	257	80	10	348	2	16	11	3	29	2	237	0	0	239	17	719	736
04:15 PM	72	20	6	4	98	11	206	84	15	301	2	11	12	6	25	5	251	1	0	257	25	681	706
04:30 PM	96	15	10	4	121	7	247	72	9	326	5	12	6	0	23	10	222	4	2	236	15	706	721
04:45 PM	55	19	9	6	83	8	221	83	6	312	3	6	6	2	15	8	294	6	1	308	15	718	733
Total	294	72	39	18	405	37	931	319	40	1287	12	45	35	11	92	25	1004	11	3	1040	72	2824	2896
05:00 PM	85	22	6	0	113	9	245	101	10	355	3	6	11	5	20	7	277	7	1	291	16	779	795
05:15 PM	87	21	7	4	115	13	260	102	16	375	1	15	7	3	23	10	247	7	0	264	23	777	800
05:30 PM	86	26	12	6	124	12	212	102	12	326	5	19	7	2	31	12	246	9	0	267	20	748	768
05:45 PM	107	33	10	3	150	10	241	102	14	353	3	9	11	4	23	10	261	12	0	283	21	809	830
Total	365	102	35	13	502	44	958	407	52	1409	12	49	36	14	97	39	1031	35	1	1105	80	3113	3193
Grand Total	659	174	74	31	907	81	1889	726	92	2696	24	94	71	25	189	64	2035	46	4	2145	152	5937	6089
Apprch %	72.7	19.2	8.2			3	70.1	26.9			12.7	49.7	37.6			3	94.9	2.1					
Total %	11.1	2.9	1.2		15.3	1.4	31.8	12.2		45.4	0.4	1.6	1.2		3.2	1.1	34.3	0.8		36.1	2.5	97.5	

	Halliburton Road Southbound				Colima Road Westbound				Dawn Haven Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	85	22	6	113	9	245	101	355	3	6	**11**	20	7	**277**	7	**291**	779
05:15 PM	87	21	7	115	**13**	**260**	**102**	**375**	1	15	7	23	10	247	7	264	777
05:30 PM	86	26	**12**	124	12	212	102	326	**5**	**19**	7	**31**	**12**	246	9	267	748
05:45 PM	**107**	**33**	10	**150**	10	241	102	353	3	9	11	23	10	261	**12**	283	**809**
Total Volume	365	102	35	502	44	958	407	1409	12	49	36	97	39	1031	35	1105	3113
% App. Total	72.7	20.3	7		3.1	68	28.9		12.4	50.5	37.1		3.5	93.3	3.2		
PHF	.853	.773	.729	.837	.846	.921	.998	.939	.600	.645	.818	.782	.813	.931	.729	.949	.962

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City of Hacienda Heights
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E/W: Colima Road
Weather: Clear

File Name : 05_HHS_Halliburton_Dawn Haven_Colima PM
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City of Hacienda Heights
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E/W: Colima Road
Weather: Clear

File Name : 05_HHS_Halliburton_Dawn Haven_Colima PM
Site Code : 22119289
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	Halliburton Road Southbound				Colima Road Westbound				Dawn Haven Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				04:45 PM				
+0 mins.	85	22	6	113	9	245	101	355	3	6	**11**	20	8	**294**	6	**308**	
+15 mins.	87	21	7	115	**13**	**260**	**102**	**375**	1	15	7	23	7	277	7	291	
+30 mins.	86	26	**12**	124	12	212	102	326	**5**	**19**	7	**31**	10	247	7	264	
+45 mins.	**107**	**33**	10	**150**	10	241	102	353	3	9	11	23	**12**	246	**9**	267	
Total Volume	365	102	35	502	44	958	407	1409	12	49	36	97	37	1064	29	1130	
% App. Total	72.7	20.3	7		3.1	68	28.9		12.4	50.5	37.1		3.3	94.2	2.6		
PHF	.853	.773	.729	.837	.846	.921	.998	.939	.600	.645	.818	.782	.771	.905	.806	.917	

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City of Hacienda Heights
N/S: Countrywood Avenue
E/W: Wedgeworth Drive
Weather: Clear

File Name : 06_HHS_Countrywood_Wedgeworth AM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

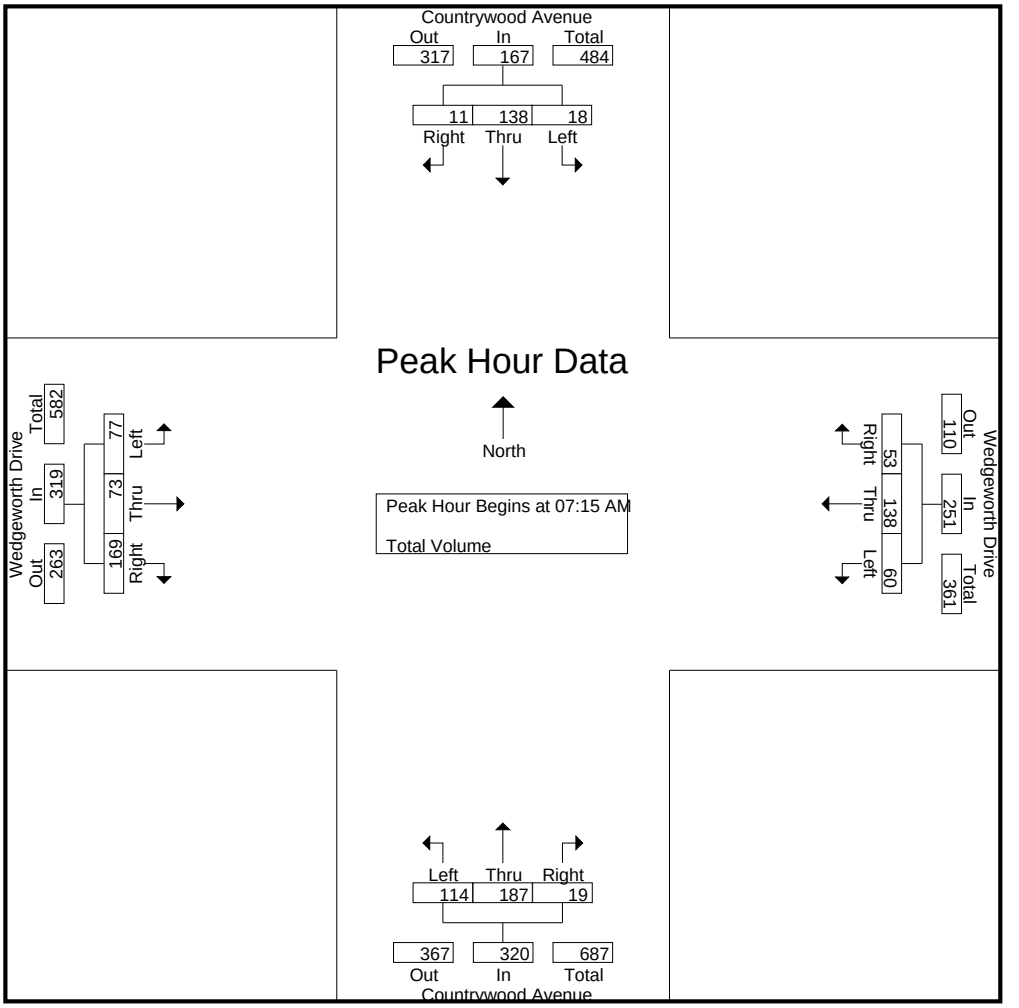
	Countrywood Avenue Southbound				Wedgeworth Drive Westbound				Countrywood Avenue Northbound				Wedgeworth Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	10	4	15	5	10	1	16	26	12	2	40	1	15	24	40	111
07:15 AM	2	22	5	29	7	26	9	42	29	30	4	63	15	9	24	48	182
07:30 AM	4	53	2	59	13	44	22	79	36	75	3	114	31	20	46	97	349
07:45 AM	10	58	2	70	21	34	20	75	29	74	8	111	24	27	64	115	371
Total	17	143	13	173	46	114	52	212	120	191	17	328	71	71	158	300	1013
08:00 AM	2	5	2	9	19	34	2	55	20	8	4	32	7	17	35	59	155
08:15 AM	1	4	3	8	7	18	3	28	22	9	2	33	3	11	33	47	116
08:30 AM	1	3	1	5	5	13	2	20	11	5	2	18	0	7	14	21	64
08:45 AM	0	3	2	5	5	11	1	17	9	9	4	22	2	6	17	25	69
Total	4	15	8	27	36	76	8	120	62	31	12	105	12	41	99	152	404
Grand Total	21	158	21	200	82	190	60	332	182	222	29	433	83	112	257	452	1417
Apprch %	10.5	79	10.5		24.7	57.2	18.1		42	51.3	6.7		18.4	24.8	56.9		
Total %	1.5	11.2	1.5	14.1	5.8	13.4	4.2	23.4	12.8	15.7	2	30.6	5.9	7.9	18.1	31.9	

	Countrywood Avenue Southbound				Wedgeworth Drive Westbound				Countrywood Avenue Northbound				Wedgeworth Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	22	**5**	29	7	26	9	42	29	30	4	63	15	9	24	48	182
07:30 AM	4	53	2	59	13	**44**	**22**	**79**	**36**	**75**	3	**114**	**31**	20	46	97	349
07:45 AM	**10**	**58**	2	**70**	**21**	34	20	75	29	74	**8**	111	24	**27**	**64**	**115**	**371**
08:00 AM	2	5	2	9	19	34	2	55	20	8	4	32	7	17	35	59	155
Total Volume	18	138	11	167	60	138	53	251	114	187	19	320	77	73	169	319	1057
% App. Total	10.8	82.6	6.6		23.9	55	21.1		35.6	58.4	5.9		24.1	22.9	53		
PHF	.450	.595	.550	.596	.714	.784	.602	.794	.792	.623	.594	.702	.621	.676	.660	.693	.712

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City of Hacienda Heights
N/S: Countrywood Avenue
E/W: Wedgeworth Drive
Weather: Clear

File Name : 06_HHS_Countrywood_Wedgeworth AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:00 AM				07:15 AM			
+0 mins.	1	10	4	15	7	26	9	42	26	12	2	40	15	9	24	48
+15 mins.	2	22	**5**	29	13	**44**	**22**	**79**	29	30	4	63	**31**	20	46	97
+30 mins.	4	53	2	59	**21**	34	20	75	**36**	**75**	3	**114**	24	**27**	**64**	**115**
+45 mins.	**10**	**58**	2	**70**	19	34	2	55	29	74	**8**	111	7	17	35	59
Total Volume	17	143	13	173	60	138	53	251	120	191	17	328	77	73	169	319
% App. Total	9.8	82.7	7.5		23.9	55	21.1		36.6	58.2	5.2		24.1	22.9	53	
PHF	.425	.616	.650	.618	.714	.784	.602	.794	.833	.637	.531	.719	.621	.676	.660	.693

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City of Hacienda Heights
N/S: Countrywood Avenue
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Weather: Clear

File Name : 06_HHS_Countrywood_Wedgeworth PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

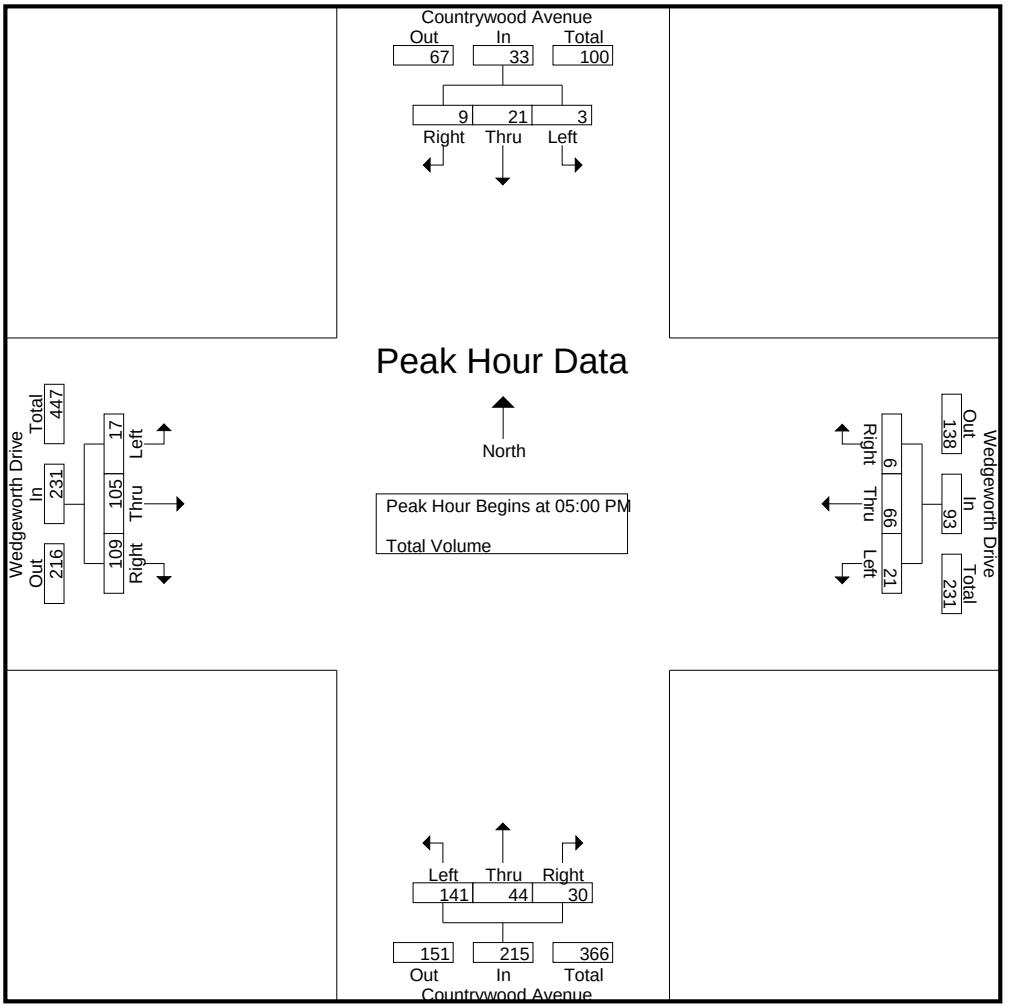
	Countrywood Avenue Southbound				Wedgeworth Drive Westbound				Countrywood Avenue Northbound				Wedgeworth Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	4	10	1	15	8	14	2	24	20	9	12	41	2	19	22	43	123
04:15 PM	0	7	7	14	6	12	3	21	8	8	9	25	6	24	20	50	110
04:30 PM	2	9	0	11	5	10	1	16	23	11	6	40	2	22	26	50	117
04:45 PM	2	7	2	11	2	12	0	14	27	5	8	40	5	22	24	51	116
Total	8	33	10	51	21	48	6	75	78	33	35	146	15	87	92	194	466
05:00 PM	2	5	3	10	6	13	3	22	37	5	5	47	4	23	31	58	137
05:15 PM	0	4	3	7	5	20	1	26	36	11	8	55	4	20	27	51	139
05:30 PM	1	6	1	8	4	19	1	24	31	6	9	46	6	33	26	65	143
05:45 PM	0	6	2	8	6	14	1	21	37	22	8	67	3	29	25	57	153
Total	3	21	9	33	21	66	6	93	141	44	30	215	17	105	109	231	572
Grand Total	11	54	19	84	42	114	12	168	219	77	65	361	32	192	201	425	1038
Apprch %	13.1	64.3	22.6		25	67.9	7.1		60.7	21.3	18		7.5	45.2	47.3		
Total %	1.1	5.2	1.8	8.1	4	11	1.2	16.2	21.1	7.4	6.3	34.8	3.1	18.5	19.4	40.9	

	Countrywood Avenue Southbound				Wedgeworth Drive Westbound				Countrywood Avenue Northbound				Wedgeworth Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**2**	5	**3**	**10**	**6**	13	**3**	22	**37**	5	5	47	4	23	**31**	58	137
05:15 PM	0	4	3	7	5	**20**	1	**26**	36	11	8	55	4	20	27	51	139
05:30 PM	1	**6**	1	8	4	19	1	24	31	6	**9**	46	**6**	**33**	26	**65**	143
05:45 PM	0	6	2	8	6	14	1	21	37	**22**	8	**67**	3	29	25	57	**153**
Total Volume	3	21	9	33	21	66	6	93	141	44	30	215	17	105	109	231	572
% App. Total	9.1	63.6	27.3		22.6	71	6.5		65.6	20.5	14		7.4	45.5	47.2		
PHF	.375	.875	.750	.825	.875	.825	.500	.894	.953	.500	.833	.802	.708	.795	.879	.888	.935

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Weather: Clear

File Name : 06_HHS_Countrywood_Wedgeworth PM
Site Code : 22119289
Start Date : 5/14/2019



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	**4**	**10**	1	**15**	**6**	13	**3**	22	**37**	5	5	47	4	23	**31**	58
+15 mins.	0	7	**7**	14	5	**20**	1	**26**	36	11	8	55	4	20	27	51
+30 mins.	2	9	0	11	4	19	1	24	31	6	**9**	46	**6**	**33**	26	**65**
+45 mins.	2	7	2	11	6	14	1	21	37	**22**	8	**67**	3	29	25	57
Total Volume	8	33	10	51	21	66	6	93	141	44	30	215	17	105	109	231
% App. Total	15.7	64.7	19.6		22.6	71	6.5		65.6	20.5	14		7.4	45.5	47.2	
PHF	.500	.825	.357	.850	.875	.825	.500	.894	.953	.500	.833	.802	.708	.795	.879	.888

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City of Hacienda Heights
N/S: Countrywood Avenue
E/W: Colima Road
Weather: Clear

File Name : 07_HHS_Countrywood_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

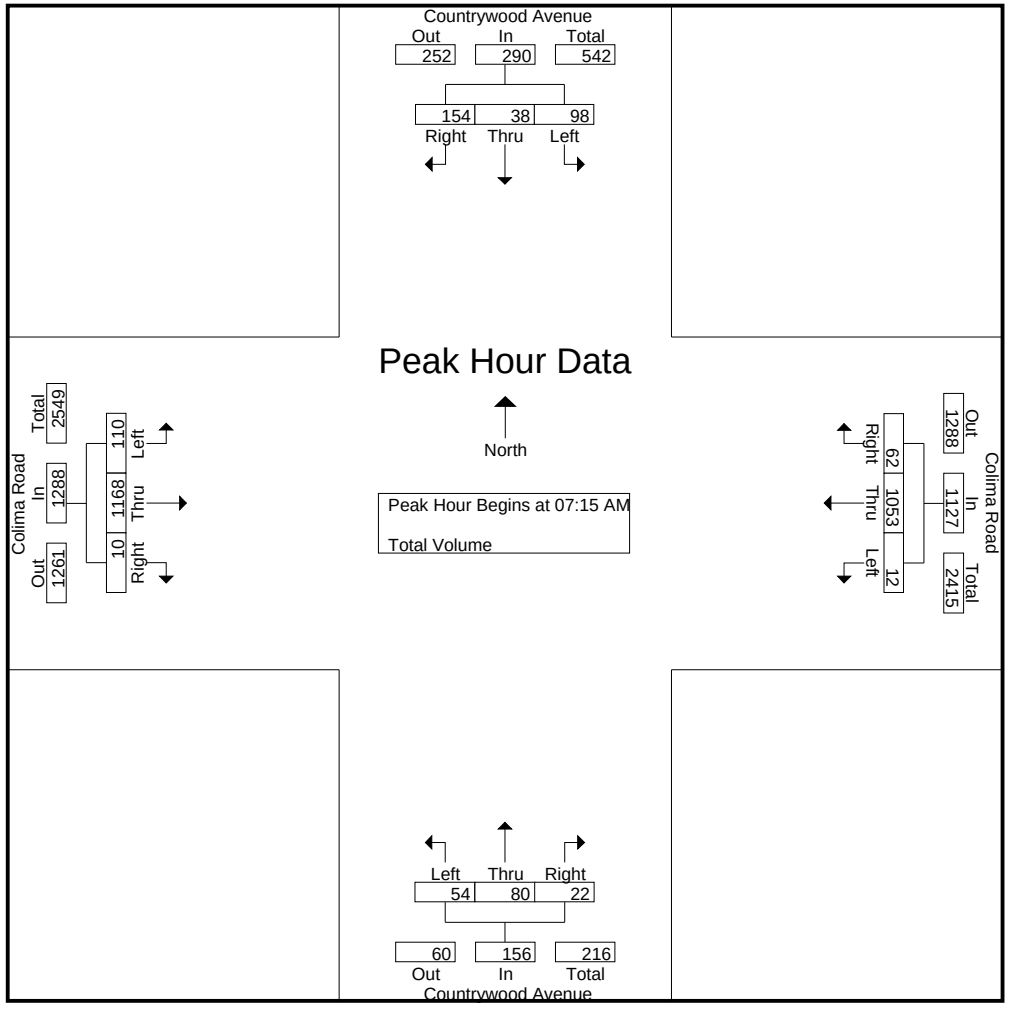
	Countrywood Avenue Southbound					Colima Road Westbound					Countrywood Avenue Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	8	4	10	5	22	1	281	11	3	293	10	5	3	0	18	5	203	2	0	210	8	543	551
07:15 AM	17	3	17	10	37	1	290	12	2	303	11	12	7	0	30	20	236	1	0	257	12	627	639
07:30 AM	25	6	38	19	69	0	258	30	14	288	23	33	8	1	64	52	291	5	1	348	35	769	804
07:45 AM	32	21	74	40	127	6	242	14	7	262	12	30	3	0	45	33	321	3	1	357	48	791	839
Total	82	34	139	74	255	8	1071	67	26	1146	56	80	21	1	157	110	1051	11	2	1172	103	2730	2833
08:00 AM	24	8	25	17	57	5	263	6	2	274	8	5	4	0	17	5	320	1	0	326	19	674	693
08:15 AM	17	1	16	6	34	3	251	11	3	265	5	4	4	0	13	7	270	4	0	281	9	593	602
08:30 AM	10	4	16	10	30	3	284	7	2	294	6	4	3	0	13	9	267	1	0	277	12	614	626
08:45 AM	17	2	15	12	34	4	266	8	3	278	7	3	3	0	13	9	245	0	0	254	15	579	594
Total	68	15	72	45	155	15	1064	32	10	1111	26	16	14	0	56	30	1102	6	0	1138	55	2460	2515
Grand Total	150	49	211	119	410	23	2135	99	36	2257	82	96	35	1	213	140	2153	17	2	2310	158	5190	5348
Apprch %	36.6	12	51.5			1	94.6	4.4			38.5	45.1	16.4			6.1	93.2	0.7					
Total %	2.9	0.9	4.1		7.9	0.4	41.1	1.9		43.5	1.6	1.8	0.7		4.1	2.7	41.5	0.3		44.5	3	97	

	Countrywood Avenue Southbound				Colima Road Westbound				Countrywood Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	17	3	17	37	1	**290**	12	**303**	11	12	7	30	20	236	1	257	627
07:30 AM	25	6	38	69	0	258	**30**	288	**23**	**33**	**8**	**64**	**52**	291	**5**	348	769
07:45 AM	**32**	**21**	**74**	**127**	**6**	242	14	262	12	30	3	45	33	**321**	3	**357**	**791**
08:00 AM	24	8	25	57	5	263	6	274	8	5	4	17	5	320	1	326	674
Total Volume	98	38	154	290	12	1053	62	1127	54	80	22	156	110	1168	10	1288	2861
% App. Total	33.8	13.1	53.1		1.1	93.4	5.5		34.6	51.3	14.1		8.5	90.7	0.8		
PHF	.766	.452	.520	.571	.500	.908	.517	.930	.587	.606	.688	.609	.529	.910	.500	.902	.904

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N/S: Countrywood Avenue
E/W: Colima Road
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File Name : 07_HHS_Countrywood_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
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	Countrywood Avenue Southbound				Colima Road Westbound				Countrywood Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:00 AM				07:00 AM				07:30 AM				
+0 mins.	17	3	17	37	1	281	11	293	10	5	3	18	**52**	291	**5**	348	
+15 mins.	25	6	38	69	1	**290**	12	**303**	11	12	7	30	33	**321**	3	**357**	
+30 mins.	**32**	**21**	**74**	**127**	0	258	**30**	288	**23**	**33**	**8**	**64**	5	320	1	326	
+45 mins.	24	8	25	57	**6**	242	14	262	12	30	3	45	7	270	4	281	
Total Volume	98	38	154	290	8	1071	67	1146	56	80	21	157	97	1202	13	1312	
% App. Total	33.8	13.1	53.1		0.7	93.5	5.8		35.7	51	13.4		7.4	91.6	1		
PHF	.766	.452	.520	.571	.333	.923	.558	.946	.609	.606	.656	.613	.466	.936	.650	.919	

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City of Hacienda Heights
N/S: Countrywood Avenue
E/W: Colima Road
Weather: Clear

File Name : 07_HHS_Countrywood_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

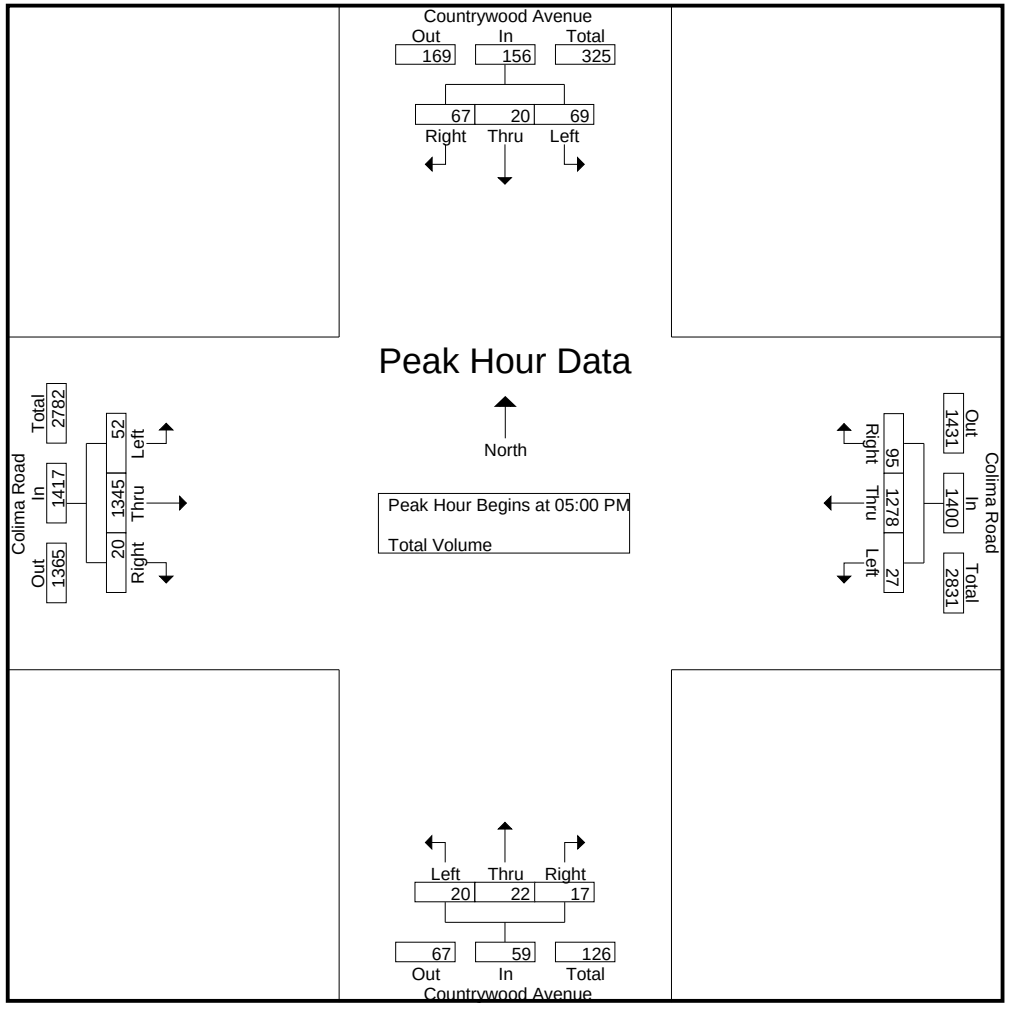
	Countrywood Avenue Southbound					Colima Road Westbound					Countrywood Avenue Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	14	8	17	13	39	8	309	23	0	340	3	1	8	2	12	13	292	2	0	307	15	698	713
04:15 PM	15	2	14	9	31	8	282	12	0	302	5	3	2	2	10	16	301	3	2	320	13	663	676
04:30 PM	16	2	15	11	33	8	304	22	3	334	5	2	4	1	11	4	333	4	0	341	15	719	734
04:45 PM	22	1	12	12	35	7	295	20	5	322	8	2	2	1	12	12	331	6	1	349	19	718	737
Total	67	13	58	45	138	31	1190	77	8	1298	21	8	16	6	45	45	1257	15	3	1317	62	2798	2860
05:00 PM	20	4	11	10	35	7	335	20	2	362	5	4	2	1	11	6	380	3	0	389	13	797	810
05:15 PM	15	9	18	15	42	3	345	25	2	373	4	2	3	0	9	13	305	5	0	323	17	747	764
05:30 PM	15	4	17	13	36	7	287	20	4	314	4	6	8	2	18	11	324	5	0	340	19	708	727
05:45 PM	19	3	21	13	43	10	311	30	3	351	7	10	4	0	21	22	336	7	0	365	16	780	796
Total	69	20	67	51	156	27	1278	95	11	1400	20	22	17	3	59	52	1345	20	0	1417	65	3032	3097
Grand Total	136	33	125	96	294	58	2468	172	19	2698	41	30	33	9	104	97	2602	35	3	2734	127	5830	5957
Apprch %	46.3	11.2	42.5			2.1	91.5	6.4			39.4	28.8	31.7			3.5	95.2	1.3					
Total %	2.3	0.6	2.1		5	1	42.3	3		46.3	0.7	0.5	0.6		1.8	1.7	44.6	0.6		46.9	2.1	97.9	

	Countrywood Avenue Southbound				Colima Road Westbound				Countrywood Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**20**	4	11	35	7	335	20	362	5	4	2	11	6	**380**	3	**389**	**797**
05:15 PM	15	**9**	18	42	3	**345**	25	**373**	4	2	3	9	13	305	5	323	747
05:30 PM	15	4	17	36	7	287	20	314	4	6	**8**	18	11	324	5	340	708
05:45 PM	19	3	**21**	**43**	**10**	311	**30**	351	**7**	**10**	4	**21**	**22**	336	**7**	365	780
Total Volume	69	20	67	156	27	1278	95	1400	20	22	17	59	52	1345	20	1417	3032
% App. Total	44.2	12.8	42.9		1.9	91.3	6.8		33.9	37.3	28.8		3.7	94.9	1.4		
PHF	.863	.556	.798	.907	.675	.926	.792	.938	.714	.550	.531	.702	.591	.885	.714	.911	.951

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Weather: Clear

File Name : 07_HHS_Countrywood_Colima PM
Site Code : 22119289
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City of Hacienda Heights
N/S: Countrywood Avenue
E/W: Colima Road
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File Name : 07_HHS_Countrywood_Colima PM
Site Code : 22119289
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	Countrywood Avenue Southbound				Colima Road Westbound				Countrywood Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	**20**	4	11	35	7	335	20	362	5	4	2	11	6	**380**	3	**389**	
+15 mins.	15	**9**	18	42	3	**345**	25	**373**	4	2	3	9	13	305	5	323	
+30 mins.	15	4	17	36	7	287	20	314	4	6	**8**	18	11	324	5	340	
+45 mins.	19	3	**21**	**43**	**10**	311	**30**	351	**7**	**10**	4	**21**	**22**	336	**7**	365	
Total Volume	69	20	67	156	27	1278	95	1400	20	22	17	59	52	1345	20	1417	
% App. Total	44.2	12.8	42.9		1.9	91.3	6.8		33.9	37.3	28.8		3.7	94.9	1.4		
PHF	.863	.556	.798	.907	.675	.926	.792	.938	.714	.550	.531	.702	.591	.885	.714	.911	

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City of Hacienda Heights
N/S: Park Lawn Road
E/W: Colima Road
Weather: Clear

File Name : 08_HHS_Park Lawn_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

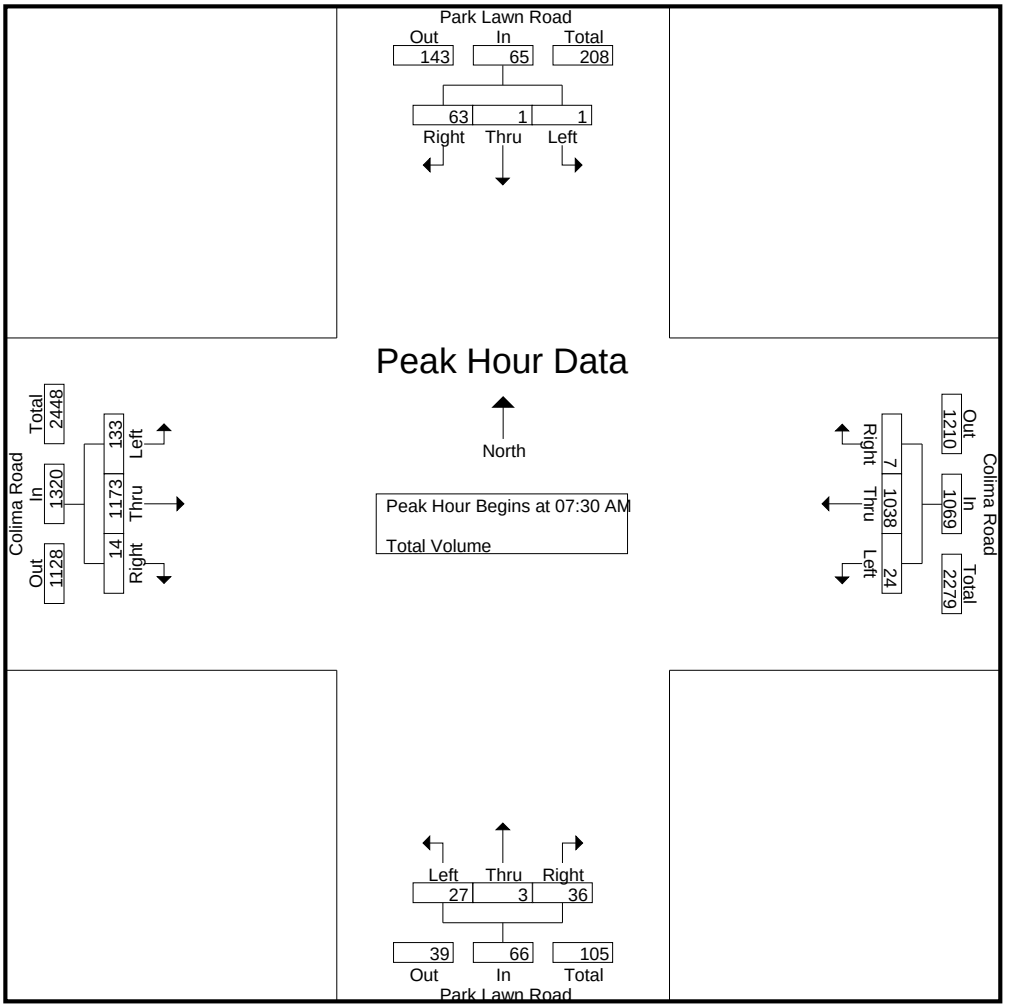
	Park Lawn Road Southbound				Colima Road Westbound				Park Lawn Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	4	4	1	293	0	294	4	1	2	7	21	183	2	206	511
07:15 AM	0	0	12	12	2	293	1	296	7	0	3	10	38	229	1	268	586
07:30 AM	0	0	13	13	0	271	4	275	13	1	6	20	38	273	3	314	622
07:45 AM	1	1	24	26	7	252	1	260	7	0	4	11	38	323	4	365	662
Total	1	1	53	55	10	1109	6	1125	31	2	15	48	135	1008	10	1153	2381
08:00 AM	0	0	18	18	7	248	0	255	5	1	10	16	23	312	6	341	630
08:15 AM	0	0	8	8	10	267	2	279	2	1	16	19	34	265	1	300	606
08:30 AM	0	0	9	9	4	286	1	291	1	0	5	6	23	246	7	276	582
08:45 AM	3	0	1	4	4	266	4	274	4	1	4	9	25	235	1	261	548
Total	3	0	36	39	25	1067	7	1099	12	3	35	50	105	1058	15	1178	2366
Grand Total	4	1	89	94	35	2176	13	2224	43	5	50	98	240	2066	25	2331	4747
Apprch %	4.3	1.1	94.7		1.6	97.8	0.6		43.9	5.1	51		10.3	88.6	1.1		
Total %	0.1	0	1.9	2	0.7	45.8	0.3	46.9	0.9	0.1	1.1	2.1	5.1	43.5	0.5	49.1	

	Park Lawn Road Southbound				Colima Road Westbound				Park Lawn Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	13	13	0	**271**	**4**	275	**13**	**1**	6	**20**	**38**	273	3	314	622
07:45 AM	**1**	**1**	**24**	**26**	7	252	1	260	7	0	4	11	38	**323**	4	**365**	**662**
08:00 AM	0	0	18	18	7	248	0	255	5	1	10	16	23	312	**6**	341	630
08:15 AM	0	0	8	8	**10**	267	2	**279**	2	1	**16**	19	34	265	1	300	606
Total Volume	1	1	63	65	24	1038	7	1069	27	3	36	66	133	1173	14	1320	2520
% App. Total	1.5	1.5	96.9		2.2	97.1	0.7		40.9	4.5	54.5		10.1	88.9	1.1		
PHF	.250	.250	.656	.625	.600	.958	.438	.958	.519	.750	.563	.825	.875	.908	.583	.904	.952

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City of Hacienda Heights
N/S: Park Lawn Road
E/W: Colima Road
Weather: Clear

File Name : 08_HHS_Park Lawn_Colima AM
Site Code : 22119289
Start Date : 5/14/2019



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:30 AM				07:30 AM			
+0 mins.	0	0	12	12	1	**293**	0	294	**13**	**1**	6	**20**	**38**	273	3	314
+15 mins.	0	0	13	13	2	293	1	**296**	7	0	4	11	38	**323**	4	**365**
+30 mins.	**1**	**1**	**24**	**26**	0	271	**4**	275	5	1	10	16	23	312	**6**	341
+45 mins.	0	0	18	18	**7**	252	1	260	2	1	**16**	19	34	265	1	300
Total Volume	1	1	67	69	10	1109	6	1125	27	3	36	66	133	1173	14	1320
% App. Total	1.4	1.4	97.1		0.9	98.6	0.5		40.9	4.5	54.5		10.1	88.9	1.1	
PHF	.250	.250	.698	.663	.357	.946	.375	.950	.519	.750	.563	.825	.875	.908	.583	.904

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City of Hacienda Heights
N/S: Park Lawn Road
E/W: Colima Road
Weather: Clear

File Name : 08_HHS_Park Lawn_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

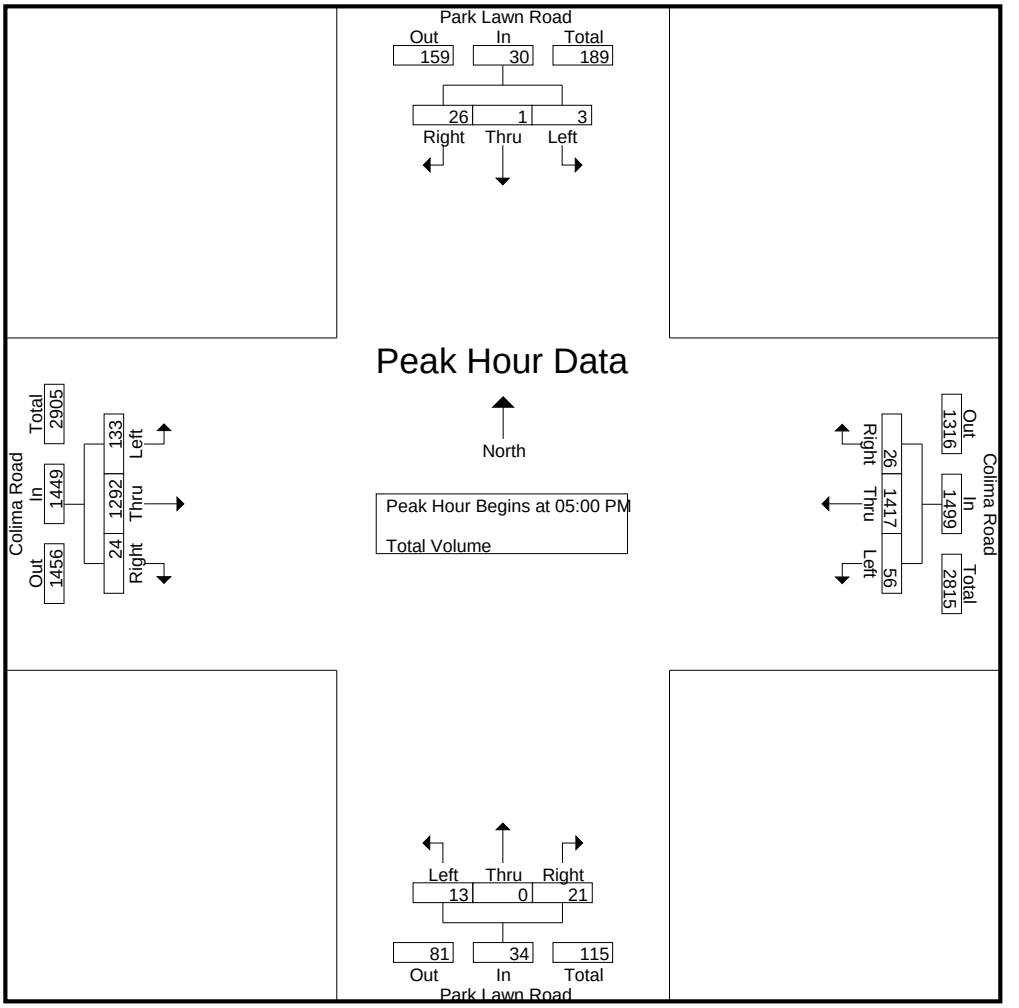
	Park Lawn Road Southbound				Colima Road Westbound				Park Lawn Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	6	6	7	341	3	351	3	0	6	9	41	279	3	323	689
04:15 PM	1	0	3	4	15	330	3	348	0	0	2	2	42	270	3	315	669
04:30 PM	0	0	7	7	11	306	6	323	0	0	6	6	51	305	4	360	696
04:45 PM	1	0	5	6	6	338	7	351	1	0	5	6	46	318	1	365	728
Total	2	0	21	23	39	1315	19	1373	4	0	19	23	180	1172	11	1363	2782
05:00 PM	1	0	10	11	9	332	4	345	2	0	7	9	48	346	2	396	761
05:15 PM	1	0	6	7	14	379	8	401	4	0	2	6	21	306	8	335	749
05:30 PM	0	0	4	4	18	330	7	355	2	0	1	3	35	291	6	332	694
05:45 PM	1	1	6	8	15	376	7	398	5	0	11	16	29	349	8	386	808
Total	3	1	26	30	56	1417	26	1499	13	0	21	34	133	1292	24	1449	3012
Grand Total	5	1	47	53	95	2732	45	2872	17	0	40	57	313	2464	35	2812	5794
Apprch %	9.4	1.9	88.7		3.3	95.1	1.6		29.8	0	70.2		11.1	87.6	1.2		
Total %	0.1	0	0.8	0.9	1.6	47.2	0.8	49.6	0.3	0	0.7	1	5.4	42.5	0.6	48.5	

	Park Lawn Road Southbound				Colima Road Westbound				Park Lawn Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**1**	0	**10**	**11**	9	332	4	345	2	0	7	9	**48**	346	2	**396**	761
05:15 PM	1	0	6	7	14	**379**	**8**	**401**	4	0	2	6	21	306	**8**	335	749
05:30 PM	0	0	4	4	**18**	330	7	355	2	0	1	3	35	291	6	332	694
05:45 PM	1	**1**	6	8	15	376	7	398	**5**	0	**11**	**16**	29	**349**	8	386	**808**
Total Volume	3	1	26	30	56	1417	26	1499	13	0	21	34	133	1292	24	1449	3012
% App. Total	10	3.3	86.7		3.7	94.5	1.7		38.2	0	61.8		9.2	89.2	1.7		
PHF	.750	.250	.650	.682	.778	.935	.813	.935	.650	.000	.477	.531	.693	.926	.750	.915	.932

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City of Hacienda Heights
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E/W: Colima Road
Weather: Clear

File Name : 08_HHS_Park Lawn_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				05:00 PM				04:30 PM			
+0 mins.	0	0	7	7	9	332	4	345	2	0	7	9	**51**	305	4	360
+15 mins.	**1**	0	5	6	14	**379**	**8**	**401**	4	0	2	6	46	318	1	365
+30 mins.	1	0	**10**	**11**	**18**	330	7	355	2	0	1	3	48	**346**	2	**396**
+45 mins.	1	0	6	7	15	376	7	398	**5**	0	**11**	**16**	21	306	**8**	335
Total Volume	3	0	28	31	56	1417	26	1499	13	0	21	34	166	1275	15	1456
% App. Total	9.7	0	90.3		3.7	94.5	1.7		38.2	0	61.8		11.4	87.6	1	
PHF	.750	.000	.700	.705	.778	.935	.813	.935	.650	.000	.477	.531	.814	.921	.469	.919

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City of Hacienda Heights
N/S: Manor Gate Road
E/W: Colima Road
Weather: Clear

File Name : 09_HHS_Manor Gate_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

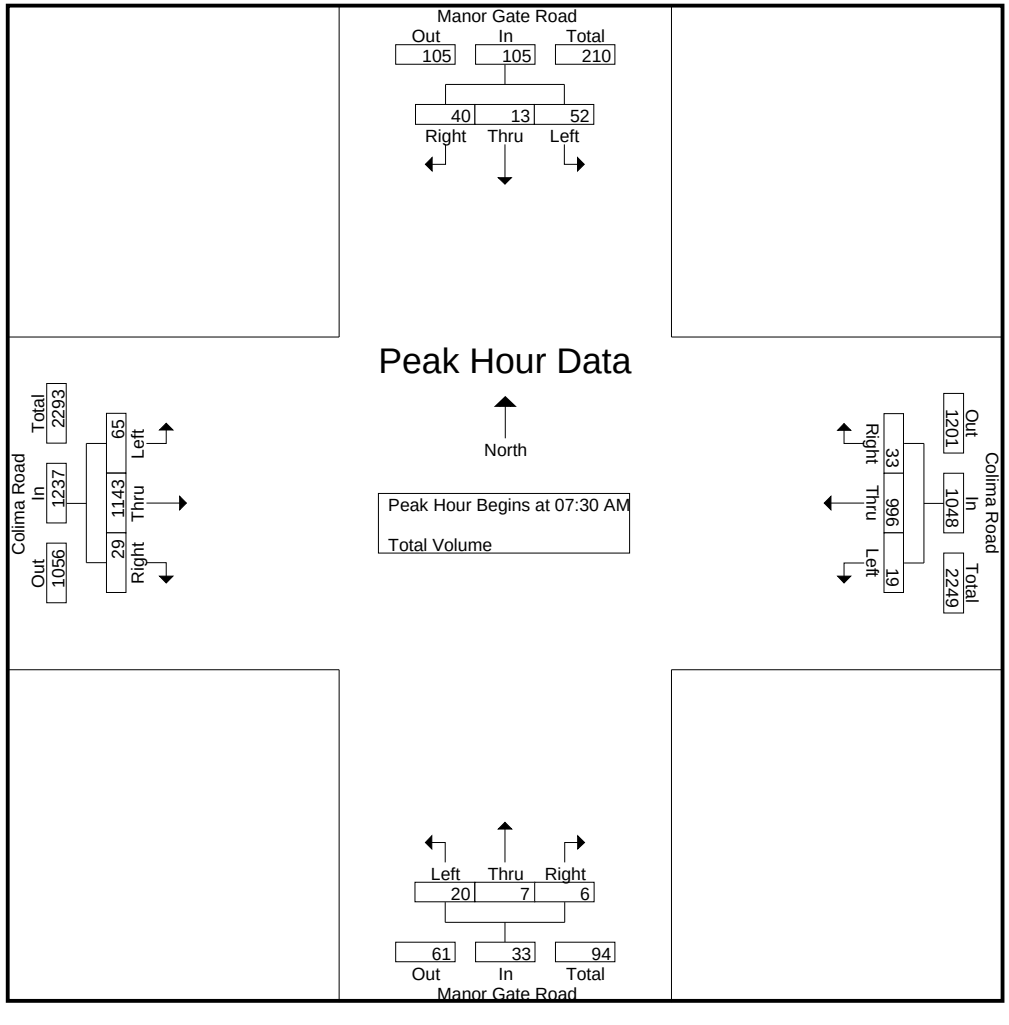
	Manor Gate Road Southbound					Colima Road Westbound					Manor Gate Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	5	2	3	1	10	3	286	4	2	293	0	1	2	2	3	1	186	3	0	190	5	496	501
07:15 AM	5	0	5	3	10	3	274	9	2	286	4	0	1	1	5	1	234	3	1	238	7	539	546
07:30 AM	13	0	10	8	23	1	269	5	0	275	1	1	2	2	4	20	270	7	0	297	10	599	609
07:45 AM	13	4	10	9	27	6	231	21	5	258	4	4	1	1	9	26	295	7	0	328	15	622	637
Total	36	6	28	21	70	13	1060	39	9	1112	9	6	6	6	21	48	985	20	1	1053	37	2256	2293
08:00 AM	20	6	15	7	41	8	245	6	1	259	7	1	2	1	10	10	312	7	0	329	9	639	648
08:15 AM	6	3	5	4	14	4	251	1	1	256	8	1	1	0	10	9	266	8	0	283	5	563	568
08:30 AM	10	1	8	4	19	15	271	6	3	292	6	3	6	2	15	5	235	8	0	248	9	574	583
08:45 AM	3	6	5	3	14	8	264	7	4	279	12	1	4	3	17	3	225	14	6	242	16	552	568
Total	39	16	33	18	88	35	1031	20	9	1086	33	6	13	6	52	27	1038	37	6	1102	39	2328	2367
Grand Total	75	22	61	39	158	48	2091	59	18	2198	42	12	19	12	73	75	2023	57	7	2155	76	4584	4660
Apprch %	47.5	13.9	38.6			2.2	95.1	2.7			57.5	16.4	26			3.5	93.9	2.6					
Total %	1.6	0.5	1.3		3.4	1	45.6	1.3		47.9	0.9	0.3	0.4		1.6	1.6	44.1	1.2		47	1.6	98.4	

	Manor Gate Road Southbound				Colima Road Westbound				Manor Gate Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	13	0	10	23	1	**269**	5	**275**	1	1	**2**	4	20	270	7	297	599
07:45 AM	13	4	10	27	6	231	**21**	258	4	**4**	1	9	**26**	295	7	328	622
08:00 AM	**20**	**6**	**15**	**41**	**8**	245	6	259	7	1	2	**10**	10	**312**	7	**329**	**639**
08:15 AM	6	3	5	14	4	251	1	256	**8**	1	1	10	9	266	**8**	283	563
Total Volume	52	13	40	105	19	996	33	1048	20	7	6	33	65	1143	29	1237	2423
% App. Total	49.5	12.4	38.1		1.8	95	3.1		60.6	21.2	18.2		5.3	92.4	2.3		
PHF	.650	.542	.667	.640	.594	.926	.393	.953	.625	.438	.750	.825	.625	.916	.906	.940	.948

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City of Hacienda Heights
N/S: Manor Gate Road
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Weather: Clear

File Name : 09_HHS_Manor Gate_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 2



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City of Hacienda Heights
N/S: Manor Gate Road
E/W: Colima Road
Weather: Clear

File Name : 09_HHS_Manor Gate_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 3

	Manor Gate Road Southbound				Colima Road Westbound				Manor Gate Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:00 AM				08:00 AM				07:30 AM				
+0 mins.	13	0	10	23	3	**286**	4	**293**	7	1	2	10	20	270	7	297	
+15 mins.	13	4	10	27	3	274	9	286	8	1	1	10	**26**	295	7	328	
+30 mins.	**20**	**6**	**15**	**41**	1	269	5	275	6	**3**	**6**	15	10	**312**	7	**329**	
+45 mins.	6	3	5	14	**6**	231	**21**	258	**12**	1	4	**17**	9	266	**8**	283	
Total Volume	52	13	40	105	13	1060	39	1112	33	6	13	52	65	1143	29	1237	
% App. Total	49.5	12.4	38.1		1.2	95.3	3.5		63.5	11.5	25		5.3	92.4	2.3		
PHF	.650	.542	.667	.640	.542	.927	.464	.949	.688	.500	.542	.765	.625	.916	.906	.940	

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City of Hacienda Heights
N/S: Manor Gate Road
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Weather: Clear

File Name : 09_HHS_Manor Gate_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

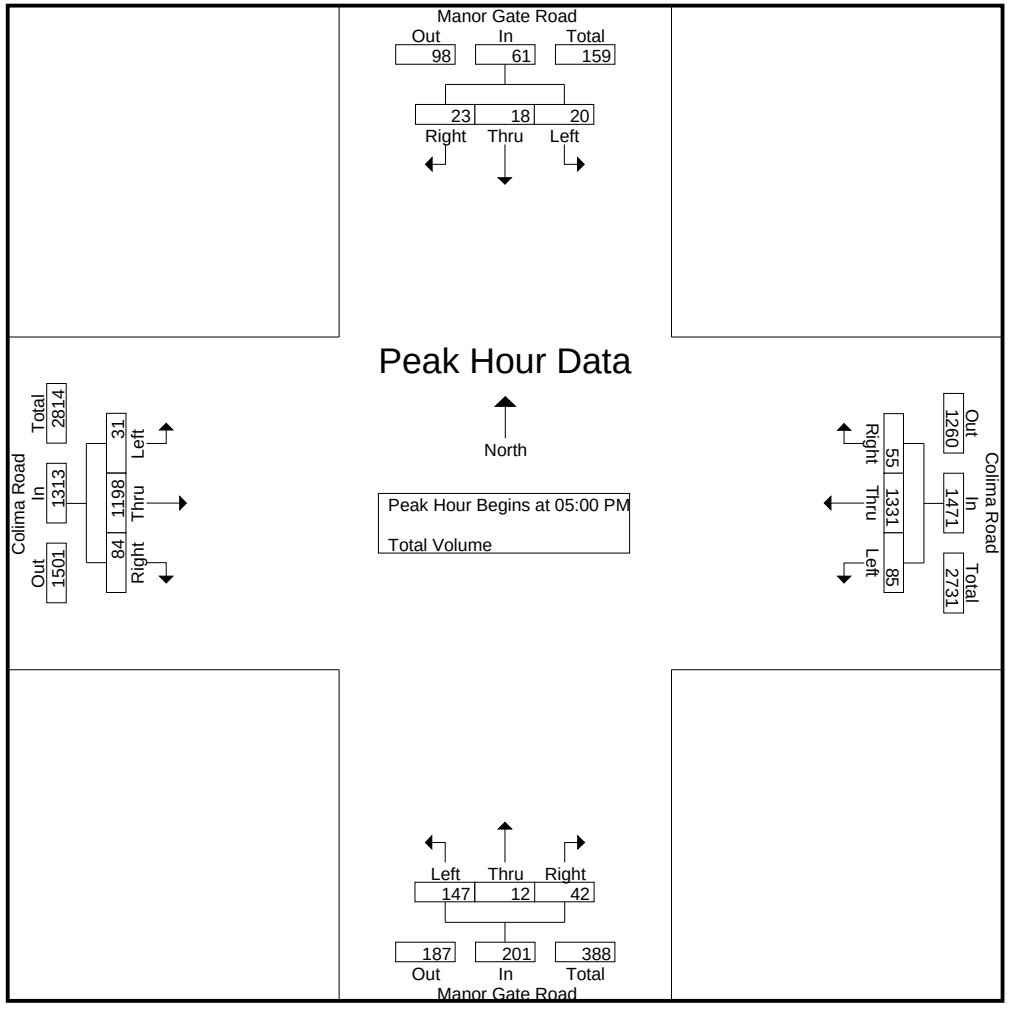
	Manor Gate Road Southbound					Colima Road Westbound					Manor Gate Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	5	2	4	1	11	26	319	10	1	355	32	4	17	5	53	8	267	17	2	292	9	711	720
04:15 PM	6	4	4	3	14	18	315	9	3	342	26	1	8	7	35	6	237	18	6	261	19	652	671
04:30 PM	9	2	3	2	14	14	288	12	1	314	27	3	9	3	39	5	282	35	5	322	11	689	700
04:45 PM	6	3	5	3	14	18	313	10	1	341	30	5	13	5	48	12	289	18	2	319	11	722	733
Total	26	11	16	9	53	76	1235	41	6	1352	115	13	47	20	175	31	1075	88	15	1194	50	2774	2824
05:00 PM	7	3	6	5	16	23	326	9	1	358	27	4	10	2	41	10	312	18	2	340	10	755	765
05:15 PM	4	4	7	5	15	11	345	8	1	364	39	1	10	6	50	5	298	16	1	319	13	748	761
05:30 PM	2	6	6	2	14	28	317	13	2	358	40	2	12	4	54	7	239	21	10	267	18	693	711
05:45 PM	7	5	4	3	16	23	343	25	2	391	41	5	10	2	56	9	349	29	6	387	13	850	863
Total	20	18	23	15	61	85	1331	55	6	1471	147	12	42	14	201	31	1198	84	19	1313	54	3046	3100
Grand Total	46	29	39	24	114	161	2566	96	12	2823	262	25	89	34	376	62	2273	172	34	2507	104	5820	5924
Apprch %	40.4	25.4	34.2			5.7	90.9	3.4			69.7	6.6	23.7			2.5	90.7	6.9					
Total %	0.8	0.5	0.7		2	2.8	44.1	1.6		48.5	4.5	0.4	1.5		6.5	1.1	39.1	3		43.1	1.8	98.2	

	Manor Gate Road Southbound				Colima Road Westbound				Manor Gate Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**7**	3	6	**16**	23	326	9	358	27	4	10	41	**10**	312	18	340	755
05:15 PM	4	4	**7**	15	11	**345**	8	364	39	1	10	50	5	298	16	319	748
05:30 PM	2	**6**	6	14	**28**	317	13	358	40	2	**12**	54	7	239	21	267	693
05:45 PM	7	5	4	16	23	343	**25**	**391**	**41**	**5**	10	**56**	9	**349**	**29**	**387**	**850**
Total Volume	20	18	23	61	85	1331	55	1471	147	12	42	201	31	1198	84	1313	3046
% App. Total	32.8	29.5	37.7		5.8	90.5	3.7		73.1	6	20.9		2.4	91.2	6.4		
PHF	.714	.750	.821	.953	.759	.964	.550	.941	.896	.600	.875	.897	.775	.858	.724	.848	.896

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City of Hacienda Heights
N/S: Manor Gate Road
E/W: Colima Road
Weather: Clear

File Name : 09_HHS_Manor Gate_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 2



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City of Hacienda Heights
N/S: Manor Gate Road
E/W: Colima Road
Weather: Clear

File Name : 09_HHS_Manor Gate_Colima PM
Site Code : 22119289
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	Manor Gate Road Southbound				Colima Road Westbound				Manor Gate Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	**7**	3	6	**16**	23	326	9	358	27	4	10	41	**10**	312	18	340	
+15 mins.	4	4	**7**	15	11	**345**	8	364	39	1	10	50	5	298	16	319	
+30 mins.	2	**6**	6	14	**28**	317	13	358	40	2	**12**	54	7	239	21	267	
+45 mins.	7	5	4	16	23	343	**25**	**391**	**41**	**5**	10	**56**	9	**349**	**29**	**387**	
Total Volume	20	18	23	61	85	1331	55	1471	147	12	42	201	31	1198	84	1313	
% App. Total	32.8	29.5	37.7		5.8	90.5	3.7		73.1	6	20.9		2.4	91.2	6.4		
PHF	.714	.750	.821	.953	.759	.964	.550	.941	.896	.600	.875	.897	.775	.858	.724	.848	

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City of Hacienda Heights
N/S: Azusa Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 11_HHS_Azusa_60W AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

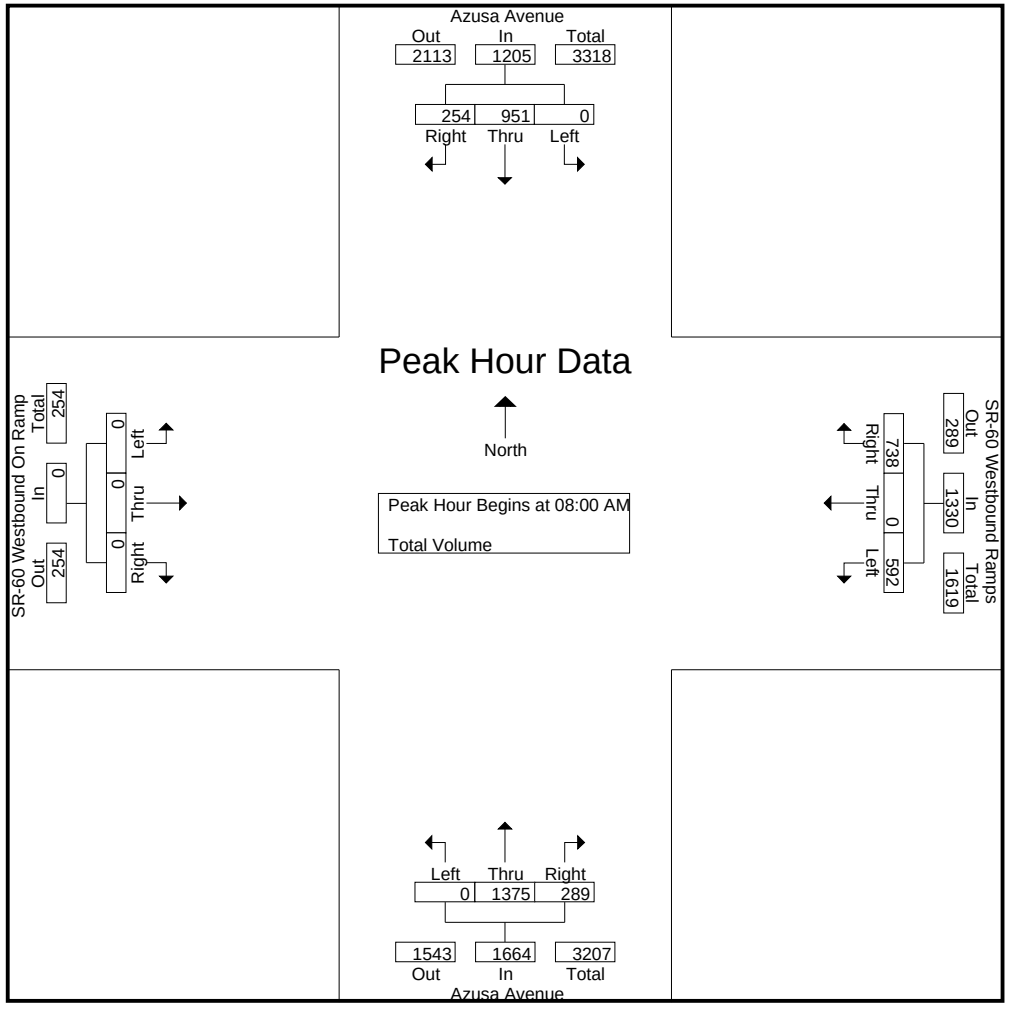
	Azusa Avenue Southbound					SR-60 Westbound Ramps Westbound					Azusa Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	326	62	0	388	163	0	132	21	295	0	235	56	0	291	0	0	0	0	0	21	974	995
07:15 AM	0	282	43	0	325	142	0	155	33	297	0	246	58	0	304	0	0	0	0	0	33	926	959
07:30 AM	0	367	40	0	407	135	0	148	12	283	0	291	49	0	340	0	0	0	0	0	12	1030	1042
07:45 AM	0	280	49	0	329	133	0	190	9	323	0	410	68	0	478	0	0	0	0	0	9	1130	1139
Total	0	1255	194	0	1449	573	0	625	75	1198	0	1182	231	0	1413	0	0	0	0	0	75	4060	4135
08:00 AM	0	203	57	0	260	153	0	181	11	334	0	328	66	0	394	0	0	0	0	0	11	988	999
08:15 AM	0	195	71	0	266	126	0	173	19	299	0	315	67	0	382	0	0	0	0	0	19	947	966
08:30 AM	0	252	64	0	316	182	0	187	0	369	0	324	89	0	413	0	0	0	0	0	0	1098	1098
08:45 AM	0	301	62	0	363	131	0	197	3	328	0	408	67	0	475	0	0	0	0	0	3	1166	1169
Total	0	951	254	0	1205	592	0	738	33	1330	0	1375	289	0	1664	0	0	0	0	0	33	4199	4232
Grand Total	0	2206	448	0	2654	1165	0	1363	108	2528	0	2557	520	0	3077	0	0	0	0	0	108	8259	8367
Apprch %	0	83.1	16.9			46.1	0	53.9			0	83.1	16.9			0	0	0					
Total %	0	26.7	5.4		32.1	14.1	0	16.5		30.6	0	31	6.3		37.3	0	0	0		0	1.3	98.7	

	Azusa Avenue Southbound				SR-60 Westbound Ramps Westbound				Azusa Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	203	57	260	153	0	181	334	0	328	66	394	0	0	0	0	988
08:15 AM	0	195	**71**	266	126	0	173	299	0	315	67	382	0	0	0	0	947
08:30 AM	0	252	64	316	**182**	0	187	**369**	0	324	**89**	413	0	0	0	0	1098
08:45 AM	0	**301**	62	**363**	131	0	**197**	328	0	**408**	67	**475**	0	0	0	0	**1166**
Total Volume	0	951	254	1205	592	0	738	1330	0	1375	289	1664	0	0	0	0	4199
% App. Total	0	78.9	21.1		44.5	0	55.5		0	82.6	17.4		0	0	0		
PHF	.000	.790	.894	.830	.813	.000	.937	.901	.000	.843	.812	.876	.000	.000	.000	.000	.900

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City of Hacienda Heights
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E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 11_HHS_Azusa_60W AM
Site Code : 22119289
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File Name : 11_HHS_Azusa_60W AM
Site Code : 22119289
Start Date : 5/14/2019

	Azusa Avenue Southbound				SR-60 Westbound Ramps Westbound				Azusa Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				08:00 AM				07:45 AM				07:00 AM				
+0 mins.	0	326	**62**	388	153	0	181	334	0	**410**	68	**478**	0	0	0	0	
+15 mins.	0	282	43	325	126	0	173	299	0	328	66	394	0	0	0	0	
+30 mins.	0	**367**	40	**407**	**182**	0	187	**369**	0	315	67	382	0	0	0	0	
+45 mins.	0	280	49	329	131	0	**197**	328	0	324	**89**	413	0	0	0	0	
Total Volume	0	1255	194	1449	592	0	738	1330	0	1377	290	1667	0	0	0	0	
% App. Total	0	86.6	13.4		44.5	0	55.5		0	82.6	17.4		0	0	0		
PHF	.000	.855	.782	.890	.813	.000	.937	.901	.000	.840	.815	.872	.000	.000	.000	.000	

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City of Hacienda Heights
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File Name : 11_HHS_Azusa_60W PM
Site Code : 22119289
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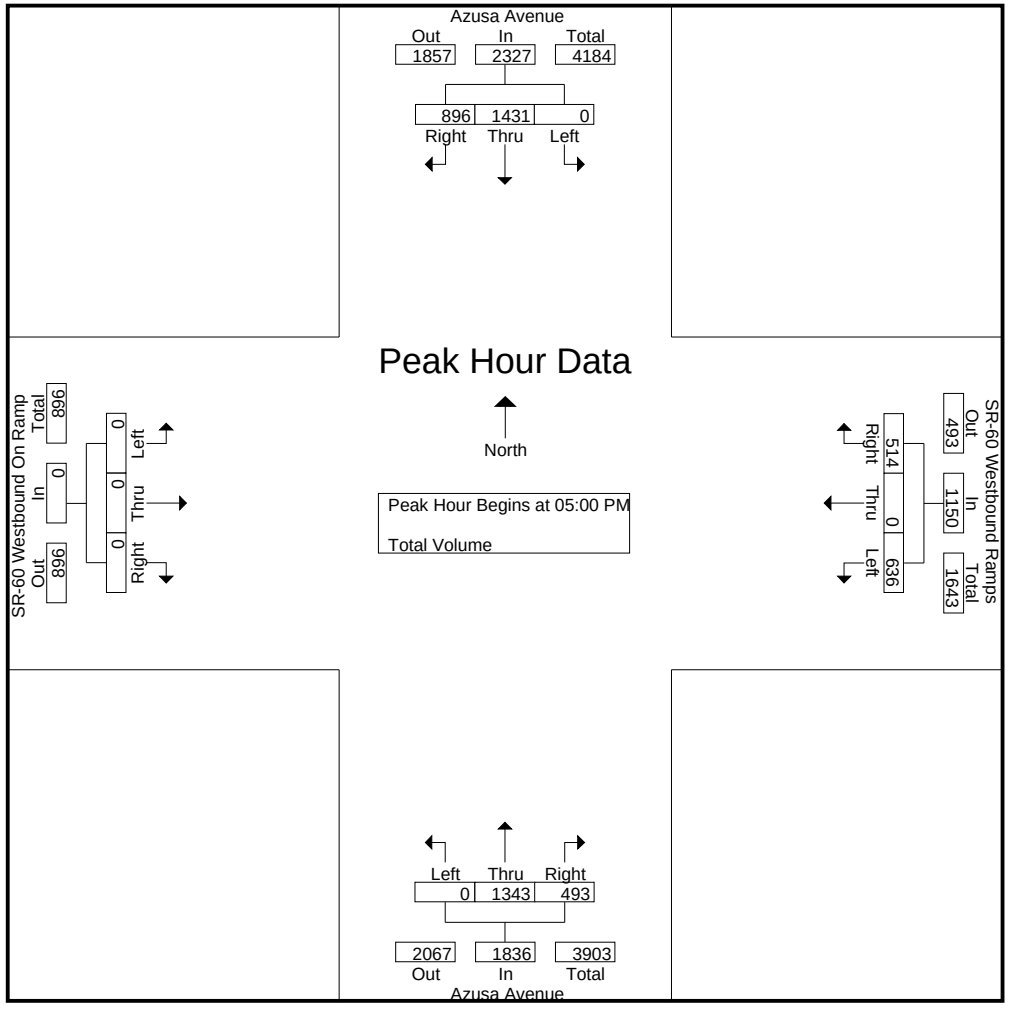
	Azusa Avenue Southbound					SR-60 Westbound Ramps Westbound					Azusa Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	305	164	0	469	135	0	120	14	255	0	357	133	0	490	0	0	0	0	0	14	1214	1228
04:15 PM	0	330	157	0	487	150	0	128	2	278	0	337	114	0	451	0	0	0	0	0	2	1216	1218
04:30 PM	0	265	163	0	428	122	0	106	12	228	0	298	104	0	402	0	0	0	0	0	12	1058	1070
04:45 PM	0	345	185	0	530	150	0	123	15	273	0	335	117	0	452	0	0	0	0	0	15	1255	1270
Total	0	1245	669	0	1914	557	0	477	43	1034	0	1327	468	0	1795	0	0	0	0	0	43	4743	4786
05:00 PM	0	315	232	0	547	131	0	116	24	247	0	309	123	0	432	0	0	0	0	0	24	1226	1250
05:15 PM	0	345	235	0	580	181	0	134	6	315	0	366	121	0	487	0	0	0	0	0	6	1382	1388
05:30 PM	0	373	217	0	590	160	0	150	13	310	0	328	123	0	451	0	0	0	0	0	13	1351	1364
05:45 PM	0	398	212	0	610	164	0	114	7	278	0	340	126	0	466	0	0	0	0	0	7	1354	1361
Total	0	1431	896	0	2327	636	0	514	50	1150	0	1343	493	0	1836	0	0	0	0	0	50	5313	5363
Grand Total	0	2676	1565	0	4241	1193	0	991	93	2184	0	2670	961	0	3631	0	0	0	0	0	93	10056	10149
Apprch %	0	63.1	36.9			54.6	0	45.4			0	73.5	26.5			0	0	0					
Total %	0	26.6	15.6		42.2	11.9	0	9.9		21.7	0	26.6	9.6		36.1	0	0	0		0	0.9	99.1	

	Azusa Avenue Southbound				SR-60 Westbound Ramps Westbound				Azusa Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	315	232	547	131	0	116	247	0	309	123	432	0	0	0	0	1226
05:15 PM	0	345	**235**	580	**181**	0	134	**315**	0	**366**	121	**487**	0	0	0	0	**1382**
05:30 PM	0	373	217	590	160	0	**150**	310	0	328	123	451	0	0	0	0	1351
05:45 PM	0	**398**	212	**610**	164	0	114	278	0	340	**126**	466	0	0	0	0	1354
Total Volume	0	1431	896	2327	636	0	514	1150	0	1343	493	1836	0	0	0	0	5313
% App. Total	0	61.5	38.5		55.3	0	44.7		0	73.1	26.9		0	0	0		
PHF	.000	.899	.953	.954	.878	.000	.857	.913	.000	.917	.978	.943	.000	.000	.000	.000	.961

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File Name : 11_HHS_Azusa_60W PM
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	Azusa Avenue Southbound				SR-60 Westbound Ramps Westbound				Azusa Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				04:00 PM				
+0 mins.	0	315	232	547	131	0	116	247	0	309	123	432	0	0	0	0	
+15 mins.	0	345	**235**	580	**181**	0	134	**315**	0	**366**	121	**487**	0	0	0	0	
+30 mins.	0	373	217	590	160	0	**150**	310	0	328	123	451	0	0	0	0	
+45 mins.	0	**398**	212	**610**	164	0	114	278	0	340	**126**	466	0	0	0	0	
Total Volume	0	1431	896	2327	636	0	514	1150	0	1343	493	1836	0	0	0	0	
% App. Total	0	61.5	38.5		55.3	0	44.7		0	73.1	26.9		0	0	0		
PHF	.000	.899	.953	.954	.878	.000	.857	.913	.000	.917	.978	.943	.000	.000	.000	.000	

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City of Hacienda Heights
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Weather: Clear

File Name : 12_HHS_Azusa_60E AM
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Groups Printed- Total Volume

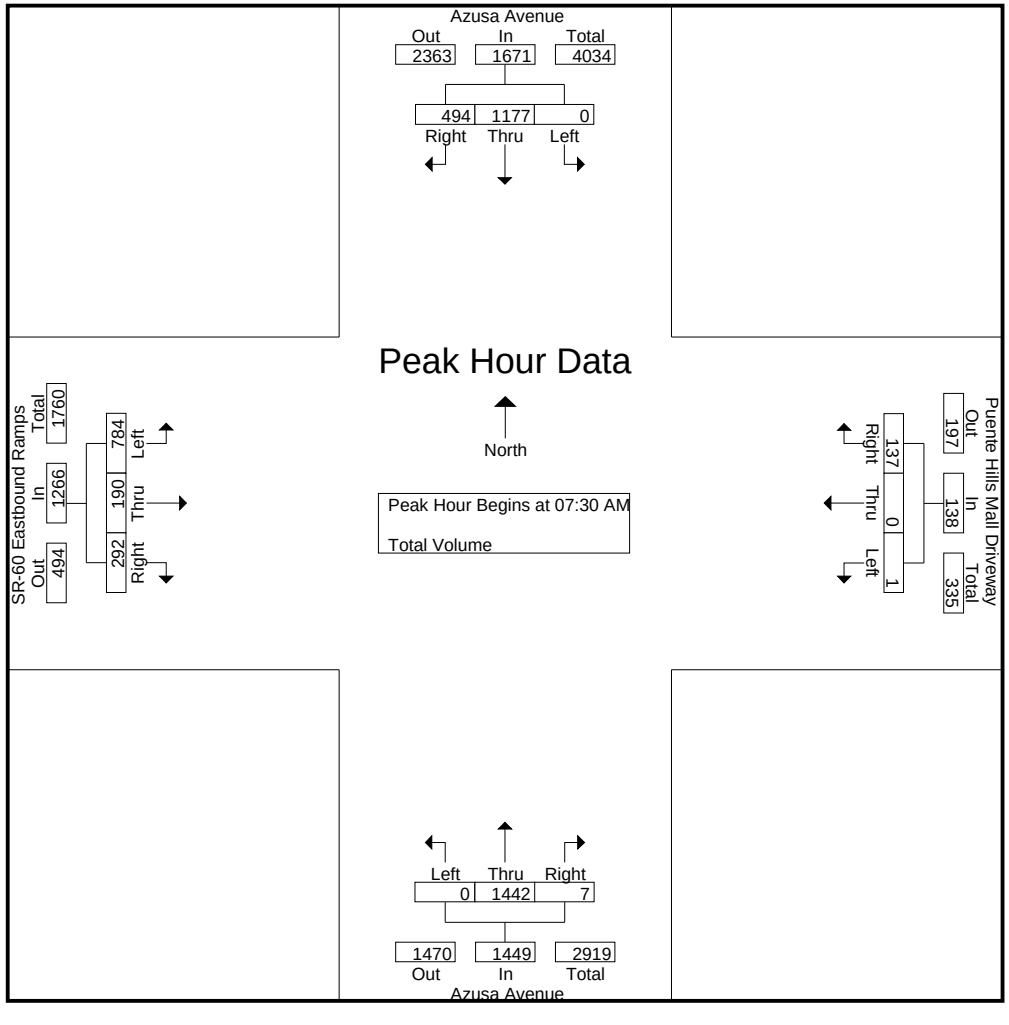
	Azusa Avenue Southbound					Puente Hills Mall Driveway Westbound					Azusa Avenue Northbound					SR-60 Eastbound Ramps Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	298	178	0	476	0	0	16	16	16	0	278	4	0	282	130	30	41	14	201	30	975	1005
07:15 AM	0	289	157	0	446	0	0	23	23	23	0	351	1	0	352	131	36	55	11	222	34	1043	1077
07:30 AM	0	351	182	0	533	0	0	19	19	19	0	337	1	0	338	181	36	67	22	284	41	1174	1215
07:45 AM	0	283	135	0	418	0	0	35	35	35	0	389	2	0	391	224	40	90	35	354	70	1198	1268
Total	0	1221	652	0	1873	0	0	93	93	93	0	1355	8	0	1363	666	142	253	82	1061	175	4390	4565
08:00 AM	0	273	98	0	371	0	0	38	38	38	0	348	3	1	351	203	54	67	26	324	65	1084	1149
08:15 AM	0	270	79	0	349	1	0	45	45	46	0	368	1	0	369	176	60	68	24	304	69	1068	1137
08:30 AM	0	344	102	0	446	0	0	47	47	47	0	339	3	0	342	195	50	69	18	314	65	1149	1214
08:45 AM	0	305	113	0	418	0	0	33	33	33	0	298	3	0	301	243	67	66	24	376	57	1128	1185
Total	0	1192	392	0	1584	1	0	163	163	164	0	1353	10	1	1363	817	231	270	92	1318	256	4429	4685
Grand Total	0	2413	1044	0	3457	1	0	256	256	257	0	2708	18	1	2726	1483	373	523	174	2379	431	8819	9250
Apprch %	0	69.8	30.2			0.4	0	99.6			0	99.3	0.7			62.3	15.7	22					
Total %	0	27.4	11.8		39.2	0	0	2.9		2.9	0	30.7	0.2		30.9	16.8	4.2	5.9		27	4.7	95.3	

	Azusa Avenue Southbound				Puente Hills Mall Driveway Westbound				Azusa Avenue Northbound				SR-60 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**351**	**182**	**533**	0	0	19	19	0	337	1	338	181	36	67	284	1174
07:45 AM	0	283	135	418	0	0	35	35	0	**389**	2	**391**	**224**	40	**90**	**354**	**1198**
08:00 AM	0	273	98	371	0	0	38	38	0	348	**3**	351	203	54	67	324	1084
08:15 AM	0	270	79	349	**1**	0	**45**	**46**	0	368	1	369	176	**60**	68	304	1068
Total Volume	0	1177	494	1671	1	0	137	138	0	1442	7	1449	784	190	292	1266	4524
% App. Total	0	70.4	29.6		0.7	0	99.3		0	99.5	0.5		61.9	15	23.1		
PHF	.000	.838	.679	.784	.250	.000	.761	.750	.000	.927	.583	.926	.875	.792	.811	.894	.944

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Weather: Clear

File Name : 12_HHS_Azusa_60E AM
Site Code : 22119289
Start Date : 5/14/2019
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	Azusa Avenue Southbound				Puente Hills Mall Driveway Westbound				Azusa Avenue Northbound				SR-60 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:45 AM				07:45 AM				08:00 AM				
+0 mins.	0	298	178	476	0	0	35	35	0	**389**	2	**391**	203	54	67	324	
+15 mins.	0	289	157	446	0	0	38	38	0	348	**3**	351	176	60	68	304	
+30 mins.	0	**351**	**182**	**533**	**1**	0	45	46	0	368	1	369	195	50	**69**	314	
+45 mins.	0	283	135	418	0	0	**47**	**47**	0	339	3	342	**243**	**67**	66	**376**	
Total Volume	0	1221	652	1873	1	0	165	166	0	1444	9	1453	817	231	270	1318	
% App. Total	0	65.2	34.8		0.6	0	99.4		0	99.4	0.6		62	17.5	20.5		
PHF	.000	.870	.896	.879	.250	.000	.878	.883	.000	.928	.750	.929	.841	.862	.978	.876	

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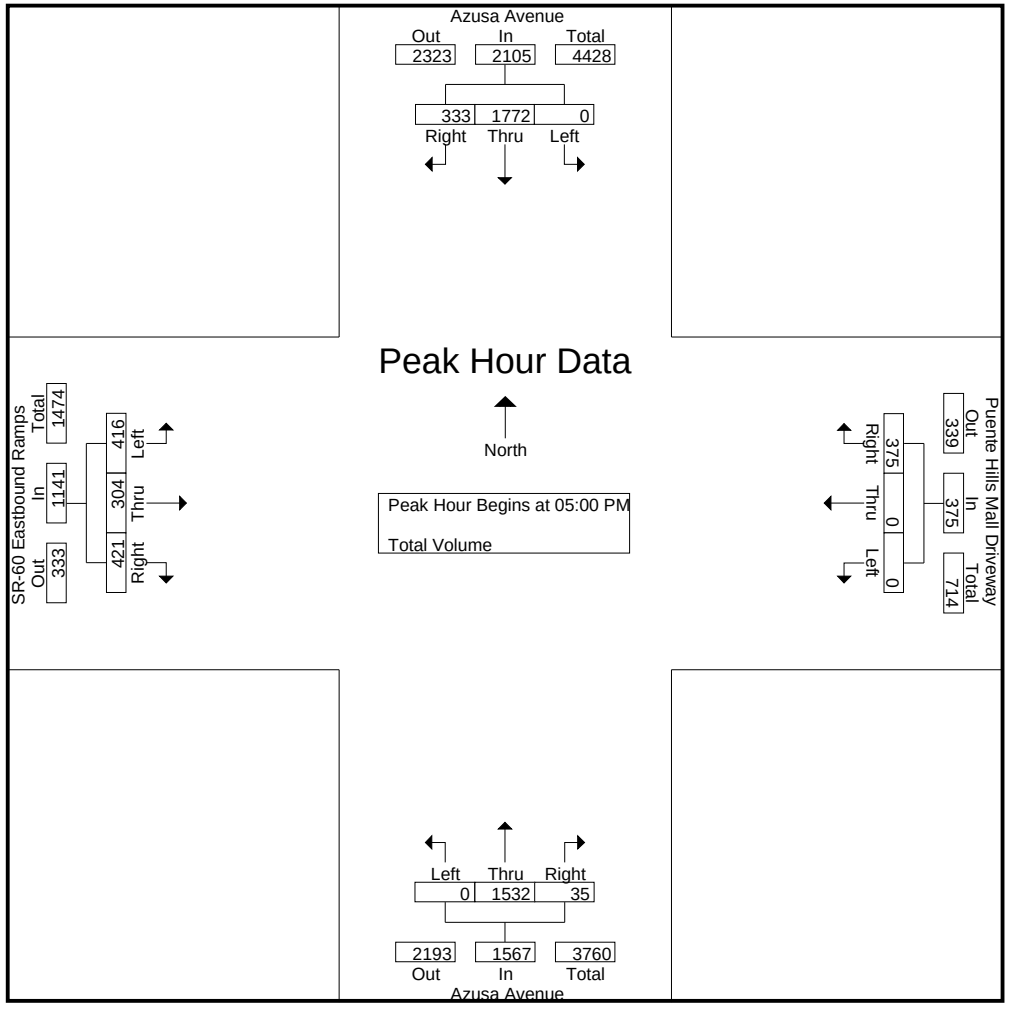
	Azusa Avenue Southbound					Puente Hills Mall Driveway Westbound					Azusa Avenue Northbound					SR-60 Eastbound Ramps Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	384	63	0	447	0	0	89	89	89	0	426	6	0	432	130	76	100	28	306	117	1274	1391
04:15 PM	0	409	70	0	479	0	0	93	93	93	0	346	11	3	357	107	68	83	20	258	116	1187	1303
04:30 PM	0	361	58	0	419	0	0	98	98	98	0	389	4	2	393	106	78	79	18	263	118	1173	1291
04:45 PM	0	420	67	0	487	0	0	82	82	82	0	352	3	1	355	105	73	73	17	251	100	1175	1275
Total	0	1574	258	0	1832	0	0	362	362	362	0	1513	24	6	1537	448	295	335	83	1078	451	4809	5260
05:00 PM	0	374	84	0	458	0	0	90	90	90	0	389	11	3	400	105	81	119	28	305	121	1253	1374
05:15 PM	0	483	66	0	549	0	0	84	84	84	0	383	6	3	389	123	86	101	26	310	113	1332	1445
05:30 PM	0	451	100	0	551	0	0	93	93	93	0	402	5	2	407	99	66	96	14	261	109	1312	1421
05:45 PM	0	464	83	0	547	0	0	108	108	108	0	358	13	4	371	89	71	105	24	265	136	1291	1427
Total	0	1772	333	0	2105	0	0	375	375	375	0	1532	35	12	1567	416	304	421	92	1141	479	5188	5667
Grand Total	0	3346	591	0	3937	0	0	737	737	737	0	3045	59	18	3104	864	599	756	175	2219	930	9997	10927
Apprch %	0	85	15			0	0	100			0	98.1	1.9			38.9	27	34.1					
Total %	0	33.5	5.9		39.4	0	0	7.4		7.4	0	30.5	0.6		31	8.6	6	7.6		22.2	8.5	91.5	

	Azusa Avenue Southbound				Puente Hills Mall Driveway Westbound				Azusa Avenue Northbound				SR-60 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	374	84	458	0	0	90	90	0	389	11	400	105	81	**119**	305	1253
05:15 PM	0	**483**	66	549	0	0	84	84	0	383	6	389	**123**	**86**	101	**310**	**1332**
05:30 PM	0	451	**100**	**551**	0	0	93	93	0	**402**	5	**407**	99	66	96	261	1312
05:45 PM	0	464	83	547	0	0	**108**	**108**	0	358	**13**	371	89	71	105	265	1291
Total Volume	0	1772	333	2105	0	0	375	375	0	1532	35	1567	416	304	421	1141	5188
% App. Total	0	84.2	15.8		0	0	100		0	97.8	2.2		36.5	26.6	36.9		
PHF	.000	.917	.833	.955	.000	.000	.868	.868	.000	.953	.673	.963	.846	.884	.884	.920	.974

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	Azusa Avenue Southbound				Puente Hills Mall Driveway Westbound				Azusa Avenue Northbound				SR-60 Eastbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	0	374	84	458	0	0	90	90	0	389	11	400	105	81	**119**	305	
+15 mins.	0	**483**	66	549	0	0	84	84	0	383	6	389	**123**	**86**	101	**310**	
+30 mins.	0	451	**100**	**551**	0	0	93	93	0	**402**	5	**407**	99	66	96	261	
+45 mins.	0	464	83	547	0	0	**108**	**108**	0	358	**13**	371	89	71	105	265	
Total Volume	0	1772	333	2105	0	0	375	375	0	1532	35	1567	416	304	421	1141	
% App. Total	0	84.2	15.8		0	0	100		0	97.8	2.2		36.5	26.6	36.9		
PHF	.000	.917	.833	.955	.000	.000	.868	.868	.000	.953	.673	.963	.846	.884	.884	.920	

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City of Hacienda Heights
N/S: Azusa Avenue
E/W: Pepper Brook Way
Weather: Clear

File Name : 13_HHS_Azusa_Pepper Brook AM
Site Code : 22119289
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Groups Printed- Total Volume

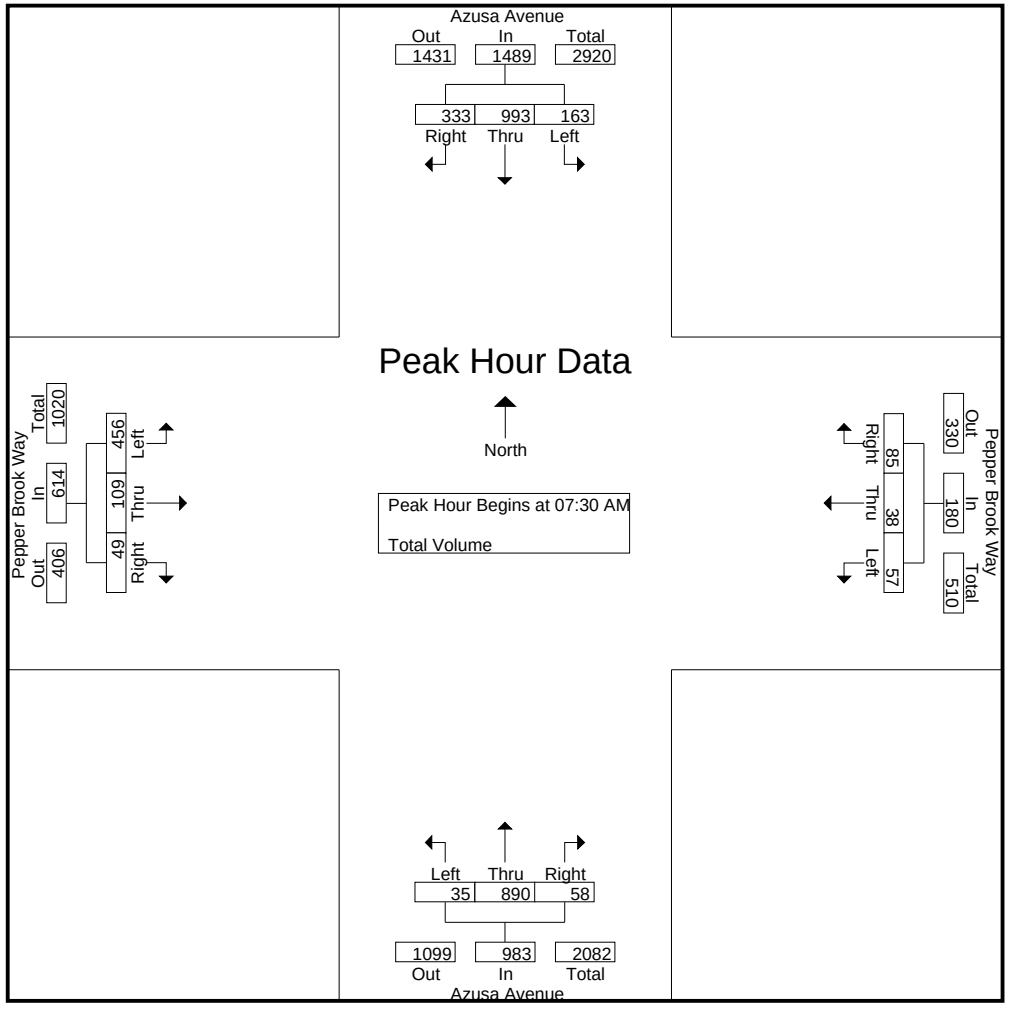
	Azusa Avenue Southbound					Pepper Brook Way Westbound					Azusa Avenue Northbound					Pepper Brook Way Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	43	267	25	2	335	9	5	27	21	41	0	179	18	4	197	75	20	6	2	101	29	674	703
07:15 AM	43	266	45	3	354	12	14	21	13	47	9	228	15	2	252	84	22	6	0	112	18	765	783
07:30 AM	44	226	114	16	384	13	15	23	12	51	13	190	17	3	220	104	18	9	3	131	34	786	820
07:45 AM	41	232	129	11	402	16	4	25	18	45	18	263	13	1	294	117	26	14	5	157	35	898	933
Total	171	991	313	32	1475	50	38	96	64	184	40	860	63	10	963	380	86	35	10	501	116	3123	3239
08:00 AM	35	259	57	6	351	14	9	23	16	46	1	204	16	1	221	124	40	17	2	181	25	799	824
08:15 AM	43	276	33	1	352	14	10	14	10	38	3	233	12	1	248	111	25	9	3	145	15	783	798
08:30 AM	44	302	34	3	380	11	11	21	11	43	4	197	22	1	223	98	16	16	0	130	15	776	791
08:45 AM	62	326	27	6	415	18	10	20	13	48	3	214	11	0	228	89	16	7	1	112	20	803	823
Total	184	1163	151	16	1498	57	40	78	50	175	11	848	61	3	920	422	97	49	6	568	75	3161	3236
Grand Total	355	2154	464	48	2973	107	78	174	114	359	51	1708	124	13	1883	802	183	84	16	1069	191	6284	6475
Apprch %	11.9	72.5	15.6			29.8	21.7	48.5			2.7	90.7	6.6			75	17.1	7.9					
Total %	5.6	34.3	7.4		47.3	1.7	1.2	2.8		5.7	0.8	27.2	2		30	12.8	2.9	1.3		17	2.9	97.1	

	Azusa Avenue Southbound				Pepper Brook Way Westbound				Azusa Avenue Northbound				Pepper Brook Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**44**	226	114	384	13	**15**	23	**51**	13	190	**17**	220	104	18	9	131	786
07:45 AM	41	232	**129**	**402**	**16**	4	**25**	45	**18**	**263**	13	**294**	117	26	14	157	**898**
08:00 AM	35	259	57	351	14	9	23	46	1	204	16	221	**124**	**40**	**17**	**181**	799
08:15 AM	43	**276**	33	352	14	10	14	38	3	233	12	248	111	25	9	145	783
Total Volume	163	993	333	1489	57	38	85	180	35	890	58	983	456	109	49	614	3266
% App. Total	10.9	66.7	22.4		31.7	21.1	47.2		3.6	90.5	5.9		74.3	17.8	8		
PHF	.926	.899	.645	.926	.891	.633	.850	.882	.486	.846	.853	.836	.919	.681	.721	.848	.909

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	Azusa Avenue Southbound				Pepper Brook Way Westbound				Azusa Avenue Northbound				Pepper Brook Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	08:00 AM				07:15 AM				07:15 AM				07:30 AM				
+0 mins.	35	259	**57**	351	12	14	21	47	9	228	15	252	104	18	9	131	
+15 mins.	43	276	33	352	13	**15**	23	**51**	13	190	**17**	220	117	26	14	157	
+30 mins.	44	302	34	380	**16**	4	**25**	45	**18**	**263**	13	**294**	**124**	**40**	**17**	**181**	
+45 mins.	**62**	**326**	27	**415**	14	9	23	46	1	204	16	221	111	25	9	145	
Total Volume	184	1163	151	1498	55	42	92	189	41	885	61	987	456	109	49	614	
% App. Total	12.3	77.6	10.1		29.1	22.2	48.7		4.2	89.7	6.2		74.3	17.8	8		
PHF	.742	.892	.662	.902	.859	.700	.920	.926	.569	.841	.897	.839	.919	.681	.721	.848	

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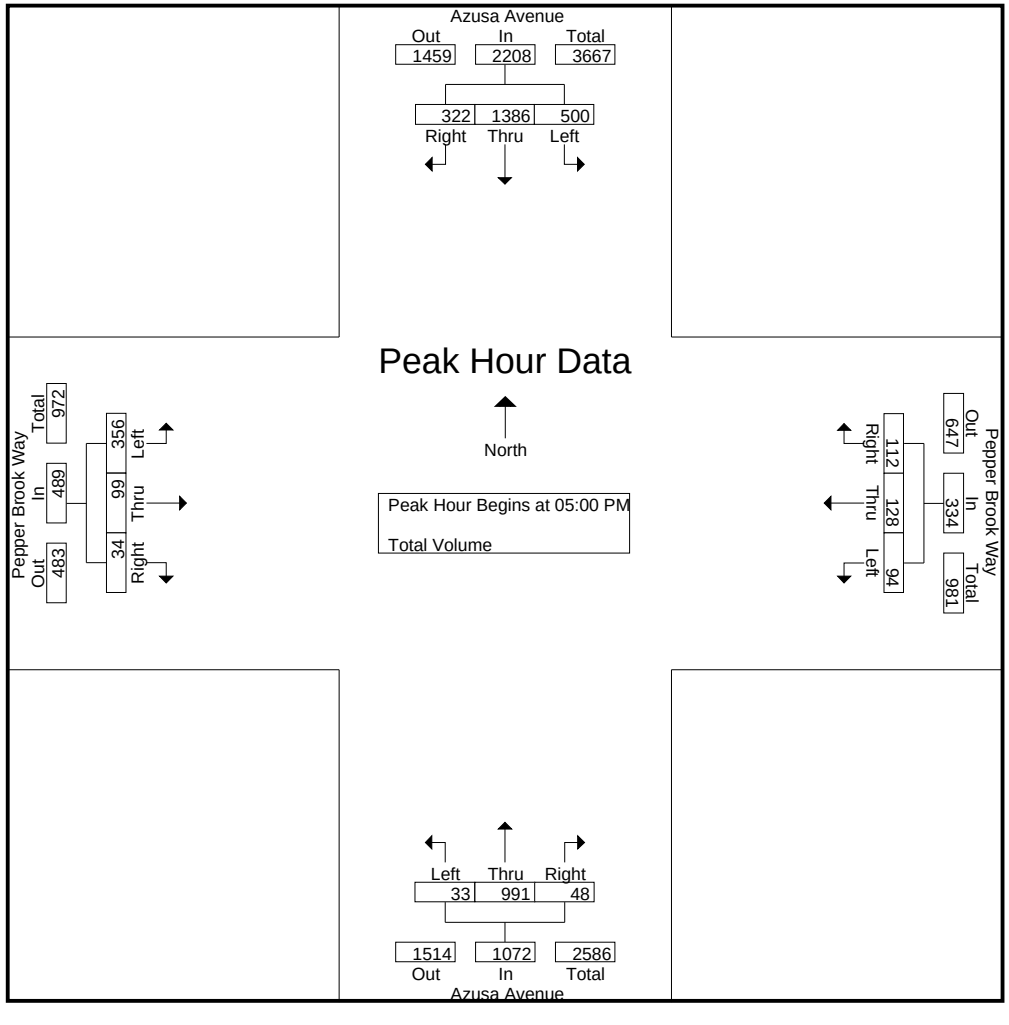
	Azusa Avenue Southbound					Pepper Brook Way Westbound					Azusa Avenue Northbound					Pepper Brook Way Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	123	319	44	4	486	19	16	31	14	66	8	270	14	4	292	107	13	9	3	129	25	973	998
04:15 PM	113	318	56	5	487	19	15	27	20	61	7	240	9	1	256	93	22	9	1	124	27	928	955
04:30 PM	113	316	43	7	472	27	15	32	20	74	8	239	13	1	260	91	19	10	1	120	29	926	955
04:45 PM	87	314	58	15	459	18	24	22	14	64	10	240	11	3	261	87	27	9	2	123	34	907	941
Total	436	1267	201	31	1904	83	70	112	68	265	33	989	47	9	1069	378	81	37	7	496	115	3734	3849
05:00 PM	125	323	63	10	511	26	35	27	17	88	11	230	6	1	247	97	29	13	2	139	30	985	1015
05:15 PM	118	359	83	5	560	29	31	22	13	82	7	262	17	2	286	88	19	8	2	115	22	1043	1065
05:30 PM	130	346	84	8	560	12	32	31	12	75	10	246	12	0	268	86	26	9	0	121	20	1024	1044
05:45 PM	127	358	92	10	577	27	30	32	20	89	5	253	13	0	271	85	25	4	1	114	31	1051	1082
Total	500	1386	322	33	2208	94	128	112	62	334	33	991	48	3	1072	356	99	34	5	489	103	4103	4206
Grand Total	936	2653	523	64	4112	177	198	224	130	599	66	1980	95	12	2141	734	180	71	12	985	218	7837	8055
Apprch %	22.8	64.5	12.7			29.5	33.1	37.4			3.1	92.5	4.4			74.5	18.3	7.2					
Total %	11.9	33.9	6.7		52.5	2.3	2.5	2.9		7.6	0.8	25.3	1.2		27.3	9.4	2.3	0.9		12.6	2.7	97.3	

	Azusa Avenue Southbound				Pepper Brook Way Westbound				Azusa Avenue Northbound				Pepper Brook Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	125	323	63	511	26	**35**	27	88	**11**	230	6	247	**97**	**29**	**13**	**139**	985
05:15 PM	118	**359**	83	560	**29**	31	22	82	7	**262**	**17**	**286**	88	19	8	115	1043
05:30 PM	**130**	346	84	560	12	32	31	75	10	246	12	268	86	26	9	121	1024
05:45 PM	127	358	**92**	**577**	27	30	**32**	**89**	5	253	13	271	85	25	4	114	**1051**
Total Volume	500	1386	322	2208	94	128	112	334	33	991	48	1072	356	99	34	489	4103
% App. Total	22.6	62.8	14.6		28.1	38.3	33.5		3.1	92.4	4.5		72.8	20.2	7		
PHF	.962	.965	.875	.957	.810	.914	.875	.938	.750	.946	.706	.937	.918	.853	.654	.879	.976

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	Azusa Avenue Southbound				Pepper Brook Way Westbound				Azusa Avenue Northbound				Pepper Brook Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				04:15 PM				
+0 mins.	125	323	63	511	26	**35**	27	88	**11**	230	6	247	93	22	9	124	
+15 mins.	118	**359**	83	560	**29**	31	22	82	7	**262**	**17**	**286**	91	19	10	120	
+30 mins.	**130**	346	84	560	12	32	31	75	10	246	12	268	87	27	9	123	
+45 mins.	127	358	**92**	**577**	27	30	**32**	**89**	5	253	13	271	**97**	**29**	**13**	**139**	
Total Volume	500	1386	322	2208	94	128	112	334	33	991	48	1072	368	97	41	506	
% App. Total	22.6	62.8	14.6		28.1	38.3	33.5		3.1	92.4	4.5		72.7	19.2	8.1		
PHF	.962	.965	.875	.957	.810	.914	.875	.938	.750	.946	.706	.937	.948	.836	.788	.910	

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City of Hacienda Heights
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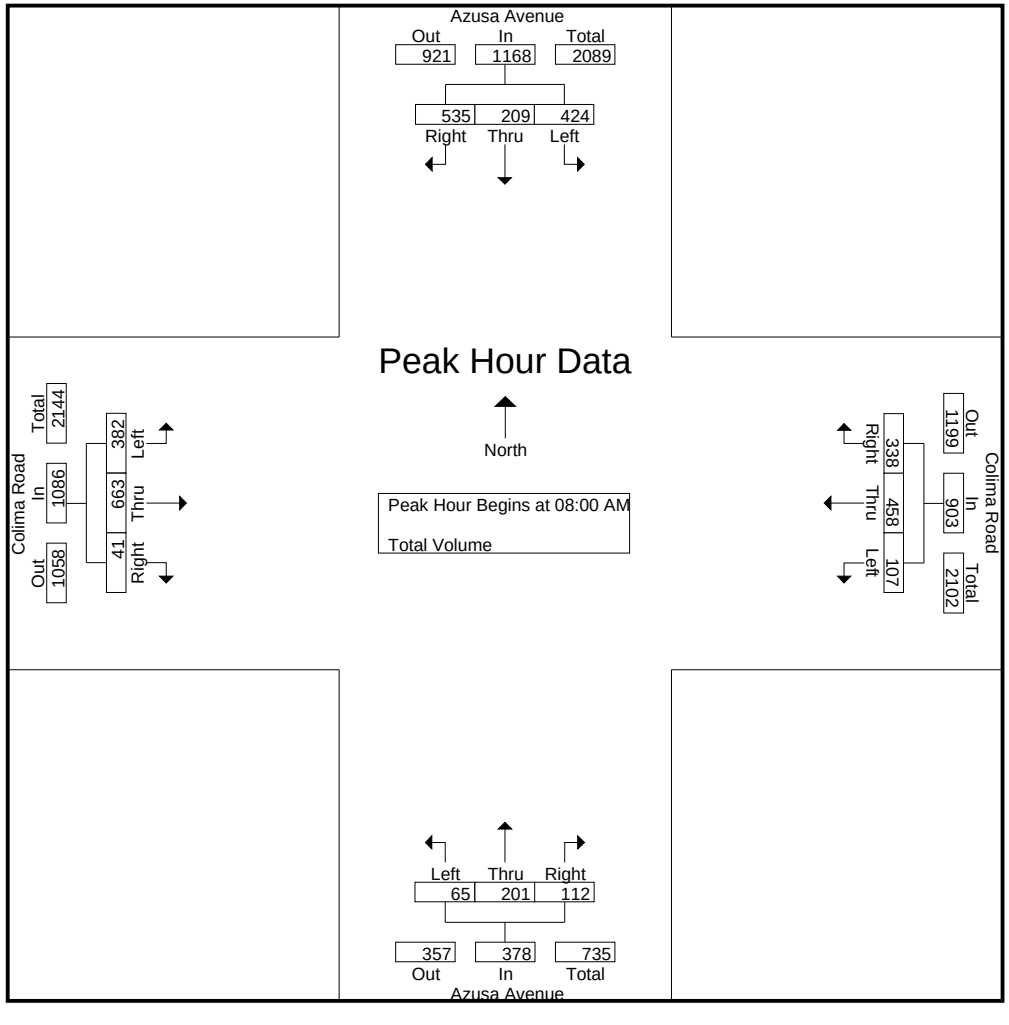
	Azusa Avenue Southbound					Colima Road Westbound					Azusa Avenue Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	69	22	185	41	276	16	86	67	31	169	7	38	18	9	63	115	84	0	0	199	81	707	788
07:15 AM	85	35	143	24	263	18	132	83	33	233	6	38	18	10	62	99	120	6	3	225	70	783	853
07:30 AM	98	34	119	26	251	22	146	73	40	241	9	37	12	6	58	128	151	8	1	287	73	837	910
07:45 AM	73	40	107	15	220	23	121	111	50	255	8	51	19	9	78	104	176	10	1	290	75	843	918
Total	325	131	554	106	1010	79	485	334	154	898	30	164	67	34	261	446	531	24	5	1001	299	3170	3469
08:00 AM	100	45	135	19	280	22	102	73	39	197	13	55	22	7	90	112	193	10	4	315	69	882	951
08:15 AM	97	45	120	23	262	29	134	96	41	259	19	44	28	12	91	100	186	6	2	292	78	904	982
08:30 AM	118	39	157	53	314	27	97	93	38	217	10	55	28	10	93	92	157	10	3	259	104	883	987
08:45 AM	109	80	123	32	312	29	125	76	18	230	23	47	34	13	104	78	127	15	5	220	68	866	934
Total	424	209	535	127	1168	107	458	338	136	903	65	201	112	42	378	382	663	41	14	1086	319	3535	3854
Grand Total	749	340	1089	233	2178	186	943	672	290	1801	95	365	179	76	639	828	1194	65	19	2087	618	6705	7323
Apprch %	34.4	15.6	50			10.3	52.4	37.3			14.9	57.1	28			39.7	57.2	3.1					
Total %	11.2	5.1	16.2		32.5	2.8	14.1	10		26.9	1.4	5.4	2.7		9.5	12.3	17.8	1		31.1	8.4	91.6	

	Azusa Avenue Southbound				Colima Road Westbound				Azusa Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	100	45	135	280	22	102	73	197	13	**55**	22	90	**112**	**193**	10	**315**	882
08:15 AM	97	45	120	262	**29**	**134**	**96**	**259**	19	44	28	91	100	186	6	292	**904**
08:30 AM	**118**	39	**157**	**314**	27	97	93	217	10	55	28	93	92	157	10	259	883
08:45 AM	109	**80**	123	312	29	125	76	230	**23**	47	**34**	**104**	78	127	**15**	220	866
Total Volume	424	209	535	1168	107	458	338	903	65	201	112	378	382	663	41	1086	3535
% App. Total	36.3	17.9	45.8		11.8	50.7	37.4		17.2	53.2	29.6		35.2	61	3.8		
PHF	.898	.653	.852	.930	.922	.854	.880	.872	.707	.914	.824	.909	.853	.859	.683	.862	.978

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	Azusa Avenue Southbound				Colima Road Westbound				Azusa Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	08:00 AM				07:30 AM				08:00 AM				07:30 AM				
+0 mins.	100	45	135	280	22	**146**	73	241	13	**55**	22	90	**128**	151	8	287	
+15 mins.	97	45	120	262	23	121	**111**	255	19	44	28	91	104	176	**10**	290	
+30 mins.	**118**	39	**157**	**314**	22	102	73	197	10	55	28	93	112	**193**	10	**315**	
+45 mins.	109	**80**	123	312	**29**	134	96	**259**	**23**	47	**34**	**104**	100	186	6	292	
Total Volume	424	209	535	1168	96	503	353	952	65	201	112	378	444	706	34	1184	
% App. Total	36.3	17.9	45.8		10.1	52.8	37.1		17.2	53.2	29.6		37.5	59.6	2.9		
PHF	.898	.653	.852	.930	.828	.861	.795	.919	.707	.914	.824	.909	.867	.915	.850	.940	

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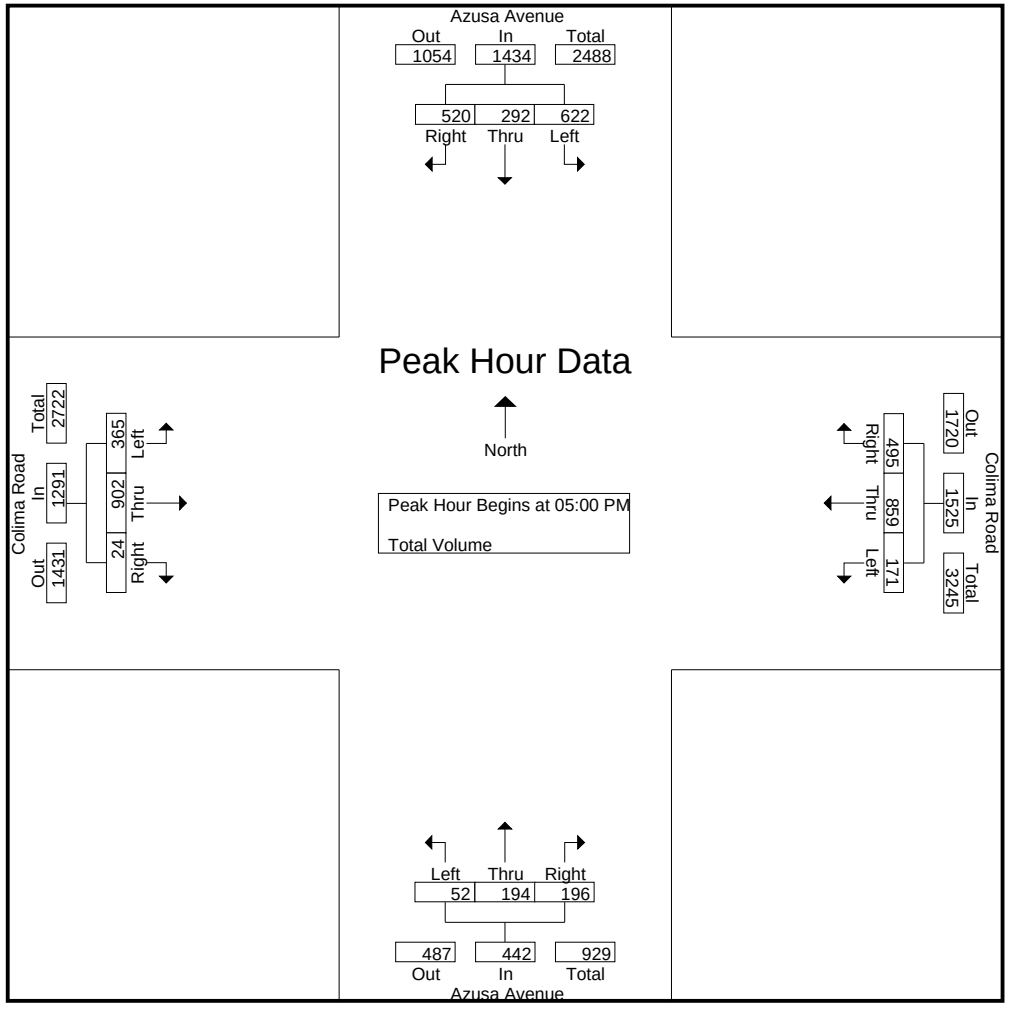
	Azusa Avenue Southbound					Colima Road Westbound					Azusa Avenue Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	131	59	127	27	317	41	197	142	59	380	11	36	39	14	86	97	239	8	5	344	105	1127	1232
04:15 PM	149	69	144	34	362	49	171	127	46	347	8	43	41	16	92	82	155	4	3	241	99	1042	1141
04:30 PM	145	56	109	26	310	42	188	116	34	346	14	48	41	12	103	101	231	7	1	339	73	1098	1171
04:45 PM	164	74	130	41	368	41	177	108	57	326	15	49	48	15	112	89	218	5	2	312	115	1118	1233
Total	589	258	510	128	1357	173	733	493	196	1399	48	176	169	57	393	369	843	24	11	1236	392	4385	4777
05:00 PM	145	54	121	38	320	31	213	130	48	374	19	49	47	11	115	76	250	5	3	331	100	1140	1240
05:15 PM	147	85	142	50	374	47	190	137	57	374	8	36	57	19	101	107	214	7	2	328	128	1177	1305
05:30 PM	168	66	121	46	355	49	228	126	45	403	15	45	41	20	101	81	189	8	3	278	114	1137	1251
05:45 PM	162	87	136	28	385	44	228	102	55	374	10	64	51	15	125	101	249	4	1	354	99	1238	1337
Total	622	292	520	162	1434	171	859	495	205	1525	52	194	196	65	442	365	902	24	9	1291	441	4692	5133
Grand Total	1211	550	1030	290	2791	344	1592	988	401	2924	100	370	365	122	835	734	1745	48	20	2527	833	9077	9910
Apprch %	43.4	19.7	36.9			11.8	54.4	33.8			12	44.3	43.7			29	69.1	1.9					
Total %	13.3	6.1	11.3		30.7	3.8	17.5	10.9		32.2	1.1	4.1	4		9.2	8.1	19.2	0.5		27.8	8.4	91.6	

	Azusa Avenue Southbound				Colima Road Westbound				Azusa Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	145	54	121	320	31	213	130	374	**19**	49	47	115	76	**250**	5	331	1140
05:15 PM	147	85	**142**	374	47	190	**137**	374	8	36	**57**	101	**107**	214	7	328	1177
05:30 PM	**168**	66	121	355	**49**	**228**	126	**403**	15	45	41	101	81	189	**8**	278	1137
05:45 PM	162	**87**	136	**385**	44	228	102	374	10	**64**	51	**125**	101	249	4	**354**	**1238**
Total Volume	622	292	520	1434	171	859	495	1525	52	194	196	442	365	902	24	1291	4692
% App. Total	43.4	20.4	36.3		11.2	56.3	32.5		11.8	43.9	44.3		28.3	69.9	1.9		
PHF	.926	.839	.915	.931	.872	.942	.903	.946	.684	.758	.860	.884	.853	.902	.750	.912	.947

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City of Hacienda Heights
N/S: Azusa Avenue
E/W: Colima Road
Weather: Clear

File Name : 14_HHS_Azusa_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 2



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City of Hacienda Heights
N/S: Azusa Avenue
E/W: Colima Road
Weather: Clear

File Name : 14_HHS_Azusa_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 3

	Azusa Avenue Southbound				Colima Road Westbound				Azusa Avenue Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				04:30 PM				
+0 mins.	145	54	121	320	31	213	130	374	**19**	49	47	115	101	231	**7**	**339**	
+15 mins.	147	85	**142**	374	47	190	**137**	374	8	36	**57**	101	89	218	5	312	
+30 mins.	**168**	66	121	355	**49**	**228**	126	**403**	15	45	41	101	76	**250**	5	331	
+45 mins.	162	**87**	136	**385**	44	228	102	374	10	**64**	51	**125**	**107**	214	7	328	
Total Volume	622	292	520	1434	171	859	495	1525	52	194	196	442	373	913	24	1310	
% App. Total	43.4	20.4	36.3		11.2	56.3	32.5		11.8	43.9	44.3		28.5	69.7	1.8		
PHF	.926	.839	.915	.931	.872	.942	.903	.946	.684	.758	.860	.884	.871	.913	.857	.966	

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City of Hacienda Heights
N/S: Albatross Road
E/W: Colima Road
Weather: Clear

File Name : 15_HHS_Albatross_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

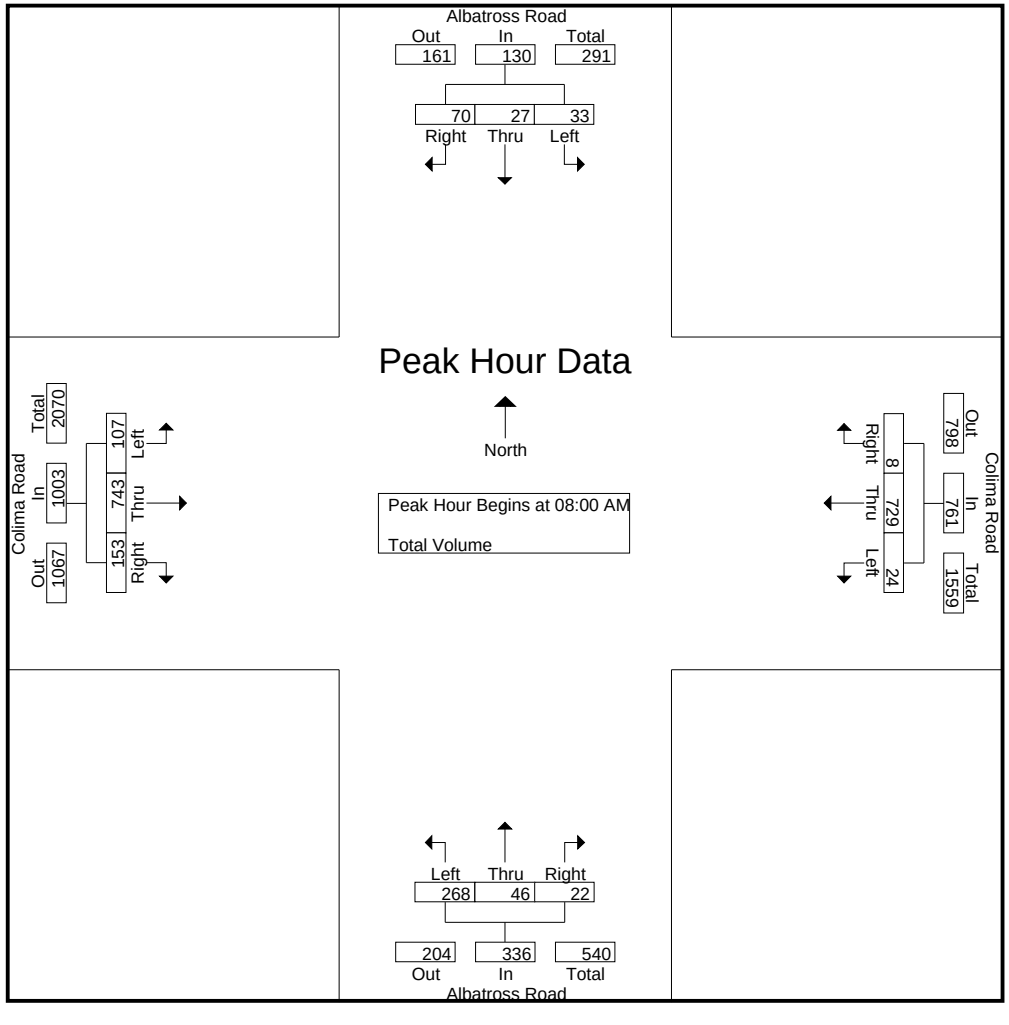
	Albatross Road Southbound					Colima Road Westbound					Albatross Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	6	4	16	9	26	5	158	2	2	165	41	6	2	1	49	4	146	11	2	161	14	401	415
07:15 AM	4	1	8	6	13	2	168	2	0	172	74	6	7	3	87	9	153	16	4	178	13	450	463
07:30 AM	2	6	16	13	24	1	201	2	1	204	59	6	7	3	72	8	195	29	3	232	20	532	552
07:45 AM	5	4	20	7	29	4	153	8	3	165	93	6	2	1	101	20	163	26	7	209	18	504	522
Total	17	15	60	35	92	12	680	14	6	706	267	24	18	8	309	41	657	82	16	780	65	1887	1952
08:00 AM	3	5	17	10	25	3	180	2	1	185	48	9	6	4	63	21	209	44	13	274	28	547	575
08:15 AM	13	7	14	9	34	9	196	1	0	206	84	14	6	3	104	28	180	39	12	247	24	591	615
08:30 AM	7	9	14	10	30	6	177	2	1	185	73	9	5	3	87	19	188	35	8	242	22	544	566
08:45 AM	10	6	25	12	41	6	176	3	1	185	63	14	5	2	82	39	166	35	17	240	32	548	580
Total	33	27	70	41	130	24	729	8	3	761	268	46	22	12	336	107	743	153	50	1003	106	2230	2336
Grand Total	50	42	130	76	222	36	1409	22	9	1467	535	70	40	20	645	148	1400	235	66	1783	171	4117	4288
Apprch %	22.5	18.9	58.6			2.5	96	1.5			82.9	10.9	6.2			8.3	78.5	13.2					
Total %	1.2	1	3.2		5.4	0.9	34.2	0.5		35.6	13	1.7	1		15.7	3.6	34	5.7		43.3	4	96	

	Albatross Road Southbound				Colima Road Westbound				Albatross Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	5	17	25	3	180	2	185	48	9	**6**	63	21	**209**	**44**	**274**	547
08:15 AM	**13**	7	14	34	**9**	**196**	1	**206**	**84**	**14**	6	**104**	28	180	39	247	**591**
08:30 AM	7	**9**	14	30	6	177	2	185	73	9	5	87	19	188	35	242	544
08:45 AM	10	6	**25**	**41**	6	176	**3**	185	63	14	5	82	**39**	166	35	240	548
Total Volume	33	27	70	130	24	729	8	761	268	46	22	336	107	743	153	1003	2230
% App. Total	25.4	20.8	53.8		3.2	95.8	1.1		79.8	13.7	6.5		10.7	74.1	15.3		
PHF	.635	.750	.700	.793	.667	.930	.667	.924	.798	.821	.917	.808	.686	.889	.869	.915	.943

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City of Hacienda Heights
N/S: Albatross Road
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Weather: Clear

File Name : 15_HHS_Albatross_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
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City of Hacienda Heights
N/S: Albatross Road
E/W: Colima Road
Weather: Clear

File Name : 15_HHS_Albatross_Colima AM
Site Code : 22119289
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	Albatross Road Southbound				Colima Road Westbound				Albatross Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	08:00 AM				08:00 AM				07:45 AM				08:00 AM				
+0 mins.	3	5	17	25	3	180	2	185	**93**	6	2	101	21	**209**	**44**	**274**	
+15 mins.	**13**	7	14	34	**9**	**196**	1	**206**	48	9	**6**	63	28	180	39	247	
+30 mins.	7	**9**	14	30	6	177	2	185	84	**14**	6	**104**	19	188	35	242	
+45 mins.	10	6	**25**	**41**	6	176	**3**	185	73	9	5	87	**39**	166	35	240	
Total Volume	33	27	70	130	24	729	8	761	298	38	19	355	107	743	153	1003	
% App. Total	25.4	20.8	53.8		3.2	95.8	1.1		83.9	10.7	5.4		10.7	74.1	15.3		
PHF	.635	.750	.700	.793	.667	.930	.667	.924	.801	.679	.792	.853	.686	.889	.869	.915	

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City of Hacienda Heights
N/S: Albatross Road
E/W: Colima Road
Weather: Clear

File Name : 15_HHS_Albatross_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

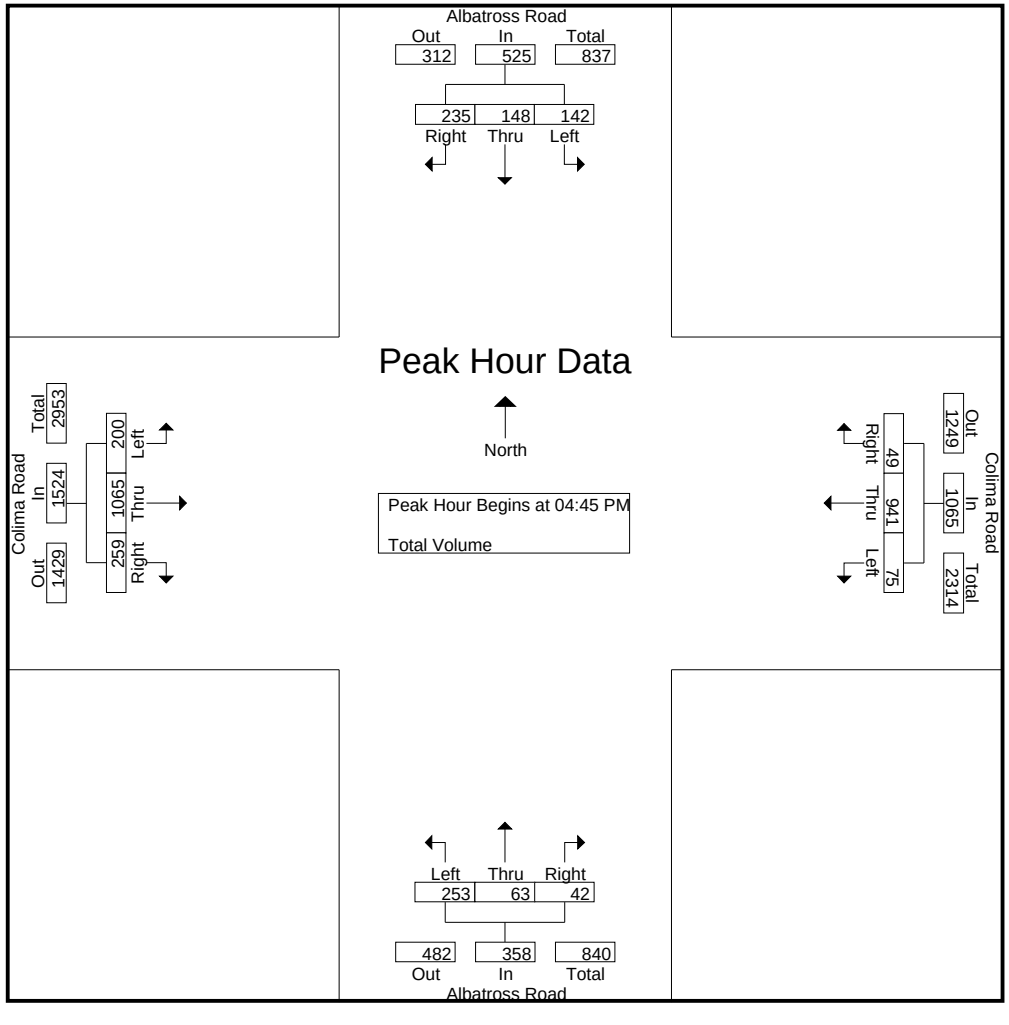
	Albatross Road Southbound					Colima Road Westbound					Albatross Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	29	27	72	30	128	11	222	11	4	244	65	11	9	3	85	49	295	53	24	397	61	854	915
04:15 PM	22	24	51	15	97	16	233	11	7	260	53	24	5	2	82	57	248	42	24	347	48	786	834
04:30 PM	25	23	59	19	107	9	224	8	1	241	59	16	4	0	79	47	263	47	21	357	41	784	825
04:45 PM	50	35	62	15	147	18	215	12	8	245	56	16	10	7	82	60	287	55	31	402	61	876	937
Total	126	109	244	79	479	54	894	42	20	990	233	67	28	12	328	213	1093	197	100	1503	211	3300	3511
05:00 PM	33	34	50	18	117	17	223	13	4	253	79	15	13	6	107	49	265	66	26	380	54	857	911
05:15 PM	33	44	60	17	137	18	237	12	8	267	52	15	8	4	75	42	260	73	28	375	57	854	911
05:30 PM	26	35	63	26	124	22	266	12	6	300	66	17	11	5	94	49	253	65	34	367	71	885	956
05:45 PM	30	52	52	15	134	20	228	17	9	265	72	17	4	1	93	63	241	72	30	376	55	868	923
Total	122	165	225	76	512	77	954	54	27	1085	269	64	36	16	369	203	1019	276	118	1498	237	3464	3701
Grand Total	248	274	469	155	991	131	1848	96	47	2075	502	131	64	28	697	416	2112	473	218	3001	448	6764	7212
Apprch %	25	27.6	47.3			6.3	89.1	4.6			72	18.8	9.2			13.9	70.4	15.8					
Total %	3.7	4.1	6.9		14.7	1.9	27.3	1.4		30.7	7.4	1.9	0.9		10.3	6.2	31.2	7		44.4	6.2	93.8	

	Albatross Road Southbound				Colima Road Westbound				Albatross Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**50**	35	62	**147**	18	215	12	245	56	16	10	82	**60**	**287**	55	**402**	876
05:00 PM	33	34	50	117	17	223	**13**	253	**79**	15	**13**	**107**	49	265	66	380	857
05:15 PM	33	**44**	60	137	18	237	12	267	52	15	8	75	42	260	**73**	375	854
05:30 PM	26	35	**63**	124	**22**	**266**	12	**300**	66	**17**	11	94	49	253	65	367	**885**
Total Volume	142	148	235	525	75	941	49	1065	253	63	42	358	200	1065	259	1524	3472
% App. Total	27	28.2	44.8		7	88.4	4.6		70.7	17.6	11.7		13.1	69.9	17		
PHF	.710	.841	.933	.893	.852	.884	.942	.888	.801	.926	.808	.836	.833	.928	.887	.948	.981

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City of Hacienda Heights
N/S: Albatross Road
E/W: Colima Road
Weather: Clear

File Name : 15_HHS_Albatross_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
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City of Hacienda Heights
N/S: Albatross Road
E/W: Colima Road
Weather: Clear

File Name : 15_HHS_Albatross_Colima PM
Site Code : 22119289
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	Albatross Road Southbound				Colima Road Westbound				Albatross Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				05:00 PM				05:00 PM				04:45 PM				
+0 mins.	**50**	35	62	**147**	17	223	13	253	**79**	15	**13**	**107**	**60**	**287**	55	**402**	
+15 mins.	33	34	50	117	18	237	12	267	52	15	8	75	49	265	66	380	
+30 mins.	33	**44**	60	137	**22**	**266**	12	**300**	66	**17**	11	94	42	260	**73**	375	
+45 mins.	26	35	**63**	124	20	228	**17**	265	72	17	4	93	49	253	65	367	
Total Volume	142	148	235	525	77	954	54	1085	269	64	36	369	200	1065	259	1524	
% App. Total	27	28.2	44.8		7.1	87.9	5		72.9	17.3	9.8		13.1	69.9	17		
PHF	.710	.841	.933	.893	.875	.897	.794	.904	.851	.941	.692	.862	.833	.928	.887	.948	

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City of Hacienda Heights
N/S: Fullerton Road
E/W: Colima Road
Weather: Clear

File Name : 16_HHS_Fullerton_Colima AM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

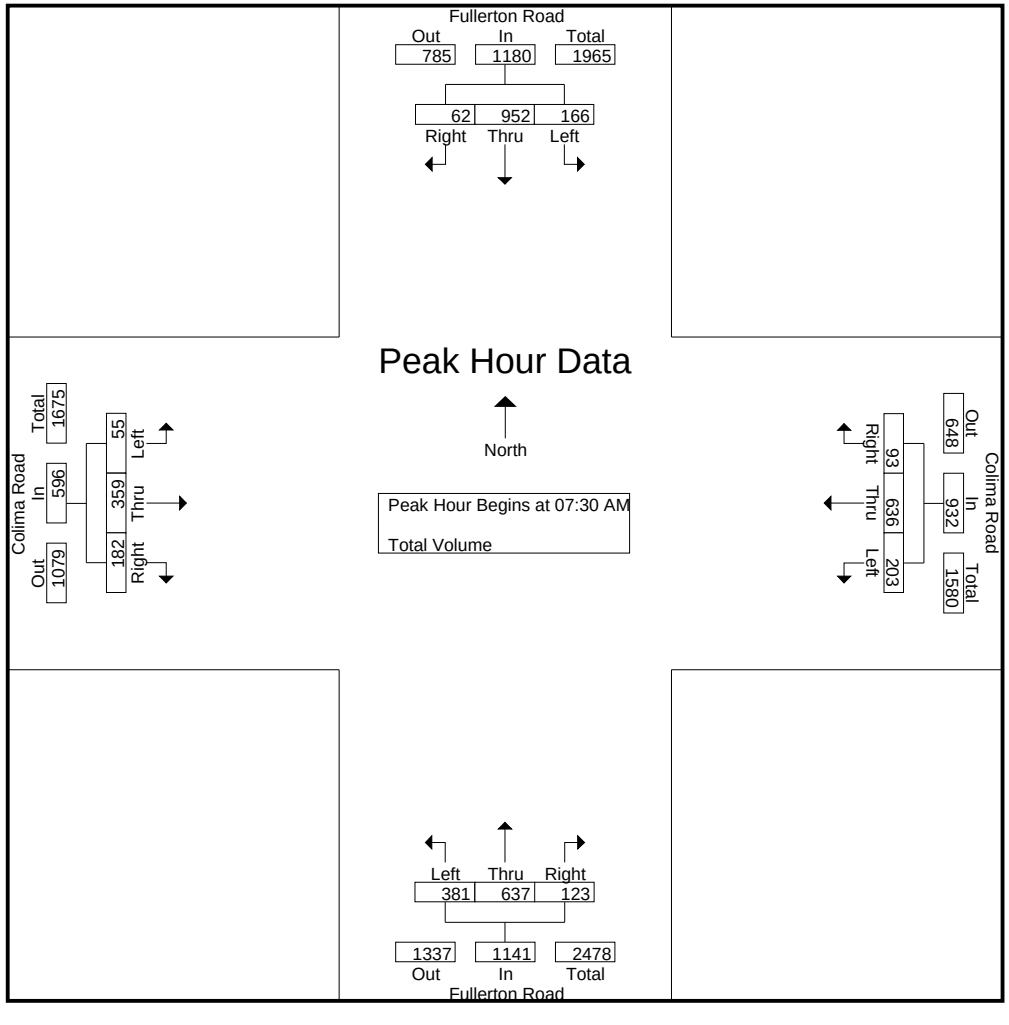
	Fullerton Road Southbound					Colima Road Westbound					Fullerton Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	19	287	3	0	309	48	128	43	18	219	71	121	16	5	208	13	55	45	17	113	40	849	889
07:15 AM	33	263	9	1	305	19	118	23	15	160	76	154	33	11	263	12	65	39	18	116	45	844	889
07:30 AM	48	293	8	0	349	41	148	24	6	213	73	162	35	17	270	17	82	62	8	161	31	993	1024
07:45 AM	45	208	15	0	268	61	161	31	4	253	104	150	39	18	293	15	85	40	9	140	31	954	985
Total	145	1051	35	1	1231	169	555	121	43	845	324	587	123	51	1034	57	287	186	52	530	147	3640	3787
08:00 AM	41	239	12	0	292	52	138	20	5	210	96	189	25	9	310	12	88	38	14	138	28	950	978
08:15 AM	32	212	27	3	271	49	189	18	4	256	108	136	24	17	268	11	104	42	11	157	35	952	987
08:30 AM	21	190	18	0	229	54	151	19	5	224	103	127	20	12	250	14	90	47	8	151	25	854	879
08:45 AM	20	179	20	3	219	40	211	20	6	271	119	125	45	25	289	8	77	31	5	116	39	895	934
Total	114	820	77	6	1011	195	689	77	20	961	426	577	114	63	1117	45	359	158	38	562	127	3651	3778
Grand Total	259	1871	112	7	2242	364	1244	198	63	1806	750	1164	237	114	2151	102	646	344	90	1092	274	7291	7565
Apprch %	11.6	83.5	5			20.2	68.9	11			34.9	54.1	11			9.3	59.2	31.5					
Total %	3.6	25.7	1.5		30.8	5	17.1	2.7		24.8	10.3	16	3.3		29.5	1.4	8.9	4.7		15	3.6	96.4	

	Fullerton Road Southbound				Colima Road Westbound				Fullerton Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**48**	**293**	8	**349**	41	148	24	213	73	162	35	270	**17**	82	**62**	**161**	**993**
07:45 AM	45	208	15	268	**61**	161	**31**	253	104	150	**39**	293	15	85	40	140	954
08:00 AM	41	239	12	292	52	138	20	210	96	**189**	25	**310**	12	88	38	138	950
08:15 AM	32	212	**27**	271	49	**189**	18	**256**	**108**	136	24	268	11	**104**	42	157	952
Total Volume	166	952	62	1180	203	636	93	932	381	637	123	1141	55	359	182	596	3849
% App. Total	14.1	80.7	5.3		21.8	68.2	10		33.4	55.8	10.8		9.2	60.2	30.5		
PHF	.865	.812	.574	.845	.832	.841	.750	.910	.882	.843	.788	.920	.809	.863	.734	.925	.969

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City of Hacienda Heights
N/S: Fullerton Road
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Weather: Clear

File Name : 16_HHS_Fullerton_Colima AM
Site Code : 22119289
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City of Hacienda Heights
N/S: Fullerton Road
E/W: Colima Road
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File Name : 16_HHS_Fullerton_Colima AM
Site Code : 22119289
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	Fullerton Road Southbound				Colima Road Westbound				Fullerton Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				08:00 AM				07:30 AM				07:30 AM				
+0 mins.	19	287	3	309	52	138	**20**	210	73	162	35	270	**17**	82	**62**	**161**	
+15 mins.	33	263	9	305	49	189	18	256	104	150	**39**	293	15	85	40	140	
+30 mins.	**48**	**293**	8	**349**	**54**	151	19	224	96	**189**	25	**310**	12	88	38	138	
+45 mins.	45	208	**15**	268	40	**211**	20	**271**	**108**	136	24	268	11	**104**	42	157	
Total Volume	145	1051	35	1231	195	689	77	961	381	637	123	1141	55	359	182	596	
% App. Total	11.8	85.4	2.8		20.3	71.7	8		33.4	55.8	10.8		9.2	60.2	30.5		
PHF	.755	.897	.583	.882	.903	.816	.963	.887	.882	.843	.788	.920	.809	.863	.734	.925	

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City of Hacienda Heights
N/S: Fullerton Road
E/W: Colima Road
Weather: Clear

File Name : 16_HHS_Fullerton_Colima PM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

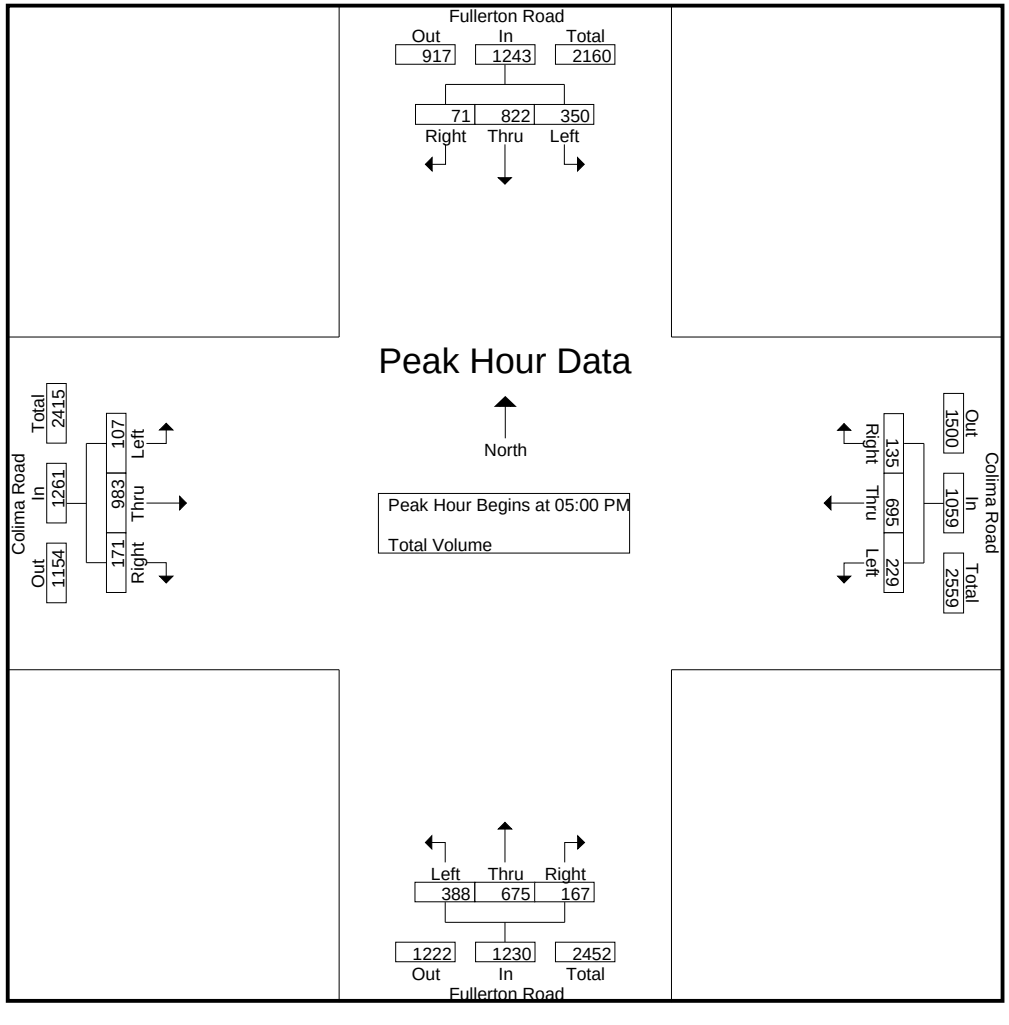
	Fullerton Road Southbound					Colima Road Westbound					Fullerton Road Northbound					Colima Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	70	179	25	0	274	52	140	27	2	219	92	180	39	22	311	16	252	54	8	322	32	1126	1158
04:15 PM	71	183	19	0	273	49	145	31	2	225	98	187	38	18	323	19	249	53	2	321	22	1142	1164
04:30 PM	69	195	16	2	280	52	142	36	5	230	102	196	40	16	338	20	242	40	5	302	28	1150	1178
04:45 PM	79	192	23	0	294	44	217	40	7	301	74	173	33	16	280	21	208	39	3	268	26	1143	1169
Total	289	749	83	2	1121	197	644	134	16	975	366	736	150	72	1252	76	951	186	18	1213	108	4561	4669
05:00 PM	68	205	20	1	293	41	196	39	4	276	96	202	40	14	338	34	271	40	6	345	25	1252	1277
05:15 PM	102	208	17	0	327	67	168	42	7	277	90	160	40	14	290	27	225	42	1	294	22	1188	1210
05:30 PM	67	197	12	0	276	65	164	25	5	254	109	178	46	24	333	25	269	42	3	336	32	1199	1231
05:45 PM	113	212	22	1	347	56	167	29	13	252	93	135	41	22	269	21	218	47	10	286	46	1154	1200
Total	350	822	71	2	1243	229	695	135	29	1059	388	675	167	74	1230	107	983	171	20	1261	125	4793	4918
Grand Total	639	1571	154	4	2364	426	1339	269	45	2034	754	1411	317	146	2482	183	1934	357	38	2474	233	9354	9587
Apprch %	27	66.5	6.5			20.9	65.8	13.2			30.4	56.8	12.8			7.4	78.2	14.4					
Total %	6.8	16.8	1.6		25.3	4.6	14.3	2.9		21.7	8.1	15.1	3.4		26.5	2	20.7	3.8		26.4	2.4	97.6	

	Fullerton Road Southbound				Colima Road Westbound				Fullerton Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	68	205	20	293	41	**196**	39	276	96	**202**	40	**338**	**34**	**271**	40	**345**	**1252**
05:15 PM	102	208	17	327	**67**	168	**42**	**277**	90	160	40	290	27	225	42	294	1188
05:30 PM	67	197	12	276	65	164	25	254	**109**	178	**46**	333	25	269	42	336	1199
05:45 PM	**113**	**212**	**22**	**347**	56	167	29	252	93	135	41	269	21	218	**47**	286	1154
Total Volume	350	822	71	1243	229	695	135	1059	388	675	167	1230	107	983	171	1261	4793
% App. Total	28.2	66.1	5.7		21.6	65.6	12.7		31.5	54.9	13.6		8.5	78	13.6		
PHF	.774	.969	.807	.896	.854	.886	.804	.956	.890	.835	.908	.910	.787	.907	.910	.914	.957

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E/W: Colima Road
Weather: Clear

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Site Code : 22119289
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City of Hacienda Heights
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	Fullerton Road Southbound				Colima Road Westbound				Fullerton Road Northbound				Colima Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				04:45 PM				04:15 PM				05:00 PM				
+0 mins.	68	205	20	293	44	**217**	40	**301**	98	187	38	323	**34**	**271**	40	**345**	
+15 mins.	102	208	17	327	41	196	39	276	**102**	196	**40**	**338**	27	225	42	294	
+30 mins.	67	197	12	276	**67**	168	**42**	277	74	173	33	280	25	269	42	336	
+45 mins.	**113**	**212**	**22**	**347**	65	164	25	254	96	**202**	40	338	21	218	**47**	286	
Total Volume	350	822	71	1243	217	745	146	1108	370	758	151	1279	107	983	171	1261	
% App. Total	28.2	66.1	5.7		19.6	67.2	13.2		28.9	59.3	11.8		8.5	78	13.6		
PHF	.774	.969	.807	.896	.810	.858	.869	.920	.907	.938	.944	.946	.787	.907	.910	.914	

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City of Hacienda Heights
N/S: Azusa Avenue
E/W: Gale Avenue
Weather: Clear

File Name : 10_HHS_Azusa_Gale AM
Site Code : 22119289
Start Date : 5/14/2019
Page No : 1

Groups Printed- Total Volume

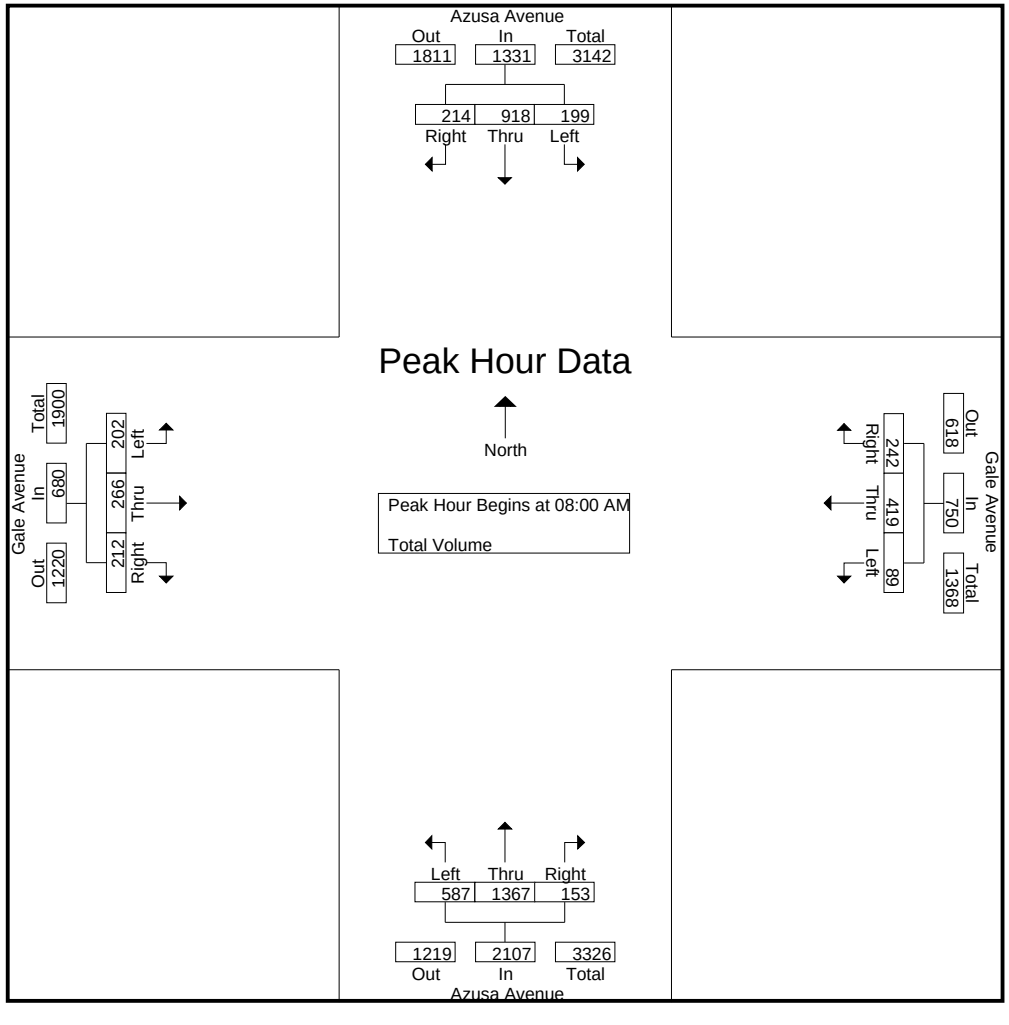
	Azusa Avenue Southbound					Gale Avenue Westbound					Azusa Avenue Northbound					Gale Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	31	341	50	10	422	9	65	28	15	102	108	210	26	9	344	19	23	30	11	72	45	940	985
07:15 AM	61	293	43	11	397	7	84	31	9	122	126	264	21	9	411	26	30	36	6	92	35	1022	1057
07:30 AM	68	325	55	7	448	9	98	41	12	148	94	293	37	6	424	48	37	58	13	143	38	1163	1201
07:45 AM	43	251	39	8	333	16	115	53	11	184	167	396	42	11	605	52	50	37	10	139	40	1261	1301
Total	203	1210	187	36	1600	41	362	153	47	556	495	1163	126	35	1784	145	140	161	40	446	158	4386	4544
08:00 AM	26	188	49	24	263	22	109	71	15	202	119	332	37	13	488	50	74	48	15	172	67	1125	1192
08:15 AM	44	231	45	10	320	15	105	43	13	163	165	338	41	9	544	58	58	48	21	164	53	1191	1244
08:30 AM	49	229	49	8	327	25	109	62	6	196	122	311	34	7	467	53	63	56	15	172	36	1162	1198
08:45 AM	80	270	71	19	421	27	96	66	6	189	181	386	41	12	608	41	71	60	10	172	47	1390	1437
Total	199	918	214	61	1331	89	419	242	40	750	587	1367	153	41	2107	202	266	212	61	680	203	4868	5071
Grand Total	402	2128	401	97	2931	130	781	395	87	1306	1082	2530	279	76	3891	347	406	373	101	1126	361	9254	9615
Apprch %	13.7	72.6	13.7			10	59.8	30.2			27.8	65	7.2			30.8	36.1	33.1					
Total %	4.3	23	4.3		31.7	1.4	8.4	4.3		14.1	11.7	27.3	3		42	3.7	4.4	4		12.2	3.8	96.2	

	Azusa Avenue Southbound				Gale Avenue Westbound				Azusa Avenue Northbound				Gale Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	26	188	49	263	22	**109**	**71**	**202**	119	332	37	488	50	**74**	48	**172**	1125
08:15 AM	44	231	45	320	15	105	43	163	165	338	**41**	544	**58**	58	48	164	1191
08:30 AM	49	229	49	327	25	109	62	196	122	311	34	467	53	63	56	172	1162
08:45 AM	**80**	**270**	**71**	**421**	**27**	96	66	189	**181**	**386**	41	**608**	41	71	**60**	172	**1390**
Total Volume	199	918	214	1331	89	419	242	750	587	1367	153	2107	202	266	212	680	4868
% App. Total	15	69	16.1		11.9	55.9	32.3		27.9	64.9	7.3		29.7	39.1	31.2		
PHF	.622	.850	.754	.790	.824	.961	.852	.928	.811	.885	.933	.866	.871	.899	.883	.988	.876

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N/S: Azusa Avenue
E/W: Gale Avenue
Weather: Clear

File Name : 10_HHS_Azusa_Gale AM
Site Code : 22119289
Start Date : 5/14/2019
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City of Hacienda Heights
N/S: Azusa Avenue
E/W: Gale Avenue
Weather: Clear

File Name : 10_HHS_Azusa_Gale AM
Site Code : 22119289
Start Date : 5/14/2019

	Azusa Avenue Southbound				Gale Avenue Westbound				Azusa Avenue Northbound				Gale Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				08:00 AM				08:00 AM				08:00 AM				
+0 mins.	31	**341**	50	422	22	**109**	**71**	**202**	119	332	37	488	50	**74**	48	**172**	
+15 mins.	61	293	43	397	15	105	43	163	165	338	**41**	544	**58**	58	48	164	
+30 mins.	**68**	325	**55**	**448**	25	109	62	196	122	311	34	467	53	63	56	172	
+45 mins.	43	251	39	333	**27**	96	66	189	**181**	**386**	41	**608**	41	71	**60**	172	
Total Volume	203	1210	187	1600	89	419	242	750	587	1367	153	2107	202	266	212	680	
% App. Total	12.7	75.6	11.7		11.9	55.9	32.3		27.9	64.9	7.3		29.7	39.1	31.2		
PHF	.746	.887	.850	.893	.824	.961	.852	.928	.811	.885	.933	.866	.871	.899	.883	.988	

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City of Hacienda Heights
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E/W: Gale Avenue
Weather: Clear

File Name : 10_HHS_Azusa_Gale PM
Site Code : 22119289
Start Date : 5/14/2019
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Groups Printed- Total Volume

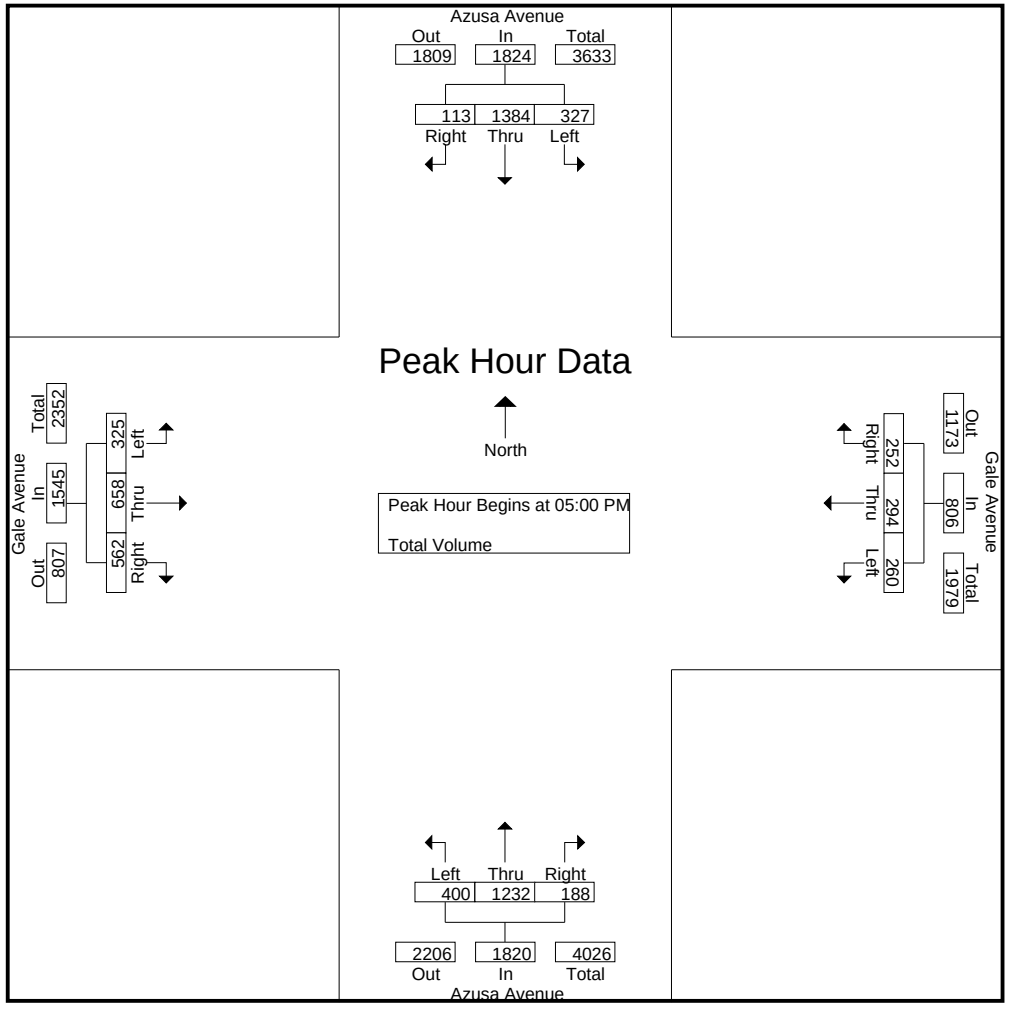
	Azusa Avenue Southbound					Gale Avenue Westbound					Azusa Avenue Northbound					Gale Avenue Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	73	338	44	17	455	43	77	76	27	196	110	309	48	10	467	60	130	93	16	283	70	1401	1471
04:15 PM	70	305	31	12	406	50	83	63	21	196	95	322	50	7	467	64	121	103	9	288	49	1357	1406
04:30 PM	61	276	39	16	376	46	73	45	21	164	106	293	45	10	444	81	119	95	21	295	68	1279	1347
04:45 PM	75	339	41	14	455	58	85	50	23	193	81	306	34	11	421	57	141	108	16	306	64	1375	1439
Total	279	1258	155	59	1692	197	318	234	92	749	392	1230	177	38	1799	262	511	399	62	1172	251	5412	5663
05:00 PM	79	331	22	8	432	53	60	60	35	173	90	319	41	7	450	84	156	145	31	385	81	1440	1521
05:15 PM	71	351	32	13	454	72	69	61	11	202	98	294	63	22	455	63	161	122	10	346	56	1457	1513
05:30 PM	105	378	33	17	516	59	62	62	23	183	109	323	44	10	476	97	172	147	6	416	56	1591	1647
05:45 PM	72	324	26	13	422	76	103	69	22	248	103	296	40	13	439	81	169	148	16	398	64	1507	1571
Total	327	1384	113	51	1824	260	294	252	91	806	400	1232	188	52	1820	325	658	562	63	1545	257	5995	6252
Grand Total	606	2642	268	110	3516	457	612	486	183	1555	792	2462	365	90	3619	587	1169	961	125	2717	508	11407	11915
Apprch %	17.2	75.1	7.6			29.4	39.4	31.3			21.9	68	10.1			21.6	43	35.4					
Total %	5.3	23.2	2.3		30.8	4	5.4	4.3		13.6	6.9	21.6	3.2		31.7	5.1	10.2	8.4		23.8	4.3	95.7	

	Azusa Avenue Southbound				Gale Avenue Westbound				Azusa Avenue Northbound				Gale Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	79	331	22	432	53	60	60	173	90	319	41	450	84	156	145	385	1440
05:15 PM	71	351	32	454	72	69	61	202	98	294	**63**	455	63	161	122	346	1457
05:30 PM	**105**	**378**	**33**	**516**	59	62	62	183	**109**	**323**	44	**476**	**97**	**172**	147	**416**	**1591**
05:45 PM	72	324	26	422	**76**	**103**	**69**	**248**	103	296	40	439	81	169	**148**	398	1507
Total Volume	327	1384	113	1824	260	294	252	806	400	1232	188	1820	325	658	562	1545	5995
% App. Total	17.9	75.9	6.2		32.3	36.5	31.3		22	67.7	10.3		21	42.6	36.4		
PHF	.779	.915	.856	.884	.855	.714	.913	.813	.917	.954	.746	.956	.838	.956	.949	.928	.942

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File Name : 10_HHS_Azusa_Gale PM
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Start Date : 5/14/2019

	Azusa Avenue Southbound				Gale Avenue Westbound				Azusa Avenue Northbound				Gale Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	75	339	**41**	455	53	60	60	173	90	319	41	450	84	156	145	385	
+15 mins.	79	331	22	432	72	69	61	202	98	294	**63**	455	63	161	122	346	
+30 mins.	71	351	32	454	59	62	62	183	**109**	**323**	44	**476**	**97**	**172**	147	**416**	
+45 mins.	**105**	**378**	33	**516**	**76**	**103**	**69**	**248**	103	296	40	439	81	169	**148**	398	
Total Volume	330	1399	128	1857	260	294	252	806	400	1232	188	1820	325	658	562	1545	
% App. Total	17.8	75.3	6.9		32.3	36.5	31.3		22	67.7	10.3		21	42.6	36.4		
PHF	.786	.925	.780	.900	.855	.714	.913	.813	.917	.954	.746	.956	.838	.956	.949	.928	

Appendix B. Intersection LOS Worksheets, Existing Conditions

Appendices

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Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\Existing AM.pdf

Scenario 1 EX AM
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	NB Right	0.661	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.046	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	WB Thru	0.755	-	C
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Thru	0.724	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.684	-	B
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Thru	1.048	60.1	F
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	EB Thru	0.706	-	C
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Thru	0.182	704.6	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.555	-	A
10	Azusa Ave at Gale Ave	Signalized	ICU 1	NB Thru	0.788	-	C
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.675	13.6	B
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Left	0.731	24.4	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.841	-	D
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.835	-	D
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.636	-	B
16	Fullerton Av at Colima Road	Signalized	ICU 1	SB Thru	0.753	-	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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	1	1157	200	201	995	6	4	2	8	242	2	382
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]	1	1157	200	201	995	6	4	2	8	242	2	382
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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	316	55	55	272	2	1	1	2	66	1	104
Total Analysis Volume [veh/h]	1	1266	219	220	1089	7	4	2	9	265	2	418
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.31	0.08	0.23	0.23	0.00	0.01	0.01	0.17	0.17	0.13
Intersection LOS	B											
Intersection V/C	0.661											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.046

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	24	74	23	104	48	620	548	780	8	29	826	62
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]	24	74	23	104	48	620	548	780	8	29	826	62
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
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]	6	19	6	27	13	163	144	205	2	8	217	16
Total Analysis Volume [veh/h]	25	78	24	109	50	651	575	818	8	30	867	65
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.07	0.02	0.41	0.20	0.17	0.17	0.01	0.32	0.32
Intersection LOS	F											
Intersection V/C	1.046											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.755

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	161	449	60	115	433	143	124	263	121	118	491	221
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]	161	449	60	115	433	143	124	263	121	118	491	221
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
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]	45	127	17	32	122	40	35	74	34	33	138	62
Total Analysis Volume [veh/h]	182	506	68	130	488	161	140	297	136	133	554	249
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.18	0.18	0.08	0.20	0.20	0.09	0.14	0.14	0.08	0.25	0.25
Intersection LOS	C											
Intersection V/C	0.755											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.724

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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]	8	46	1	116	9	83	231	755	7	1	822	222
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
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]	2	12	0	31	2	22	62	204	2	0	222	60
Total Analysis Volume [veh/h]	9	50	1	125	10	90	249	815	8	1	888	240
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.16	0.26	0.26	0.00	0.35	0.35
Intersection LOS	C											
Intersection V/C	0.724											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.684

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	48	127	40	312	48	60	60	915	25	18	836	398
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]	48	127	40	312	48	60	60	915	25	18	836	398
Peak Hour Factor	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930
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]	13	36	11	87	13	17	17	256	7	5	234	111
Total Analysis Volume [veh/h]	54	142	45	349	54	67	67	1025	28	20	936	446
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.11	0.13	0.04	0.04	0.33	0.33	0.01	0.29	0.28
Intersection LOS	B											
Intersection V/C	0.684											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	60.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.048

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	114	187	19	18	138	11	77	73	169	60	138	53
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]	114	187	19	18	138	11	77	73	169	60	138	53
Peak Hour Factor	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120
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	66	7	6	48	4	27	26	59	21	48	19
Total Analysis Volume [veh/h]	160	263	27	25	194	15	108	103	237	84	194	74
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	450	394	454	426
Degree of Utilization, x	1.05	0.59	0.99	0.83

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	14.36	3.70	12.61	7.76
95th-Percentile Queue Length [ft]	358.88	92.57	315.23	194.11
Approach Delay [s/veh]	86.14	24.65	67.55	40.74
Approach LOS	F	C	F	E
Intersection Delay [s/veh]	60.06			
Intersection LOS	F			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	54	80	22	98	38	154	110	1168	10	12	1053	62
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]	54	80	22	98	38	154	110	1168	10	12	1053	62
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]	15	22	6	27	11	43	30	323	3	3	291	17
Total Analysis Volume [veh/h]	60	88	24	108	42	170	122	1292	11	13	1165	69
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.07	0.07	0.03	0.11	0.08	0.41	0.41	0.01	0.39	0.39
Intersection LOS	C											
Intersection V/C	0.706											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	704.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.182

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	27	3	36	1	1	63	133	1173	14	24	1038	7
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]	27	3	36	1	1	63	133	1173	14	24	1038	7
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
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]	7	1	9	0	0	17	35	308	4	6	273	2
Total Analysis Volume [veh/h]	28	3	38	1	1	66	140	1232	15	25	1090	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.47	0.18	0.09	0.05	0.06	0.14	0.22	0.01	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	674.55	704.64	494.12	182.33	229.47	16.73	12.31	0.00	0.00	11.81	0.00	0.00
Movement LOS	F	F	F	F	F	C	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	7.24	7.24	7.24	0.95	0.95	0.95	0.84	0.00	0.00	0.14	0.00	0.00
95th-Percentile Queue Length [ft/ln]	181.02	181.02	181.02	23.71	23.71	23.71	21.05	0.00	0.00	3.54	0.00	0.00
d_A, Approach Delay [s/veh]	576.49			22.29			1.24			0.26		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	16.37											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.555

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	7	6	52	13	40	65	1143	29	19	996	33
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]	20	7	6	52	13	40	65	1143	29	19	996	33
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]	5	2	2	14	3	11	17	301	8	5	263	9
Total Analysis Volume [veh/h]	21	7	6	55	14	42	69	1206	31	20	1051	35
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.00	0.03	0.04	0.03	0.04	0.39	0.39	0.01	0.34	0.34
Intersection LOS	A											
Intersection V/C	0.555											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.788

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	587	1367	153	199	918	214	202	266	212	89	419	242
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]	587	1367	153	199	918	214	202	266	212	89	419	242
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
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]	168	390	44	57	262	61	58	76	61	25	120	69
Total Analysis Volume [veh/h]	670	1561	175	227	1048	244	231	304	242	102	478	276
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.33	0.11	0.08	0.22	0.15	0.08	0.10	0.08	0.04	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.788											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1375	289	0	951	254	0	0	0	592	0	738
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	1375	289	0	951	254	0	0	0	592	0	738
Peak Hour Factor	1.0000	0.9000	0.9000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	1.0000	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]	0	382	80	0	264	71	0	0	0	164	0	205
Total Analysis Volume [veh/h]	0	1528	321	0	1057	282	0	0	0	658	0	820
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	59	0	0	59	0	0	0	0	61	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	52	52	52	52	52		52	52	52
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]	22	22	22	22	22		22	22	22
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43		0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.32	0.33	0.22	0.23	0.20		0.31	0.33	0.34
s, saturation flow rate [veh/h]	3204	1541	1431	4584	1431		1603	1484	1431
c, Capacity [veh/h]	1363	656	608	1950	608		674	624	601
d1, Uniform Delay [s]	12.54	12.78	11.03	11.12	10.65		12.57	13.03	13.28
k, delay calibration	0.11	0.14	0.11	0.11	0.11		0.11	0.14	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	2.53	0.71	0.24	0.55		1.55	2.89	3.97
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	0.75	0.78	0.53	0.54	0.46		0.73	0.79	0.82
d, Delay for Lane Group [s/veh]	13.38	15.30	11.74	11.35	11.21		14.12	15.93	17.25
Lane Group LOS	B	B	B	B	B		B	B	B
Critical Lane Group	No	Yes	No	No	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.16	4.54	2.34	2.50	1.98		4.16	4.51	4.75
50th-Percentile Queue Length [ft/ln]	104.07	113.49	58.49	62.45	49.42		103.96	112.79	118.73
95th-Percentile Queue Length [veh/ln]	7.49	8.03	4.21	4.50	3.56		7.48	8.00	8.32
95th-Percentile Queue Length [ft/ln]	187.33	200.85	105.28	112.42	88.95		187.12	199.88	208.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.75	11.74	0.00	11.35	11.21	0.00	0.00	0.00	14.58	0.00	16.72
Movement LOS		B	B		B	B				B		B
d_A, Approach Delay [s/veh]	13.62			11.32			0.00			15.77		
Approach LOS	B			B			A			B		
d_I, Intersection Delay [s/veh]	13.64											
Intersection LOS	B											
Intersection V/C	0.675											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.666
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	917	917	0	0
d_b, Bicycle Delay [s]	17.60	17.60	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	2.577	2.296	4.132	6.571
Bicycle LOS	B	B	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1442	7	0	1177	494	784	190	292	0	0	137
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	1442	7	0	1177	494	784	190	292	0	0	137
Peak Hour Factor	1.0000	0.9440	0.9440	1.0000	0.9440	0.9440	0.9440	0.9440	0.9440	1.0000	1.0000	0.9440
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	382	2	0	312	131	208	50	77	0	0	36
Total Analysis Volume [veh/h]	0	1528	7	0	1247	523	831	201	309	0	0	145
Presence of On-Street Parking	No		No	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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	0	4
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	48	0	0	48	0	0	72	0	0	0	72
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
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	2.00	2.00	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]	64	64	64	64	48	48	48	48
g / C, Green / Cycle	0.53	0.53	0.53	0.53	0.40	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.25	0.23	0.20	0.37	0.33	0.37	0.33	0.10
s, saturation flow rate [veh/h]	4584	1678	6113	1431	1275	1273	1366	1431
c, Capacity [veh/h]	2440	893	3253	761	555	567	548	574
d1, Uniform Delay [s]	17.53	17.03	16.50	20.70	33.75	34.77	32.07	23.94
k, delay calibration	0.50	0.50	0.50	0.50	0.16	0.21	0.16	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]	0.66	1.51	0.34	5.01	3.42	5.64	4.51	0.23
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	0.47	0.43	0.38	0.69	0.77	0.82	0.82	0.25
d, Delay for Lane Group [s/veh]	18.19	18.54	16.84	25.71	37.17	40.41	36.58	24.17
Lane Group LOS	B	B	B	C	D	D	D	C
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.30	6.35	4.78	10.96	11.89	13.68	12.30	2.83
50th-Percentile Queue Length [ft/ln]	157.53	158.72	119.50	273.96	297.19	341.90	307.52	70.79
95th-Percentile Queue Length [veh/ln]	10.42	10.48	8.37	16.39	17.54	19.74	18.05	5.10
95th-Percentile Queue Length [ft/ln]	260.45	262.03	209.14	409.68	438.55	493.53	451.31	127.42

Movement, Approach, & Intersection Results

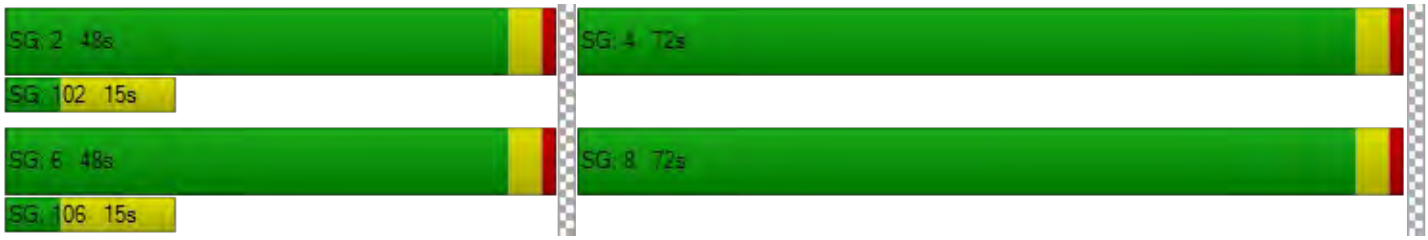
d_M, Delay for Movement [s/veh]	0.00	18.28	18.54	0.00	16.84	25.71	38.74	37.73	36.58	0.00	0.00	24.17
Movement LOS		B	B		B	C	D	D	D			C
d_A, Approach Delay [s/veh]	18.28			19.46			38.10			24.17		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	24.44											
Intersection LOS	C											
Intersection V/C	0.731											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.525	2.051
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1133	0
d_b, Bicycle Delay [s]	24.07	24.07	11.27	60.00
l_b,int, Bicycle LOS Score for Intersection	2.193	2.290	2.666	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
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]	35	890	58	163	993	333	456	109	49	57	38	85
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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]	10	245	16	45	273	92	125	30	13	16	10	23
Total Analysis Volume [veh/h]	39	979	64	179	1092	366	502	120	54	63	42	94
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.16	0.16	0.06	0.34	0.34	0.31	0.11	0.11	0.04	0.07	0.06
Intersection LOS	D											
Intersection V/C	0.841											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.835

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	65	201	112	424	209	535	382	663	41	107	458	338
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]	65	201	112	424	209	535	382	663	41	107	458	338
Peak Hour Factor	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780
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]	17	51	29	108	53	137	98	169	10	27	117	86
Total Analysis Volume [veh/h]	66	206	115	434	214	547	391	678	42	109	468	346
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.06	0.07	0.15	0.13	0.34	0.14	0.21	0.03	0.07	0.15	0.22
Intersection LOS	D											
Intersection V/C	0.835											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.636

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	268	46	22	33	27	70	107	743	153	24	729	8
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	46	22	33	27	70	107	743	153	24	729	8
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]	71	12	6	9	7	19	28	197	41	6	193	2
Total Analysis Volume [veh/h]	284	49	23	35	29	74	113	788	162	25	773	8
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.18	0.03	0.01	0.02	0.02	0.05	0.07	0.25	0.10	0.02	0.24	0.01
Intersection LOS	B											
Intersection V/C	0.636											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.753

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	381	637	123	166	952	62	55	359	182	203	636	93
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]	381	637	123	166	952	62	55	359	182	203	636	93
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	98	164	32	43	246	16	14	93	47	52	164	24
Total Analysis Volume [veh/h]	393	657	127	171	982	64	57	370	188	209	656	96
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]	10.00

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

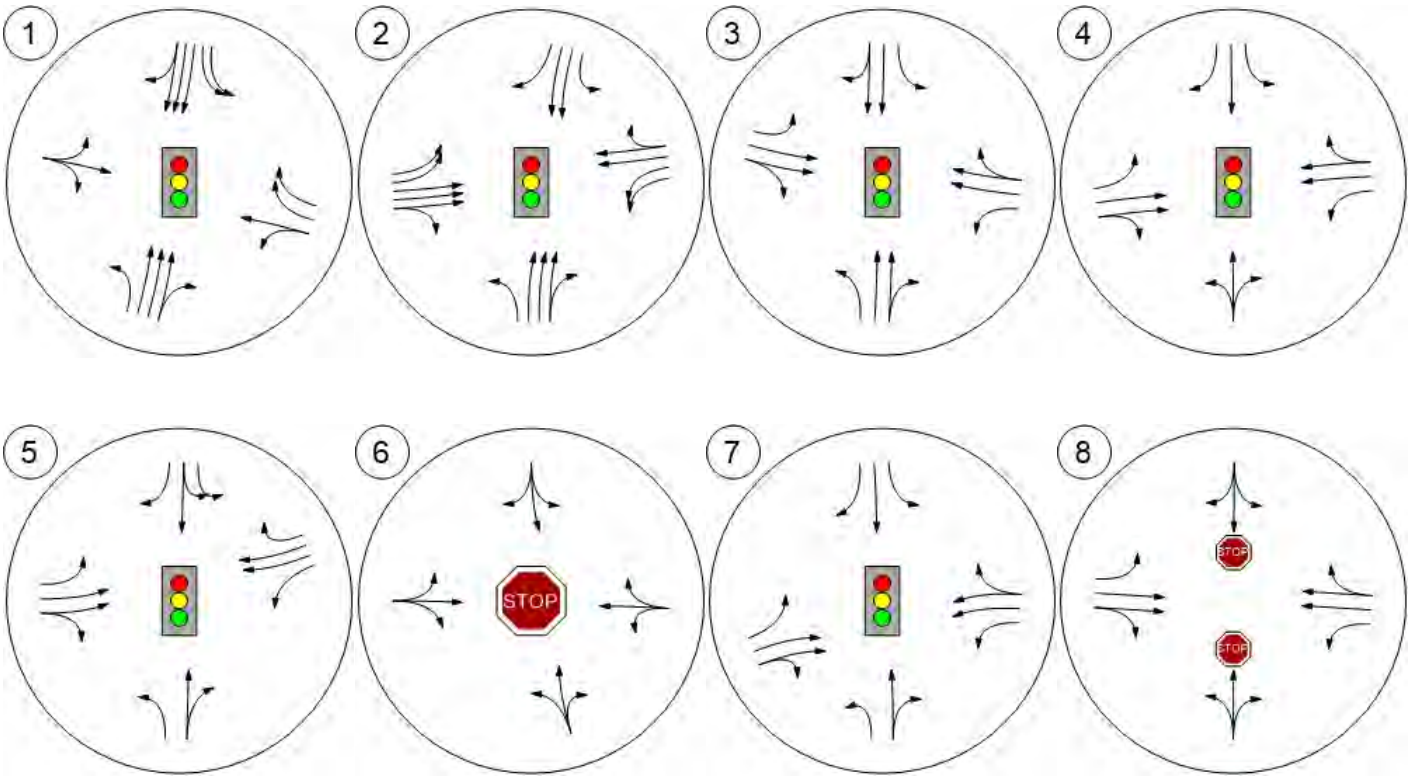
V/C, Movement V/C Ratio	0.14	0.21	0.08	0.06	0.33	0.33	0.02	0.12	0.12	0.07	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.753											

Study Intersections



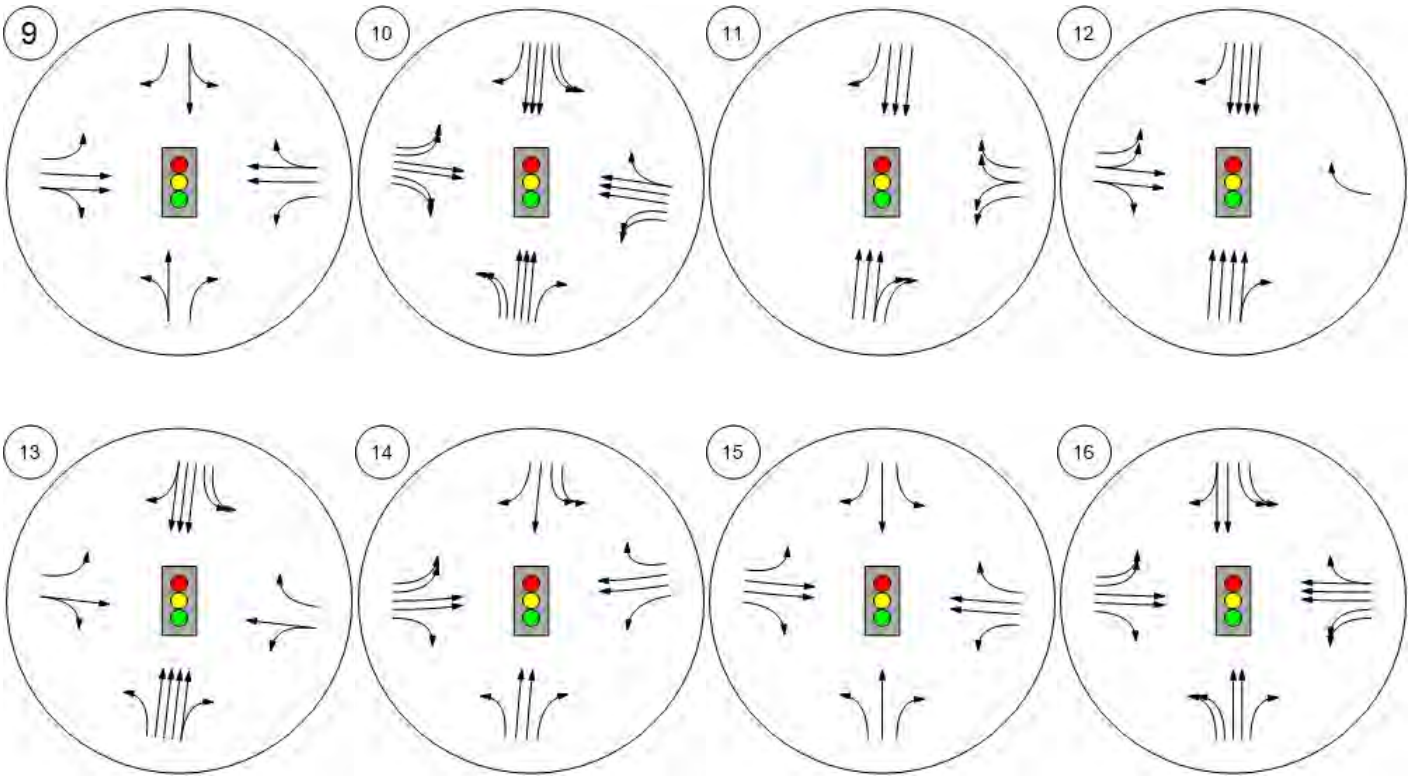
Lane Configuration and Traffic Control





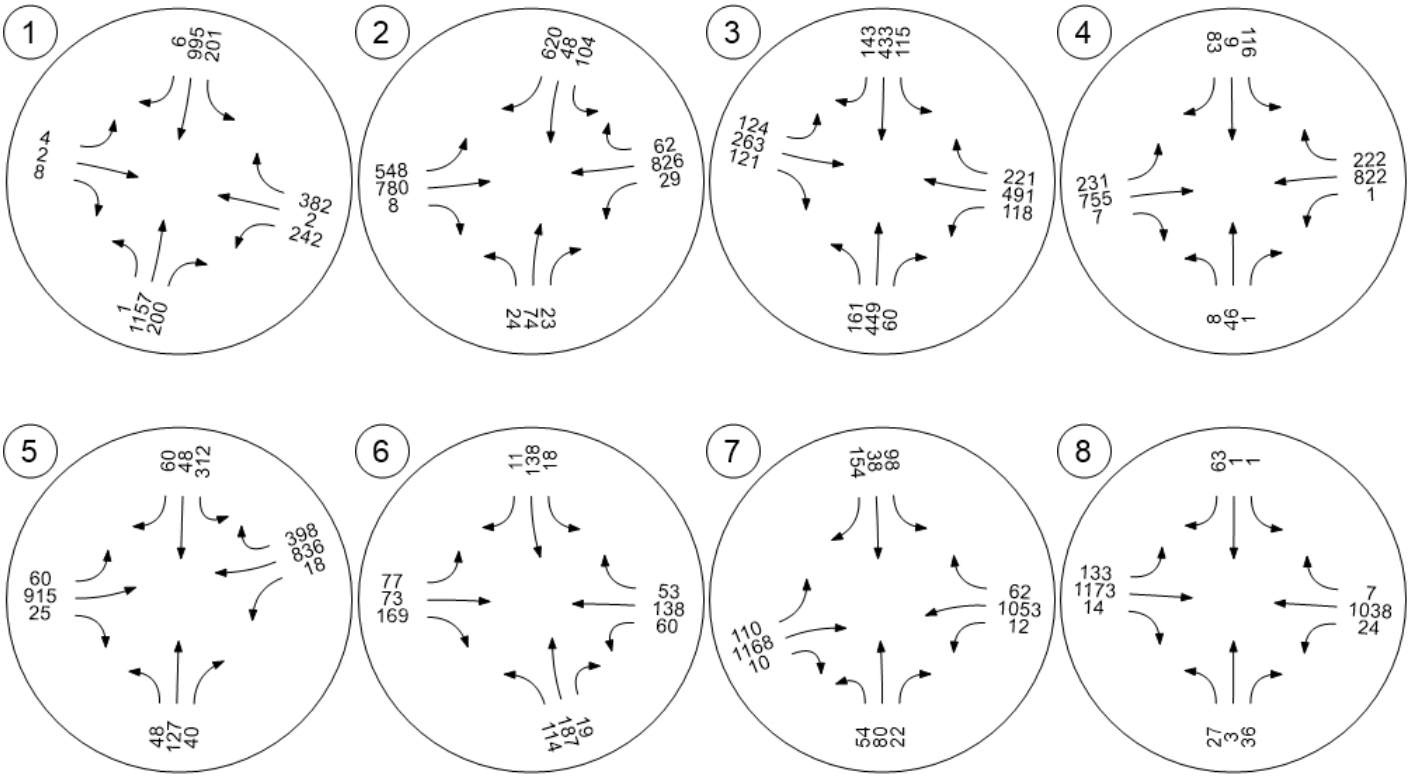
Lane Configuration and Traffic Control





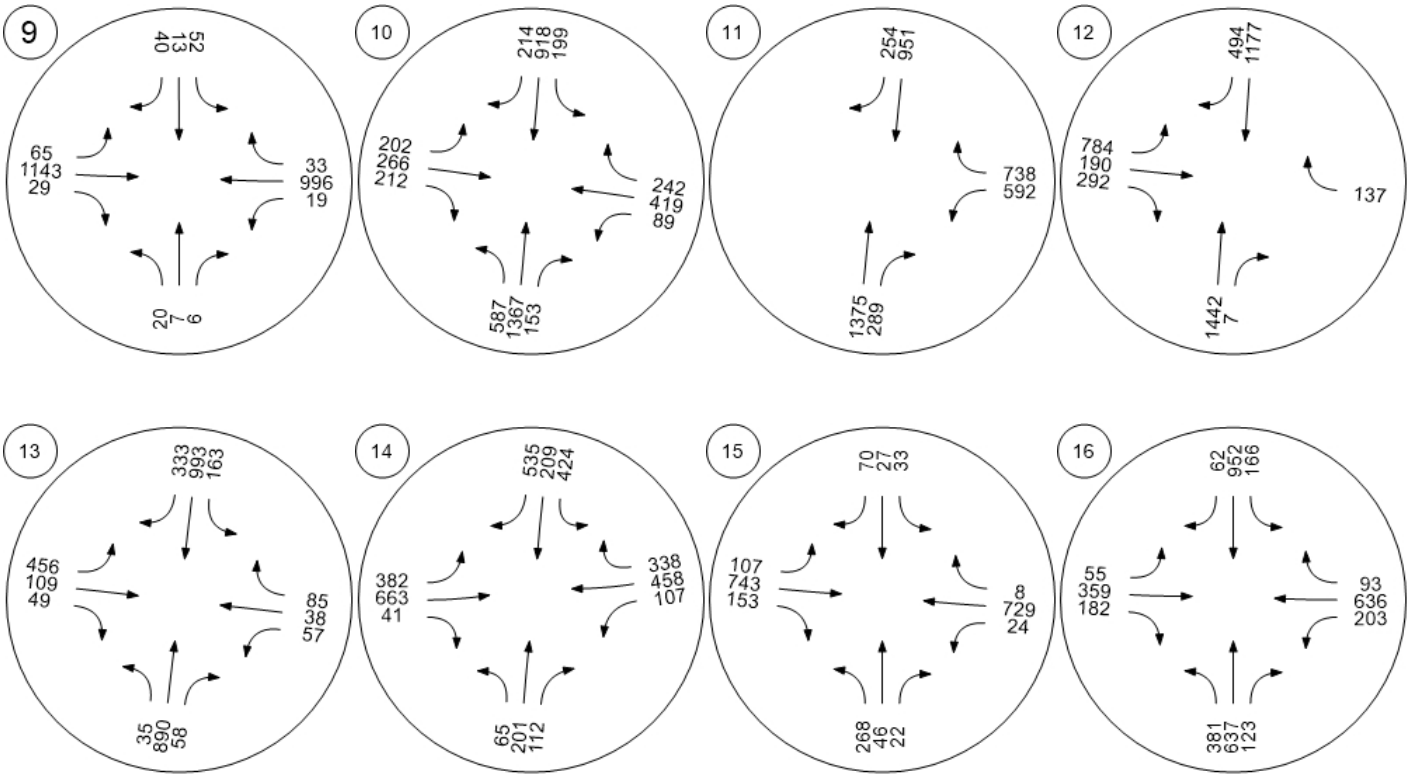
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\Existing PM.pdf

Scenario 2 EX PM
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	SB Thru	0.649	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.219	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	EB Right	0.620	-	B
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	EB Thru	0.703	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Right	0.682	-	B
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Left	0.310	9.5	A
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	WB Thru	0.657	-	B
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Left	2.081	1,314.0	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	WB Right	0.735	-	C
10	Azusa Ave at Gale Ave	Signalized	ICU 1	SB Thru	0.868	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	SB Right	0.930	34.3	C
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Right	0.629	22.4	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.896	-	D
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.938	-	E
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.838	-	D
16	Fullerton Av at Colima Road	Signalized	ICU 1	EB Thru	0.936	-	E

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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	6	962	189	450	1190	5	1	1	3	201	0	174
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]	6	962	189	450	1190	5	1	1	3	201	0	174
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]	2	252	49	118	312	1	0	0	1	53	0	46
Total Analysis Volume [veh/h]	6	1007	198	471	1246	5	1	1	3	210	0	182
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.25	0.25	0.16	0.26	0.26	0.00	0.00	0.00	0.13	0.00	0.06
Intersection LOS	B											
Intersection V/C	0.649											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.219

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	47	75	62	132	106	693	803	1218	19	56	799	63
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]	47	75	62	132	106	693	803	1218	19	56	799	63
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	13	20	17	35	28	186	216	327	5	15	215	17
Total Analysis Volume [veh/h]	51	81	67	142	114	745	863	1310	20	60	859	68
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.04	0.47	0.30	0.28	0.28	0.02	0.32	0.32
Intersection LOS	F											
Intersection V/C	1.219											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.620

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	61	478	74	117	384	117	139	461	134	70	314	114
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]	61	478	74	117	384	117	139	461	134	70	314	114
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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]	17	131	20	32	105	32	38	126	37	19	86	31
Total Analysis Volume [veh/h]	67	523	81	128	420	128	152	504	147	77	344	125
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.19	0.19	0.08	0.17	0.17	0.10	0.20	0.20	0.05	0.15	0.15
Intersection LOS	B											
Intersection V/C	0.620											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.703

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	6	9	3	106	17	151	322	1070	9	3	773	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]	6	9	3	106	17	151	322	1070	9	3	773	79
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	2	2	1	28	5	40	86	285	2	1	206	21
Total Analysis Volume [veh/h]	6	10	3	113	18	161	343	1141	10	3	824	84
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.07	0.01	0.10	0.21	0.36	0.36	0.00	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.703											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.682

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	12	49	36	365	102	35	39	1031	35	44	958	407
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]	12	49	36	365	102	35	39	1031	35	44	958	407
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	3	13	9	95	27	9	10	268	9	11	249	106
Total Analysis Volume [veh/h]	12	51	37	379	106	36	41	1072	36	46	996	423
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.06	0.06	0.12	0.15	0.02	0.03	0.35	0.35	0.03	0.31	0.26
Intersection LOS	B											
Intersection V/C	0.682											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-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):	0.310

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	141	44	30	3	21	9	17	105	109	21	66	6
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]	141	44	30	3	21	9	17	105	109	21	66	6
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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]	38	12	8	1	6	2	5	28	29	6	18	2
Total Analysis Volume [veh/h]	151	47	32	3	22	10	18	112	117	22	71	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	742	731	805	732
Degree of Utilization, x	0.31	0.05	0.31	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.32	0.15	1.30	0.47
95th-Percentile Queue Length [ft]	33.04	3.77	32.61	11.68
Approach Delay [s/veh]	10.02	8.18	9.44	8.69
Approach LOS	B	A	A	A
Intersection Delay [s/veh]	9.47			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	22	17	69	20	67	52	1345	20	27	1278	95
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]	20	22	17	69	20	67	52	1345	20	27	1278	95
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	5	6	4	18	5	18	14	354	5	7	336	25
Total Analysis Volume [veh/h]	21	23	18	73	21	70	55	1414	21	28	1344	100
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.03	0.05	0.01	0.04	0.03	0.45	0.45	0.02	0.45	0.45
Intersection LOS	B											
Intersection V/C	0.657											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,314.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.081

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	13	0	21	3	1	26	133	1292	24	56	1417	26
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]	13	0	21	3	1	26	133	1292	24	56	1417	26
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]	3	0	6	1	0	7	36	347	6	15	380	7
Total Analysis Volume [veh/h]	14	0	23	3	1	28	143	1386	26	60	1520	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	2.08	0.00	0.06	0.41	0.22	0.08	0.34	0.01	0.00	0.13	0.02	0.00
d_M, Delay for Movement [s/veh]	1313.95	1577.93	788.23	612.26	913.10	125.67	17.73	0.00	0.00	13.59	0.00	0.00
Movement LOS	F	F	F	F	F	F	C	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	5.16	5.16	5.16	2.77	2.77	2.77	1.46	0.00	0.00	0.43	0.00	0.00
95th-Percentile Queue Length [ft/ln]	128.92	128.92	128.92	69.16	69.16	69.16	36.59	0.00	0.00	10.66	0.00	0.00
d_A, Approach Delay [s/veh]	987.15			195.90			1.63			0.51		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	14.28											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	147	12	42	20	18	23	31	1198	84	85	1331	55
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]	147	12	42	20	18	23	31	1198	84	85	1331	55
Peak Hour Factor	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960
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]	41	3	12	6	5	6	9	334	23	24	371	15
Total Analysis Volume [veh/h]	164	13	47	22	20	26	35	1337	94	95	1485	61
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.11	0.03	0.01	0.03	0.02	0.02	0.45	0.45	0.06	0.48	0.48
Intersection LOS	C											
Intersection V/C	0.735											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.868

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	400	1232	188	327	1384	113	325	658	562	260	294	252
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]	400	1232	188	327	1384	113	325	658	562	260	294	252
Peak Hour Factor	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420
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]	106	327	50	87	367	30	86	175	149	69	78	67
Total Analysis Volume [veh/h]	425	1308	200	347	1469	120	345	699	597	276	312	268
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.27	0.13	0.12	0.31	0.08	0.12	0.22	0.19	0.10	0.12	0.12
Intersection LOS	D											
Intersection V/C	0.868											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

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):	0.930

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1343	493	0	1431	896	0	0	0	636	0	514
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	1343	493	0	1431	896	0	0	0	636	0	514
Peak Hour Factor	1.0000	0.9610	0.9610	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	1.0000	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]	0	349	128	0	372	233	0	0	0	165	0	134
Total Analysis Volume [veh/h]	0	1398	513	0	1489	932	0	0	0	662	0	535
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	82	0	0	82	0	0	0	0	38	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	58	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	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		20	20	20
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52		0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.30	0.32	0.33	0.32	0.65		0.25	0.26	0.28
s, saturation flow rate [veh/h]	3204	1474	1431	4584	1431		1603	1540	1431
c, Capacity [veh/h]	1661	764	742	2377	742		550	529	491
d1, Uniform Delay [s]	9.56	9.93	10.08	9.94	13.93		16.61	16.84	17.30
k, delay calibration	0.11	0.18	0.19	0.11	0.50		0.11	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]	0.32	1.37	1.65	0.27	126.39		1.84	2.22	3.40
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	0.58	0.63	0.64	0.63	1.26		0.73	0.75	0.81
d, Delay for Lane Group [s/veh]	9.88	11.30	11.72	10.21	140.33		18.45	19.06	20.70
Lane Group LOS	A	B	B	B	F		B	B	C
Critical Lane Group	No	No	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.36	3.71	3.81	3.61	33.48		4.36	4.46	4.71
50th-Percentile Queue Length [ft/ln]	84.11	92.73	95.20	90.36	837.06		108.90	111.44	117.72
95th-Percentile Queue Length [veh/ln]	6.06	6.68	6.85	6.51	50.29		7.78	7.92	8.27
95th-Percentile Queue Length [ft/ln]	151.40	166.91	171.35	162.65	1257.24		194.47	198.00	206.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.00	11.70	0.00	10.21	140.33	0.00	0.00	0.00	18.69	0.00	20.28
Movement LOS		B	B		B	F				B		C
d_A, Approach Delay [s/veh]	10.70			60.30			0.00			19.40		
Approach LOS	B			E			A			B		
d_I, Intersection Delay [s/veh]	34.30											
Intersection LOS	C											
Intersection V/C	0.930											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.649
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1300	1300	0	0
d_b, Bicycle Delay [s]	7.35	7.35	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.611	2.891	4.132	6.107
Bicycle LOS	B	C	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.629

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1532	35	0	1772	333	416	304	421	0	0	375
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	1532	35	0	1772	333	416	304	421	0	0	375
Peak Hour Factor	1.0000	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	0.9740	0.9740	1.0000	1.0000	0.9740
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	393	9	0	455	85	107	78	108	0	0	96
Total Analysis Volume [veh/h]	0	1573	36	0	1819	342	427	312	432	0	0	385
Presence of On-Street Parking	No		No	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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	0	4
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	39	0	0	39	0	0	81	0	0	0	81
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
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	2.00	2.00	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]	69	69	69	69	43	43	43	43
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.36	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.26	0.24	0.30	0.24	0.27	0.25	0.33	0.27
s, saturation flow rate [veh/h]	4584	1657	6113	1431	1275	1573	1302	1431
c, Capacity [veh/h]	2621	947	3494	818	494	605	471	517
d1, Uniform Delay [s]	14.93	14.53	15.66	14.45	35.51	32.73	36.57	33.43
k, delay calibration	0.50	0.50	0.50	0.50	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	1.00
d2, Incremental Delay [s]	0.58	1.40	0.56	1.57	1.69	1.25	7.81	2.15
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	0.46	0.42	0.52	0.42	0.68	0.66	0.92	0.74
d, Delay for Lane Group [s/veh]	15.51	15.92	16.22	16.03	37.20	33.98	44.37	35.58
Lane Group LOS	B	B	B	B	D	C	D	D
Critical Lane Group	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.99	6.06	7.07	5.17	9.12	10.22	13.05	10.11
50th-Percentile Queue Length [ft/ln]	149.81	151.50	176.83	129.34	227.92	255.43	326.21	252.69
95th-Percentile Queue Length [veh/ln]	10.01	10.10	11.43	8.90	14.07	15.46	18.97	15.32
95th-Percentile Queue Length [ft/ln]	250.18	252.43	285.87	222.60	351.71	386.49	474.31	383.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	15.61	15.92	0.00	16.22	16.03	36.70	33.98	44.37	0.00	0.00	35.58
Movement LOS		B	B		B	B	D	C	D			D
d_A, Approach Delay [s/veh]	15.62			16.19			38.75			35.58		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.38											
Intersection LOS	C											
Intersection V/C	0.629											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.454	2.154
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	1283	0
d_b, Bicycle Delay [s]	30.10	30.10	7.70	60.00
l_b,int, Bicycle LOS Score for Intersection	2.223	2.451	2.526	4.132
Bicycle LOS	B	B	B	D

Sequence

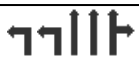
Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.896

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
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]	33	991	48	500	1386	322	356	99	34	94	128	112
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]	8	254	12	128	355	82	91	25	9	24	33	29
Total Analysis Volume [veh/h]	34	1015	49	512	1420	330	365	101	35	96	131	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.17	0.17	0.18	0.41	0.41	0.23	0.09	0.09	0.06	0.14	0.07
Intersection LOS	D											
Intersection V/C	0.896											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.938

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	52	194	196	622	292	520	365	902	24	171	859	495
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]	52	194	196	622	292	520	365	902	24	171	859	495
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
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]	14	51	52	164	77	137	96	238	6	45	227	131
Total Analysis Volume [veh/h]	55	205	207	657	308	549	385	952	25	181	907	523
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.13	0.23	0.19	0.34	0.13	0.30	0.02	0.11	0.28	0.33
Intersection LOS	E											
Intersection V/C	0.938											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	253	63	42	142	148	235	200	1065	259	75	941	49
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]	253	63	42	142	148	235	200	1065	259	75	941	49
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
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]	64	16	11	36	38	60	51	271	66	19	240	12
Total Analysis Volume [veh/h]	258	64	43	145	151	240	204	1086	264	76	959	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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.04	0.03	0.09	0.09	0.15	0.13	0.34	0.17	0.05	0.30	0.03
Intersection LOS	D											
Intersection V/C	0.838											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.936

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	388	675	167	350	822	71	107	983	171	229	695	135
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]	388	675	167	350	822	71	107	983	171	229	695	135
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
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]	101	176	44	91	215	19	28	257	45	60	182	35
Total Analysis Volume [veh/h]	405	705	175	366	859	74	112	1027	179	239	726	141
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]	10.00

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

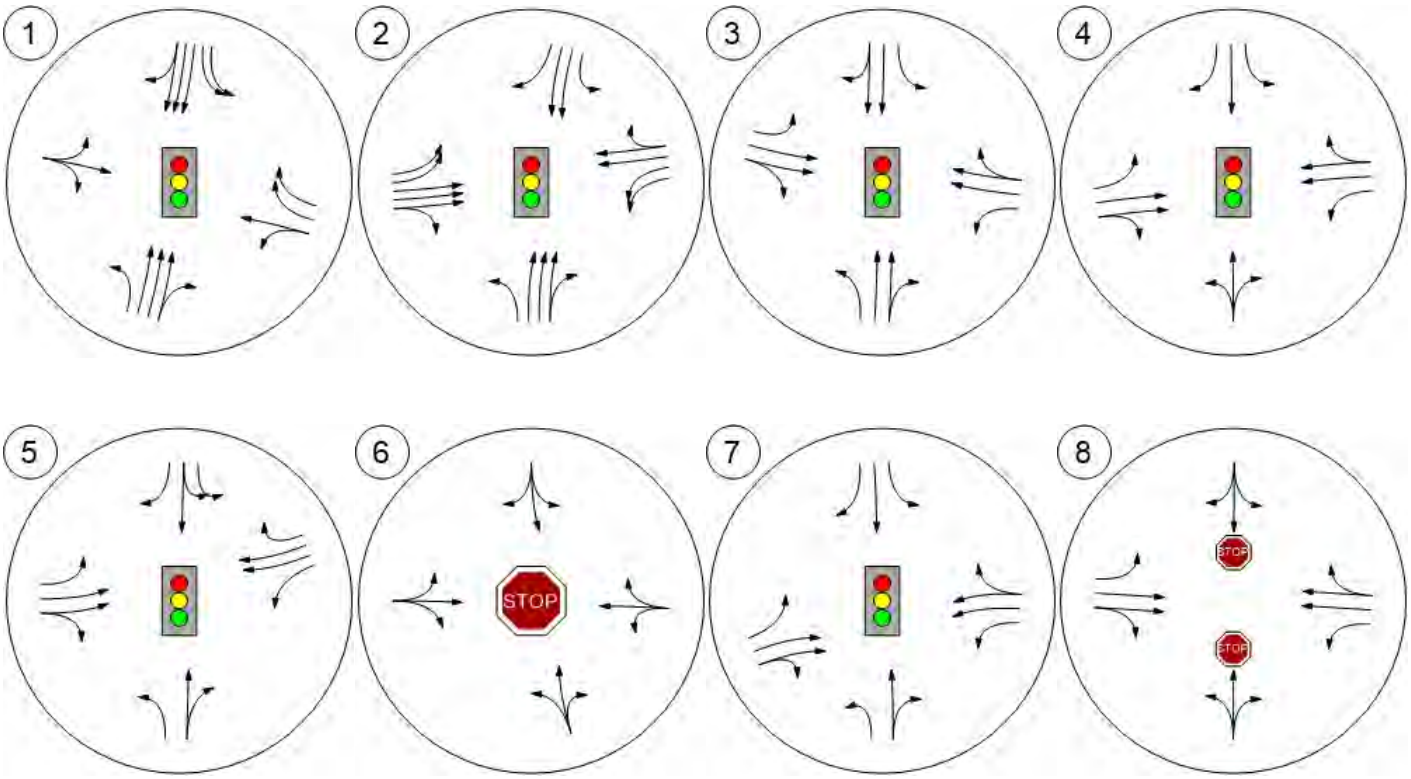
V/C, Movement V/C Ratio	0.14	0.22	0.11	0.13	0.29	0.29	0.04	0.32	0.11	0.08	0.18	0.18
Intersection LOS	E											
Intersection V/C	0.936											

Study Intersections



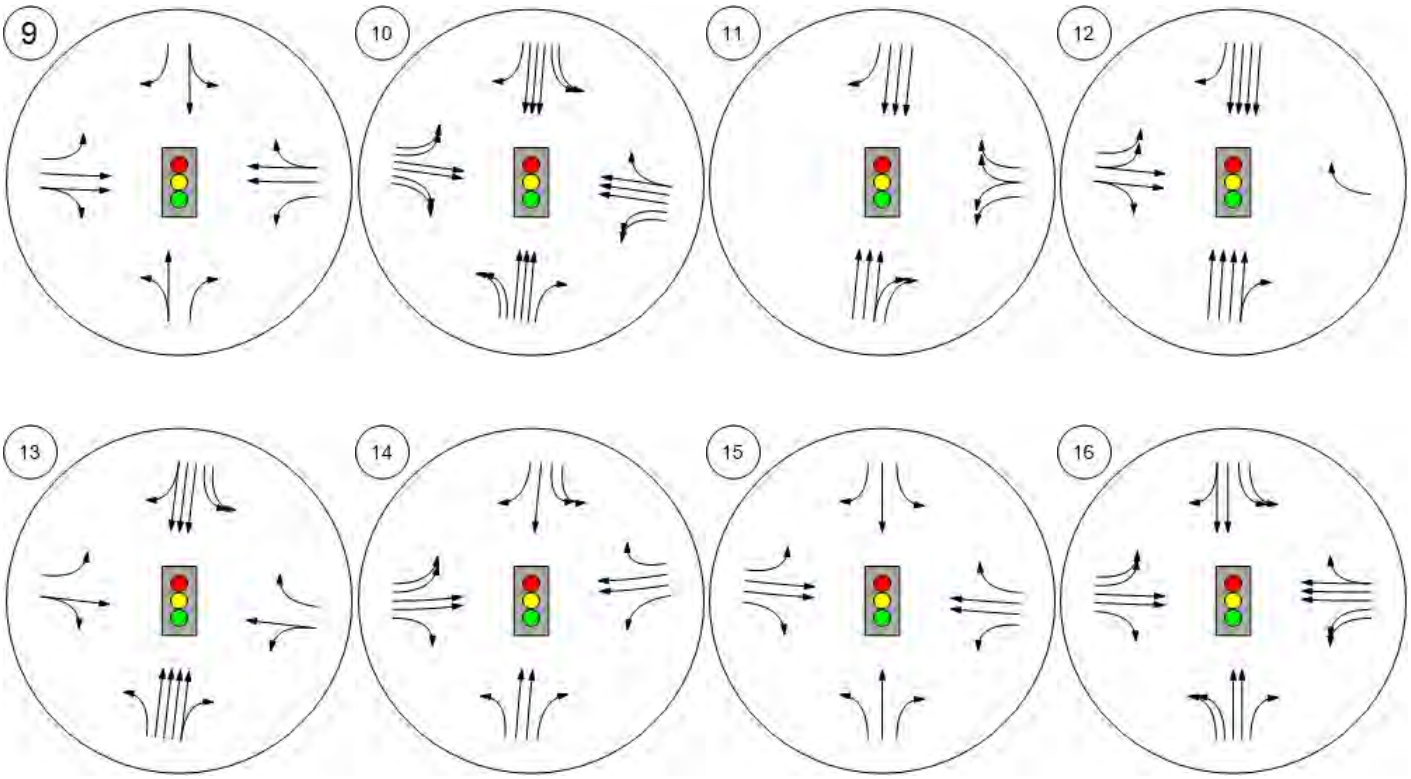
Lane Configuration and Traffic Control





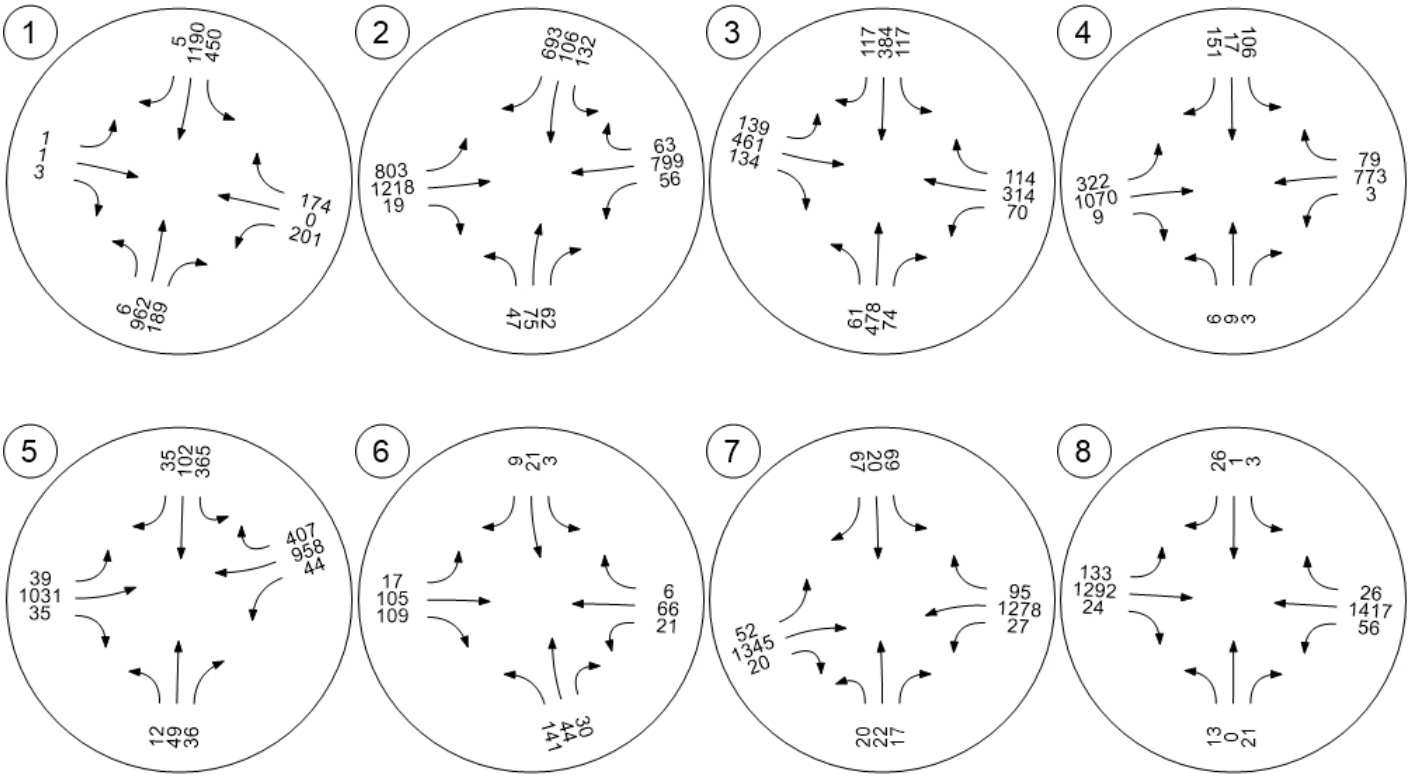
Lane Configuration and Traffic Control





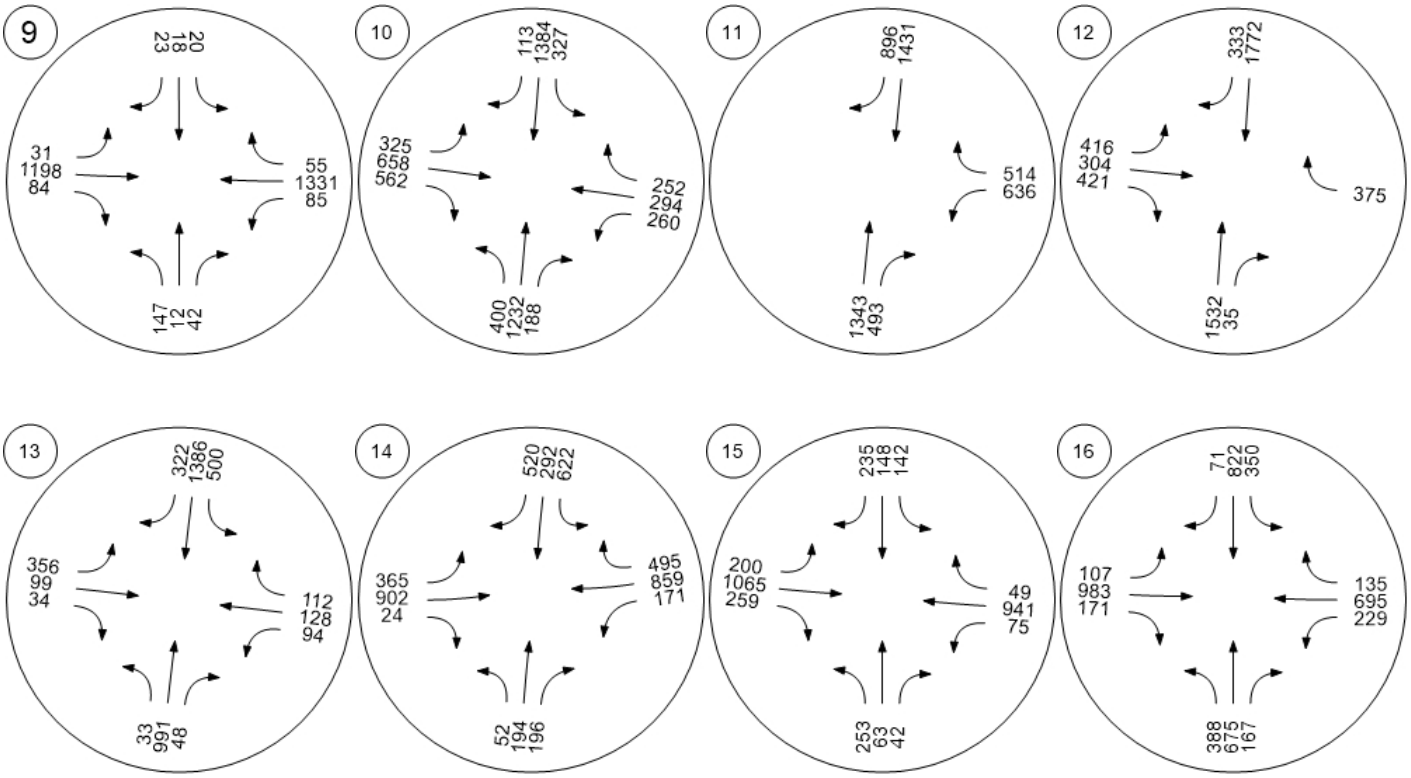
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Appendix C. Cumulative Projects

Appendices

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Table 2 Cumulative Projects Trip Generation

Group	Project Name/ Address	City	Project Type	Land Use	ITE Code	Unit Amount	Unit	Trip Generation[1]						
								Daily	AM Peak Hour			PM Peak Hour		
									In	Out	Total	In	Out	Total
A	17110 A Colima Road	Los Angeles County	Services	Fast-Food Restaurant without Drive-Through Window	933	4	TSF[2]	1385	60	40	100	57	57	114
	17110 B Colima Road	Los Angeles County	Services	Fast-Food Restaurant without Drive-Through Window	933	1	TSF	346	15	10	25	14	14	28
B	16234 Folger Street	Los Angeles County	Residential	Single-Family Detached Housing	210	86	DU[3]	812	16	48	64	54	32	86
	1085 Bixby Drive	Industry	Industrial	General Office Building	710	6	TSF	58	6	1	7	1	6	7
C	1067 Larimore	La Puente	Residential	Multi-Family Housing (Low Rise)	220	5	DU	37	1	2	3	2	1	3
	747 Del Valle	La Puente	Residential	Multi-Family Housing (Low Rise)	220	45	DU	329	5	16	21	16	9	25
	15921 Sierra Vista	La Puente	Residential	Multi-Family Housing (Low Rise)	220	5	DU	37	1	2	3	2	1	3
D	335 Willow	La Puente	Residential	Single-Family Detached Housing	210	5	DU	47	1	3	4	3	2	5
	14317 Beckner	La Puente	Residential	Multi-Family Housing (Low Rise)	220	5	DU	37	1	2	3	2	1	3
	Total Cumulative Projects Trip Generation:							3,088	106	124	230	151	123	274

[1] Trip generation rates for peak hour of adjacent streets, per the ITE Trip Generation Manual 10th Edition.
[2] TSF= Thousand Square Feet
[3] DU= Dwelling Units

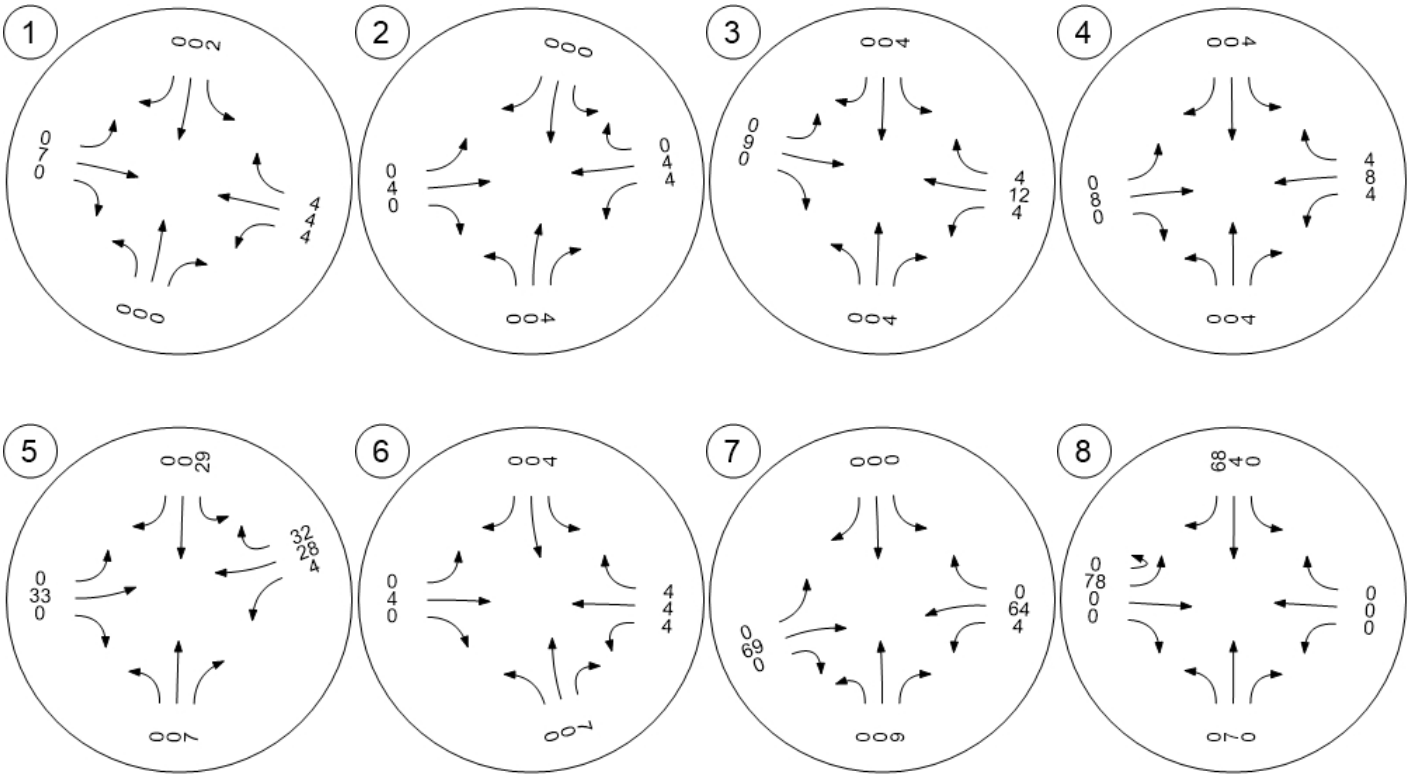
Appendix D. Intersection LOS Worksheets, Existing With Project Conditions

Appendices

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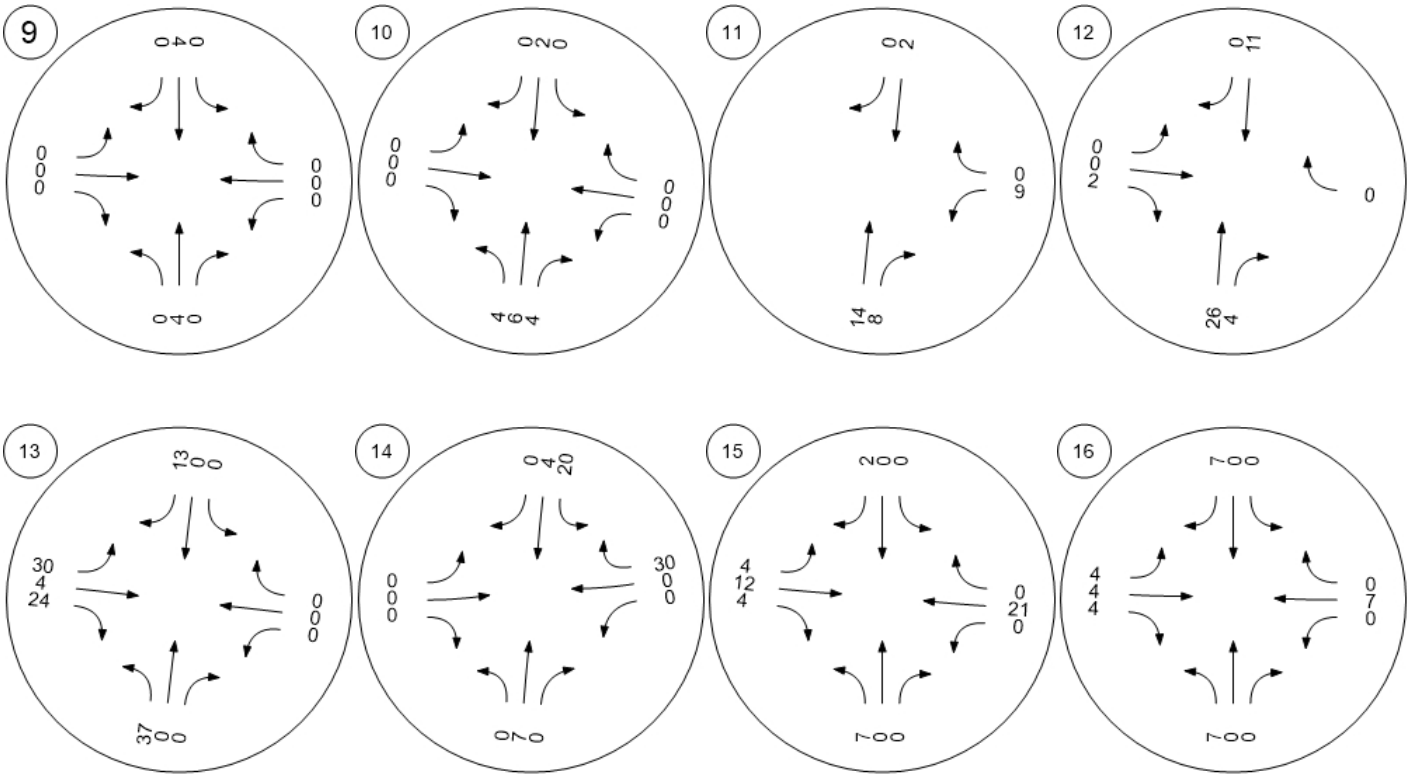
Traffic Volume - Net New Site Trips





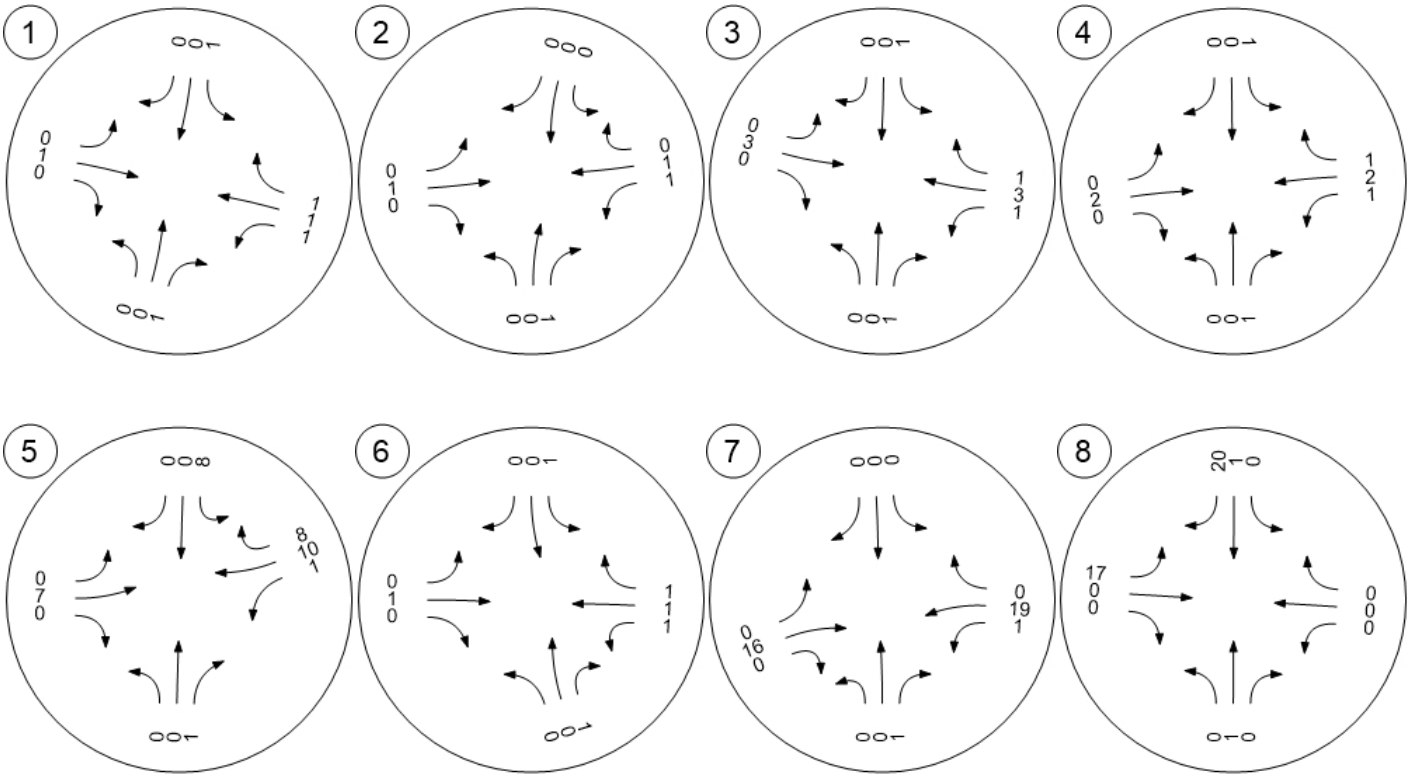
Traffic Volume - Net New Site Trips





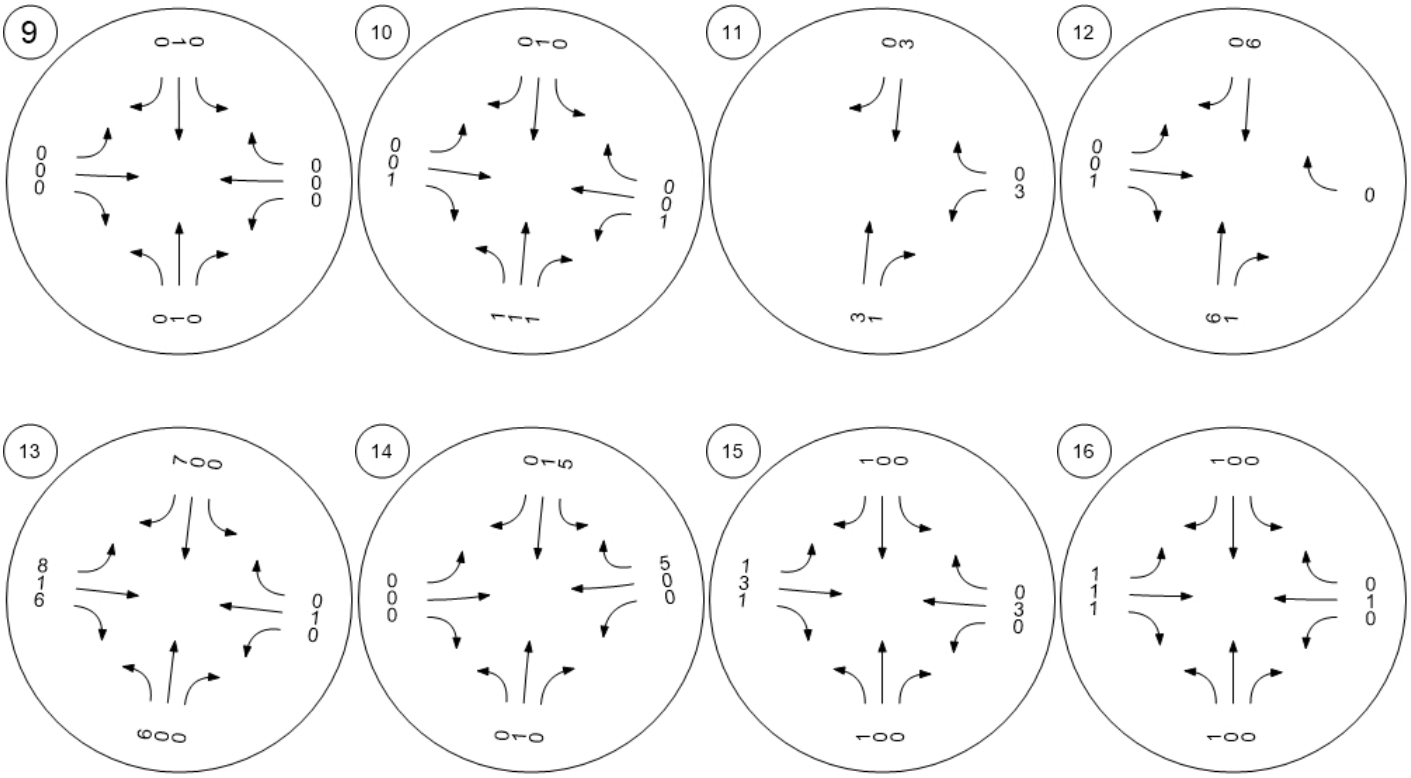
Traffic Volume - Net New Site Trips





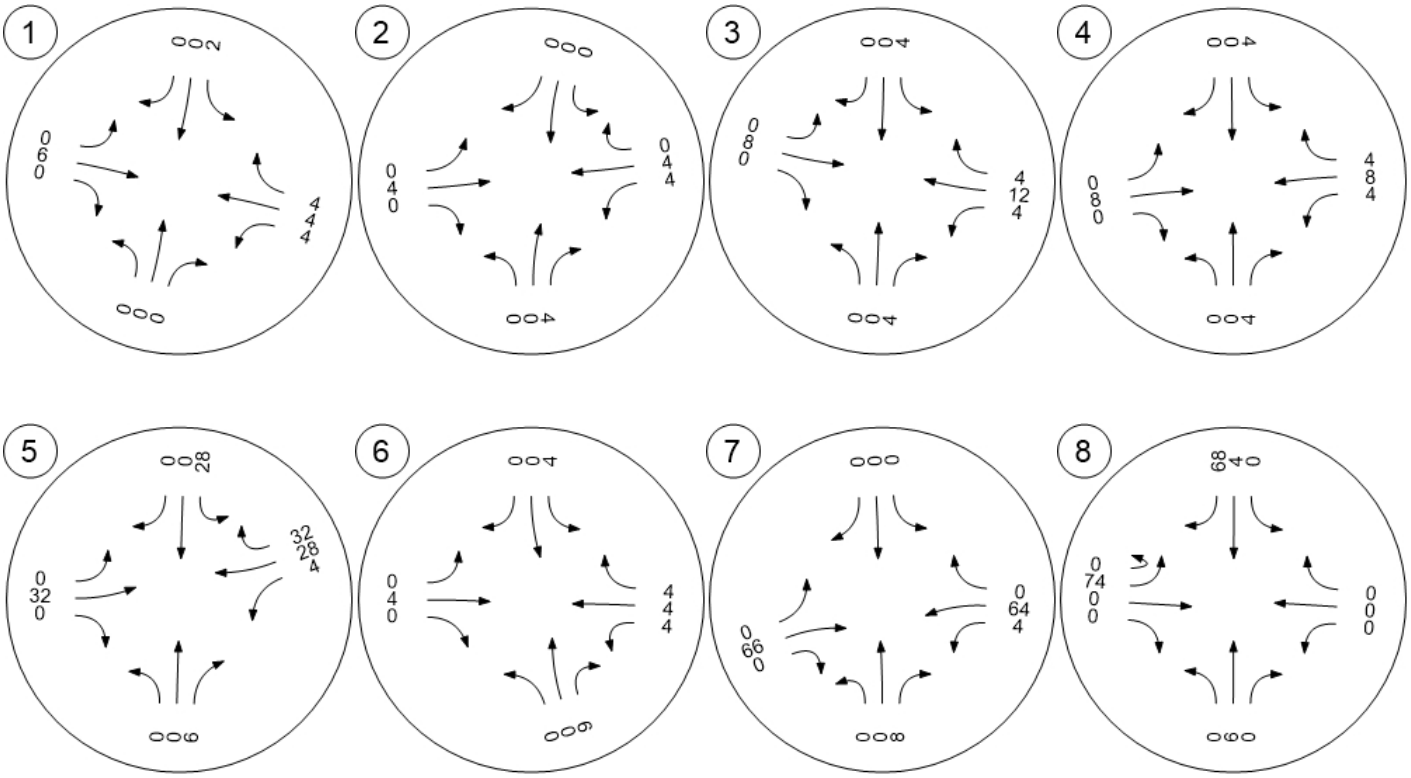
Traffic Volume - Net New Site Trips





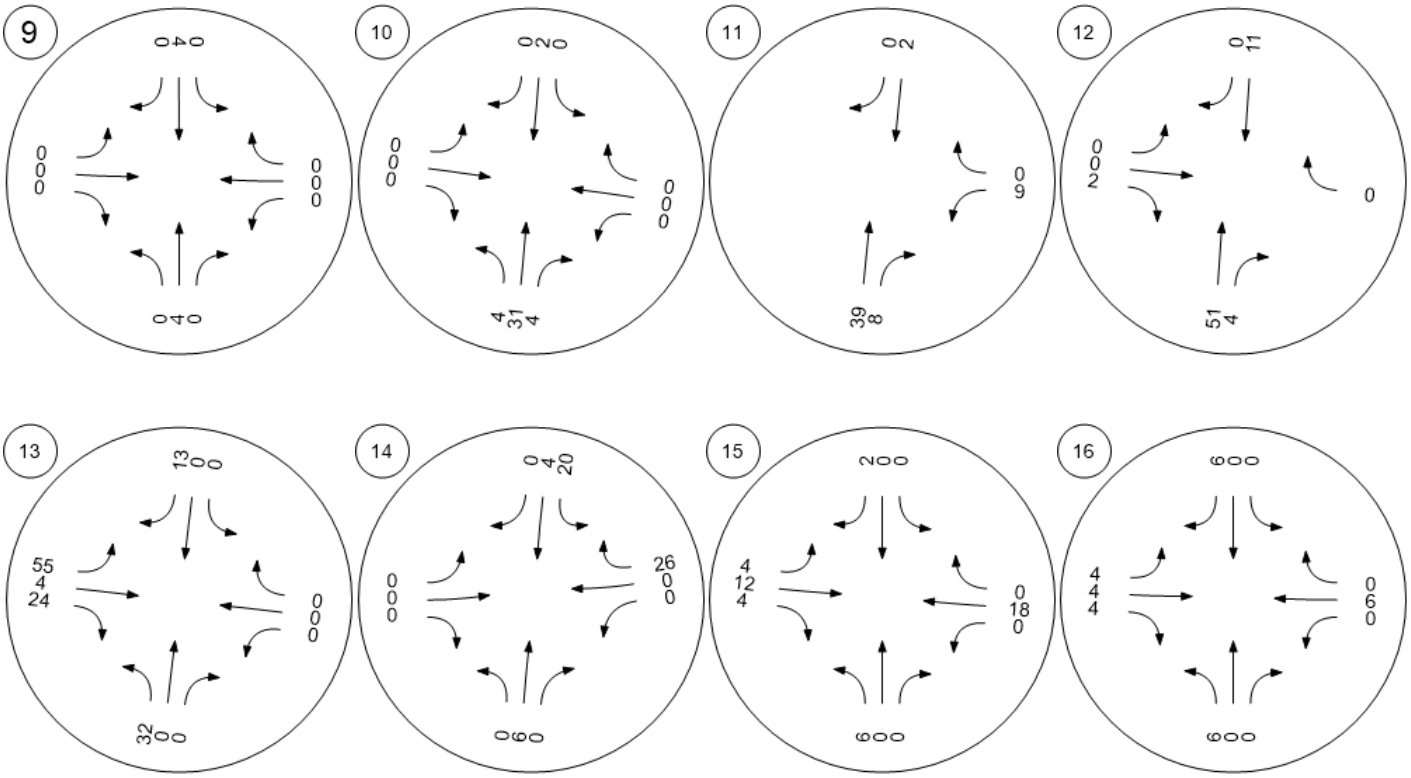
Traffic Volume - Net New Site Trips





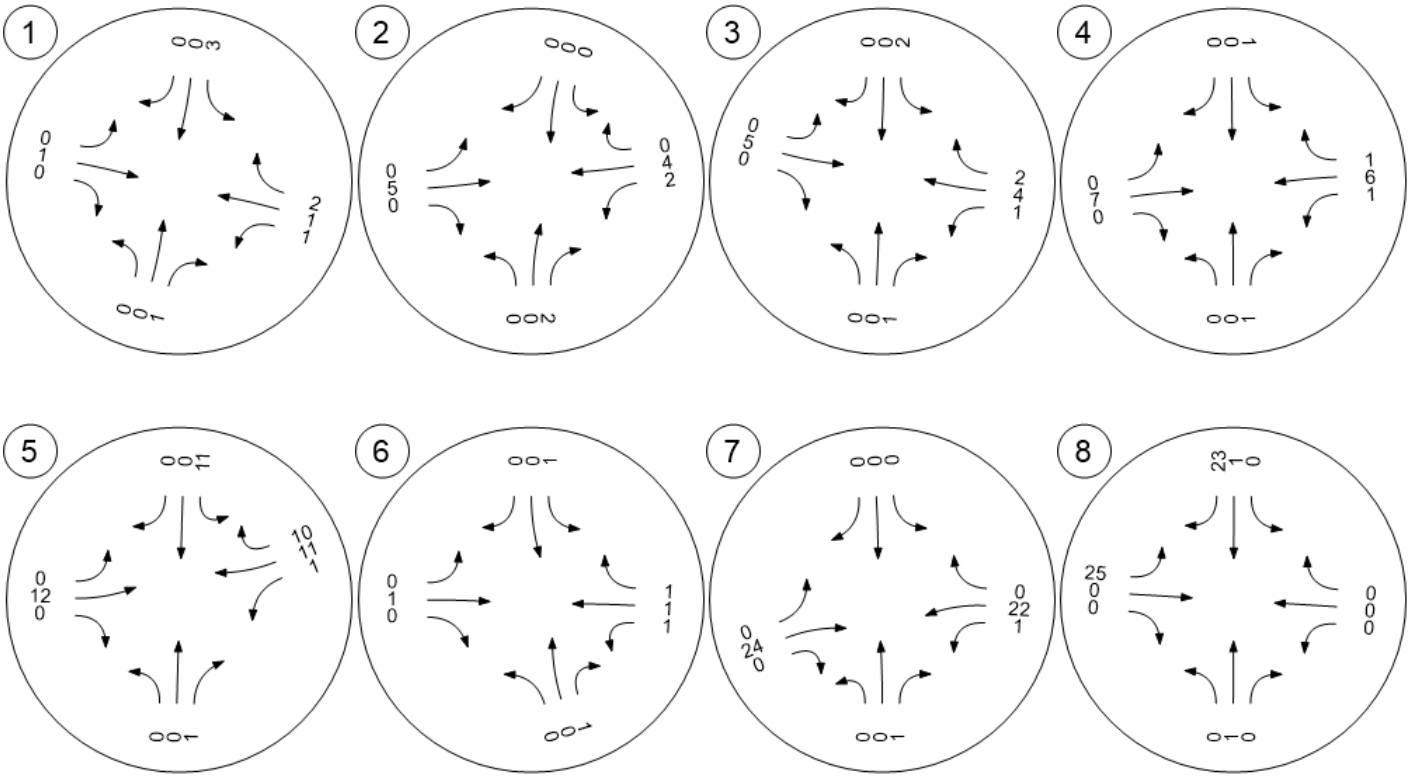
Traffic Volume - Net New Site Trips





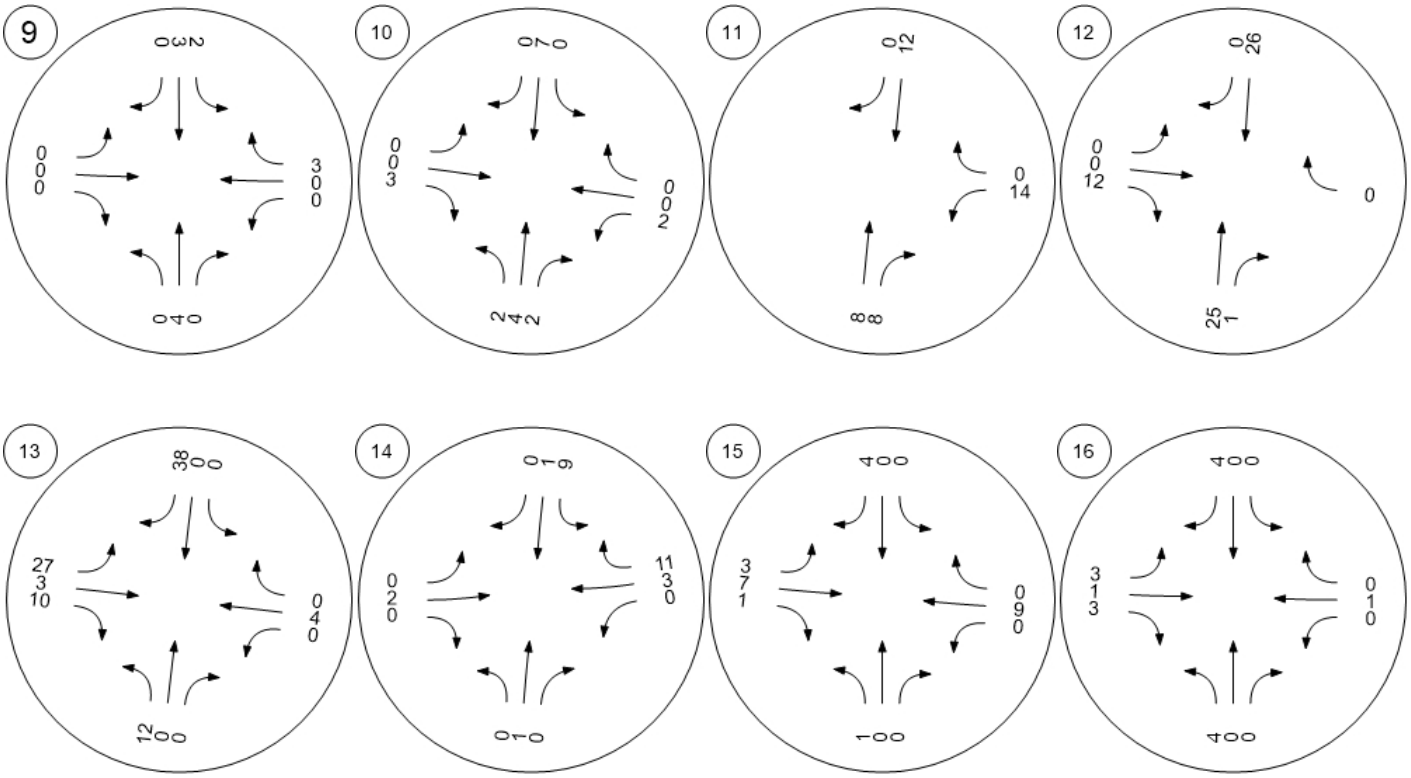
Traffic Volume - Net New Site Trips





Traffic Volume - Net New Site Trips





Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+P1 AM.pdf

Scenario 3 EX AM + Phase1
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	NB Right	0.669	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.047	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	WB Thru	0.761	-	C
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Thru	0.733	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.714	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Thru	1.068	65.9	F
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	EB Thru	0.728	-	C
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	SB Thru	0.838	10,000.0	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.558	-	A
10	Azusa Ave at Gale Ave	Signalized	ICU 1	NB Thru	0.790	-	C
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.681	13.9	B
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Left	0.731	24.5	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.890	-	D
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.854	-	D
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.652	-	B
16	Fullerton Av at Colima Road	Signalized	ICU 1	SB Thru	0.761	-	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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	1	1157	200	201	995	6	4	2	8	242	2	382
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	2	0	0	0	7	0	4	4	4
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]	1	1157	200	203	995	6	4	9	8	246	6	386
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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	316	55	56	272	2	1	2	2	67	2	106
Total Analysis Volume [veh/h]	1	1266	219	222	1089	7	4	10	9	269	7	422
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.31	0.08	0.23	0.23	0.00	0.01	0.01	0.17	0.17	0.13
Intersection LOS	B											
Intersection V/C	0.669											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.047

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	24	74	23	104	48	620	548	780	8	29	826	62
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	4	0	0	0	0	4	0	4	4	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]	24	74	27	104	48	620	548	784	8	33	830	62
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
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]	6	19	7	27	13	163	144	206	2	9	218	16
Total Analysis Volume [veh/h]	25	78	28	109	50	651	575	823	8	35	871	65
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.07	0.02	0.41	0.20	0.17	0.17	0.01	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.047											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.761

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	161	449	60	115	433	143	124	263	121	118	491	221
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	4	4	0	0	0	9	0	4	12	4
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]	161	449	64	119	433	143	124	272	121	122	503	225
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
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]	45	127	18	34	122	40	35	77	34	34	142	63
Total Analysis Volume [veh/h]	182	506	72	134	488	161	140	307	136	138	567	254
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.18	0.18	0.08	0.20	0.20	0.09	0.14	0.14	0.09	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.761											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	4	4	0	0	0	8	0	4	8	4
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]	8	46	5	120	9	83	231	763	7	5	830	226
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
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]	2	12	1	32	2	22	62	206	2	1	224	61
Total Analysis Volume [veh/h]	9	50	5	130	10	90	249	824	8	5	896	244
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.16	0.26	0.26	0.00	0.36	0.36
Intersection LOS	C											
Intersection V/C	0.733											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	48	127	40	312	48	60	60	915	25	18	836	398
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	7	29	0	0	0	33	0	4	28	32
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]	48	127	47	341	48	60	60	948	25	22	864	430
Peak Hour Factor	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930
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]	13	36	13	95	13	17	17	265	7	6	242	120
Total Analysis Volume [veh/h]	54	142	53	382	54	67	67	1062	28	25	968	482
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.12	0.14	0.04	0.04	0.34	0.34	0.02	0.30	0.30
Intersection LOS	C											
Intersection V/C	0.714											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	65.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.068

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	114	187	19	18	138	11	77	73	169	60	138	53
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	7	4	0	0	0	4	0	4	4	4
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]	114	187	26	22	138	11	77	77	169	64	142	57
Peak Hour Factor	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120
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	66	9	8	48	4	27	27	59	22	50	20
Total Analysis Volume [veh/h]	160	263	37	31	194	15	108	108	237	90	199	80
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	460	390	453	423
Degree of Utilization, x	1.07	0.62	1.02	0.87

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	15.11	3.98	13.49	8.89
95th-Percentile Queue Length [ft]	377.63	99.38	337.24	222.26
Approach Delay [s/veh]	92.02	26.01	75.56	47.58
Approach LOS	F	D	F	E
Intersection Delay [s/veh]	65.94			
Intersection LOS	F			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	54	80	22	98	38	154	110	1168	10	12	1053	62
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	9	0	0	0	0	69	0	4	64	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]	54	80	31	98	38	154	110	1237	10	16	1117	62
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]	15	22	9	27	11	43	30	342	3	4	309	17
Total Analysis Volume [veh/h]	60	88	34	108	42	170	122	1368	11	18	1236	69
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.07	0.03	0.11	0.08	0.43	0.43	0.01	0.41	0.41
Intersection LOS	C											
Intersection V/C	0.728											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima 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):	0.838

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd				Colima Rd		
Approach	Northbound			Southbound			Eastbound				Westbound		
Lane Configuration													
Turning Movement	Left	Thru	Right	Left	Thru	Right	U-tu	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	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.0	100.0	100.0	100.0	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00				40.00		
Grade [%]	0.00			0.00			0.00				0.00		
Crosswalk	No			No			No				No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd				Colima Rd		
Base Volume Input [veh/h]	27	3	36	1	1	63	0	133	1173	14	24	1038	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	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	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	4	68	0	78	0	0	0	0	0
Diverted Trips [veh/h]	0	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	0
Existing Site Adjustment Volume [veh/h]	0	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	0
Total Hourly Volume [veh/h]	27	10	36	1	5	131	0	211	1173	14	24	1038	7
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.952	0.952	0.952	1.000	0.9520	0.9520	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	3	9	0	1	34	0	55	308	4	6	273	2
Total Analysis Volume [veh/h]	28	11	38	1	5	138	0	222	1232	14	25	1090	7
Pedestrian Volume [ped/h]	0			0			0				0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	11.37	1.83	0.09	0.00	0.84	0.29	0.00	0.63	0.01	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	7600.85	6739.54	6148.00	10000.0	10000.0	10000.0	34.06	31.29	0.00	0.00	11.80	0.00	0.00
Movement LOS	F	F	F	F	F	F	D	D	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	11.43	11.43	11.43	20.62	20.62	20.62	4.11	4.11	0.00	0.00	0.14	0.05	0.00
95th-Percentile Queue Length [ft/ln]	285.69	285.69	285.69	515.47	515.47	515.47	102.6	102.6	0.00	0.00	3.53	1.18	0.00
d_A, Approach Delay [s/veh]	6760.82			10000.00			4.73				0.26		
Approach LOS	F			F			A				A		
d_I, Intersection Delay [s/veh]	700.04												
Intersection LOS	F												

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	7	6	52	13	40	65	1143	29	19	996	33
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	4	0	0	4	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]	20	11	6	52	17	40	65	1143	29	19	996	33
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]	5	3	2	14	4	11	17	301	8	5	263	9
Total Analysis Volume [veh/h]	21	12	6	55	18	42	69	1206	31	20	1051	35
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.00	0.03	0.05	0.03	0.04	0.39	0.39	0.01	0.34	0.34
Intersection LOS	A											
Intersection V/C	0.558											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

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	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	587	1367	153	199	918	214	202	266	212	89	419	242
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]	4	6	4	0	2	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]	591	1373	157	199	920	214	202	266	212	89	419	242
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
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]	169	392	45	57	263	61	58	76	61	25	120	69
Total Analysis Volume [veh/h]	675	1567	179	227	1050	244	231	304	242	102	478	276
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.33	0.11	0.08	0.22	0.15	0.08	0.10	0.08	0.04	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.790											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1375	289	0	951	254	0	0	0	592	0	738
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	14	8	0	2	0	0	0	0	9	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	1389	297	0	953	254	0	0	0	601	0	738
Peak Hour Factor	1.0000	0.9000	0.9000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	1.0000	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]	0	386	83	0	265	71	0	0	0	167	0	205
Total Analysis Volume [veh/h]	0	1543	330	0	1059	282	0	0	0	668	0	820
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	59	0	0	59	0	0	0	0	61	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	52	52	52	52	52		52	52	52
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]	22	22	22	22	22		22	22	22
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43		0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.32	0.33	0.23	0.23	0.20		0.31	0.33	0.35
s, saturation flow rate [veh/h]	3204	1539	1431	4584	1431		1603	1486	1431
c, Capacity [veh/h]	1369	658	611	1958	611		674	625	602
d1, Uniform Delay [s]	12.71	12.96	11.22	11.22	10.75		12.78	13.25	13.51
k, delay calibration	0.11	0.15	0.11	0.11	0.11		0.11	0.15	0.16
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	2.80	0.74	0.23	0.54		1.68	3.13	4.33
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	0.75	0.78	0.54	0.54	0.46		0.74	0.79	0.82
d, Delay for Lane Group [s/veh]	13.56	15.76	11.96	11.46	11.29		14.46	16.37	17.84
Lane Group LOS	B	B	B	B	B		B	B	B
Critical Lane Group	No	Yes	No	No	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.30	4.73	2.47	2.55	2.01		4.31	4.68	4.94
50th-Percentile Queue Length [ft/ln]	107.54	118.32	61.76	63.77	50.29		107.71	117.06	123.62
95th-Percentile Queue Length [veh/ln]	7.70	8.30	4.45	4.59	3.62		7.71	8.23	8.59
95th-Percentile Queue Length [ft/ln]	192.58	207.52	111.17	114.79	90.53		192.81	205.78	214.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.98	11.96	0.00	11.46	11.29	0.00	0.00	0.00	14.95	0.00	17.26
Movement LOS		B	B		B	B				B		B
d_A, Approach Delay [s/veh]		13.89			11.42			0.00			16.22	
Approach LOS		B			B			A			B	
d_I, Intersection Delay [s/veh]	13.92											
Intersection LOS	B											
Intersection V/C	0.681											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.670
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	917	917	0	0
d_b, Bicycle Delay [s]	17.60	17.60	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.590	2.297	4.132	6.588
Bicycle LOS	B	B	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1442	7	0	1177	494	784	190	292	0	0	137
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	26	4	0	11	0	0	0	2	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	1468	11	0	1188	494	784	190	294	0	0	137
Peak Hour Factor	1.0000	0.9440	0.9440	1.0000	0.9440	0.9440	0.9440	0.9440	0.9440	1.0000	1.0000	0.9440
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	389	3	0	315	131	208	50	78	0	0	36
Total Analysis Volume [veh/h]	0	1555	12	0	1258	523	831	201	311	0	0	145
Presence of On-Street Parking	No		No	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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	0	4
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	48	0	0	48	0	0	72	0	0	0	72
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
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	2.00	2.00	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]	64	64	64	64	48	48	48	48
g / C, Green / Cycle	0.53	0.53	0.53	0.53	0.40	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.26	0.23	0.21	0.37	0.33	0.37	0.33	0.10
s, saturation flow rate [veh/h]	4584	1674	6113	1431	1275	1274	1365	1431
c, Capacity [veh/h]	2438	890	3251	761	555	568	548	574
d1, Uniform Delay [s]	17.68	17.16	16.55	20.72	33.76	34.75	32.06	23.92
k, delay calibration	0.50	0.50	0.50	0.50	0.17	0.21	0.16	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]	0.68	1.58	0.35	5.02	3.46	5.66	4.54	0.23
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	0.48	0.44	0.39	0.69	0.77	0.82	0.82	0.25
d, Delay for Lane Group [s/veh]	18.36	18.74	16.90	25.74	37.22	40.41	36.61	24.14
Lane Group LOS	B	B	B	C	D	D	D	C
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.48	6.54	4.84	10.97	11.93	13.70	12.32	2.83
50th-Percentile Queue Length [ft/ln]	162.12	163.40	120.93	274.19	298.15	342.45	307.89	70.75
95th-Percentile Queue Length [veh/ln]	10.66	10.73	8.44	16.40	17.59	19.77	18.07	5.09
95th-Percentile Queue Length [ft/ln]	266.52	268.22	211.10	409.97	439.74	494.19	451.77	127.35

Movement, Approach, & Intersection Results

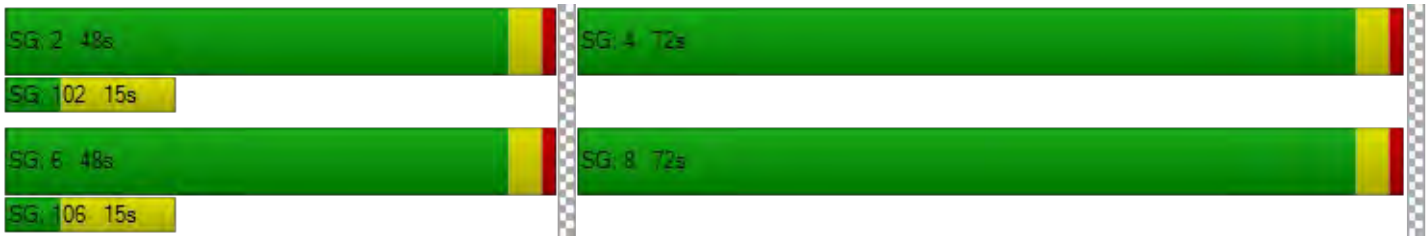
d_M, Delay for Movement [s/veh]	0.00	18.46	18.74	0.00	16.90	25.74	38.76	37.78	36.61	0.00	0.00	24.14
Movement LOS		B	B		B	C	D	D	D			C
d_A, Approach Delay [s/veh]	18.46			19.50			38.12			24.14		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	24.47											
Intersection LOS	C											
Intersection V/C	0.731											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.525	2.052
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1133	0
d_b, Bicycle Delay [s]	24.07	24.07	11.27	60.00
l_b,int, Bicycle LOS Score for Intersection	2.206	2.294	2.668	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.890

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
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]	37	0	0	0	0	13	30	4	24	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]	72	890	58	163	993	346	486	113	73	57	38	85
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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]	20	245	16	45	273	95	134	31	20	16	10	23
Total Analysis Volume [veh/h]	79	979	64	179	1092	381	535	124	80	63	42	94
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.16	0.16	0.06	0.34	0.34	0.33	0.13	0.13	0.04	0.07	0.06
Intersection LOS	D											
Intersection V/C	0.890											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	65	201	112	424	209	535	382	663	41	107	458	338
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	7	0	20	4	0	0	0	0	0	0	30
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]	65	208	112	444	213	535	382	663	41	107	458	368
Peak Hour Factor	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780
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]	17	53	29	113	54	137	98	169	10	27	117	94
Total Analysis Volume [veh/h]	66	213	115	454	218	547	391	678	42	109	468	376
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.07	0.16	0.14	0.34	0.14	0.21	0.03	0.07	0.15	0.24
Intersection LOS	D											
Intersection V/C	0.854											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	268	46	22	33	27	70	107	743	153	24	729	8
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]	7	0	0	0	0	2	4	12	4	0	21	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]	275	46	22	33	27	72	111	755	157	24	750	8
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]	73	12	6	9	7	19	29	200	42	6	199	2
Total Analysis Volume [veh/h]	292	49	23	35	29	76	118	801	166	25	795	8
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	-	-

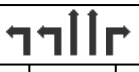
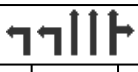
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.03	0.01	0.02	0.02	0.05	0.07	0.25	0.10	0.02	0.25	0.01
Intersection LOS	B											
Intersection V/C	0.652											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.761

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	381	637	123	166	952	62	55	359	182	203	636	93
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]	7	0	0	0	0	7	4	4	4	0	7	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]	388	637	123	166	952	69	59	363	186	203	643	93
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	100	164	32	43	246	18	15	94	48	52	166	24
Total Analysis Volume [veh/h]	400	657	127	171	982	71	61	375	192	209	664	96
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]	10.00

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

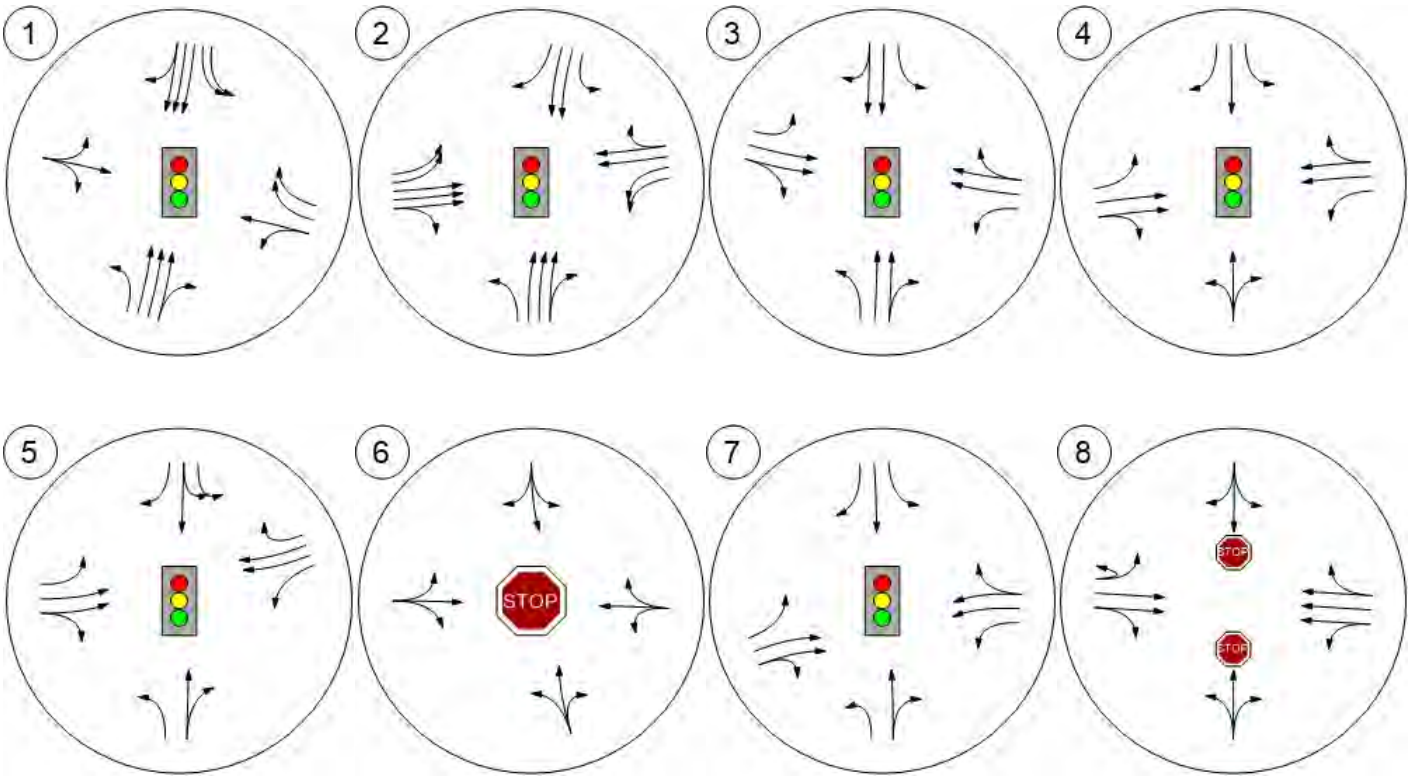
V/C, Movement V/C Ratio	0.14	0.21	0.08	0.06	0.33	0.33	0.02	0.12	0.12	0.07	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.761											

Study Intersections



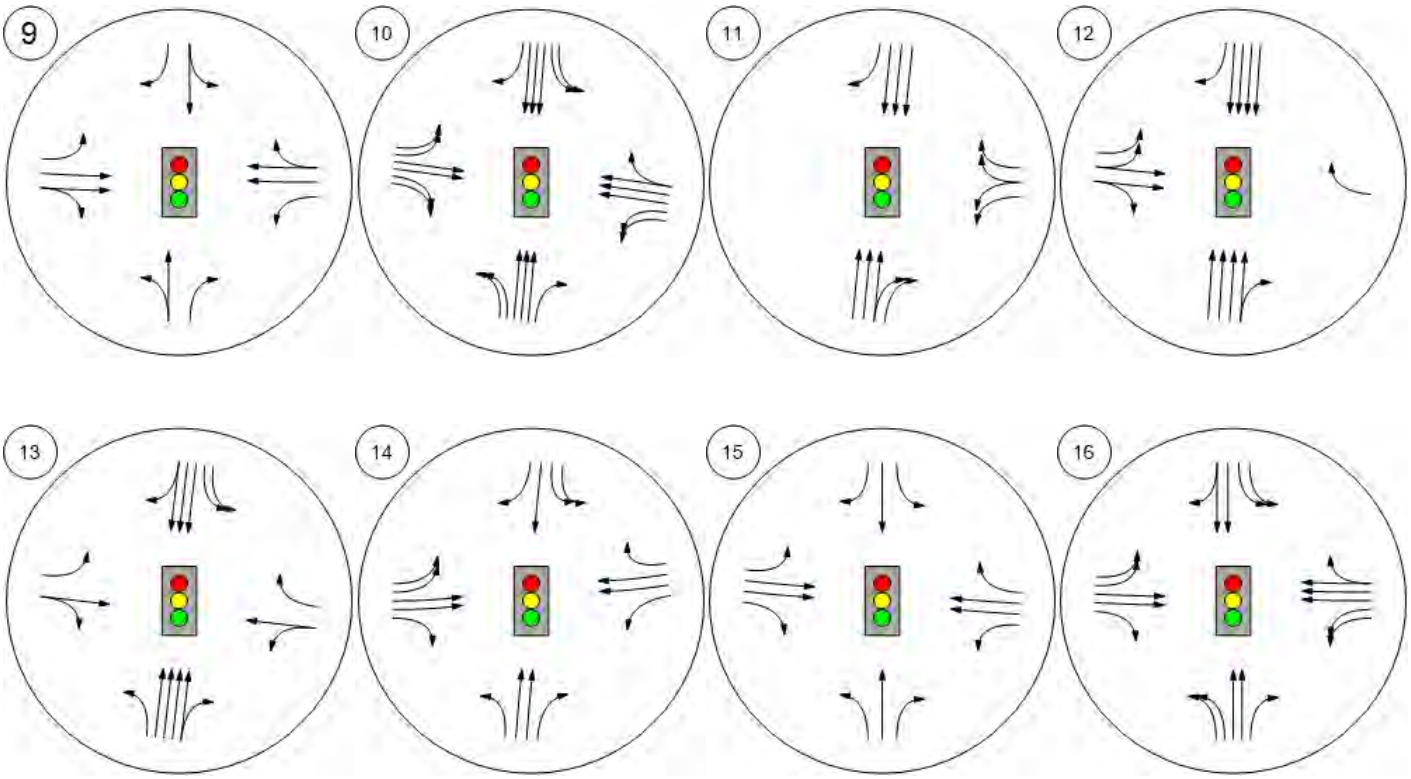
Lane Configuration and Traffic Control





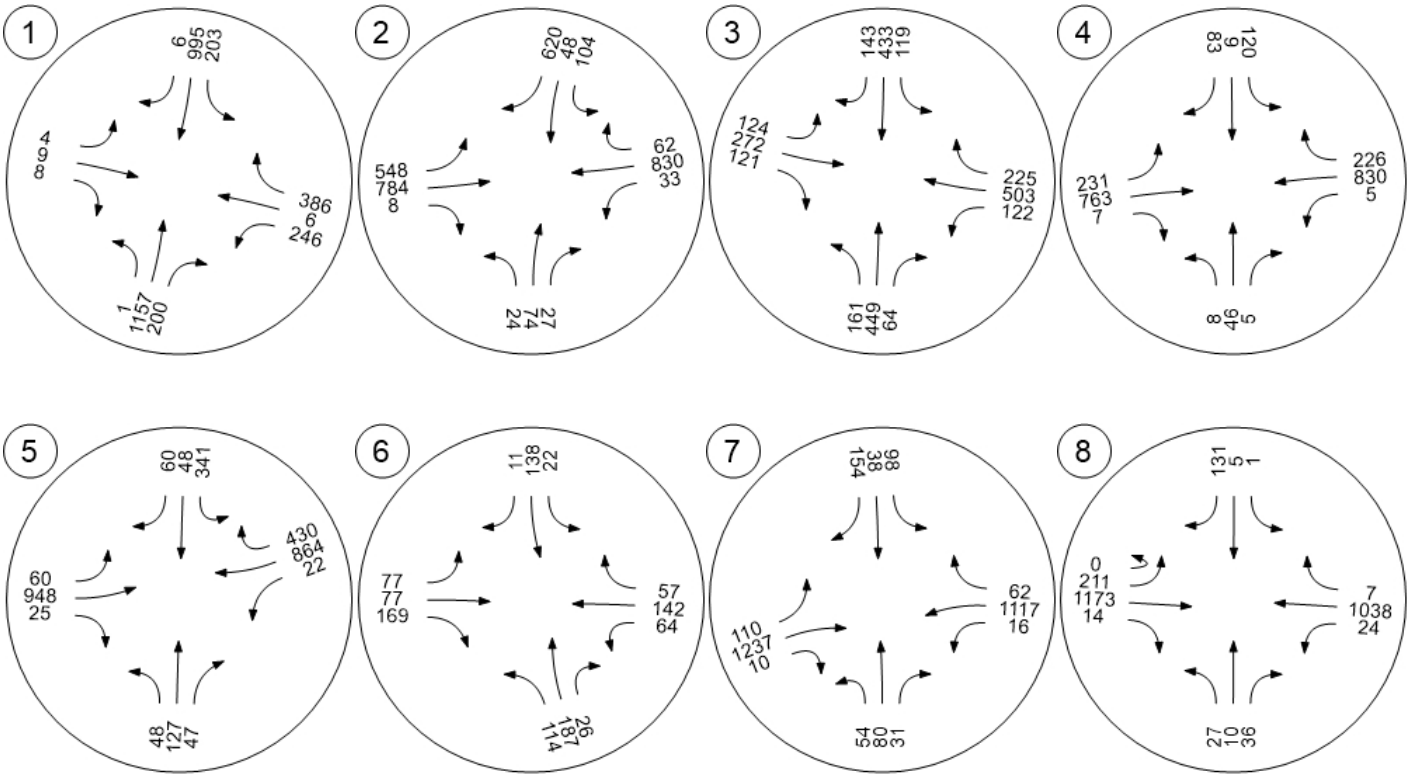
Lane Configuration and Traffic Control





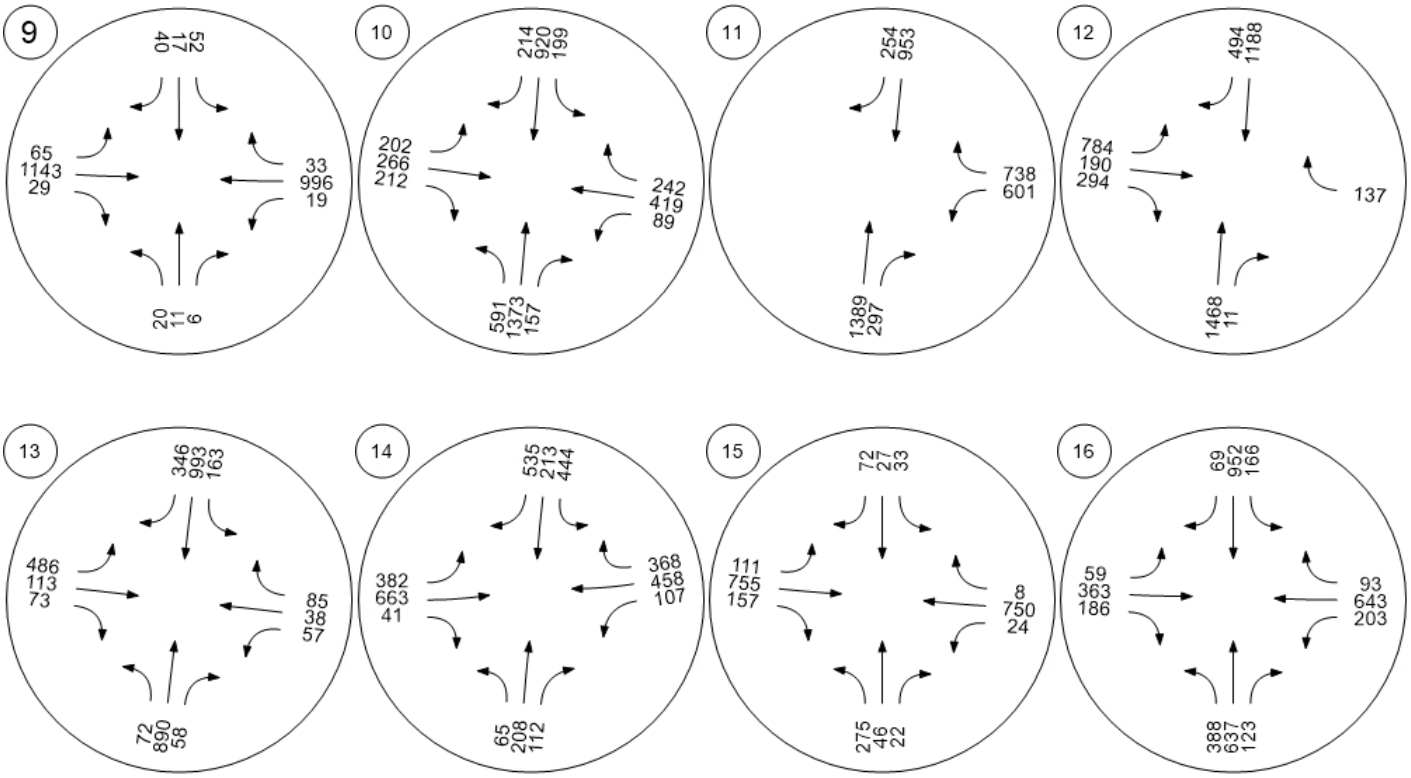
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+P1 PM.pdf

Scenario 4 EX PM + Phase1
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	SB Thru	0.651	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.219	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	EB Thru	0.623	-	B
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Right	0.718	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.688	-	B
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Left	0.312	9.5	A
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	WB Thru	0.664	-	B
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Thru	0.251	2,456.3	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	WB Right	0.736	-	C
10	Azusa Ave at Gale Ave	Signalized	ICU 1	SB Thru	0.869	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	SB Right	0.931	34.4	C
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Right	0.631	22.4	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.907	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.941	-	E
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.841	-	D
16	Fullerton Av at Colima Road	Signalized	ICU 1	EB Thru	0.937	-	E

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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	6	962	189	450	1190	5	1	1	3	201	0	174
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	1	1	0	0	0	1	0	1	1	1
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]	6	962	190	451	1190	5	1	2	3	202	1	175
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]	2	252	50	118	312	1	0	1	1	53	0	46
Total Analysis Volume [veh/h]	6	1007	199	472	1246	5	1	2	3	212	1	183
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.25	0.25	0.16	0.26	0.26	0.00	0.00	0.00	0.13	0.13	0.06
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.219

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	47	75	62	132	106	693	803	1218	19	56	799	63
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	1	0	0	0	0	1	0	1	1	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]	47	75	63	132	106	693	803	1219	19	57	800	63
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	13	20	17	35	28	186	216	328	5	15	215	17
Total Analysis Volume [veh/h]	51	81	68	142	114	745	863	1311	20	61	860	68
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.04	0.47	0.30	0.28	0.28	0.02	0.32	0.32
Intersection LOS	F											
Intersection V/C	1.219											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	61	478	74	117	384	117	139	461	134	70	314	114
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	1	1	0	0	0	3	0	1	3	1
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]	61	478	75	118	384	117	139	464	134	71	317	115
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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]	17	131	21	32	105	32	38	127	37	19	87	31
Total Analysis Volume [veh/h]	67	523	82	129	420	128	152	508	147	78	347	126
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.19	0.19	0.08	0.17	0.17	0.10	0.20	0.20	0.05	0.15	0.15
Intersection LOS	B											
Intersection V/C	0.623											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	1	1	0	0	0	2	0	1	2	1
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]	8	46	2	117	9	83	231	757	7	2	824	223
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	2	12	1	31	2	22	62	202	2	1	220	59
Total Analysis Volume [veh/h]	9	49	2	125	10	88	246	807	7	2	878	238
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.15	0.25	0.25	0.00	0.35	0.35
Intersection LOS	C											
Intersection V/C	0.718											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.688

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	12	49	36	365	102	35	39	1031	35	44	958	407
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	1	8	0	0	0	7	0	1	10	8
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]	12	49	37	373	102	35	39	1038	35	45	968	415
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	3	13	10	97	27	9	10	270	9	12	252	108
Total Analysis Volume [veh/h]	12	51	38	388	106	36	41	1079	36	47	1006	431
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.06	0.06	0.12	0.15	0.02	0.03	0.35	0.35	0.03	0.31	0.27
Intersection LOS	B											
Intersection V/C	0.688											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-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):	0.312

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	141	44	30	3	21	9	17	105	109	21	66	6
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	1	1	0	0	0	1	0	1	1	1
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]	141	44	31	4	21	9	17	106	109	22	67	7
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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]	38	12	8	1	6	2	5	28	29	6	18	2
Total Analysis Volume [veh/h]	151	47	33	4	22	10	18	113	117	24	72	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	740	726	802	730
Degree of Utilization, x	0.31	0.05	0.31	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.33	0.16	1.32	0.49
95th-Percentile Queue Length [ft]	33.36	3.90	32.93	12.24
Approach Delay [s/veh]	10.06	8.21	9.48	8.74
Approach LOS	B	A	A	A
Intersection Delay [s/veh]	9.50			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	22	17	69	20	67	52	1345	20	27	1278	95
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	1	0	0	0	0	16	0	1	19	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]	20	22	18	69	20	67	52	1361	20	28	1297	95
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	5	6	5	18	5	18	14	358	5	7	341	25
Total Analysis Volume [veh/h]	21	23	19	73	21	70	55	1431	21	29	1364	100
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.03	0.05	0.01	0.04	0.03	0.45	0.45	0.02	0.46	0.46
Intersection LOS	B											
Intersection V/C	0.664											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	2,456.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.251

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	13	0	21	3	1	26	133	1292	24	56	1417	26
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	1	0	0	1	20	17	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]	13	1	21	3	2	46	150	1292	24	56	1417	26
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]	3	0	6	1	1	12	40	347	6	15	380	7
Total Analysis Volume [veh/h]	14	1	23	3	2	49	161	1386	26	60	1520	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.32	0.25	0.06	0.56	0.50	0.14	0.38	0.01	0.00	0.13	0.02	0.00
d_M, Delay for Movement [s/veh]	2407.73	2456.29	1563.04	942.06	1167.44	276.62	18.58	0.00	0.00	13.59	0.00	0.00
Movement LOS	F	F	F	F	F	F	C	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	5.87	5.87	5.87	5.12	5.12	5.12	1.74	0.00	0.00	0.43	0.00	0.00
95th-Percentile Queue Length [ft/ln]	146.76	146.76	146.76	127.94	127.94	127.94	43.54	0.00	0.00	10.66	0.00	0.00
d_A, Approach Delay [s/veh]	1897.75			346.59			1.90			0.51		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	28.91											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	147	12	42	20	18	23	31	1198	84	85	1331	55
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	1	0	0	1	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]	147	13	42	20	19	23	31	1198	84	85	1331	55
Peak Hour Factor	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960
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]	41	4	12	6	5	6	9	334	23	24	371	15
Total Analysis Volume [veh/h]	164	15	47	22	21	26	35	1337	94	95	1485	61
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.11	0.03	0.01	0.03	0.02	0.02	0.45	0.45	0.06	0.48	0.48
Intersection LOS	C											
Intersection V/C	0.736											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	400	1232	188	327	1384	113	325	658	562	260	294	252
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]	1	1	1	0	1	0	0	0	1	1	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]	401	1233	189	327	1385	113	325	658	563	261	294	252
Peak Hour Factor	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420
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]	106	327	50	87	368	30	86	175	149	69	78	67
Total Analysis Volume [veh/h]	426	1309	201	347	1470	120	345	699	598	277	312	268
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.27	0.13	0.12	0.31	0.08	0.12	0.22	0.19	0.10	0.12	0.12
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.931

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1343	493	0	1431	896	0	0	0	636	0	514
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]	1	3	1	0	3	0	0	0	0	3	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]	1	1346	494	0	1434	896	0	0	0	639	0	514
Peak Hour Factor	1.0000	0.9610	0.9610	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	1.0000	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]	0	350	129	0	373	233	0	0	0	166	0	134
Total Analysis Volume [veh/h]	1	1401	514	0	1492	932	0	0	0	665	0	535
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	82	0	0	82	0	0	0	0	38	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	58	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	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		20	20	20
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52		0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.30	0.32	0.33	0.33	0.65		0.25	0.26	0.28
s, saturation flow rate [veh/h]	3204	1474	1431	4584	1431		1603	1540	1431
c, Capacity [veh/h]	1660	763	741	2374	741		551	530	492
d1, Uniform Delay [s]	9.60	9.97	10.12	9.98	13.96		16.61	16.84	17.30
k, delay calibration	0.11	0.18	0.19	0.11	0.50		0.11	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]	0.32	1.39	1.68	0.28	126.91		1.84	2.22	3.45
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	0.58	0.63	0.65	0.63	1.26		0.73	0.76	0.81
d, Delay for Lane Group [s/veh]	9.92	11.36	11.79	10.25	140.87		18.45	19.05	20.75
Lane Group LOS	A	B	B	B	F		B	B	C
Critical Lane Group	No	No	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.39	3.74	3.84	3.64	33.57		4.37	4.47	4.73
50th-Percentile Queue Length [ft/ln]	84.63	93.38	95.88	90.92	839.32		109.26	111.78	118.26
95th-Percentile Queue Length [veh/ln]	6.09	6.72	6.90	6.55	50.44		7.80	7.94	8.30
95th-Percentile Queue Length [ft/ln]	152.34	168.09	172.59	163.66	1260.90		194.97	198.48	207.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.05	11.76	0.00	10.25	140.87	0.00	0.00	0.00	18.69	0.00	20.32
Movement LOS		B	B		B	F				B		C
d_A, Approach Delay [s/veh]	10.75			60.48			0.00			19.42		
Approach LOS	B			E			A			B		
d_I, Intersection Delay [s/veh]	34.39											
Intersection LOS	C											
Intersection V/C	0.931											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.649
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1300	1300	0	0
d_b, Bicycle Delay [s]	7.35	7.35	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.613	2.893	4.132	6.112
Bicycle LOS	B	C	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1532	35	0	1772	333	416	304	421	0	0	375
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]	1	6	1	0	6	0	0	0	1	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]	1	1538	36	0	1778	333	416	304	422	0	0	375
Peak Hour Factor	1.0000	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	0.9740	0.9740	1.0000	1.0000	0.9740
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	395	9	0	456	85	107	78	108	0	0	96
Total Analysis Volume [veh/h]	1	1579	37	0	1825	342	427	312	433	0	0	385
Presence of On-Street Parking	No		No	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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	0	4
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	41	0	0	41	0	0	79	0	0	0	79
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
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	2.00	2.00	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]	68	68	68	68	44	44	44	44
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.36	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.26	0.24	0.30	0.24	0.27	0.25	0.33	0.27
s, saturation flow rate [veh/h]	4584	1656	6113	1431	1275	1574	1302	1431
c, Capacity [veh/h]	2617	946	3490	817	495	607	472	518
d1, Uniform Delay [s]	15.00	14.60	15.74	14.50	35.40	32.64	36.52	33.35
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.12	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]	0.59	1.41	0.56	1.58	1.67	1.24	8.48	2.13
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	0.46	0.43	0.52	0.42	0.68	0.66	0.92	0.74
d, Delay for Lane Group [s/veh]	15.60	16.01	16.30	16.08	37.07	33.88	45.00	35.48
Lane Group LOS	B	B	B	B	D	C	D	D
Critical Lane Group	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.04	6.11	7.12	5.19	9.10	10.20	13.16	10.09
50th-Percentile Queue Length [ft/ln]	151.05	152.75	178.07	129.63	227.46	254.97	329.10	252.31
95th-Percentile Queue Length [veh/ln]	10.07	10.16	11.50	8.92	14.05	15.44	19.11	15.30
95th-Percentile Queue Length [ft/ln]	251.83	254.10	287.49	223.00	351.13	385.91	477.86	382.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	15.69	16.01	0.00	16.30	16.08	36.57	33.88	45.00	0.00	0.00	35.48
Movement LOS		B	B		B	B	D	C	D			D
d_A, Approach Delay [s/veh]	15.70			16.26			38.91			35.48		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.45											
Intersection LOS	C											
Intersection V/C	0.631											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.454	2.154
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	617	1250	0
d_b, Bicycle Delay [s]	28.70	28.70	8.44	60.00
l_b,int, Bicycle LOS Score for Intersection	2.226	2.453	2.527	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.907

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
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]	6	0	0	0	0	7	8	1	6	0	1	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]	39	991	48	500	1386	329	364	100	40	94	129	112
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]	10	254	12	128	355	84	93	26	10	24	33	29
Total Analysis Volume [veh/h]	40	1015	49	512	1420	337	373	102	41	96	132	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.18	0.41	0.41	0.23	0.09	0.09	0.06	0.14	0.07
Intersection LOS	E											
Intersection V/C	0.907											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	52	194	196	622	292	520	365	902	24	171	859	495
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	1	0	5	1	0	0	0	0	0	0	5
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]	52	195	196	627	293	520	365	902	24	171	859	500
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
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]	14	51	52	166	77	137	96	238	6	45	227	132
Total Analysis Volume [veh/h]	55	206	207	662	309	549	385	952	25	181	907	528
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.13	0.23	0.19	0.34	0.13	0.30	0.02	0.11	0.28	0.33
Intersection LOS	E											
Intersection V/C	0.941											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	253	63	42	142	148	235	200	1065	259	75	941	49
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]	1	0	0	0	0	1	1	3	1	0	3	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]	254	63	42	142	148	236	201	1068	260	75	944	49
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
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]	65	16	11	36	38	60	51	272	66	19	241	12
Total Analysis Volume [veh/h]	259	64	43	145	151	241	205	1089	265	76	962	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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.04	0.03	0.09	0.09	0.15	0.13	0.34	0.17	0.05	0.30	0.03
Intersection LOS	D											
Intersection V/C	0.841											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.937

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	388	675	167	350	822	71	107	983	171	229	695	135
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]	1	0	0	0	0	1	1	1	1	0	1	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]	389	675	167	350	822	72	108	984	172	229	696	135
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
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]	102	176	44	91	215	19	28	257	45	60	182	35
Total Analysis Volume [veh/h]	406	705	175	366	859	75	113	1028	180	239	727	141
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]	10.00

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

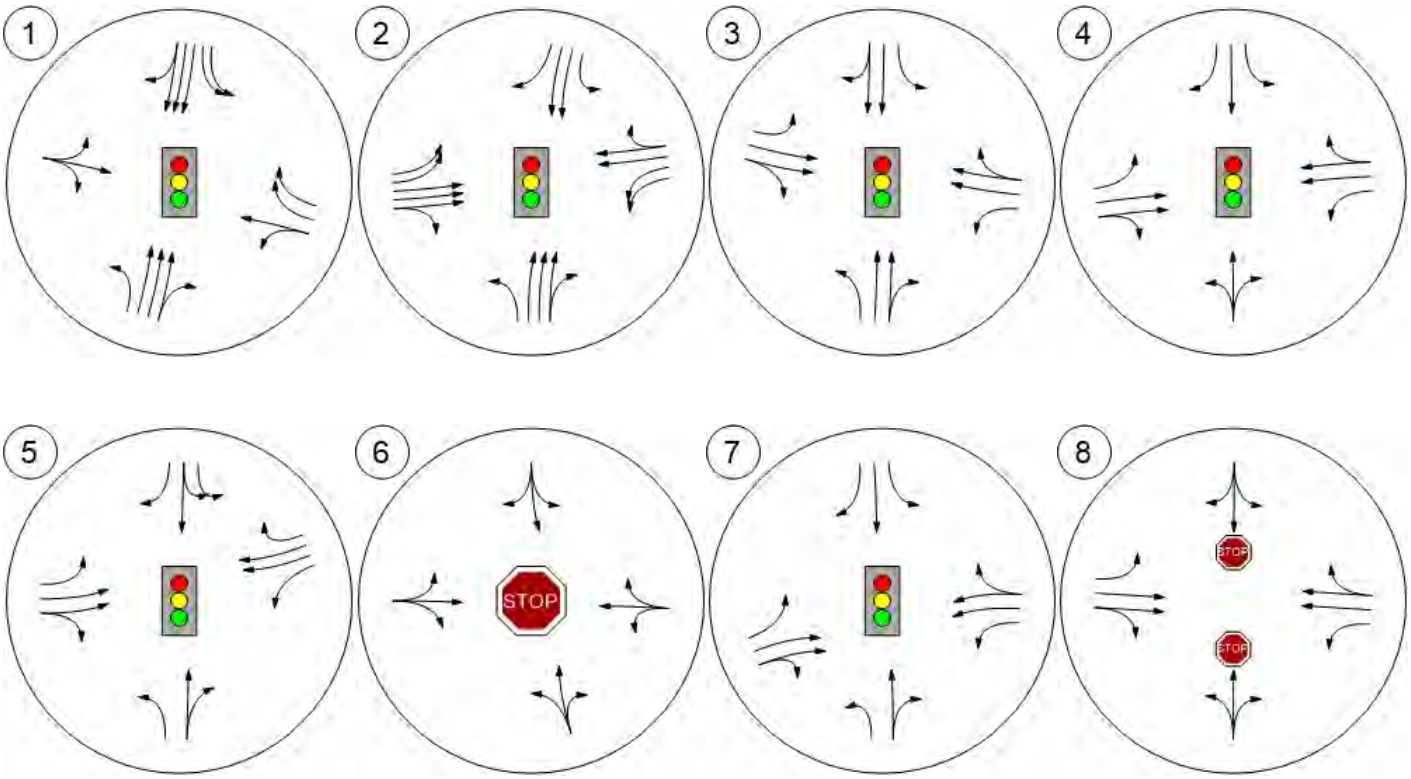
V/C, Movement V/C Ratio	0.14	0.22	0.11	0.13	0.29	0.29	0.04	0.32	0.11	0.08	0.18	0.18
Intersection LOS	E											
Intersection V/C	0.937											

Study Intersections



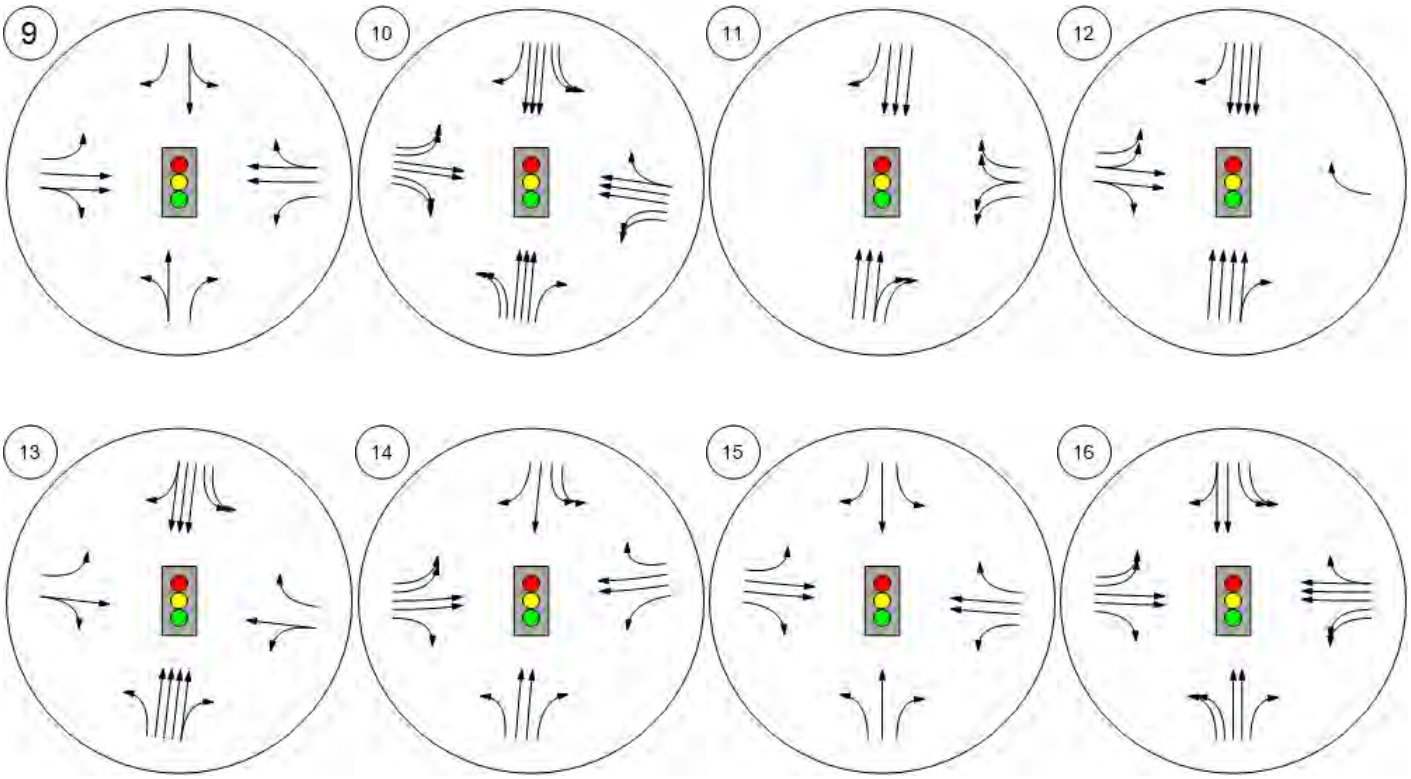
Lane Configuration and Traffic Control





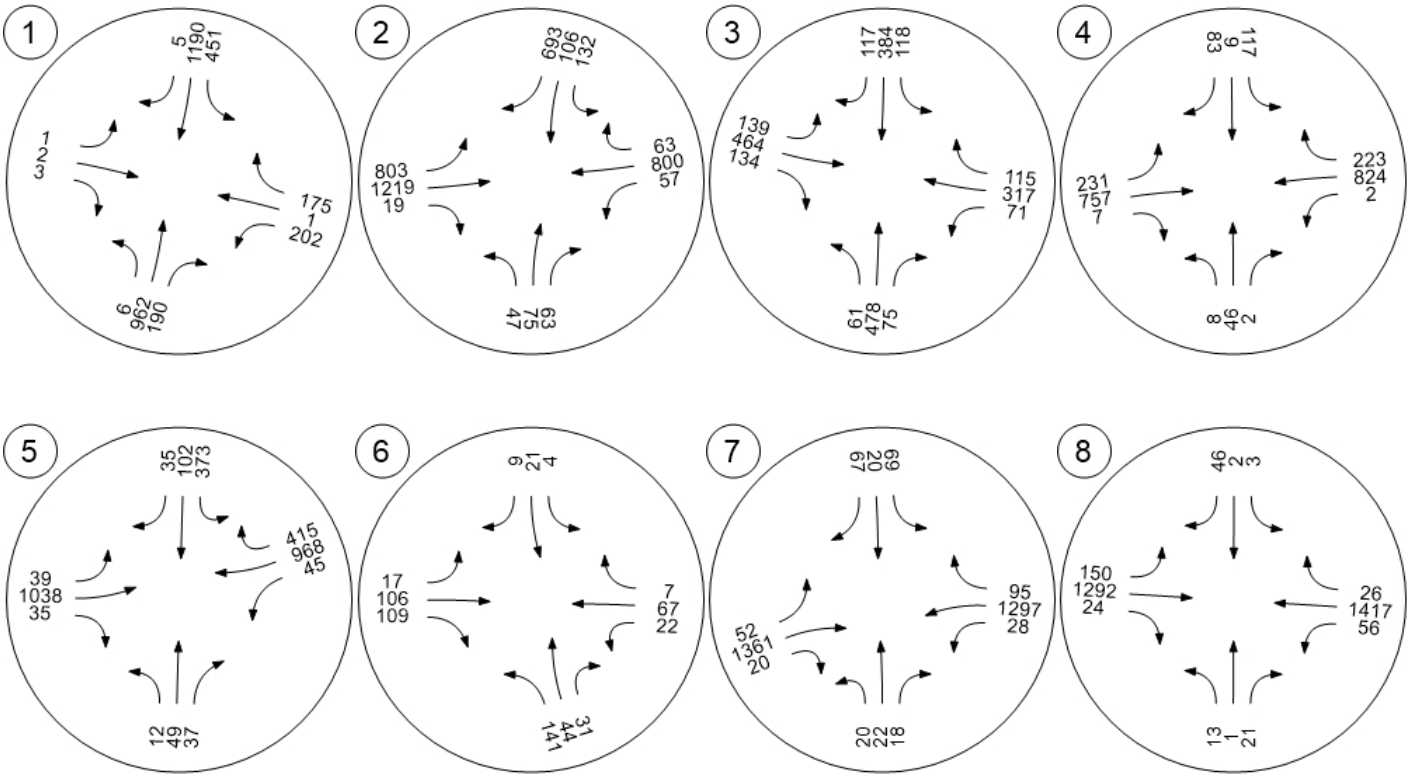
Lane Configuration and Traffic Control





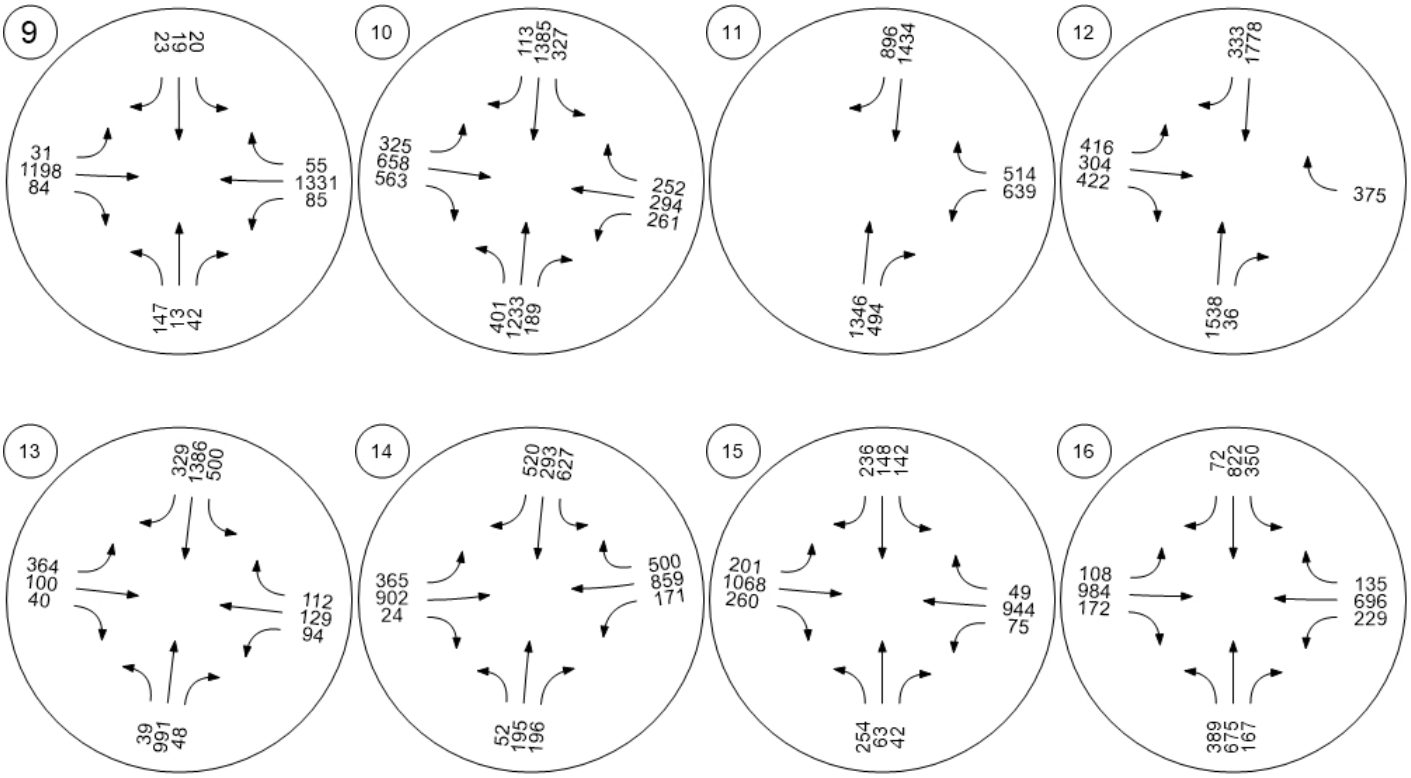
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES and Residential Project

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+P2 AM.pdf

Scenario 14 Phase II + EX AM
6/28/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	NB Right	0.668	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.047	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	WB Thru	0.761	-	C
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Thru	0.733	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.713	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Thru	1.064	65.4	F
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	EB Thru	0.728	-	C
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	SB Thru	0.794	10,000.0	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.558	-	A
10	Azusa Ave at Gale Ave	Signalized	ICU 1	NB Thru	0.790	-	C
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.686	14.1	B
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Left	0.731	24.5	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	EB Left	0.904	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.851	-	D
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.651	-	B
16	Fullerton Av at Colima Road	Signalized	ICU 1	SB Thru	0.760	-	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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.668

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	1	1157	200	201	995	6	4	2	8	242	2	382
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	2	0	0	0	6	0	4	4	4
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]	1	1157	200	203	995	6	4	8	8	246	6	386
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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	316	55	56	272	2	1	2	2	67	2	106
Total Analysis Volume [veh/h]	1	1266	219	222	1089	7	4	9	9	269	7	422
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.31	0.08	0.23	0.23	0.00	0.01	0.01	0.17	0.17	0.13
Intersection LOS	B											
Intersection V/C	0.668											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.047

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	24	74	23	104	48	620	548	780	8	29	826	62
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	4	0	0	0	0	4	0	4	4	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]	24	74	27	104	48	620	548	784	8	33	830	62
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
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]	6	19	7	27	13	163	144	206	2	9	218	16
Total Analysis Volume [veh/h]	25	78	28	109	50	651	575	823	8	35	871	65
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.07	0.02	0.41	0.20	0.17	0.17	0.01	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.047											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.761

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	161	449	60	115	433	143	124	263	121	118	491	221
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	4	4	0	0	0	8	0	4	12	4
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]	161	449	64	119	433	143	124	271	121	122	503	225
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
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]	45	127	18	34	122	40	35	76	34	34	142	63
Total Analysis Volume [veh/h]	182	506	72	134	488	161	140	306	136	138	567	254
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.18	0.18	0.08	0.20	0.20	0.09	0.14	0.14	0.09	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.761											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	4	4	0	0	0	8	0	4	8	4
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]	8	46	5	120	9	83	231	763	7	5	830	226
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
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]	2	12	1	32	2	22	62	206	2	1	224	61
Total Analysis Volume [veh/h]	9	50	5	130	10	90	249	824	8	5	896	244
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.16	0.26	0.26	0.00	0.36	0.36
Intersection LOS	C											
Intersection V/C	0.733											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	48	127	40	312	48	60	60	915	25	18	836	398
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	6	28	0	0	0	32	0	4	28	32
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]	48	127	46	340	48	60	60	947	25	22	864	430
Peak Hour Factor	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930
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]	13	36	13	95	13	17	17	265	7	6	242	120
Total Analysis Volume [veh/h]	54	142	52	381	54	67	67	1060	28	25	968	482
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.12	0.14	0.04	0.04	0.34	0.34	0.02	0.30	0.30
Intersection LOS	C											
Intersection V/C	0.713											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	65.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.064

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	114	187	19	18	138	11	77	73	169	60	138	53
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	6	4	0	0	0	4	0	4	4	4
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]	114	187	25	22	138	11	77	77	169	64	142	57
Peak Hour Factor	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120
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	66	9	8	48	4	27	27	59	22	50	20
Total Analysis Volume [veh/h]	160	263	35	31	194	15	108	108	237	90	199	80
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	458	390	453	423
Degree of Utilization, x	1.06	0.62	1.02	0.87

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	14.93	3.97	13.48	8.89
95th-Percentile Queue Length [ft]	373.37	99.34	336.99	222.18
Approach Delay [s/veh]	90.60	26.00	75.46	47.55
Approach LOS	F	D	F	E
Intersection Delay [s/veh]	65.44			
Intersection LOS	F			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	54	80	22	98	38	154	110	1168	10	12	1053	62
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	8	0	0	0	0	66	0	4	64	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]	54	80	30	98	38	154	110	1234	10	16	1117	62
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]	15	22	8	27	11	43	30	341	3	4	309	17
Total Analysis Volume [veh/h]	60	88	33	108	42	170	122	1365	11	18	1236	69
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.07	0.03	0.11	0.08	0.43	0.43	0.01	0.41	0.41
Intersection LOS	C											
Intersection V/C	0.728											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima 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):	0.794

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd				Colima Rd		
Approach	Northbound			Southbound			Eastbound				Westbound		
Lane Configuration													
Turning Movement	Left	Thru	Right	Left	Thru	Right	U-tu	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	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.0	100.0	100.0	100.0	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00				40.00		
Grade [%]	0.00			0.00			0.00				0.00		
Crosswalk	No			No			No				No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd				Colima Rd		
Base Volume Input [veh/h]	27	3	36	1	1	63	0	133	1173	14	24	1038	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	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	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	4	68	0	74	0	0	0	0	0
Diverted Trips [veh/h]	0	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	0
Existing Site Adjustment Volume [veh/h]	0	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	0
Total Hourly Volume [veh/h]	27	9	36	1	5	131	0	207	1173	14	24	1038	7
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.952	0.952	0.952	1.000	0.9520	0.9520	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	2	9	0	1	34	0	54	308	4	6	273	2
Total Analysis Volume [veh/h]	28	9	38	1	5	138	0	217	1232	14	25	1090	7
Pedestrian Volume [ped/h]	0			0			0				0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	9.57	1.42	0.09	0.00	0.79	0.29	0.00	0.62	0.01	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	6294.14	5633.00	5072.48	10000.0	10000.0	10000.0	33.23	30.46	0.00	0.00	11.80	0.00	0.00
Movement LOS	F	F	F	F	F	F	D	D	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	11.07	11.07	11.07	20.62	20.62	20.62	3.93	3.93	0.00	0.00	0.14	0.05	0.00
95th-Percentile Queue Length [ft/ln]	276.74	276.74	276.74	515.47	515.47	515.47	98.21	98.21	0.00	0.00	3.53	1.18	0.00
d_A, Approach Delay [s/veh]	5595.83			10000.00			4.52				0.26		
Approach LOS	F			F			A				A		
d_I, Intersection Delay [s/veh]	665.69												
Intersection LOS	F												

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	7	6	52	13	40	65	1143	29	19	996	33
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	4	0	0	4	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]	20	11	6	52	17	40	65	1143	29	19	996	33
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]	5	3	2	14	4	11	17	301	8	5	263	9
Total Analysis Volume [veh/h]	21	12	6	55	18	42	69	1206	31	20	1051	35
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.00	0.03	0.05	0.03	0.04	0.39	0.39	0.01	0.34	0.34
Intersection LOS	A											
Intersection V/C	0.558											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

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	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	587	1367	153	199	918	214	202	266	212	89	419	242
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]	4	31	4	0	2	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]	591	1398	157	199	920	214	202	266	212	89	419	242
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
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]	169	399	45	57	263	61	58	76	61	25	120	69
Total Analysis Volume [veh/h]	675	1596	179	227	1050	244	231	304	242	102	478	276
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.33	0.11	0.08	0.22	0.15	0.08	0.10	0.08	0.04	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.790											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1375	289	0	951	254	0	0	0	592	0	738
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	39	8	0	2	0	0	0	0	9	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	1414	297	0	953	254	0	0	0	601	0	738
Peak Hour Factor	1.0000	0.9000	0.9000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	1.0000	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]	0	393	83	0	265	71	0	0	0	167	0	205
Total Analysis Volume [veh/h]	0	1571	330	0	1059	282	0	0	0	668	0	820
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	59	0	0	59	0	0	0	0	61	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	53	53	53	53	53		53	53	53
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]	23	23	23	23	23		22	22	22
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43		0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.33	0.34	0.23	0.23	0.20		0.31	0.33	0.35
s, saturation flow rate [veh/h]	3204	1541	1431	4584	1431		1603	1486	1431
c, Capacity [veh/h]	1381	664	616	1975	616		672	623	600
d1, Uniform Delay [s]	12.83	13.08	11.23	11.23	10.76		13.03	13.51	13.77
k, delay calibration	0.11	0.16	0.11	0.11	0.11		0.12	0.15	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.88	3.13	0.72	0.23	0.53		1.79	3.32	4.59
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	0.76	0.79	0.54	0.54	0.46		0.74	0.80	0.83
d, Delay for Lane Group [s/veh]	13.71	16.22	11.95	11.46	11.29		14.82	16.83	18.36
Lane Group LOS	B	B	B	B	B		B	B	B
Critical Lane Group	No	Yes	No	No	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.47	4.96	2.50	2.58	2.03		4.43	4.82	5.09
50th-Percentile Queue Length [ft/ln]	111.72	124.06	62.39	64.48	50.82		110.77	120.51	127.36
95th-Percentile Queue Length [veh/ln]	7.94	8.62	4.49	4.64	3.66		7.88	8.42	8.80
95th-Percentile Queue Length [ft/ln]	198.40	215.39	112.29	116.07	91.47		197.07	210.53	219.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	14.20	11.95	0.00	11.46	11.29	0.00	0.00	0.00	15.34	0.00	17.76
Movement LOS		B	B		B	B				B		B
d_A, Approach Delay [s/veh]	14.10			11.43			0.00			16.67		
Approach LOS	B			B			A			B		
d_I, Intersection Delay [s/veh]	14.15											
Intersection LOS	B											
Intersection V/C	0.686											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.670
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	917	917	0	0
d_b, Bicycle Delay [s]	17.60	17.60	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.605	2.297	4.132	6.588
Bicycle LOS	B	B	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1442	7	0	1177	494	784	190	292	0	0	137
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	51	4	0	11	0	0	0	2	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	1493	11	0	1188	494	784	190	294	0	0	137
Peak Hour Factor	1.0000	0.9440	0.9440	1.0000	0.9440	0.9440	0.9440	0.9440	0.9440	1.0000	1.0000	0.9440
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	395	3	0	315	131	208	50	78	0	0	36
Total Analysis Volume [veh/h]	0	1582	12	0	1258	523	831	201	311	0	0	145
Presence of On-Street Parking	No		No	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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	0	4
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	48	0	0	48	0	0	72	0	0	0	72
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
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	2.00	2.00	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]	64	64	64	64	48	48	48	48
g / C, Green / Cycle	0.53	0.53	0.53	0.53	0.40	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.26	0.24	0.21	0.37	0.33	0.37	0.33	0.10
s, saturation flow rate [veh/h]	4584	1674	6113	1431	1275	1274	1365	1431
c, Capacity [veh/h]	2438	890	3251	761	555	568	548	574
d1, Uniform Delay [s]	17.78	17.25	16.55	20.72	33.76	34.75	32.06	23.92
k, delay calibration	0.50	0.50	0.50	0.50	0.17	0.21	0.16	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]	0.71	1.63	0.35	5.02	3.46	5.66	4.54	0.23
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	0.49	0.45	0.39	0.69	0.77	0.82	0.82	0.25
d, Delay for Lane Group [s/veh]	18.49	18.88	16.90	25.74	37.22	40.41	36.61	24.14
Lane Group LOS	B	B	B	C	D	D	D	C
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.64	6.69	4.84	10.97	11.93	13.70	12.32	2.83
50th-Percentile Queue Length [ft/ln]	165.93	167.17	120.93	274.19	298.15	342.45	307.89	70.75
95th-Percentile Queue Length [veh/ln]	10.86	10.93	8.44	16.40	17.59	19.77	18.07	5.09
95th-Percentile Queue Length [ft/ln]	271.56	273.19	211.10	409.97	439.74	494.19	451.77	127.35

Movement, Approach, & Intersection Results

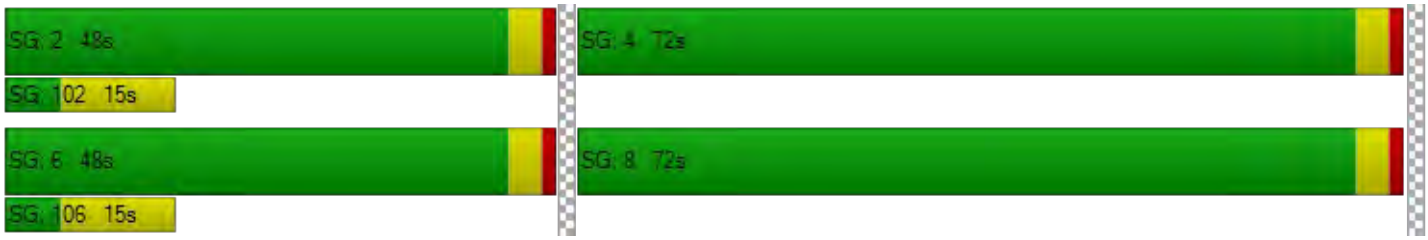
d_M, Delay for Movement [s/veh]	0.00	18.59	18.88	0.00	16.90	25.74	38.76	37.78	36.61	0.00	0.00	24.14
Movement LOS		B	B		B	C	D	D	D			C
d_A, Approach Delay [s/veh]	18.59			19.50			38.12			24.14		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	24.48											
Intersection LOS	C											
Intersection V/C	0.731											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.525	2.052
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1133	0
d_b, Bicycle Delay [s]	24.07	24.07	11.27	60.00
l_b,int, Bicycle LOS Score for Intersection	2.217	2.294	2.668	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.904

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
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]	32	0	0	0	0	13	55	4	24	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]	67	890	58	163	993	346	511	113	73	57	38	85
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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]	18	245	16	45	273	95	141	31	20	16	10	23
Total Analysis Volume [veh/h]	74	979	64	179	1092	381	562	124	80	63	42	94
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.16	0.16	0.06	0.34	0.34	0.35	0.13	0.13	0.04	0.07	0.06
Intersection LOS	E											
Intersection V/C	0.904											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.851

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	65	201	112	424	209	535	382	663	41	107	458	338
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	6	0	20	4	0	0	0	0	0	0	26
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]	65	207	112	444	213	535	382	663	41	107	458	364
Peak Hour Factor	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780
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]	17	53	29	113	54	137	98	169	10	27	117	93
Total Analysis Volume [veh/h]	66	212	115	454	218	547	391	678	42	109	468	372
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.07	0.16	0.14	0.34	0.14	0.21	0.03	0.07	0.15	0.23
Intersection LOS	D											
Intersection V/C	0.851											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	268	46	22	33	27	70	107	743	153	24	729	8
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]	6	0	0	0	0	2	4	12	4	0	18	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]	274	46	22	33	27	72	111	755	157	24	747	8
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]	73	12	6	9	7	19	29	200	42	6	198	2
Total Analysis Volume [veh/h]	291	49	23	35	29	76	118	801	166	25	792	8
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.18	0.03	0.01	0.02	0.02	0.05	0.07	0.25	0.10	0.02	0.25	0.01
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	381	637	123	166	952	62	55	359	182	203	636	93
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]	6	0	0	0	0	6	4	4	4	0	6	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]	387	637	123	166	952	68	59	363	186	203	642	93
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	100	164	32	43	246	18	15	94	48	52	166	24
Total Analysis Volume [veh/h]	399	657	127	171	982	70	61	375	192	209	663	96
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]	10.00

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

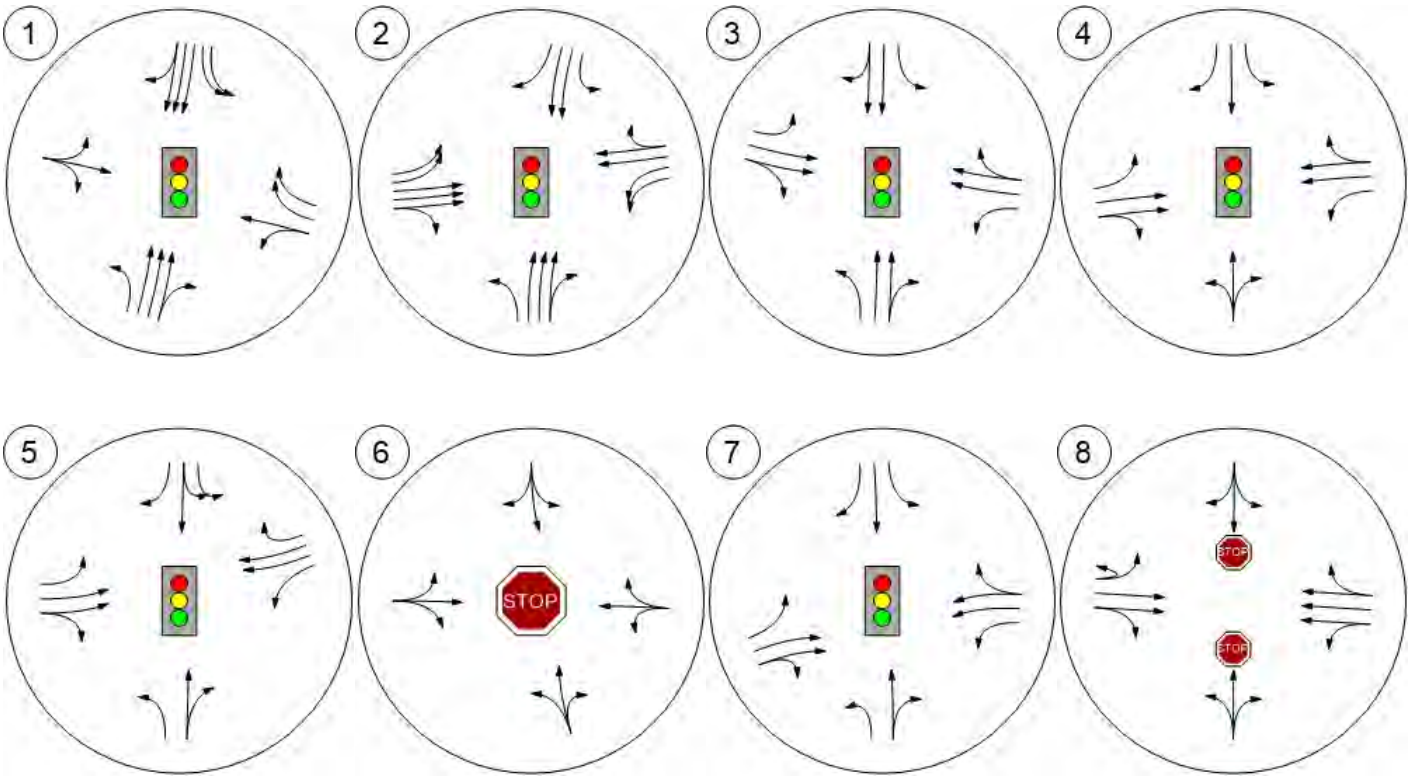
V/C, Movement V/C Ratio	0.14	0.21	0.08	0.06	0.33	0.33	0.02	0.12	0.12	0.07	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.760											

Study Intersections



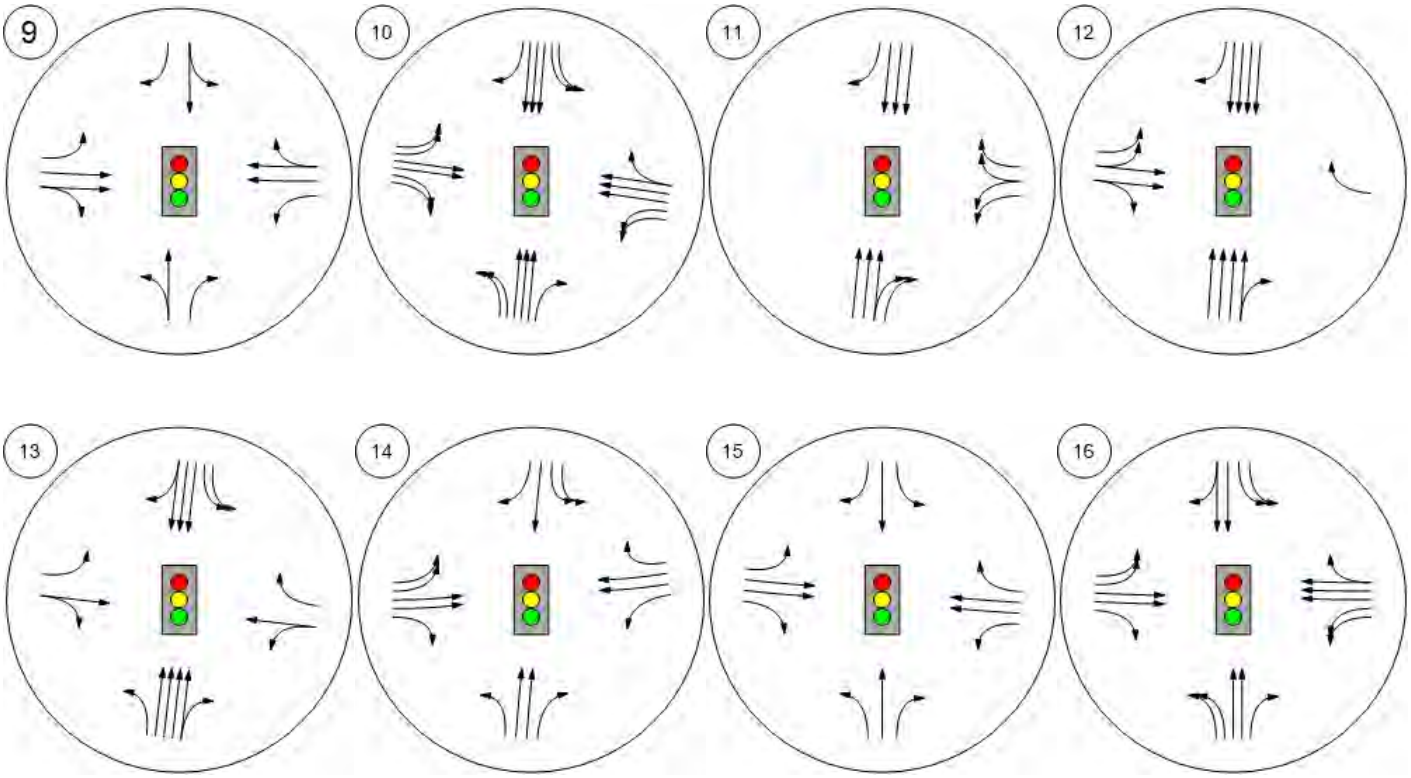
Lane Configuration and Traffic Control





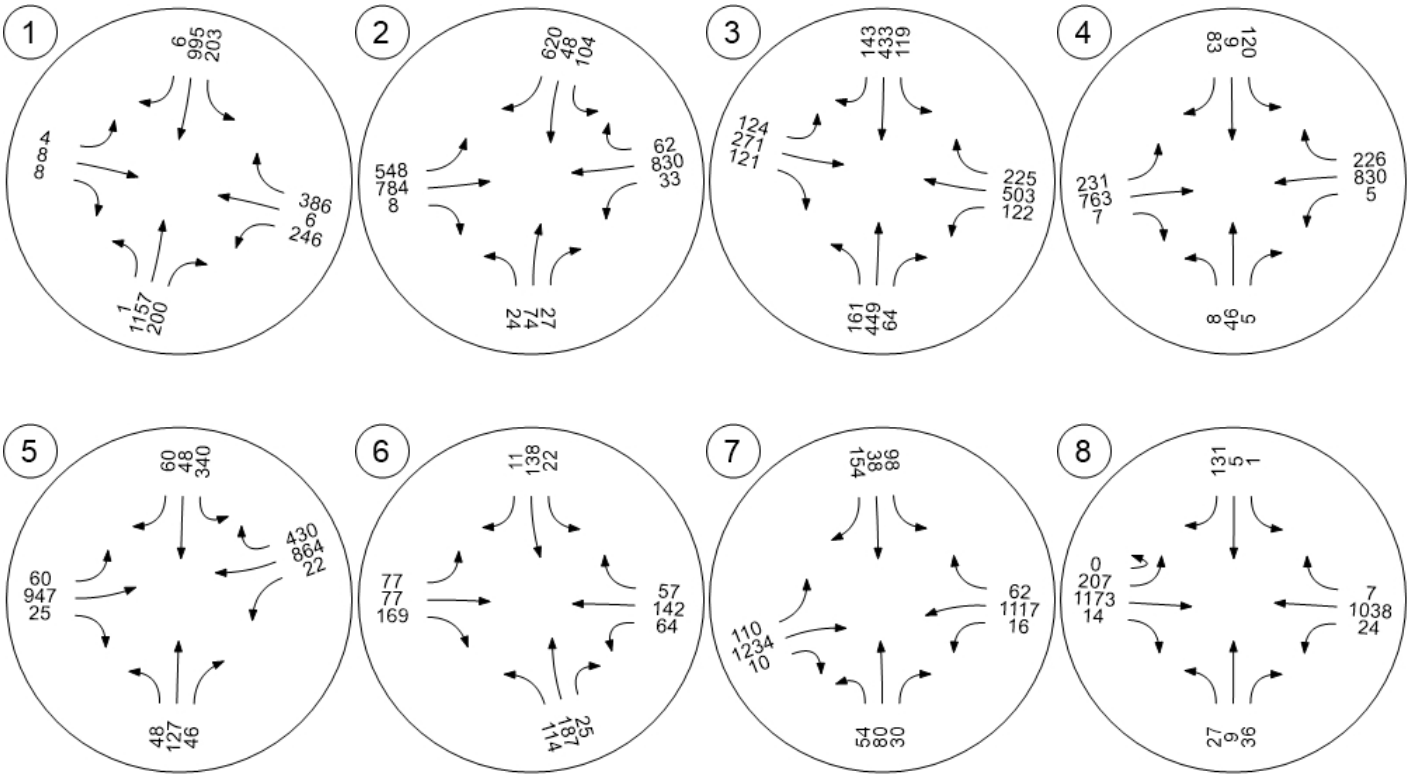
Lane Configuration and Traffic Control





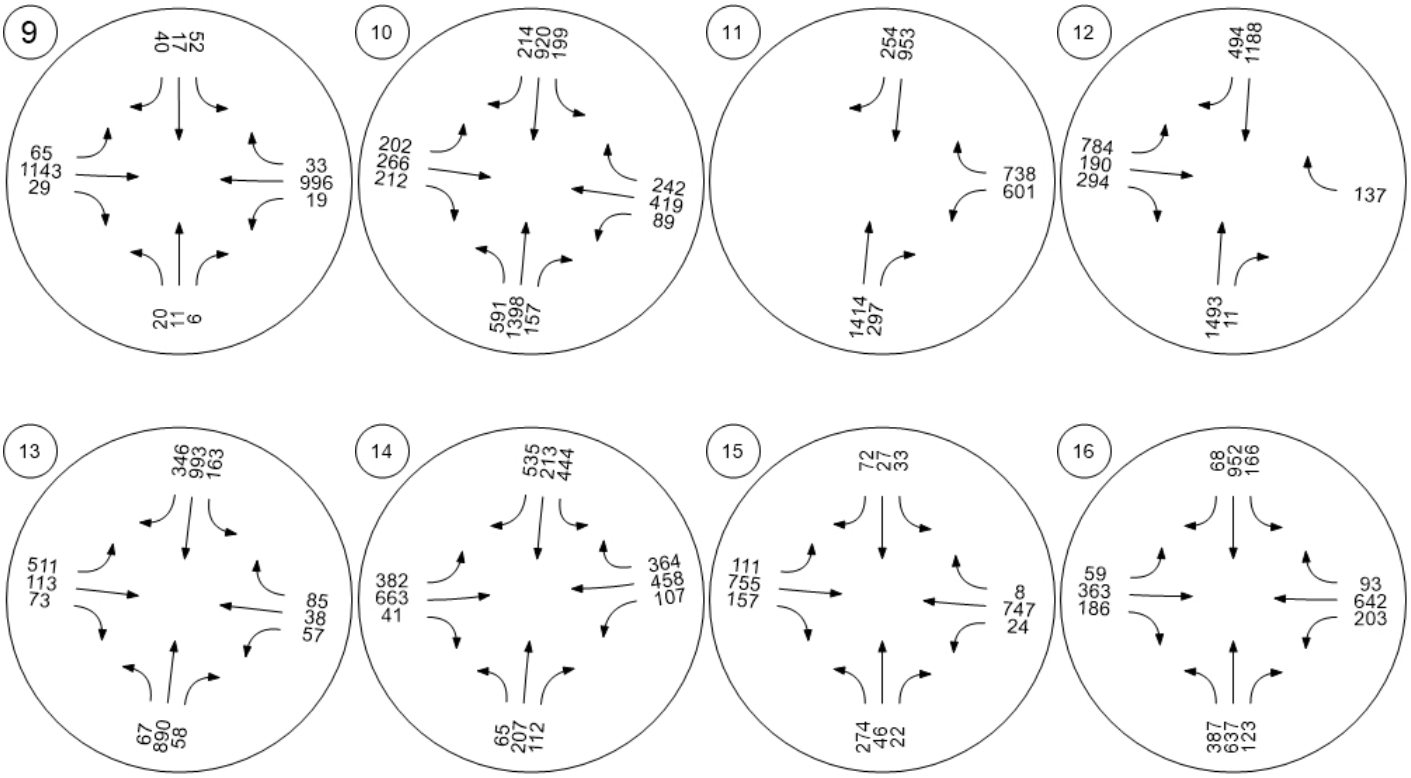
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES and Residential Project

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+P2 PM.pdf

Scenario 15 Phase II + EX PM
6/28/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	SB Thru	0.652	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.220	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	EB Thru	0.624	-	B
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Thru	0.720	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Right	0.690	-	B
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Left	0.312	9.5	A
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	WB Thru	0.665	-	B
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Thru	0.267	2,726.9	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	WB Thru	0.739	-	C
10	Azusa Ave at Gale Ave	Signalized	ICU 1	SB Thru	0.871	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	SB Right	0.934	34.7	C
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Right	0.644	22.8	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.932	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.945	-	E
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.846	-	D
16	Fullerton Av at Colima Road	Signalized	ICU 1	EB Thru	0.939	-	E

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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	6	962	189	450	1190	5	1	1	3	201	0	174
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	1	3	0	0	0	1	0	1	1	2
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]	6	962	190	453	1190	5	1	2	3	202	1	176
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]	2	252	50	119	312	1	0	1	1	53	0	46
Total Analysis Volume [veh/h]	6	1007	199	474	1246	5	1	2	3	212	1	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.25	0.25	0.16	0.26	0.26	0.00	0.00	0.00	0.13	0.13	0.06
Intersection LOS	B											
Intersection V/C	0.652											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.220

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	47	75	62	132	106	693	803	1218	19	56	799	63
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	2	0	0	0	0	5	0	2	4	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]	47	75	64	132	106	693	803	1223	19	58	803	63
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	13	20	17	35	28	186	216	329	5	16	216	17
Total Analysis Volume [veh/h]	51	81	69	142	114	745	863	1315	20	62	863	68
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.04	0.47	0.30	0.28	0.28	0.02	0.32	0.32
Intersection LOS	F											
Intersection V/C	1.220											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton 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	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	61	478	74	117	384	117	139	461	134	70	314	114
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	1	2	0	0	0	5	0	1	4	2
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]	61	478	75	119	384	117	139	466	134	71	318	116
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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]	17	131	21	33	105	32	38	127	37	19	87	32
Total Analysis Volume [veh/h]	67	523	82	130	420	128	152	510	147	78	348	127
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.19	0.19	0.08	0.17	0.17	0.10	0.21	0.21	0.05	0.15	0.15
Intersection LOS	B											
Intersection V/C	0.624											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.720

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	1	1	0	0	0	7	0	1	6	1
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]	8	46	2	117	9	83	231	762	7	2	828	223
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	2	12	1	31	2	22	62	203	2	1	221	59
Total Analysis Volume [veh/h]	9	49	2	125	10	88	246	812	7	2	883	238
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.15	0.26	0.26	0.00	0.35	0.35
Intersection LOS	C											
Intersection V/C	0.720											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.690

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	12	49	36	365	102	35	39	1031	35	44	958	407
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	1	11	0	0	0	12	0	1	11	10
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]	12	49	37	376	102	35	39	1043	35	45	969	417
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	3	13	10	98	27	9	10	271	9	12	252	108
Total Analysis Volume [veh/h]	12	51	38	391	106	36	41	1084	36	47	1007	433
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.06	0.06	0.12	0.16	0.02	0.03	0.35	0.35	0.03	0.31	0.27
Intersection LOS	B											
Intersection V/C	0.690											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-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):	0.312

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	141	44	30	3	21	9	17	105	109	21	66	6
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	1	1	0	0	0	1	0	1	1	1
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]	141	44	31	4	21	9	17	106	109	22	67	7
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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]	38	12	8	1	6	2	5	28	29	6	18	2
Total Analysis Volume [veh/h]	151	47	33	4	22	10	18	113	117	24	72	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	740	726	802	730
Degree of Utilization, x	0.31	0.05	0.31	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.33	0.16	1.32	0.49
95th-Percentile Queue Length [ft]	33.36	3.90	32.93	12.24
Approach Delay [s/veh]	10.06	8.21	9.48	8.74
Approach LOS	B	A	A	A
Intersection Delay [s/veh]	9.50			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.665

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	22	17	69	20	67	52	1345	20	27	1278	95
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	1	0	0	0	0	24	0	1	22	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]	20	22	18	69	20	67	52	1369	20	28	1300	95
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	5	6	5	18	5	18	14	360	5	7	342	25
Total Analysis Volume [veh/h]	21	23	19	73	21	70	55	1440	21	29	1367	100
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.03	0.05	0.01	0.04	0.03	0.46	0.46	0.02	0.46	0.46
Intersection LOS	B											
Intersection V/C	0.665											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	2,726.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.267

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	13	0	21	3	1	26	133	1292	24	56	1417	26
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	1	0	0	1	23	25	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]	13	1	21	3	2	49	158	1292	24	56	1417	26
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]	3	0	6	1	1	13	42	347	6	15	380	7
Total Analysis Volume [veh/h]	14	1	23	3	2	53	170	1386	26	60	1520	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.71	0.27	0.06	0.60	0.53	0.16	0.40	0.01	0.00	0.13	0.02	0.00
d_M, Delay for Movement [s/veh]	2719.37	2726.90	1775.28	1021.58	1256.32	307.22	19.04	0.00	0.00	13.59	0.00	0.00
Movement LOS	F	F	F	F	F	F	C	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	5.96	5.96	5.96	5.56	5.56	5.56	1.89	0.00	0.00	0.43	0.00	0.00
95th-Percentile Queue Length [ft/ln]	149.07	149.07	149.07	138.90	138.90	138.90	47.31	0.00	0.00	10.66	0.00	0.00
d_A, Approach Delay [s/veh]	2148.14			376.89			2.05			0.51		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	32.73											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	147	12	42	20	18	23	31	1198	84	85	1331	55
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	4	0	2	3	0	0	0	0	0	0	3
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]	147	16	42	22	21	23	31	1198	84	85	1331	58
Peak Hour Factor	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960
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]	41	4	12	6	6	6	9	334	23	24	371	16
Total Analysis Volume [veh/h]	164	18	47	25	23	26	35	1337	94	95	1485	65
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.11	0.03	0.02	0.03	0.02	0.02	0.45	0.45	0.06	0.48	0.48
Intersection LOS	C											
Intersection V/C	0.739											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	400	1232	188	327	1384	113	325	658	562	260	294	252
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]	2	4	2	0	7	0	0	0	3	2	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	1236	190	327	1391	113	325	658	565	262	294	252
Peak Hour Factor	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420
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]	107	328	50	87	369	30	86	175	150	70	78	67
Total Analysis Volume [veh/h]	427	1312	202	347	1477	120	345	699	600	278	312	268
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.27	0.13	0.12	0.31	0.08	0.12	0.22	0.19	0.10	0.12	0.12
Intersection LOS	D											
Intersection V/C	0.871											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1343	493	0	1431	896	0	0	0	636	0	514
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]	1	8	8	0	12	0	0	0	0	14	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]	1	1351	501	0	1443	896	0	0	0	650	0	514
Peak Hour Factor	1.0000	0.9610	0.9610	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	1.0000	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]	0	351	130	0	375	233	0	0	0	169	0	134
Total Analysis Volume [veh/h]	1	1406	521	0	1502	932	0	0	0	676	0	535
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	82	0	0	82	0	0	0	0	38	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	58	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	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		20	20	20
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52		0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.30	0.33	0.34	0.33	0.65		0.25	0.26	0.28
s, saturation flow rate [veh/h]	3204	1472	1431	4584	1431		1603	1542	1431
c, Capacity [veh/h]	1654	760	738	2366	738		555	534	495
d1, Uniform Delay [s]	9.73	10.11	10.26	10.12	14.06		16.60	16.82	17.30
k, delay calibration	0.11	0.18	0.20	0.11	0.50		0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	1.48	1.77	0.29	128.80		1.84	2.21	3.62
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	0.58	0.63	0.65	0.63	1.26		0.73	0.76	0.81
d, Delay for Lane Group [s/veh]	10.06	11.60	12.03	10.41	142.86		18.44	19.03	20.92
Lane Group LOS	B	B	B	B	F		B	B	C
Critical Lane Group	No	No	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.46	3.83	3.93	3.72	33.90		4.42	4.52	4.81
50th-Percentile Queue Length [ft/ln]	86.39	95.66	98.19	92.91	847.56		110.57	113.06	120.29
95th-Percentile Queue Length [veh/ln]	6.22	6.89	7.07	6.69	50.97		7.87	8.01	8.41
95th-Percentile Queue Length [ft/ln]	155.50	172.18	176.73	167.24	1274.31		196.80	200.24	210.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.19	12.00	0.00	10.41	142.86	0.00	0.00	0.00	18.68	0.00	20.46
Movement LOS		B	B		B	F				B		C
d_A, Approach Delay [s/veh]	10.94			61.12			0.00			19.47		
Approach LOS	B			E			A			B		
d_I, Intersection Delay [s/veh]	34.71											
Intersection LOS	C											
Intersection V/C	0.934											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.653
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1300	1300	0	0
d_b, Bicycle Delay [s]	7.35	7.35	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.619	2.898	4.132	6.131
Bicycle LOS	B	C	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.644

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1532	35	0	1772	333	416	304	421	0	0	375
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]	1	25	1	0	26	0	0	0	12	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]	1	1557	36	0	1798	333	416	304	433	0	0	375
Peak Hour Factor	1.0000	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	0.9740	0.9740	1.0000	1.0000	0.9740
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	400	9	0	461	85	107	78	111	0	0	96
Total Analysis Volume [veh/h]	1	1599	37	0	1846	342	427	312	445	0	0	385
Presence of On-Street Parking	No		No	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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	0	4
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	41	0	0	41	0	0	79	0	0	0	79
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
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	2.00	2.00	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]	67	67	67	67	45	45	45	45
g / C, Green / Cycle	0.56	0.56	0.56	0.56	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.27	0.25	0.30	0.24	0.26	0.25	0.34	0.27
s, saturation flow rate [veh/h]	4584	1657	6113	1431	1275	1573	1302	1431
c, Capacity [veh/h]	2576	931	3434	804	506	621	484	531
d1, Uniform Delay [s]	15.71	15.28	16.49	15.12	34.46	31.73	35.99	32.41
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.13	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]	0.63	1.51	0.61	1.65	1.52	1.13	9.14	1.90
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	0.48	0.44	0.54	0.43	0.67	0.65	0.92	0.72
d, Delay for Lane Group [s/veh]	16.35	16.79	17.10	16.77	35.99	32.86	45.13	34.31
Lane Group LOS	B	B	B	B	D	C	D	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.32	6.39	7.45	5.33	8.94	10.03	13.58	9.91
50th-Percentile Queue Length [ft/ln]	157.96	159.67	186.15	133.28	223.62	250.74	339.60	247.67
95th-Percentile Queue Length [veh/ln]	10.44	10.53	11.92	9.12	13.85	15.22	19.63	15.07
95th-Percentile Queue Length [ft/ln]	261.01	263.29	298.03	227.94	346.25	380.58	490.71	376.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.45	16.79	0.00	17.10	16.77	35.50	32.86	45.13	0.00	0.00	34.31
Movement LOS		B	B		B	B	D	C	D			C
d_A, Approach Delay [s/veh]	16.46			17.04			38.36			34.31		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	22.78											
Intersection LOS	C											
Intersection V/C	0.644											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.456	2.154
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	617	1250	0
d_b, Bicycle Delay [s]	28.70	28.70	8.44	60.00
l_b,int, Bicycle LOS Score for Intersection	2.234	2.462	2.536	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.932

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
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]	12	0	0	0	0	38	27	3	10	0	4	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]	45	991	48	500	1386	360	383	102	44	94	132	112
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]	12	254	12	128	355	92	98	26	11	24	34	29
Total Analysis Volume [veh/h]	46	1015	49	512	1420	369	392	105	45	96	135	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.18	0.41	0.41	0.25	0.09	0.09	0.06	0.14	0.07
Intersection LOS	E											
Intersection V/C	0.932											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.945

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	52	194	196	622	292	520	365	902	24	171	859	495
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	1	0	9	1	0	0	2	0	0	3	11
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]	52	195	196	631	293	520	365	904	24	171	862	506
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
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]	14	51	52	167	77	137	96	239	6	45	228	134
Total Analysis Volume [veh/h]	55	206	207	666	309	549	385	955	25	181	910	534
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.13	0.23	0.19	0.34	0.13	0.30	0.02	0.11	0.28	0.33
Intersection LOS	E											
Intersection V/C	0.945											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	253	63	42	142	148	235	200	1065	259	75	941	49
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]	1	0	0	0	0	4	3	7	1	0	9	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]	254	63	42	142	148	239	203	1072	260	75	950	49
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
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]	65	16	11	36	38	61	52	273	66	19	242	12
Total Analysis Volume [veh/h]	259	64	43	145	151	244	207	1093	265	76	968	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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.04	0.03	0.09	0.09	0.15	0.13	0.34	0.17	0.05	0.30	0.03
Intersection LOS	D											
Intersection V/C	0.846											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.939

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	388	675	167	350	822	71	107	983	171	229	695	135
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]	4	0	0	0	0	4	3	1	3	0	1	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]	392	675	167	350	822	75	110	984	174	229	696	135
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
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]	102	176	44	91	215	20	29	257	45	60	182	35
Total Analysis Volume [veh/h]	410	705	175	366	859	78	115	1028	182	239	727	141
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]	10.00

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

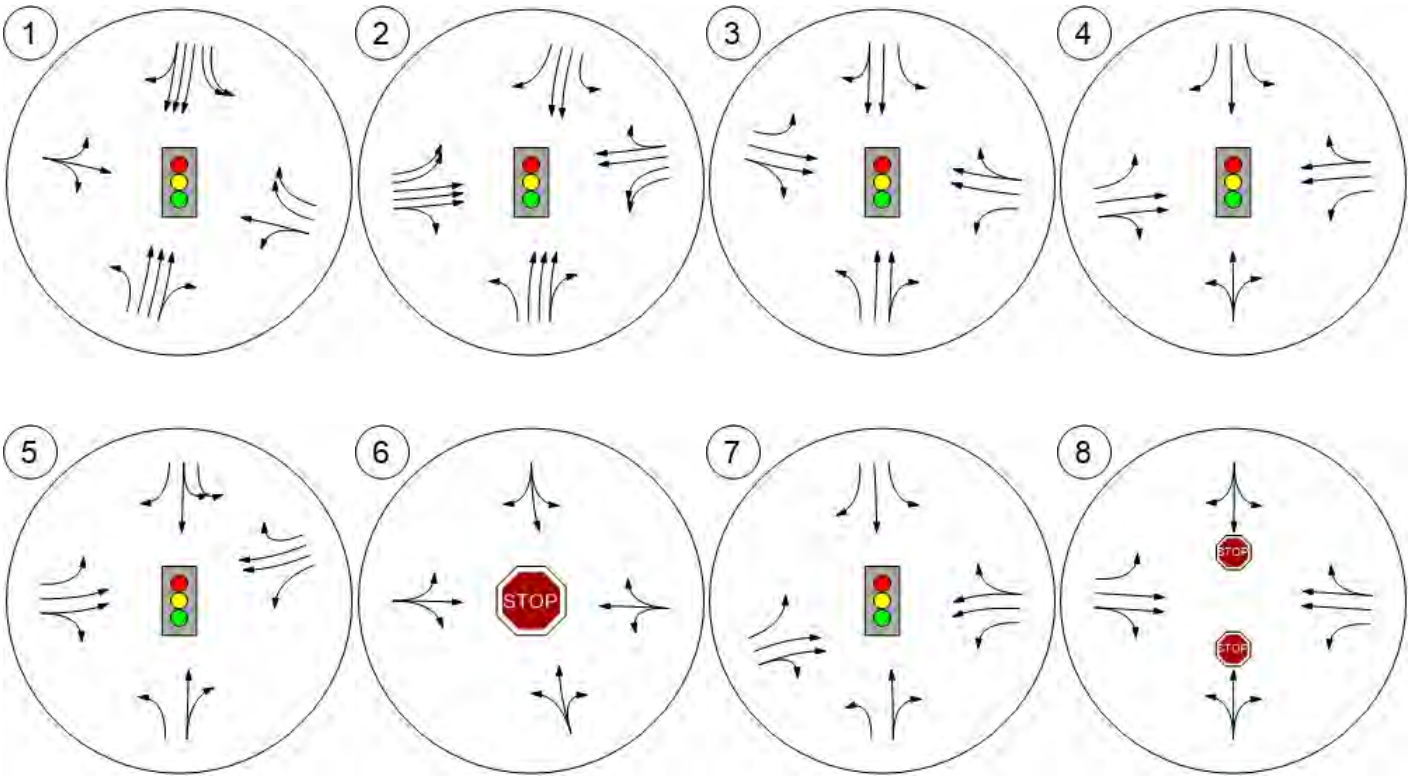
V/C, Movement V/C Ratio	0.14	0.22	0.11	0.13	0.29	0.29	0.04	0.32	0.11	0.08	0.18	0.18
Intersection LOS	E											
Intersection V/C	0.939											

Study Intersections



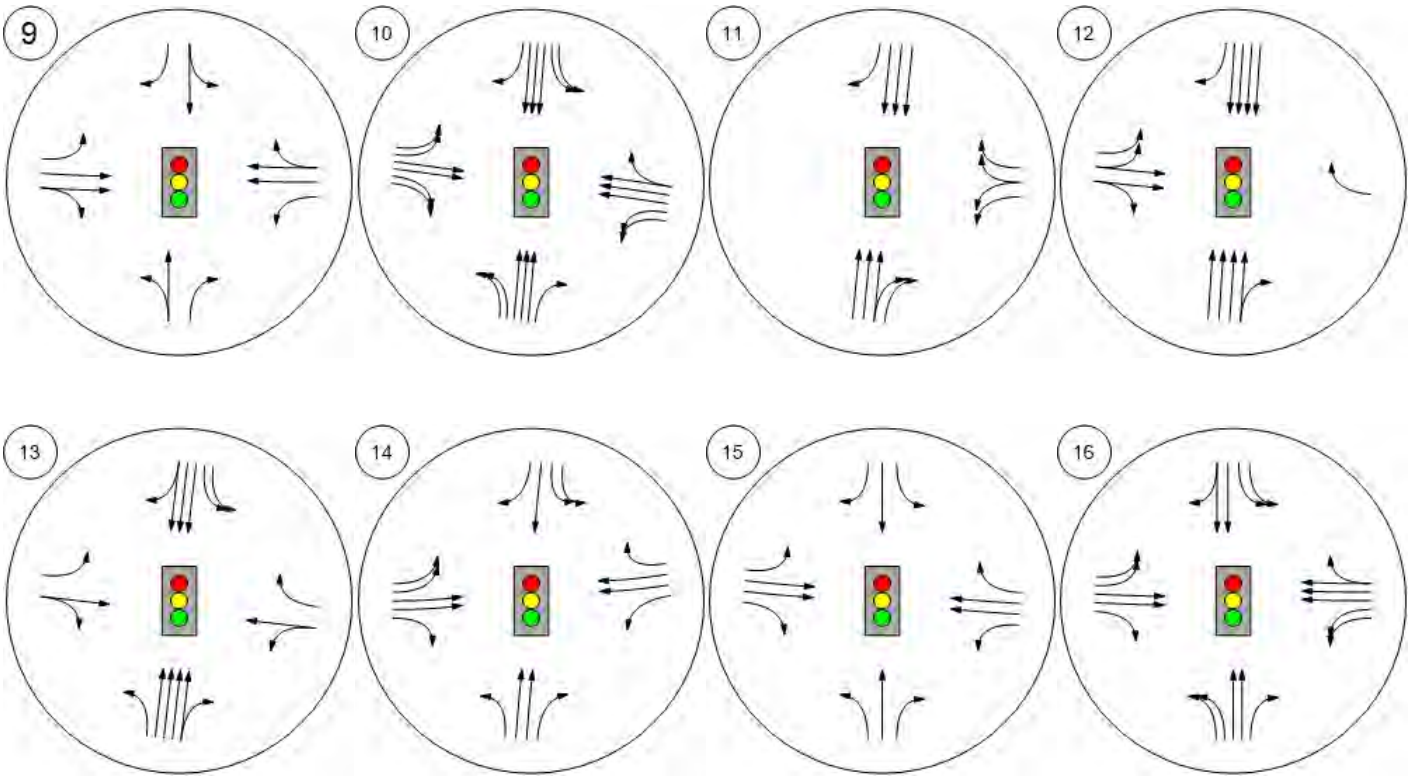
Lane Configuration and Traffic Control





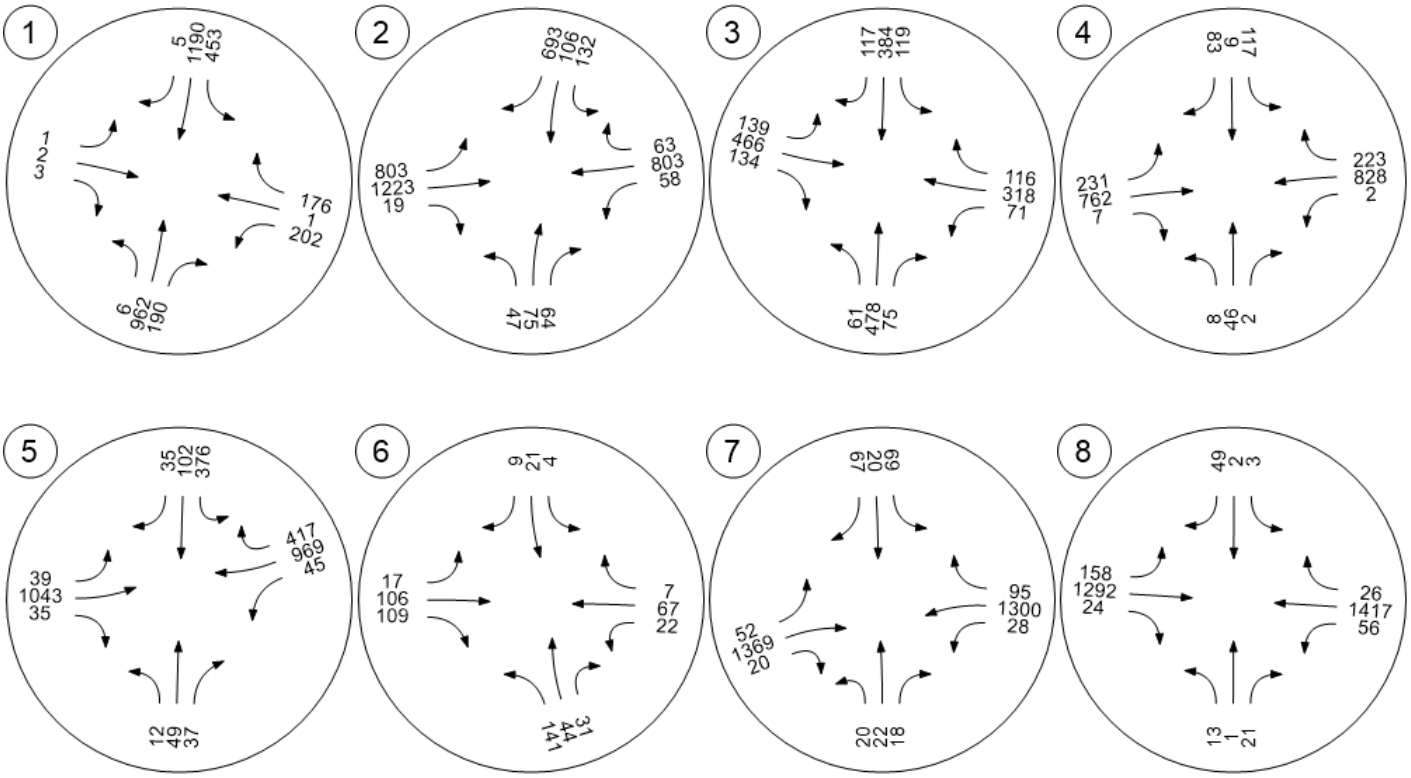
Lane Configuration and Traffic Control





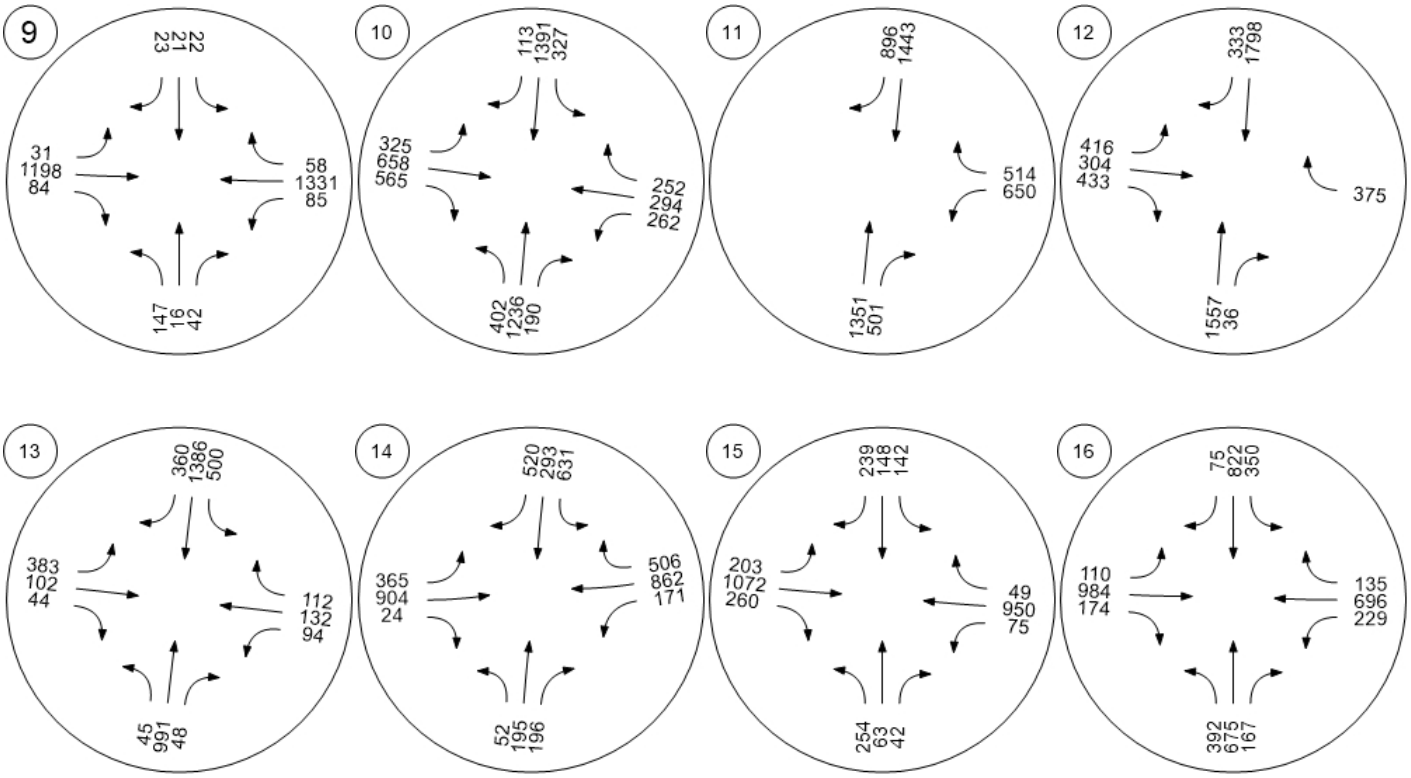
Traffic Volume - Future Total Volume



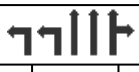


Traffic Volume - Future Total Volume





Option 1: Mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
Total Analysis Volume [veh/h]	79	979	64	179	1092	381	535	124	80	63	42	94

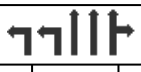
Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.16	0.16	0.06	0.34	0.34	0.17	0.30	0.30	0.04	0.07	0.06
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	C											
Intersection V/C	0.787											

Option 1: Mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
Total Analysis Volume [veh/h]	40	1015	49	512	1420	337	373	102	41	96	132	115

Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.18	0.41	0.41	0.12	0.23	0.23	0.06	0.14	0.07
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	D											
Intersection V/C	0.835											

Appendix E. Intersection LOS Worksheets, Future Without Project Conditions

Appendices

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Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+A+C 2021 AM.pdf

Scenario 8 E+A+C_2021_AM
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	NB Thru	0.667	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.055	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	WB Thru	0.763	-	C
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Thru	0.735	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.700	-	B
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Thru	1.053	63.0	F
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	EB Thru	0.720	-	C
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Thru	0.215	882.2	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.617	-	B
10	Azusa Ave at Gale Ave	Signalized	ICU 1	NB Thru	0.801	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.685	14.1	B
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	SB Right	0.747	20.1	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.851	-	D
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.859	-	D
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.651	-	B
16	Fullerton Av at Colima Road	Signalized	ICU 1	SB Thru	0.764	-	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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.667

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	1	1157	200	201	995	6	4	2	8	242	2	382
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
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	1	0	2	0	0	2	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]	1	1169	202	203	1005	7	4	4	8	244	4	386
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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	320	55	56	275	2	1	1	2	67	1	106
Total Analysis Volume [veh/h]	1	1279	221	222	1100	8	4	4	9	267	4	422
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.31	0.08	0.23	0.23	0.00	0.01	0.01	0.17	0.17	0.13
Intersection LOS	B											
Intersection V/C	0.667											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.055

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	24	74	23	104	48	620	548	780	8	29	826	62
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
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	4	0	0	3	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]	24	75	23	105	48	626	553	792	8	29	837	63
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
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]	6	20	6	28	13	164	145	208	2	8	220	17
Total Analysis Volume [veh/h]	25	79	24	110	50	657	580	831	8	30	878	66
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.07	0.02	0.41	0.20	0.17	0.17	0.01	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.055											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.763

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	161	449	60	115	433	143	124	263	121	118	491	221
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	4	2	0	0	2	0	3	2	1
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	454	65	120	439	144	125	268	122	122	498	224
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
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]	46	128	18	34	124	41	35	76	34	34	140	63
Total Analysis Volume [veh/h]	184	512	73	135	495	162	141	302	138	138	561	253
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.18	0.18	0.08	0.21	0.21	0.09	0.14	0.14	0.09	0.25	0.25
Intersection LOS	C											
Intersection V/C	0.763											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
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	4	0	0	0	4	0	0	3	3
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]	8	46	1	121	9	84	233	767	7	1	833	227
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
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]	2	12	0	33	2	23	63	207	2	0	225	61
Total Analysis Volume [veh/h]	9	50	1	131	10	91	252	828	8	1	900	245
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.16	0.26	0.26	0.00	0.36	0.36
Intersection LOS	C											
Intersection V/C	0.735											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.700

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	48	127	40	312	48	60	60	915	25	18	836	398
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	13	0	0	0	12	0	1	9	9
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]	48	128	42	328	48	61	61	936	25	19	853	411
Peak Hour Factor	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930
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]	13	36	12	92	13	17	17	262	7	5	239	115
Total Analysis Volume [veh/h]	54	143	47	367	54	68	68	1048	28	21	955	460
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.11	0.13	0.04	0.04	0.34	0.34	0.01	0.30	0.29
Intersection LOS	B											
Intersection V/C	0.700											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	63.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.053

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	114	187	19	18	138	11	77	73	169	60	138	53
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	0	0	1	0	0	0	3	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]	117	190	19	18	140	11	78	74	174	61	139	54
Peak Hour Factor	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120
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]	41	67	7	6	49	4	27	26	61	21	49	19
Total Analysis Volume [veh/h]	164	267	27	25	197	15	110	104	244	86	195	76
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	458	393	458	424
Degree of Utilization, x	1.05	0.60	1.01	0.84

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	14.62	3.81	13.50	8.11
95th-Percentile Queue Length [ft]	365.52	95.26	337.48	202.79
Approach Delay [s/veh]	86.90	25.12	74.43	42.83
Approach LOS	F	D	F	E
Intersection Delay [s/veh]	63.00			
Intersection LOS	F			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.720

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	54	80	22	98	38	154	110	1168	10	12	1053	62
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	4	0	0	0	27	0	3	19	3
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]	55	81	27	103	38	156	111	1207	10	15	1083	66
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]	15	22	7	28	11	43	31	334	3	4	300	18
Total Analysis Volume [veh/h]	61	90	30	114	42	173	123	1335	11	17	1198	73
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.07	0.03	0.11	0.08	0.42	0.42	0.01	0.40	0.40
Intersection LOS	C											
Intersection V/C	0.720											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	882.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.215

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	27	3	36	1	1	63	133	1173	14	24	1038	7
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	2	0	0	0	36	0	2	25	2
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]	27	3	39	3	1	64	134	1221	14	26	1073	9
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
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]	7	1	10	1	0	17	35	321	4	7	282	2
Total Analysis Volume [veh/h]	28	3	41	3	1	67	141	1283	15	27	1127	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.73	0.21	0.10	0.17	0.07	0.14	0.23	0.01	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	846.64	882.23	633.36	223.16	275.69	24.64	12.65	0.00	0.00	12.16	0.00	0.00
Movement LOS	F	F	F	F	F	C	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	7.98	7.98	7.98	1.69	1.69	1.69	0.89	0.00	0.00	0.16	0.00	0.00
95th-Percentile Queue Length [ft/ln]	199.39	199.39	199.39	42.34	42.34	42.34	22.18	0.00	0.00	4.02	0.00	0.00
d_A, Approach Delay [s/veh]	726.67			36.57			1.24			0.28		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	20.78											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.617

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	7	6	52	13	40	65	1143	29	19	996	33
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	0	21	0	0	0	0	0	41	38	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]	49	7	27	53	13	40	66	1154	70	57	1006	33
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]	13	2	7	14	3	11	17	304	18	15	265	9
Total Analysis Volume [veh/h]	52	7	28	56	14	42	70	1217	74	60	1061	35
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.02	0.04	0.04	0.03	0.04	0.40	0.40	0.04	0.34	0.34
Intersection LOS	B											
Intersection V/C	0.617											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.801

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	587	1367	153	199	918	214	202	266	212	89	419	242
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	6	0	0	10	1	2	2	12	0	1	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]	598	1387	155	201	937	217	206	271	226	90	424	244
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
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]	171	396	44	57	267	62	59	77	64	26	121	70
Total Analysis Volume [veh/h]	683	1583	177	229	1070	248	235	309	258	103	484	279
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.33	0.11	0.08	0.22	0.16	0.08	0.10	0.08	0.04	0.16	0.16
Intersection LOS	D											
Intersection V/C	0.801											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.685

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1375	289	0	951	254	0	0	0	592	0	738
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0000	1.0000	1.0000	1.0100	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	0	15	7	0	0	0	2	0	3
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	1397	292	0	976	264	0	0	0	600	0	748
Peak Hour Factor	1.0000	0.9000	0.9000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	1.0000	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]	0	388	81	0	271	73	0	0	0	167	0	208
Total Analysis Volume [veh/h]	0	1552	324	0	1084	293	0	0	0	667	0	831
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	59	0	0	59	0	0	0	0	61	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	53	53	53	53	53		53	53	53
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]	23	23	23	23	23		22	22	22
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43		0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.32	0.34	0.23	0.24	0.20		0.31	0.34	0.35
s, saturation flow rate [veh/h]	3204	1542	1431	4584	1431		1603	1484	1431
c, Capacity [veh/h]	1369	659	611	1958	611		676	626	604
d1, Uniform Delay [s]	12.86	13.10	11.26	11.40	10.95		12.87	13.36	13.61
k, delay calibration	0.11	0.15	0.11	0.11	0.11		0.12	0.15	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.87	2.95	0.72	0.25	0.58		1.79	3.34	4.57
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	0.76	0.79	0.53	0.55	0.48		0.74	0.80	0.83
d, Delay for Lane Group [s/veh]	13.73	16.06	11.97	11.65	11.53		14.66	16.70	18.19
Lane Group LOS	B	B	B	B	B		B	B	B
Critical Lane Group	No	Yes	No	No	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.40	4.85	2.44	2.67	2.14		4.41	4.81	5.07
50th-Percentile Queue Length [ft/ln]	109.93	121.30	61.03	66.63	53.50		110.21	120.17	126.85
95th-Percentile Queue Length [veh/ln]	7.84	8.46	4.39	4.80	3.85		7.85	8.40	8.77
95th-Percentile Queue Length [ft/ln]	195.90	211.61	109.85	119.94	96.29		196.29	210.06	219.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	14.18	11.97	0.00	11.65	11.53	0.00	0.00	0.00	15.17	0.00	17.59
Movement LOS		B	B		B	B				B		B
d_A, Approach Delay [s/veh]	14.07			11.62			0.00			16.52		
Approach LOS	B			B			A			B		
d_I, Intersection Delay [s/veh]	14.13											
Intersection LOS	B											
Intersection V/C	0.685											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.670
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	917	917	0	0
d_b, Bicycle Delay [s]	17.60	17.60	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.591	2.317	4.132	6.604
Bicycle LOS	B	B	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1442	7	0	1177	494	784	190	292	0	0	137
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0100	1.0100	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	10	0	3	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	1462	7	0	1199	499	795	192	295	0	0	138
Peak Hour Factor	1.0000	0.9440	0.9440	1.0000	0.9440	0.9440	0.9440	0.9440	0.9440	1.0000	1.0000	0.9440
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	387	2	0	318	132	211	51	78	0	0	37
Total Analysis Volume [veh/h]	0	1549	7	0	1270	529	842	203	313	0	0	146
Presence of On-Street Parking	No		No	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]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	21	0	0	21	0	0	69	0	0	0	69
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
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	2.00	2.00	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]	44	44	44	44	38	38	38	38
g / C, Green / Cycle	0.49	0.49	0.49	0.49	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.25	0.23	0.21	0.37	0.34	0.38	0.33	0.10
s, saturation flow rate [veh/h]	4584	1678	6113	1431	1275	1264	1365	1431
c, Capacity [veh/h]	2223	814	2964	694	602	613	582	610
d1, Uniform Delay [s]	16.01	15.54	15.06	18.94	23.63	24.64	22.19	16.50
k, delay calibration	0.50	0.50	0.50	0.50	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	1.00
d2, Incremental Delay [s]	0.89	2.01	0.45	7.77	1.57	2.28	2.31	0.20
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	0.52	0.48	0.43	0.76	0.71	0.78	0.78	0.24
d, Delay for Lane Group [s/veh]	16.90	17.55	15.52	26.70	25.20	26.92	24.50	16.70
Lane Group LOS	B	B	B	C	C	C	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.03	5.16	3.82	9.29	8.06	9.47	8.32	1.94
50th-Percentile Queue Length [ft/ln]	125.75	128.94	95.39	232.31	201.55	236.72	208.12	48.44
95th-Percentile Queue Length [veh/ln]	8.71	8.88	6.87	14.29	12.72	14.52	13.06	3.49
95th-Percentile Queue Length [ft/ln]	217.70	222.05	171.70	357.29	317.97	362.88	326.41	87.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	17.06	17.55	0.00	15.52	26.70	26.04	25.24	24.50	0.00	0.00	16.70
Movement LOS		B	B		B	C	C	C	C			B
d_A, Approach Delay [s/veh]		17.06			18.81			25.57			16.70	
Approach LOS		B			B			C			B	
d_I, Intersection Delay [s/veh]						20.07						
Intersection LOS						C						
Intersection V/C						0.747						

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.516	2.038
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	378	1444	0
d_b, Bicycle Delay [s]	29.61	29.61	3.47	45.00
l_b,int, Bicycle LOS Score for Intersection	2.201	2.302	2.680	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.851

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	2	8	0	0	0	0	0	0	1
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]	35	904	59	167	1011	336	461	110	49	58	38	87
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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]	10	249	16	46	278	92	127	30	13	16	10	24
Total Analysis Volume [veh/h]	39	994	65	184	1112	370	507	121	54	64	42	96
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.17	0.17	0.06	0.34	0.34	0.32	0.11	0.11	0.04	0.07	0.06
Intersection LOS	D											
Intersection V/C	0.851											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.859

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	65	201	112	424	209	535	382	663	41	107	458	338
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	0	0	0	8	5	11	5	0	15	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]	81	203	113	428	211	548	391	681	46	108	478	341
Peak Hour Factor	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780
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]	21	52	29	109	54	140	100	174	12	28	122	87
Total Analysis Volume [veh/h]	83	208	116	438	216	560	400	696	47	110	489	349
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.07	0.07	0.15	0.14	0.35	0.14	0.22	0.03	0.07	0.15	0.22
Intersection LOS	D											
Intersection V/C	0.859											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	268	46	22	33	27	70	107	743	153	24	729	8
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	2	2	6	3	0	9	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]	275	46	22	33	27	73	110	756	158	24	745	8
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]	73	12	6	9	7	19	29	200	42	6	198	2
Total Analysis Volume [veh/h]	292	49	23	35	29	77	117	802	168	25	790	8
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.18	0.03	0.01	0.02	0.02	0.05	0.07	0.25	0.11	0.02	0.25	0.01
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	381	637	123	166	952	62	55	359	182	203	636	93
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	3	2	2	2	0	3	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]	388	643	124	168	962	66	58	365	186	205	645	94
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	100	166	32	43	248	17	15	94	48	53	166	24
Total Analysis Volume [veh/h]	400	664	128	173	993	68	60	377	192	212	666	97
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]	10.00

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

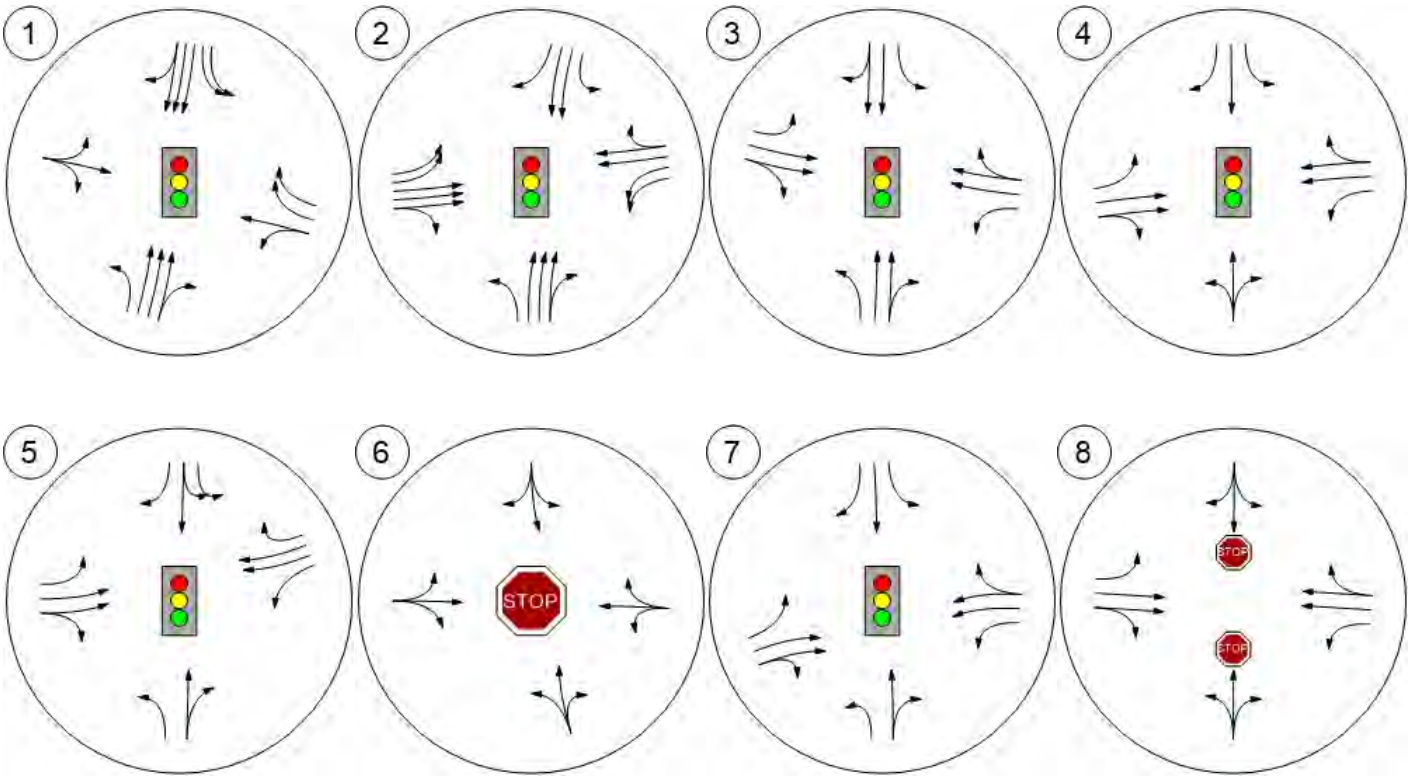
V/C, Movement V/C Ratio	0.14	0.21	0.08	0.06	0.33	0.33	0.02	0.12	0.12	0.07	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.764											

Study Intersections



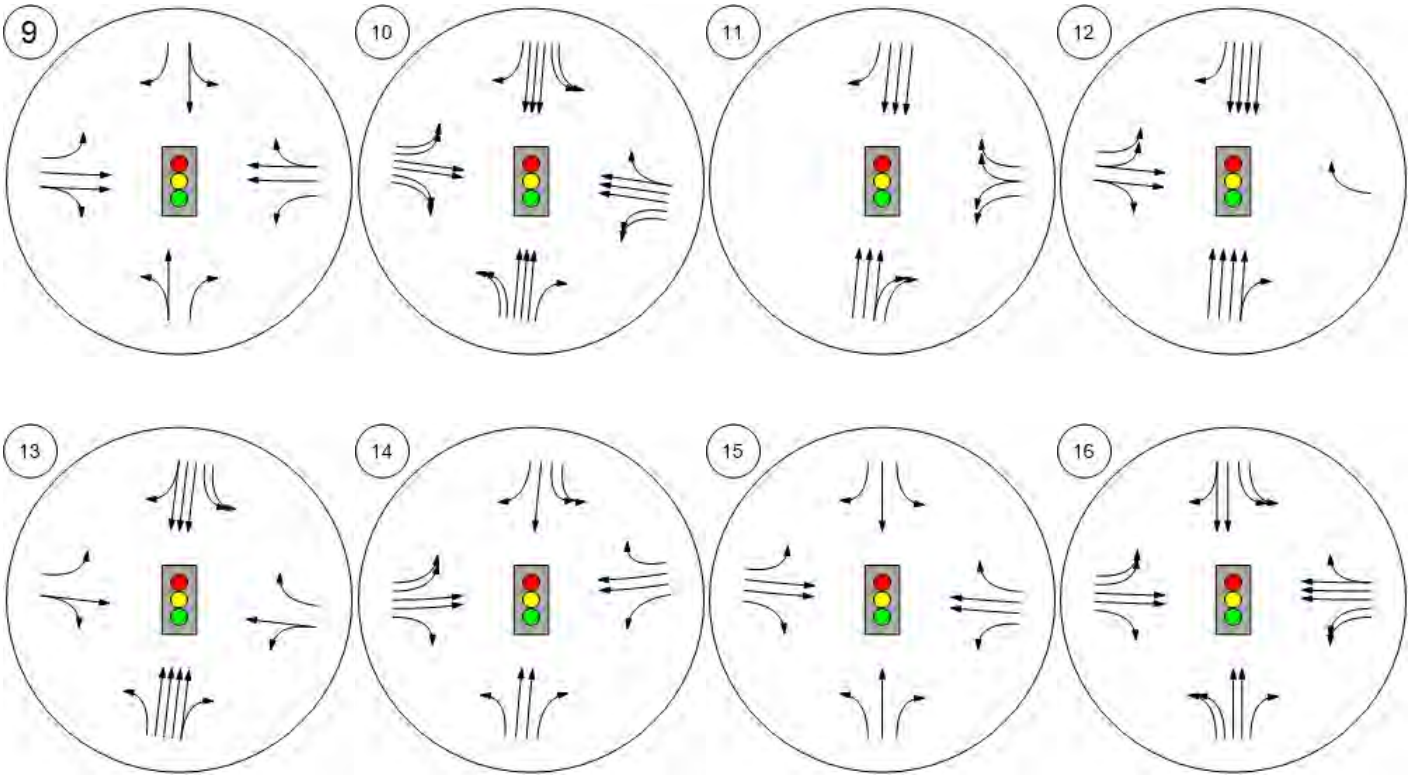
Lane Configuration and Traffic Control





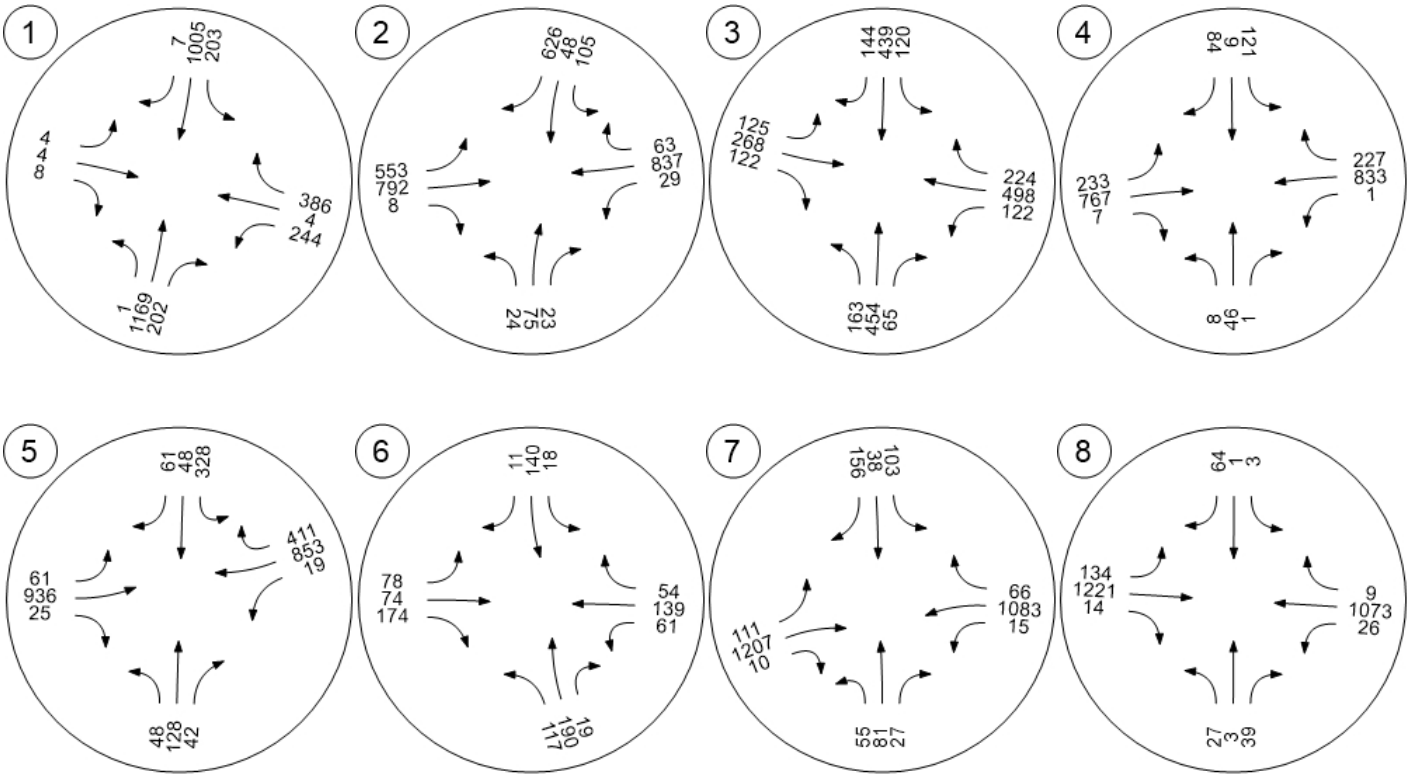
Lane Configuration and Traffic Control





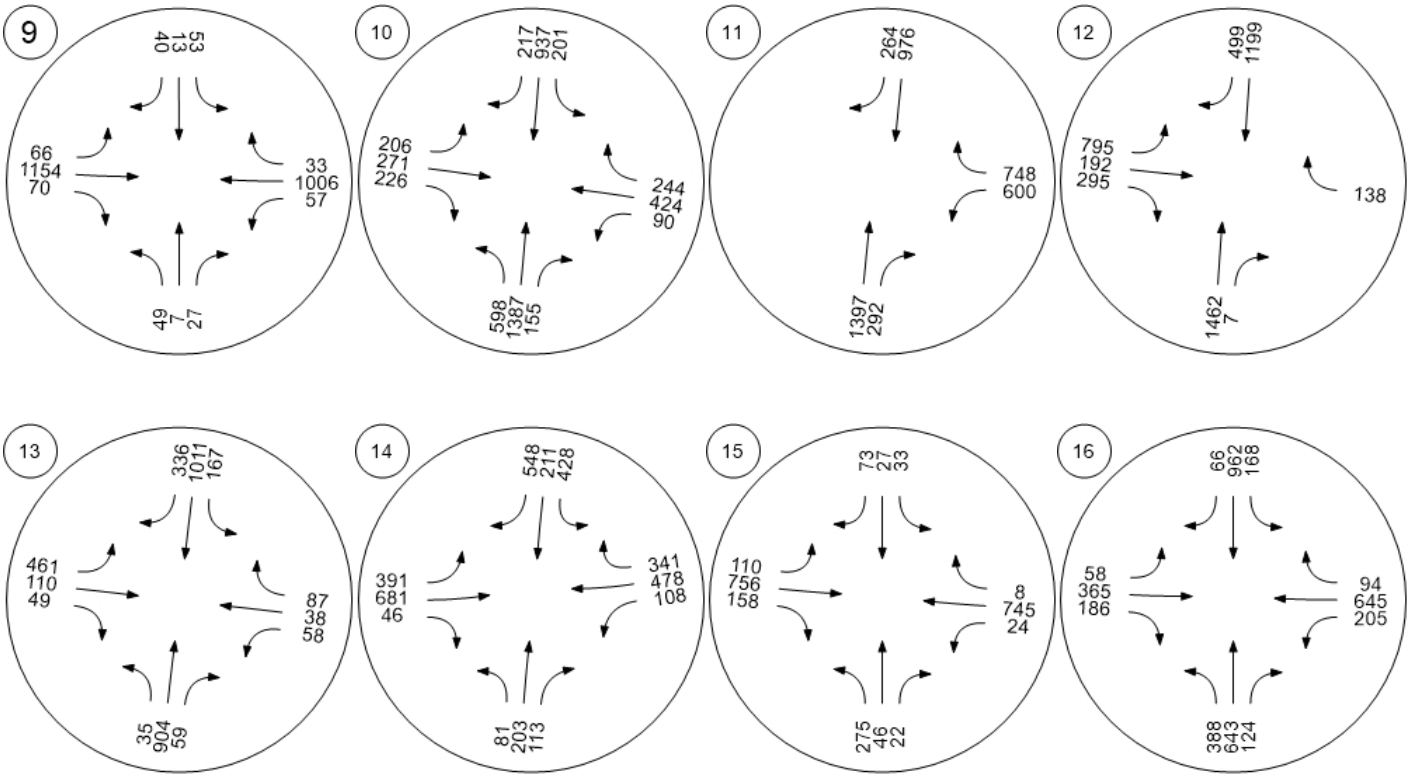
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+A+C 2021 PM.pdf

Scenario 9 E+A+C_2021_PM
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	SB Thru	0.658	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.232	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	EB Thru	0.633	-	B
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	EB Thru	0.712	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.695	-	B
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Left	0.318	9.6	A
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	WB Thru	0.676	-	B
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Left	2.596	1,702.8	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	WB Right	0.803	-	D
10	Azusa Ave at Gale Ave	Signalized	ICU 1	SB Thru	0.884	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	SB Right	0.946	36.5	D
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Right	0.637	14.4	B
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.906	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.963	-	E
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.854	-	D
16	Fullerton Av at Colima Road	Signalized	ICU 1	EB Thru	0.948	-	E

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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.658

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	6	962	189	450	1190	5	1	1	3	201	0	174
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
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	1	1	3	0	0	2	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]	6	972	191	455	1202	6	2	4	3	203	2	176
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]	2	254	50	119	315	2	1	1	1	53	1	46
Total Analysis Volume [veh/h]	6	1018	200	476	1259	6	2	4	3	213	2	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.25	0.25	0.17	0.26	0.26	0.00	0.01	0.01	0.13	0.13	0.06
Intersection LOS	B											
Intersection V/C	0.658											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.232

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	47	75	62	132	106	693	803	1218	19	56	799	63
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
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	4	0	0	4	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]	47	76	63	133	107	700	811	1234	19	57	811	64
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	13	20	17	36	29	188	218	332	5	15	218	17
Total Analysis Volume [veh/h]	51	82	68	143	115	753	872	1327	20	61	872	69
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.04	0.47	0.30	0.28	0.28	0.02	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.232											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	61	478	74	117	384	117	139	461	134	70	314	114
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	4	3	2	0	1	2	0	4	2	4
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]	62	485	79	121	390	118	141	468	135	75	319	119
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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]	17	133	22	33	107	32	39	128	37	21	87	33
Total Analysis Volume [veh/h]	68	531	86	132	427	129	154	512	148	82	349	130
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.19	0.19	0.08	0.17	0.17	0.10	0.21	0.21	0.05	0.15	0.15
Intersection LOS	B											
Intersection V/C	0.633											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.712

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	6	9	3	106	17	151	322	1070	9	3	773	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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
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	4	0	0	0	4	0	0	4	4
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]	6	9	3	111	17	153	325	1085	9	3	785	84
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	2	2	1	30	5	41	87	289	2	1	209	22
Total Analysis Volume [veh/h]	6	10	3	118	18	163	346	1157	10	3	837	90
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.07	0.01	0.10	0.22	0.36	0.36	0.00	0.29	0.29
Intersection LOS	C											
Intersection V/C	0.712											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.695

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	12	49	36	365	102	35	39	1031	35	44	958	407
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	10	0	0	0	11	0	1	11	10
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]	12	49	37	379	103	35	39	1052	35	45	979	421
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	3	13	10	98	27	9	10	273	9	12	254	109
Total Analysis Volume [veh/h]	12	51	38	394	107	36	41	1094	36	47	1018	438
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.06	0.06	0.12	0.16	0.02	0.03	0.35	0.35	0.03	0.32	0.27
Intersection LOS	B											
Intersection V/C	0.695											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.318

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	141	44	30	3	21	9	17	105	109	21	66	6
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	0	0	1	0	0	0	3	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]	145	45	30	3	22	9	17	106	113	21	67	6
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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]	39	12	8	1	6	2	5	28	30	6	18	2
Total Analysis Volume [veh/h]	155	48	32	3	24	10	18	113	121	22	72	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	738	726	801	727
Degree of Utilization, x	0.32	0.05	0.31	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.37	0.16	1.35	0.48
95th-Percentile Queue Length [ft]	34.29	4.02	33.75	11.89
Approach Delay [s/veh]	10.14	8.23	9.54	8.74
Approach LOS	B	A	A	A
Intersection Delay [s/veh]	9.56			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	22	17	69	20	67	52	1345	20	27	1278	95
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	4	0	0	0	22	0	4	22	4
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]	20	22	21	74	20	68	53	1380	20	31	1313	100
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	5	6	6	19	5	18	14	363	5	8	345	26
Total Analysis Volume [veh/h]	21	23	22	78	21	72	56	1451	21	33	1381	105
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.03	0.05	0.01	0.05	0.04	0.46	0.46	0.02	0.46	0.46
Intersection LOS	B											
Intersection V/C	0.676											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,702.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.596

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	13	0	21	3	1	26	133	1292	24	56	1417	26
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	2	0	0	0	30	0	3	30	2
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]	13	0	24	5	1	26	134	1335	24	60	1461	28
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]	3	0	6	1	0	7	36	358	6	16	392	8
Total Analysis Volume [veh/h]	14	0	26	5	1	28	144	1432	26	64	1568	30
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	2.60	0.00	0.07	0.83	0.27	0.09	0.35	0.01	0.00	0.14	0.02	0.00
d_M, Delay for Movement [s/veh]	1702.82	2018.74	1045.03	912.17	1292.26	322.70	18.67	0.00	0.00	14.09	0.00	0.00
Movement LOS	F	F	F	F	F	F	C	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	5.74	5.74	5.74	3.93	3.93	3.93	1.57	0.00	0.00	0.48	0.00	0.00
95th-Percentile Queue Length [ft/ln]	143.48	143.48	143.48	98.22	98.22	98.22	39.35	0.00	0.00	12.01	0.00	0.00
d_A, Approach Delay [s/veh]	1275.25			437.91			1.68			0.54		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	20.82											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.803

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	147	12	42	20	18	23	31	1198	84	85	1331	55
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	0	36	0	0	0	0	0	35	36	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]	183	12	78	20	18	23	31	1210	120	122	1344	56
Peak Hour Factor	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960
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]	51	3	22	6	5	6	9	338	33	34	375	16
Total Analysis Volume [veh/h]	204	13	87	22	20	26	35	1350	134	136	1500	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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.14	0.05	0.01	0.03	0.02	0.02	0.46	0.46	0.09	0.49	0.49
Intersection LOS	D											
Intersection V/C	0.803											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale 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	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	400	1232	188	327	1384	113	325	658	562	260	294	252
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	10	0	0	8	3	2	2	10	0	3	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]	419	1254	190	330	1406	117	330	667	578	263	300	255
Peak Hour Factor	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420
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	333	50	88	373	31	88	177	153	70	80	68
Total Analysis Volume [veh/h]	445	1331	202	350	1493	124	350	708	614	279	318	271
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.28	0.13	0.12	0.31	0.08	0.12	0.22	0.19	0.10	0.12	0.12
Intersection LOS	D											
Intersection V/C	0.884											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

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):	0.946

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1343	493	0	1431	896	0	0	0	636	0	514
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0000	1.0000	1.0000	1.0100	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	0	0	13	5	0	0	0	1	0	8
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	1373	498	0	1458	910	0	0	0	643	0	527
Peak Hour Factor	1.0000	0.9610	0.9610	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	1.0000	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]	0	357	130	0	379	237	0	0	0	167	0	137
Total Analysis Volume [veh/h]	0	1429	518	0	1517	947	0	0	0	669	0	548
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	103	0	0	103	0	0	0	0	17	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	58	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	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		20	20	20
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52		0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.30	0.33	0.34	0.33	0.66		0.25	0.26	0.28
s, saturation flow rate [veh/h]	3204	1475	1431	4584	1431		1603	1538	1431
c, Capacity [veh/h]	1651	760	737	2363	737		557	534	497
d1, Uniform Delay [s]	9.82	10.20	10.36	10.22	14.11		16.61	16.85	17.31
k, delay calibration	0.11	0.19	0.20	0.11	0.50		0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	1.56	1.89	0.29	138.25		1.85	2.26	3.72
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	0.59	0.64	0.66	0.64	1.28		0.73	0.76	0.82
d, Delay for Lane Group [s/veh]	10.16	11.76	12.25	10.51	152.35		18.46	19.10	21.03
Lane Group LOS	B	B	B	B	F		B	B	C
Critical Lane Group	No	No	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.53	3.91	4.03	3.79	35.82		4.45	4.56	4.86
50th-Percentile Queue Length [ft/ln]	88.20	97.85	100.69	94.85	895.47		111.32	114.04	121.44
95th-Percentile Queue Length [veh/ln]	6.35	7.05	7.25	6.83	54.08		7.91	8.06	8.47
95th-Percentile Queue Length [ft/ln]	158.75	176.13	181.24	170.74	1351.88		197.83	201.61	211.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.30	12.22	0.00	10.51	152.35	0.00	0.00	0.00	18.71	0.00	20.53
Movement LOS		B	B		B	F				B		C
d_A, Approach Delay [s/veh]	11.08			65.03			0.00			19.53		
Approach LOS	B			E			A			B		
d_I, Intersection Delay [s/veh]	36.53											
Intersection LOS	D											
Intersection V/C	0.946											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.653
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1650	1650	0	0
d_b, Bicycle Delay [s]	1.84	1.84	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.630	2.915	4.132	6.140
Bicycle LOS	B	C	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.637

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1532	35	0	1772	333	416	304	421	0	0	375
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0100	1.0100	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	0	9	0	8	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	1557	35	0	1799	336	428	307	425	0	0	379
Peak Hour Factor	1.0000	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	0.9740	0.9740	1.0000	1.0000	0.9740
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	400	9	0	462	86	110	79	109	0	0	97
Total Analysis Volume [veh/h]	0	1599	36	0	1847	345	439	315	436	0	0	389
Presence of On-Street Parking	No		No	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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	19	0	0	19	0	0	41	0	0	0	41
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60
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	2.00	2.00	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]	28	28	28	28	24	24	24	24
g / C, Green / Cycle	0.47	0.47	0.47	0.47	0.39	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.27	0.25	0.30	0.24	0.26	0.27	0.33	0.27
s, saturation flow rate [veh/h]	4584	1657	6113	1431	1275	1576	1302	1431
c, Capacity [veh/h]	2169	784	2892	677	584	696	513	563
d1, Uniform Delay [s]	11.39	11.08	11.96	11.00	16.36	14.98	16.61	15.17
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.12	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]	1.07	2.47	1.09	2.73	0.85	0.88	4.52	1.52
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	0.57	0.52	0.64	0.51	0.56	0.61	0.85	0.69
d, Delay for Lane Group [s/veh]	12.47	13.55	13.05	13.73	17.21	15.86	21.13	16.69
Lane Group LOS	B	B	B	B	B	B	C	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.13	3.37	3.67	2.89	3.65	4.50	5.54	4.23
50th-Percentile Queue Length [ft/ln]	78.19	84.25	91.81	72.15	91.20	112.52	138.42	105.66
95th-Percentile Queue Length [veh/ln]	5.63	6.07	6.61	5.20	6.57	7.98	9.40	7.60
95th-Percentile Queue Length [ft/ln]	140.74	151.64	165.26	129.88	164.15	199.51	234.90	189.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.72	13.55	0.00	13.05	13.73	16.97	15.86	21.13	0.00	0.00	16.69
Movement LOS		B	B		B	B	B	B	C			B
d_A, Approach Delay [s/veh]		12.74			13.16			18.16			16.69	
Approach LOS		B			B			B			B	
d_I, Intersection Delay [s/veh]						14.39						
Intersection LOS						B						
Intersection V/C						0.637						

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.424	2.121
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	0
d_b, Bicycle Delay [s]	16.88	16.88	4.41	30.00
l_b,int, Bicycle LOS Score for Intersection	2.234	2.464	2.541	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.906

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	2	7	0	0	0	0	0	0	3
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]	33	1008	48	507	1407	325	360	100	34	95	129	116
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]	8	258	12	130	360	83	92	26	9	24	33	30
Total Analysis Volume [veh/h]	34	1033	49	519	1442	333	369	102	35	97	132	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.17	0.17	0.18	0.41	0.41	0.23	0.09	0.09	0.06	0.14	0.07
Intersection LOS	E											
Intersection V/C	0.906											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.963

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	52	194	196	622	292	520	365	902	24	171	859	495
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	0	0	7	7	15	14	0	15	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]	67	196	198	628	295	532	376	926	38	173	883	500
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
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]	18	52	52	166	78	140	99	244	10	46	233	132
Total Analysis Volume [veh/h]	71	207	209	663	312	562	397	978	40	183	932	528
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.06	0.13	0.23	0.20	0.35	0.14	0.31	0.03	0.11	0.29	0.33
Intersection LOS	E											
Intersection V/C	0.963											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	253	63	42	142	148	235	200	1065	259	75	941	49
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	2	2	9	4	0	9	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]	260	64	42	143	149	239	204	1085	266	76	959	49
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
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]	66	16	11	36	38	61	52	277	68	19	244	12
Total Analysis Volume [veh/h]	265	65	43	146	152	244	208	1106	271	77	978	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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.04	0.03	0.09	0.10	0.15	0.13	0.35	0.17	0.05	0.31	0.03
Intersection LOS	D											
Intersection V/C	0.854											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.948

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	388	675	167	350	822	71	107	983	171	229	695	135
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	3	3	3	3	0	3	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]	395	682	169	354	830	75	111	996	176	231	705	136
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
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]	103	178	44	92	217	20	29	260	46	60	184	36
Total Analysis Volume [veh/h]	413	713	177	370	867	78	116	1041	184	241	737	142
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]	10.00

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

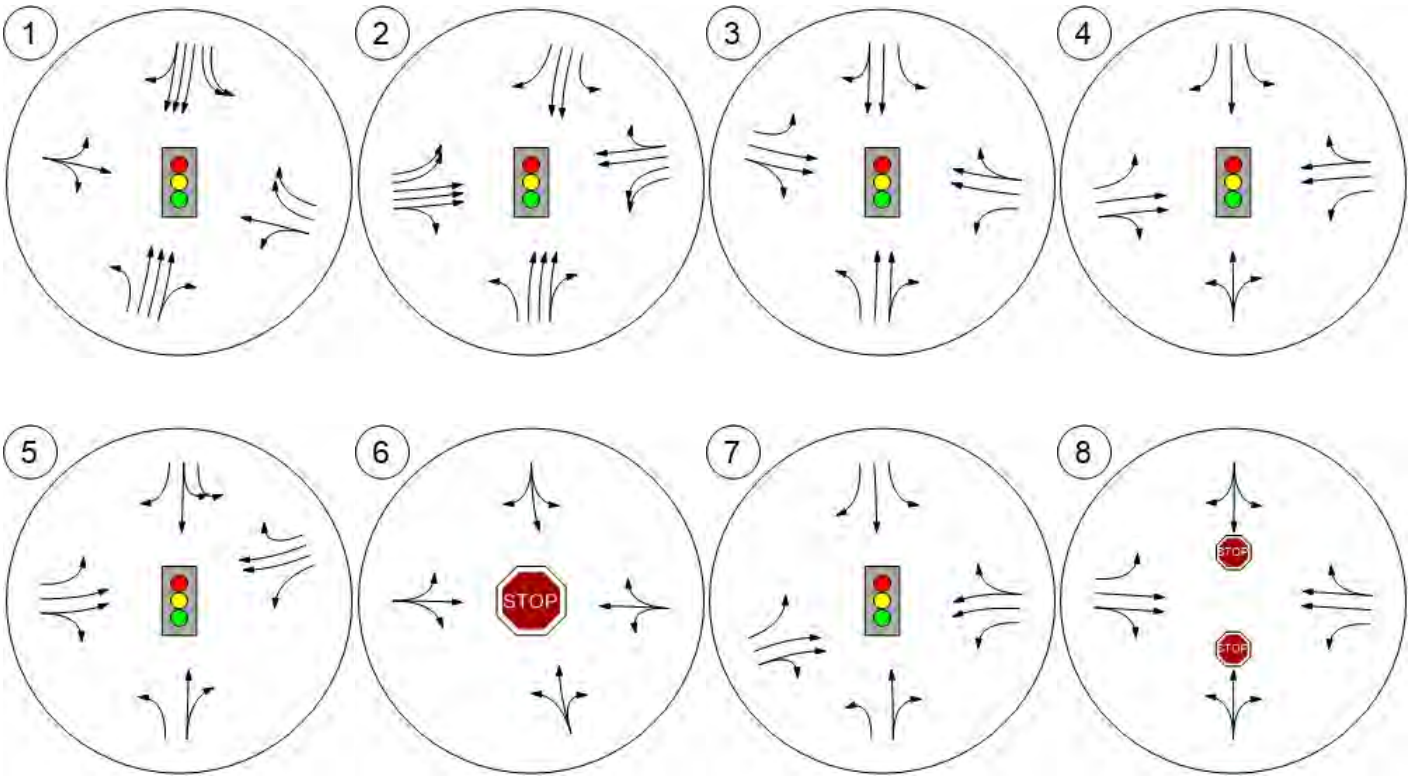
V/C, Movement V/C Ratio	0.14	0.22	0.11	0.13	0.30	0.30	0.04	0.33	0.12	0.08	0.18	0.18
Intersection LOS	E											
Intersection V/C	0.948											

Study Intersections



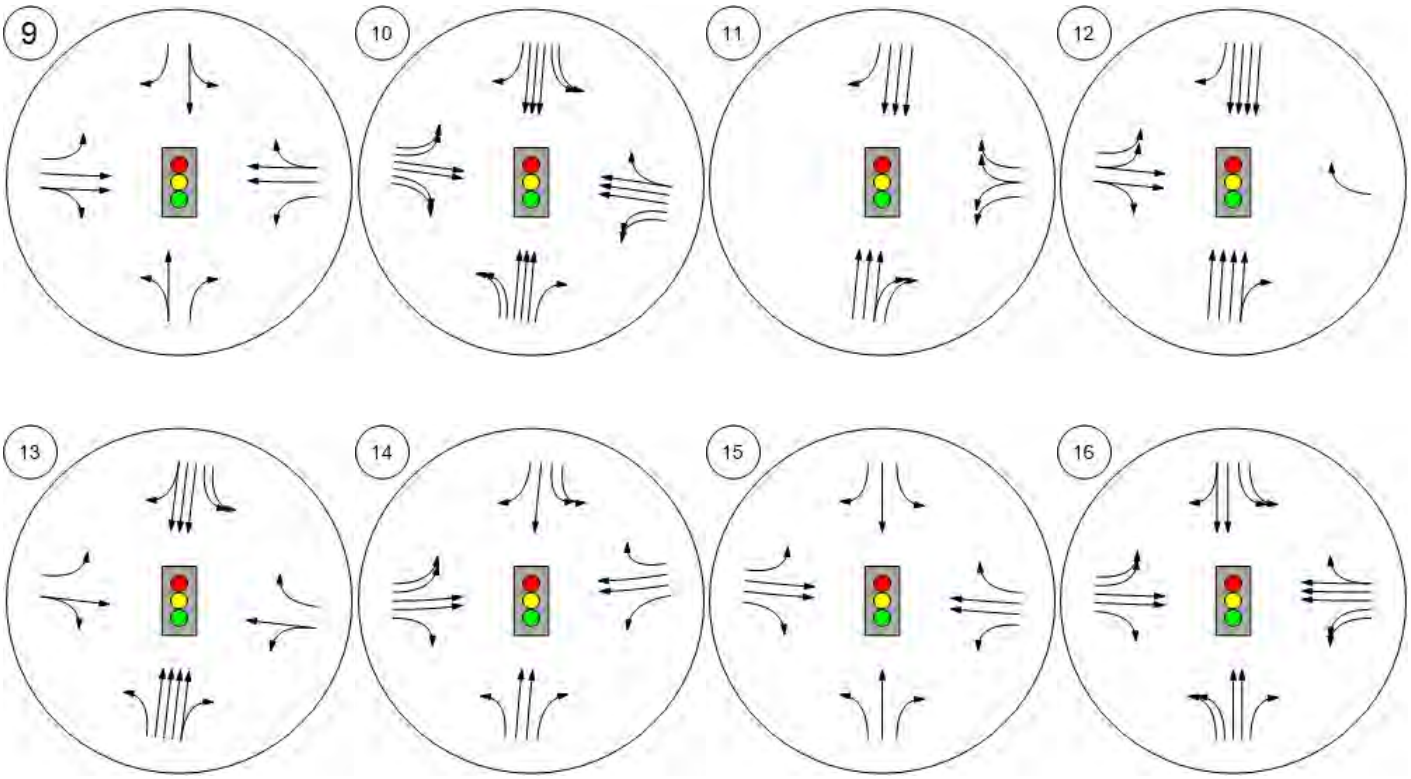
Lane Configuration and Traffic Control





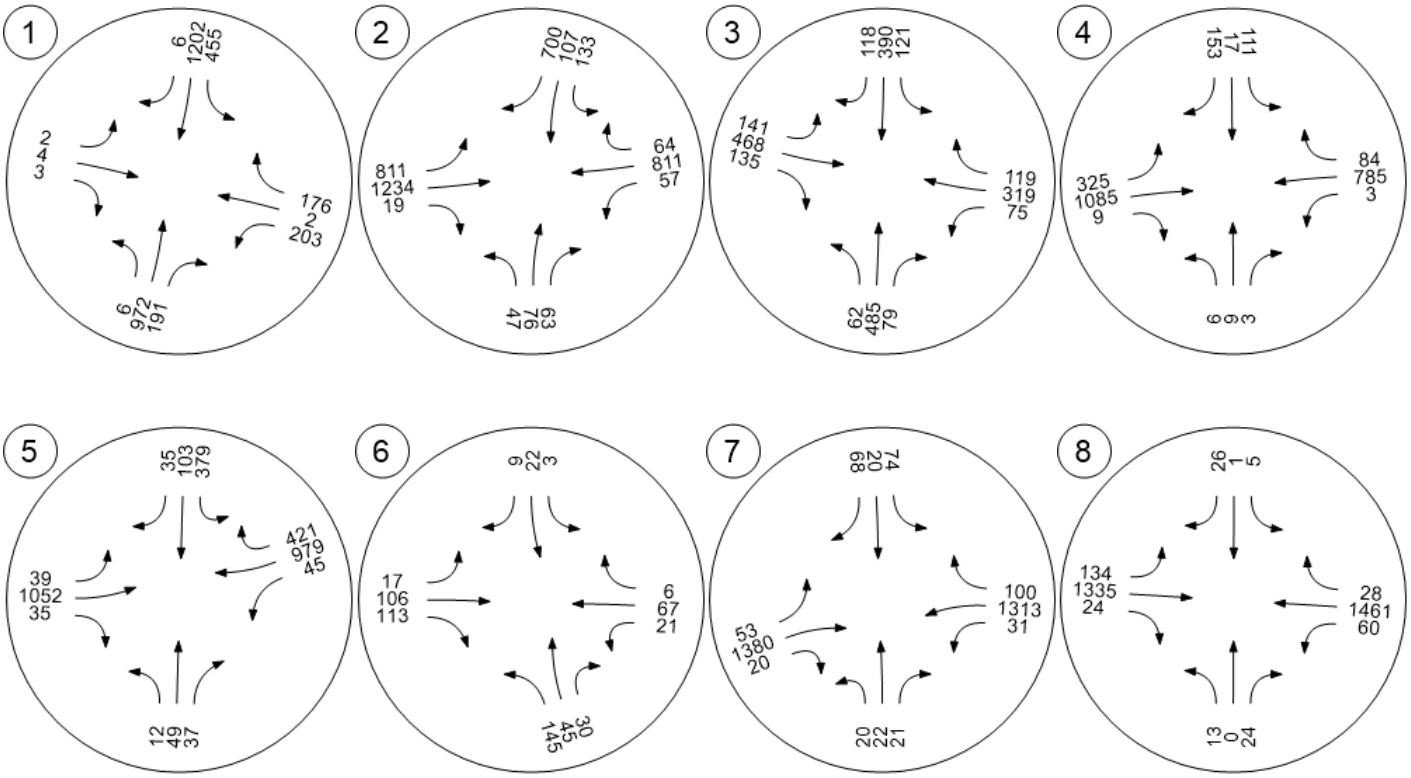
Lane Configuration and Traffic Control





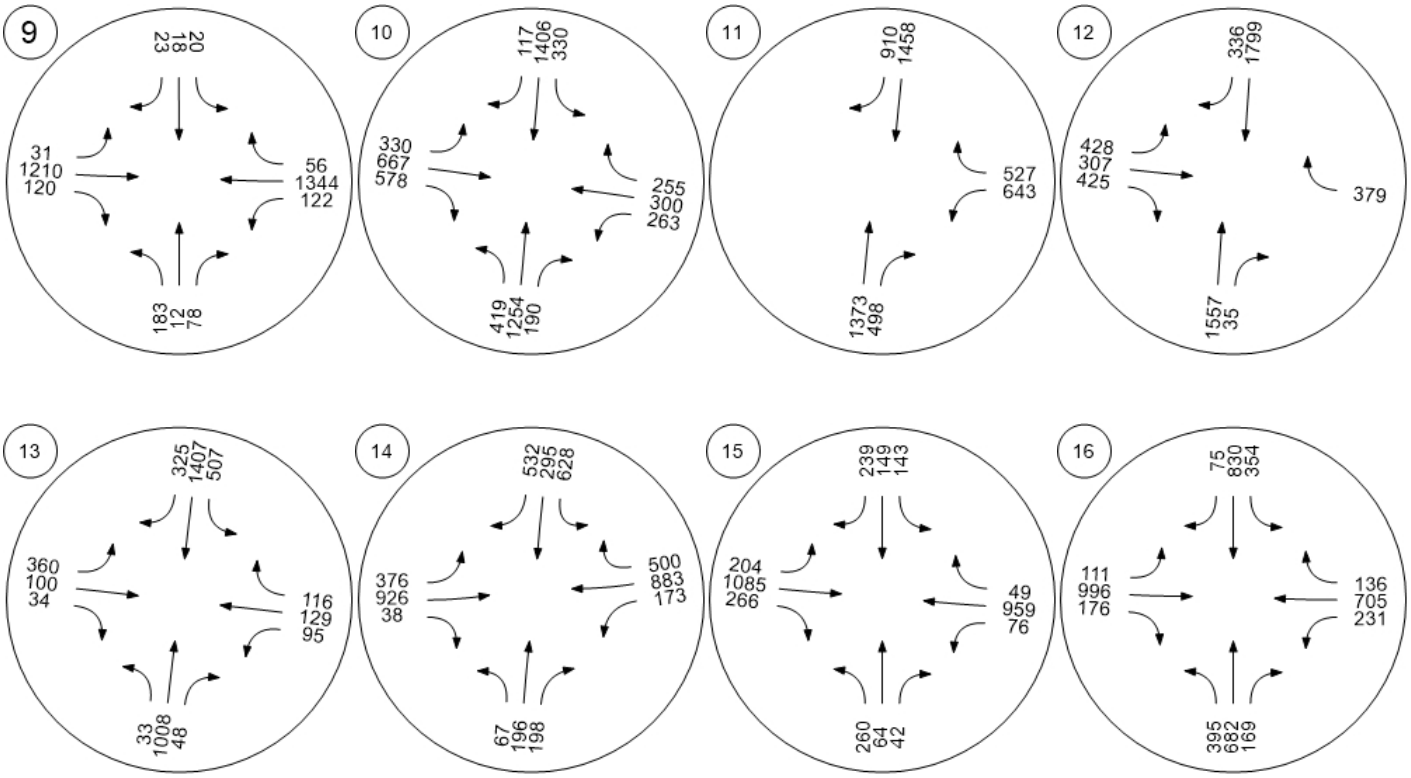
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES and Residential Project

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Report File: P:\...\E+A+C Phase II AM.pdf

Scenario 10 Phase II - E+A+C AM
6/28/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	NB Thru	0.678	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.076	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	WB Thru	0.776	-	C
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Thru	0.747	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.713	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Thru	1.087	69.7	F
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	EB Thru	0.732	-	C
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Thru	0.237	1,036.7	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.627	-	B
10	Azusa Ave at Gale Ave	Signalized	ICU 1	NB Thru	0.814	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.698	14.9	B
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	SB Right	0.761	20.6	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Right	0.865	-	D
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.874	-	D
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.661	-	B
16	Fullerton Av at Colima Road	Signalized	ICU 1	SB Right	0.776	-	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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	1	1157	200	201	995	6	4	2	8	242	2	382
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
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	1	0	2	0	0	2	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]	1	1192	206	207	1025	7	4	4	8	249	4	393
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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	326	56	57	280	2	1	1	2	68	1	107
Total Analysis Volume [veh/h]	1	1304	225	226	1121	8	4	4	9	272	4	430
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.32	0.32	0.08	0.24	0.24	0.00	0.01	0.01	0.17	0.17	0.13
Intersection LOS	B											
Intersection V/C	0.678											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.076

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	24	74	23	104	48	620	548	780	8	29	826	62
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
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	4	0	0	3	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]	25	76	24	107	49	639	564	807	8	30	854	64
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
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]	7	20	6	28	13	168	148	212	2	8	224	17
Total Analysis Volume [veh/h]	26	80	25	112	51	671	592	847	8	31	896	67
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.07	0.02	0.42	0.21	0.18	0.18	0.01	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.076											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	161	449	60	115	433	143	124	263	121	118	491	221
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	4	4	2	0	0	2	0	3	2	1
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]	166	463	66	122	448	147	128	273	125	125	508	229
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
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]	47	130	19	34	126	41	36	77	35	35	143	65
Total Analysis Volume [veh/h]	187	522	74	138	505	166	144	308	141	141	573	258
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.19	0.19	0.09	0.21	0.21	0.09	0.14	0.14	0.09	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.776											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
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	4	0	0	0	4	0	0	3	3
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]	8	47	1	123	9	85	238	782	7	1	850	232
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
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]	2	13	0	33	2	23	64	211	2	0	229	63
Total Analysis Volume [veh/h]	9	51	1	133	10	92	257	844	8	1	918	251
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.16	0.27	0.27	0.00	0.37	0.37
Intersection LOS	C											
Intersection V/C	0.747											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	48	127	40	312	48	60	60	915	25	18	836	398
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	13	0	0	0	12	0	1	9	9
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]	49	131	43	334	49	62	62	954	26	20	870	419
Peak Hour Factor	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930
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]	14	37	12	94	14	17	17	267	7	6	244	117
Total Analysis Volume [veh/h]	55	147	48	374	55	69	69	1068	29	22	974	469
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.12	0.13	0.04	0.04	0.34	0.34	0.01	0.30	0.29
Intersection LOS	C											
Intersection V/C	0.713											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	69.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.087

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	114	187	19	18	138	11	77	73	169	60	138	53
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	0	0	1	0	0	0	3	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]	119	194	20	19	143	11	79	75	177	62	142	55
Peak Hour Factor	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120
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	68	7	7	50	4	28	26	62	22	50	19
Total Analysis Volume [veh/h]	167	272	28	27	201	15	111	105	249	87	199	77
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	467	391	465	422
Degree of Utilization, x	1.09	0.62	1.04	0.86

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	15.77	4.06	14.43	8.58
95th-Percentile Queue Length [ft]	394.18	101.38	360.87	214.41
Approach Delay [s/veh]	97.82	26.27	82.82	45.83
Approach LOS	F	D	F	E
Intersection Delay [s/veh]	69.71			
Intersection LOS	F			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima 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	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	54	80	22	98	38	154	110	1168	10	12	1053	62
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	4	0	0	0	27	0	3	19	3
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]	56	82	28	105	39	159	113	1230	10	15	1104	67
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]	15	23	8	29	11	44	31	340	3	4	305	19
Total Analysis Volume [veh/h]	62	91	31	116	43	176	125	1361	11	17	1221	74
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.07	0.03	0.11	0.08	0.43	0.43	0.01	0.40	0.40
Intersection LOS	C											
Intersection V/C	0.732											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,036.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.237

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	27	3	36	1	1	63	133	1173	14	24	1038	7
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	2	0	0	0	36	0	2	25	2
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]	28	3	40	3	1	65	137	1244	14	27	1094	9
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
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]	7	1	11	1	0	17	36	327	4	7	287	2
Total Analysis Volume [veh/h]	29	3	42	3	1	68	144	1307	15	28	1149	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.97	0.24	0.10	0.19	0.08	0.15	0.24	0.01	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	997.71	1036.65	761.65	249.45	304.54	27.21	12.90	0.00	0.00	12.34	0.00	0.00
Movement LOS	F	F	F	F	F	D	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	8.51	8.51	8.51	1.88	1.88	1.88	0.93	0.00	0.00	0.17	0.00	0.00
95th-Percentile Queue Length [ft/ln]	212.80	212.80	212.80	47.05	47.05	47.05	23.35	0.00	0.00	4.27	0.00	0.00
d_A, Approach Delay [s/veh]	865.31			40.32			1.27			0.29		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	24.71											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.627

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	7	6	52	13	40	65	1143	29	19	996	33
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	0	21	0	0	0	0	0	41	38	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]	50	7	27	54	13	41	67	1177	71	58	1026	34
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]	13	2	7	14	3	11	18	310	19	15	271	9
Total Analysis Volume [veh/h]	53	7	28	57	14	43	71	1242	75	61	1082	36
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.02	0.04	0.04	0.03	0.04	0.41	0.41	0.04	0.35	0.35
Intersection LOS	B											
Intersection V/C	0.627											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.814

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	587	1367	153	199	918	214	202	266	212	89	419	242
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	6	0	0	10	1	2	2	12	0	1	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]	610	1414	158	205	956	221	210	276	230	92	433	249
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
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]	174	404	45	59	273	63	60	79	66	26	124	71
Total Analysis Volume [veh/h]	696	1614	180	234	1091	252	240	315	263	105	494	284
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.34	0.11	0.08	0.23	0.16	0.08	0.10	0.08	0.04	0.16	0.16
Intersection LOS	D											
Intersection V/C	0.814											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1375	289	0	951	254	0	0	0	592	0	738
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0000	1.0000	1.0000	1.0300	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	0	15	7	0	0	0	2	0	3
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	1424	298	0	995	269	0	0	0	612	0	763
Peak Hour Factor	1.0000	0.9000	0.9000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	1.0000	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]	0	396	83	0	276	75	0	0	0	170	0	212
Total Analysis Volume [veh/h]	0	1582	331	0	1106	299	0	0	0	680	0	848
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	59	0	0	59	0	0	0	0	61	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	55	55	55	55	55		55	55	55
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]	24	24	24	24	24		23	23	23
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43		0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.33	0.34	0.23	0.24	0.21		0.32	0.34	0.36
s, saturation flow rate [veh/h]	3204	1542	1431	4584	1431		1603	1484	1431
c, Capacity [veh/h]	1376	662	614	1968	614		682	631	608
d1, Uniform Delay [s]	13.35	13.61	11.65	11.81	11.32		13.31	13.83	14.11
k, delay calibration	0.11	0.18	0.11	0.11	0.11		0.14	0.18	0.20
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.92	3.63	0.74	0.25	0.60		2.21	4.07	5.54
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	0.77	0.80	0.54	0.56	0.49		0.75	0.81	0.84
d, Delay for Lane Group [s/veh]	14.27	17.24	12.39	12.06	11.92		15.52	17.90	19.64
Lane Group LOS	B	B	B	B	B		B	B	B
Critical Lane Group	No	Yes	No	No	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.74	5.32	2.63	2.87	2.30		4.80	5.27	5.58
50th-Percentile Queue Length [ft/ln]	118.56	133.08	65.69	71.72	57.45		120.05	131.67	139.51
95th-Percentile Queue Length [veh/ln]	8.31	9.11	4.73	5.16	4.14		8.40	9.03	9.45
95th-Percentile Queue Length [ft/ln]	207.84	227.67	118.24	129.09	103.42		209.89	225.76	236.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	14.85	12.39	0.00	12.06	11.92	0.00	0.00	0.00	16.12	0.00	18.95
Movement LOS		B	B		B	B				B		B
d_A, Approach Delay [s/veh]	14.77			12.03			0.00			17.69		
Approach LOS	B			B			A			B		
d_I, Intersection Delay [s/veh]	14.89											
Intersection LOS	B											
Intersection V/C	0.698											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.678
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	917	917	0	0
d_b, Bicycle Delay [s]	17.60	17.60	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.612	2.332	4.132	6.654
Bicycle LOS	B	B	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.761

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1442	7	0	1177	494	784	190	292	0	0	137
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300	1.0000	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	0	10	0	3	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	1491	7	0	1222	509	811	196	301	0	0	141
Peak Hour Factor	1.0000	0.9440	0.9440	1.0000	0.9440	0.9440	0.9440	0.9440	0.9440	1.0000	1.0000	0.9440
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	395	2	0	324	135	215	52	80	0	0	37
Total Analysis Volume [veh/h]	0	1579	7	0	1294	539	859	208	319	0	0	149
Presence of On-Street Parking	No		No	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]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	21	0	0	21	0	0	69	0	0	0	69
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
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	2.00	2.00	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]	43	43	43	43	39	39	39	39
g / C, Green / Cycle	0.48	0.48	0.48	0.48	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.26	0.24	0.21	0.38	0.34	0.38	0.34	0.10
s, saturation flow rate [veh/h]	4584	1678	6113	1431	1275	1266	1365	1431
c, Capacity [veh/h]	2190	801	2919	683	611	624	592	620
d1, Uniform Delay [s]	16.58	16.08	15.57	19.70	23.31	24.29	21.83	16.12
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.12	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]	0.97	2.18	0.49	8.99	1.58	2.42	2.29	0.20
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	0.54	0.49	0.44	0.79	0.72	0.78	0.78	0.24
d, Delay for Lane Group [s/veh]	17.55	18.26	16.06	28.69	24.89	26.71	24.11	16.32
Lane Group LOS	B	B	B	C	C	C	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.27	5.40	3.98	9.90	8.22	9.64	8.43	1.95
50th-Percentile Queue Length [ft/ln]	131.68	135.03	99.62	247.40	205.51	241.10	210.64	48.79
95th-Percentile Queue Length [veh/ln]	9.03	9.21	7.17	15.06	12.92	14.74	13.19	3.51
95th-Percentile Queue Length [ft/ln]	225.77	230.32	179.32	376.38	323.07	368.43	329.64	87.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	17.73	18.26	0.00	16.06	28.69	25.78	24.92	24.11	0.00	0.00	16.32
Movement LOS		B	B		B	C	C	C	C			B
d_A, Approach Delay [s/veh]	17.73			19.78			25.27			16.32		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	20.55											
Intersection LOS	C											
Intersection V/C	0.761											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.524	2.040
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	378	1444	0
d_b, Bicycle Delay [s]	29.61	29.61	3.47	45.00
l_b,int, Bicycle LOS Score for Intersection	2.214	2.316	2.703	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.865

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	2	8	0	0	0	0	0	0	1
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]	36	922	60	170	1031	343	470	112	50	59	39	89
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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]	10	254	17	47	284	94	129	31	14	16	11	24
Total Analysis Volume [veh/h]	40	1014	66	187	1134	377	517	123	55	65	43	98
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.06	0.35	0.35	0.32	0.11	0.11	0.04	0.07	0.06
Intersection LOS	D											
Intersection V/C	0.865											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	65	201	112	424	209	535	382	663	41	107	458	338
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	0	0	0	8	5	11	5	0	15	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]	82	207	115	437	215	559	398	694	47	110	487	348
Peak Hour Factor	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780
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]	21	53	29	112	55	143	102	177	12	28	124	89
Total Analysis Volume [veh/h]	84	212	118	447	220	572	407	710	48	112	498	356
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.07	0.07	0.16	0.14	0.36	0.14	0.22	0.03	0.07	0.16	0.22
Intersection LOS	D											
Intersection V/C	0.874											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	268	46	22	33	27	70	107	743	153	24	729	8
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	2	2	6	3	0	9	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]	280	47	23	34	28	74	112	771	161	25	760	8
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]	74	12	6	9	7	20	30	204	43	7	201	2
Total Analysis Volume [veh/h]	297	50	24	36	30	78	119	818	171	27	806	8
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.19	0.03	0.02	0.02	0.02	0.05	0.07	0.26	0.11	0.02	0.25	0.01
Intersection LOS	B											
Intersection V/C	0.661											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima 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	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	381	637	123	166	952	62	55	359	182	203	636	93
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	3	2	2	2	0	3	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]	395	656	127	171	981	67	59	372	189	209	658	96
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	102	169	33	44	253	17	15	96	49	54	170	25
Total Analysis Volume [veh/h]	408	677	131	176	1012	69	61	384	195	216	679	99
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]	10.00

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

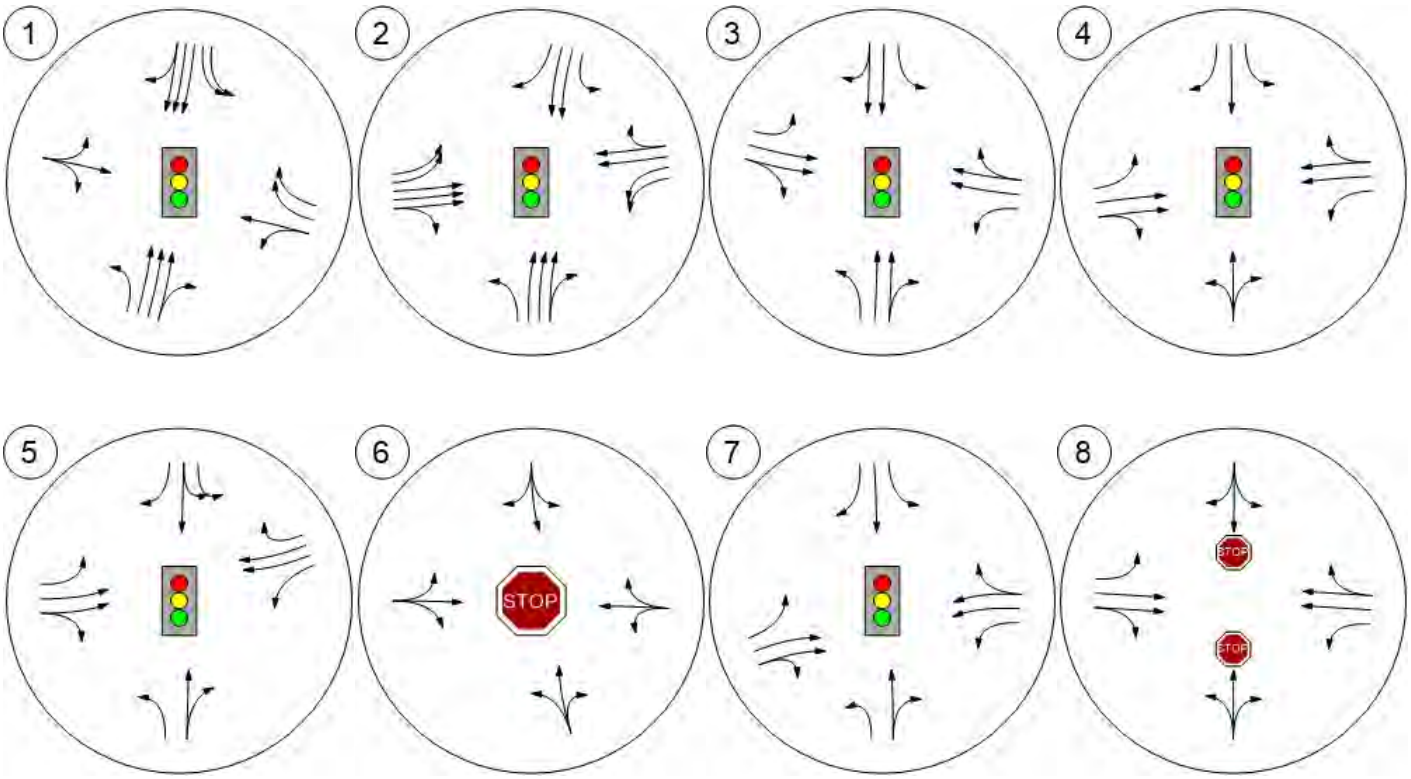
V/C, Movement V/C Ratio	0.14	0.21	0.08	0.06	0.34	0.34	0.02	0.12	0.12	0.08	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.776											

Study Intersections



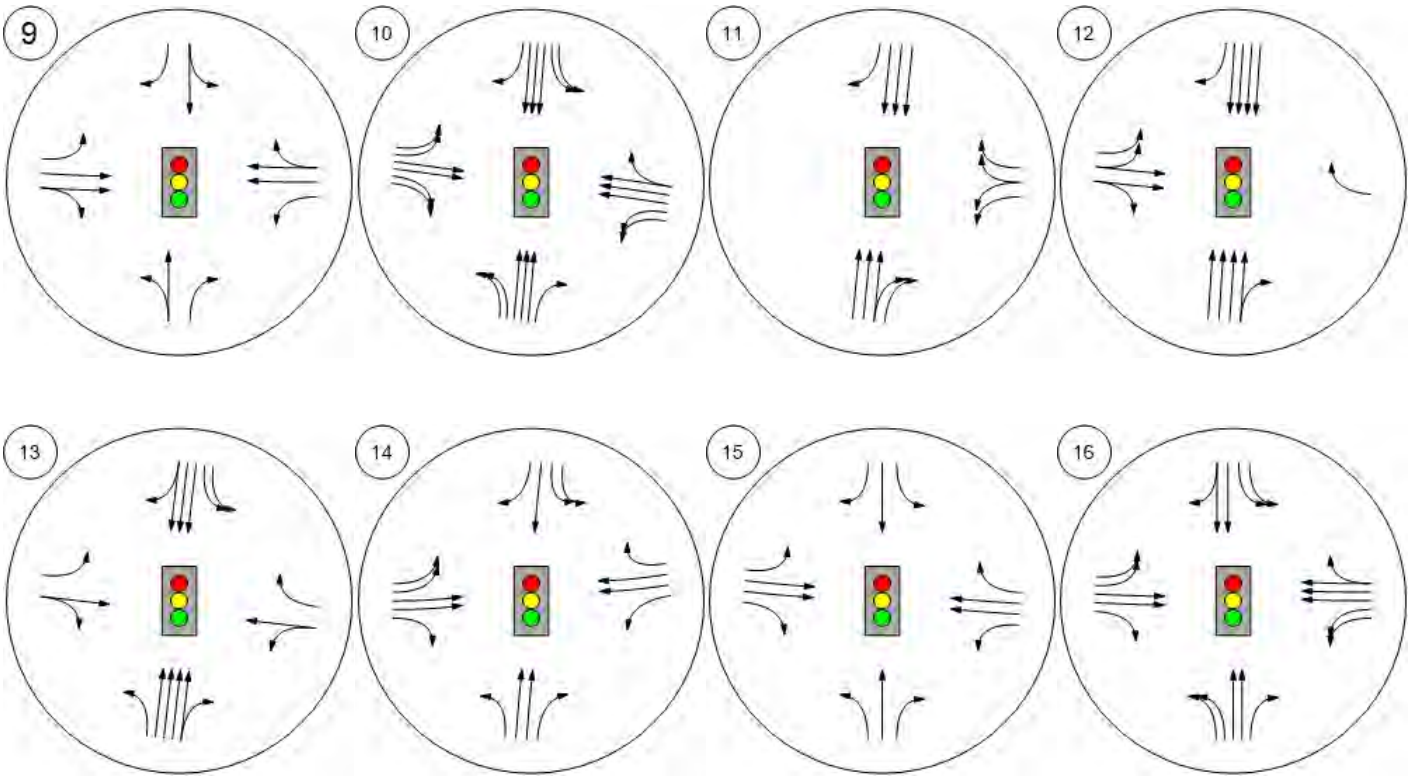
Lane Configuration and Traffic Control





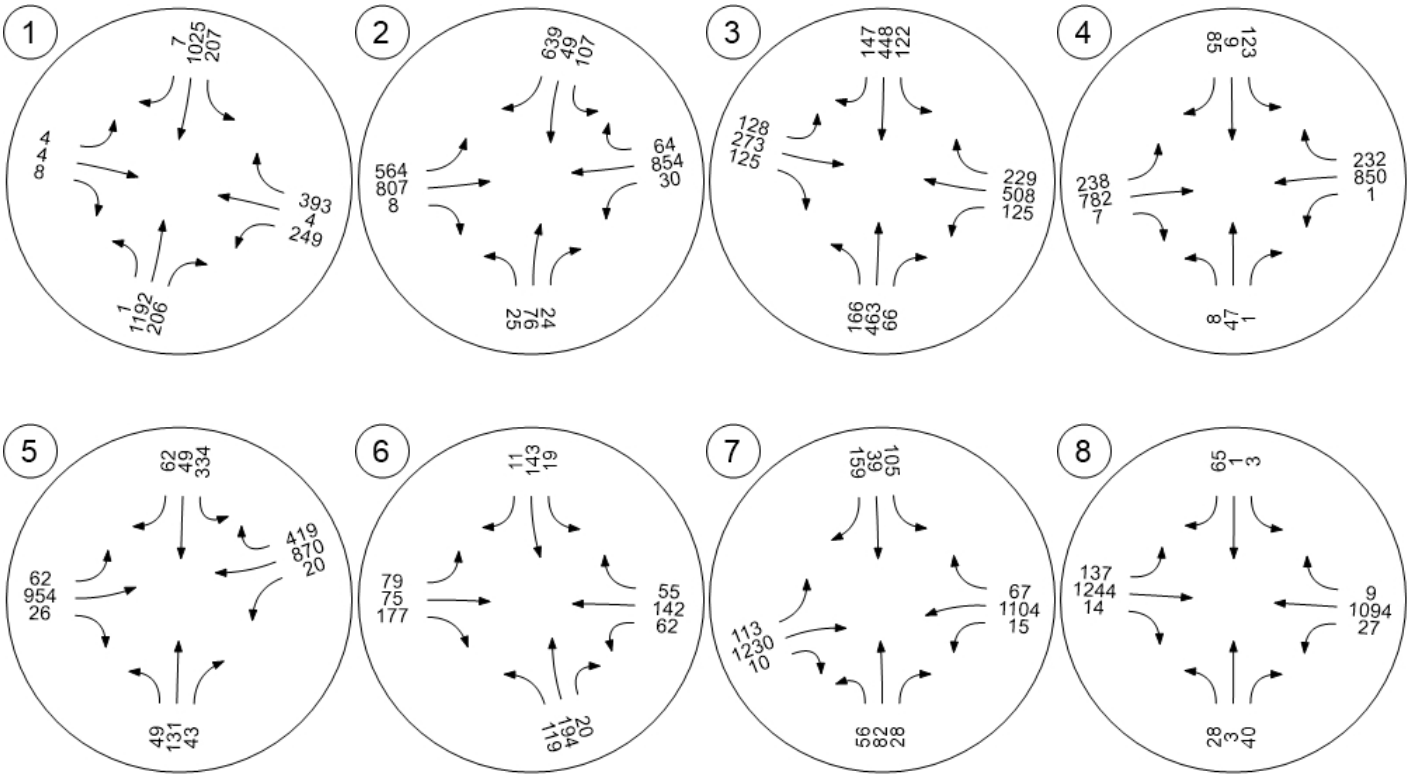
Lane Configuration and Traffic Control





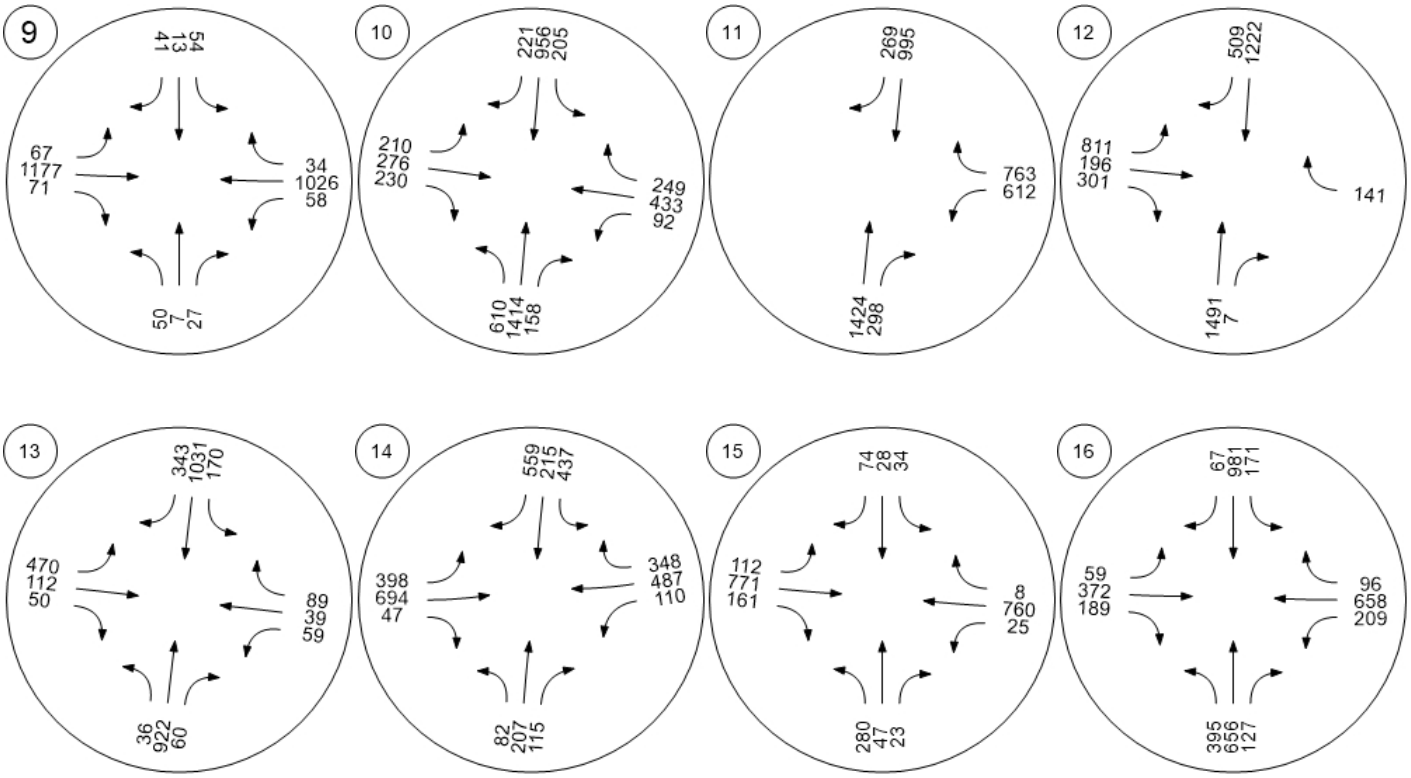
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES and Residential Project

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+A+C - Phase II PM.pdf

Scenario 11 Phase II - E+A+C PM
6/28/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	SB Thru	0.669	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.254	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	EB Thru	0.643	-	B
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	EB Right	0.724	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Right	0.707	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Left	0.327	9.7	A
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	WB Thru	0.688	-	B
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Left	3.050	2,051.5	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	WB Right	0.817	-	D
10	Azusa Ave at Gale Ave	Signalized	ICU 1	SB Thru	0.899	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	SB Right	0.965	39.5	D
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Right	0.651	14.7	B
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Right	0.922	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.980	-	E
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.868	-	D
16	Fullerton Av at Colima Road	Signalized	ICU 1	EB Thru	0.965	-	E

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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	6	962	189	450	1190	5	1	1	3	201	0	174
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
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	1	1	3	0	0	2	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]	6	991	195	464	1226	6	2	4	3	207	2	179
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]	2	259	51	121	321	2	1	1	1	54	1	47
Total Analysis Volume [veh/h]	6	1038	204	486	1284	6	2	4	3	217	2	187
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.26	0.17	0.27	0.27	0.00	0.01	0.01	0.14	0.14	0.06
Intersection LOS	B											
Intersection V/C	0.669											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.254

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	47	75	62	132	106	693	803	1218	19	56	799	63
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
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	4	0	0	4	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]	48	77	64	136	109	714	827	1259	20	58	827	65
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	13	21	17	37	29	192	222	338	5	16	222	17
Total Analysis Volume [veh/h]	52	83	69	146	117	768	889	1354	22	62	889	70
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.04	0.48	0.31	0.29	0.29	0.02	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.254											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	61	478	74	117	384	117	139	461	134	70	314	114
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	4	3	2	0	1	2	0	4	2	4
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]	63	494	80	124	398	121	144	477	138	76	325	121
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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]	17	135	22	34	109	33	39	130	38	21	89	33
Total Analysis Volume [veh/h]	69	540	88	136	435	132	158	522	151	83	356	132
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.20	0.20	0.09	0.18	0.18	0.10	0.21	0.21	0.05	0.15	0.15
Intersection LOS	B											
Intersection V/C	0.643											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.724

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	6	9	3	106	17	151	322	1070	9	3	773	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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
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	4	0	0	0	4	0	0	4	4
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]	6	9	3	113	18	156	332	1106	9	3	800	85
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	2	2	1	30	5	42	88	295	2	1	213	23
Total Analysis Volume [veh/h]	6	10	3	120	19	166	354	1179	10	3	853	91
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.08	0.01	0.10	0.22	0.37	0.37	0.00	0.30	0.30
Intersection LOS	C											
Intersection V/C	0.724											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	12	49	36	365	102	35	39	1031	35	44	958	407
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	10	0	0	0	11	0	1	11	10
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]	12	50	38	386	105	36	40	1073	36	46	998	429
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	3	13	10	100	27	9	10	279	9	12	259	111
Total Analysis Volume [veh/h]	12	52	40	401	109	37	42	1115	37	48	1037	446
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.06	0.06	0.13	0.16	0.02	0.03	0.36	0.36	0.03	0.32	0.28
Intersection LOS	C											
Intersection V/C	0.707											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.327

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	141	44	30	3	21	9	17	105	109	21	66	6
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	0	0	1	0	0	0	3	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]	148	46	31	3	23	9	18	108	115	22	68	6
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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	12	8	1	6	2	5	29	31	6	18	2
Total Analysis Volume [veh/h]	158	49	33	3	25	10	19	116	123	24	73	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	734	720	797	722
Degree of Utilization, x	0.33	0.05	0.32	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.42	0.17	1.41	0.50
95th-Percentile Queue Length [ft]	35.61	4.17	35.20	12.40
Approach Delay [s/veh]	10.27	8.28	9.67	8.81
Approach LOS	B	A	A	A
Intersection Delay [s/veh]	9.67			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.688

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	22	17	69	20	67	52	1345	20	27	1278	95
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	4	0	0	0	22	0	4	22	4
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]	21	23	22	75	21	69	54	1407	21	32	1338	102
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	6	6	6	20	6	18	14	370	6	8	352	27
Total Analysis Volume [veh/h]	22	24	23	79	22	73	57	1479	22	34	1407	107
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.03	0.05	0.01	0.05	0.04	0.47	0.47	0.02	0.47	0.47
Intersection LOS	B											
Intersection V/C	0.688											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	2,051.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.050

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	13	0	21	3	1	26	133	1292	24	56	1417	26
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	2	0	0	0	30	0	3	30	2
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]	13	0	25	5	1	27	137	1361	25	61	1490	29
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]	3	0	7	1	0	7	37	365	7	16	400	8
Total Analysis Volume [veh/h]	14	0	27	5	1	29	147	1460	27	65	1599	31
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.05	0.00	0.08	0.95	0.31	0.09	0.37	0.01	0.00	0.15	0.02	0.00
d_M, Delay for Movement [s/veh]	2051.47	2400.27	1277.30	1065.13	1514.00	395.70	19.45	0.00	0.00	14.39	0.00	0.00
Movement LOS	F	F	F	F	F	F	C	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	6.03	6.03	6.03	4.23	4.23	4.23	1.69	0.00	0.00	0.50	0.00	0.00
95th-Percentile Queue Length [ft/ln]	150.84	150.84	150.84	105.84	105.84	105.84	42.24	0.00	0.00	12.60	0.00	0.00
d_A, Approach Delay [s/veh]	1541.65			523.29			1.75			0.55		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	25.06											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.817

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	147	12	42	20	18	23	31	1198	84	85	1331	55
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	0	36	0	0	0	0	0	35	36	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]	186	12	79	21	19	24	32	1234	122	124	1371	57
Peak Hour Factor	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960
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	3	22	6	5	7	9	344	34	35	383	16
Total Analysis Volume [veh/h]	208	13	88	23	21	27	36	1377	136	138	1530	64
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.14	0.06	0.01	0.03	0.02	0.02	0.47	0.47	0.09	0.50	0.50
Intersection LOS	D											
Intersection V/C	0.817											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.899

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	400	1232	188	327	1384	113	325	658	562	260	294	252
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	10	0	0	8	3	2	2	10	0	3	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]	427	1279	194	337	1434	119	337	680	589	268	306	260
Peak Hour Factor	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420
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]	113	339	51	89	381	32	89	180	156	71	81	69
Total Analysis Volume [veh/h]	453	1358	206	358	1522	126	358	722	625	285	325	276
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.28	0.13	0.12	0.32	0.08	0.12	0.23	0.20	0.10	0.13	0.13
Intersection LOS	D											
Intersection V/C	0.899											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	39.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.965

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1343	493	0	1431	896	0	0	0	636	0	514
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0000	1.0000	1.0000	1.0300	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	0	0	13	5	0	0	0	1	0	8
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	1400	508	0	1487	928	0	0	0	656	0	537
Peak Hour Factor	1.0000	0.9610	0.9610	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	1.0000	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]	0	364	132	0	387	241	0	0	0	171	0	140
Total Analysis Volume [veh/h]	0	1457	529	0	1547	966	0	0	0	683	0	559
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	103	0	0	103	0	0	0	0	17	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	59	59	59	59	59		59	59	59
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		21	21	21
g / C, Green / Cycle	0.51	0.51	0.51	0.51	0.51		0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.31	0.34	0.35	0.34	0.68		0.26	0.27	0.29
s, saturation flow rate [veh/h]	3204	1475	1431	4584	1431		1603	1538	1431
c, Capacity [veh/h]	1638	754	731	2344	731		565	542	504
d1, Uniform Delay [s]	10.15	10.56	10.73	10.57	14.34		16.59	16.84	17.32
k, delay calibration	0.11	0.20	0.21	0.11	0.50		0.11	0.11	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	1.82	2.20	0.32	153.80		1.86	2.27	4.13
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	0.61	0.66	0.68	0.66	1.32		0.73	0.76	0.82
d, Delay for Lane Group [s/veh]	10.52	12.38	12.93	10.90	168.14		18.45	19.11	21.44
Lane Group LOS	B	B	B	B	F		B	B	C
Critical Lane Group	No	No	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.73	4.17	4.30	4.01	38.83		4.57	4.69	5.05
50th-Percentile Queue Length [ft/ln]	93.17	104.28	107.47	100.29	970.76		114.35	117.21	126.17
95th-Percentile Queue Length [veh/ln]	6.71	7.51	7.70	7.22	59.01		8.08	8.24	8.73
95th-Percentile Queue Length [ft/ln]	167.70	187.71	192.47	180.52	1475.17		202.04	205.98	218.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.69	12.90	0.00	10.90	168.14	0.00	0.00	0.00	18.71	0.00	20.84
Movement LOS		B	B		B	F				B		C
d_A, Approach Delay [s/veh]	11.59			71.34			0.00			19.67		
Approach LOS	B			E			A			B		
d_I, Intersection Delay [s/veh]	39.49											
Intersection LOS	D											
Intersection V/C	0.965											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.660
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1650	1650	0	0
d_b, Bicycle Delay [s]	1.84	1.84	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.652	2.942	4.132	6.182
Bicycle LOS	B	C	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1532	35	0	1772	333	416	304	421	0	0	375
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300	1.0000	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	0	9	0	8	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	1588	36	0	1834	343	436	313	434	0	0	386
Peak Hour Factor	1.0000	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	0.9740	0.9740	1.0000	1.0000	0.9740
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	408	9	0	471	88	112	80	111	0	0	99
Total Analysis Volume [veh/h]	0	1630	37	0	1883	352	448	321	446	0	0	396
Presence of On-Street Parking	No		No	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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	19	0	0	19	0	0	41	0	0	0	41
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60
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	2.00	2.00	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]	28	28	28	28	24	24	24	24
g / C, Green / Cycle	0.47	0.47	0.47	0.47	0.40	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.27	0.25	0.31	0.25	0.26	0.28	0.34	0.28
s, saturation flow rate [veh/h]	4584	1657	6113	1431	1275	1576	1302	1431
c, Capacity [veh/h]	2133	771	2845	666	594	708	523	574
d1, Uniform Delay [s]	11.82	11.48	12.42	11.40	16.10	14.70	16.38	14.89
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.13	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]	1.19	2.71	1.23	2.99	0.84	0.87	4.85	1.49
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	0.59	0.54	0.66	0.53	0.56	0.61	0.85	0.69
d, Delay for Lane Group [s/veh]	13.00	14.19	13.65	14.39	16.94	15.57	21.22	16.37
Lane Group LOS	B	B	B	B	B	B	C	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.30	3.56	3.88	3.05	3.70	4.53	5.68	4.25
50th-Percentile Queue Length [ft/ln]	82.47	88.94	97.02	76.25	92.41	113.33	142.02	106.35
95th-Percentile Queue Length [veh/ln]	5.94	6.40	6.99	5.49	6.65	8.03	9.59	7.64
95th-Percentile Queue Length [ft/ln]	148.44	160.10	174.64	137.24	166.34	200.63	239.74	190.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.28	14.19	0.00	13.65	14.39	16.70	15.57	21.22	0.00	0.00	16.37
Movement LOS		B	B		B	B	B	B	C			B
d_A, Approach Delay [s/veh]	13.30			13.76			18.02			16.37		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	14.75											
Intersection LOS	B											
Intersection V/C	0.651											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.430	2.125
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	0
d_b, Bicycle Delay [s]	16.88	16.88	4.41	30.00
l_b,int, Bicycle LOS Score for Intersection	2.247	2.482	2.562	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.922

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	2	7	0	0	0	0	0	0	3
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]	34	1028	49	517	1435	332	367	102	35	97	132	118
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]	9	263	13	132	368	85	94	26	9	25	34	30
Total Analysis Volume [veh/h]	35	1053	50	530	1470	340	376	105	36	99	135	121
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.17	0.17	0.18	0.42	0.42	0.24	0.09	0.09	0.06	0.15	0.08
Intersection LOS	E											
Intersection V/C	0.922											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.980

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	52	194	196	622	292	520	365	902	24	171	859	495
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	0	0	7	7	15	14	0	15	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]	68	200	202	641	301	543	383	944	39	176	900	510
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
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]	18	53	53	169	79	143	101	249	10	46	238	135
Total Analysis Volume [veh/h]	72	211	213	677	318	573	404	997	41	186	950	539
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.07	0.13	0.24	0.20	0.36	0.14	0.31	0.03	0.12	0.30	0.34
Intersection LOS	E											
Intersection V/C	0.980											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.868

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	253	63	42	142	148	235	200	1065	259	75	941	49
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	2	2	9	4	0	9	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]	265	65	43	146	152	244	208	1106	271	77	978	50
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
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]	68	17	11	37	39	62	53	282	69	20	249	13
Total Analysis Volume [veh/h]	270	66	44	149	155	249	212	1127	276	78	997	51
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	-	-

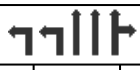
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.04	0.03	0.09	0.10	0.16	0.13	0.35	0.17	0.05	0.31	0.03
Intersection LOS	D											
Intersection V/C	0.868											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.965

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	388	675	167	350	822	71	107	983	171	229	695	135
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	3	3	3	3	0	3	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]	403	695	172	361	847	76	113	1015	179	236	719	139
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
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	182	45	94	221	20	30	265	47	62	188	36
Total Analysis Volume [veh/h]	421	726	180	377	885	79	118	1061	187	247	751	145
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]	10.00

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

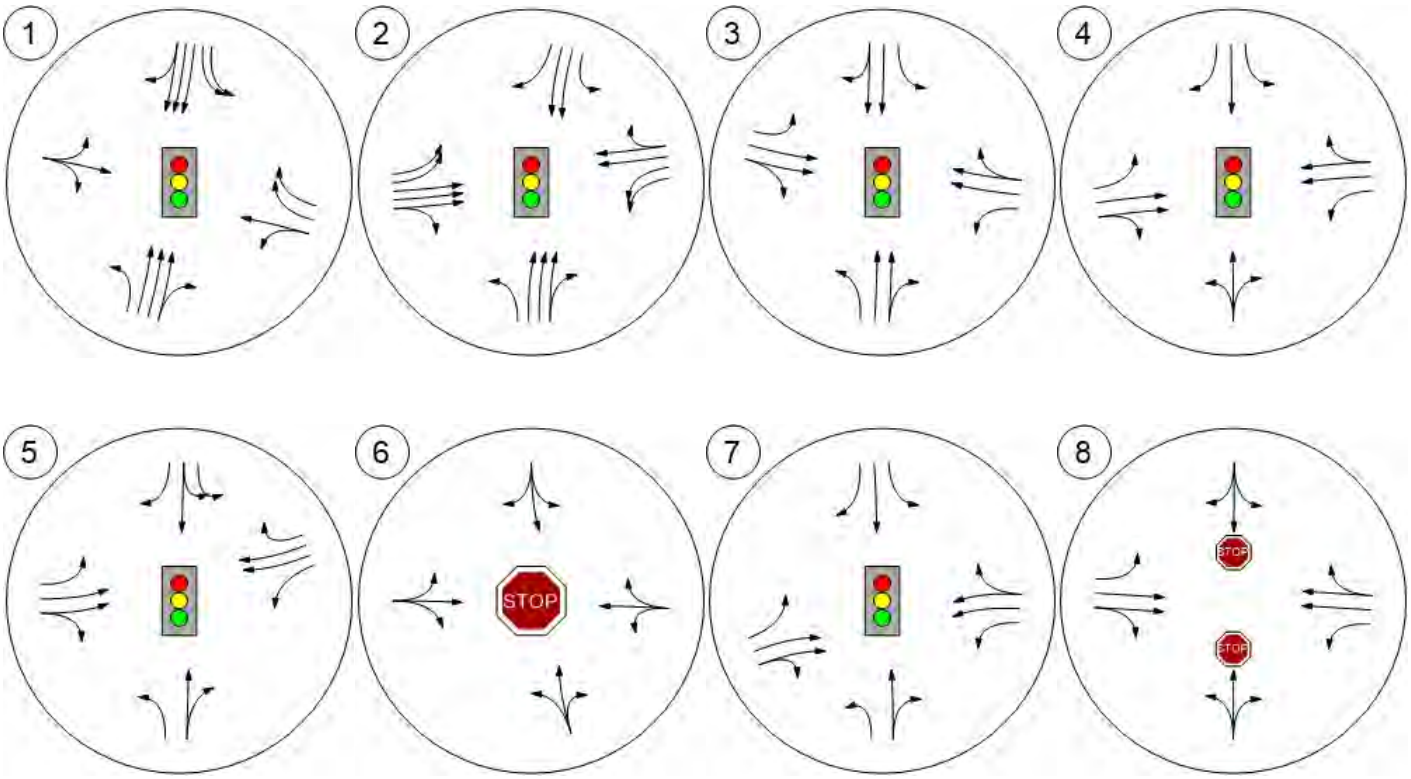
V/C, Movement V/C Ratio	0.15	0.23	0.11	0.13	0.30	0.30	0.04	0.33	0.12	0.09	0.19	0.19
Intersection LOS	E											
Intersection V/C	0.965											

Study Intersections



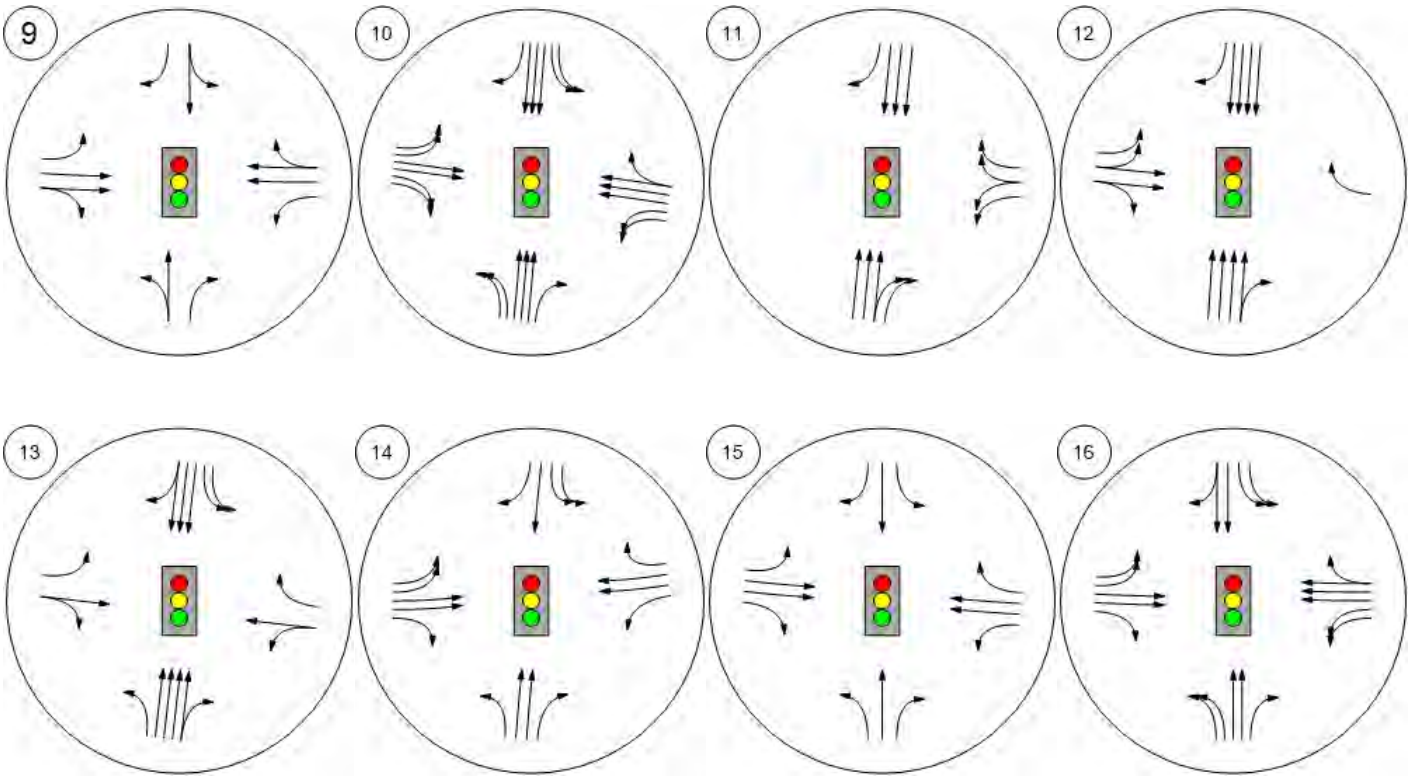
Lane Configuration and Traffic Control





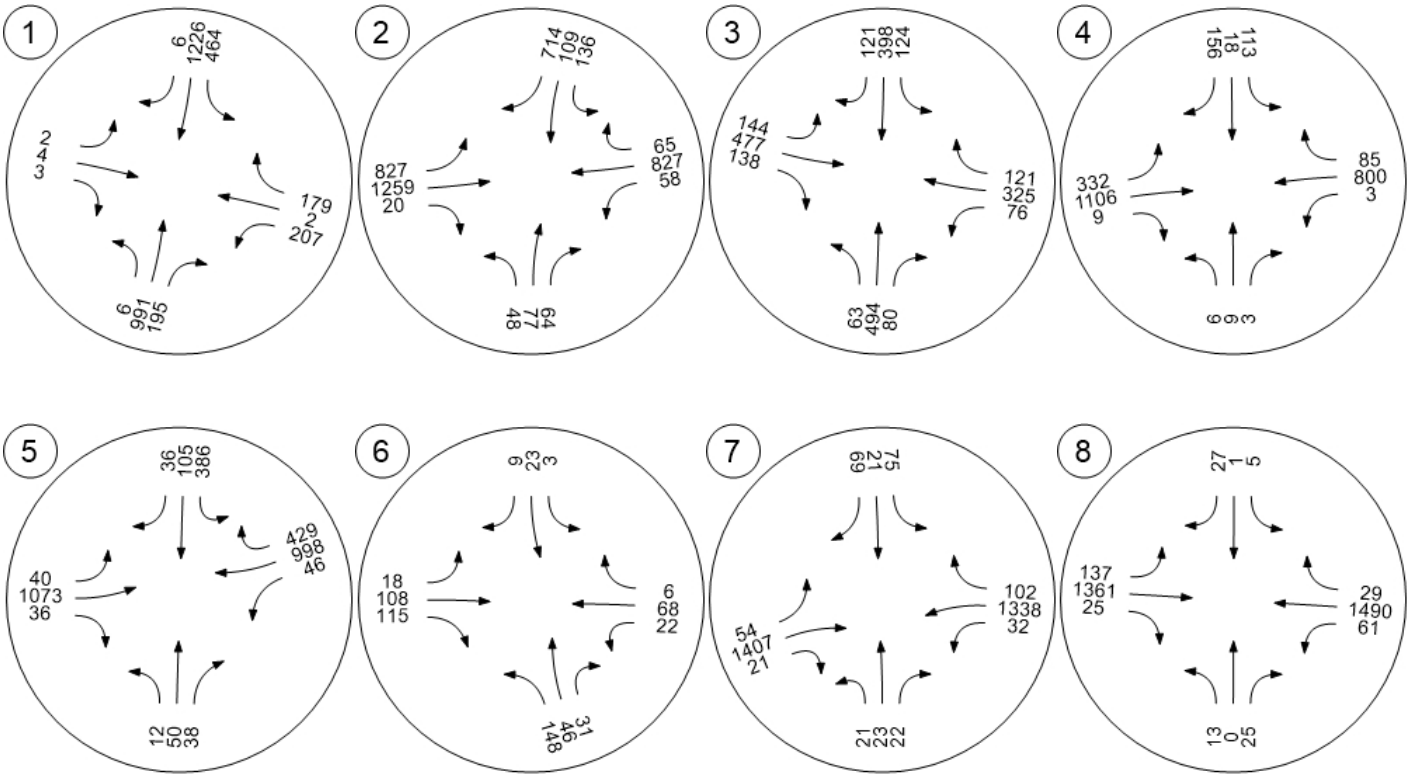
Lane Configuration and Traffic Control





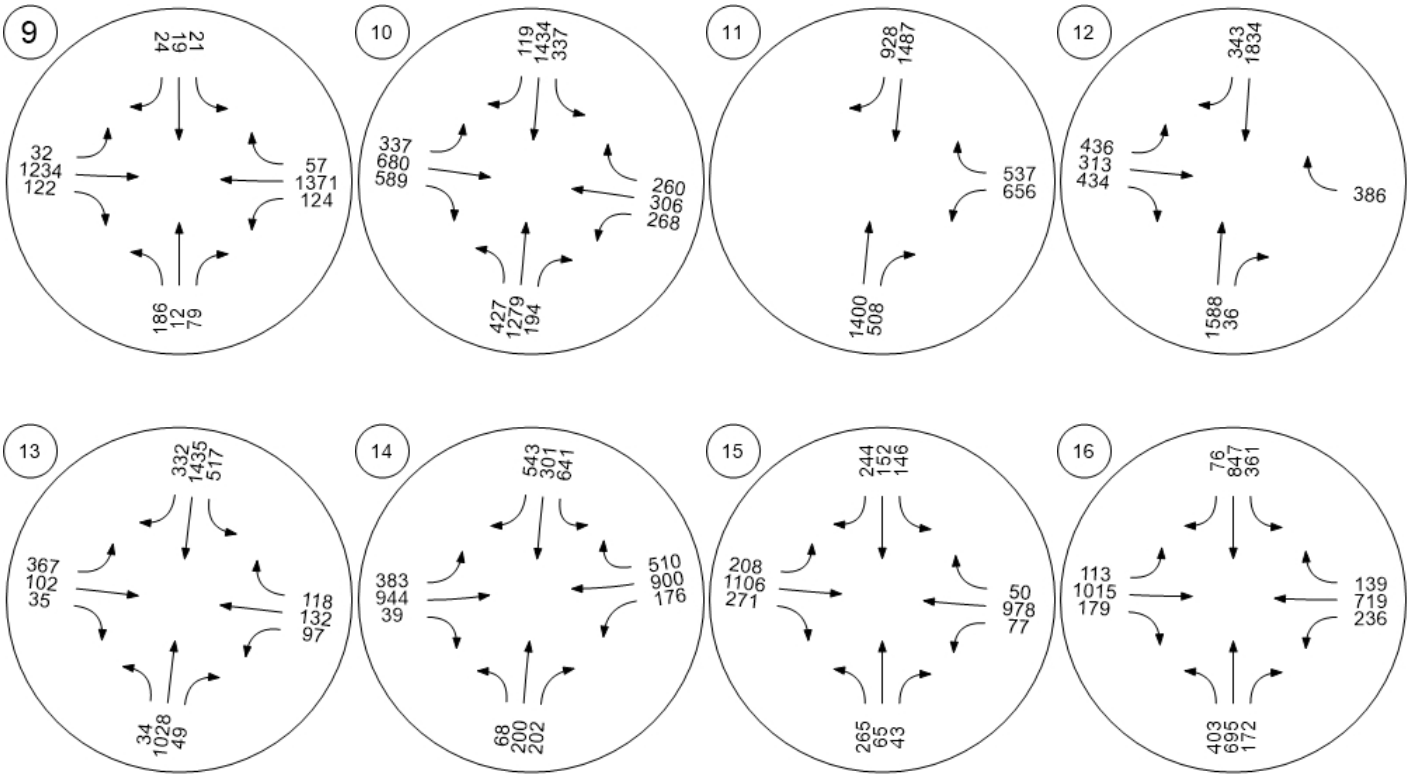
Traffic Volume - Future Total Volume



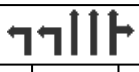


Traffic Volume - Future Total Volume





Option 1: mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
Total Analysis Volume [veh/h]	39	994	65	184	1112	370	507	121	54	64	42	96

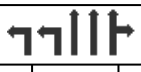
Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.17	0.17	0.06	0.34	0.34	0.16	0.21	0.21	0.04	0.07	0.06
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	C											
Intersection V/C	0.747											

Option 1: mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
Total Analysis Volume [veh/h]	34	1033	49	519	1442	333	369	102	35	97	132	119

Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.17	0.17	0.18	0.41	0.41	0.12	0.23	0.23	0.06	0.14	0.07
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	D											
Intersection V/C	0.833											

Appendix F. Intersection LOS Worksheets, Future With Project Conditions

Appendices

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Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+A+C+P1 AM.pdf

Scenario 5 E+A+C+Phase1_AM
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	NB Thru	0.675	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.057	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	WB Right	0.768	-	C
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Right	0.743	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.727	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Thru	1.085	71.0	F
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	EB Thru	0.745	-	C
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Left	4.771	2,973.4	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.620	-	B
10	Azusa Ave at Gale Ave	Signalized	ICU 1	NB Thru	0.803	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.691	14.4	B
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	SB Right	0.748	20.1	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.898	-	D
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.871	-	D
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.663	-	B
16	Fullerton Av at Colima Road	Signalized	ICU 1	SB Right	0.770	-	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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	1	1157	200	201	995	6	4	2	8	242	2	382
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	4	0	1	0	6	0	4	6	4
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]	1	1169	206	207	1005	7	4	8	8	248	8	390
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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	320	56	57	275	2	1	2	2	68	2	107
Total Analysis Volume [veh/h]	1	1279	225	226	1100	8	4	9	9	271	9	427
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.31	0.08	0.23	0.23	0.00	0.01	0.01	0.17	0.18	0.13
Intersection LOS	B											
Intersection V/C	0.675											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.057

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	24	74	23	104	48	620	548	780	8	29	826	62
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	0	0	0	8	0	4	7	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]	24	75	27	105	48	626	553	796	8	33	841	63
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
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]	6	20	7	28	13	164	145	209	2	9	221	17
Total Analysis Volume [veh/h]	25	79	28	110	50	657	580	835	8	35	882	66
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.07	0.02	0.41	0.20	0.18	0.18	0.01	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.057											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	161	449	60	115	433	143	124	263	121	118	491	221
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	8	8	2	0	0	14	0	7	14	5
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	454	69	124	439	144	125	280	122	126	510	228
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
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]	46	128	19	35	124	41	35	79	34	36	144	64
Total Analysis Volume [veh/h]	184	512	78	140	495	162	141	316	138	142	575	257
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.18	0.18	0.09	0.21	0.21	0.09	0.14	0.14	0.09	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.768											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	8	0	0	0	12	0	4	11	7
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]	8	46	5	125	9	84	233	775	7	5	841	231
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
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]	2	12	1	34	2	23	63	209	2	1	227	62
Total Analysis Volume [veh/h]	9	50	5	135	10	91	252	837	8	5	908	249
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.08	0.01	0.06	0.16	0.26	0.26	0.00	0.36	0.36
Intersection LOS	C											
Intersection V/C	0.743											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	48	127	40	312	48	60	60	915	25	18	836	398
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	45	0	0	0	40	0	5	37	41
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]	48	128	46	360	48	61	61	964	25	23	881	443
Peak Hour Factor	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930
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]	13	36	13	101	13	17	17	270	7	6	247	124
Total Analysis Volume [veh/h]	54	143	52	403	54	68	68	1080	28	26	987	496
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.13	0.14	0.04	0.04	0.35	0.35	0.02	0.31	0.31
Intersection LOS	C											
Intersection V/C	0.727											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	71.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.085

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	114	187	19	18	138	11	77	73	169	60	138	53
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	4	4	1	0	0	4	3	4	4	4
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]	117	190	23	22	140	11	78	78	174	65	143	58
Peak Hour Factor	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120
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]	41	67	8	8	49	4	27	27	61	23	50	20
Total Analysis Volume [veh/h]	164	267	32	31	197	15	110	110	244	91	201	81
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	463	388	464	421
Degree of Utilization, x	1.08	0.63	1.05	0.89

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	15.62	4.11	14.60	9.20
95th-Percentile Queue Length [ft]	390.61	102.73	365.08	230.12
Approach Delay [s/veh]	97.37	26.68	84.98	49.71
Approach LOS	F	D	F	E
Intersection Delay [s/veh]	70.99			
Intersection LOS	F			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.745

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	54	80	22	98	38	154	110	1168	10	12	1053	62
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	9	4	0	0	0	91	0	7	83	3
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]	55	81	31	103	38	156	111	1271	10	19	1147	66
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]	15	22	9	28	11	43	31	351	3	5	317	18
Total Analysis Volume [veh/h]	61	90	34	114	42	173	123	1406	11	21	1269	73
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.07	0.03	0.11	0.08	0.44	0.44	0.01	0.42	0.42
Intersection LOS	C											
Intersection V/C	0.745											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	2,973.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.771

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	27	3	36	1	1	63	133	1173	14	24	1038	7
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	2	4	68	68	36	0	2	25	2
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]	27	7	39	3	5	132	202	1221	14	26	1073	9
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
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]	7	2	10	1	1	35	53	321	4	7	282	2
Total Analysis Volume [veh/h]	28	7	41	3	5	139	212	1283	15	27	1127	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.77	0.73	0.10	0.49	0.52	0.30	0.35	0.01	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	2973.43	2736.22	2368.73	821.56	609.07	238.86	14.00	0.00	0.00	12.16	0.00	0.00
Movement LOS	F	F	F	F	F	F	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	10.51	10.51	10.51	9.95	9.95	9.95	1.55	0.00	0.00	0.16	0.00	0.00
95th-Percentile Queue Length [ft/ln]	262.87	262.87	262.87	248.65	248.65	248.65	38.67	0.00	0.00	4.02	0.00	0.00
d_A, Approach Delay [s/veh]	2625.36			263.34			1.96			0.28		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	83.40											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.620

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	7	6	52	13	40	65	1143	29	19	996	33
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	4	21	0	4	0	0	0	41	38	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]	49	11	27	53	17	40	66	1154	70	57	1006	33
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]	13	3	7	14	4	11	17	304	18	15	265	9
Total Analysis Volume [veh/h]	52	12	28	56	18	42	70	1217	74	60	1061	35
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.02	0.04	0.05	0.03	0.04	0.40	0.40	0.04	0.34	0.34
Intersection LOS	B											
Intersection V/C	0.620											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.803

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	587	1367	153	199	918	214	202	266	212	89	419	242
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	4	0	14	1	2	2	16	4	1	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]	602	1391	159	201	941	217	206	271	230	94	424	244
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
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]	172	397	45	57	269	62	59	77	66	27	121	70
Total Analysis Volume [veh/h]	687	1588	182	229	1074	248	235	309	263	107	484	279
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.33	0.11	0.08	0.22	0.16	0.08	0.10	0.08	0.04	0.16	0.16
Intersection LOS	D											
Intersection V/C	0.803											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1375	289	0	951	254	0	0	0	592	0	738
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0000	1.0000	1.0000	1.0100	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	20	4	0	27	7	0	0	0	14	0	3
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]	4	1409	296	0	988	264	0	0	0	612	0	748
Peak Hour Factor	1.0000	0.9000	0.9000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	1.0000	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]	1	391	82	0	274	73	0	0	0	170	0	208
Total Analysis Volume [veh/h]	4	1566	329	0	1098	293	0	0	0	680	0	831
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	59	0	0	59	0	0	0	0	61	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	54	54	54	54	54		54	54	54
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]	23	23	23	23	23		23	23	23
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43		0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.33	0.34	0.23	0.24	0.20		0.31	0.34	0.35
s, saturation flow rate [veh/h]	3204	1541	1431	4584	1431		1603	1486	1431
c, Capacity [veh/h]	1372	660	613	1963	613		678	629	605
d1, Uniform Delay [s]	13.06	13.31	11.43	11.58	11.07		13.07	13.55	13.83
k, delay calibration	0.11	0.16	0.11	0.11	0.11		0.13	0.16	0.18
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	3.25	0.73	0.25	0.58		1.97	3.61	4.99
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	0.76	0.79	0.54	0.56	0.48		0.74	0.80	0.83
d, Delay for Lane Group [s/veh]	13.95	16.56	12.17	11.83	11.65		15.04	17.16	18.82
Lane Group LOS	B	B	B	B	B		B	B	B
Critical Lane Group	No	Yes	No	No	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.55	5.06	2.54	2.77	2.18		4.58	4.99	5.29
50th-Percentile Queue Length [ft/ln]	113.64	126.40	63.48	69.13	54.53		114.45	124.85	132.31
95th-Percentile Queue Length [veh/ln]	8.04	8.74	4.57	4.98	3.93		8.09	8.66	9.07
95th-Percentile Queue Length [ft/ln]	201.06	218.59	114.27	124.44	98.15		202.18	216.47	226.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	14.46	12.17	0.00	11.83	11.65	0.00	0.00	0.00	15.59	0.00	18.17
Movement LOS		B	B		B	B				B		B
d_A, Approach Delay [s/veh]	14.36			11.79			0.00			17.01		
Approach LOS	B			B			A			B		
d_I, Intersection Delay [s/veh]	14.45											
Intersection LOS	B											
Intersection V/C	0.691											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.674
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	917	917	0	0
d_b, Bicycle Delay [s]	17.60	17.60	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.602	2.325	4.132	6.626
Bicycle LOS	B	B	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.748

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1442	7	0	1177	494	784	190	292	0	0	137
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0100	1.0100	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	30	4	0	34	0	3	0	4	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]	4	1486	11	0	1223	499	795	192	299	0	0	138
Peak Hour Factor	1.0000	0.9440	0.9440	1.0000	0.9440	0.9440	0.9440	0.9440	0.9440	1.0000	1.0000	0.9440
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	394	3	0	324	132	211	51	79	0	0	37
Total Analysis Volume [veh/h]	4	1574	12	0	1296	529	842	203	317	0	0	146
Presence of On-Street Parking	No		No	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]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	21	0	0	21	0	0	69	0	0	0	69
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
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	2.00	2.00	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]	44	44	44	44	38	38	38	38
g / C, Green / Cycle	0.49	0.49	0.49	0.49	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.26	0.24	0.21	0.37	0.34	0.38	0.33	0.10
s, saturation flow rate [veh/h]	4584	1674	6113	1431	1275	1266	1364	1431
c, Capacity [veh/h]	2221	811	2961	693	602	615	582	610
d1, Uniform Delay [s]	16.15	15.67	15.18	18.98	23.65	24.62	22.18	16.47
k, delay calibration	0.50	0.50	0.50	0.50	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	1.00
d2, Incremental Delay [s]	0.93	2.10	0.47	7.81	1.58	2.29	2.33	0.20
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	0.54	0.49	0.44	0.76	0.71	0.78	0.78	0.24
d, Delay for Lane Group [s/veh]	17.08	17.77	15.65	26.78	25.23	26.91	24.50	16.67
Lane Group LOS	B	B	B	C	C	C	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.17	5.31	3.92	9.31	8.11	9.50	8.34	1.94
50th-Percentile Queue Length [ft/ln]	129.28	132.66	98.03	232.74	202.72	237.38	208.53	48.39
95th-Percentile Queue Length [veh/ln]	8.90	9.08	7.06	14.31	12.78	14.55	13.08	3.48
95th-Percentile Queue Length [ft/ln]	222.52	227.10	176.46	357.84	319.47	363.72	326.95	87.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	17.25	17.77	0.00	15.65	26.78	26.05	25.28	24.50	0.00	0.00	16.67
Movement LOS		B	B		B	C	C	C	C			B
d_A, Approach Delay [s/veh]	17.25			18.88			25.58			16.67		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	20.14											
Intersection LOS	C											
Intersection V/C	0.748											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.517	2.039
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	378	1444	0
d_b, Bicycle Delay [s]	29.61	29.61	3.47	45.00
l_b,int, Bicycle LOS Score for Intersection	2.214	2.312	2.683	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.898

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	24	5	0	2	8	28	32	4	24	0	4	1
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]	59	904	59	167	1011	364	493	114	73	58	42	87
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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]	16	249	16	46	278	100	136	31	20	16	12	24
Total Analysis Volume [veh/h]	65	994	65	184	1112	400	542	125	80	64	46	96
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.17	0.17	0.06	0.35	0.35	0.34	0.13	0.13	0.04	0.07	0.06
Intersection LOS	D											
Intersection V/C	0.898											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	65	201	112	424	209	535	382	663	41	107	458	338
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	4	0	20	4	8	5	11	5	0	15	20
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]	81	207	113	448	215	548	391	681	46	108	478	361
Peak Hour Factor	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780
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]	21	53	29	115	55	140	100	174	12	28	122	92
Total Analysis Volume [veh/h]	83	212	116	458	220	560	400	696	47	110	489	369
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.07	0.07	0.16	0.14	0.35	0.14	0.22	0.03	0.07	0.15	0.23
Intersection LOS	D											
Intersection V/C	0.871											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	268	46	22	33	27	70	107	743	153	24	729	8
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	6	6	18	7	0	21	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]	279	46	22	33	27	77	114	768	162	24	757	8
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]	74	12	6	9	7	20	30	204	43	6	201	2
Total Analysis Volume [veh/h]	296	49	23	35	29	82	121	814	172	25	803	8
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.19	0.03	0.01	0.02	0.02	0.05	0.08	0.25	0.11	0.02	0.25	0.01
Intersection LOS	B											
Intersection V/C	0.663											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	381	637	123	166	952	62	55	359	182	203	636	93
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	7	6	6	6	0	7	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]	392	643	124	168	962	70	62	369	190	205	649	94
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	101	166	32	43	248	18	16	95	49	53	167	24
Total Analysis Volume [veh/h]	405	664	128	173	993	72	64	381	196	212	670	97
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]	10.00

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

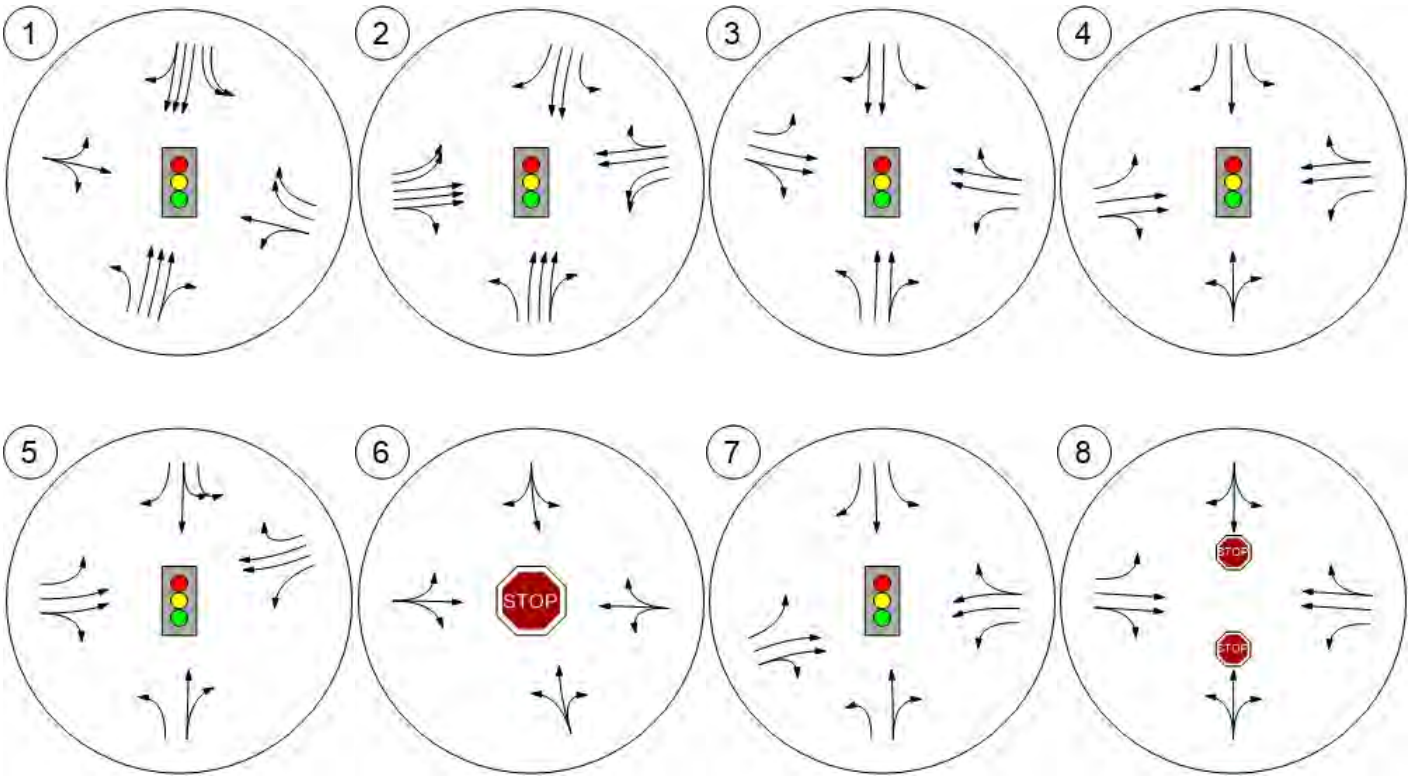
V/C, Movement V/C Ratio	0.14	0.21	0.08	0.06	0.33	0.33	0.02	0.12	0.12	0.07	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.770											

Study Intersections



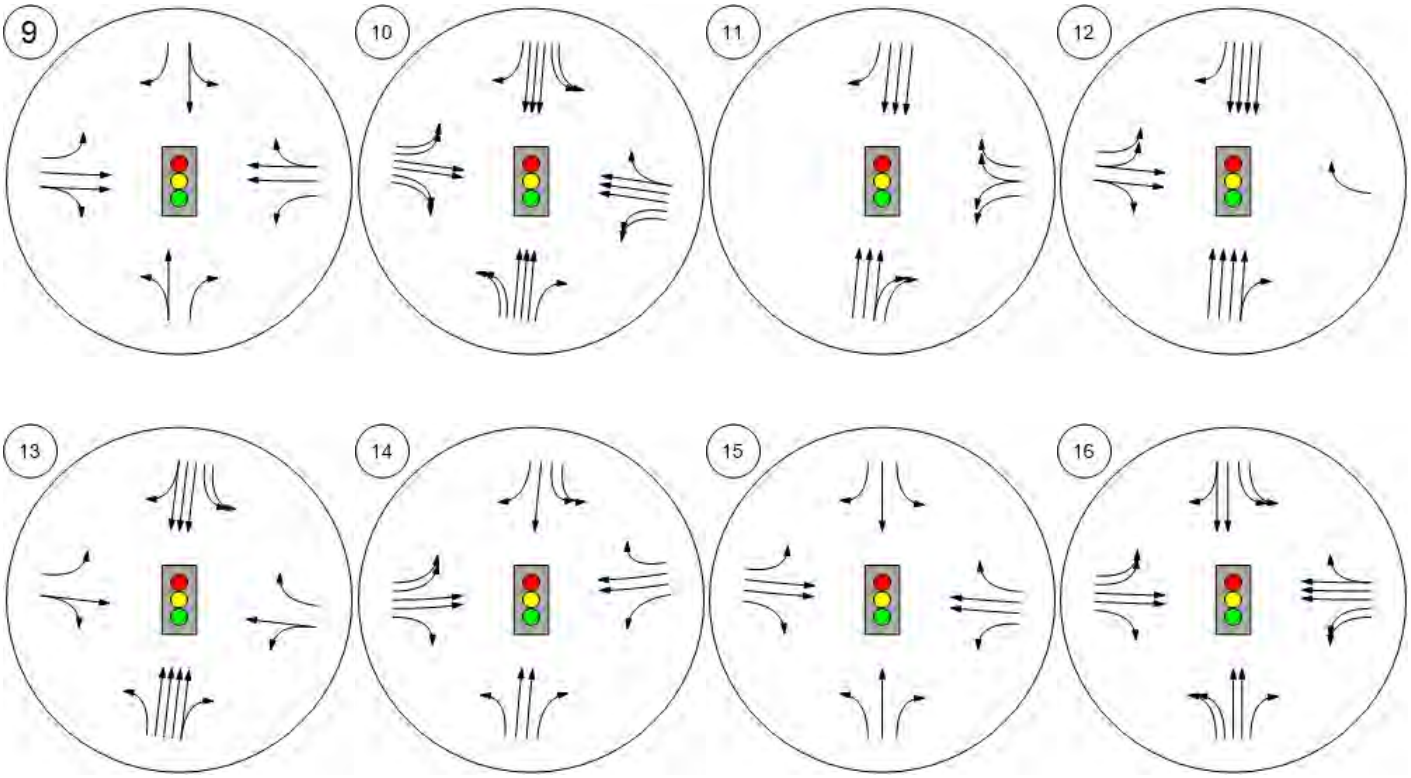
Lane Configuration and Traffic Control





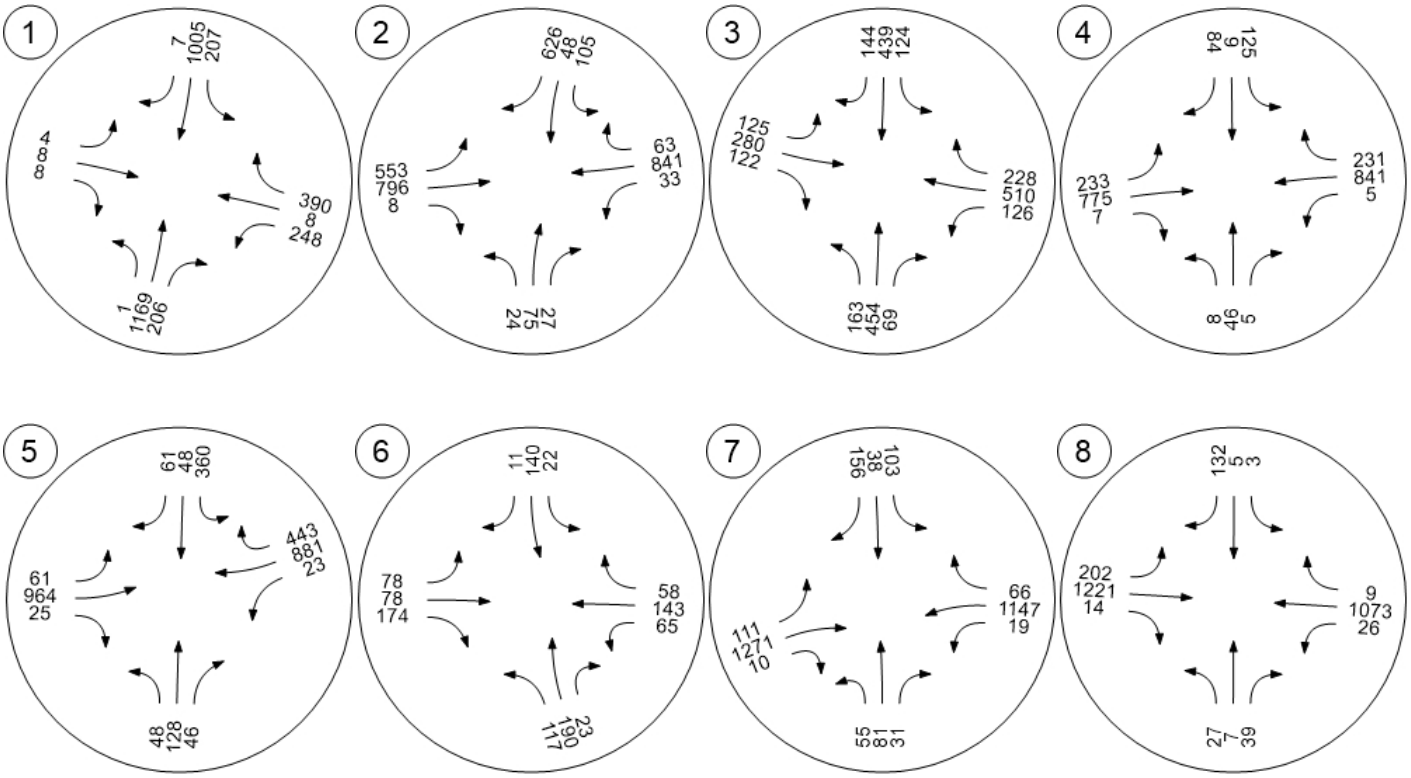
Lane Configuration and Traffic Control





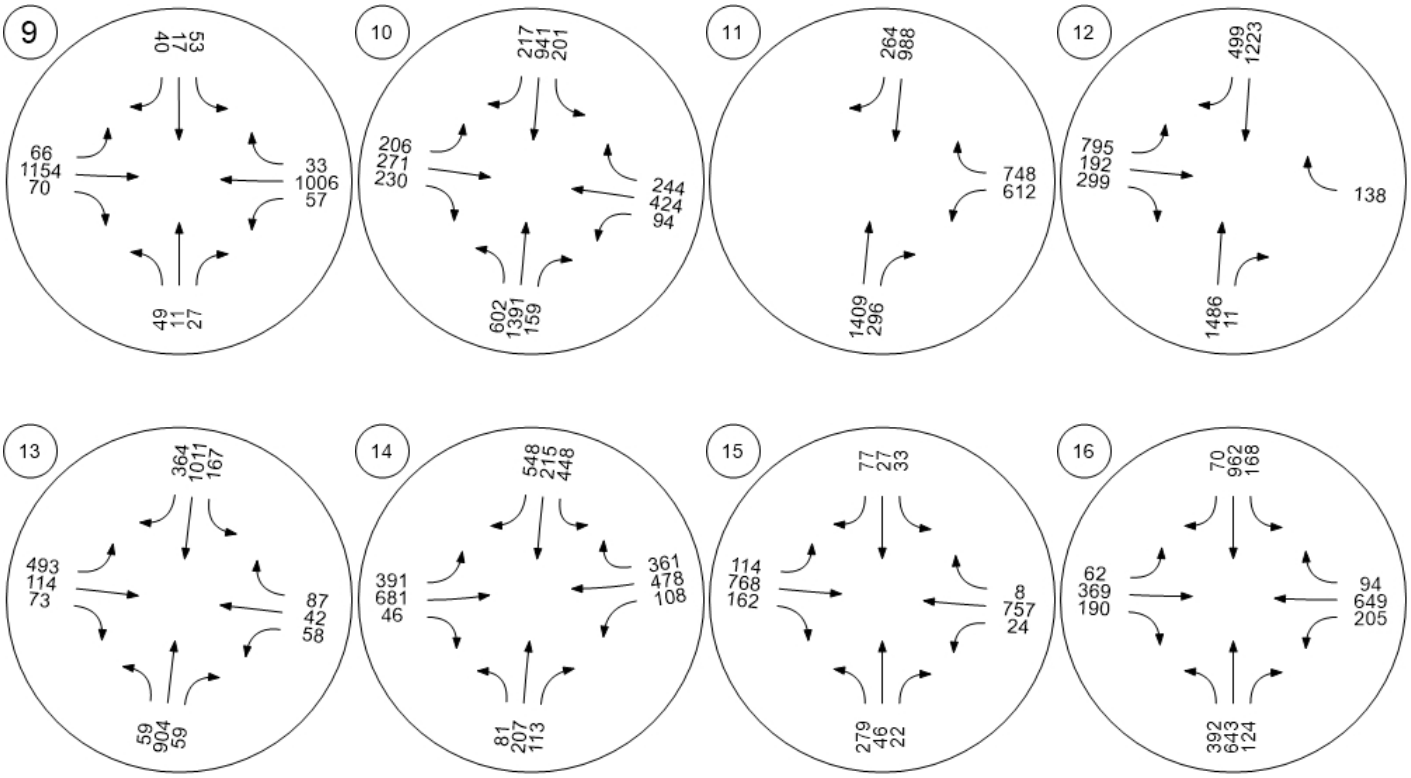
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+A+C+P1 PM.pdf

Scenario 7 E+A+C+Phase1_PM
6/27/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	SB Thru	0.660	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.232	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	EB Thru	0.636	-	B
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	EB Thru	0.713	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.701	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Left	0.321	9.6	A
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	WB Thru	0.683	-	B
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Left	4.703	3,499.2	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	WB Right	0.803	-	D
10	Azusa Ave at Gale Ave	Signalized	ICU 1	SB Thru	0.885	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	SB Right	0.946	36.6	D
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Right	0.639	14.4	B
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.916	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.967	-	E
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.857	-	D
16	Fullerton Av at Colima Road	Signalized	ICU 1	EB Thru	0.949	-	E

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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	6	962	189	450	1190	5	1	1	3	201	0	174
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	1	0	1	1	4	0	1	3	1
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]	6	972	192	456	1202	6	2	5	3	204	3	177
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]	2	254	50	119	315	2	1	1	1	53	1	46
Total Analysis Volume [veh/h]	6	1018	201	477	1259	6	2	5	3	214	3	185
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.25	0.25	0.17	0.26	0.26	0.00	0.01	0.01	0.13	0.14	0.06
Intersection LOS	B											
Intersection V/C	0.660											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.232

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	47	75	62	132	106	693	803	1218	19	56	799	63
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	0	0	0	0	5	0	1	5	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]	47	76	64	133	107	700	811	1235	19	58	812	64
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	13	20	17	36	29	188	218	332	5	16	218	17
Total Analysis Volume [veh/h]	51	82	69	143	115	753	872	1328	20	62	873	69
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.04	0.47	0.30	0.28	0.28	0.02	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.232											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.636

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	61	478	74	117	384	117	139	461	134	70	314	114
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	5	4	2	0	1	5	0	5	5	5
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]	62	485	80	122	390	118	141	471	135	76	322	120
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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]	17	133	22	33	107	32	39	129	37	21	88	33
Total Analysis Volume [veh/h]	68	531	88	133	427	129	154	515	148	83	352	131
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.19	0.19	0.08	0.17	0.17	0.10	0.21	0.21	0.05	0.15	0.15
Intersection LOS	B											
Intersection V/C	0.636											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	6	9	3	106	17	151	322	1070	9	3	773	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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	5	0	0	0	6	0	1	6	5
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]	6	9	4	112	17	153	325	1087	9	4	787	85
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	2	2	1	30	5	41	87	290	2	1	210	23
Total Analysis Volume [veh/h]	6	10	4	119	18	163	346	1159	10	4	839	91
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.07	0.01	0.10	0.22	0.37	0.37	0.00	0.29	0.29
Intersection LOS	C											
Intersection V/C	0.713											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	12	49	36	365	102	35	39	1031	35	44	958	407
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	18	0	0	0	18	0	2	21	18
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]	12	49	38	387	103	35	39	1059	35	46	989	429
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	3	13	10	101	27	9	10	275	9	12	257	111
Total Analysis Volume [veh/h]	12	51	40	402	107	36	41	1101	36	48	1028	446
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.06	0.06	0.13	0.16	0.02	0.03	0.36	0.36	0.03	0.32	0.28
Intersection LOS	C											
Intersection V/C	0.701											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.321

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	141	44	30	3	21	9	17	105	109	21	66	6
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	1	1	1	0	0	1	3	1	1	1
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]	145	45	31	4	22	9	17	107	113	22	68	7
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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]	39	12	8	1	6	2	5	29	30	6	18	2
Total Analysis Volume [veh/h]	155	48	33	4	24	10	18	114	121	24	73	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	736	722	799	726
Degree of Utilization, x	0.32	0.05	0.32	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.38	0.17	1.36	0.50
95th-Percentile Queue Length [ft]	34.62	4.16	34.08	12.47
Approach Delay [s/veh]	10.18	8.27	9.58	8.79
Approach LOS	B	A	A	A
Intersection Delay [s/veh]	9.60			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.683

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	22	17	69	20	67	52	1345	20	27	1278	95
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	4	0	0	0	38	0	5	41	4
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]	20	22	22	74	20	68	53	1396	20	32	1332	100
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	5	6	6	19	5	18	14	367	5	8	350	26
Total Analysis Volume [veh/h]	21	23	23	78	21	72	56	1468	21	34	1401	105
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.03	0.05	0.01	0.05	0.04	0.47	0.47	0.02	0.47	0.47
Intersection LOS	B											
Intersection V/C	0.683											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	3,499.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.703

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	13	0	21	3	1	26	133	1292	24	56	1417	26
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	2	1	20	17	30	0	3	30	2
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]	13	1	24	5	2	46	151	1335	24	60	1461	28
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]	3	0	6	1	1	12	41	358	6	16	392	8
Total Analysis Volume [veh/h]	14	1	26	5	2	49	162	1432	26	64	1568	30
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.70	0.31	0.07	1.20	0.62	0.15	0.40	0.01	0.00	0.14	0.02	0.00
d_M, Delay for Movement [s/veh]	3499.21	3406.87	2299.77	1485.70	1735.40	632.87	19.64	0.00	0.00	14.09	0.00	0.00
Movement LOS	F	F	F	F	F	F	C	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	6.49	6.49	6.49	6.62	6.62	6.62	1.88	0.00	0.00	0.48	0.00	0.00
95th-Percentile Queue Length [ft/ln]	162.18	162.18	162.18	165.41	165.41	165.41	46.93	0.00	0.00	12.01	0.00	0.00
d_A, Approach Delay [s/veh]	2736.34			748.39			1.96			0.54		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	46.81											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.803

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	147	12	42	20	18	23	31	1198	84	85	1331	55
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	1	36	0	1	0	0	0	35	36	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]	183	13	78	20	19	23	31	1210	120	122	1344	56
Peak Hour Factor	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960
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]	51	4	22	6	5	6	9	338	33	34	375	16
Total Analysis Volume [veh/h]	204	15	87	22	21	26	35	1350	134	136	1500	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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.14	0.05	0.01	0.03	0.02	0.02	0.46	0.46	0.09	0.49	0.49
Intersection LOS	D											
Intersection V/C	0.803											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	400	1232	188	327	1384	113	325	658	562	260	294	252
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	11	1	0	9	3	2	2	11	1	3	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]	420	1255	191	330	1407	117	330	667	579	264	300	255
Peak Hour Factor	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420
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	333	51	88	373	31	88	177	154	70	80	68
Total Analysis Volume [veh/h]	446	1332	203	350	1494	124	350	708	615	280	318	271
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.28	0.13	0.12	0.31	0.08	0.12	0.22	0.19	0.10	0.12	0.12
Intersection LOS	D											
Intersection V/C	0.885											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	36.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.946

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1343	493	0	1431	896	0	0	0	636	0	514
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0000	1.0000	1.0000	1.0100	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	2	0	16	5	0	0	0	4	0	8
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	1376	500	0	1461	910	0	0	0	646	0	527
Peak Hour Factor	1.0000	0.9610	0.9610	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	1.0000	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]	0	358	130	0	380	237	0	0	0	168	0	137
Total Analysis Volume [veh/h]	0	1432	520	0	1520	947	0	0	0	672	0	548
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	103	0	0	103	0	0	0	0	17	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	58	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	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		20	20	20
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52		0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.30	0.33	0.34	0.33	0.66		0.25	0.26	0.28
s, saturation flow rate [veh/h]	3204	1475	1431	4584	1431		1603	1538	1431
c, Capacity [veh/h]	1650	759	737	2360	737		558	535	498
d1, Uniform Delay [s]	9.86	10.25	10.41	10.26	14.13		16.60	16.84	17.31
k, delay calibration	0.11	0.19	0.20	0.11	0.50		0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	1.59	1.92	0.30	138.77		1.85	2.25	3.77
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	0.59	0.64	0.66	0.64	1.29		0.73	0.76	0.82
d, Delay for Lane Group [s/veh]	10.20	11.84	12.33	10.55	152.90		18.46	19.10	21.08
Lane Group LOS	B	B	B	B	F		B	B	C
Critical Lane Group	No	No	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.55	3.95	4.06	3.82	35.91		4.47	4.58	4.88
50th-Percentile Queue Length [ft/ln]	88.80	98.64	101.51	95.44	897.70		111.68	114.39	122.00
95th-Percentile Queue Length [veh/ln]	6.39	7.10	7.31	6.87	54.22		7.93	8.08	8.50
95th-Percentile Queue Length [ft/ln]	159.84	177.56	182.71	171.78	1355.54		198.34	202.09	212.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.35	12.30	0.00	10.55	152.90	0.00	0.00	0.00	18.71	0.00	20.57
Movement LOS		B	B		B	F				B		C
d_A, Approach Delay [s/veh]	11.14			65.20			0.00			19.55		
Approach LOS	B			E			A			B		
d_I, Intersection Delay [s/veh]	36.61											
Intersection LOS	D											
Intersection V/C	0.946											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.654
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1650	1650	0	0
d_b, Bicycle Delay [s]	1.84	1.84	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.633	2.916	4.132	6.145
Bicycle LOS	B	C	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.639

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1532	35	0	1772	333	416	304	421	0	0	375
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	1.0100	1.0100	1.0000	1.0100	1.0100	1.0100	1.0100	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	1	0	15	0	8	0	1	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	1563	36	0	1805	336	428	307	426	0	0	379
Peak Hour Factor	1.0000	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	0.9740	0.9740	1.0000	1.0000	0.9740
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	401	9	0	463	86	110	79	109	0	0	97
Total Analysis Volume [veh/h]	0	1605	37	0	1853	345	439	315	437	0	0	389
Presence of On-Street Parking	No		No	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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	19	0	0	19	0	0	41	0	0	0	41
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60
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	2.00	2.00	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]	28	28	28	28	24	24	24	24
g / C, Green / Cycle	0.47	0.47	0.47	0.47	0.39	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.27	0.25	0.30	0.24	0.26	0.27	0.34	0.27
s, saturation flow rate [veh/h]	4584	1657	6113	1431	1275	1576	1302	1431
c, Capacity [veh/h]	2165	783	2887	676	585	697	514	564
d1, Uniform Delay [s]	11.44	11.13	12.01	11.03	16.33	14.95	16.59	15.13
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.12	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]	1.09	2.51	1.11	2.74	0.84	0.87	4.56	1.51
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	0.57	0.52	0.64	0.51	0.56	0.61	0.85	0.69
d, Delay for Lane Group [s/veh]	12.53	13.64	13.12	13.77	17.17	15.82	21.14	16.65
Lane Group LOS	B	B	B	B	B	B	C	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.15	3.40	3.70	2.89	3.64	4.49	5.55	4.22
50th-Percentile Queue Length [ft/ln]	78.86	84.99	92.49	72.33	91.05	112.34	138.81	105.47
95th-Percentile Queue Length [veh/ln]	5.68	6.12	6.66	5.21	6.56	7.97	9.42	7.59
95th-Percentile Queue Length [ft/ln]	141.94	152.99	166.48	130.19	163.89	199.25	235.42	189.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.79	13.64	0.00	13.12	13.77	16.93	15.82	21.14	0.00	0.00	16.65
Movement LOS		B	B		B	B	B	B	C			B
d_A, Approach Delay [s/veh]	12.81			13.22			18.14			16.65		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	14.42											
Intersection LOS	B											
Intersection V/C	0.639											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.424	2.122
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	0
d_b, Bicycle Delay [s]	16.88	16.88	4.41	30.00
l_b,int, Bicycle LOS Score for Intersection	2.237	2.466	2.542	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.916

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	7	0	2	7	7	7	1	6	0	1	3
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]	39	1008	48	507	1407	332	367	101	40	95	130	116
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]	10	258	12	130	360	85	94	26	10	24	33	30
Total Analysis Volume [veh/h]	40	1033	49	519	1442	340	376	103	41	97	133	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.18	0.41	0.41	0.24	0.09	0.09	0.06	0.14	0.07
Intersection LOS	E											
Intersection V/C	0.916											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.967

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	52	194	196	622	292	520	365	902	24	171	859	495
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	1	0	5	1	7	7	15	14	0	15	5
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]	67	197	198	633	296	532	376	926	38	173	883	505
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
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]	18	52	52	167	78	140	99	244	10	46	233	133
Total Analysis Volume [veh/h]	71	208	209	668	313	562	397	978	40	183	932	533
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.13	0.23	0.20	0.35	0.14	0.31	0.03	0.11	0.29	0.33
Intersection LOS	E											
Intersection V/C	0.967											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	253	63	42	142	148	235	200	1065	259	75	941	49
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	0	3	3	12	5	0	12	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]	261	64	42	143	149	240	205	1088	267	76	962	49
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
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]	67	16	11	36	38	61	52	277	68	19	245	12
Total Analysis Volume [veh/h]	266	65	43	146	152	245	209	1109	272	77	981	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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.04	0.03	0.09	0.10	0.15	0.13	0.35	0.17	0.05	0.31	0.03
Intersection LOS	D											
Intersection V/C	0.857											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.949

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	388	675	167	350	822	71	107	983	171	229	695	135
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	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	4	4	4	4	0	4	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]	396	682	169	354	830	76	112	997	177	231	706	136
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
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]	103	178	44	92	217	20	29	260	46	60	184	36
Total Analysis Volume [veh/h]	414	713	177	370	867	79	117	1042	185	241	738	142
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]	10.00

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

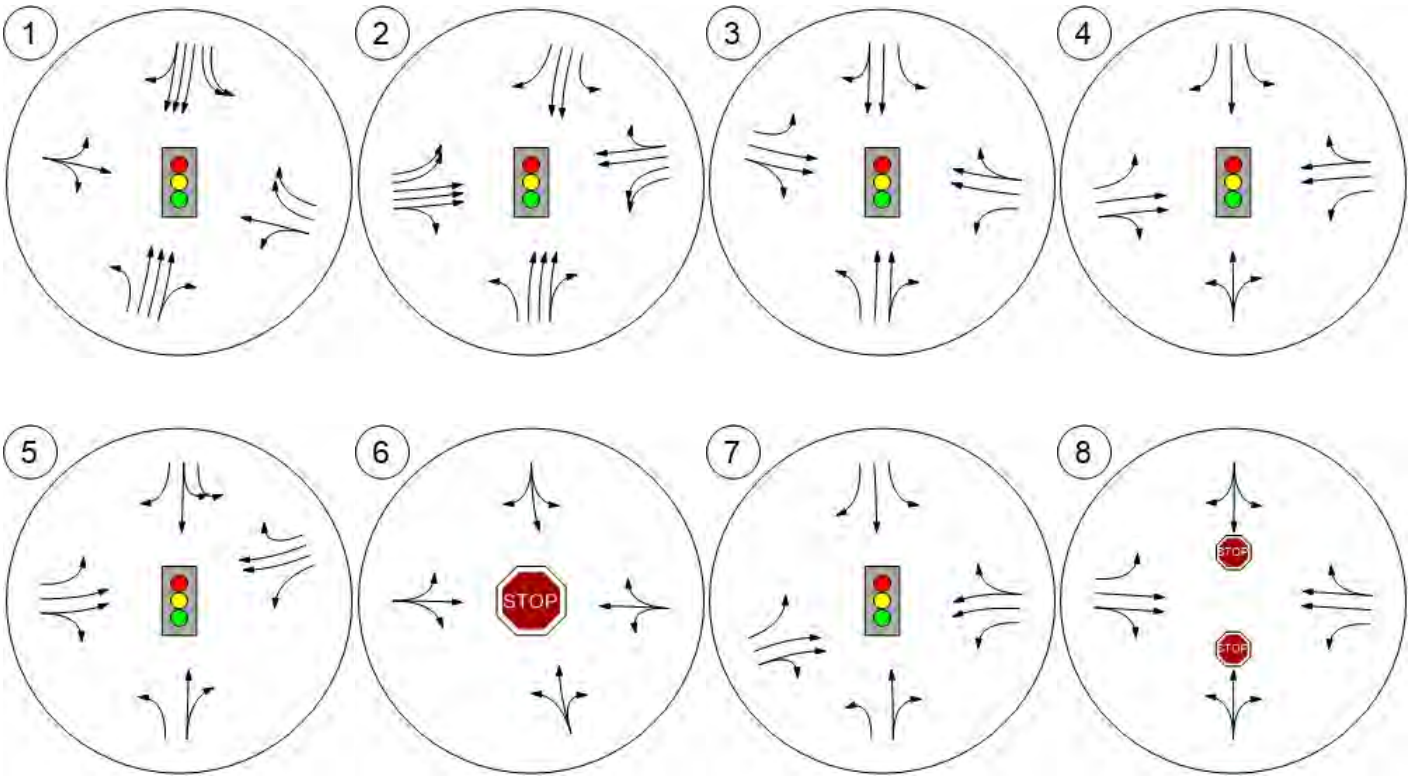
V/C, Movement V/C Ratio	0.14	0.22	0.11	0.13	0.30	0.30	0.04	0.33	0.12	0.08	0.18	0.18
Intersection LOS	E											
Intersection V/C	0.949											

Study Intersections



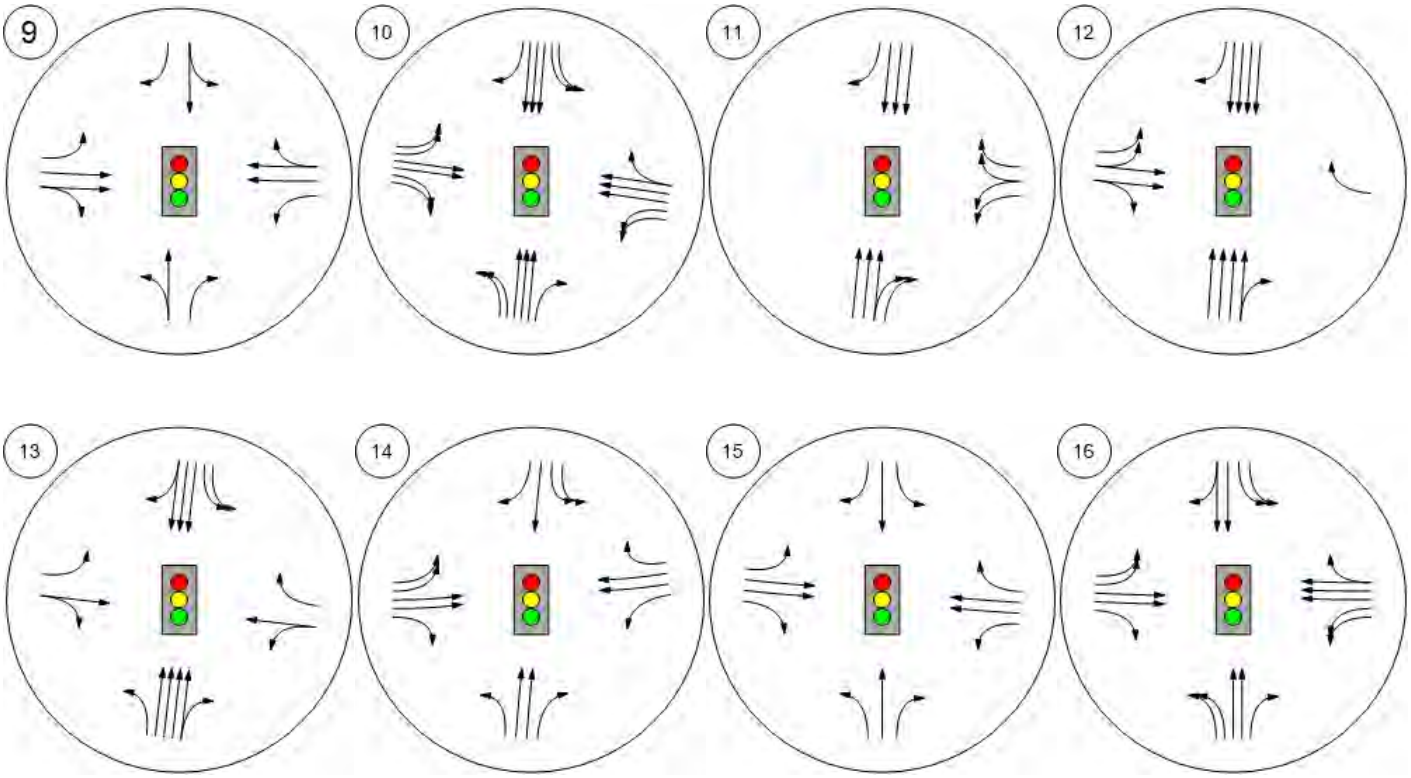
Lane Configuration and Traffic Control





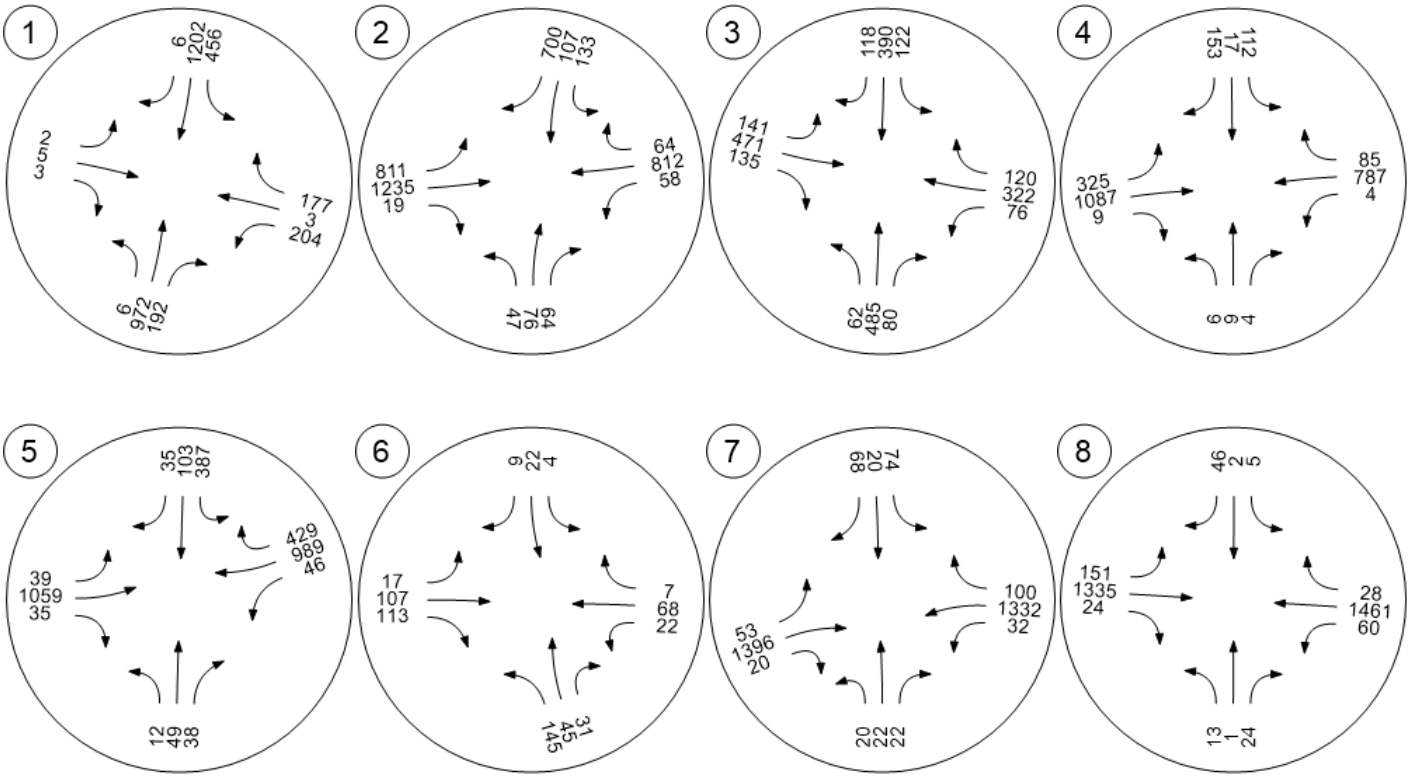
Lane Configuration and Traffic Control





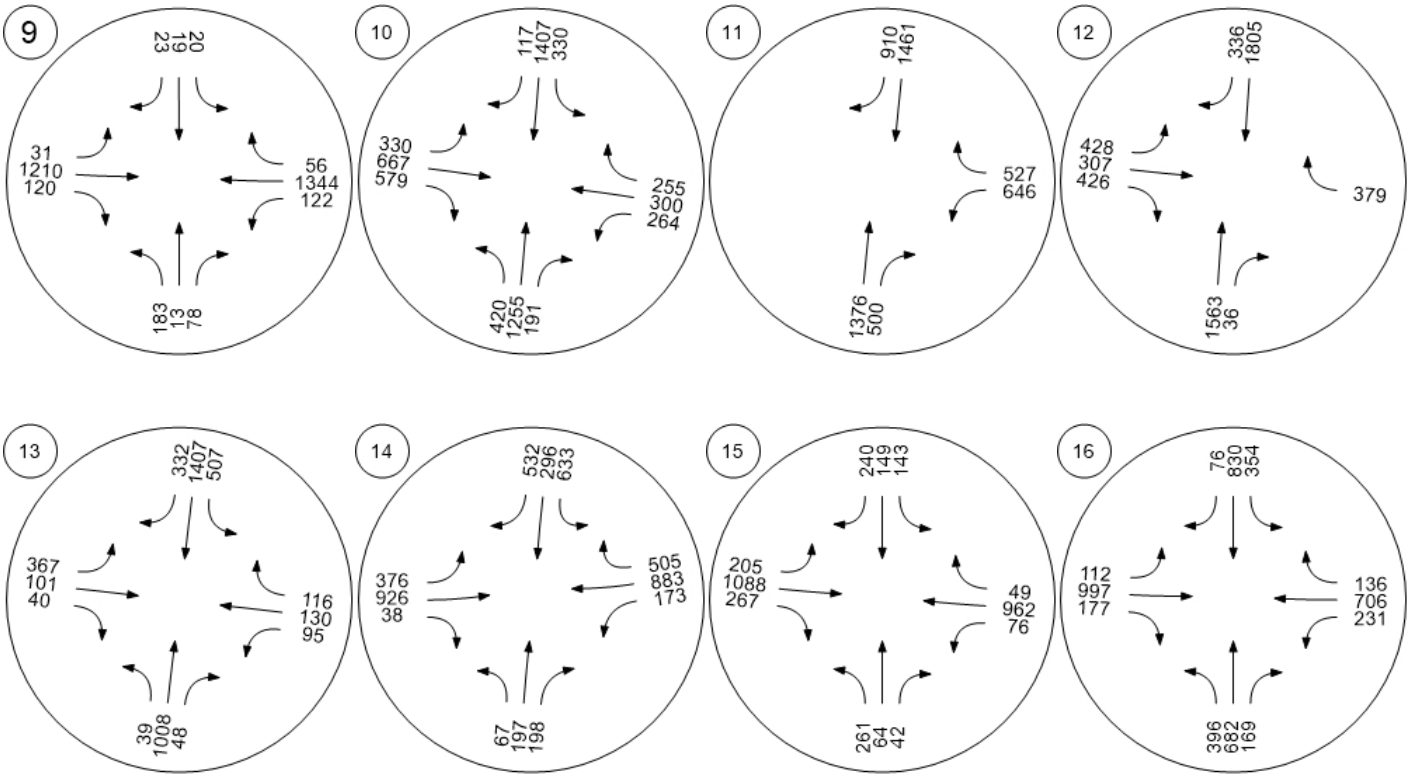
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES and Residential Project

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+A+C+P2 AM.pdf

Scenario 13 Phase II + E+A+C AM
6/28/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	NB Thru	0.686	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.079	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	WB Right	0.782	-	C
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	WB Thru	0.757	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.740	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Thru	1.115	76.9	F
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	EB Thru	0.760	-	C
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Left	5.333	3,337.6	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.633	-	B
10	Azusa Ave at Gale Ave	Signalized	ICU 1	NB Thru	0.818	-	D
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	WB Right	0.707	15.4	B
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	SB Right	0.762	20.7	C
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	EB Left	0.934	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.888	-	D
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.675	-	B
16	Fullerton Av at Colima Road	Signalized	ICU 1	SB Thru	0.783	-	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: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	1	1157	200	201	995	6	4	2	8	242	2	382
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	5	0	1	0	6	0	3	5	5
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]	1	1192	210	212	1025	7	4	8	8	252	7	398
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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	326	57	58	280	2	1	2	2	69	2	109
Total Analysis Volume [veh/h]	1	1304	230	232	1121	8	4	9	9	276	8	435
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.32	0.32	0.08	0.24	0.24	0.00	0.01	0.01	0.17	0.18	0.14
Intersection LOS	B											
Intersection V/C	0.686											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.079

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	24	74	23	104	48	620	548	780	8	29	826	62
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	0	0	0	9	0	4	11	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]	25	76	28	107	49	639	564	812	8	34	862	64
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
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]	7	20	7	28	13	168	148	213	2	9	226	17
Total Analysis Volume [veh/h]	26	80	29	112	51	671	592	852	8	36	905	67
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.07	0.02	0.42	0.21	0.18	0.18	0.01	0.34	0.34
Intersection LOS	F											
Intersection V/C	1.079											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	161	449	60	115	433	143	124	263	121	118	491	221
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	8	8	2	0	0	15	0	6	13	5
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]	166	463	70	126	448	147	128	286	125	128	519	233
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
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]	47	130	20	36	126	41	36	81	35	36	146	66
Total Analysis Volume [veh/h]	187	522	79	142	505	166	144	322	141	144	585	263
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.19	0.19	0.09	0.21	0.21	0.09	0.14	0.14	0.09	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.782											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.757

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	8	46	1	116	9	83	231	755	7	1	822	222
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	8	0	0	0	13	0	3	15	6
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]	8	47	5	127	9	85	238	791	7	4	862	235
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
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]	2	13	1	34	2	23	64	214	2	1	233	63
Total Analysis Volume [veh/h]	9	51	5	137	10	92	257	854	8	4	931	254
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.09	0.01	0.06	0.16	0.27	0.27	0.00	0.37	0.37
Intersection LOS	C											
Intersection V/C	0.757											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	48	127	40	312	48	60	60	915	25	18	836	398
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	46	0	0	0	41	0	4	55	36
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]	49	131	47	367	49	62	62	983	26	23	916	446
Peak Hour Factor	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930	0.8930
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]	14	37	13	103	14	17	17	275	7	6	256	125
Total Analysis Volume [veh/h]	55	147	53	411	55	69	69	1101	29	26	1026	499
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.13	0.13	0.13	0.15	0.04	0.04	0.35	0.35	0.02	0.32	0.31
Intersection LOS	C											
Intersection V/C	0.740											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	76.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.115

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	114	187	19	18	138	11	77	73	169	60	138	53
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	4	4	1	0	0	4	3	3	3	3
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]	119	194	24	23	143	11	79	79	177	65	145	58
Peak Hour Factor	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120	0.7120
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	68	8	8	50	4	28	28	62	23	51	20
Total Analysis Volume [veh/h]	167	272	34	32	201	15	111	111	249	91	204	81
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	473	386	471	419
Degree of Utilization, x	1.12	0.64	1.07	0.90

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	16.71	4.31	15.40	9.48
95th-Percentile Queue Length [ft]	417.86	107.64	384.96	237.01
Approach Delay [s/veh]	107.59	27.58	92.14	51.70
Approach LOS	F	D	F	F
Intersection Delay [s/veh]	76.89			
Intersection LOS	F			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	54	80	22	98	38	154	110	1168	10	12	1053	62
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	9	4	0	0	0	93	0	6	95	3
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]	56	82	32	105	39	159	113	1296	10	18	1180	67
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]	15	23	9	29	11	44	31	358	3	5	326	19
Total Analysis Volume [veh/h]	62	91	35	116	43	176	125	1434	11	20	1305	74
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.07	0.03	0.11	0.08	0.45	0.45	0.01	0.43	0.43
Intersection LOS	C											
Intersection V/C	0.760											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	3,337.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	5.333

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	27	3	36	1	1	63	133	1173	14	24	1038	7
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	3	2	3	79	70	36	0	2	25	2
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]	28	7	40	3	4	144	207	1244	14	27	1094	9
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
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]	7	2	11	1	1	38	54	327	4	7	287	2
Total Analysis Volume [veh/h]	29	7	42	3	4	151	217	1307	15	28	1149	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	5.33	0.82	0.10	0.69	0.47	0.33	0.36	0.01	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	3337.56	3097.46	2684.37	1132.51	726.81	310.75	14.38	0.00	0.00	12.34	0.00	0.00
Movement LOS	F	F	F	F	F	F	B	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	10.88	10.88	10.88	11.61	11.61	11.61	1.65	0.00	0.00	0.17	0.00	0.00
95th-Percentile Queue Length [ft/ln]	272.01	272.01	272.01	290.32	290.32	290.32	41.18	0.00	0.00	4.27	0.00	0.00
d_A, Approach Delay [s/veh]	2964.30			336.89			2.03			0.29		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	97.23											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	7	6	52	13	40	65	1143	29	19	996	33
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	5	21	3	6	0	0	0	41	38	0	1
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]	50	12	27	57	19	41	67	1177	71	58	1026	35
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]	13	3	7	15	5	11	18	310	19	15	271	9
Total Analysis Volume [veh/h]	53	13	28	60	20	43	71	1242	75	61	1082	37
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.02	0.04	0.05	0.03	0.04	0.41	0.41	0.04	0.35	0.35
Intersection LOS	B											
Intersection V/C	0.633											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.818

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	587	1367	153	199	918	214	202	266	212	89	419	242
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	15	4	0	16	1	2	2	17	4	1	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]	615	1423	162	205	962	221	210	276	235	96	433	249
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
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]	176	406	46	59	275	63	60	79	67	27	124	71
Total Analysis Volume [veh/h]	702	1624	185	234	1098	252	240	315	268	110	494	284
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.34	0.12	0.08	0.23	0.16	0.08	0.10	0.08	0.04	0.16	0.16
Intersection LOS	D											
Intersection V/C	0.818											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1375	289	0	951	254	0	0	0	592	0	738
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0000	1.0000	1.0000	1.0300	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	26	14	0	30	7	0	0	0	17	0	3
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]	3	1442	312	0	1010	269	0	0	0	627	0	763
Peak Hour Factor	1.0000	0.9000	0.9000	1.0000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	1.0000	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]	1	401	87	0	281	75	0	0	0	174	0	212
Total Analysis Volume [veh/h]	3	1602	347	0	1122	299	0	0	0	697	0	848
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	59	0	0	59	0	0	0	0	61	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	56	56	56	56	56		56	56	56
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]	24	24	24	24	24		24	24	24
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43		0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.33	0.35	0.24	0.24	0.21		0.32	0.35	0.36
s, saturation flow rate [veh/h]	3204	1538	1431	4584	1431		1603	1487	1431
c, Capacity [veh/h]	1382	663	617	1977	617		683	634	610
d1, Uniform Delay [s]	13.63	13.92	12.00	12.03	11.49		13.62	14.14	14.44
k, delay calibration	0.11	0.19	0.11	0.11	0.11		0.16	0.19	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.95	4.15	0.81	0.26	0.59		2.50	4.50	6.23
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	0.77	0.81	0.56	0.57	0.48		0.75	0.81	0.84
d, Delay for Lane Group [s/veh]	14.58	18.07	12.80	12.29	12.08		16.12	18.64	20.67
Lane Group LOS	B	B	B	B	B		B	B	C
Critical Lane Group	No	Yes	No	No	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.96	5.65	2.87	3.00	2.36		5.06	5.56	5.92
50th-Percentile Queue Length [ft/ln]	124.05	141.16	71.81	75.06	58.93		126.55	138.90	148.01
95th-Percentile Queue Length [veh/ln]	8.62	9.54	5.17	5.40	4.24		8.75	9.42	9.91
95th-Percentile Queue Length [ft/ln]	215.38	238.58	129.25	135.11	106.07		218.79	235.55	247.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	15.24	12.80	0.00	12.29	12.08	0.00	0.00	0.00	16.78	0.00	19.87
Movement LOS		B	B		B	B				B		B
d_A, Approach Delay [s/veh]	15.22			12.24			0.00			18.48		
Approach LOS	B			B			A			B		
d_I, Intersection Delay [s/veh]	15.38											
Intersection LOS	B											
Intersection V/C	0.707											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.684
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	917	917	0	0
d_b, Bicycle Delay [s]	17.60	17.60	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.632	2.341	4.132	6.682
Bicycle LOS	B	B	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.762

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1442	7	0	1177	494	784	190	292	0	0	137
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300	1.0000	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	55	3	0	40	0	3	0	7	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]	3	1540	10	0	1252	509	811	196	308	0	0	141
Peak Hour Factor	1.0000	0.9440	0.9440	1.0000	0.9440	0.9440	0.9440	0.9440	0.9440	1.0000	1.0000	0.9440
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	408	3	0	332	135	215	52	82	0	0	37
Total Analysis Volume [veh/h]	3	1631	11	0	1326	539	859	208	326	0	0	149
Presence of On-Street Parking	No		No	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]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	21	0	0	21	0	0	69	0	0	0	69
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
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	2.00	2.00	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]	43	43	43	43	39	39	39	39
g / C, Green / Cycle	0.48	0.48	0.48	0.48	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.27	0.25	0.22	0.38	0.35	0.39	0.34	0.10
s, saturation flow rate [veh/h]	4584	1675	6113	1431	1275	1270	1362	1431
c, Capacity [veh/h]	2185	798	2914	682	612	626	592	621
d1, Uniform Delay [s]	16.85	16.32	15.73	19.77	23.33	24.24	21.81	16.07
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.12	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]	1.06	2.36	0.51	9.08	1.61	2.44	2.31	0.20
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	0.56	0.51	0.46	0.79	0.72	0.78	0.78	0.24
d, Delay for Lane Group [s/veh]	17.90	18.68	16.25	28.85	24.94	26.69	24.12	16.26
Lane Group LOS	B	B	B	C	C	C	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.54	5.68	4.12	9.93	8.30	9.69	8.45	1.95
50th-Percentile Queue Length [ft/ln]	138.54	142.12	103.06	248.24	207.55	242.26	211.36	48.68
95th-Percentile Queue Length [veh/ln]	9.40	9.60	7.42	15.10	13.03	14.80	13.22	3.51
95th-Percentile Queue Length [ft/ln]	235.06	239.88	185.51	377.44	325.68	369.88	330.57	87.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	18.09	18.68	0.00	16.25	28.85	25.79	24.99	24.12	0.00	0.00	16.26
Movement LOS		B	B		B	C	C	C	C			B
d_A, Approach Delay [s/veh]	18.10			19.89			25.28			16.26		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	20.69											
Intersection LOS	C											
Intersection V/C	0.762											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.525	2.041
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	378	378	1444	0
d_b, Bicycle Delay [s]	29.61	29.61	3.47	45.00
l_b,int, Bicycle LOS Score for Intersection	2.237	2.329	2.709	4.132
Bicycle LOS	B	B	B	D

Sequence

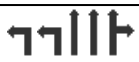
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

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	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	5	0	2	8	37	55	6	24	0	5	1
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]	62	922	60	170	1031	380	525	118	74	59	44	89
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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]	17	254	17	47	284	105	144	32	20	16	12	24
Total Analysis Volume [veh/h]	68	1014	66	187	1134	418	578	130	81	65	48	98
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.17	0.17	0.06	0.36	0.36	0.36	0.13	0.13	0.04	0.07	0.06
Intersection LOS	E											
Intersection V/C	0.934											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	65	201	112	424	209	535	382	663	41	107	458	338
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	4	0	21	3	8	5	14	5	0	16	22
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]	82	211	115	458	218	559	398	697	47	110	488	370
Peak Hour Factor	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780	0.9780
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]	21	54	29	117	56	143	102	178	12	28	125	95
Total Analysis Volume [veh/h]	84	216	118	468	223	572	407	713	48	112	499	378
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.07	0.07	0.16	0.14	0.36	0.14	0.22	0.03	0.07	0.16	0.24
Intersection LOS	D											
Intersection V/C	0.888											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	268	46	22	33	27	70	107	743	153	24	729	8
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	7	8	21	6	0	23	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	47	23	34	28	79	118	786	164	25	774	8
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]	75	12	6	9	7	21	31	208	43	7	205	2
Total Analysis Volume [veh/h]	301	50	24	36	30	84	125	834	174	27	821	8
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.19	0.03	0.02	0.02	0.02	0.05	0.08	0.26	0.11	0.02	0.26	0.01
Intersection LOS	B											
Intersection V/C	0.675											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	381	637	123	166	952	62	55	359	182	203	636	93
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	8	8	5	8	0	7	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]	400	656	127	171	981	72	65	375	195	209	662	96
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
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]	103	169	33	44	253	19	17	97	50	54	171	25
Total Analysis Volume [veh/h]	413	677	131	176	1012	74	67	387	201	216	683	99
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]	10.00

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

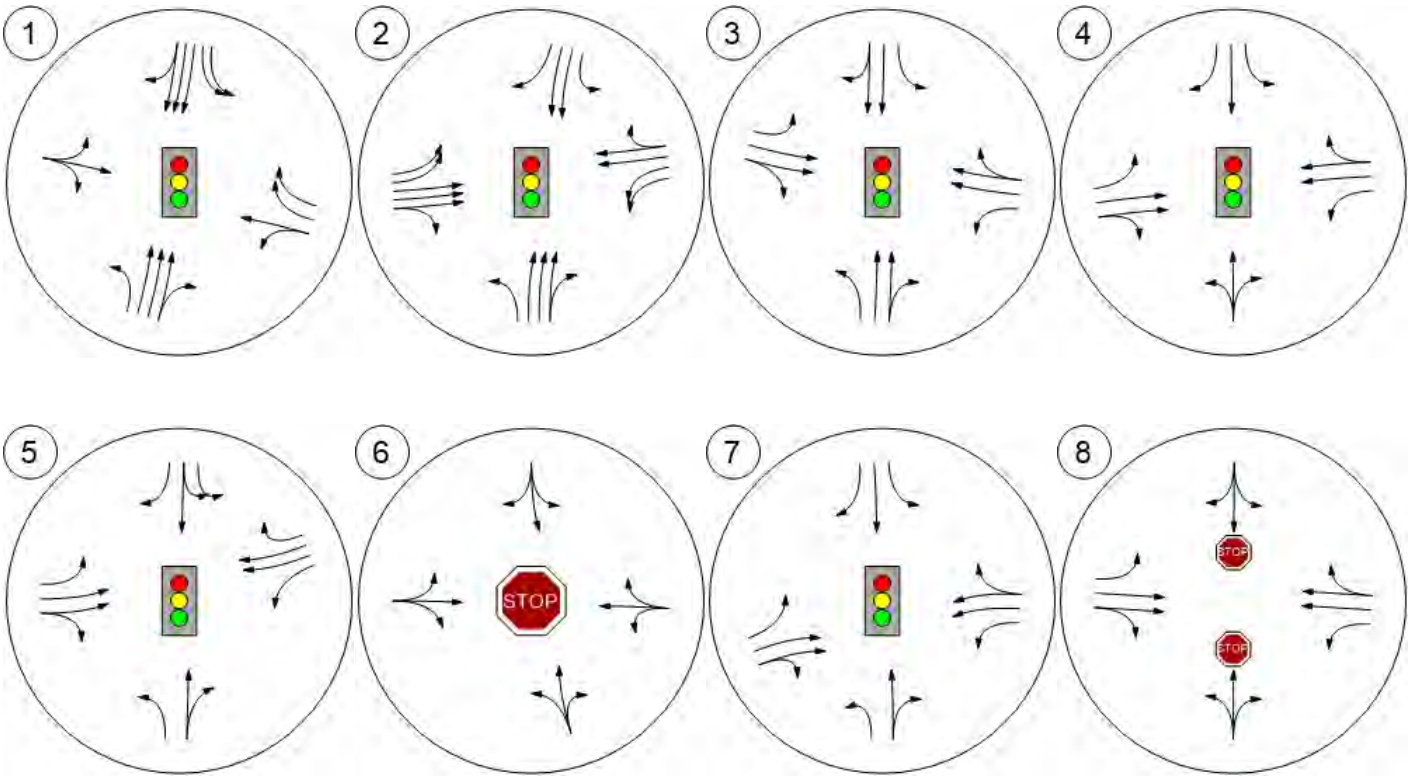
V/C, Movement V/C Ratio	0.14	0.21	0.08	0.06	0.34	0.34	0.02	0.12	0.13	0.08	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.783											

Study Intersections



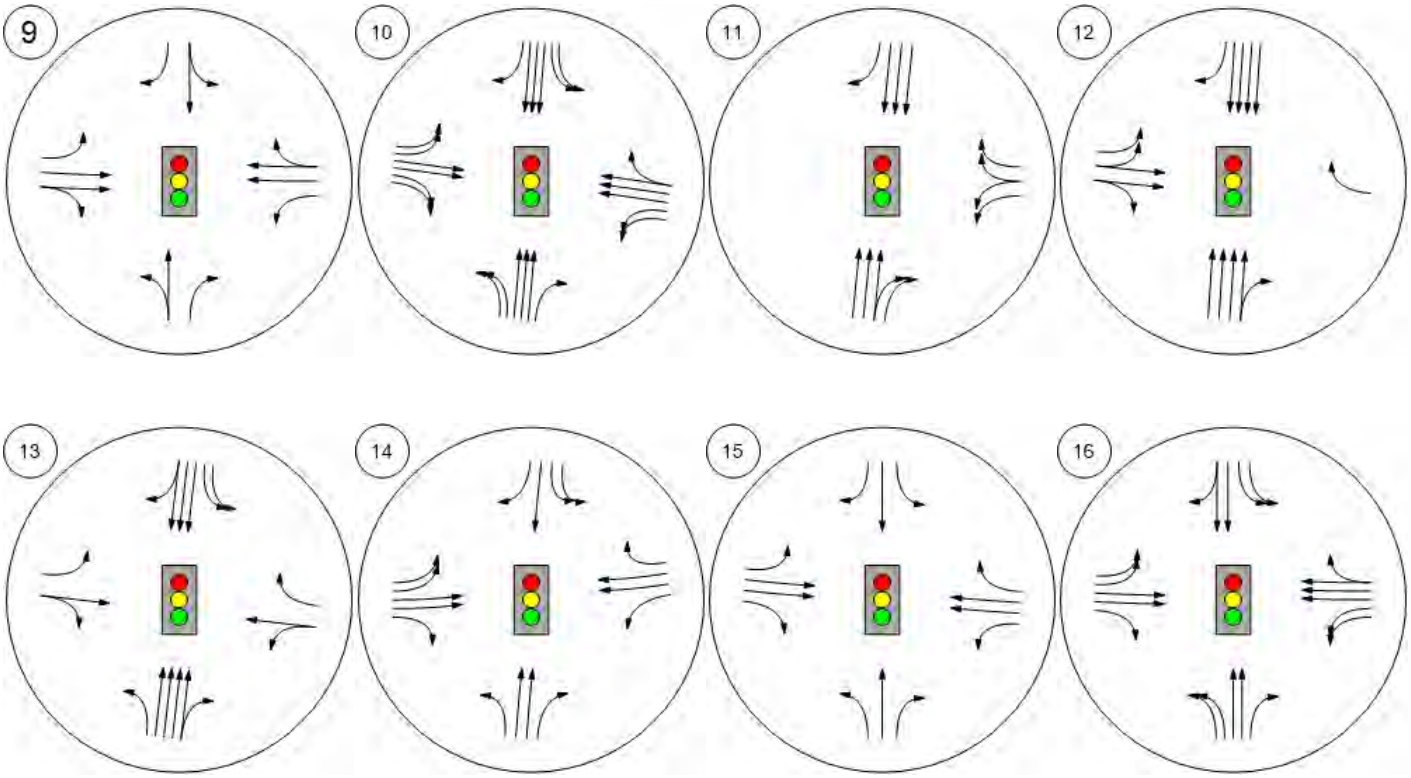
Lane Configuration and Traffic Control





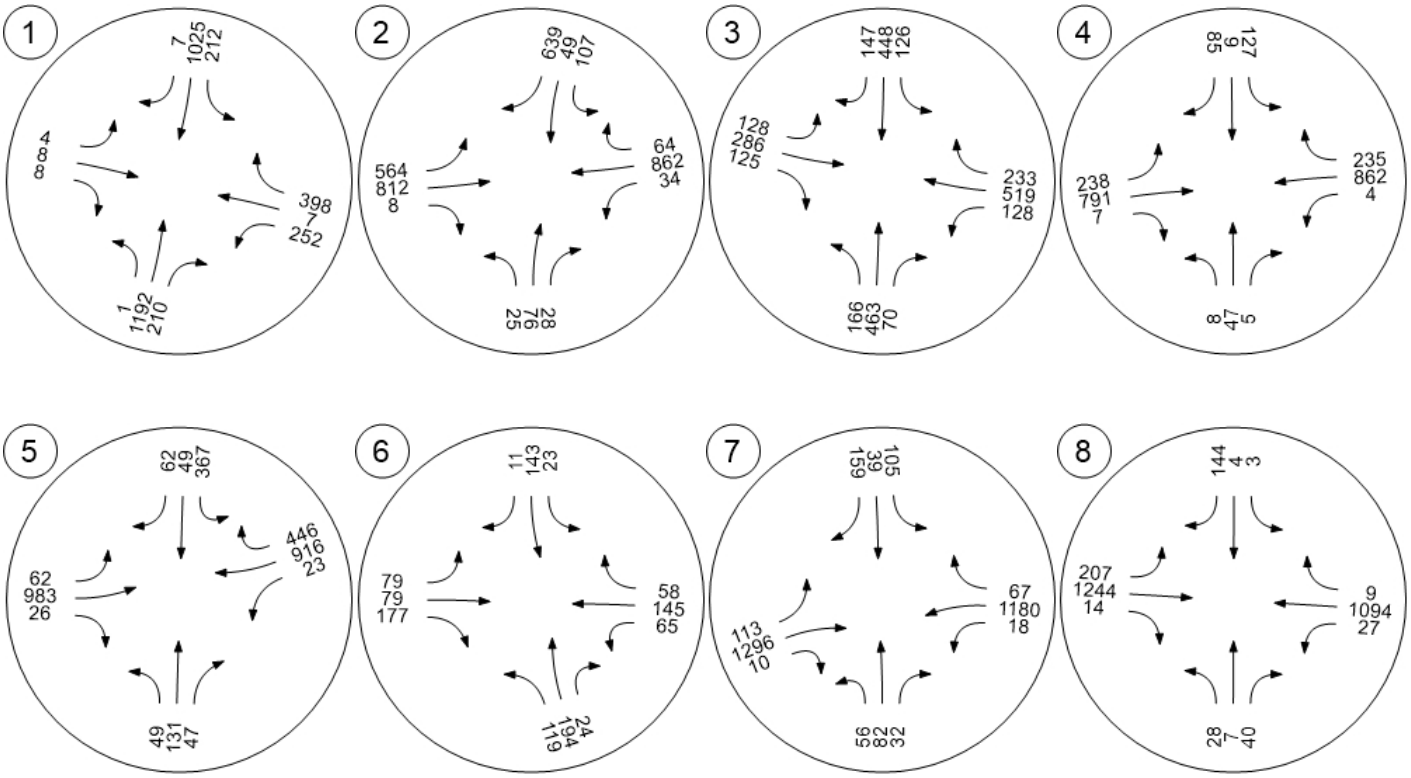
Lane Configuration and Traffic Control





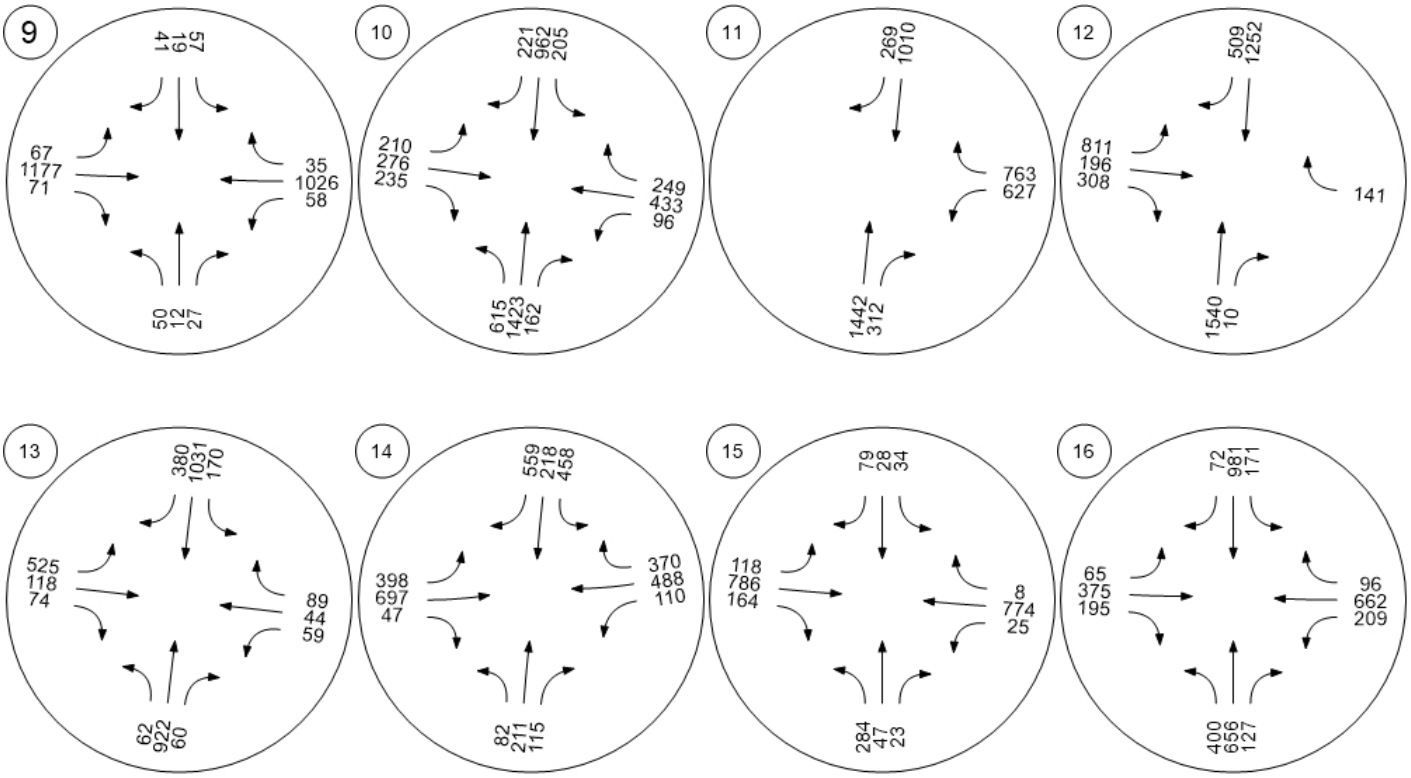
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Wedgeworth ES and Residential Project

Vistro File: P:\...\!RevisedWedgeworth.vistro
Report File: P:\...\E+A+C+P2 PM.pdf

Scenario 12 Phase II + E+A+C PM
6/28/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Hacienda Blvd at Halliburton Rd	Signalized	ICU 1	SB Thru	0.671	-	B
2	Hacienda Blvd at Colima Rd	Signalized	ICU 1	SB Right	1.256	-	F
3	Stimson Ave at Halliburton Rd	Signalized	ICU 1	EB Right	0.647	-	B
4	Stimson Ave/Sierra Ridge Way at Colima Rd	Signalized	ICU 1	EB Right	0.726	-	C
5	Halliburton Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.716	-	C
6	Countrywood Ave at Wedgeworth Dr	All-way stop	HCM 6th Edition	NB Left	0.329	9.7	A
7	Countrywood Ave at Colima Rd	Signalized	ICU 1	WB Thru	0.695	-	B
8	Park Lawn Rd at Colima Rd	Two-way stop	HCM 6th Edition	NB Left	7.663	5,839.2	F
9	Manor Gate Rd at Colima Rd	Signalized	ICU 1	WB Thru	0.821	-	D
10	Azusa Ave at Gale Ave	Signalized	ICU 1	SB Thru	0.902	-	E
11	Azusa Ave at I-60 WB Ramps	Signalized	HCM 6th Edition	SB Right	0.968	39.9	D
12	Azusa Ave at I-60 EB Ramps	Signalized	HCM 6th Edition	EB Right	0.664	15.1	B
13	Azusa Ave at Pepper Brook Way	Signalized	ICU 1	SB Thru	0.958	-	E
14	Azusa Ave at Colima Rd	Signalized	ICU 1	SB Right	0.987	-	E
15	Albatross Rd at Colima Rd	Signalized	ICU 1	EB Thru	0.876	-	D
16	Fullerton Av at Colima Road	Signalized	ICU 1	EB Thru	0.968	-	E

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.

Option 1: Mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
Total Analysis Volume [veh/h]	65	994	65	184	1112	400	542	125	80	64	46	96

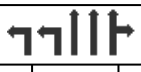
Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.17	0.17	0.06	0.35	0.35	0.17	0.30	0.30	0.04	0.07	0.06
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	C											
Intersection V/C	0.793											

Option 1: Mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
Total Analysis Volume [veh/h]	40	1033	49	519	1442	340	376	103	41	97	133	119

Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.18	0.41	0.41	0.12	0.24	0.24	0.06	0.14	0.07
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	D											
Intersection V/C	0.844											

Option 1: Mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	35	890	58	163	993	333	456	109	49	57	38	85
Total Analysis Volume [veh/h]	65	994	65	184	1112	400	542	125	80	64	46	96

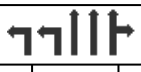
Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.17	0.17	0.06	0.35	0.35	0.17	0.30	0.30	0.04	0.07	0.06
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	C											
Intersection V/C	0.793											

Option 1: Mitigated

Number	13											
Intersection	Azusa Ave at Pepper Brook Way											
Control Type	Signalized											
Analysis Method	ICU 1											
Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
Total Analysis Volume [veh/h]	40	1033	49	519	1442	340	376	103	41	97	133	119

Intersection Settings

Cycle Length [s]	100											
Lost time [s]	10.00											
Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
so, Base Saturation Flow per Lane [veh/h/ln]	1600		1600	1600		1600	1600			1600		1600

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.18	0.41	0.41	0.12	0.16	0.16	0.06	0.14	0.07
Critical Movement	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Intersection LOS	D											
Intersection V/C	0.844											

Intersection Level Of Service Report
Intersection 1: Hacienda Blvd at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.671

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	40.00	100.00	100.00	275.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	6	962	189	450	1190	5	1	1	3	201	0	174
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	3	0	1	1	4	0	1	3	2
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]	6	991	196	467	1226	6	2	5	3	208	3	181
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]	2	259	51	122	321	2	1	1	1	54	1	47
Total Analysis Volume [veh/h]	6	1038	205	489	1284	6	2	5	3	218	3	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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	5	2	0	1	6	0	0	8	0	0	4	4
Auxiliary Signal Groups												4
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.26	0.17	0.27	0.27	0.00	0.01	0.01	0.14	0.14	0.06
Intersection LOS	B											
Intersection V/C	0.671											

Intersection Level Of Service Report
Intersection 2: Hacienda Blvd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.256

Intersection Setup

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	200.00	100.00	100.00	300.00	100.00	100.00	280.00	100.00	100.00	200.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hacienda Blvd			Hacienda Blvd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	47	75	62	132	106	693	803	1218	19	56	799	63
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	0	0	0	0	9	0	2	8	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]	48	77	66	136	109	714	827	1264	20	60	831	65
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
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]	13	21	18	37	29	192	222	340	5	16	223	17
Total Analysis Volume [veh/h]	52	83	71	146	117	768	889	1359	22	65	894	70
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.04	0.48	0.31	0.29	0.29	0.02	0.33	0.33
Intersection LOS	F											
Intersection V/C	1.256											

Intersection Level Of Service Report
Intersection 3: Stimson Ave at Halliburton Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	95.00	100.00	100.00	165.00	100.00	100.00	210.00	100.00	100.00	195.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stimson Ave			Stimson Ave			Halliburton Rd			Halliburton Rd		
Base Volume Input [veh/h]	61	478	74	117	384	117	139	461	134	70	314	114
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	5	5	2	0	1	7	0	5	6	6
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]	63	494	81	126	398	121	144	482	138	77	329	123
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
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]	17	135	22	34	109	33	39	132	38	21	90	34
Total Analysis Volume [veh/h]	69	540	89	138	435	132	158	527	151	84	360	135
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.20	0.20	0.09	0.18	0.18	0.10	0.21	0.21	0.05	0.15	0.15
Intersection LOS	B											
Intersection V/C	0.647											

Intersection Level Of Service Report
Intersection 4: Stimson Ave/Sierra Ridge Way at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.726

Intersection Setup

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
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 Pocket	0	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	240.00	100.00	100.00	160.00	100.00	100.00	120.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Stimson Ave			Stimson Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	6	9	3	106	17	151	322	1070	9	3	773	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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	5	0	0	0	11	0	1	10	5
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]	6	9	4	114	18	156	332	1113	9	4	806	86
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	2	2	1	30	5	42	88	297	2	1	215	23
Total Analysis Volume [veh/h]	6	10	4	122	19	166	354	1187	10	4	859	92
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.08	0.01	0.10	0.22	0.37	0.37	0.00	0.30	0.30
Intersection LOS	C											
Intersection V/C	0.726											

Intersection Level Of Service Report
Intersection 5: Halliburton Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.716

Intersection Setup

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	230.00	100.00	100.00	225.00	100.00	100.00	215.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Dawn Haven Rd			Halliburton Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	12	49	36	365	102	35	39	1031	35	44	958	407
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	21	0	0	0	23	0	2	22	20
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]	12	50	39	397	105	36	40	1085	36	47	1009	439
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
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]	3	13	10	103	27	9	10	282	9	12	262	114
Total Analysis Volume [veh/h]	12	52	41	413	109	37	42	1128	37	49	1049	456
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]	10.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	0	2	0	0	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												4
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.06	0.06	0.13	0.16	0.02	0.03	0.36	0.36	0.03	0.33	0.29
Intersection LOS	C											
Intersection V/C	0.716											

Intersection Level Of Service Report
Intersection 6: Countrywood Ave at Wedgeworth Dr

Control Type:	All-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.329

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Countrywood Ave			Countrywood Ave			Wedgeworth Dr			Wedgeworth Dr		
Base Volume Input [veh/h]	141	44	30	3	21	9	17	105	109	21	66	6
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	1	1	1	0	0	1	3	1	1	1
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]	148	46	32	4	23	9	18	109	115	23	69	7
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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	12	9	1	6	2	5	29	31	6	18	2
Total Analysis Volume [veh/h]	158	49	34	4	25	10	19	117	123	25	74	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	733	716	794	721
Degree of Utilization, x	0.33	0.05	0.33	0.15

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.44	0.17	1.42	0.51
95th-Percentile Queue Length [ft]	35.93	4.31	35.53	12.84
Approach Delay [s/veh]	10.31	8.32	9.71	8.85
Approach LOS	B	A	A	A
Intersection Delay [s/veh]	9.71			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Countrywood Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.695

Intersection Setup

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	85.00	100.00	100.00	160.00	100.00	100.00	255.00	100.00	100.00	165.00	100.00	100.00
Speed [mph]	25.00			30.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Countrywood Ave			Countrywood Ave			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	20	22	17	69	20	67	52	1345	20	27	1278	95
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	4	0	0	0	46	0	5	44	4
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]	21	23	23	75	21	69	54	1431	21	33	1360	102
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	6	6	6	20	6	18	14	376	6	9	358	27
Total Analysis Volume [veh/h]	22	24	24	79	22	73	57	1505	22	35	1430	107
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.03	0.05	0.01	0.05	0.04	0.48	0.48	0.02	0.48	0.48
Intersection LOS	B											
Intersection V/C	0.695											

Intersection Level Of Service Report
Intersection 8: Park Lawn Rd at Colima Rd

Control Type:	Two-way stop	Delay (sec / veh):	5,839.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	7.663

Intersection Setup

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			30.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Park Lawn Rd			Park Lawn Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	13	0	21	3	1	26	133	1292	24	56	1417	26
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	3	2	1	23	25	30	0	3	30	2
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]	13	1	25	5	2	50	162	1361	25	61	1490	29
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]	3	0	7	1	1	13	43	365	7	16	400	8
Total Analysis Volume [veh/h]	14	1	27	5	2	54	174	1460	27	65	1599	31
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	7.66	0.38	0.08	1.55	0.77	0.17	0.44	0.01	0.00	0.15	0.02	0.00
d_M, Delay for Movement [s/veh]	5839.18	5252.32	3878.85	1984.01	2244.87	876.86	21.13	0.00	0.00	14.39	0.00	0.00
Movement LOS	F	F	F	F	F	F	C	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	6.89	6.89	6.89	7.58	7.58	7.58	2.19	0.00	0.00	0.50	0.00	0.00
95th-Percentile Queue Length [ft/ln]	172.24	172.24	172.24	189.47	189.47	189.47	54.83	0.00	0.00	12.60	0.00	0.00
d_A, Approach Delay [s/veh]	4565.00			1012.46			2.21			0.55		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	74.62											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 9: Manor Gate Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	105.00	100.00	100.00	115.00	100.00	100.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Manor Gate Rd			Manor Gate Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	147	12	42	20	18	23	31	1198	84	85	1331	55
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	4	36	2	3	0	0	0	35	36	0	3
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]	186	16	79	23	22	24	32	1234	122	124	1371	60
Peak Hour Factor	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960	0.8960
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	4	22	6	6	7	9	344	34	35	383	17
Total Analysis Volume [veh/h]	208	18	88	26	25	27	36	1377	136	138	1530	67
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]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.14	0.06	0.02	0.03	0.02	0.02	0.47	0.47	0.09	0.50	0.50
Intersection LOS	D											
Intersection V/C	0.821											

Intersection Level Of Service Report
Intersection 10: Azusa Ave at Gale Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.902

Intersection Setup

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale 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 Pocket	2	0	0	1	0	1	2	0	1	2	0	1
Pocket Length [ft]	275.00	100.00	100.00	200.00	100.00	150.00	235.00	100.00	220.00	265.00	100.00	275.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			Gale Ave			Gale Ave		
Base Volume Input [veh/h]	400	1232	188	327	1384	113	325	658	562	260	294	252
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	14	2	0	15	3	2	2	13	2	3	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]	429	1283	196	337	1441	119	337	680	592	270	306	260
Peak Hour Factor	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420	0.9420
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]	114	340	52	89	382	32	89	180	157	72	81	69
Total Analysis Volume [veh/h]	455	1362	208	358	1530	126	358	722	628	287	325	276
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	3	8	8	7	4	0
Auxiliary Signal Groups			2			6			8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.28	0.13	0.12	0.32	0.08	0.12	0.23	0.20	0.10	0.13	0.13
Intersection LOS	E											
Intersection V/C	0.902											

Intersection Level Of Service Report
Intersection 11: Azusa Ave at I-60 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	39.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.968

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Azusa Ave			Azusa Ave			I-60 WB On			I-60 WB Off		
Base Volume Input [veh/h]	0	1343	493	0	1431	896	0	0	0	636	0	514
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0000	1.0000	1.0000	1.0300	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	9	0	25	5	0	0	0	15	0	8
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	1408	517	0	1499	928	0	0	0	670	0	537
Peak Hour Factor	1.0000	0.9610	0.9610	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	1.0000	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]	0	366	134	0	390	241	0	0	0	174	0	140
Total Analysis Volume [veh/h]	0	1465	538	0	1560	966	0	0	0	697	0	559
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]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	0	2	0	0	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	0	0	0	5	0	0
Maximum Green [s]	0	30	0	0	30	0	0	0	0	30	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	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	0.0	0.0
Split [s]	0	103	0	0	103	0	0	0	0	17	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	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	0.0	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	0.0	0.0
Minimum Recall		No			No					No		
Maximum Recall		No			No					No		
Pedestrian Recall		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	C	R	C	R		L	C	R
C, Cycle Length [s]	59	59	59	59	59		59	59	59
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		21	21	21
g / C, Green / Cycle	0.51	0.51	0.51	0.51	0.51		0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.31	0.34	0.35	0.34	0.68		0.26	0.27	0.29
s, saturation flow rate [veh/h]	3204	1473	1431	4584	1431		1603	1541	1431
c, Capacity [veh/h]	1631	750	728	2334	728		569	547	508
d1, Uniform Delay [s]	10.33	10.76	10.92	10.76	14.46		16.58	16.82	17.32
k, delay calibration	0.11	0.21	0.22	0.11	0.50		0.11	0.11	0.14
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	1.97	2.37	0.34	156.32		1.87	2.27	4.36
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	0.61	0.67	0.69	0.67	1.33		0.74	0.77	0.82
d, Delay for Lane Group [s/veh]	10.71	12.72	13.29	11.10	170.79		18.45	19.10	21.68
Lane Group LOS	B	B	B	B	F		B	B	C
Critical Lane Group	No	No	No	No	Yes		No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.83	4.31	4.44	4.12	39.24		4.64	4.76	5.16
50th-Percentile Queue Length [ft/ln]	95.69	107.65	110.92	103.03	981.12		116.07	118.90	128.89
95th-Percentile Queue Length [veh/ln]	6.89	7.71	7.89	7.42	59.70		8.18	8.33	8.88
95th-Percentile Queue Length [ft/ln]	172.23	192.73	197.28	185.46	1492.38		204.42	208.31	221.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.89	13.25	0.00	11.10	170.79	0.00	0.00	0.00	18.71	0.00	21.03
Movement LOS		B	B		B	F				B		C
d_A, Approach Delay [s/veh]	11.86			72.17			0.00			19.74		
Approach LOS	B			E			A			B		
d_I, Intersection Delay [s/veh]	39.90											
Intersection LOS	D											
Intersection V/C	0.968											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	0.00	51.34
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.665
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1650	1650	0	0
d_b, Bicycle Delay [s]	1.84	1.84	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	2.661	2.949	4.132	6.205
Bicycle LOS	B	C	D	F

Sequence

Ring 1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Azusa Ave at I-60 EB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Azusa Ave			Azusa Ave			I-60 EB Off-Ramp			I-60 EB On-Ramp		
Base Volume Input [veh/h]	0	1532	35	0	1772	333	416	304	421	0	0	375
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	1.0300	1.0300	1.0000	1.0300	1.0300	1.0300	1.0300	1.0300	1.0000	1.0000	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	1	0	35	0	8	0	12	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	1613	37	0	1860	343	436	313	446	0	0	386
Peak Hour Factor	1.0000	0.9740	0.9740	1.0000	0.9740	0.9740	0.9740	0.9740	0.9740	1.0000	1.0000	0.9740
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	414	9	0	477	88	112	80	114	0	0	99
Total Analysis Volume [veh/h]	0	1656	38	0	1910	352	448	321	458	0	0	396
Presence of On-Street Parking	No		No	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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	4	0	0	0	8
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	0	5
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
Split [s]	0	19	0	0	19	0	0	41	0	0	0	41
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	10
Rest In Walk		No			No			No				No
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0
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	C	C	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60
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	2.00	2.00	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	27	25	25	25	25
g / C, Green / Cycle	0.46	0.46	0.46	0.46	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.28	0.26	0.31	0.25	0.26	0.28	0.35	0.28
s, saturation flow rate [veh/h]	4584	1657	6113	1431	1275	1576	1302	1431
c, Capacity [veh/h]	2094	757	2792	653	604	722	534	587
d1, Uniform Delay [s]	12.27	11.92	12.90	11.77	15.67	14.28	16.14	14.46
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11	0.14	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]	1.32	2.98	1.38	3.17	0.80	0.81	5.30	1.36
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	0.61	0.56	0.68	0.54	0.55	0.60	0.86	0.67
d, Delay for Lane Group [s/veh]	13.59	14.90	14.29	14.94	16.47	15.09	21.44	15.82
Lane Group LOS	B	B	B	B	B	B	C	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.47	3.75	4.08	3.14	3.63	4.44	5.87	4.16
50th-Percentile Queue Length [ft/ln]	86.80	93.75	102.04	78.47	90.63	111.03	146.71	104.01
95th-Percentile Queue Length [veh/ln]	6.25	6.75	7.35	5.65	6.53	7.90	9.84	7.49
95th-Percentile Queue Length [ft/ln]	156.25	168.75	183.67	141.24	163.13	197.43	246.03	187.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.89	14.90	0.00	14.29	14.94	16.23	15.09	21.44	0.00	0.00	15.82
Movement LOS		B	B		B	B	B	B	C			B
d_A, Approach Delay [s/veh]	13.92			14.39			17.84			15.82		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.10											
Intersection LOS	B											
Intersection V/C	0.664											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	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]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.432	2.125
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1233	0
d_b, Bicycle Delay [s]	16.88	16.88	4.41	30.00
l_b,int, Bicycle LOS Score for Intersection	2.258	2.493	2.572	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Azusa Ave at Pepper Brook Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.958

Intersection Setup

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
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 Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	420.00	100.00	100.00	210.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Azusa Rd			Azusa Ave			Pepper Brook Way			Pepper Brook Way		
Base Volume Input [veh/h]	33	991	48	500	1386	322	356	99	34	94	128	112
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	7	0	2	7	38	26	3	10	0	4	3
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]	46	1028	49	517	1435	370	393	105	45	97	136	118
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]	12	263	13	132	368	95	101	27	12	25	35	30
Total Analysis Volume [veh/h]	47	1053	50	530	1470	379	403	108	46	99	139	121
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.17	0.17	0.18	0.43	0.43	0.25	0.10	0.10	0.06	0.15	0.08
Intersection LOS	E											
Intersection V/C	0.958											

Intersection Level Of Service Report
Intersection 14: Azusa Ave at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.987

Intersection Setup

Name	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
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 Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	210.00	100.00	100.00	260.00	100.00	100.00	230.00	100.00	135.00	230.00	100.00	100.00
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	Azusa Rd			Azusa Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	52	194	196	622	292	520	365	902	24	171	859	495
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	1	0	9	1	7	7	17	14	0	18	11
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]	68	201	202	650	302	543	383	946	39	176	903	521
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
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]	18	53	53	172	80	143	101	250	10	46	238	138
Total Analysis Volume [veh/h]	72	212	213	686	319	573	404	999	41	186	954	550
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]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups						6						4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.07	0.13	0.24	0.20	0.36	0.14	0.31	0.03	0.12	0.30	0.34
Intersection LOS	E											
Intersection V/C	0.987											

Intersection Level Of Service Report
Intersection 15: Albatross Rd at Colima Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.876

Intersection Setup

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Albatross Rd			Albatross Rd			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	253	63	42	142	148	235	200	1065	259	75	941	49
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	0	6	5	16	5	0	18	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]	266	65	43	146	152	248	211	1113	272	77	987	50
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
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]	68	17	11	37	39	63	54	284	69	20	252	13
Total Analysis Volume [veh/h]	271	66	44	149	155	253	215	1135	277	78	1006	51
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]	10.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	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	0.04	0.03	0.09	0.10	0.16	0.13	0.35	0.17	0.05	0.31	0.03
Intersection LOS	D											
Intersection V/C	0.876											

Intersection Level Of Service Report
Intersection 16: Fullerton Av at Colima Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.968

Intersection Setup

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Fullerton Av			Fullerton Av			Colima Rd			Colima Rd		
Base Volume Input [veh/h]	388	675	167	350	822	71	107	983	171	229	695	135
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	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	7	6	4	6	0	4	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]	407	695	172	361	847	80	116	1016	182	236	720	139
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
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]	106	182	45	94	221	21	30	265	48	62	188	36
Total Analysis Volume [veh/h]	425	726	180	377	885	84	121	1062	190	247	752	145
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]	10.00

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

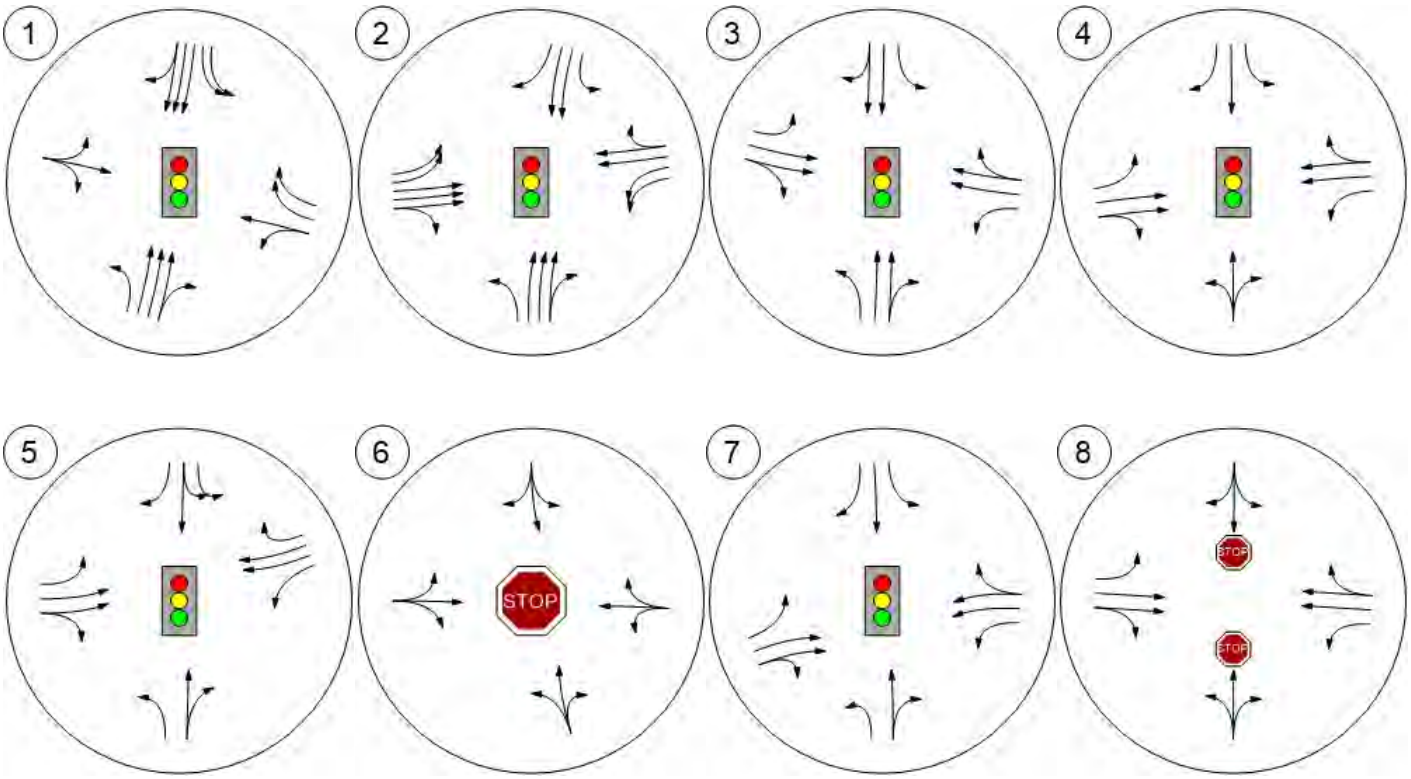
V/C, Movement V/C Ratio	0.15	0.23	0.11	0.13	0.30	0.30	0.04	0.33	0.12	0.09	0.19	0.19
Intersection LOS	E											
Intersection V/C	0.968											

Study Intersections



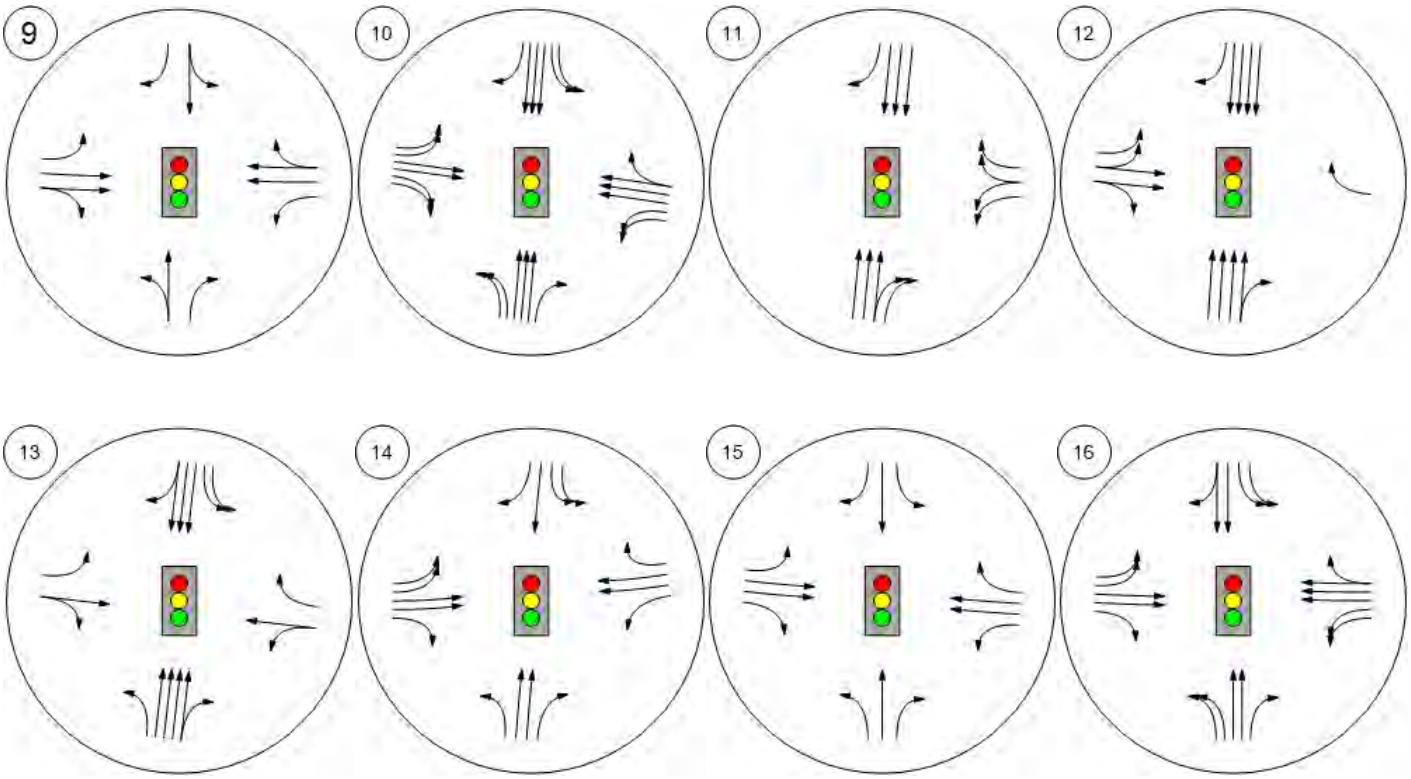
Lane Configuration and Traffic Control





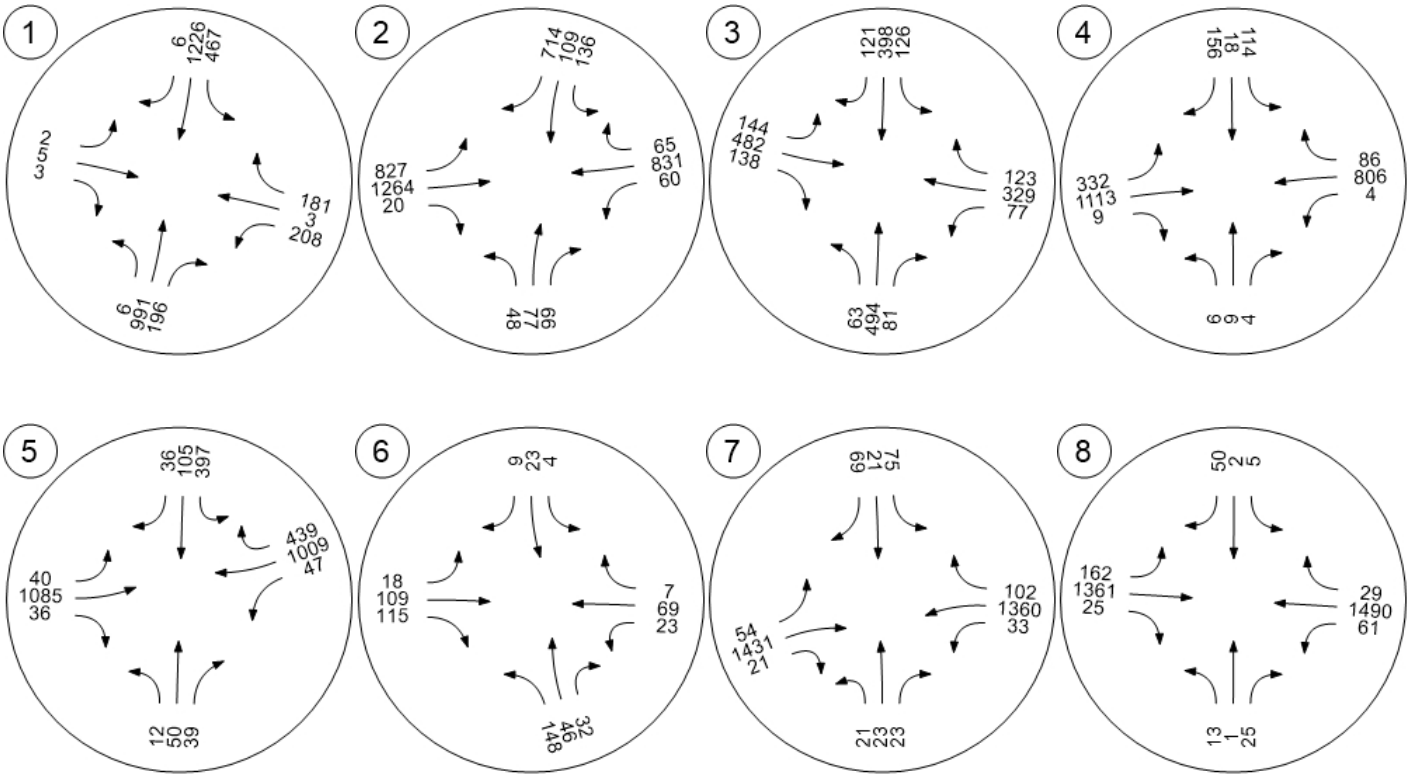
Lane Configuration and Traffic Control





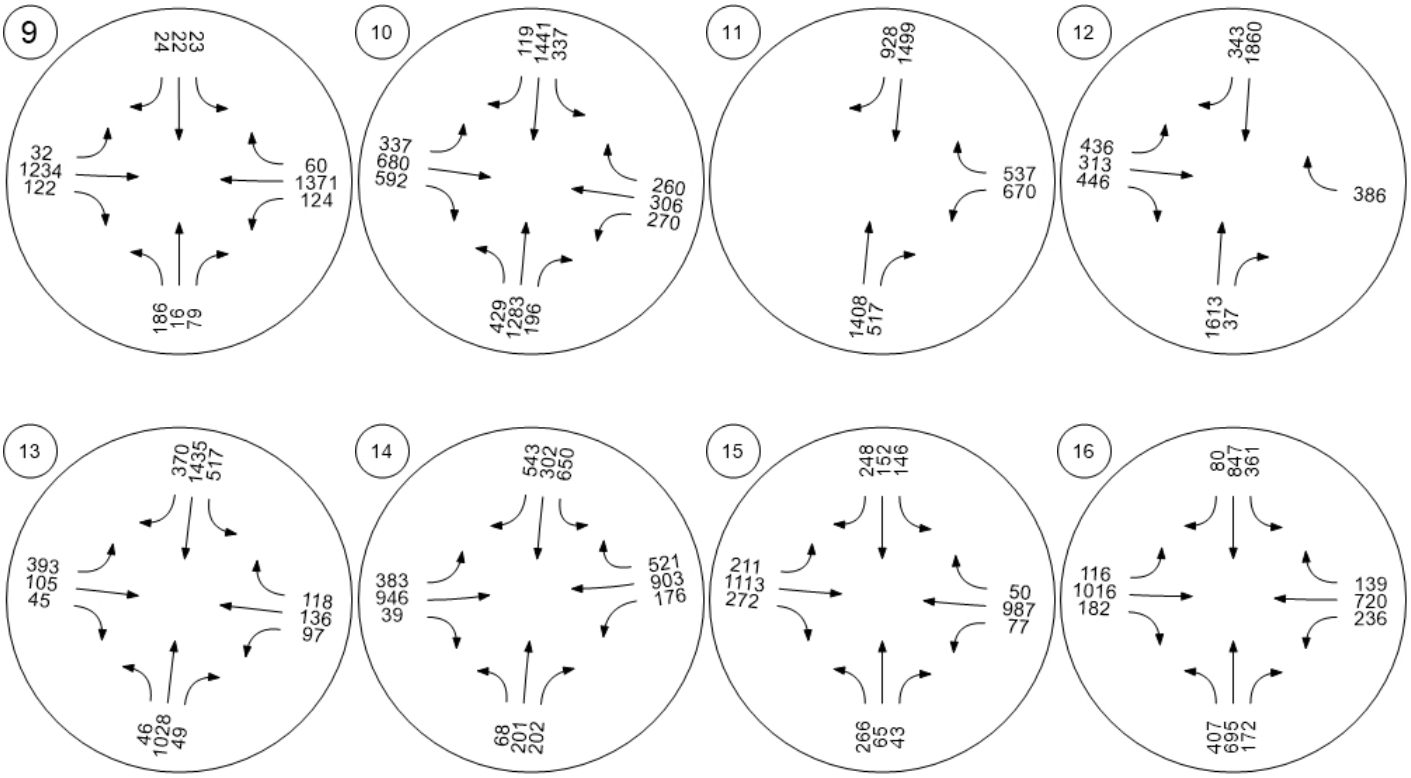
Traffic Volume - Future Total Volume





Traffic Volume - Future Total Volume





Appendix G. Signal Warrant Worksheets

Appendices

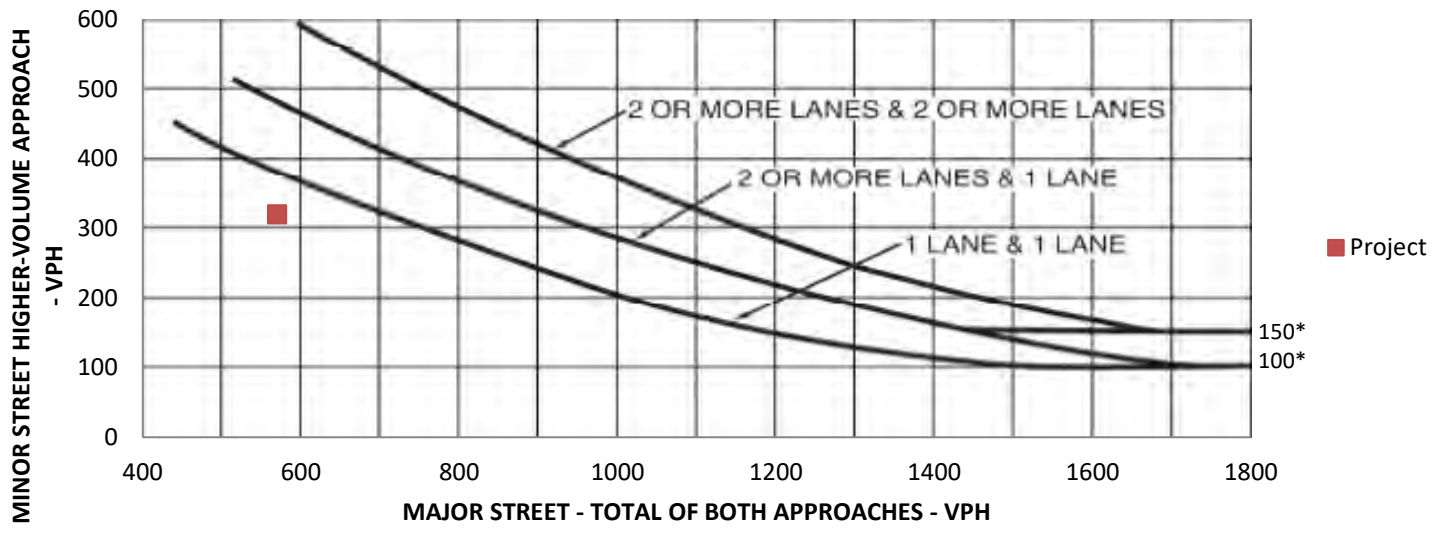
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Warrant 3, Peak Hour

Traffic Conditions: Existing AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	570
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	320
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

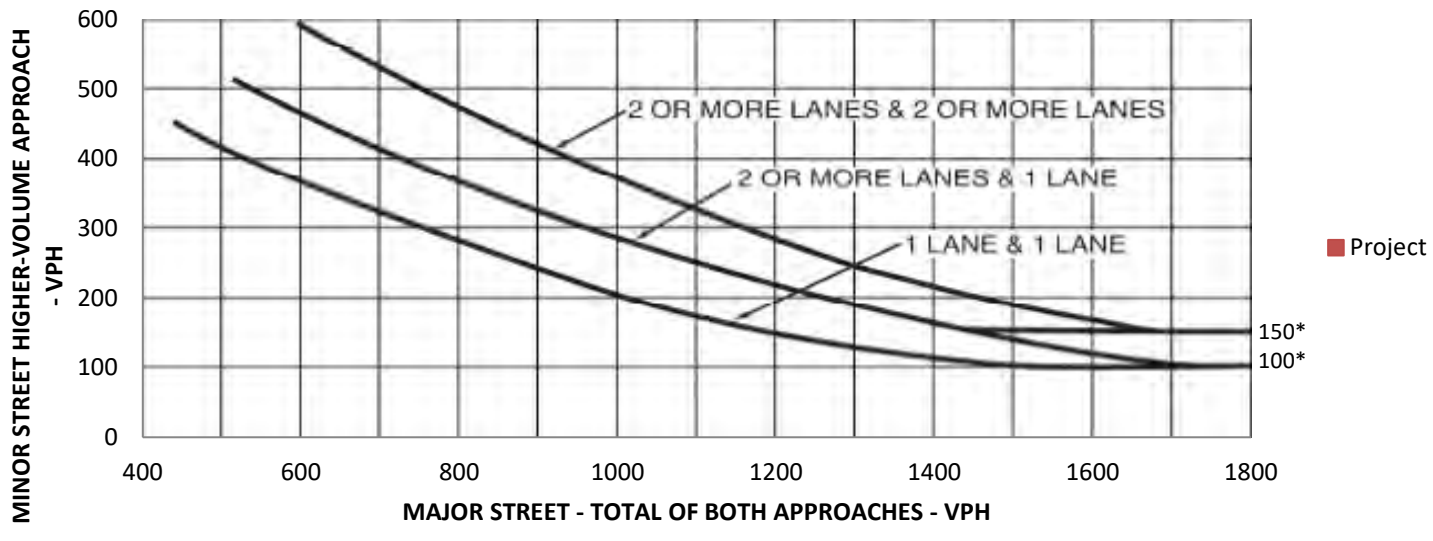
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	324
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	215
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

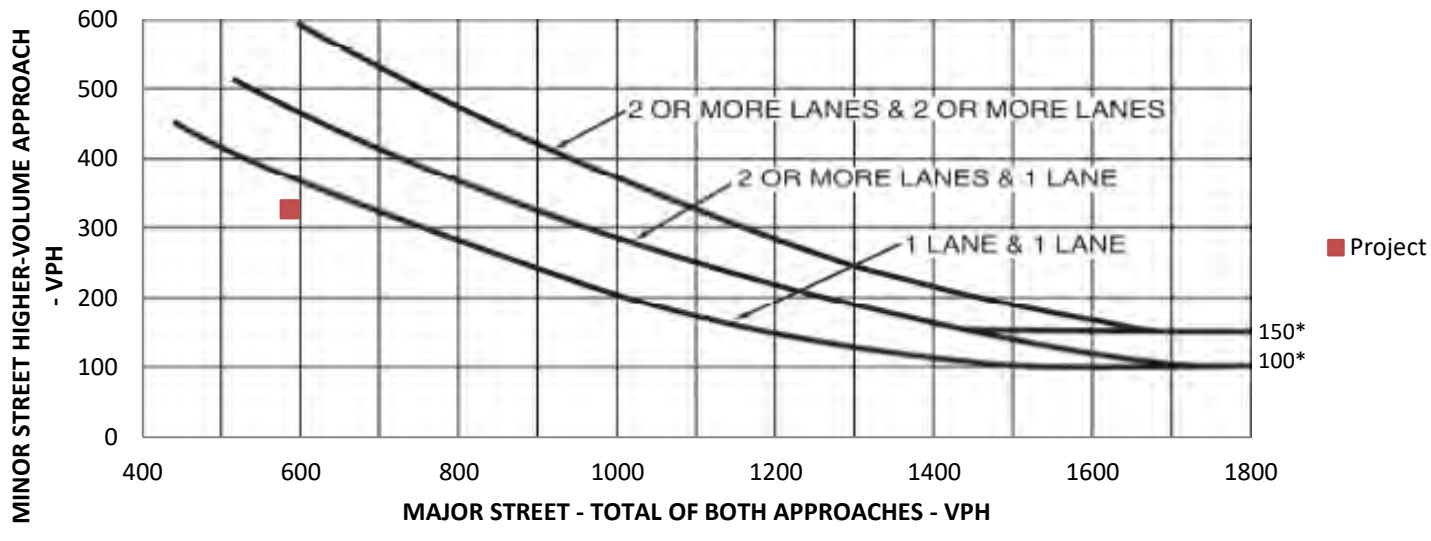
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Phase I AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	586
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	327
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

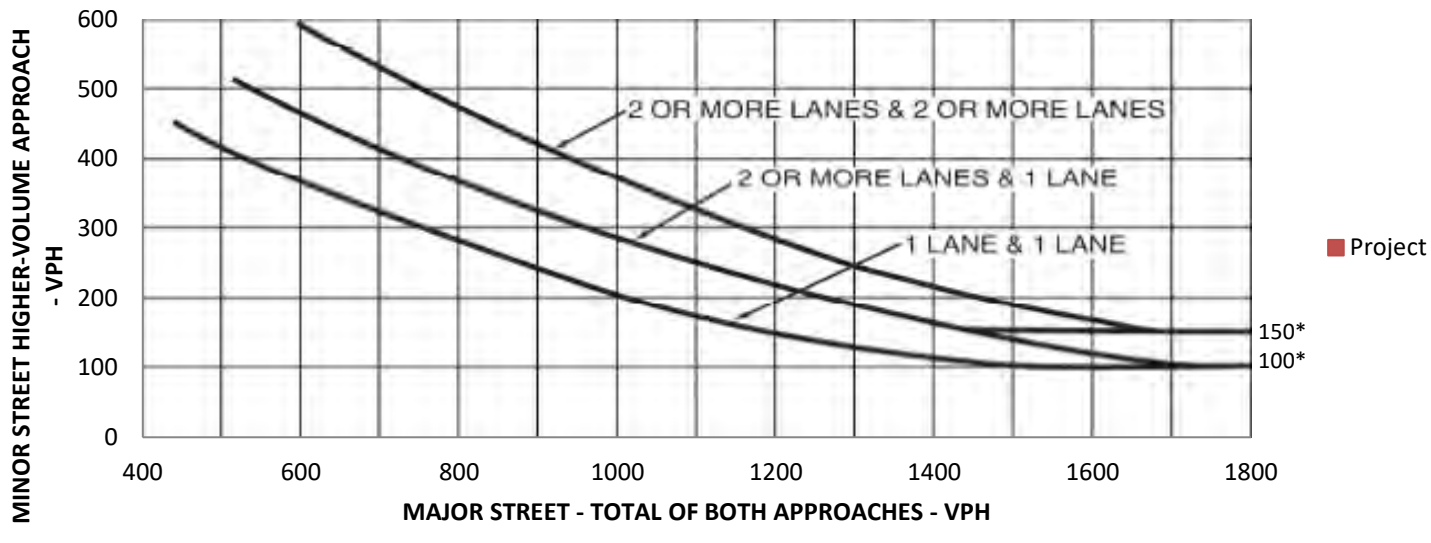
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Phase I PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	328
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	216
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

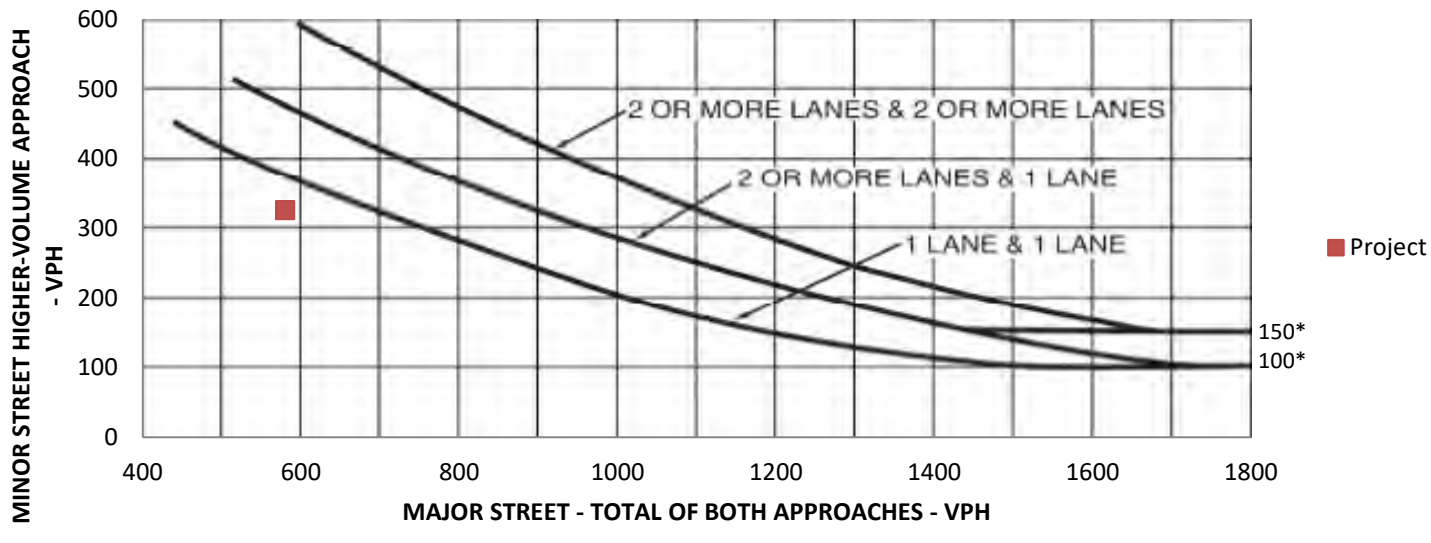
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Cumulative AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	580
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	326
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

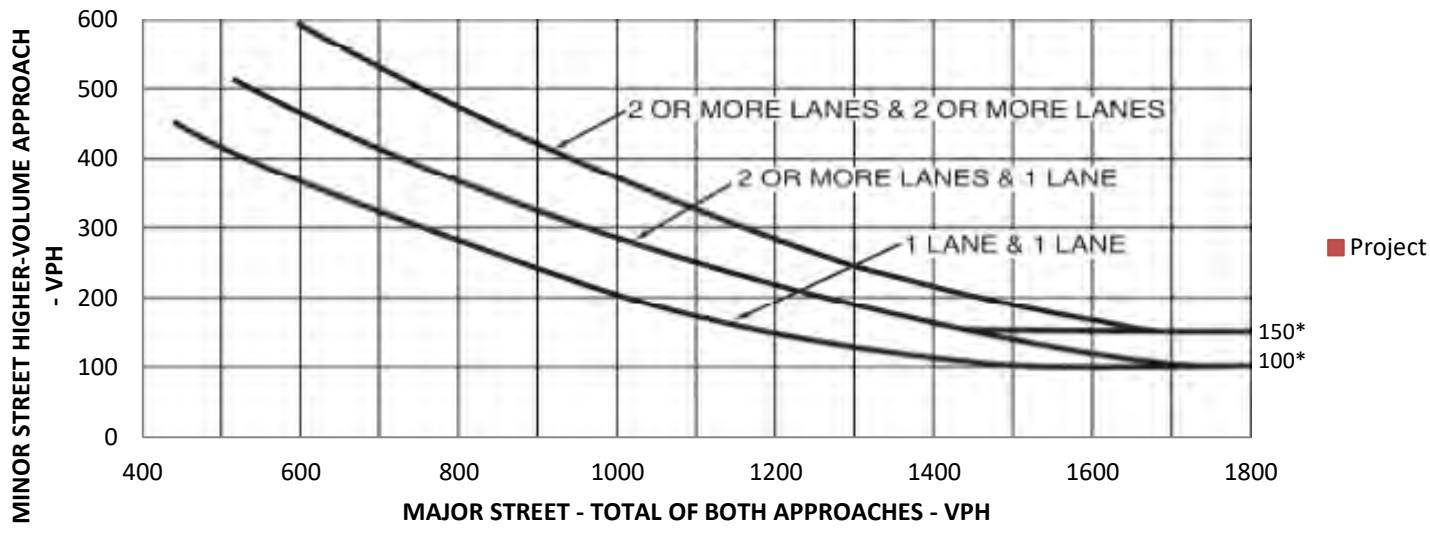
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Cumulative PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	330
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	220
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

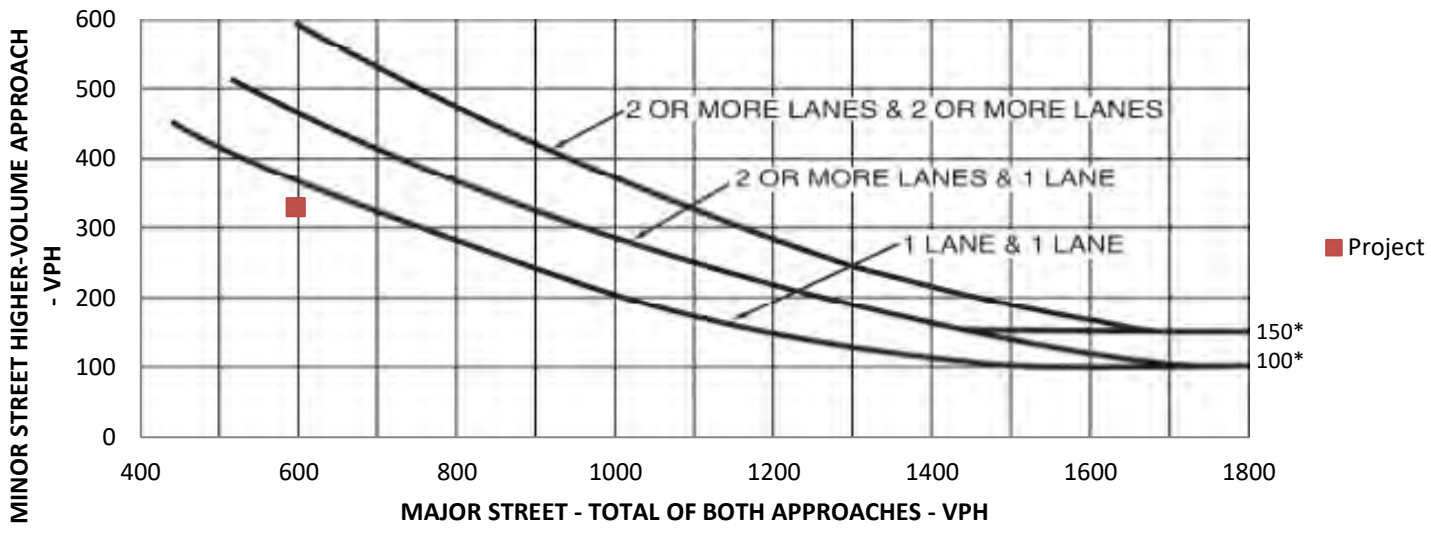
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	596
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	330
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

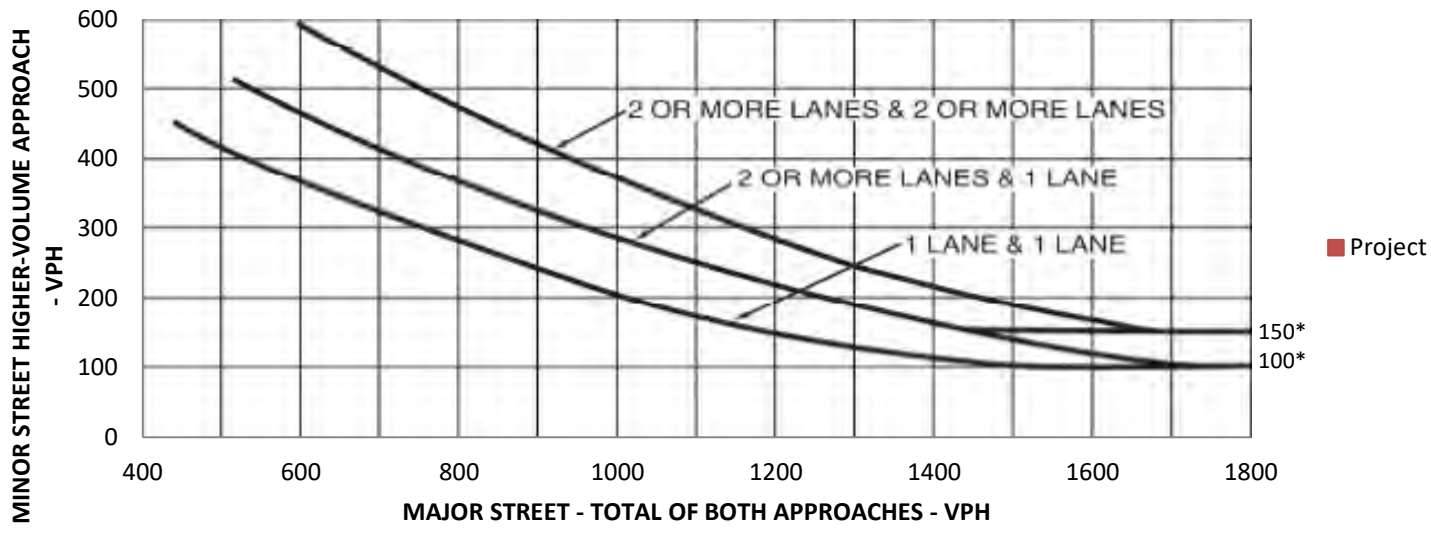
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	334
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	221
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

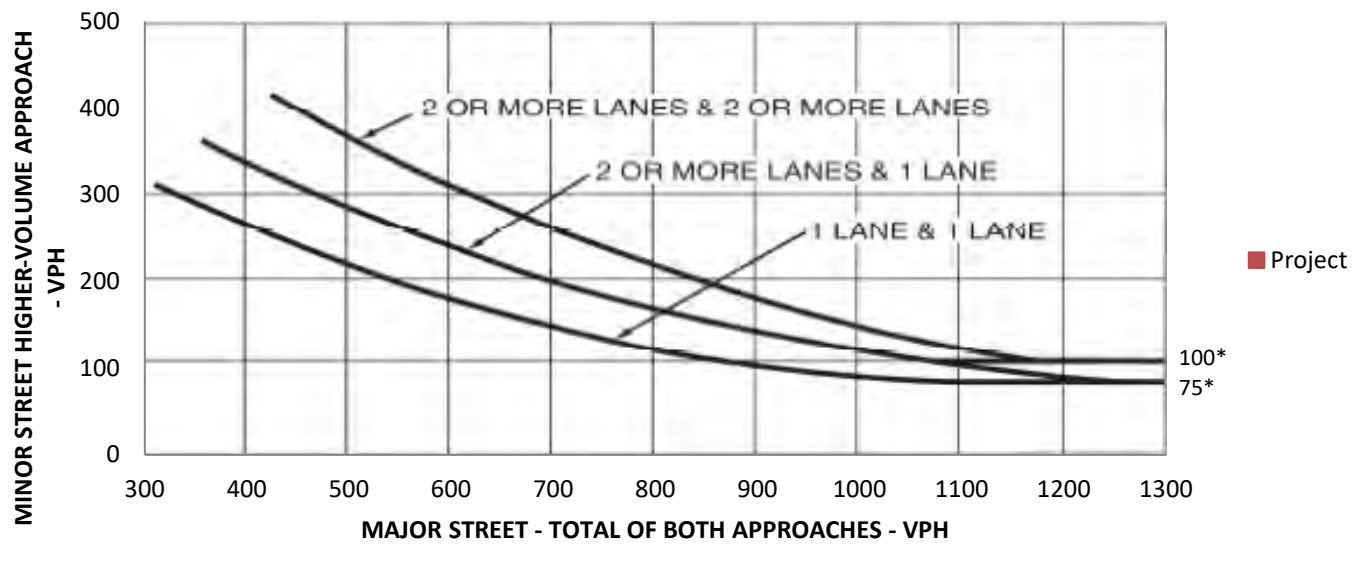
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2389
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	66
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

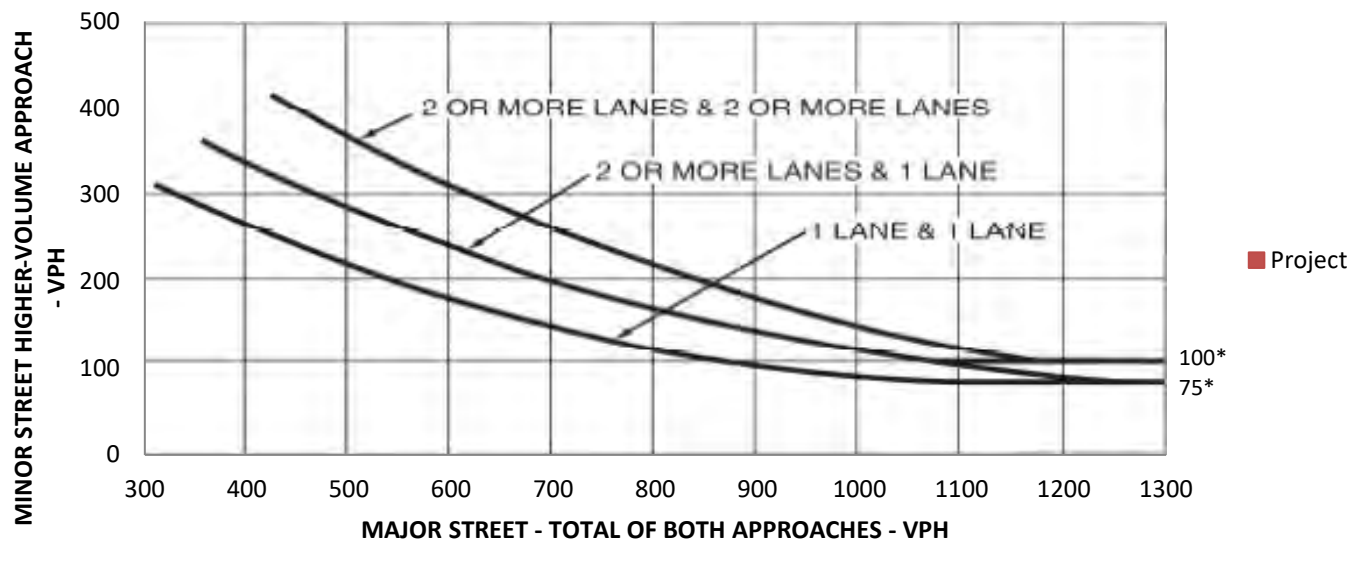
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2948
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	34
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

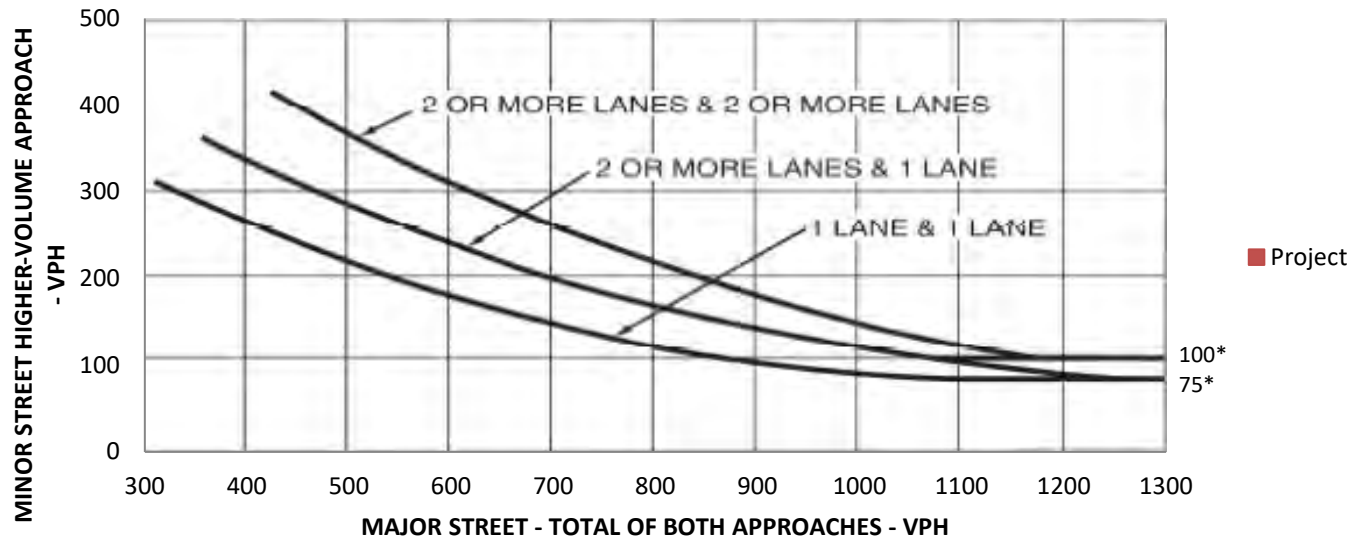
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Phase I AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2467
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	137
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

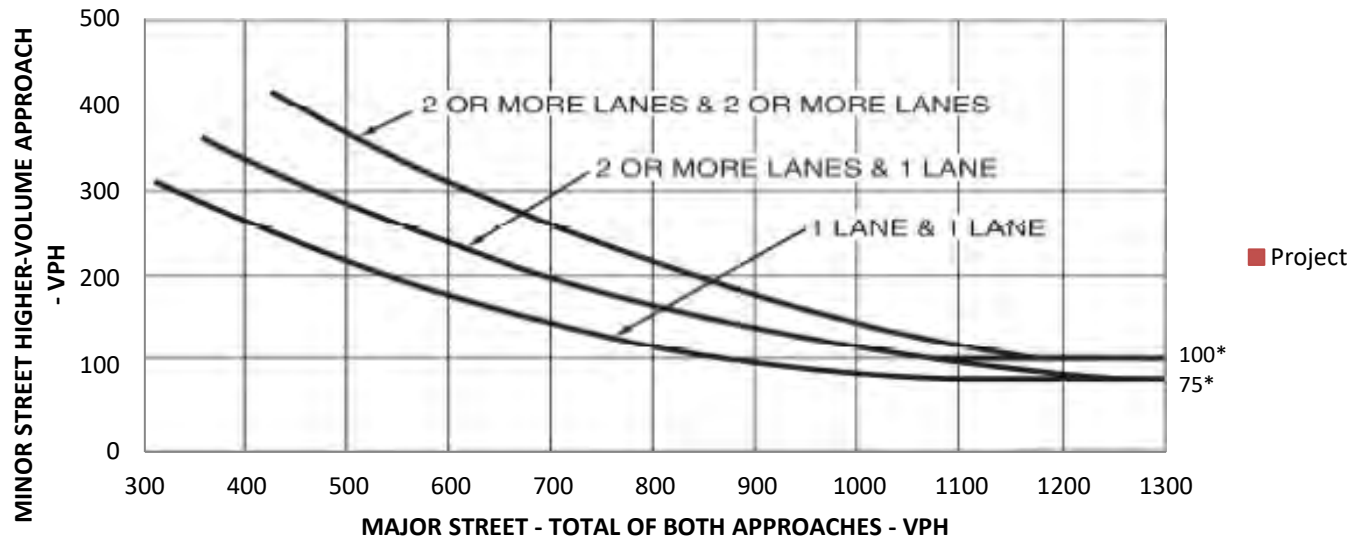
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Phase I PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2965
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	51
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

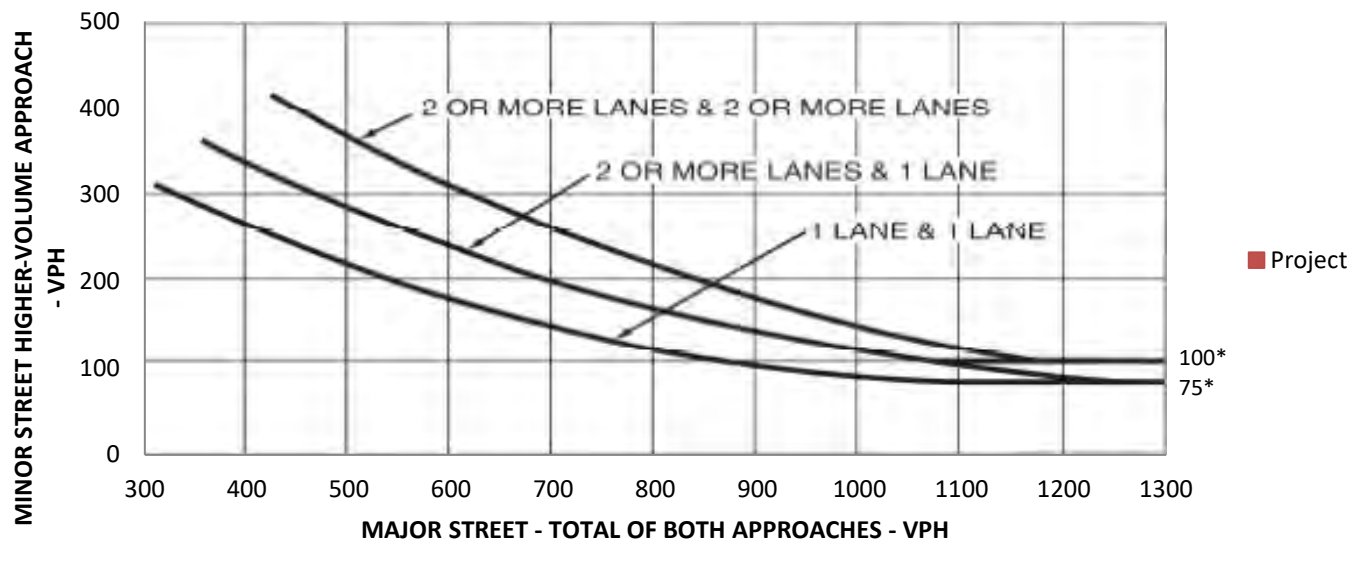
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Cumulative AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2477
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	69
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

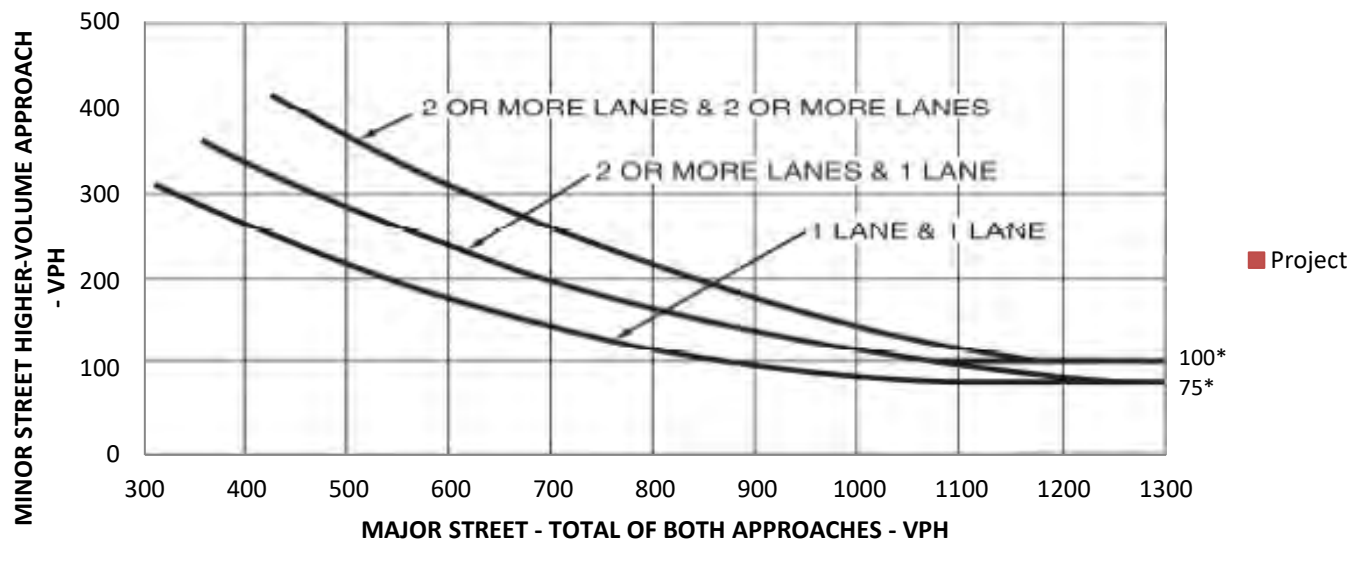
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Cumulative PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	3042
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	37
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

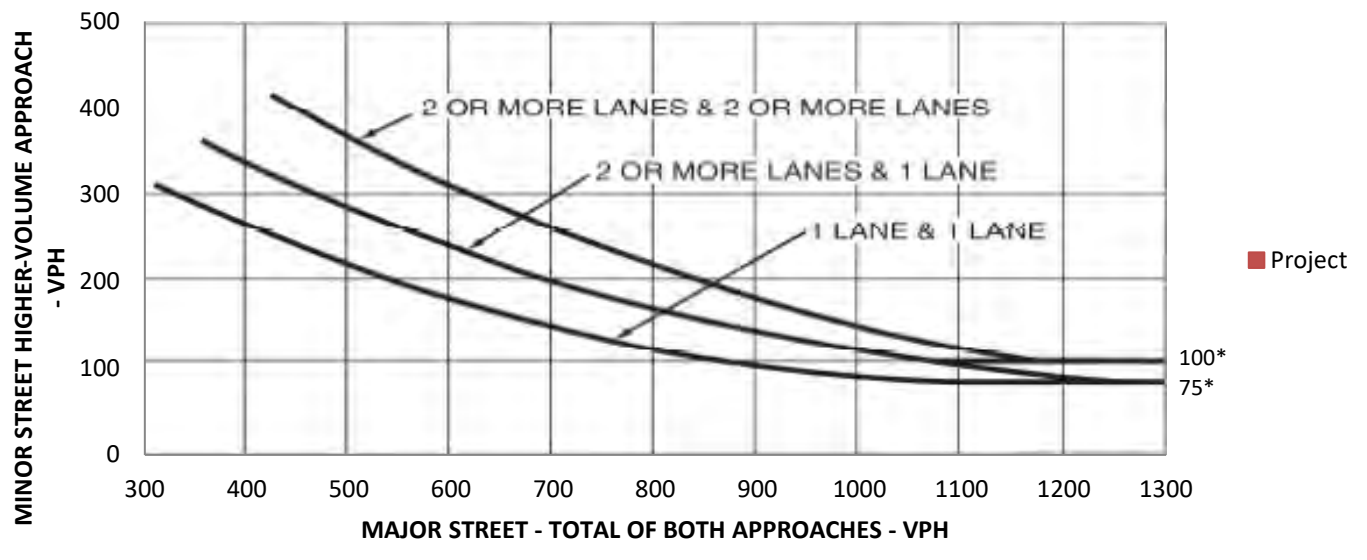
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2545
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	140
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

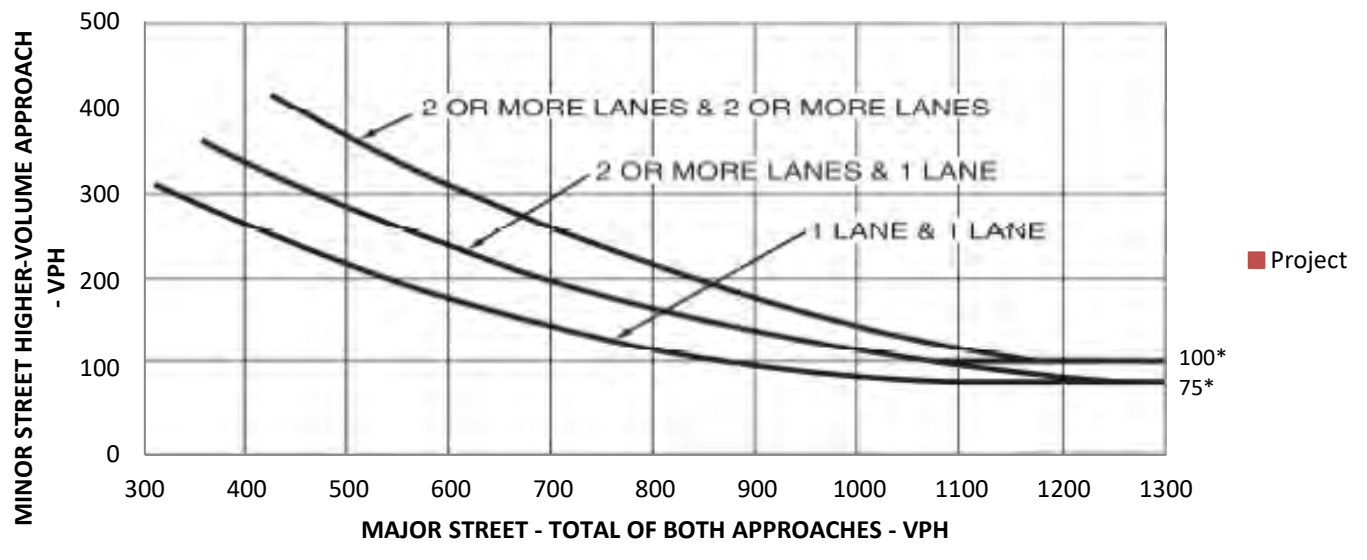
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	3059
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	53
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

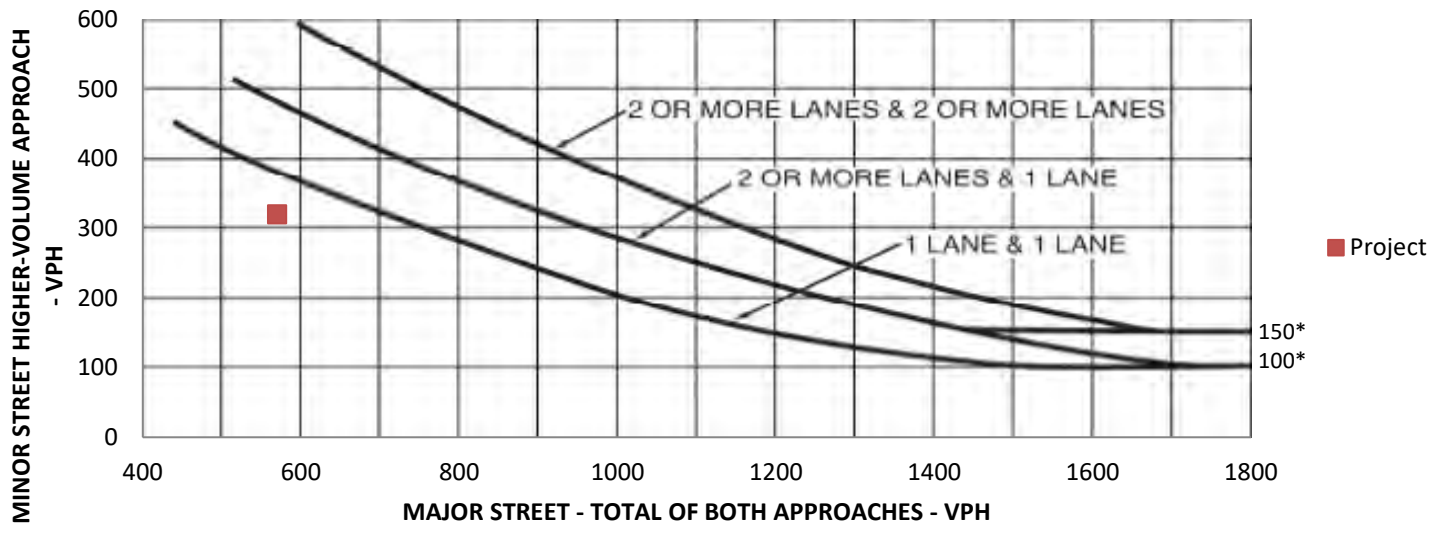
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	570
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	320
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

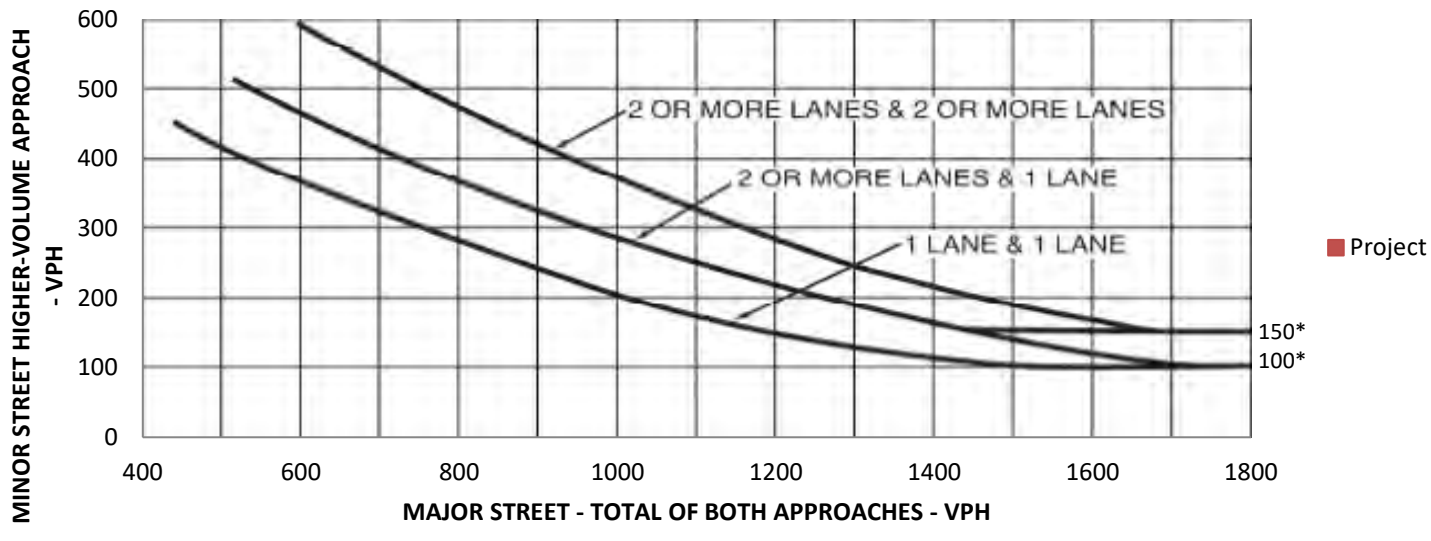
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	324
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	215
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

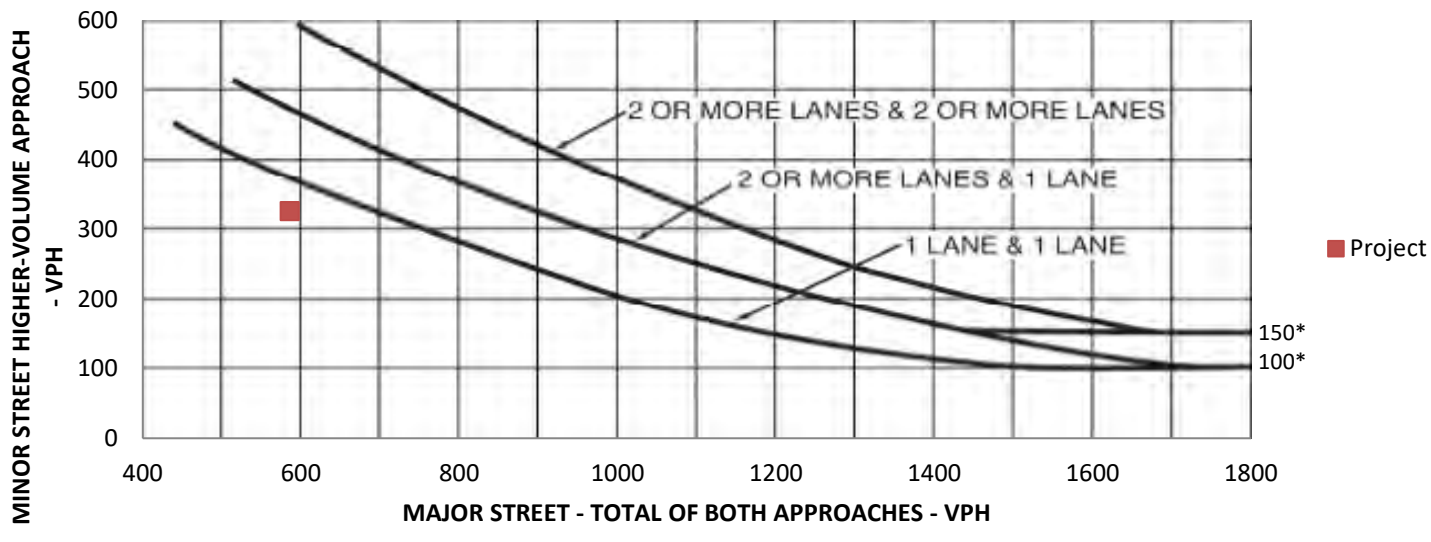
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Phase I AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	586
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	326
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

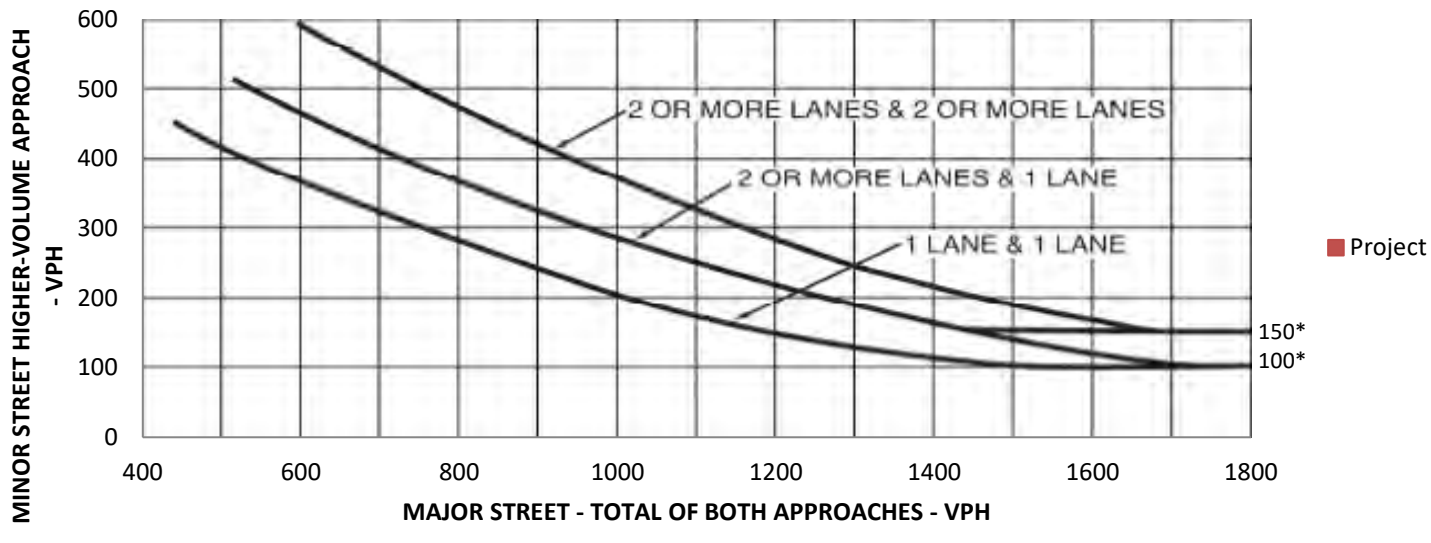
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Phase I PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	328
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	216
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

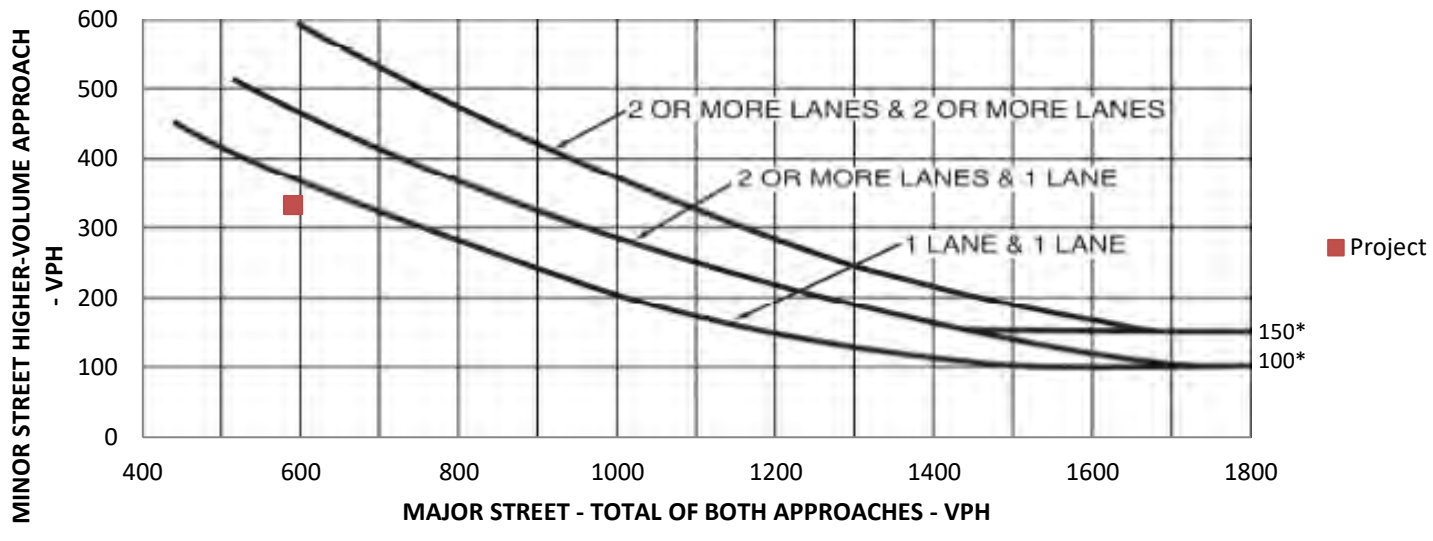
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Cumulative AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	590
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	333
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

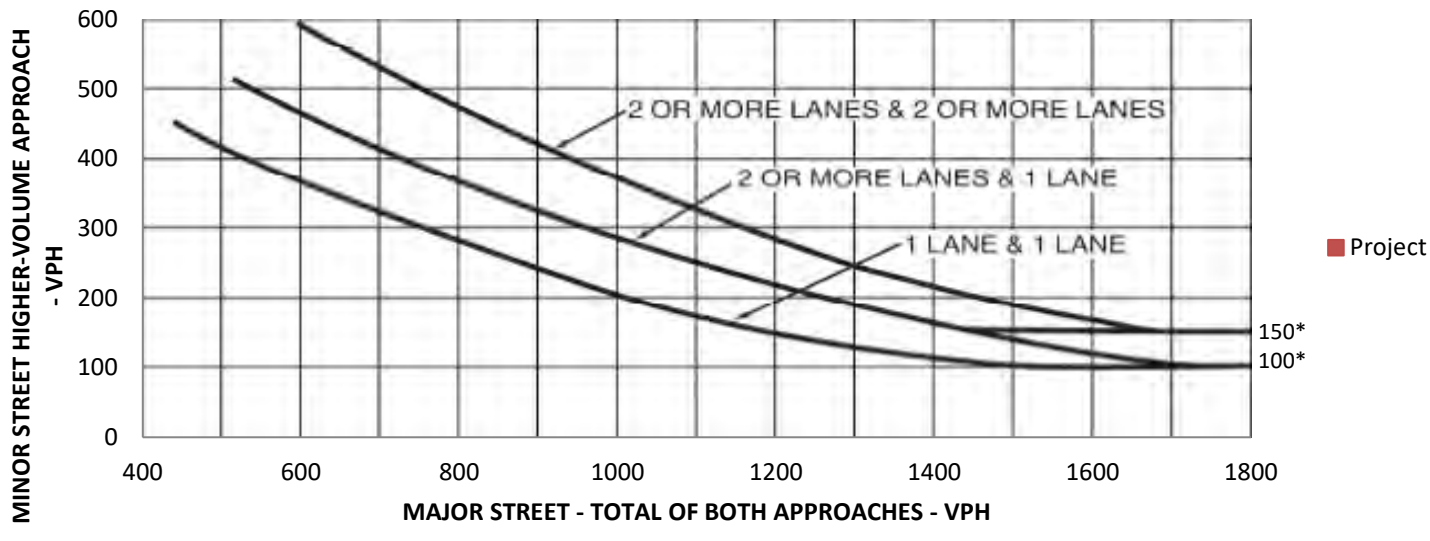
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Cumulative PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	337
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	225
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

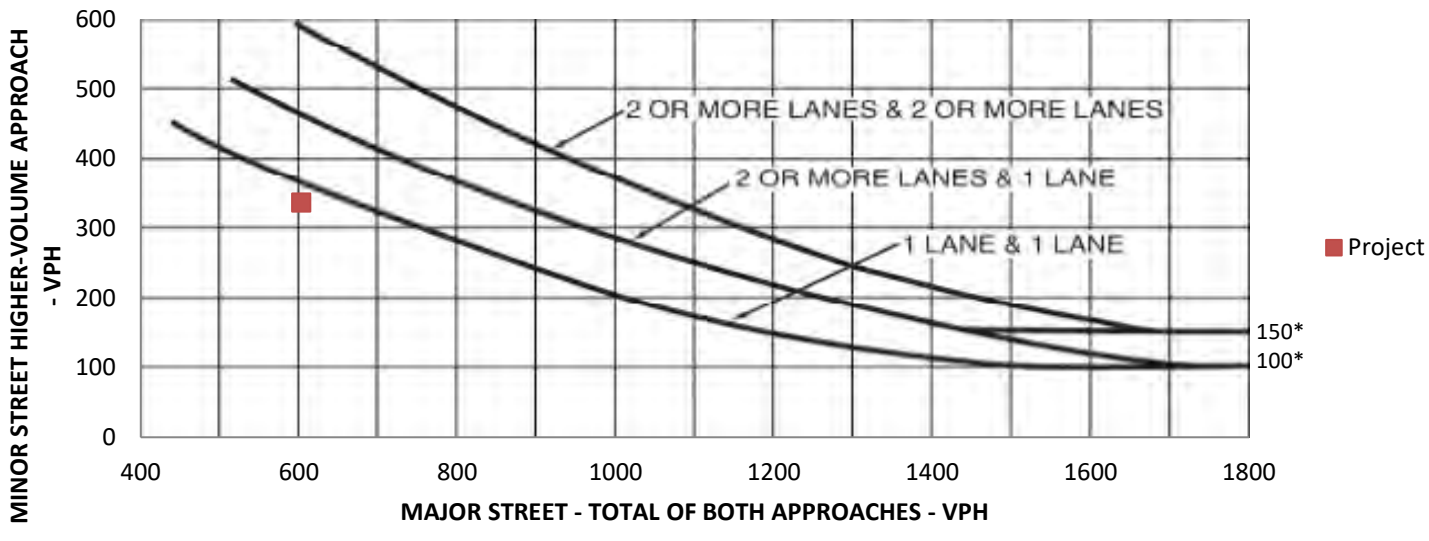
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative AM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	603
	AM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	337
	AM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

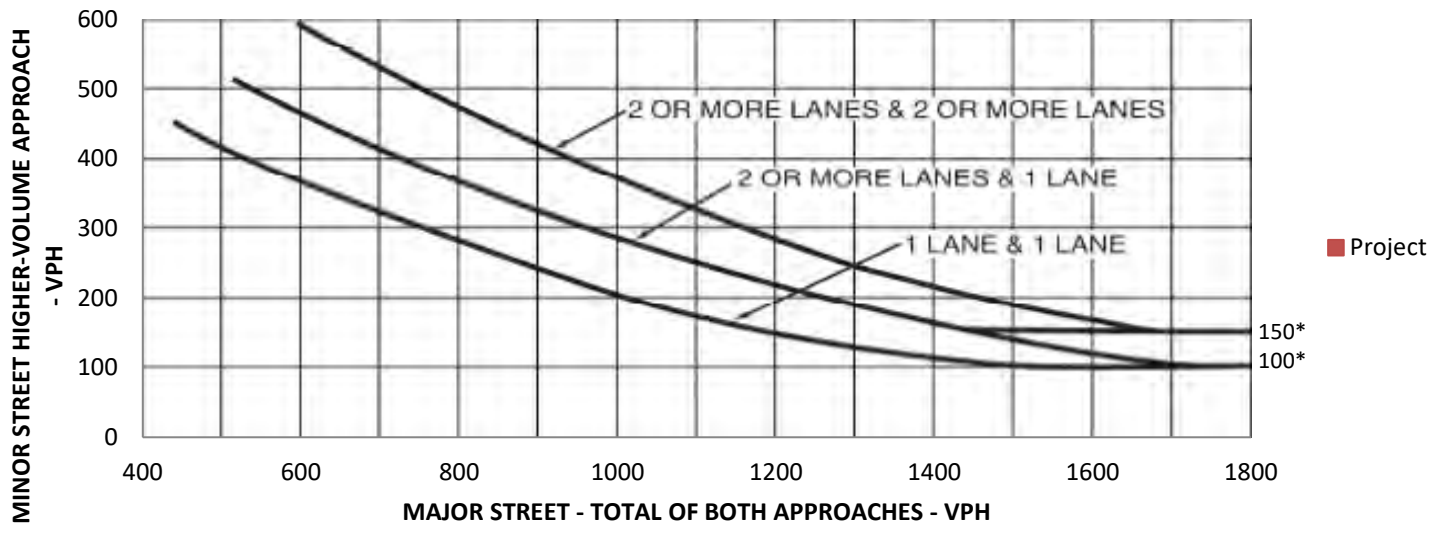
VPH - Vehicles Per Hour

Warrant 3, Peak Hour

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative PM

Major Street Name:	Wedgeworth Drive	Total of Both Approaches (VPH) =	341
	PM	Number of Apporach Lanes =	1

Minor Street Name:	Countrywood Avenue	High Volume Approach (VPH) =	226
	PM	Number of Apporach Lanes =	1



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

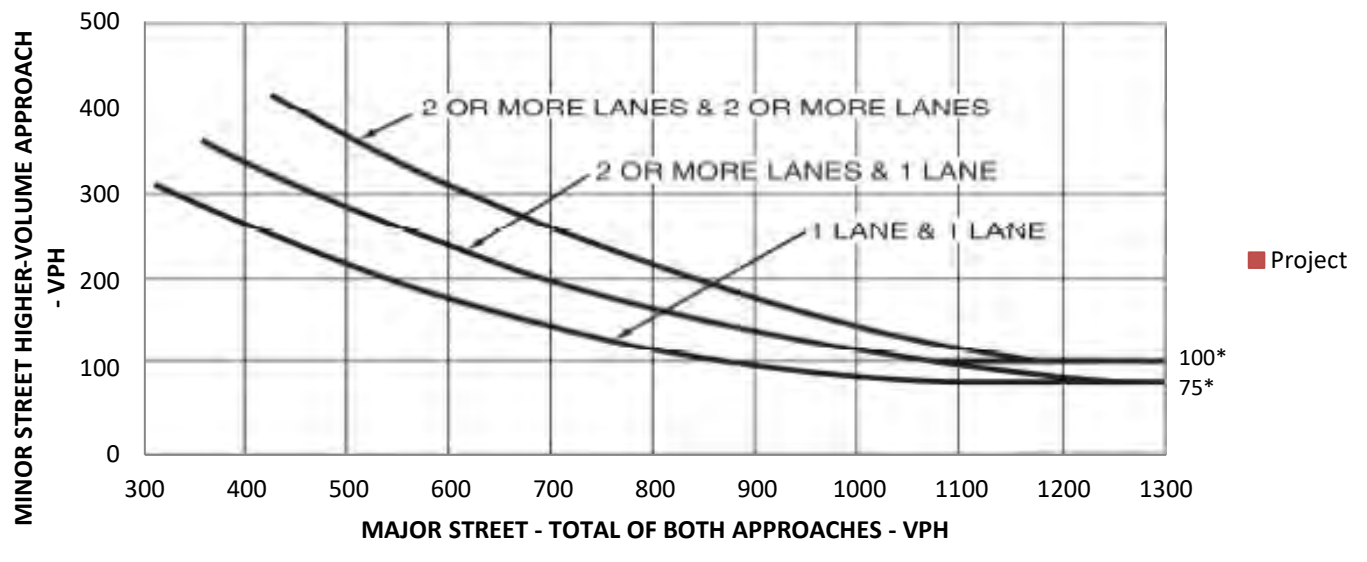
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2389
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	66
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

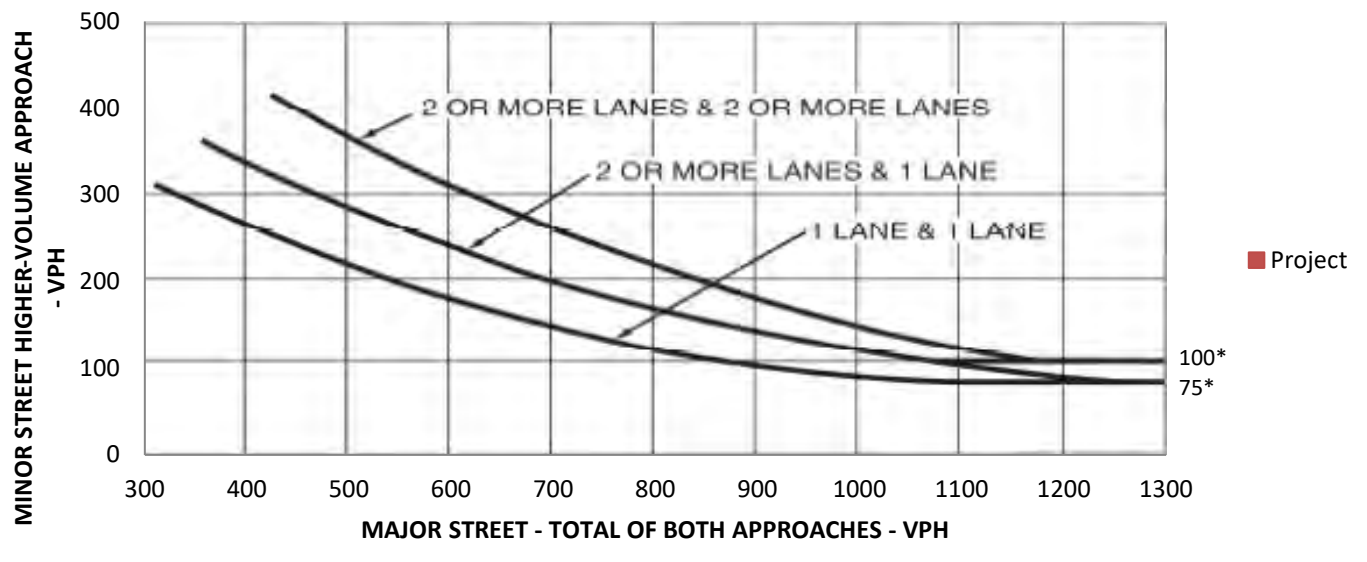
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2948
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	34
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

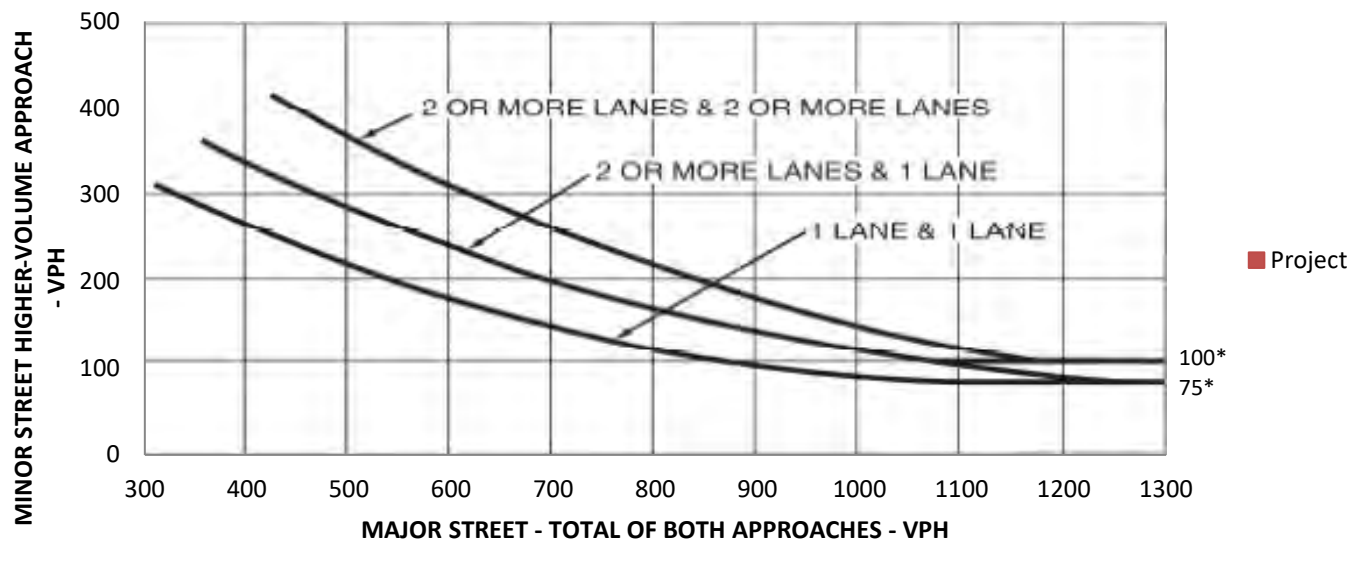
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Phase I AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2463
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	142
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

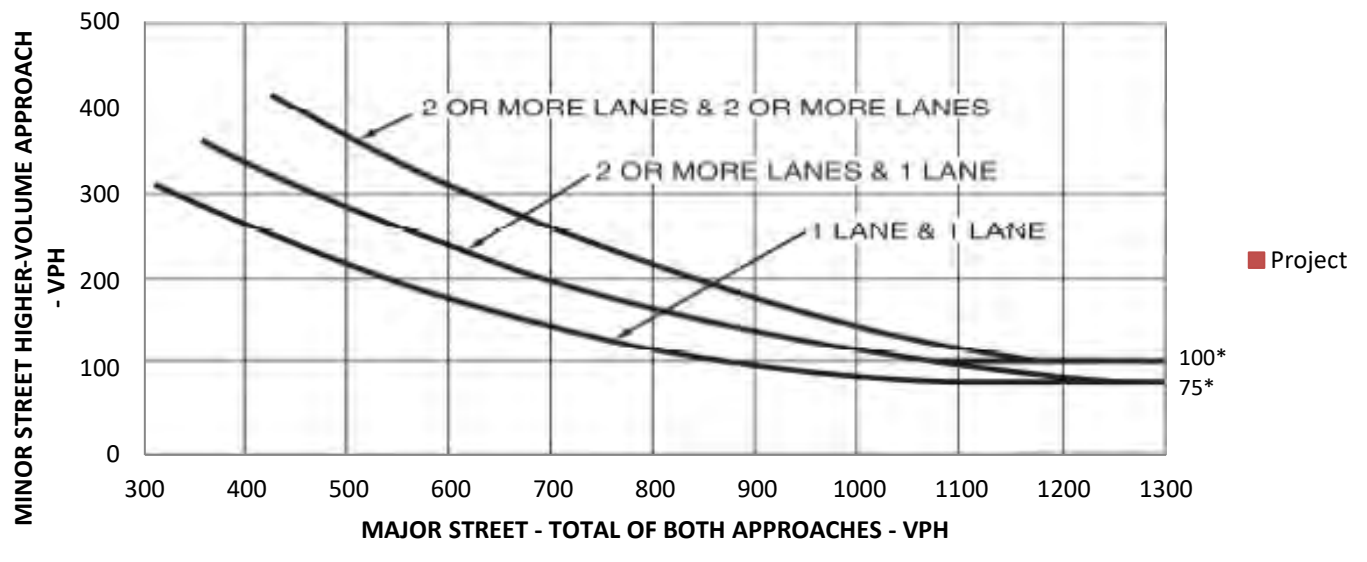
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Phase I PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2973
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	54
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

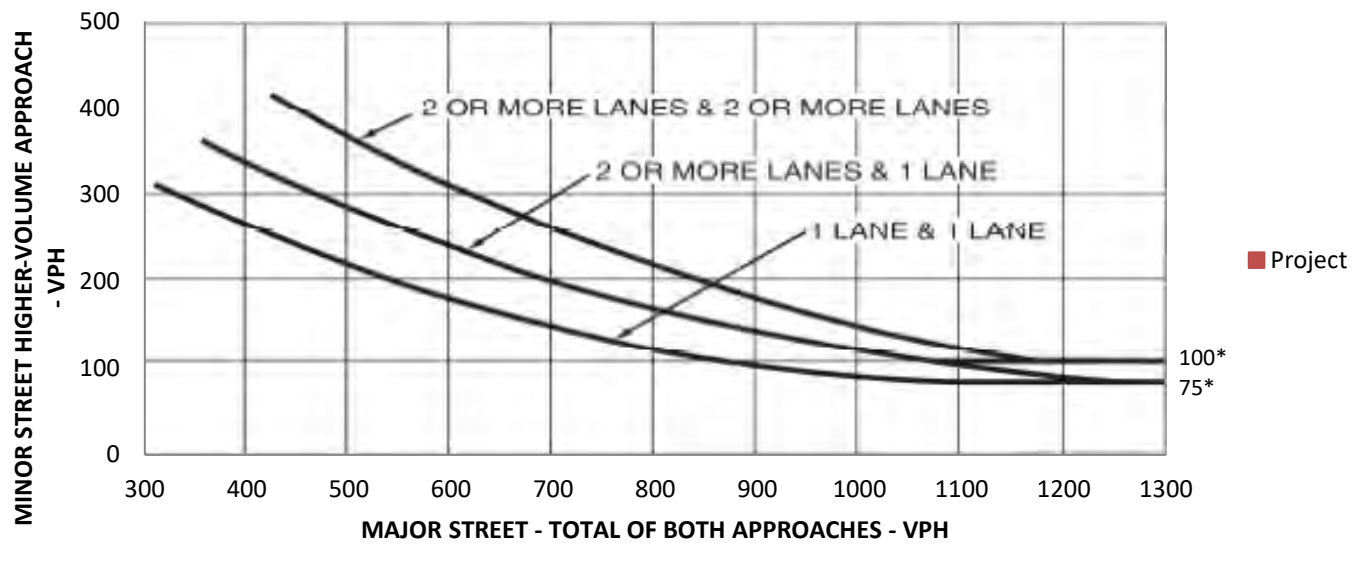
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Cumulative AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2525
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	69
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

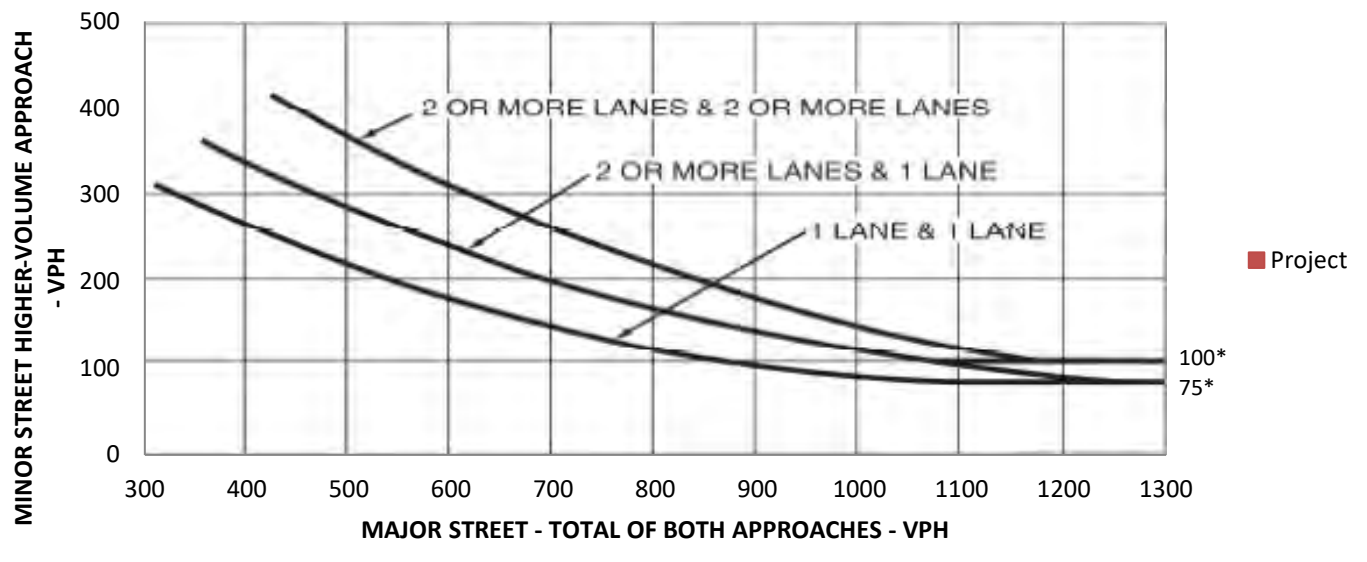
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Cumulative PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	3103
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	38
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

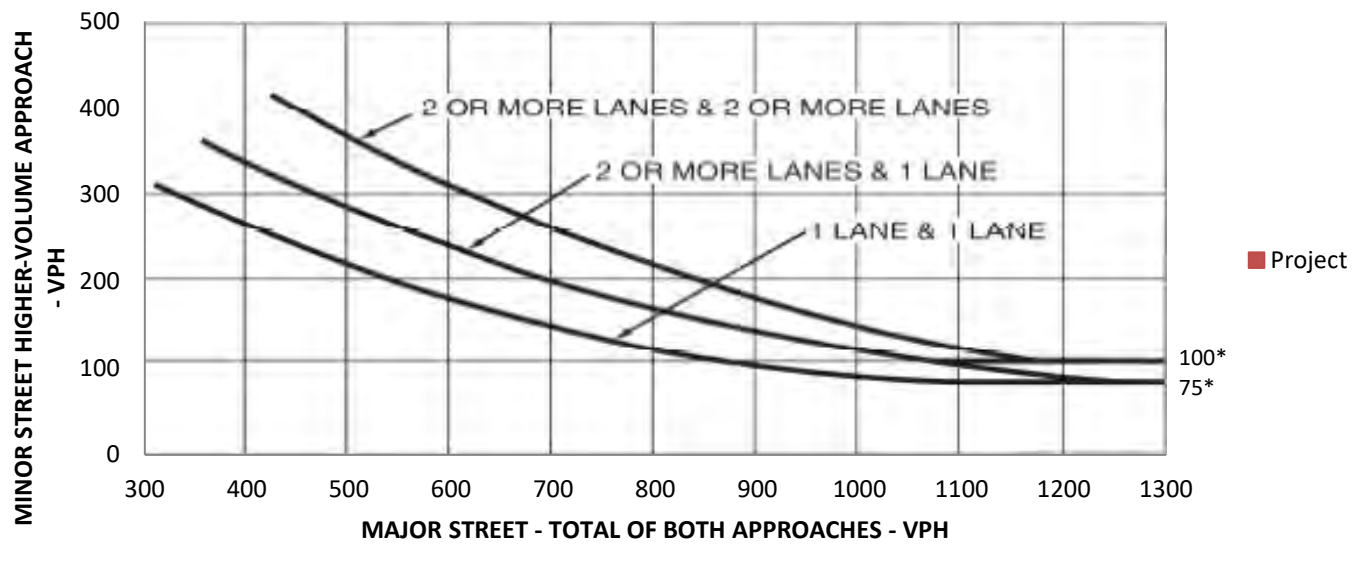
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative AM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	2595
	AM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	151
	AM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

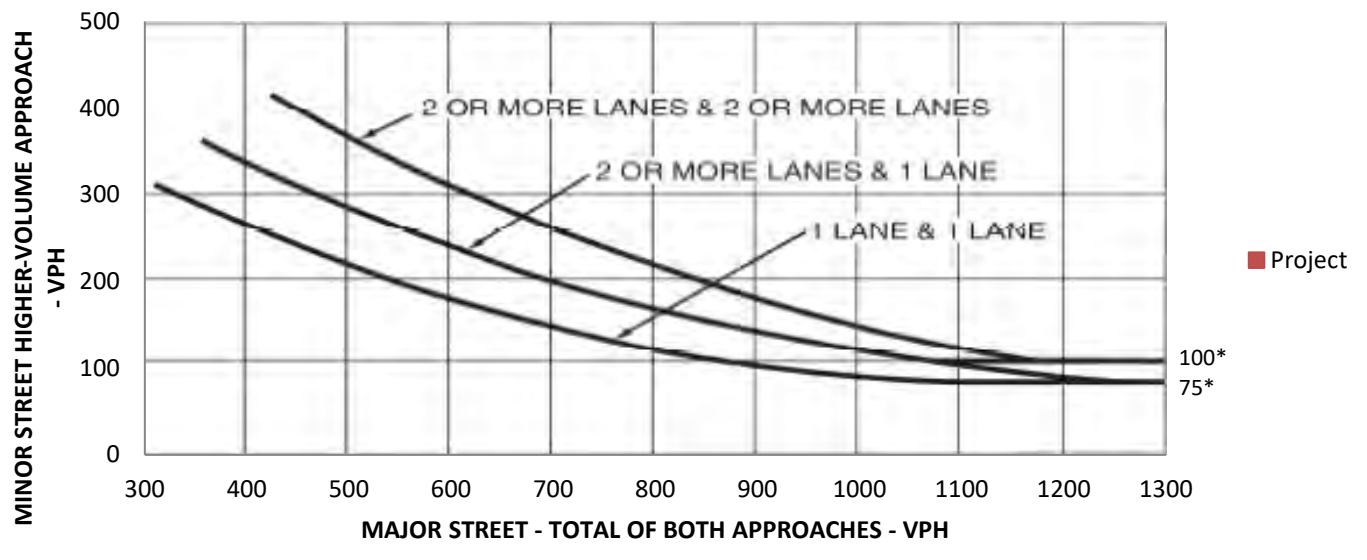
VPH - Vehicles Per Hour

Warrant 3, Peak Hour (70% Factor)

Traffic Conditions: Existing Plus Ambient Plus Phase I Plus Cumulative PM

Major Street Name:	Colima Road	Total of Both Approaches (VPH) =	3128
	PM	Number of Apporach Lanes =	2

Minor Street Name:	Park Lawn Road	High Volume Approach (VPH) =	57
	PM	Number of Apporach Lanes =	1



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: California Manual on Uniform Traffic Countrol Devices 2014 Edition

VPH - Vehicles Per Hour

Appendix G Baseball Field Hazard Assessment – Wedgeworth E.S.

Appendices

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Keenan & Associates

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License # 0451271

September 10, 2020

Mr. Hal Longan
Director, Risk Management
HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT
15959 E. Gale Avenue
City of Industry, CA 91745

RE: BASEBALL FIELD HAZARD ASSESSMENT – WEDGEWORTH E.S.

Dear Mr. Longan:

Enclosed is the report for the Hazard Assessment of the baseball fields adjacent to the Wedgeworth Elementary School site conducted on August 25, 2020. The Hazard Assessment was performed as a covered service under the Southern California ReLiEF (SCR) policy.

If you have any questions, please do not hesitate to contact me at (310) 212-0363, extension 2718.

Sincerely,

Leny Banal

Leny Banal
Senior Consultant Loss Control
Loss Control/Risk Management

LB/jl

cc: Mr. Joel Duarte, Hacienda La Puente USD
Nicole Fayaz, Keenan and Associates
Brad Keenan, Keenan and Associates
Craig Farmer, Farmer Smith & Lane LLP

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BASEBALL FIELD HAZARD ASSESSMENT
WEDGEWORTH ELEMENTARY SCHOOL

PREPARED FOR

HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT

September 10, 2020

Prepared By

Leny Banal
Senior Consultant, Loss Control

KEENAN & ASSOCIATES
2355 Crenshaw Boulevard, Suite 200
Torrance, CA 90501

Lic. #0451271

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INTRODUCTION

On August 25, 2020, Keenan & Associates conducted a Hazard Assessment of the Baseball Fields adjacent to Wedgeworth Elementary School campus of the Hacienda La Puente Unified School District.

Leny Banal, Senior Loss Control Consultant and Michele Lindsey, Loss Control Consultant conducted the inspections, and Jeff Long, Project Coordinator, processed the report.

LIMITATIONS

A sincere effort was made to conduct a thorough inspection of the baseball fields, its associated properties, and grounds. This effort was directed at identifying hazards within the specified property. The observations are based upon conditions observed at the time of the inspection and were apparent to the consultants.

The information contained in this report does not certify that the facilities, grounds, equipment, materials, or operations are in compliance with any federal, state, or local law, rule, or regulation. The information in this report does not conclude that all possible hazardous conditions were observed or reported.

SCOPE OF SERVICES

The purpose of the hazard assessment is to reduce the frequency and severity of property and liability losses at the District by identifying hazards that could potentially result in those types of losses and by offering hazard correction recommendations for the District to consider.

BACKGROUND

At the District's request, Keenan Loss Control conducted a hazard inspection of the baseball fields adjacent to the Wedgeworth Elementary School.

Mr. Hal Longan, Director of Risk Management, Mr. Joel Duarte, Director of Purchasing and Warehouse, accompanied us to the site, and access was provided by one of the site staff members, Duane.

It was shared that the District has had a long-standing relationship with a little league organization allowing the use of the fields at no cost. During the over 40-year old agreement, maintenance of the property has been provided by the organization's volunteers and parent groups.

The property has become a topic during Board meetings due to renewed discussions related to the District's site redevelopment and property plans.

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SITE SURVEYED

The snapshot below provides an aerial view of the fields and its proximity to the school site.



All four baseball fields, a small parking lot directly leading to the entrance gate, and the common areas where the scorer booths and snack shop can be accessed were included in the hazard assessment. The interior areas of the booths, snack shop, and restrooms were not accessible at the time of the visit.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

In an effort to reasonably protect athletes, spectators, and visitors from known or foreseeable risks, the District may wish to consider a review of its current hazard identification processes and/or implement a self-inspection program that includes regular, documented assessments of the site's grounds and fields.

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The observations below provide brief descriptions of the most common findings in all four fields, which are consistent with lack of regular maintenance.

- Uneven field surfaces caused by rodent holes, exposed sprinkler heads or surface erosion present elevated trip hazards. Hardened dirt and overgrown grass need to be inspected and maintained.






- There are several fencing issues (outfield fence caps need repair or replacement, wire ends of the fence are exposed, trees and branches protruding are through the fences) that need to be addressed. Defective or damaged chain link fencing can present projection or laceration hazards.

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- There were several areas in the fields where sprinkler boxes and other protrusions were exposed.





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- The benches in the dugouts that are cracked, splintered, rotted, and/or broken should be repaired or replaced. Also, pest management may need to be implemented as there was evidence of rodent feces in these areas.





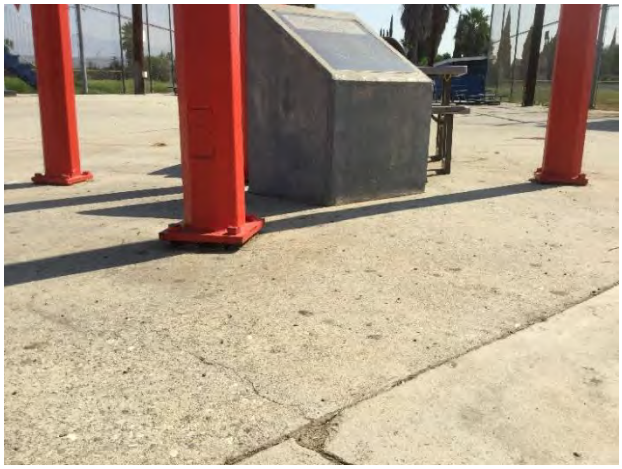
- On deck or walkways from the dugout should be safe from obstacles and the warm up areas need maintenance.





- The open areas connecting the fields have uneven surfaces, exposed concrete footings, cracks in the walkways, and raised edges, presenting elevated trip hazards. To increase visibility of ramps or areas where there are unexpected elevation changes, these areas should be marked using yellow paint.
- In addition, please consider securing access to the high-voltage box.

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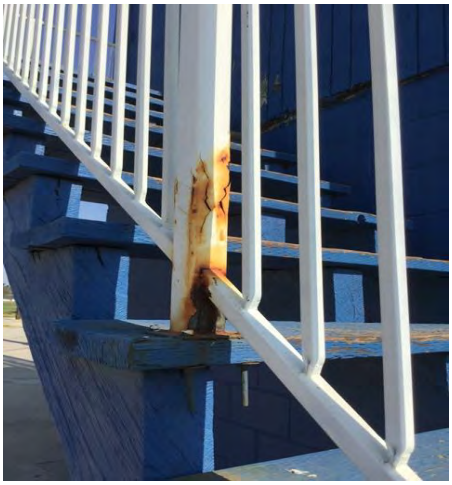
- Bleachers that contain more than three rows should be equipped with protective side railing extending upward from the third row and a protective back railing. Replace nets that are torn and have holes.





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- The stairs to the announcer/scorer booths need attention. The stair boards have deteriorated and the rails are rusty and unstable. The end covers were missing from the rail and sharp edges pose laceration hazards.





- It appeared that the integrity of the light poles and the fixtures attached to it may be compromised and need inspection, repair, or replacement. The cable supporting the pole is broken.





- Parking lots and walkways have cracks, gaps, and uneven surfaces that present trip hazards.

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- There was evidence of unauthorized access in the area such as accumulation of trash, graffiti, and baseballs outside of the field.





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Appendix H Methane Testing Report.

Appendices

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October 5, 2020

Hossein Torabzadeh
Los Angeles County Department of Public Works
Annex Building, 3rd Floor
900 S Fremont Avenue
Alhambra, California 91803

Subject: Methane Testing Report – Technical Memorandum Hacienda La Puente Unified School District Wedgeworth K-8 School, Hacienda Heights

Dear Mr. Torabzadeh:

This document presents the Methane Testing Report – Technical Memorandum (Tech Memo) for the proposed Wedgeworth K-8 School located at the northeast corner of the intersection of Wedgeworth Drive and Eagle Park Road in Hacienda Heights, Los Angeles County, California (Figure 1). PlaceWorks is submitting this Tech Memo to the Los Angeles County Department of Public Works (LACDPW), on behalf of Hacienda La Puente Unified School District (District).

Site Description

The District proposes to redevelop the existing Wedgeworth Elementary School at 16949 Wedgeworth Drive to a new K-8 school. The existing elementary school site encompasses 20 acres, and the District would develop a 10-acre portion as a K-8 school (Figure 2). The proposed school site is associated with the Assessor Parcel Number [APN] 8209-001-901.

The project site is adjacent to ballfields, followed by the Pomona Freeway (SR-60) to the north, Wedgeworth Drive to the south, Eagle Park Road to the west, and Pepperbrook Channel to the east. Residential land is located to the east, west, and south. Based on a review of historical aerial photographs (Appendix A), the project site had been utilized for agricultural purposes, as an orchard from at least 1928 to around 1952 and then the site was used for grain crops from 1952 to about 1964. Wedgeworth Elementary School was constructed in 1969 and additional buildings were added in 1973. A review of the historical aerial photographs from the time period that the well was installed shows that the orchard was not disturbed in the location that was mapped near the school. There are no dirt roads or missing trees in that area that would be needed to drill a well.

Purpose of the Investigation

Based on the California Department of Conservation Geologic Energy Management Division (CalGEM) Well Finder website, the Site is located near a plugged and abandoned dry hole that was advanced and abandoned in 1946 since it was nonproducing. Based on a 2019 Construction Site Well Review by CalGEM engineers (Appendix B), a revised location was mapped by CalGEM engineers that places the dry abandoned well underneath the westbound lanes of the Pomona Freeway-State Route 60 (SR-60) approximately 1,020 feet north of where it is mapped on the Well Finder website (Figure 3). The project site is located outside the Walnut Oil Field and is not located within any oil field.

The District decided to complete a methane investigation to determine if there are any significant methane concentrations at or above levels of concern beneath the footprints of the proposed structures.

PlaceWorks is a certified City of Los Angeles Department of Building and Safety Testing Agency for site methane testing (Test Lab #TA10210) and our personnel are experienced with conducting methane investigations throughout California.

Soil Gas Sampling Program

PlaceWorks conducted the work in accordance with the California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board and San Francisco Regional Water Quality Control Board's *Advisory – Active Soil Gas Investigations*, dated July 2015. Interphase Environmental, Inc. of Commerce, California drilled and installed the soil gas probes on behalf of PlaceWorks using a truck mounted Geoprobe.

On September 4, 2020, five shallow gas probes were installed within the footprint of each of the five proposed buildings at 5 feet below ground surface (bgs) (Figure 3). In addition, deeper probes were installed at 15 feet bgs. The soil gas probes were installed in accordance with the design details presented in the Cal-EPA guidance. The probes were constructed using Nylaflow™ polyethylene tubing, with appropriate porous probe tips for the screened interval. The probes were installed on September 4, 2020.

Two rounds of soil gas sampling were conducted. The first round was conducted on September 8, 2020 and the last round was conducted on September 9, 2020. Prior to collecting soil gas samples, measurements of ambient barometric pressure and gas probe pressure were obtained. Sampling involved purging the probe tubes of stagnant air, followed by the measurement of methane concentrations using a Photovac FID organic vapor analyzer OVA, and a Jerome 631-X hydrogen sulfide analyzer. The sampling program is included in Table 1. A Professional Geologist was on-site to observe field activities.

Testing Results

PlaceWorks did not detect any methane from any of the probes onsite on either day using a very low detection limit of 0.5 parts per million by volume (ppmv) (Table 2). The level of concern for methane in soil gas used by the Department of Toxic Substances Control for a school site is 5,000 ppmv. PlaceWorks only detected hydrogen sulfide from two probes out of ten, and of these, only one probe showed a detectable concentration on both days of sampling (Table 3).

SVP-3-15' had a hydrogen sulfide concentration of 0.003 ppmv on September 8th, and 0.004 ppmv on September 9th. SVP-4-15' had a hydrogen sulfide concentration of 0.006 ppmv on September 8th, and was nondetect on September 9th. The hydrogen sulfide detections are close to the detection limit of the Jerome 631-X instrument (0.003 ppmv). The source of the trace hydrogen sulfide is not known for certain, but a buried recycled irrigation water main and a sewer main are located within 70 feet to the east of SG-3 and SG-4, and the adjoining field to the east is irrigated with recycled water. The level of concern for hydrogen sulfide in soil gas used by the Department of Toxic Substances Control for a school site is 10 ppmv.

The differential pressure readings for the probes showed that all of the locations had less than 100 inches of water of vacuum, indicating that the samples are representative of the underlying formation, which is mostly silt based on direct observation for this report and the previous Preliminary Environmental Assessment field work.

Quality Assurance/Quality Control (QA/QC)

Hand-held instruments were calibrated with the appropriate calibration gas prior to each sampling event. Since no methane was detected, it was not necessary to send any samples to a fixed laboratory. The workplan

stated that if methane was detected at a concentration of 5,000 ppmv or greater, then ten percent of all positive detections would be sent to a fixed laboratory.

The standard Quality Assurance Project Plan (QAPP) previously submitted and approved by DTSC for similar projects was followed and is attached to the end of this Report (Appendix C). Additionally, a Health and Safety Plan (HASP) that was developed for the Preliminary Environmental Assessment of this project was followed during site sampling activities is also attached to the end of this Report in Appendix D.

Conclusions and Recommendations

Based on the 2019 Construction Site Well Review by CalGEM engineers and the results of this investigation, it is probable that the location of the well depicted on the CalGEM Well Finder website is not the correct location of the former dry well. Based on the information from CalGEM and the results of this report, PlaceWorks recommends that Los Angeles County Department of Public Works rescinds their requirement for the proposed new school buildings to install a methane mitigation system.

If you have any questions or comments, or if additional information is required regarding this Tech Memo, please contact the undersigned at (909) 989-4449.

Sincerely,

PLACEWORKS

Denise Clendening

Denise Clendening, Ph.D.
Associate Principal

Michael Watson

Michael Watson, PG 8177
Project Geologist



Enclosures:

References

Table 1 – Sampling and Analysis Program
Table 2 – Summary Table of Methane Results in Soil Gas
Table 3 – Summary Table of Hydrogen Sulfide Results in Soil Gas
Table 4 – Differential Pressure Readings
Figure 1 – Site Location
Figure 2 – Current Site Conditions
Figure 3 – Sample Locations
Appendix A – Historical Aerial Photographs
Appendix B – CalGEM Construction Site Well Review
Appendix C – Quality Assurance Project Plan
Appendix D – Health and Safety Plan

c: Hacienda La Puente Unified School District; Attn. Mr. Hansberger

REFERENCES

1. California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board and San Francisco Regional Water Quality Control Board, 2015. *Advisory – Active Soil Gas Investigations*, dated July 2015

2. EDR, 2019. Aerial Photographs dated 1928, 1938, 1948, 1952, 1963, 1970, 1977, 1981, 1983, 1990, 1994, 2002, 2005, 2009, 2012, and 2016.

TABLE 1
SAMPLING AND ANALYSIS PROGRAM
Wedgeworth K-8 School
Hacienda La Puente Unified School District
Hacienda Heights, California

Sample Number	Depth (feet bgs)	Rationale	Methane by MicroFID	Hydrogen Sulfide by Jerome 631-X
Soil Gas Samples				
SG-1	5	Nearby Dry Well	D	D
	15		D	D
SG-2	5	Nearby Dry Well	D	D
	15		D	D
SG-3	5	Nearby Dry Well	D	D
	15		D	D
SG-4	5	Nearby Dry Well	D	D
	15		D	D
SG-5	5	Nearby Dry Well	D	D
	15		D	D
Total			10 D	10 D

Note:

D=Discrete

Probes will be sampled twice at an interval of at least 24 hours.

10% of all positive methane detections above 5,000 ppmv were to be sent to a fixed laboratory

TABLE 2
Summary Table of Methane Results in Soil Gas
Wedgeworth K-8 School
Hacienda La Puente Unified School District
Hacienda Heights, California

	Sample Number	SG-1		SG-2		SG-3		SG-4		SG-5	
	Depth (feet bgs)	5'	15'	5'	15'	5'	15'	5'	15'	5'	15'
Analysis	Date	Concentration in parts per million by volume (ppmv)									
Methane by GEM 2000 Plus	9/8/2020	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Methane by GEM 2000 Plus	9/9/2020	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Notes:
ND - Not Detected
The DTSC recommended level of concern for methane in soil gas beneath a school site is 5,000 ppmv.

TABLE 3
Summary Table of Hydrogen Sulfide Results in Soil Gas
Wedgeworth K-8 School
Hacienda La Puente Unified School District
Hacienda Heights, California

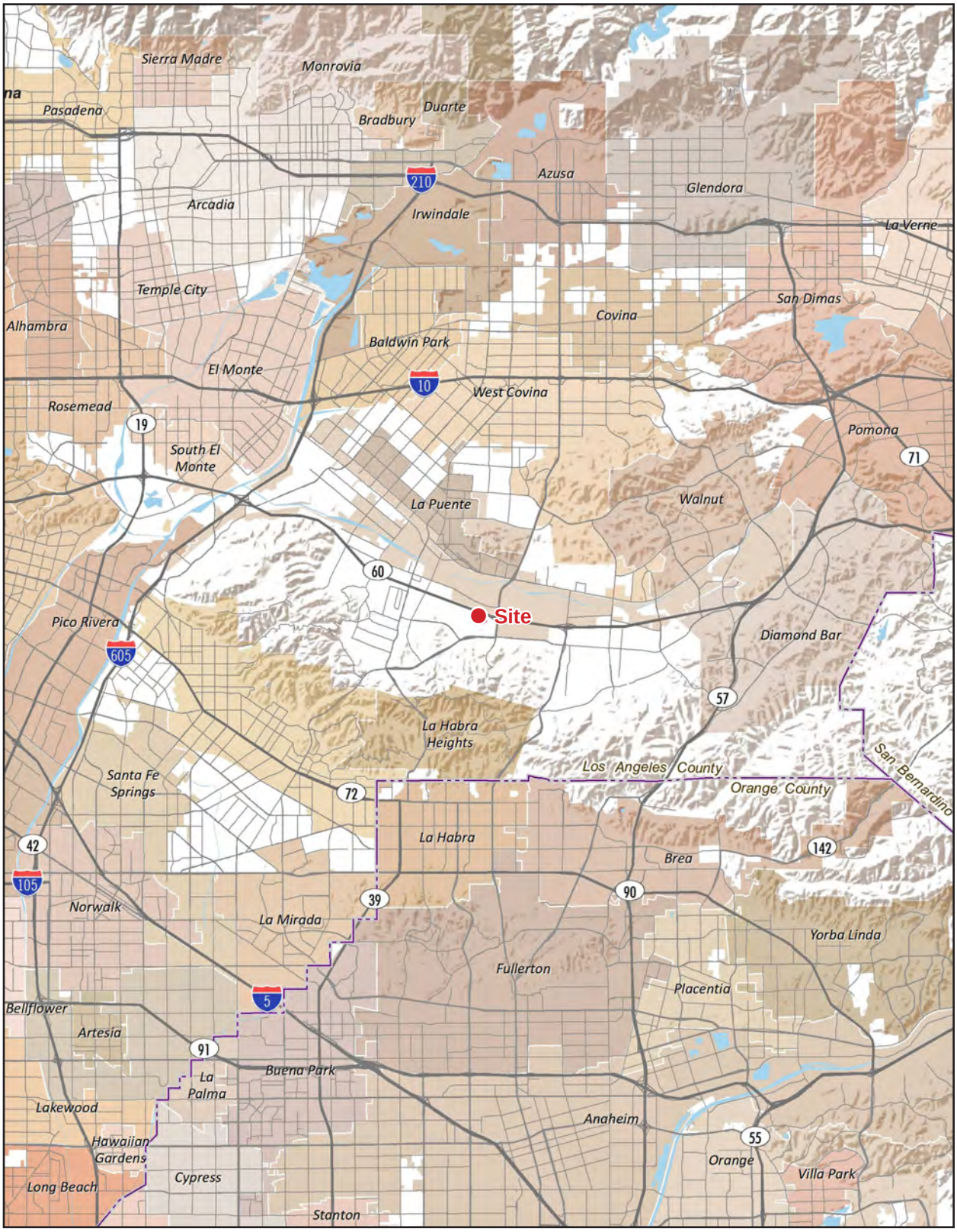
	Sample Number	SVP-1		SVP-2		SVP-3		SVP-4		SVP-5	
	Depth (feet bgs)	5'	15'	5'	15'	5'	15'	5'	15'	5'	15'
Analysis	Date	Parts per million by volume (ppmv)									
H_2S by 631-X	9/8/2020	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<0.003	0.003	ND<0.003	0.006	ND<0.003	ND<0.003
H_2S by 631-X	9/9/2020	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<0.003	0.004	ND<0.003	ND<0.003	ND<0.003	ND<0.003

Notes:
ND - Not Detected
The DTSC recommended level of concern for hydrogen sulfide in soil gas beneath a school site is 10 ppmv.

TABLE 4
Differential Pressure Readings
Wedgeworth K-8 School
Hacienda La Puente Unified School District
Hacienda Heights, California

	Sample Number	SVP-1		SVP-2		SVP-3		SVP-4		SVP-5	
	Depth (feet bgs)	5'	15'	5'	15'	5'	15'	5'	15'	5'	15'
	Date	Inches water									
Difference in Pressure	9/8/2020	-42	-6	-72	-48	<0.05	<0.05	<0.05	<0.05	<0.05	-95
Difference in Pressure	9/9/2020	-90	-24	-84	-20	<0.05	<0.05	<0.05	<0.05	<0.05	-94

Figure 1 - Site Location



Note: Unincorporated county areas are shown in white.

0 3
Scale (Miles)

Source: ESRI, 2018

Figure 2 - Current Site Conditions



Project Boundary

School Boundary

Source: ESRI, 2018

0 300
Scale (Feet)

Figure 3 - Sampling Locations



Source: Nearmap, 2020

PlaceWorks

Wedgeworth ES

16949 Wedgeworth Dr

Hacienda Heights, CA 91745

Inquiry Number: 5461186.8

October 23, 2018

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/23/18

Site Name:

Wedgeworth ES
16949 Wedgeworth Dr
Hacienda Heights, CA 91745
EDR Inquiry # 5461186.8

Client Name:

PlaceWorks
3 MacArthur Place Suite 1100
Santa Ana, CA 92707
Contact: Denise Clendening

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Flight Date: May 22, 2002	USDA
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: September 06, 1990	USDA
1983	1"=500'	Flight Date: November 19, 1983	EDR Proprietary Brewster Pacific
1981	1"=500'	Flight Date: February 21, 1981	EDR Proprietary Brewster Pacific
1977	1"=500'	Flight Date: May 29, 1977	EDR Proprietary Brewster Pacific
1970	1"=500'	Flight Date: February 18, 1970	EDR Proprietary Brewster Pacific
1963	1"=500'	Flight Date: February 28, 1963	USGS
1952	1"=500'	Flight Date: August 01, 1952	USGS
1948	1"=500'	Flight Date: July 10, 1948	USGS
1938	1"=500'	Flight Date: May 22, 1938	USDA
1928	1"=500'	Flight Date: January 01, 1928	FAIR

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INQUIRY #: 5461186.8
YEAR: 2016
= 500'
N
EDR


INQUIRY #: 5461186.8
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 5461186.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 5461186.8
YEAR: 2005
= 500'
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EDR


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YEAR: 2002
= 500'
N
EDR


INQUIRY #: 5461186.8
YEAR: 1994
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EDR


INQUIRY #: 5461186.8
YEAR: 1990
= 500'
N
EDR


INQUIRY #: 5461186.8
YEAR: 1983
= 500'
N
EDR
H-21


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YEAR: 1981
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EDR


INQUIRY #: 5461186.8
YEAR: 1977
= 500'
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EDR



INQUIRY #: 5461186.8

YEAR: 1970

= 500'

N

EDR


INQUIRY #: 5461186.8
YEAR: 1963
= 500'
N
EDR



INQUIRY #: 5461186.8

YEAR: 1952

= 500'

N

EDR



INQUIRY #: 5461186.8

YEAR: 1948

= 500'

N

EDR



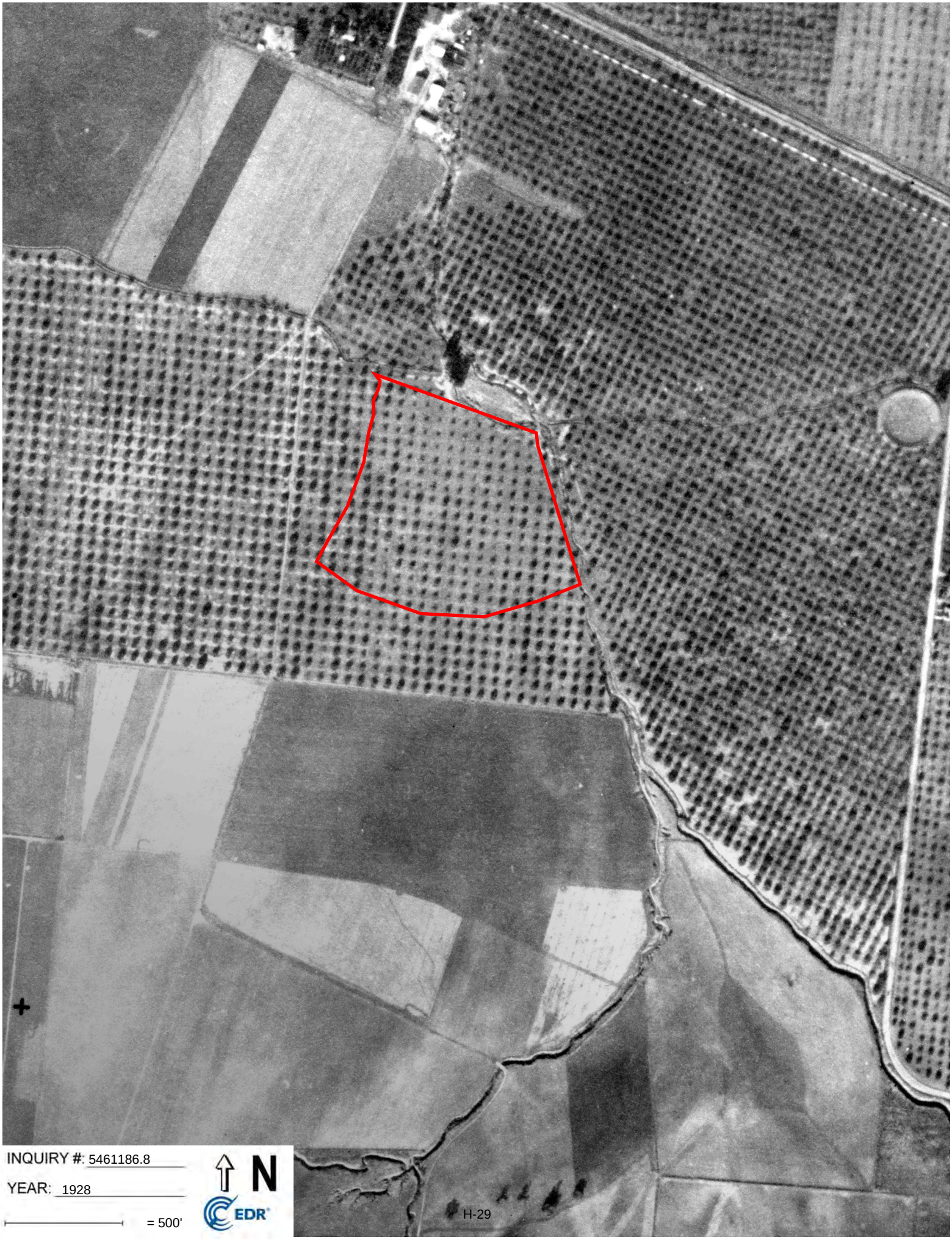
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YEAR: 1938

= 500'

N

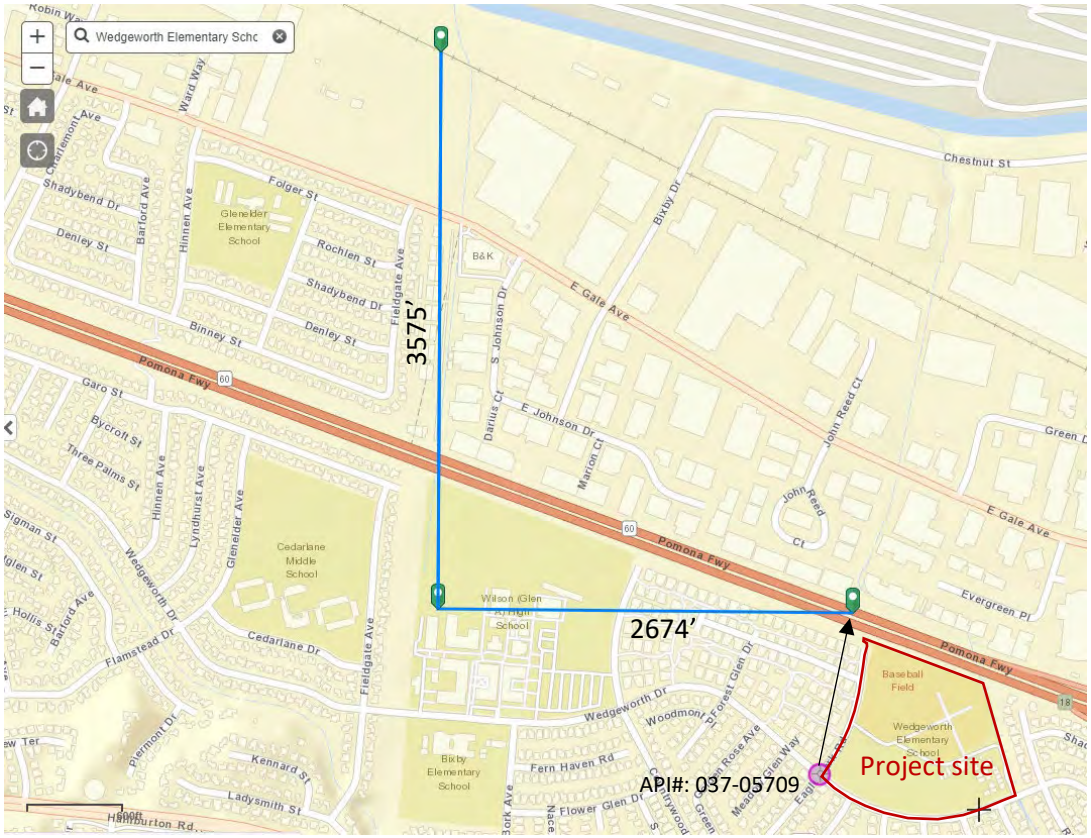
EDR


INQUIRY #: 5461186.8
YEAR: 1928
= 500'
N
EDR
H-29

Project Name: Wedgeworth K-8 School Redevelopment and Residential
Address: 16949 Wedgeworth Drive, Hacienda Heights, CA 91745
APN: 8209-001-901

Field	Sec.	Twn	Rge
None specific	16	02S	10W, SB

Operator	API No.	Well Name	Abd Date	Abd Stds	Inadequate / Missing Plugs	Comment	Well Evaluation
Morton and Sons	04-037-05709	"Wm. Rowland Estate" 2-1	11/11/1947				Well not in project boundary



Source: DOGGR Online Map, revised well location from well file

Project Name: Wedgeworth K-8 School Redevelopment and Residential
Address: 16949 Wedgeworth Drive, Hacienda Heights, CA 91745
APN: 8209-001-901

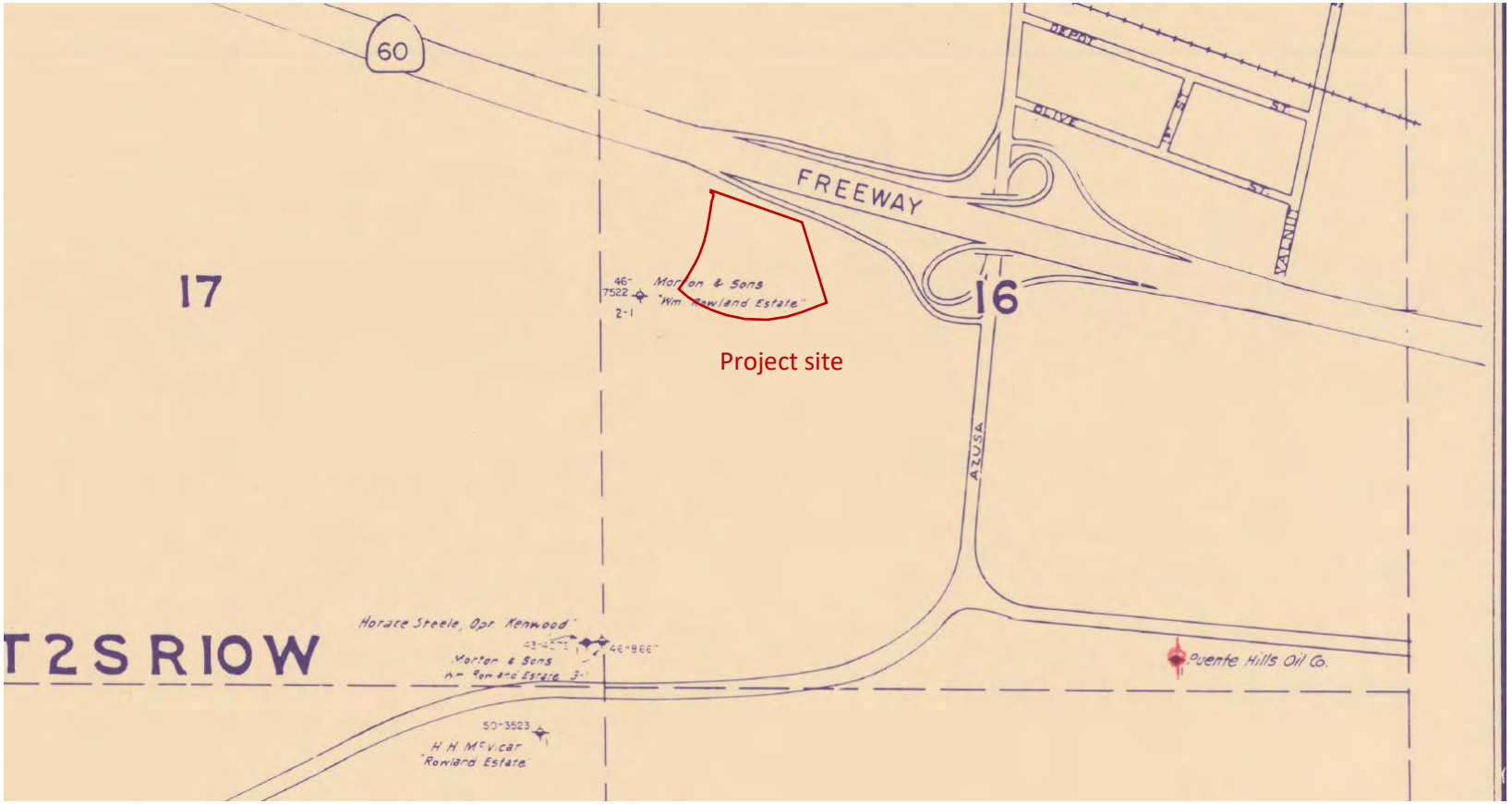
Morton and Sons
WELL SUMMARY REPORT LOS ANGELES, CALIFORNIA
Operator formerly A.W.Lyddon, Operator Field xxx
Well No. Wm Rowland Estate #2-1 Sec. 16, T. 2S, R. 10W, S.B. B. & M.
Location 3575' S &2674' E of intersection of westerly line of Tr.4280 L.A. Cty and southerly line of U.P.R.R. right of way Elevation of ~~derrick floor~~ ground above sea level 411.46 feet.

Source: Well file summary report.



Source: Los Angeles County of the Assessor Parcel Map

Project Name: Wedgeworth K-8 School Redevelopment and Residential
Address: 16949 Wedgeworth Drive, Hacienda Heights, CA 91745
APN: 8209-001-901



Project Name: Wedgeworth K-8 School Redevelopment and Residential
Address: 16949 Wedgeworth Drive, Hacienda Heights, CA 91745
APN: 8209-001-901

Source: 104 Blueline Map

Project Name: Wedgeworth K-8 School Redevelopment and Residential
Address: 16949 Wedgeworth Drive, Hacienda Heights, CA 91745
APN: 8209-001-901

WEDGEWORTH K-8 SCHOOL AND RESIDENTIAL DEVELOPMENT PROJECT DRAFT EIR
HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT

Figure XX - Location of Wildcat Exploratory Well



November 2018 | Quality Assurance Project Plan

WEDGEWORTH ELEMENTARY SCHOOL

for Hacienda La Puente Unified School District

Prepared for:

Hacienda La Puente Unified School District
Contact: Mark Hansberger, Director
Facilities Projects
15959 East Gale Avenue
City of Industry, California 91716

Project Number:
HLPU-01.0

Prepared by:

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Ontario, California 91764
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1. Introduction

This Quality Assurance Project Plan (QAPP) has been prepared by PlaceWorks on behalf of Hacienda La Puente Unified School District (District) to address quality assurance (QA) and quality control (QC) policies associated with the collection of environmental data at the Wedgeworth Elementary School Site (site), in Hacienda Heights, California. This QAPP presents the plan for sampling and analysis as part of the investigation. U.S. Environmental Protection Agency (USEPA) policy requires a QAPP for all environmental data collection projects mandated or supported by the USEPA through regulations or other formalized means (USEPA 1998a). The purpose of this QAPP is to identify the methods to be employed to establish technical accuracy, precision, and validity of data that is generated at the site.

This QAPP contains general and specific details regarding field sampling, laboratory, and analytical procedures that apply to investigation activities. It provides field and laboratory personnel with instructions regarding activities to be performed before, during, and after field investigations. These instructions will insure data collected for use in project decisions will be of the type and quality required to meet the data quality objectives (DQOs) for the project.

Guidelines followed in the preparation of this QAPP are described in EPA Requirements for Quality Assurance Plans for Environmental Data Operations, External Review Draft Final, EPA QA/R-5 (USEPA 1998a) and EPA Guidance for Quality Assurance Project Plans, EPA QA/G-5 (USEPA 1998b). Other documents that have been referenced in this plan include, Guidance for the Data Quality Objectives Process, EPA QA/G-4 (USEPA 1994a) and Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (USEPA SW-846, Third Edition, 1996).

1.1 PROJECT HISTORY AND OBJECTIVES

The project site is the 10-acres located at 16949 Wedgeworth Drive, Hacienda Heights, California. The project site is located within Section 16 of Township 2 South, Range 10 West of the San Bernardino Base Line and Meridian.

Past usage of the site was assessed through an interview, historical aerial photographs, topographic maps and databases. Copies of historical information reviewed are included in Appendix B. Based on a review of historical information; the subject site was developed for agricultural purposes from at least 1928 to 1952 as an orchard and then from 1952 to 1972 the site was utilized for row crops. After 1972 the site is occupied by Wedgeworth Elementary School.

1. Introduction

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2. Project Description

This section presents information concerning the proposed sampling activities, selected analytical parameters, data quality objectives, and the resulting project decisions.

2.1 ANALYTICAL SCOPE

The planned sampling effort includes the sampling and analysis of shallow soils for a list of potential hazardous substances. Soil samples will be collected on the project area in accordance with the protocols detailed in the DTSC's PEA Guidance Manual (DTSC 1999).

The appropriate analyses selected for this field program, and the rationale for selection of these parameters, will be further provided in the Workplan. A&R Laboratories, Inc. (ARL), located in Ontario, California, will perform testing of soil samples.

2.2 DATA USE

Decisions to be made based upon the planned sampling and analysis effort will be determined by the data compiled from the sampling and analysis program. It is intended that data collected through implementation of this QAPP will satisfy federal, state, and local data quality requirements. These data may be used to characterize the nature and extent of contamination, support risk assessment, support the evaluation of corrective/remedial action, and/or assist in determination of additional actions.

The presence of environmental contaminants will be determined by the extent of valid detectable concentrations of the constituents discussed above. If the data associated with any detections of chemicals of potential concern (COPCs) are confirmed, the data will be used to assess risk using accepted methods for determining potential carcinogenic and non-carcinogenic exposures. If results from the risk screening evaluations indicate no risks of exposure with respect to the use of the property, then the District will use the data to support No Further Action consent from DTSC, and the proposed development may continue without modification. If the evaluation indicates unacceptable risks of exposure, then the data can be used by District for further consideration of action.

2. Site Description

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3. Project Organization

This section provides a description of the organizational structure and responsibilities of the individual positions for this project. This description defines the lines of communication and identifies key personnel assigned to various activities for the project.

3.1 HACIENDA LA PUENTE UNIFIED SCHOOL DISTRICT

Mr. Mark Hansberger is the designated contact person for the District. Mr. Hansberger will be responsible for the directional decisions, as well as budget control, and for work conducted at the school site. Mr. Hansberger, or designee, may perform document review of related work plans, reports, and drawings for activities associated with this project.

3.2 PLACEWORKS

The investigation contractor has responsibility for assigned phases of investigation and reporting. Together the management team (Project Manager and Field Manager) will be responsible for the technical planning and implementation of the work. The QA staff has responsibility for effective planning, verification and management of QA activities associated with the assigned project.

Dr. Denise Clendening is the PlaceWorks Project Manager and will serve as the primary contact with the DTSC and the District. Her responsibilities include strategy development, budget control, document control, project management, risk assessment and document review.

Mr. Michael Watson of PlaceWorks is a Professional Geologist in the State of California. Mr. Watson's responsibilities include field activities and preparation of required reports and data validation including quality assurance/quality control.

3.3 LABORATORY

The primary offsite laboratory is anticipated to be ARL in Ontario, California. ARL will perform analytical testing for soil samples collected for this investigation. The laboratory's project manager will report to the PlaceWorks Field Manager on all aspects of the sample analysis. In addition, the PlaceWorks QA Manager will be advised of any matters related to data quality during the course of the investigation.

3. Project Organization

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4. Data Quality Objectives

DQOs have been specified for each data collection activity. The project work will be conducted and documented so that the data collected are of sufficient quality for their intended use (USEPA 1998). DQOs specify the data type, quality, quantity, and uses needed to make decisions, and are the basis for designing data collection activities. The DQOs have been used to design the data collection activities that will be presented in the Workplan. The DQOs for the project are discussed in the following sections.

4.1 DATA QUALITY OBJECTIVES

The project DQOs developed specifically for the planned sampling and analysis program have been determined based on USEPA's seven-step DQO process (USEPA 1994a). The Project Manager will evaluate the DQOs to determine if the quantitative and qualitative needs of the sampling and analysis program have been met. The project definition associated with each step of the DQO process can be summarized as follows:

State the problem: The purpose of the sampling program is to determine if the proposed site is acceptable for the development of a new educational facility. Although the proposed development of the site will result in asphalt or concrete surfacing over the majority of the site, exposed soils will exist in landscaped areas where students could come into contact. Previous investigations have not performed a complete evaluation of potential contamination based on historical use of the property.

Identify the Decision: The data obtained from the sampling and testing activities will be used to evaluate if releases of hazardous substances from historical uses have occurred at the site. The investigative results will be further evaluated to determine to what extent any contamination identified will result in risk of exposure. The results will be compiled and used to assess the relative threat associated with any contamination identified, through a baseline risk assessment. Based on the calculation of human health and ecological risks for the site, the suitability of the property for its intended development will be determined.

Identify Inputs to the Decision: Inputs to the decision will include results of analytical testing of soil gas samples, and shallow soils from selected locations on the site. Each of these matrices will be tested for the specified analytes discussed in Section II.

Define the Study Boundaries: The boundaries of the field sampling and analysis program will be the perimeter of the site as discussed above and detailed in the Workplan.

Develop a Decision Rule: Decisions will be based upon laboratory results for the target constituents presented in Tables 1 through 3 for each respective matrix tested. If no valid detectable concentrations of target compounds are reported for the given samples, then a decision will be made that the site is fully characterized with respect to the compounds tested and no further sampling will be required as part of this

investigation. If target constituents are detected in the samples tested, then the data will be compiled for use in calculating the human health and ecological risk of exposure. The results of the risk evaluation will be used by the District to support a No Further Action consent from DTSC, if the data indicate risk is acceptable.

Specify Limits on Decision Error: The results of all analytical testing will be subjected to data validation specified in Section 7.3. Data are determined to be valid if the specified DQOs for precision, accuracy, representativeness, comparability and completeness are achieved. The results of any detected target constituents will be considered in evaluating the need for additional sampling of soil gas and/or site soil, and assessing the necessity for reducing any risks posed by the potential contamination.

Optimize the Design: The field sampling program has been designed to provide the type and quantity of data needed to satisfy each of the aforementioned objectives. A separate Workplan provides the specifications for the data collection activities, including the numbers of samples, respective locations, and sampling techniques. The quality of the data will be assessed through the procedures further described in this QAPP.

4.2 PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY AND COMPLETENESS

The basis for assessing the elements of data quality is discussed in the following subsections. In the absence of laboratory specific precision and accuracy limits, the QC limits listed in this section must be met.

4.2.1 Precision

Precision measures the reproducibility of repetitive measurements. It is strictly defined as the degree of mutual agreement among independent measurements as the result of repeated application of the sample process under similar conditions.

Analytical precision is a measurement of the variability associated with duplicate or replicate analyses of the same sample in the laboratory. Precision is assessed by analysis of the results between laboratory quality control sample pairs. These include laboratory control sample (LCS) and LCS duplicates, matrix spike (MS) and MS duplicates (MSD), or sample duplicates. If the recoveries of analytes in the specified control samples pairs are comparable within established control limits, then precision criteria are satisfied.

Total precision is a measurement of the variability associated with the entire sampling and analytical process. It is determined by analysis of duplicate (two) or replicate (more than two) field samples, and measures variability introduced by both the laboratory and field operations. Field duplicate samples are analyzed to assess combined field and analytical precision.

Duplicate results are assessed using the relative percent difference (RPD) between duplicate measurements. If the RPD for laboratory quality control samples exceeds 30 percent, data will be qualified as described in the applicable validation procedure. If the RPD between primary and duplicate field samples exceeds 100 percent for soil or soil gas, data will be qualified as described in the applicable validation procedure.

The RPD is calculated as the difference between the two sample results (absolute value) divided by the average of the two sample results. The equation can be expressed as follows:

$$\%RPD = 200 \times ((x2-x1) / (x2+x1))$$

4.2.2 Accuracy

Accuracy is a statistical measurement of correctness of a measured value, and includes components of random error (variability due to imprecision) and systematic error. It reflects the total error associated with a measurement. A measurement is accurate when the value reported does not differ from the true value of a known concentration, spike, or standard.

Accuracy of laboratory analyses will be assessed by LCS recoveries, surrogate standard recoveries, MS spike recoveries, and initial and continuing calibrations of instruments. Laboratory accuracy is expressed as the percent recovery (%R). Accuracy limits are statistically generated by the laboratory or required by specified USEPA methods. If the percent recovery is determined to be outside of acceptance criteria, data will be qualified as described in the applicable validation procedure. The calculation of percent recovery is provided below:

$$\% R = 100 \times (Xs-X)/T$$

where Xs is the measured value of the spiked sample, X is the measured value of the unspiked sample, and T is the true value of the spike solution added.

Accuracy is also assessed by the analysis of laboratory and field blanks. Assessment of blank results provides information regarding potential bias imparted to analytical results from measurement systems and/or field conditions. Field accuracy will be assessed through the analysis of field equipment blanks. Analysis of field blanks documents bias associated with the sampling process, field contamination, sample preservation, and sample handling. The DQO for field equipment and trip blanks is that all values are less than the reporting limit for each target constituent. If contamination is reported in the field equipment or trip blanks, data will be qualified as described in the applicable validation procedure.

4.2.3 Representativeness

Representativeness is the degree to which data accurately and precisely represent selected characteristics of the media sampled. Representativeness of data collection is addressed by careful preparation of sampling and analysis programs. This QAPP addresses representativeness by specifying sufficient and proper numbers and locations of samples; incorporating appropriate sampling methodologies; specifying proper sample collection techniques and decontamination procedures; selecting appropriate laboratory methods to prepare and analyze soil and soil gas; and establishing proper field and laboratory QA/QC procedures.

4.2.4 Completeness

Completeness is the measure of valid data obtained compared to the amount that was expected under ideal conditions. The number of valid results divided by the number of possible results, expressed as a percentage,

4. Data Quality Objectives

determines the completeness of the data set. The objective for completeness is to obtain at least 90 percent of the planned data to support evaluation and assessment efforts. Specifically, for background samples, a completeness requirement of 100 percent is mandated. The formula for calculation of completeness is presented, as follows:

$$\% \text{ Completeness} = 100 \times \frac{\text{number of valid results}}{\text{number of expected results}}$$

4.2.5 Comparability

Comparability is an expression of confidence with which one data set can be compared to another. The objective of comparability is to ensure that data developed during the investigation are comparable with data previously collected (i.e., methods of analysis are comparable), and that the methods used adequately address applicable criteria or standards established by the USEPA and California Department of Health Services (CADHS). This QAPP addresses comparability by specifying laboratory methods that are consistent with the current standards of practice as approved by the USEPA and CADHS. Field methods will be discussed in the Workplan.

5. Quality Control Elements

This section presents QC requirements relevant to analysis of environmental samples that will be followed during all project analytical activities. The purpose of the QC program is to produce data of known quality that satisfy the project objectives and that meet or exceed the requirements of the standard methods of analysis. This program provides a mechanism for ongoing control and evaluation of data quality measurements through the use of QC materials.

5.1 QUALITY CONTROL ELEMENTS

The chemical data to be collected for this effort will be used to determine that the extent of contamination is properly evaluated. As such, it is critical that the chemical data is documented to be of the highest confidence and quality. Consequently, strict QA/QC procedures will be adhered to. These procedures include:

- Adherence to protocols for field sampling and decontamination procedures;
- Collection and laboratory analysis of appropriate field and equipment blanks to monitor for contamination of samples in the field or the laboratory;
- Collection and laboratory analysis of site specific matrix spike, matrix spike duplicate, and blind duplicate samples to evaluate precision and accuracy; and
- Attainment of completeness goals.

5.1.1 Equipment Decontamination

Non-dedicated equipment will be decontaminated before and after each sample is collected. The equipment will be washed in a non-phosphate detergent and potable water, rinsed in potable water, and then double rinsed in distilled water. A description of the specific methodologies to be followed to maximize proper decontamination of non-dedicated sampling equipment is provided in the Workplan.

5.1.2 Standards

Standards used for calibration or to prepare samples will be certified by National Institute of Standards and Technology (NIST), USEPA, or other equivalent source. The standards will be current. The expiration date will be established by the manufacturer, or based on chemical stability, the possibility of contamination, and environmental and storage conditions. Standards will be labeled with expiration dates, and will reference primary standard sources if applicable. Expired standards will be discarded.

5.1.3 Supplies

All supplies will be inspected prior to their use in the field or laboratory. The descriptions for sample collection and analysis contained in the methods will be used as a guideline for establishing the acceptance criteria for supplies. A current inventory and appropriate storage system for these materials will assure their integrity prior to use.

5.1.4 Holding Time Compliance

Sample preparation and analysis will be completed within the required method holding times (Table 1). Holding time begins at the time of sample collection. If holding times are exceeded, and the analyses are performed, the associated results will be qualified as described in the applicable validation procedure. The following definitions of extraction and analysis compliance are used to assess holding times:

- Preparation or extraction completion - completion of the sample preparation process as described in the applicable method, prior to any necessary extract cleanup.
- Analysis completion - completion of all analytical runs, including dilutions, second-column confirmations, and any required re-analyses.

5.1.5 Preventative Maintenance

The Field Manager for PlaceWorks is responsible for documenting the maintenance of all field equipment prescribed in the manufacturer's specifications. Scheduled maintenance will be performed by trained personnel. Procedures specific to the calibration, use and maintenance of field equipment are presented in the Workplan. The analytical laboratory is responsible for all analytical equipment calibration and maintenance as described in their laboratory QA Plan. Subcontractors are responsible for maintenance of all equipment needed to carry out subcontracted duties

5.2 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) SAMPLES

The purpose of this QA/QC program is to produce data of known quality that satisfy the project objectives and that meet or exceed the requirements of the standard methods of analysis. This program provides a mechanism for ongoing control and evaluation of data quality measurements through the use of QC materials. Quality assurance and quality control samples will be collected as part of the overall QA/QC program.

5.2.1 Laboratory Reagent Blanks

A laboratory reagent blank is de-ionized, distilled water that is extracted by the laboratory and analyzed as a sample. Analysis of the reagent blank indicates potential sources of contamination from laboratory procedures (e.g., contaminated reagents, improperly cleaned laboratory equipment, or persistent contamination due to presence of certain compounds in the ambient laboratory air). A reagent blank will be analyzed at least once each day for each method utilized by the laboratory for that day.

5.2.2 Field Equipment Blanks

A field equipment blank is a sample that is prepared in the field by pouring de-ionized, distilled water into cleaned sampling equipment. The water is then collected and analyzed as a sample. Field equipment blanks are typically blind (given a fictitious name so that the laboratory will not recognize it as a blank). The field equipment blank gives an indication of contamination from field procedures (e.g., improperly cleaned sampling equipment, cross-contamination). Field equipment blanks will be collected at a minimum frequency of at least one per day when non-dedicated equipment is utilized. The field equipment blanks should be analyzed using the same analyses requested for the associated primary samples collected.

5.2.3 Trip Blanks

The primary purpose of trip blanks is to detect potential additional sources of contamination that could potentially influence contaminant values reported in field samples, both quantitatively and qualitatively. Trip blanks serve as a mechanism of control for sample bottle preparation, blank water quality and sample handling. They are generally submitted to the laboratory for analysis of VOCs. If VOCs are detected with the PID at or above 1 part per million, trip blanks will included as part of the sampling program.

5.2.4 Matrix Spike Samples

Matrix spikes are performed by the analytical laboratory to evaluate the efficiency of the sample extraction and analysis procedures, and are necessary because matrix interference (interferences from non-target compound in the sample matrix, water or soil) may have a widely varying impact on the accuracy and precision of the extraction analysis. The matrix spike is prepared by the addition of known quantities of target compounds to a sample. The sample is extracted and analyzed. The results of the analysis are compared with the known additions and a matrix spike recovery is calculated giving an evaluation of the accuracy of the extraction and analysis procedures. Matrix spike recoveries are reviewed to check that they are within acceptable range. However, the acceptable ranges vary widely with both sample matrix and analytical method. Matrix spikes and matrix spike duplicates will be analyzed by the laboratory at a frequency of at least one per twenty, or 5 percent of the primary field samples. Typically, matrix spikes are performed in duplicate in order to evaluate the precision of the procedures as well as the accuracy. Precision objectives (represented by agreement between matrix spike and matrix spike duplicate recoveries) and accuracy objectives (represented by matrix spike recovery results) are based on statistically generated limits established annually by the analytical laboratory. It is important to note that these objectives are to be viewed as goals, not as criteria. If matrix bias is suspected, the associated data will be qualified and the direction of the bias indicated in the data validation report.

5.2.5 Field Duplicate Samples

Field duplicate samples will be collected and analyzed to evaluate sampling and analytical precision. Field duplicates are collected and analyzed in the same manner as the primary samples. Agreement between duplicate sample results will indicate good sampling and analytical precision. Specific locations will be designated for collection of field duplicates prior to the start of field activities. Field duplicates will be collected at a frequency of 10 percent of the primary samples collected. The duplicate sample will be

5. Quality Control Elements

analyzed for all laboratory analyses requested for the primary sample collected. The precision goal for field duplicates analyses will be plus or minus 50 percent relative percent difference for aqueous samples and plus or minus 100 percent relative percent difference for soil, or air samples. Results for samples exceeding these goals will be qualified as estimated. Professional judgement will be used to determine if all samples in the associated batch will be qualified as well.

5.2.6 Performance Evaluation Samples

Double blind performance evaluation (PE) samples may be submitted to the analytical laboratory during any site investigation. These samples may be of water or soil matrix, and are used to assess the accuracy of analytical procedures employed for a given sample set. PE samples will be used if questionable data quality is suspected as determined during laboratory audits or data validation.

If used, double blind PE samples will be prepared by Environmental Resources Standards, or similar supplier, in similar sample containers as the project field samples and shipped from the field to the laboratory for analysis.

Double blind PE samples will be prepared using NIST and/or A2LA certified standards. The project-specific PE samples will contain known concentrations of the analytes of interest. Laboratory results will be evaluated against the original Certificates of Analyses for precision and accuracy. PE samples may be submitted for analysis as part of the laboratory pre-qualification process, or as part of a given sampling event. Results will be reported to the laboratory and presented with associated field sample results

6. Sampling Procedures

The defensibility of data is dependent on the use of well defined, accepted sampling procedures. This section describes the sampling and handling procedures that will be followed for each sampling event.

6.1 SAMPLING PROCEDURES

Collection of high integrity environmental samples is important to the quality of chemical data to be generated. To this end, detailed field procedures have been developed to guide sample collections during each phase of the field investigation. These procedures are contained in the Workplan.

6.1.1 Sample Containers, Preservation and Holding Times

Table 1 lists the required sample containers, preservatives, and recommended maximum holding times for samples. Sample containers provided by the laboratory will be new, and purchased commercially from I-Chem, Eagle Pitcher, or other equivalent validated sources.

6.1.2 Sample Handling and Storage

In the field, each sample container will be marked with the sampling location number, and date and time of sample collection. All sample containers will be wiped with paper towels and securely packed, in a cooler on ice, in preparation for delivery to the laboratory.

Upon receipt of the samples, the laboratory will immediately notify the Field Manager if conditions or problems are identified which require immediate resolution. Such conditions include container breakage, missing or improper chain-of-custody, exceeded holding times, improper preservation, missing or illegible sample labeling, or temperature excursions.

6.1.3 Sample Custody

For each sample that is submitted to the laboratory for analysis, an entry will be made on a chain-of-custody form supplied by the laboratory. The information to be recorded includes the sampling date and time, sample identification number, matrix type, requested analyses and methods, preservatives, and the sampler's name. Sampling team members will maintain custody of the samples until they are relinquished to laboratory personnel or a professional courier service. The chain-of-custody form will accompany the samples from the time of collection until received by the laboratory. Each party in possession of the samples (except the professional courier service) will sign the chain-of-custody form signifying receipt.

The chain-of-custody form will be placed in a plastic bag and shipped with samples inside the cooler. After the samples, ice, and chain-of-custody forms are packed in the coolers, the cooler will be appropriately sealed before it is relinquished to the courier. A copy of the original completed form will be provided by the

6. Sampling Procedures

laboratory along with the report of results. Upon receipt, the laboratory will inspect the condition of the sample containers and report the information on chain-of-custody or similar form.

7. Analytical Procedures

The analytical methods used for this project are primarily USEPA approved methods and are listed in Tables 1 through 3. Specific analytical method procedures are detailed in the laboratory QA Plan and standard operating procedures (SOPs) of the selected laboratory. These documents may be reviewed by PlaceWorks quality assurance staff during laboratory audits to ensure that project specifications are met. Laboratory audits are discussed in Section 9.2.

7.1 INTERNAL STANDARDS

Internal standards are measured amounts of method-specified compounds added after preparation, or extraction, of a sample. Internal standards are added to samples, controls, and blanks in accordance with method requirements to identify column injection losses, purging losses, or viscosity effects.

Acceptance limits for internal standard recoveries are set forth in the applicable method. If the internal standard recovery falls outside of acceptance criteria, the instrument will be checked for malfunction and reanalysis of the sample will be performed after any problems are resolved.

7.2 RETENTION TIME WINDOWS

Retention time windows will be established as described in SW-846 Method 8000A for applicable analyses of organic compounds. Retention time windows are used for qualitative identification of analytes and are calculated based on multiple, replicated analyses of a respective standard.

Retention times will be checked on a daily basis. Acceptance criteria for retention time windows are established in the referenced method. If the retention time falls outside the respective window, actions will be taken to correct the problem. The instrument must be re-calibrated after any retention time window failure and the affected samples must be reanalyzed.

7.3 METHOD DETECTION LIMITS

The method detection limit (MDL) is the minimum concentration of an analyte, or compound, that can be measured and reported with 99 percent confidence that the concentration is greater than zero. MDLs are established for each method, matrix and analyte, and for each instrument used to analyze project samples. MDLs are derived using the procedures described in 40CFR 136 Appendix B (USEPA 1990a). USEPA requires that MDLs be established on an annual basis. MDLs must be less than applicable reporting limits for each target analyte presented in Tables 2 and 3.

7.4 INSTRUMENT CALIBRATION

Analytical instruments will be calibrated in accordance with the procedures specified in the applicable method. All analytes that are reported shall be present in the initial and continuing calibrations, and these calibrations must meet the acceptance criteria specified in the reference method. Records of standard preparation and instrument calibration will be maintained. Records shall unambiguously trace the preparation of standards and their use in calibration and quantitation of sample results. Calibration records will be traceable to standard materials as described in Section 5.2.

At the onset of analysis, instrument calibrations will be checked using all of the analytes of interest. This applies equally to multi-response analytes. At a minimum, calibration criteria will satisfy method requirements. Analyte concentrations can be determined with either calibration curves or response factors, as defined in the method. Guidance provided in SW-846 should be considered to determine appropriate evaluation procedures.

8. Data Reporting

This section presents reporting requirements relevant to the data produced during all project analytical activities.

8.1 FIELD DATA

Data measured by field instruments will be recorded in field notebooks, laptops, and/or on required field forms. Units of measure for field analyses are identified on the field forms. The field data will be reviewed by the Project or Field Manager to evaluate completeness of the field records and appropriateness of the field methods employed. All field records will be retained in the project files.

8.2 LABORATORY DATA

Analytical data will contain the necessary sample results and quality control data to evaluate the data quality objectives defined for the project. Documentation requirements for laboratory data are defined in USEPA Region IX Laboratory Documentation Requirements for Data Validation (USEPA 1990b). The laboratory reports will be consistent with USEPA Level III documentation and include the following data and summary forms:

- Narrative, cross-reference, chain-of-custody, and method references;
- Analytical results;
- Surrogate recoveries (as applicable);
- Calibration summary;
- Blank results;
- Laboratory control sample recoveries;
- Duplicate sample results or duplicate spike recoveries;
- Sample spike recoveries;
- Instrument tuning summary;
- Associated raw data; and
- Magnetic tape or equivalent upon request.

Data validation criteria are derived from the USEPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review (USEPA 1994b and 1994c). The Functional Guidelines provide specific data validation criteria that can be applied to data generated for this investigation.

The laboratory data will be reviewed for compliance with the applicable method and the quality of the data reported. The following summarizes the areas of data validation.

- Holding Times;
- Calibrations;
- Blanks;
- Laboratory Control Samples;
- Matrix Spike/Matrix Spike Duplicates;
- Surrogates/Internal Standards (as applicable);
- Field Quality Control Samples; and
- Compound Identification and Quantification.

The application of data validation criteria is a function of project-specific DQOs. The QA/QC Manager will determine if the data quality objectives for the analytical data have been met. Results of the data validation review will be documented and summarized in the investigation.

8.3 PROCEDURES FOR DATA VALIDATION

Procedures for performing data validation for the types of analyses to be performed for this investigation are documented in the National Functional Guidelines. Data validation will be documented in a manner consistent with the functional guidelines. The results of the data validation will be included in a Data Validation Memorandum. This documentation will be maintained by PlaceWorks in the project files.

8.3.1 Data Qualifiers

The data validation procedures were designed to review each data set and identify biases inherent to the data and determine its usefulness. Data validation flags are applied to those sample results that fall outside of specified tolerance limits, and, therefore, did not meet the program's quality assurance objectives described in Section 3.2. Data validation flags to be used for this project are defined in the National Functional Guidelines. Data validation flags will indicate if results are considered quantitative, estimated, or rejected. Only rejected data are considered unusable for decision-making purposes; however, other qualified data may require further verification.

8.3.2 Project Data Management

Data management is the process of organizing, maintaining, and applying a variety of data to provide a useful and coherent view of the site conditions. Data collected for this investigation include sample collection data, field measurement data, onsite laboratory analytical data, and offsite laboratory analytical data. The data management resources include staff to review and maintain project data, a computerized data management system, and a documentation filing system. The project database management system has the capability to maintain the relationship between sampling locations, samples collected, and filed and laboratory analytical results.

8. Data Reporting

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9. Performance and System Audits

Audit programs are established and directed by PlaceWorks quality assurance staff to ensure that field and laboratory activities are performed in compliance with project controlling documents. This section describes responsibilities, requirements and methods for scheduling, conducting and documenting audits of field and laboratory activities.

9.1 FIELD AUDITS

Field audits focus on appropriateness of personnel assignments and expertise, availability of field equipment, adherence to project controlling documents for sample collection and identification, sample handling and transport, use of QA samples, chain of custody procedures, equipment decontamination and documentation. Field audits are not required, but may be performed in the event significant discrepancies are identified that warrant evaluation of field practices.

9.2 LABORATORY AUDITS

Laboratory audits include reviews of sample handling procedures, internal sample tracking, SOPs, analytical data documentation, QA/QC protocols, and data reporting. Any selected mobile or offsite laboratory will be licensed by the State of California as a certified testing laboratory. If no previous audit has been conducted by PlaceWorks, a scheduled audit will be conducted by the quality assurance staff during the course of this project to ensure the integrity of sample handling and processing by the laboratory.

9.3 DATA AUDITS

Data audits will be performed on analytical results received from the laboratories. These audits will be accomplished through the process of data validation as described in Section 8.3, or may involve a more detailed review of laboratory analytical results. Data audits require the laboratory to submit complete raw data files to PlaceWorks for validation. PlaceWorks chemists will perform a review of the data consistent with the level of effort described in the National Functional Guidelines (USEPA 1994 b and c). This level of validation consists of a detailed review of sample data, including verification of data calculations for calibration and quality control samples to assess if these data are consistent with method requirements. Upon request, the laboratory will make available all supporting documentation in a timely fashion.

9.4 REPORTS TO MANAGEMENT AND RESPONSIBILITIES

Upon completion of any audit, the auditor will submit to the Project Manager and Field Manager a report or memorandum describing any problems or deficiencies identified during the audit. It is the responsibility of the Project Manager to determine if the deviations will result in any adverse effect on the project conclusions. If it is determined that corrective action is necessary, procedures outlined in Section 9.5 will be followed.

9.5 CORRECTIVE ACTION

Corrective actions will be initiated whenever data quality indicators suggest that DQOs have not been met. Corrective actions will begin with identifying the source of the problem. Potential problem sources include failure to adhere to method procedures, improper data reduction, equipment malfunctions, or systemic contamination. The first level of responsibility for identifying the problems and initiating corrective action lies with the analyst/field personnel. The second level of responsibility lies with any person reviewing the data. Corrective actions may include more intensive staff training, equipment repair followed by a more intensive preventive maintenance program, or removal of the source of systemic contamination. Once resolved, the corrective action procedure will be fully documented, and if DQOs were not met, the samples in question must be recollected and/or reanalyzed utilizing a properly functioning system (USEPA 1998).

10. References

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3. USEPA, 1994a. Guidance for the Data Quality Objectives Process. EPA QA/G-4. Office of Research and Development U.S. Environmental Protection Agency. Washington, D.C.
4. USEPA, 1994b. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. EPA540/R-94/013. Office of Emergency and Remedial Response. Washington, D.C.
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6. USEPA, 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. SW-846, Third Edition, Office of Solid Waste and Emergency Response U.S. Environmental Protection Agency. Washington, D.C.
7. USEPA, 1998a. EPA Guidance for Quality Assurance Project Plans. EPA QA/G-5. Office of Research and Development U.S. Environmental Protection Agency. Washington, D.C.
8. USEPA, 1998b. EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations, External Review Draft Final. EPA QA/R-5. Washington, D.C.
9. United States Geological Survey (USGS), 2015. 7.5' Topographic Series, Nuevo, California Quadrangle Map, scale 1:24,000.

10. References

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Table 1
Sample Containers, Preservatives, and Holding Times
Wedgeworth Elementary School
16949 Wedgeworth Drive
Hacienda La Puente Unified School District
Hacienda Heights, California

Analyte	Method	Container	Preservative	Holding Time
SOIL ANALYSES				
Organochlorine Pesticides	EPA 8081A	4 oz glass or sleeve	4°C	14 days to extraction, 40 days to analysis
Lead	EPA 6010B	4 oz glass or sleeve	4°C	
Arsenic	EPA 6010B	4 oz glass or sleeve	4°C	180 days
SOIL GAS ANALYSES				
Volatile Organic Compounds	EPA 8260B	2-250ml glass syringes	n/a	30 minutes

Notes:

The laboratory will freeze all samples after extraction and all archived samples immediately.

No deterioration of frozen samples is expected during the time period required to complete the investigation.

Table 2
List of Method Compounds and Reporting Limits
Soil and Blank Sample Analysis
Wedgeworth Elementary School
16949 Wedgeworth Drive
Hacienda La Puente Unified School District
Hacienda Heights, California

Title 22 Metals			
Method	Compound	Soil Reporting Limit mg/kg	Water Reporting Limit mg/l
EPA 6010B	Arsenic	1.00	0.0100
Organochlorine Pesticides			
Method	Compound	Soil Reporting Limit mg/kg	Water Reporting Limit ug/l
EPA 8081A	Aldrin	0.0010	0.040
	alpha-BHC	0.0010	0.030
	beta-BHC	0.0010	0.060
	delta-BHC	0.0010	0.090
	gamma-BHC	0.0010	0.040
	Chlordane	0.010	0.50
	4,4'-DDD	0.0020	0.050
	4,4'-DDE	0.0020	0.050
	4,4'-DDT	0.0020	0.050
	Dieldrin	0.0020	0.020
	Endosulfan I	0.0010	0.050
	Endosulfan II	0.0020	0.040
	Endosulfan Sulfate	0.0020	0.10
	Endrin	0.0020	0.050
	Endrin Aldehyde	0.0020	0.10
	Endrin Ketone	0.100	0.50
	Heptachlor	0.0010	0.030
	Heptachlor Epoxide	0.0010	0.080
	Methoxychlor	0.010	0.040
	Toxaphene	0.020	0.50

Table 3
Laboratory Quality Control Limits
Wedgeworth Elementary School
16949 Wedgeworth Drive
Hacienda La Puente Unified School District
Hacienda Heights, California

Title 22 Metals						
Method	**Compound**	**RL** mg/kg	**MDL** mg/kg	**LCS % Rec.**	**MS/MSD % Rec.**	**MS/MSD RPD**
EPA 6010B	Arsenic	1.00	0.243	70-130	70-130	0-25
Volatile Organic Compounds						
Method	**Compound**	**RL mg/kg**	**MDL mg/kg**	**LCS % Rec.**	**MS/MSD % Rec.**	**MS/MSD RPD**
EPA 8081A	Aldrin	0.0010	0.00090	70-130	70-130	0-25
	alpha-BHC	0.0010	0.00060	70-130	70-130	0-25
	beta-BHC	0.0010	0.00030	70-130	70-130	0-25
	delta-BHC	0.0010	0.00040	70-130	70-130	0-25
	gamma-BHC	0.0010	0.00050	70-130	70-130	0-25
	Chlordane	0.010	0.0087	70-130	70-130	0-25
	4,4'-DDD	0.0020	0.0011	70-130	70-130	0-25
	4,4'-DDE	0.0020	0.00090	70-130	70-130	0-25
	4,4'-DDT	0.0020	0.00090	70-130	70-130	0-25
	Dieldrin	0.0020	0.0015	70-130	70-130	0-25
	Endosulfan I	0.0010	0.00070	70-130	70-130	0-25
	Endosulfan II	0.0020	0.0011	70-130	70-130	0-25
	Endosulfan Sulfate	0.0020	0.00090	70-130	70-130	0-25
	Endrin	0.0020	0.0014	70-130	70-130	0-25
	Endrin Aldehyde	0.0020	0.00090	70-130	70-130	0-25
	Endrin Ketone	0.100	0.0021	70-130	70-130	0-25
	Heptachlor	0.0010	0.00070	70-130	70-130	0-25
	Heptachlor Epoxide	0.0010	0.00050	70-130	70-130	0-25
	Methoxychlor	0.010	0.00090	70-130	70-130	0-25
	Toxaphene	0.020	0.0110	70-130	70-130	0-25

Notes:
Blank cells denote analytes which are not part of the normally spiked compounds.

RL	Reporting Limit
MDL	Method Detection Limit
LCS	Laboratory Control Sample
MS/MSD	Matrix Spikes/Matrix Spike Duplicates
RPD	Relative Percent Difference

November 2018 | Health and Safety Plan

WEDGEWORTH ELEMENTARY SCHOOL

for Hacienda La Puente Unified School District

Prepared for:

Hacienda La Puente Unified School District
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Project Number:
HLPU-01.0

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1. Applicable Standards and Goals

1.1 GENERAL

This Health and Safety Plan (HASP) was prepared by PlaceWorks for Hacienda La Puente Unified School District (the District). This HASP provides an overview of current conditions at the site and describes the safety procedures to be employed and the rationale for their selection. The HASP has been prepared to ensure proper precautions are taken to protect human health and safety while work is being performed at the site. During the development of this HASP, consideration was given to current safety standards as defined by the U.S. Environmental Protection Agency (EPA), the Occupational Health and Safety Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH). This HASP was prepared in accordance with guidelines set forth in Title 8 of the California Code of Regulations, Section 5192 (8 CCR 5192). In addition, this HASP also describes the health effects and standards for known contaminants and the procedures designed to account for the potential for exposure to unknown substances.

1.2 SCOPE AND APPLICABILITY OF THE HEALTH AND SAFETY PLAN

The purpose of this HASP is to define the requirements and designate protocols to be followed by the onsite personnel during the field activities. Site conditions, identified sources and previous work elements implemented at the site are described in the Workplan. This HASP is applicable to all employees, government employees, contractors, subcontractors, and visitors to the site. This HASP will be used to ensure that adequate site safety practices are used during sample collection activities.

All personnel working at the site must review the HASP and sign an agreement to comply with its requirements and to signify their familiarity with all aspects of the HASP before entering an exclusion zone or a contamination reduction zone. A copy of the HASP Certification is provided in Section 19. All personnel working at the site will be briefed daily by the Site Safety Officer (SSO) and will be required to become familiar with the following sections of this plan:

- Directions to Hospital - Section 17 and Page 3 (map);
- Safety Rules and Personal Hygiene - Appendix A;
- Field Standard Operating Procedures for Use and Decontamination of Personal Protective Equipment (PPE) - Appendix B;
- Heat Stress and Heat Stress Monitoring - Appendix C.

1. Applicable Standards and Goals

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Figure 1 Hospital Route Map

1. Applicable Standards and Goals

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2. Site Description

2.1 SITE IDENTIFICATION

The site has been identified by the District as Wedgeworth Elementary School.

2.2 SITE LOCATION

The site is located at 16949 Wedgeworth Drive Hacienda Heights, unincorporated Los Angeles County, California.

2.3 CURRENT AND HISTORICAL LAND USES

2.3.1 Property Ownership

The District currently owns the project site.

2.3.2 Business/Manufacturing Activities

Based on a review of historical documents, no manufacturing activities have occurred on the site. The site is occupied by the Wedgeworth Elementary School. The site had been used for agriculture prior to the construction of the school.

2.3.3 Site Climatological Setting

The site is classified as being in climate zone 10 by the California Energy Commission. It is an area that is semi-arid with hot, dry summers and mild winters. The Western Regional Climate Center collected data from Azusa from 1901 to 1972. The mean temperature in the area ranges from a low of 47.7° Fahrenheit (°F) in the winter to a high of 77.8°F in the summer. The average annual precipitation is 18.96 inches per year.

2. Site Description

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3. Roles and Responsibilities

A number of roles are required for the safe and efficient operation of a field team. These roles include Project Director, Project Manager, PlaceWorks Health and Safety Manager, Site Manager, SSO and field personnel. A team member may take on more than one role, but the roles must be clearly assigned and must cover all positions required. The personnel assigned to the various roles and their phone numbers are listed below:

Assignment	Name	Phone Number
Project Director	Dr. Denise Clendening	(909) 989-4449
Project Manager	Dr. Denise Clendening	(909) 989-4449
Health & Safety Manager	Mike Watson	(909) 989-4449
Site Manager	Mike Watson	(909) 989-4449
Site Safety Officer	Mike Watson	(909) 989-4449
Field Personnel	Mike Watson	(909) 989-4449

The following guidelines outline assignment of responsibilities of the field team members.

3.1 PROJECT DIRECTOR

The Project Director is responsible for the overall operation of the project, including safety during field activities. Specific responsibilities include organization of all project work assignments, assigning personnel to specific duties, ensuring that the field team follows health and safety procedures approved by the PlaceWorks Health and Safety Manager, and overall quality assurance/quality control of the project.

3.2 PROJECT MANAGER

The Project Manager will be responsible for the day-to-day progress of the project and will hold review and planning meetings as necessary with all technical staff, during which the current progress, problems encountered, and future direction will be discussed.

3.3 PLACEWORKS HEALTH AND SAFETY MANAGER

The PlaceWorks Health and Safety Manager is responsible for the design and, with assistance from the Project Manager on personnel issues, implementation of the health and safety program for this project. This includes developing a site HASP, ensuring that all onsite workers have met the necessary health and safety training requirements and are knowledgeable about the work they will perform, assigning a qualified SSO to the field team, verifying compliance with all applicable safety and health requirements, and updating equipment and procedures based on new information gathered during the course of work.

3.4 SITE MANAGER

The Site Manager is responsible for the operation of the field team. Responsibilities include organization of field activities, compliance with the provisions of the site Workplan, field documentation and record keeping, quality control of field activities, and communication with the site's correspondent. The Site Manager, along with the SSO, must also ensure that subcontractors and outside observers comply with the HASP.

3.5 SITE SAFETY OFFICER

The SSO works closely with the Site Manager to enforce the provisions of the HASP during field activities. The SSO is responsible for implementing the procedures stipulated in the HASP:

- Evaluating and amending the HASP daily to remedy deficiencies and post entry briefings;
- Determining the levels of personal protection based on observations or changing field conditions;
- Controlling site entry and exit;
- Briefing the field team on the health and safety decontamination procedures required for various field activities;
- Monitoring the field team for signs of stress or exposure;
- Initiating emergency procedures, if necessary;
- Verifying that field team members have met the health and safety requirements for field activities;
- Being available to document and respond to any concerns or complaints made by personnel onsite;
- Documenting unsafe work practices or conditions;
- Documenting any accidents or incidents that result in illness or injury to personnel; and
- Issuing stop work notices if site conditions become unsafe, with conference with the Project Director and/or the PlaceWorks Health and Safety Manager.

3.6 FIELD TECHNICIANS

The field technicians are responsible for complying with the HASP, notifying the SSO of hazardous or potentially hazardous conditions, and carrying out specialized tasks during field operations. These tasks include inspecting, calibrating, maintaining, and using field equipment; performing site characterization activities; maintaining decontamination stations; preparing and decontaminating sampling equipment; collecting and preserving samples; and packaging and shipping samples according to proper chain-of-custody procedures.

3.7 FIELD TEAM SIZE

The size of the field team is determined by the nature of the field activities, the characteristics of the site, the safety hazards involved, and the prescribed levels of safety protection. The field team must be large enough to ensure onsite activities are conducted safely, but not so large as to sacrifice efficiency. PlaceWorks personnel shall be present during all phases of the field activities.

3. Roles and Responsibilities

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4. Training and Medical Monitoring Requirements

Staff and subcontractors participating in the fieldwork must have completed a 40-hour health and safety training course (8 CCR 5192(e), 29 CFR 1910.120(e)(2)) as appropriate for their particular tasks and have annual refresher training. Before personnel arrive onsite, each employer will be responsible for certifying that its employees meet the OSHA training requirements.

Each employee will be familiar with the requirements of the site safety and health plan, and will participate in site activity and safety briefings. Medical surveillance is conducted as a routine program, which meets the requirements of 8 CCR 5192 (f); the medical surveillance program is detailed in Appendix D. There will not be any special medical tests or examinations required for staff involved in this project.

All personnel will be trained to operate their respective equipment, including respiratory protection if site conditions exist where respirators are needed. Under no circumstance will untrained or unqualified personnel operate equipment.

4. Training and Medical Monitoring Requirements

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5. Description of Field Work

The following subsections describe tasks to be performed during the field activities and the hazards associated with each task. Some of the protective measures to be implemented during completion of those operations are also identified.

5.1 SOIL SAMPLING ACTIVITIES

5.1.1 Soil Sampling

Soil samples will be collected following protocols described in the Workplan and the following guidance: DTSC's *Interim Guidance for Sampling Agricultural Properties (Third Revision)* (DTSC 2008). Soil will be collected in glass jars.

5.1.2 Sampling Methods and Procedures

Soil sampling will be conducted using a hand auger. The hand auger will be advanced to the desired depths and the barrel will be retrieved. Observations pertaining to the soil type will be recorded by a field geologist. The soil will be decanted into a pre-cleaned glass jar. Each sample will be labeled with the sample number, sample depth, and the date and time sampled. Samples will be immediately placed in an ice-filled cooler and listed on a chain-of-custody form. Any observation pertaining to potential soil contamination or soil source will be recorded.

Hazards associated with this task include dermal contact with and accidental ingestion of contaminated soil and inhalation of dusts and vapors (i.e. VOCs), noise and lifting. Some of the protective measures to be implemented during soil sampling include the use of chemical-resistant gloves to reduce the hazards associated with soil sampling. Level D PPE will be used when sampling is initiated, but will be upgraded as necessary. The use of a PID for air monitoring will be used (as necessary) primarily for the detection of VOCs and not organochlorine pesticides or metals, which are not detectable with a PID.

Previous surveys indicate that heavy equipment such as drilling or excavation equipment may produce continuous and impact noise at or above the action level of 85 dBA. All site personnel within 25 feet of operating equipment, or near an operation that creates noise levels high enough to impair conversation, shall wear hearing protective devices (either muffs or plugs). All PlaceWorks personnel are in the PlaceWorks Hearing Conservation Program and have had baseline and, where appropriate, annual audiograms. Personnel will wash their hands with soap and water prior to inserting earplugs to avoid initiating ear infections.

The following guidelines will be followed whenever lifting equipment such as portable generators, coolers filled with samples, any other objects that are of odd size or shape, or that weigh over 40 pounds.

- Get help when lifting heavy loads. Portable generators will only be lifted using a two-person lift.

5. Description of Field Work

- When moving heavy objects such as drums or containers, use a dolly or other means of assistance.
- Plan the lift. If lifting a heavy object, plan the route and where to place the object. In addition, plan communication signals to be used (i.e., "1, 2, 3, lift," etc.).
- Wear sturdy shoes in good condition that supply traction when performing lifts.
- Keep your back straight and head aligned during the lift and use your legs to lift the load – do not twist or bend from the waist. Keep the load in front of you – do not lift or carry objects from the side.
- Keeping the heavy part of the load close to your body will help maintain your balance.

6. Chemical Hazards

The presence of chemical hazards at the site has not been confirmed; however, the primary suspected potential constituents of concern associated with the site are metals and organochlorine pesticides. The list of chemicals of concern for the site will be reassessed, as more data becomes available. Brief toxicological profiles of the major constituents of concern are included in Appendix E. Chemical and physical characteristics of these compounds are presented in Table 1.

Potential exposures to these chemicals during field activities include the following:

- Dermal contact with and accidental ingestion of potentially contaminated rinsate and residue during decontamination and sampling; and
- Splash hazards during decontamination.

To protect workers from eye and skin contact, skin absorption, and accidental ingestion of airborne dust, PPE will be used as outlined in Section 8.0.

6.1 HAZARD ASSESSMENT

A literature review was conducted to find ionization potentials (IPs), exposure limits, and concentrations immediately dangerous to life and health (IDLH) for the constituents of concern in environmental media at the site. Exposure limit data are expressed as 8-hour time-weighted averages (TWAs). TWAs promulgated in OSHA regulations are referred to as permissible exposure limits (PELs). The American Conference of Governmental and Industrial Hygienists adopts values for exposure limits that are referred to as threshold limit values.

Exposure limits and the IDLH for the constituents of concern are depicted in Table 1. These data are also used to establish action levels to determine when personnel should upgrade from Level D PPE (i.e., no respiratory protection) to Level C PPE (i.e., full-face air-purifying respirator) and to select the appropriate types of outer garments, gloves, and respirator cartridges. Action levels triggering an upgrade in respiratory protection from Level D to Level C are established by examining exposure limit data and selecting compounds with the lowest PEL.

Site work will be initiated in Level D protection. If unusual odors or symptoms are noted in the field, and engineering controls cannot reduce potential hazards in the breathing zone, the level of protection will be upgraded to Level C. If an upgrade to Level B is required, field activities will stop and the site will be evacuated. If Level B is required, the project will be stopped and the current operating procedures will be assessed by the SSO, the Health and Safety Officer, and the Health and Safety Committee. If it is determined that Level B PPE is required, a subcontractor will be retained to conduct this supervised work.

6. Chemical Hazards

The potential for injuries inherent in operating heavy equipment presents additional hazards, especially because the operator may be wearing restrictive clothing. The use of heavy equipment creates the potential for contact with active utility lines. These utility lines will be located before intrusive activities are conducted and avoided.

7. Physical Hazards

Potential physical hazards associated with this project include, but are not limited to, working around heavy equipment, electrocution, slippery terrain, noise, weather conditions, and heat stress.

7.1 HEAVY EQUIPMENT

It is important that personnel be aware of all operations that are occurring at a work location as well as physical hazards, such as excavations, trenches, or open pits. Personnel will be aware of the position and movement of equipment by identified operational areas. Special precautions, with regard to layout of equipment traffic patterns associated with other vehicles and buildings, will be carefully considered before beginning field activities. Traffic barriers and/or caution barrier tape will be used to delineate the layout and assist in directing traffic flow to reduce risk of vehicle injury. Employees will be notified during daily meetings as to the established traffic patterns of heavy equipment. Whenever heavy equipment operations are conducted in a congested site area, a traffic coordinator designated by the SSO will direct movement of heavy equipment and pedestrians. For non-essential persons, pedestrian traffic will be prohibited where heavy excavation equipment is in operation. Operators will be tasked to watch for employees that might stray into the restricted entry area; site personnel will be required to wear orange safety vests in the vicinity of heavy equipment operation.

7.2 ELECTROCUTION

Electrical power lines above (overhead) and below ground will be identified at the site before to the start of any activities to prevent electrocution. Minimum safe distance will be established by the SSO in areas of overhead and underground power lines. Subcontracted utility locating services will be used as necessary to locate or confirm the presence of suspected underground utilities at drilling or boring locations.

7.3 SLIPPERY TERRAIN, SLIPS, TRIPS, AND FALLS

Slippery and uneven terrain is common and may increase the risk of injuries. Personnel shall wear the appropriate foot protection while onsite. The SSO will monitor site work surfaces for potential trip and fall hazards. Overhead hazards consist of potential contact with falling objects, rigging equipment, or other items in use at the site. Hard hats are required at all times when at the site.

7.4 NOISE

Noise levels around the equipment may exceed a comfortable range; therefore earplugs or equivalent hearing protection devices are required when equipment is operating.

7.5 HEAT STRESS

The potential for heat stress is high given the warm southern California climate and use of protective garments. Heat stress and heat stress monitoring are discussed in Appendix C.

8. Personal Protective Equipment (PPE)

It is anticipated that Level D PPE will be used, with Level C PPE available on stand-by. Level D PPE will consist of the following equipment:

- Long pants and long-sleeved or short-sleeved shirts;
- Steel-toed work boots;
- Nitrile gloves;
- Hard hats, required when heavy equipment is being used and an overhead hazard exists;
- Safety glasses; and
- Hearing protection during heavy equipment operation.

Damaged PPE will be replaced immediately. Backup equipment will be kept onsite for replacement as necessary.

At a minimum, the following PPE will be discarded and replaced daily:

- Nitrile gloves; and
- Disposable type ear plugs.

New gloves will be used to collect each sample. Procedures for using PPE are given in Appendix B.

The level of protection provided by PPE selection may be upgraded or downgraded by the SSO, in conference with the PlaceWorks Health and Safety Manager and/or the Project Director, based on changes in site conditions. When a significant change occurs, the hazards will be reassessed. Some indicators of the need for reassessment are as follows:

- A change in weather conditions;
- Encountering contaminants other than those previously identified;
- A change in ambient levels of contaminants; and
- A change in work scope that affects the degree of contact with contaminants.

Level C PPE will consist of the following equipment:

8. Personal Protective Equipment (PPE)

- Dual-canister full-face air-purifying respirator (NIOSH approved);
- Organic vapor/P100 combination cartridges;
- Tyvek or Saranex-coated coveralls;
- Steel-toed work boots;
- Double layer nitrile;
- Hard hats, required when heavy equipment is being used; and
- Safety glasses.

Particulate respirator cartridges should be changed out when the wearer has difficulty breathing through the cartridges. Chemical gas or vapor respirator cartridges will be changed out at least daily.

- Proper inspection of PPE includes several levels of inspection depending on specific articles of PPE and its frequency of use. The different levels of inspection are as follows:
- Inspection of equipment received from the factory or distributor;
- Inspection of equipment as it is issued to workers;
- Inspection after use or training;
- Periodic inspection of stored equipment; and
- Periodic inspection when a question arises concerning the appropriateness of the selected equipment or when problems with similar equipment arise.

The primary inspection of PPE in use for activities at the site will occur before use and will be conducted by the user. This ensures that the device or article has been inspected by the user and the user is familiar with its use. The SSO will periodically review field technicians' knowledge and execution of inspection guidelines for the various types of PPE in use at the site.

9. Illumination

Nighttime work activities are not anticipated; however, if nighttime work becomes necessary, illumination at the site will be supplemented in order to ensure safe working conditions. Supplemental lighting will be provided by mobile generator powered units.

9. Illumination

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10. Standard Operating Procedures

The standards regarding Safety Rules and Personal Hygiene and Use and Decontamination of PPE are detailed in Appendices A and B, respectively.

Standard operating procedures (SOPs) for equipment will be presented in the Addendum.

10.1 DAILY SAFETY MEETINGS

The SSO will conduct a daily safety meeting to discuss any changes in safety status, safety violations and administrative actions, work assignments, or modifications of procedures with all onsite field personnel. This safety meeting will be scheduled as the first activity of each day. An alternate person may be designated to conduct the briefing at the discretion of the SSO. All personnel present will sign the Daily Attendance sheet.

10.2 DAILY DEBRIEFING MEETINGS

At the end of each workday at the site, the SSO will discuss with the Site Manager or the Project Director, daily progress, technical problems, administrative resolution of disciplinary actions, and monitoring and analytical findings.

In the event that an emergency occurs or other accident that requires immediate attention, and additional safety meeting may be conducted. Non-routine meetings will address any site changes that have safety implications, which must be immediately addressed before work can continue.

10.3 ADMINISTRATIVE ACTION

Observed violations of safety procedures can result in immediate removal of the violator from the site. The Project Director will take administrative action on each violation. In the event of a violation, the nature of the violation, the past record of the violator, and any extenuating circumstances will be reviewed. The SSO and Health and Safety Officer will provide a recommendation to the Project Director regarding administrative actions such as retraining and reassignment, change in clearance status, or permanent dismissal from the site.

10. Standard Operating Procedures

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11. Confined Spaces

No confined space entry is anticipated at the site. A confined space protocol will be developed for Agency review and approval should conditions at the site change.

11. Confined Spaces

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12. Noise Monitoring

Noise may be monitored using a sound level meter (General Radio model 1565B) in areas where heavy equipment is being utilized. Hearing protection devices (HPDs) will be available onsite at all times. Use of HPDs will be required whenever the noise level equals or exceeds 85 dBA; in general, they will be used whenever equipment is operated. Field technicians will be informed on the proper use, maintenance and storage of HPDs. Engineering controls will be utilized as necessary to ensure that noise levels generated by work do not impact residences adjacent to the site.

12. Noise Monitoring

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13. Description of Site Work Zones

The various work zones may be established at the site before commencing any field activities.

Exclusion Zone

All workers who enter the contaminated work area will wear the correct level of protection. The number of workers in this zone will be kept at a minimum.

Contamination Reduction Zone (CRZ)

Decontamination areas for field personnel and heavy equipment will be designated in the CRZ adjacent to the exclusion zone.

Support Zones

The administrative and break areas shall be located in the support zone outside the CRZ and the overall work zone. The support zone will be located upwind from the overall work zone as permitted by site meteorological conditions.

The work areas and site shall be cleared and secured at the end of each workday.

13. Description of Site Work Zones

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14. Decontamination

Decontamination of PPE will take place in the decontamination area identified onsite. Before starting field activities, a decontamination station will be set with one bucket or tub containing a clean water and soap mixture and another bucket or tub containing clean water. All workers and PPE will be decontaminated to prevent the spread of potentially hazardous substances. All workers will wash their hands, arms, and face after removing PPE and before leaving the site. The volume and concentration of the decontamination fluid will be sufficiently low to allow disposal at the site. The water (and water with detergent) will be poured onto the ground or into a storm drain. Disposable items will be placed in trash bags for disposal along with other wastes removed from the property. Support vehicles are to be left, to the extent practical, outside the exclusion area so that decontamination will not be necessary. Decontamination procedures are outlined in Appendix B.

14. Decontamination

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15. Emergency Supplies

15.1 FIRE EXTINGUISHERS

A fire extinguisher will be available onsite during field activities. Field technicians will be informed on the proper use of fire extinguishers.

15.2 SPILL CONTROL EQUIPMENT

Accidental spills will be contained with sandbags or commercially available absorbent materials especially designed for spill containment or cleanup.

15. Emergency Supplies

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16. Emergency Contact Information

Emergency response shall be addressed according to the requirements of T8 CCR 5192. If it is determined that the emergency could threaten human health or the environment, the incident will be reported to the proper agencies:

Police/Fire	**911**
Department of Toxic Substances Control	(714) 484-5300
5796 Corporate Avenue	
Cypress, California 90630	
Fax: (714) 484-5302	
Department of Health Services	(916) 445-4171
714/744 P Street	
Sacramento, California 95814	
The closest hospital is:	(562) 945-3561
Whitter Hospital Medical Center	
9080 Colima Road	
Whittier, California 90605	

16. Emergency Contact Information

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17. Directions to the Hospital

Directions (See Figure 1): Start out heading west on Wedgeworth Drive towards Orchard Hill Lane, turn left onto Park Lawn Road, turn right onto Colima Road, turn left onto Janine Drive, and the destination will be on the left. Distance is 6.0 miles and estimated arrive time is 12 minutes.

17. Directions to the Hospital

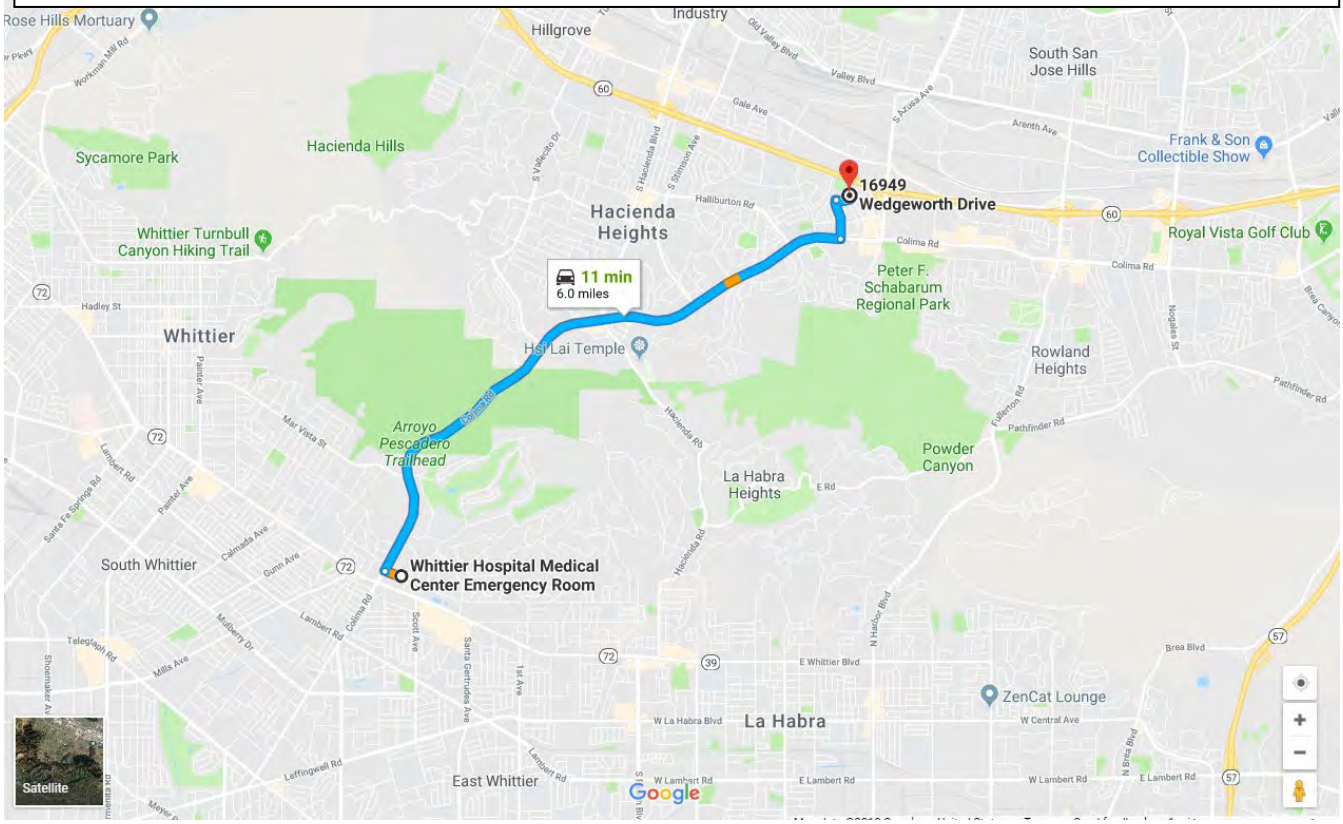
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FIGURE 1
HOSPITAL ROUTE MAP

Starting from: 16949 Wedgeworth Drive, Hacienda Heights, Unincorporated Los Angeles County CA

Arriving at: Whitter Hospital Medical Center Emergency Room
9080 Colima Road, Whittier, Los Angeles County, CA

Distance: 6.0 miles **Approximate Travel Time: 12 minutes**



Directions	Mile
1. Head west on Wedgeworth Drive toward Orchard Hill Lane	0.1
2. Turn left onto Park Lawn Lane	0.3
3. Turn right onto Colima Road	5.4
4. Turn left onto Janine Drive	0.2
5. Turn left, destination will be on the left	<0.1

PLACEWORKS

18. Authorized Changes to the Health and Safety Plan

Changes to the HASP are to be documented by completing a Modification of Site Health and Safety Plan form. This completed form must be signed by the Site Safety Officer, the Health and Safety Manager, and the Project Director. A copy of each completed form is to be included with each copy of the HASP and made a part of the project files.

18. Authorized Changes to the Health and Safety Plan

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19. Certification

This HASP has been reviewed and approved by the PlaceWorks Health and Safety Manager. The plan satisfies the requirements of the Occupational Safety and Health Act 1910.120 as implemented by the Health and Safety Committee for hazardous waste site activities.

All PlaceWorks site personnel have read the HASP and are familiar with its provisions.

NAME SIGNATURE DATE

19. Certification

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Appendices

Appendix

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TABLE 1
OCCUPATIONAL HEALTH GUIDELINES AND TOXICOLOGICAL INFORMATION
Wedgeworth Elementary School
16949 Wedgeworth Drive
Hacienda Heights, California

Contaminant	OSHA PEL (ppm)	STEL (ppm)	NIOSH REL (ppm)	IDLH (ppm)	Ionization Potential (eV)	Routes of Exposure	Known or Suspected Carcinogen	Symptoms	1997 NIOSH Page Reference
Arsenic	0.010 mg/m^3	n/a	2 mg/m^3 (15-minute period)	5 mg/m^3	n/a	Inh, Ing, Absorption, Contact	Yes	Ulceration of nasal septum, dermatitis, GI disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin	20
Dichlorodiphenyltrichloroethane (DDT)	1 mg/m^3 (skin)	n/a	0.5 mg/m^3	500 mg/m^3	n/a	Inh, Ing, Absorption, Contact	Yes	Irritation to eyes and skin, paresthesia of the tongue, lips, and face, tremor, apprehension, dizziness, confusion, malaise, headache, fatigue, convulsions, paresis of hands, vomiting, potentional occupational carcinogen	88
Aldrin	0.25 mg/m^3 (skin)	n/a	0.25 mg/m^3 (skin)	25 mg/m^3	n/a	Inh, Ing, Absorption, Contact	Yes	Headache, dizziness, nausea, vomiting, malaise, myoclonic jerks of limbs, clonic, tonic convulsions, coma, hematuria, azotemia, potentional occupational carcinogen	8
Toxaphene	0.5 mg/m^3 (skin)	n/a	n/a	200 mg/m^3	n/a	Inh, Ing, Absorption, Contact	Yes	Nausea, confusion, agitation, tremor, convulsions, unconsciousness; dry, red skin; potentional occupational carcinogen	58
Dieldrin	0.25 mg/m^3 (skin)	n/a	0.25 mg/m^3 (skin)	50 mg/m^3	n/a	Inh, Ing, Absorption, Contact	Yes	Headache, dizziness, nausea, vomiting, malaise, sweat, myoclonic limb jerks, clonic, tonic convulsions; coma, potentional occupational carcinogen, in animals: liver, kidney damage	104

ppm - parts per million
mg/m^3 - milligrams per cubic meter
n/a - not applicable

Appendix A

Safety Rules and Personal Hygiene

1. Remove all facial hair that interferes with a satisfactory fit of respiratory protective equipment.
2. Do not wear contact lenses while wearing full-face respirators.
3. Do not take prescribed drugs unless specifically approved by a physician. Notify the SSO that prescription medication is being taken.
4. In the work zone, do not eat, drink, smoke, chew gum or tobacco, or engage in any other practice that increases the probability of hand-to-mouth transfer or ingestion of material.
5. Wash hands and face thoroughly after leaving the work area and before eating, drinking, or any other activities.
6. Thoroughly wash entire body as soon as possible after removing Level C protective garments.
7. Whenever possible, avoid contact with contaminated or suspected contaminated surfaces.

Appendix B

Field Standard Operating Procedures for Use and Decontamination of Personal Protective Equipment

1. Park vehicles outside the site boundaries.

2. During the pre-work safety meeting, the SSO will provide the following information:
   A. a description of the site and known problem areas
   B. the level of protection required
   C. emergency medical information
   D. the locations of the first aid kit and fire extinguisher

3. Use the nearest lavatory.

4. Lay out and check safety gear.

5. Check and don Level D PPE.

6. For work in Level C PPE, put on safety gear in the following order:
   A. Coveralls
   B. Steel-toed work boots
   C. Connect suit and boots with tape
   D. Outer booties, if used
   E. Air purifying respirators (APRs), if required

7. For work in Level C PPE, put on APRs as follows:
   A. Inspect.
      (1) Inspect before each use to ensure that they have been cleaned adequately.
      (2) Check material conditions for signs of pliability, deterioration, or distortion.
      (3) Examine cartridges and ensure that they are the correct type for the intended use, that the expiration date has not passed, and that they have not been opened or used previously.
      (4) Check face shields for cracks or fogginess.
   B. Loosen all harness strap adjustments.
   C. Place chin in chin cup and draw back evenly on strap adjustments - the two bottom straps first, then the two top straps, and the center top strap last.
   D. Check that the respirator is centered evenly on the face and that the straps are not uncomfortably tight.

E. Check for leaks or proper facial seals.
   (1) To conduct a negative-pressure test, close the inlet part with the palm of the hand so it does not pass air, and gently inhale for about 10 seconds. Any inward rush of air indicates a poor fit. Note that a leaking facepiece may be drawn tightly to the face to form a good seal, giving a false indication of adequate fit.
   (2) To conduct a positive-pressure test, gently exhale while covering the exhalation valve to ensure that a positive pressure can be built up. Failure to build a positive pressure indicates a poor fit.

8. Put on the rest of the gear in the following order:
   A. Raise hood
   B. Hard hat, if necessary
   C. Surgical gloves
   D. Outer gloves
   E. Connect gloves and suit with tape

9. Select a buddy to act as a safety backup.

10. Check your buddy's equipment and have your buddy check yours for rips, tears, or malfunctions. Pay special attention to respirators, making sure that seals are good and that cartridges are securely in place.

11. If any equipment or gear gets damaged or if your suit tears badly, GO BACK.

12. If you experience physical discomfort, breathing difficulties, light-headedness, dizziness, or other abnormalities, GO BACK.

13. When you return, have your buddy check for external accumulation of contamination and remove it. Also check gear for damage.

14. Decontamination will be performed in steps as follows (as appropriate for the PPE being utilized):

    Step 1 - Segregated Equipment Drop: Deposit equipment used onsite (tools, sampling devices and containers, monitoring instruments, clipboards, etc.) in different containers with plastic liners. Each may be contaminated to a different degree. Segregation at the drop reduces the probability of cross-contamination. This equipment may be reused if properly decontaminated.

    Equipment: various sizes of containers
    plastic drop cloths

Step 2 - Boot Cover and Outer Glove Wash and Rinse: (Optional - will be used at the Site Safety Officer's discretion.)

Equipment:
- spray bottle/container with nozzle
- two wash basins or tubs
- scrub brush
- water
- Liqui-nox nonphosphate soap solution (1%)

Step 3 - Tape Removal: Remove tape around boots and gloves, and deposit in container with plastic liner. Remove boot covers, then outer gloves, and place them in the container.

Equipment:
- container (30-50 gallons)
- plastic liners
- folding chairs

Step 4 - Safety Boot Wash and Rinse: (Optional - will be used at discretion of field team members.)

Equipment:
- two wash basins or tubs
- scrub brush
- water
- Liqui-nox solution (1%)

Step 5 - Protective Coverall Removal: With the assistance of a helper, remove protective coverall. Deposit in container with plastic liner.

Equipment:
- container (30-50 gallons)
- folding chairs
- plastic liners

Step 6 - Respirator Removal: Remove facepiece. Avoid touching face with gloves. If work is completed for the day, discard cartridges in lined container, and wash and rinse respirator.

Equipment:
- container (30-50 gallons)
- plastic liners

Step 7 - Inner Glove Removal: Remove inner gloves and deposit in container with plastic liner.

Equipment:
- container (20-30 gallons)
- plastic liners

15. Respirators will be cleaned daily by hand washing with MSA cleaner-sanitizer solution followed by a thorough rinse and air drying. NEVER ALLOW A RESPIRATOR TO DRY WITH THE STRAPS PLACED FORWARD ACROSS THE FACESHIELD BECAUSE THIS MAY CAUSE CHANGES IN THE FACE-TO-RESPIRATOR SEAL SURFACE. The specific procedures to be employed are as follows:

A. Remove all cartridges (canisters) and filters plus gaskets and seals not

permanently affixed to their seats.

B. Loosen harness adjustment straps.
C. Remove exhalation valve cover.
D. Remove inhalation and exhalation valves.
E. Remove protective faceshield cover.
F. Wash facepiece in MSA cleaner/sanitizer powder mixed with warm water, preferably at a temperature of 120□ F. Wash components separately from facepiece. Heavy soil may be removed from the facepiece surface using a medium-soft handbrush.
G. Remove all parts from the wash solution, and rinse twice in clean, warm water.
H. Air dry all parts in a designated clean area.
I. Pat facepieces, valves, and seats to remove any remaining soap residue, water, or other foreign material with a clean, damp, lint-free cloth.
J. Reassemble respirator.
K. Place respirator in a plastic bag and the respirator box or otherwise store the respirator to prevent exposure to dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact.

16. Investigation-derived waste material will be handled as follows:
    A. Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster on site. These wastes are not considered hazardous and can be sent to a municipal landfill. Any PPE and disposable equipment that is to be disposed of which can still be reused will be rendered inoperable before disposal in the refuse dumpster.
    B. Wash and rinse waters from personal and equipment decontamination will be poured onto the ground or into a storm drain.
    C. Soil cuttings generated during the subsurface sampling will be placed back into the soil borings from which the samples were obtained. Any remaining soil cuttings will be spread around the sampling location.

Appendix C

Heat Stress and Heat Stress Monitoring

Heat is one of the most common (and potentially serious) illnesses at hazardous waste sites where PPE is worn; therefore, regular monitoring and other preventive precautions are vital. Shelter from the sun will be provided during rest periods. Below is a list of the signs and symptoms of heat stress. Initial work schedules will be approximately 90 minutes of work followed by 15 minutes of rest. Work intervals will be adjusted to shorter periods based on the assessment of the SSO. Monitoring for heat stress will be conducted by visual observation by the individual team members.

Signs and Symptoms of Heat Stress

- **Heat rash** may result from continuous exposure to heat or humid air.

- **Heat cramps** are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include:
  - muscle spasms
  - pain in the hands, feet, and abdomen

- **Heat exhaustion** occurs from increased stress on various body organs, including inadequate blood circulation caused by cardiovascular insufficiency or dehydration. Signs and symptoms include:
  - pale, cool, moist skin
  - heavy sweating
  - dizziness
  - nausea
  - fainting

- **Heat stroke** is the most serious form of heat stress. Temperature regulation fails, and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms include:
  - red, hot, usually dry skin
  - lack of or reduced perspiration
  - nausea
  - dizziness and confusion
  - strong, rapid pulse
  - coma

First-aid remedies for heat stress and heat stroke includes removing the worker to a cool place, providing cool water or a commercial sport drink, loosen tight clothing, and call for an ambulance if victim vomits or starts to loose consciousness.

Appendix D

Medical Monitoring Program

The workers most likely to be exposed to contaminated materials at the site are sampling and inspection personnel. These personnel are included in this Medical Monitoring Program.

The purposes of the Medical Monitoring Program are to identify any illness or problem that would put an employee at an unusual risk from exposures; to ensure that each employee can use negative-pressure respirators safely and withstand heat or cold stress; and to establish and maintain a medical data base for employees to monitor any abnormalities that may be related to work exposure and that could increase injury risk for the employee or others in the performance of job functions. The Medical Monitoring Program includes:

- A baseline physical examination;
- A medical determination of fitness of duty, including work restrictions after any job-related injury or illness or non job-related absence lasting more than three working days;
- The review of each site-specific Health and Safety Plan and potential exposure list to determine the need for specific biological and medical monitoring; and
- Annual and exit physical examinations with attention given to specific exposures or symptoms.

Baseline Physical Examination

A Baseline Physical Examination will be performed on each employee engaged in hazardous waste activities. The purposes of this examination are to identify any illness or problem that would put an employee at unusual risk from certain exposures; to certify the safe use of negative-pressure respirators (OSHA Safety and Health Standard 29 CFR 1910.134); and to develop a database for the assessment of exposure-related events detected through periodic medical monitoring. Variable data, such as age, sex, race, smoking, prior employment, and exposure history, that may have a bearing on the occurrence of subsequent events after employment begins will be gathered.

The content of the Baseline Physical Examination will include:

- Medical, occupational, and fertility histories;
- A physical examination, stressing neurological, cardiopulmonary, musculoskeletal, and skin systems;
- An electrocardiogram;
- PA and lateral chest x-rays;
- A pulmonary function test (FEV1, FVC, FEV 25-75);
- An audiogram;

- A multi-chemistry blood panel, including kidney and liver function tests, CBC with
- differential, and urinalysis;
- Tests deemed necessary by symptoms or exposure history;
- A red blood cell cholinesterase; and
- Physical parameters, including blood pressure and visual acuity testing.

Annual Physical Examination
An examination and updated occupational history will be performed on an annual basis during the anniversary month of the baseline physical examination. The Annual Physical Examination serves to identify and prevent illness caused by cumulative exposure to toxic substances.

The Annual Physical Examination will include:
- A personal work history (based on specific project histories);
- A physical examination, stressing neurological, cardiopulmonary, musculoskeletal, and skin systems;
- Pulmonary function test (FEV1, FVC, FEV 25-75);
- A multi-chemistry blood panel, including kidney and liver function test;
- An audiogram;
- Tests deemed necessary by symptoms or exposure history; and
- An optional wellness profile.

Return to Work Examination
Any job-related illness or injury will be followed by a medical examination to determine fitness for duty or possible job restrictions based on the physical findings of the medical examiner. A similar examination will be performed following three missed workdays caused by a non job-related illness or injury requiring medical intervention.

Exit Physical Examination
The content of the Exit Physical Examination will include:
- a personal work history (based on specific project histories);
- medical, exposure, and fertility histories;
- a physical examination, stressing neurological, cardiopulmonary, musculoskeletal, and skin systems;
- a pulmonary function test (FEV1, FVC, FEV 25-75);
- an electrocardiogram;
- PA and lateral chest x-rays;
- an audiogram;
- a multi-chemistry blood panel, including kidney and liver function tests, CBC with differential, and urinalysis;
- tests deemed necessary by symptoms or exposure history;
- a red blood cell cholinesterase; and
- physical parameters, including blood pressure and visual acuity testing.

Appendix E

Properties of Materials and Toxicological Profiles

Chromium (Cr III and Cr VI)

The permissible exposure limit (PEL) for chrome is 0.5 mg/m^3, which is also the recommended exposure limit (REL) established by the National Institute for Occupational Safety and Health (NIOSH). The Immediately Dangerous to Life or Health (IDLH) concentration for this substance is 25 mg/m^3.

The appearance and odor of this substance varies depending on the type of chrome compound. Symptoms of exposure to chrome may include irritation of the skin and eyes. If splashed in the eyes, irrigate immediately. For dermal exposure, wash with soap and water immediately. If swallowed, immediately seek medical attention. If victim stops breathing after exposure to vapors, begin artificial respiration.

Arsenic

The PEL for arsenic is 0.010 mg/$m^{3.}$ NIOSH has established an REL, based on a 15-minute exposure period, of 2 mg/m^3. The IDLH concentration for this substance is 5 mg/m^3.

The appearance and odor of arsenic varies depending upon the specific organic arsenic compound. Routes of exposure include inhalation, ingestion, and contact. The skin, respiratory system, kidneys, central nervous system (CNS), liver, GI tract, and reproductive system are all target organs or chronic exposure.

Lead

The PEL for lead is 0.050 mg/m^3. NIOSH has established an REL of 0.100 mg/m3. The IDLH concentration for this substance is 100 mg/m^3.

A heavy, ductile, soft, gray solid, lead is also known as lead metal and plumbum. A person can be exposed to lead contamination by inhalation, ingestion, or contact. The target organs for lead include eyes, GI tract, CNS, blood, and gingival tissue.

Symptoms of lead exposure include weakness, lassitude, insomnia; facial pallor; pal eye, anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; ankle or wrist paralysis, encephalopathy; kidney disease; irritated eyes; and hypotension. If eye contact occurs, the eyes should be washed immediately with large amounts of water. For dermal contact, remove any penetrated clothing and immediately flush the contaminated skin with soap and water. If this chemical is inhaled in large quantities, move to fresh air at once. Perform mouth-to-mouth resuscitation if breathing has stopped. Keep the person warm and resting. For any of the above or if the chemical has been swallowed, seek medical attention promptly.

Dichlorodiphenyltrichloroethane (DDT)

The PEL for DDT is 1 mg/m^3. NIOSH has established an REL of 0.5 mg/m^3. The IDLH concentration for this substance is 500 mg/m^3.

Routes of exposure include inhalation, ingestion, absorption, and contact. Symptoms of exposure to DDT include irritation to eyes and skin, paresthesia of the tongue, lips, and face, tremor, apprehension, dizziness, confusion, malaise, headache, fatigue, convulsions, and vomiting. If eye contact occurs, the eyes should be washed immediately with large amounts of water. For dermal contact, remove any penetrated clothing and immediately flush the contaminated skin with soap and water. If this chemical is inhaled in large quantities, move to fresh air at once. Perform mouth-to-mouth resuscitation if breathing has stopped. Keep the person warm and resting. For any of the above or if the chemical has been swallowed, seek medical attention promptly.

Aldrin

The PEL for aldrin is 0.25 mg/m^3. NIOSH has established an REL of 0.25 mg/m^3. The IDLH concentration for this substance is 25 mg/m^3.

Routes of exposure include inhalation, ingestion, absorption, and contact. Symptoms of exposure to aldrin include headache, dizziness, nausea, vomiting, malaise, and coma. If eye contact occurs, the eyes should be washed immediately with large amounts of water. For dermal contact, remove any penetrated clothing and immediately flush the contaminated skin with soap and water. If this chemical is inhaled in large quantities, move to fresh air at once. Perform mouth-to-mouth resuscitation if breathing has stopped. Keep the person warm and resting. For any of the above or if the chemical has been swallowed, seek medical attention promptly.

Toxaphene

The PEL for toxaphene is 0.5 mg/m^3. The IDLH concentration for this substance is 200 mg/m^3.

Routes of exposure include inhalation, ingestion, absorption, and contact. Symptoms of exposure to toxaphene include nausea, confusion, agitation, temor, convulsions, dry, red skin, and unconsciousness. If eye contact occurs, the eyes should be washed immediately with large amounts of water. For dermal contact, remove any penetrated clothing and immediately flush the contaminated skin with soap and water. If this chemical is inhaled in large quantities, move to fresh air at once. Perform mouth-to-mouth resuscitation if breathing has stopped. Keep the person warm and resting. For any of the above or if the chemical has been swallowed, seek medical attention promptly.

Dieldrin

The PEL for dieldrin is 0.25 mg/m^3. NIOSH has established an REL of 0.25 mg/m3. The IDLH concentration for this substance is 50 mg/m^3.

Routes of exposure include inhalation, ingestion, absorption, and contact. Symptoms of exposure to dieldrin include headache, dizziness, nausea, vomiting, sweat, and coma. If eye contact occurs, the eyes should be washed immediately with large amounts of water. For dermal contact, remove any penetrated clothing and immediately flush the contaminated skin with soap and water. If this chemical is inhaled in large quantities, move to fresh air at once. Perform mouth-to-mouth resuscitation if breathing has stopped. Keep the person warm and resting. For any of the above or if the chemical has been swallowed, seek medical attention promptly.

Appendix F

Site Safety Officer Responsibilities

An SSO will be designated. The responsibilities of the SSO will include the following:

- briefing personnel on the hazards at the site, the standard operating procedures to be employed, and emergency procedures;
- conducting onsite health monitoring;
- coordinating access control and site security, including responsibility for protection of third parties, such as visitors or the surrounding community;
- monitoring work practices and decontamination to ensure that required procedures are being followed;
- being available to document and respond to any concerns or complaints made by onsite personnel;
- documenting unsafe work practices or conditions;
- documenting any accidents or incidents that result in illness or injury to personnel; and
- evaluating and amending the HASP daily to remedy deficiencies and post entry briefings.

Appendix G

Authorized Changes to HASP

Insert the following changes and replace affected pages

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Site Safety Officer Date

_____ _____
Project Director Date

References

U.S. Department of Health and Human Services, 1997. NIOSH Pocket Guide to Chemical Hazards. Washington, DC.