Addendum to the City of Pleasanton Housing Element and Climate Action Plan General Plan Amendment and Rezoning Supplemental EIR for the Avalon Bay Pleasanton Project City of Pleasanton, Alameda County, California

Prepared for:
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Table of Contents

List of Tables

List of Exhibits

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACCMA	Alameda County Congestion Management Agency
ACCWP	Alameda Countywide Clean Water Program
ACTIA	Alameda County Transportation Improvement Authority
AIA	Airport Influence Area
ALUCP	Airport Land Use Compatibility Plan
APA	Airport Protection Area
AQP	Air Quality Plan
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BGM	BAAQMD's Greenhouse Gas Model
BMP	Best Management Practice
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CBC	California Building Standards Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CWA	Clean Water Act
dB	decibels
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
EFZ	Earthquake Fault Zone
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
GHG	greenhouse gas

GPCD	gallons per capita per day
HDR	High Density Residential
HRA	Health Risk Assessment
HVAC	heating, ventilation, and air conditioning
IAQ	Indoor Air Quality
LAVTA	Livermore Amador Valley Transit Authority
LAVTA Wheels	LAVTA Tri-Valley Wheels
lbs	pounds
L_{eq}	equivalent noise/sound level
LHMP	Local Hazard Mitigation Plan
L_{max}	maximum noise/sound level
LOS	Level of Service
LRA	Local Responsibility Area
MDR	Medium Density Residential
MERV	Minimum Efficiency Reporting Value
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MTC	Metropolitan Transportation Commission
MT CO_2e	metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	Negative Declaration
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PRC	Public Resources Code
PUD	Planned Unit Development
PV	photovoltaics
RHNA	Regional Housing Needs Allocation
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
RWTF	Regional Wastewater Treatment Facility
SEIR	Supplemental Environmental Impact Report
SP	service population
SRA	State Responsibility Area
State Water Board	California State Water Resources Control Board

SWIS	Solid Waste Information System
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TCM	Transportation Control Measure
TCR	Tribal Cultural Resource
TIA	Traffic Impact Analysis
URBEMIS2002	Urban Emissions software
USFWS	United States Fish and Wildlife Service
UWMP	Urban Water Management Plan
VMT	Vehicle Miles Traveled
VOC	volatile organic compound
WSA	Water Supply Assessment

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SECTION 1: INTRODUCTION

This Addendum and attached supporting documents have been prepared to determine whether and to what extent the City of Pleasanton 2015–2023 (5th Cycle) Housing Element Supplemental Environmental Impact Report (SEIR) (State Clearinghouse [SCH] No. 2011052002) addresses the potential impacts of the proposed modifications to the City of Pleasanton – Avalon Bay Project (proposed project) and if it would result in any new significant environmental effect not addressed in the SEIR or increase the severity of any previous identified environmental effect addressed in the SEIR as required under the California Environmental Quality Act (CEQA) (Public Resources Code [PRC], § 21000, *et seq*.).

The proposed project consists of modifications to the approved, yet to be constructed podium building at 5601 Owens Drive (formerly 4452 Rosewood Drive) (project site). The modifications include the addition of a fifth floor to the podium building with an additional 31 residential units.

1.1 - CEQA Assessment

Pursuant to CEQA Guidelines, (PRC § 21000, *et seq*.), an SEIR and a Mitigation Monitoring and Reporting Program (MMRP) were prepared and certified by the City of Pleasanton (City) on January 4, 2012 pursuant to Resolution No. 12-493, for the 2015–2023 (5th Cycle) Housing Element (SCH No. 2011052002). This document will be referred to as the SEIR throughout this Addendum.

A previously prepared Addendum to the SEIR, dated March 4, 2012 (herein referred to as the 2012 Addendum), was prepared to analyze the site-specific project. The 2012 Addendum was certified, and the project was approved. The 2012 Addendum is incorporated into the SEIR and, as such, the documents are collectively referred to as the SEIR. Additional changes have now been proposed to the project, requiring discretionary approval.

CEQA Guidelines Section 15164, subd. (a) requires a lead agency or a responsible agency to prepare an Addendum to a previously certified Environmental Impact Report if some changes or additions are necessary but none of the conditions described in CEQA Guidelines Sections 15162 or 15163 calling for preparation of a subsequent or supplemental document have occurred (CEQA Guidelines § 15164, subd. (a); 15163, subd. (a)). The CEQA Guidelines instruct agencies to use checklists or similar mechanisms to conduct this analysis pursuant to Section 15162's guidance for determining the need for subsequent documents. Whether a later activity provides

changes to the approved project that are consistent with and within the scope of the conditions described in Section 15162 calling for preparation of the SEIR is a factual question that the City determines based on substantial evidence in the record. Factors that the City may consider in making this determination include, but are not limited to, consistency of the later activity with the type of allowable land use, overall planned density and building intensity, geographic area analyzed for environmental impacts, and covered infrastructure as addressed in the SEIR.

1.2 - Summary of Results

As illustrated by the following Addendum, the proposed project is found to be in conformance with the analysis and conclusions of the Housing Element SEIR. This determination is based on the following criteria:

1. There are no substantial changes proposed by the proposed project or under the circumstances in which the proposed project would be undertaken that would require major revisions of the SEIR.
2. The proposed revisions do not require preparation of a new subsequent or Supplemental EIR due to either (1) the involvement of new significant environmental effects, (2) a substantial increase in the severity of previously identified significant effects, or (3) new information of substantial importance.
3. No mitigation measures or alternatives previously found not to be feasible would in fact be feasible nor has the proposed project proponent declined to adopt any additional mitigation measures or alternatives that would substantially reduce one or more significant effects on the environment.
4. Applicable mitigation measures from the previous SEIR are identified and discussed in this Addendum.

As illustrated herein, the proposed project is consistent with and within the scope of the previously Certified SEIR and would involve only minor changes; therefore, an Addendum is appropriate and is the legally required CEQA compliance for the proposed project.

The following Mitigation Measures (MMs) identified in the SEIR are applicable to the proposed project, as described in each environmental topic:

- MM 4.B-1a
- MM 4.C-1a
- MM 4.C-1b
- MM 4.D-4
- MM 4.D-3
- MM 4.G-5 (part c)
- MM 4.J-1
- MM 4.J-6c
- MM 4.N-1
- MM 4.L-2

The Housing Element Update SEIR is available at: https://www.cityofpleasantonca.gov/assets/our-government/community-development/final-supplemental-eir-he-cap-gpa010412%5B1%5D.pdf?_t=1729096072

The 2012 Addendum is available at:

City of Pleasanton
200 Old Bernal Avenue
Pleasanton, CA 94566-0802

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SECTION 2: PROJECT DESCRIPTION

2.1 - Project Details

1. Project Title and Number

Avalon Bay Project Addendum (City Project No. PUD85-08-iD-6M)

2. Lead Agency Name and Address

City of Pleasanton
Community Development Department
Planning Division
200 Old Bernal Avenue
Pleasanton, California 94566-0802

3. Contact Person and Phone Number

Jenny Soo, Associate Planner
Phone: 925.931.5615

4. Project Location and Assessor's Parcel Number (APN)

5601 Owens Drive (APNs 941-2780-44 and 941-2780-45)

5. Project Sponsor's Name and Address

Avalon Bay Communities
455 Market Street, Suite 1650
San Francisco, CA 94105

6. General Plan Designation

Business Park/Mixed Use

7. Zoning and Density

Planned Unit Development (PUD) – High Density Residential (HDR)

8. Description of Project

This document is an Addendum to the SEIR as modified by the 2012 Addendum. For the purposes of this analysis the SEIR and the 2012 Addendum are collectively referred to as the SEIR.

The proposed project consists of modifications to the approved, yet to be constructed podium building at 5601 Owens Drive (formerly 4452

Rosewood Drive) (project site). The modifications include an addition of a fifth floor to the podium building with an additional 31 residential units.

9. Requested Permits/Approvals

- Planned Unit Development Modifications
- Building Permit

2.2 - Project Location and Setting

2.2.1 - Location

The project site consists of approximately 8.4 acres located on the north side of Owens Drive between Rosewood Drive and Tassajara Creek within the Hacienda Business Park in the City of Pleasanton (Exhibit 1). The project site is approximately 0.3 mile south of Interstate 580 (I-580) and approximately 0.7 mile southeast of the East Dublin/Pleasanton Bay Area Rapid Transit (BART) station.

2.2.2 - Existing Environmental Setting

Project Site

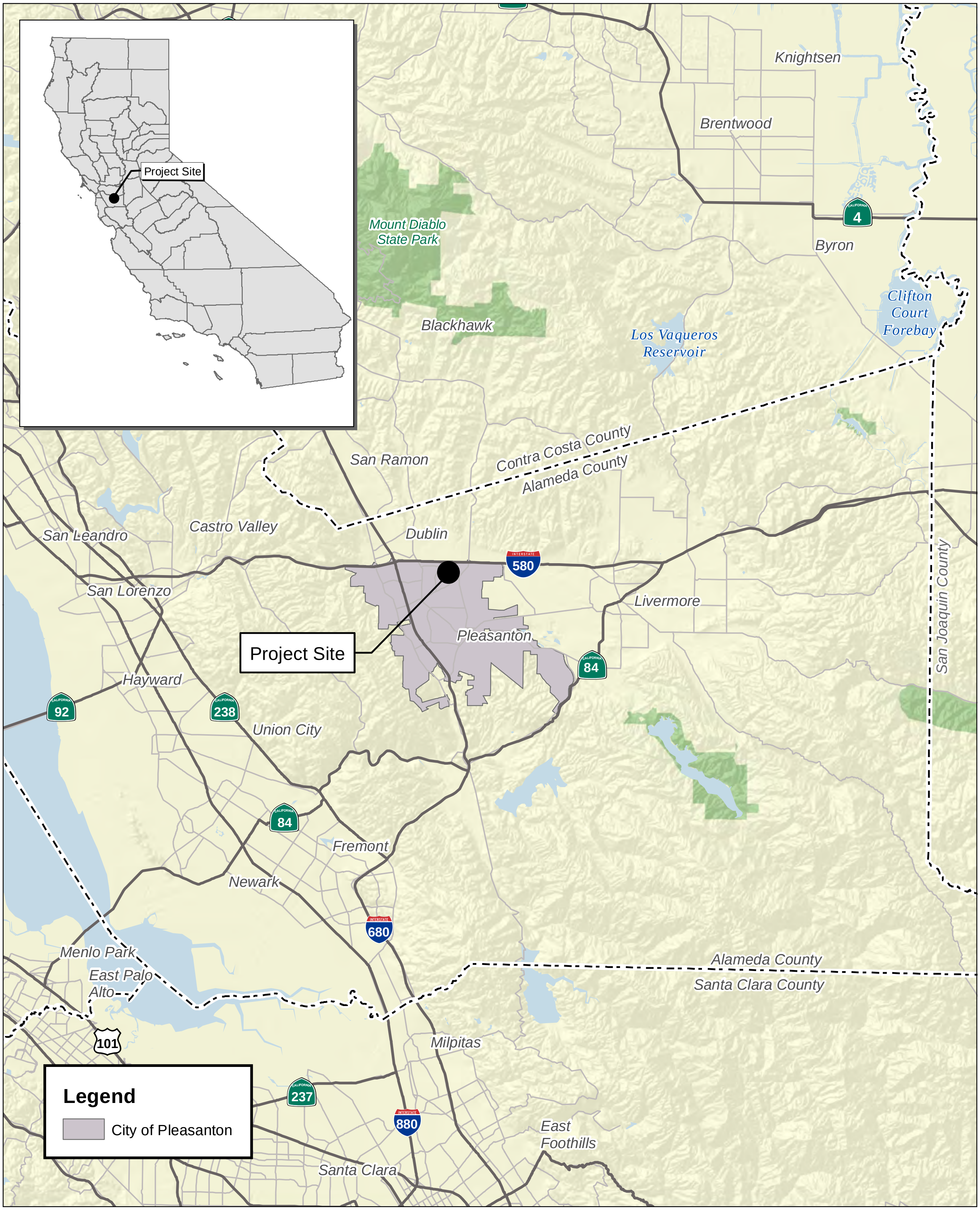
The 8.4-acre site is currently under construction in accordance with the project's 2013 approval with the exception of the podium building located in the southeastern portion of the project site. Prior to construction, the project site consisted of surface parking with associated landscaping areas (Exhibit 1).

Surrounding Land Uses

The project site is adjacent to a variety of land uses, including multi-family residential uses to the south and east, commercial retail uses to the northwest, and commercial office space to the north (Exhibit 2). Tassajara Creek abuts the project site on the east.

Land Use Designation and Zoning

The project site is zoned PUD –HDR and Planned Unit Development – Industrial/Commercial-Office (PUD-I/C-O) and has a General Plan land use designation of Business Park/Mixed Use (Exhibit 3 and Exhibit 4).



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

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Exhibit 1
Regional Location Map

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CITY OF PLEASANTON
ADDENDUM TO THE CITY OF PLEASANTON HOUSING ELEMENT AND CLIMATE ACTION PLAN GENERAL PLAN AMENDMENT AND REZONING SUPPLEMENTAL EIR FOR THE AVALON BAY PLEASANTON PROJECT

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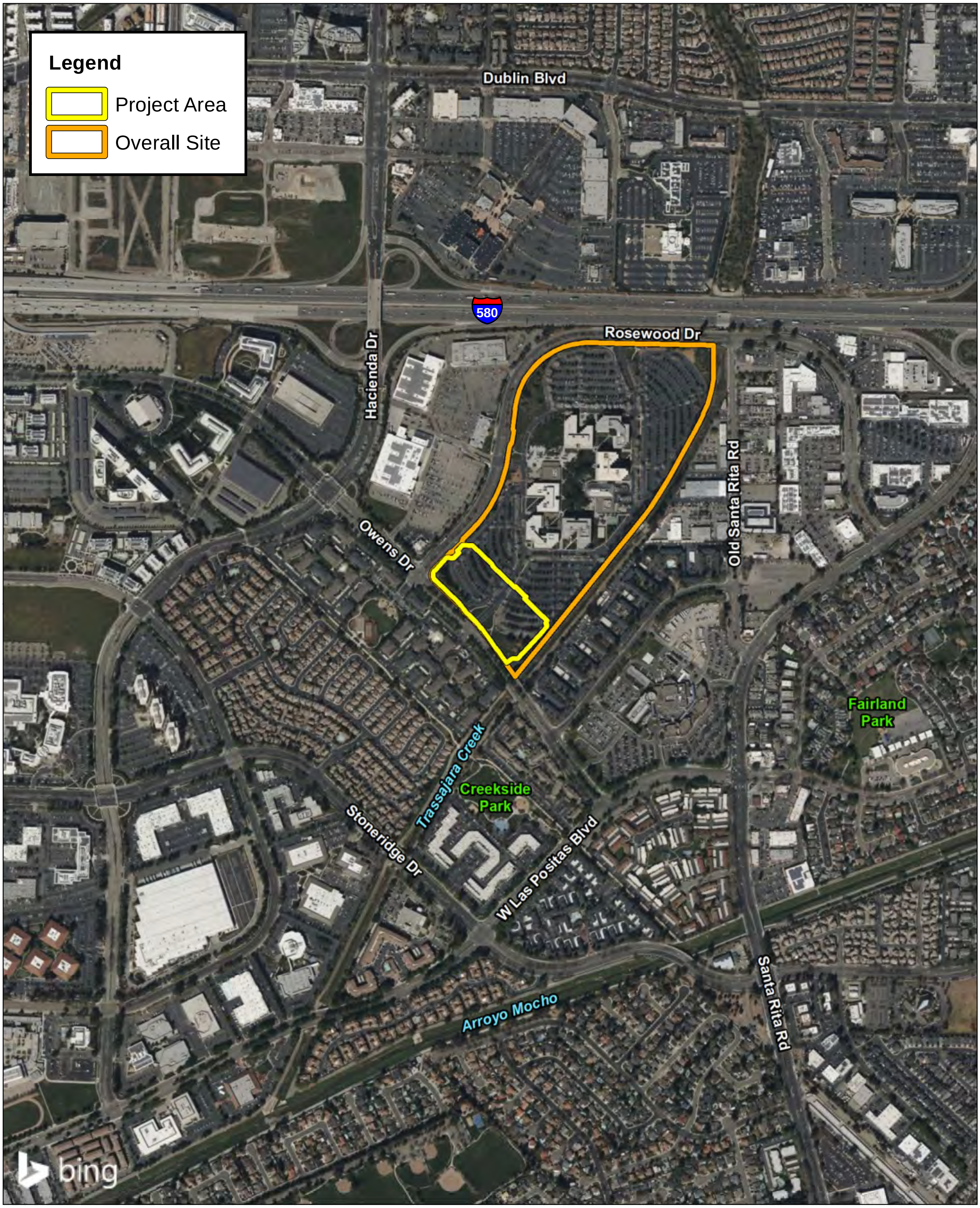

Source: Bing Aerial Imagery. County of Alameda.

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Exhibit 2
Local Vicinity Map

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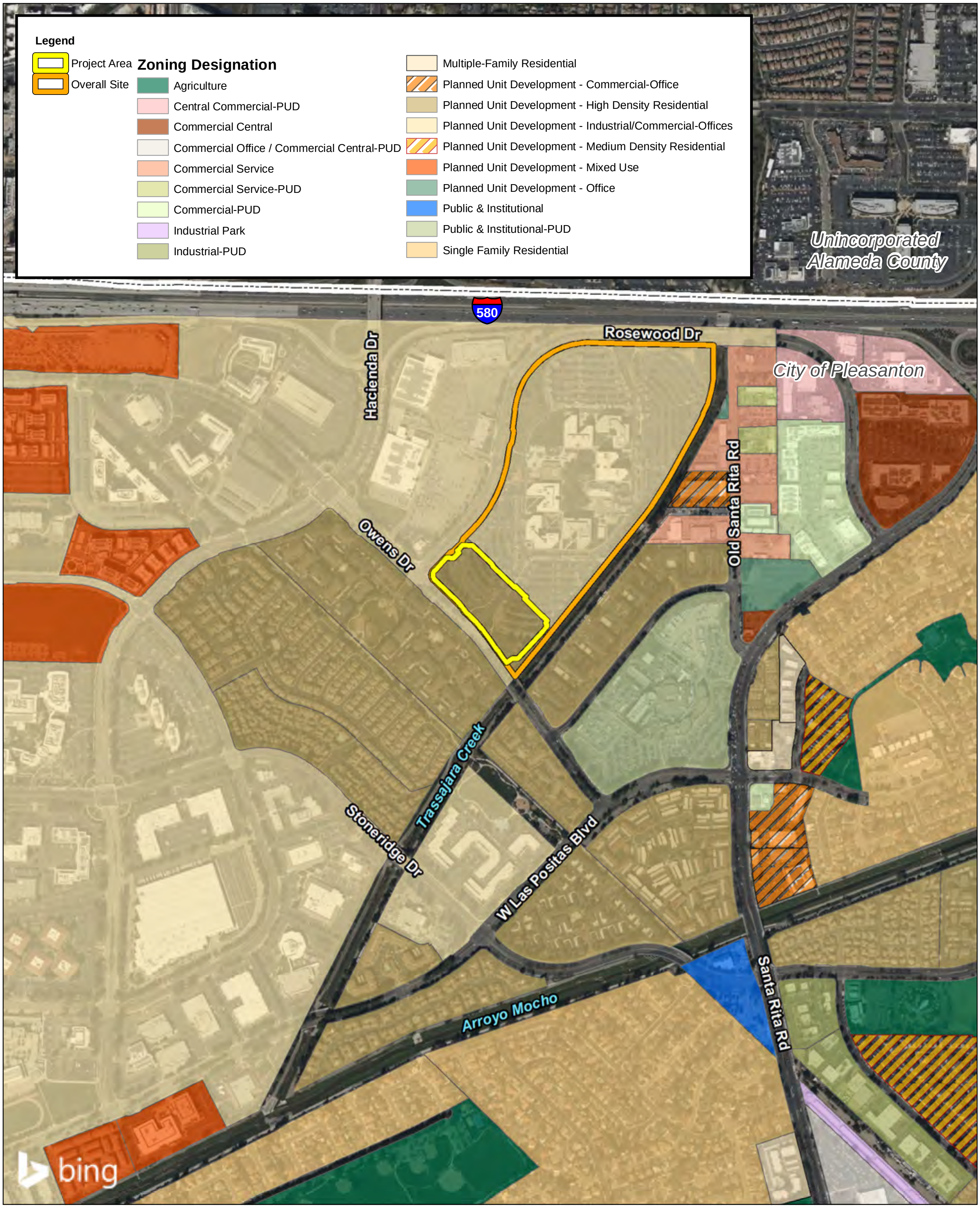

Source: Bing Aerial Imagery. City of Pleasanton.

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Exhibit 3
Zoning Map

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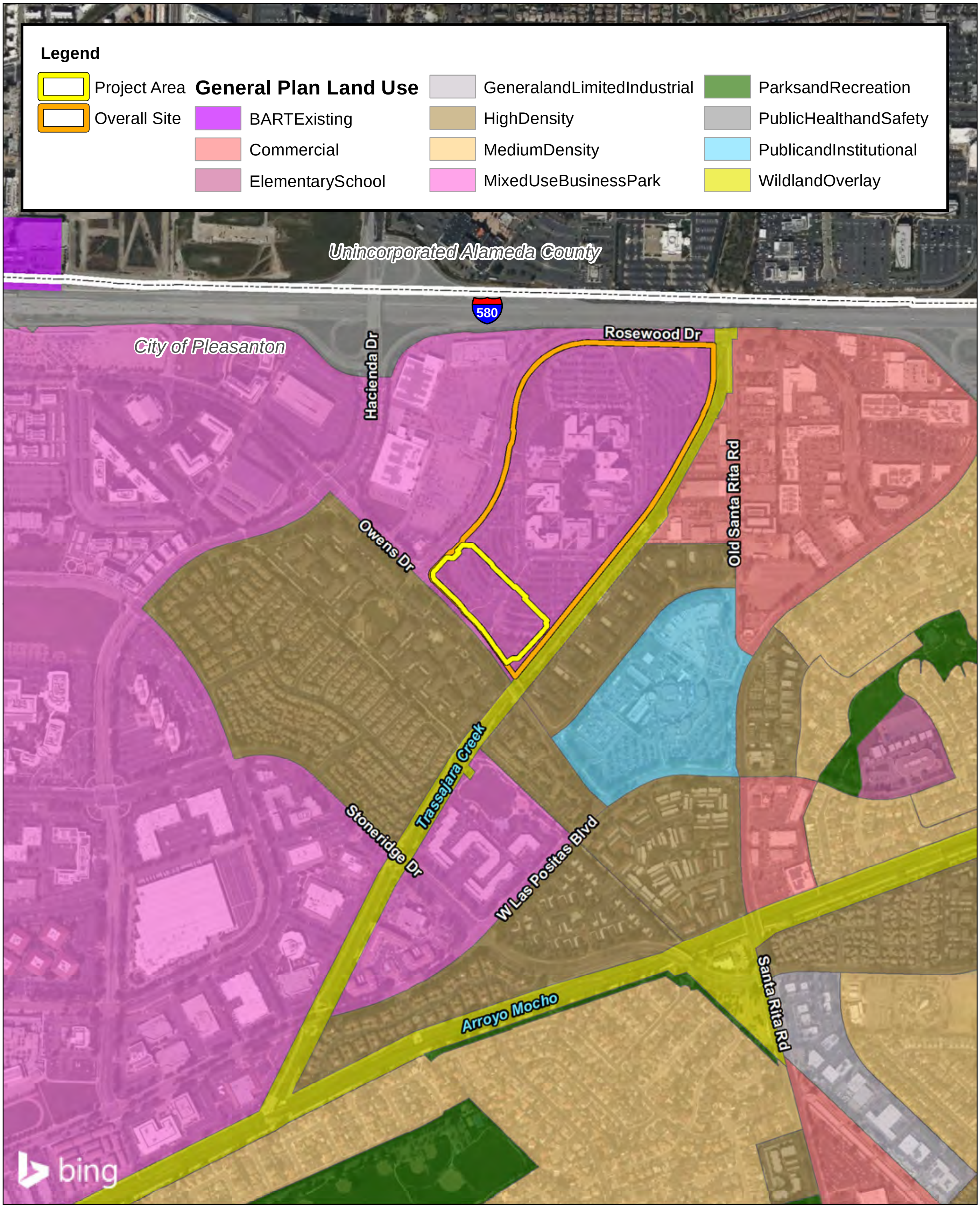

Source: Bing Aerial Imagery. City of Pleasanton.

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Exhibit 4
General Plan Land Use Designation

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2.3 - Project Background and Previous Environmental Review

2.3.1 - General Plan Housing Element

On July 21, 2009, the City of Pleasanton adopted the Pleasanton General Plan Update 2005–2025 subsequent to the certification of the Pleasanton General Plan Update 2005–2025 EIR (SCH No. 2005122139). However, as a result of two lawsuits (*Urban Habitat Program v. City of Pleasanton* and *State of California v. City of Pleasanton*) and a subsequent Settlement Agreement and Covenant Not to Sue, dated August 2010, the City was obligated to update its Housing Element to meet regional housing needs (including eliminating the housing cap) and adopt a Climate Action Plan, both of which are subject to the provisions of CEQA.

2.3.2 - 2012 Housing Element Update Supplemental Environmental Impact Report

On January 4, 2012, under Resolution No. 12-493, the City of Pleasanton certified the SEIR for the 5th Cycle City of Pleasanton Housing Element and Climate Action Plan General Plan Amendment and Rezonings (SCH No. 2011052002), hereinafter referred to as the SEIR. The document provided supplemental information for the City of Pleasanton General Plan Program EIR (SCH No. 2005122139) with regards to an updated Housing Element, the adoption of a Climate Action Plan, and related General Plan Amendments and Rezonings. The SEIR considered the potential impacts that were likely to result from implementation of the policies and programs contained within the updated Housing Element and Climate Action Plan and the changes in land use designations proposed in the General Plan Amendment and rezonings.

Within the SEIR, the City identified 21 potential sites for rezoning and the buildout potentials of those sites to provide an adequate inventory of housing to meet Pleasanton's share of regional housing needs through 2014 (City of Pleasanton 2011). Not all 21 sites were needed to meet Pleasanton's share of regional housing needs, and the City ultimately selected only nine of the 21 sites for rezoning. As such, the SEIR provides a conservative analysis regarding potential impacts resulting from the development of residential land uses on rezoned sites.

The subject property (project site) was included as a potential site for rezoning in the SEIR as site Number 10. Within the SEIR, 8.43 acres of the 60-acre parcel was considered for the development of 252 to 420 units and up to 10,000 square feet of retail space. Future development on the project site would be required to abide by all applicable mitigation included in the SEIR. As a result of the SEIR, the 8.43-acre portion of the project site was rezoned from Planned Unit Development Industrial/ Commercial-Office (PUD-I/C-O) to Planned Unit Development High Density Residential (PUD-HDR). The PUD-HDR zoning for the project site requires a housing unit per acre ratio from 35:1 to no more than 40:1 and, as analyzed in the SEIR, allows for up to 10,000 square feet of retail space. The City approval includes a list of uses allowed and conditionally allowed. Child care facility is listed as a conditionally allowed use.

The SEIR concluded that all potential impacts resulting from the implementation of the Housing Element and Climate Action Plan were either less than significant or could be reduced to less than significant after mitigation with the exception of two significant unavoidable impacts. The first significant unavoidable impact involves the demolition of a potentially significant historic resource on Site 6. The project site evaluated in this Addendum is not located on Site 6 and, therefore, would not contribute to this significant unavoidable impact. The second significant unavoidable impact determined by the SEIR consists of the addition of traffic to Sunol Boulevard (First Street) and Hopyard Road to the point at which roadway segments would operate unacceptably under Cumulative Plus Project Conditions. However, the minor modifications to the previously approved project as analyzed herein would result in a reduced contribution to this impact as it proposes fewer residential units and less retail space than that analyzed in the SEIR.

2.3.3 - 2012 Addendum

In 2012, the City considered an Addendum to the SEIR (2012 Addendum) that analyzed an approximately 8.4-acre southern portion of the 60.9-acre California Center property and zoned it for PUD-HDR with a density of at least 35 dwelling units per acre (294 units) with no more than 40 dwelling units per acre (336 units), consistent with the SEIR.

The 2012 Addendum included analysis of this 8.4-acre area for the demolition of the existing parking lot, associated landscaping, the construction of 305 residences in eight buildings, and construction of 7,520 square feet of retail space in two buildings. The City unanimously approved the 2012 Addendum and the project on March 27, 2013.

2.3.4 - Approved 2022 Minor Modifications

In 2022, AvalonBay Communities acquired the 8.4-acre site that is zoned PUD-HDR. The same year, the City approved minor modifications (Case No. PUD-85-08-1D-5M) to the PUD analyzed in the approved 2012 Addendum, as follow: (1) modifying site layout, including on-site circulation, parking, and open spaces areas; (2) updating exterior elevations of all buildings; (3) changing the retail use of the corner building to a daycare center (subject to a conditional use permit approval),[1] and (4) modifying related on- and off-site improvements (APNs 941-2780-44 and 941-2780-45) (Exhibit 5).

2.4 - Project Characteristics

2.4.1 - Approved Development Summary

The approved 305-unit residential complex includes four garden buildings, two townhouse buildings, one podium building, and on-site amenity buildings. Residential amenities include a resident community center, pool and spa, and fitness building.

With the Planning Commission's approval of the Conditional Use Permit in 2024, a child care facility of approximately 6,600 square feet would be located at the corner of Rosewood Drive and Owens Drive, replacing the previously approved retail building. The child care facility would have a maximum of 110 children and 18 staff members on-site at one time.

In June 2024, building permits for the residential portion of the project were issued, with the exception of the podium building.

Table 1 provides a summary of the residential component changes between 2012 approval and 2022 modifications with the total residential units remain unchanged.

[1] The Planning Commission approved the child care facility (Case No. P24-0110) in April 2024.

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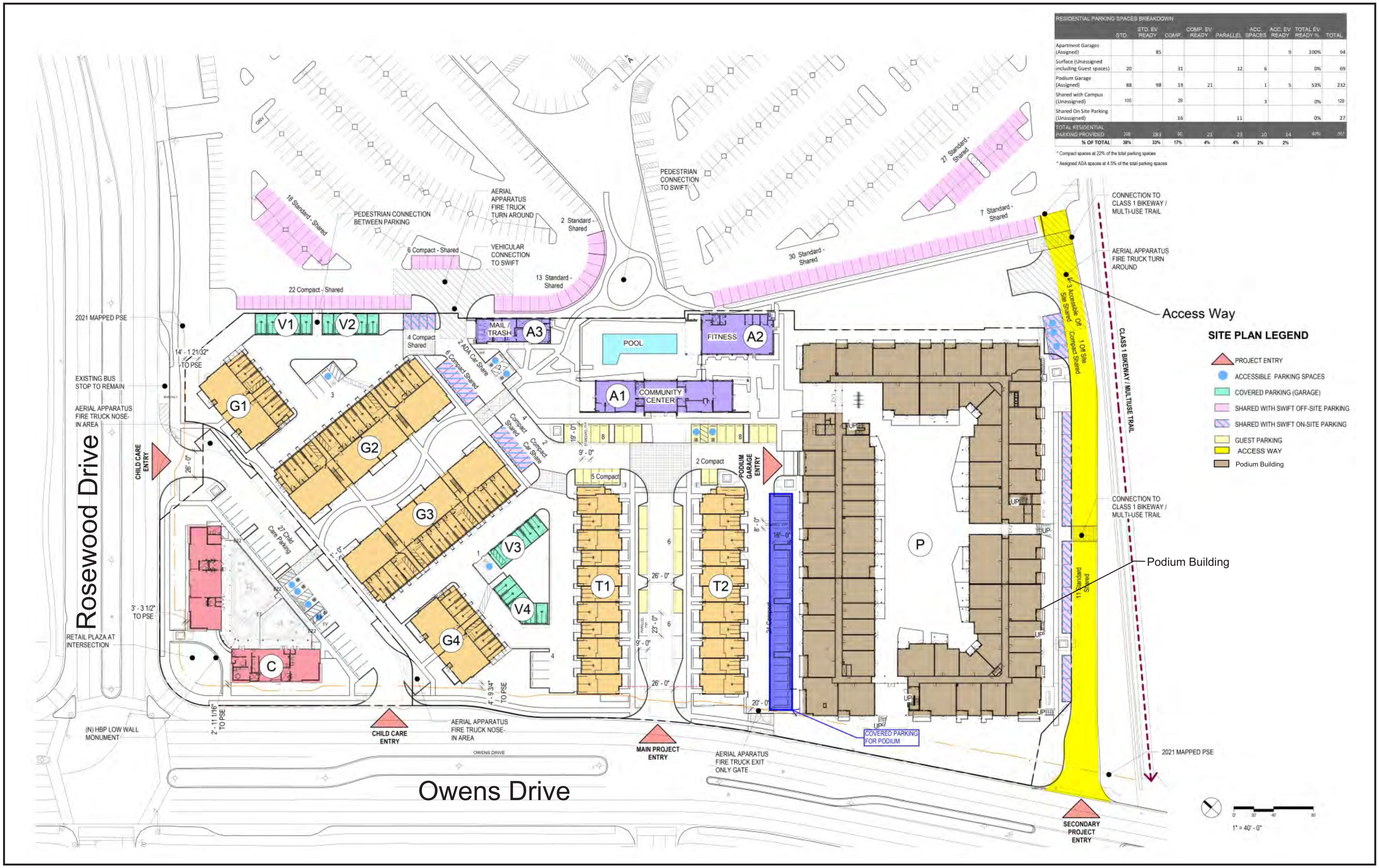

RESIDENTIAL PARKING SPACES BREAKDOWN	STD.	STD. EV READY	COMP.	COMP. EV READY	PARALLEL	ACC. SPACES	ACC. EV READY	TOTAL EV READY %	TOTAL
Apartment Garages (Assigned)		85					9	100%	94
Surface (Unassigned including Guest spaces)	20		31		12	6		0%	69
Podium Garage (Assigned)	88	98	19	21		1	5	53%	232
Shared with Campus (Unassigned)	100		28			3		0%	120
Shared On Site Parking (Unassigned)			16		11			0%	27
TOTAL RESIDENTIAL PARKING PROVIDED	208	183	92	21	23	10	14	40%	551
% OF TOTAL	38%	33%	17%	4%	4%	2%	2%		

* Compact spaces at 22% of the total parking spaces
* Assigned ADA spaces at 4.5% of the total parking spaces

Source: Pyatok, AvalonBay Communities, 07/25/2024.

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Exhibit 5
Site Plan

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Table 1: Project Summary–Residential Component Comparison

2012 Approved Project		2022 Modifications	
Building	**Units**	**Building**	**Units**
Garden Walkup G1	37	Garden Walkup G1 and G4	20
Garden Walkup G2	31	Garden Walkup G2 and G3	40
Garden Walkup G3/G4	40	Townhouses T1 and T2	22
Podium P1, P2, P3	254	Podium	223
Total	**305**	**Total**	**305**

Table 2 shows the 2012-approved retail buildings replaced by the 2022-approved child care facility.

Table 2: Project Summary–Retail v. Daycare

Use	2012 Approved Project	2024 Modifications
Retail	7,520 square feet	—
Daycare	—	6,600 square feet

2.4.2 - Proposed Development Modification

The applicant now proposes to modify the approved four-story podium building. Specifically, the proposal would add a fifth floor with an additional 31 residential units, with the overall residential units consistent with the 2012 Housing Element update

Table 3 compares the currently proposed improvements with what was previously approved as part of the 2012 Addendum. As shown, the changes include an additional 31 units, which would be located in a new fifth floor to the podium building.

Table 3: Project Summary Compared to Approved Project in 2012 Addendum

Use	2012 Addendum	Approved Development Modifications (2022 and 2024)	Currently Proposed Development Modifications	Overall Change
Residential	305 units (4 stories)	305 units (4 stories)	336 units (5 stories)	31 units
Retail	7,520 square feet	0	—	-7,520 square feet

Use	2012 Addendum	Approved Development Modifications (2022 and 2024)	Currently Proposed Development Modifications	Overall Change
Child care Facility	0	6,600 square feet	—	+6,600 square feet

2.4.3 - Design and Appearance

The design of the proposed fifth floor of the podium building would match the approved podium building. It is designed on sustainable design principles, and the residential buildings will achieve a "Green Home" rating on Alameda County Waste Management Authority's Multi-family Green Building Rating System.

Exhibit 6, Building Elevations and Perspectives, depicts the podium building's proposed elevations from various angles.

2.4.4 - Landscaping

Addition of the fifth floor would not result in any changes to landscaping as approved and previously considered in the 2012 Addendum.

2.4.5 - Access and Circulation

Vehicular Circulation

There would not be any changes to vehicular access for the proposed project. Vehicular access would be provided from Owens Drive via an 80-foot-wide main project entry. Internal circulation would be provided as shown in Exhibit 5, Site Plan.

Alternative Transit

Livermore Amador Valley Transit Authority (LAVTA) Tri-Valley Wheels (Wheels) LAVTA Route 54 provides stops along Rosewood Drive and within California Center that would offer easy access for residents.

LAVTA Wheels Route 10R provides access along Owens Drive, which would also supply transit access for future residents.

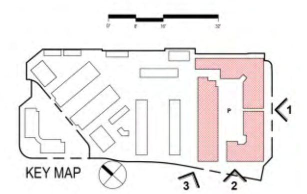
Pedestrian Access

Rosewood Drive and Owens Drive include sidewalks for pedestrians. In addition, the Tassajara Creek Trail is located along the project's eastern boundary, located approximately 0.7 mile to the north.

1: S-E ELEVATION FACING SWIFT

2: S-W ELEVATION FACING OWENS DRIVE

3: VIEW FROM OWENS DRIVE



Source: Pyatok, AvalonBay Communities, 07/25/2024.

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Exhibit 6
Building Elevations and Perspectives

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CITY OF PLEASANTON
ADDENDUM TO THE CITY OF PLEASANTON HOUSING ELEMENT AND CLIMATE ACTION PLAN GENERAL PLAN AMENDMENT AND REZONING SUPPLEMENTAL EIR FOR THE AVALON BAY PLEASANTON PROJECT

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2.4.6 - Parking

With the proposed 31 additional residential units, the applicant proposes an additional 60 parking spaces. The parking would be located on the adjoining property to the north via a recorded shared parking agreement.

2.4.7 - Off-site Improvements

No changes or additions to off-site improvements would be required or are proposed in association with the proposed additional fifth floor.

2.4.8 - Utilities

The proposed additional 31 residential units would be subject to requirements and fees per the City master fee schedule at the time of permit issuance.

Utility infrastructure, including stormwater, would not require any significant changes as a result of the proposed additional fifth floor and 31 units.

2.4.9 - Construction Schedule and Phasing

Construction of the residential complex is underway with the exception of the podium building. It is estimated that construction of the podium building may begin in January 2025, with podium building occupancy in late 2026. The project plans and specifications incorporate construction minimization plans designed to reduce construction equipment exhaust emissions and minimize emissions of toxic air contaminants. The architectural coatings phase of construction is estimated to take approximately 6 months to complete. Low VOC paint (250 grams volatile organic compounds [VOC] per liter or less) will be used. Off-road construction equipment with diesel-powered engines over 50 horsepower will be powered by Tier 4 certified engines; engines over 150 horsepower will have Level 3 diesel particulate filters with a minimum efficiency of 85 percent.

2.5 - Discretionary Approvals

The City of Pleasanton has discretionary authority over the proposed project and is the CEQA Lead Agency for the preparation of this Addendum. In order to implement the proposed project, the following permits and/or approval would need to be granted:

- Planned Unit Development Modifications
- Building Permit

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SECTION 3: CEQA GUIDELINES SECTION 15164: ADDENDUM TO A CERTIFIED EIR

Section 15164 of the State CEQA Guidelines states that an Addendum to an EIR shall be prepared "if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred." Thus, if none of the conditions described below are met, the City may not require preparation of a subsequent or Supplemental EIR. Rather, the City can decide that no further environmental documentation is necessary or can require that an Addendum be prepared.

CEQA Guidelines Section 15164, subd. (a) provides that the lead agency or a responsible agency shall prepare an Addendum to a previously certified Environmental Impact Report or Negative Declaration (ND) if some changes or additions are necessary but none of the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR or ND have occurred (CEQA Guidelines § 15164, subd. (a)).

An Addendum need not be circulated for public review but can be included in or attached to the Final EIR or ND (CEQA Guidelines § 15164, subd. (c)). The decision-making body shall consider the Addendum to the Final EIR prior to making a decision on the proposed project (CEQA Guidelines § 15164, subd. (d)). An agency must also include a brief explanation of the decision not to prepare a subsequent EIR or ND pursuant to Section 15162 (CEQA Guidelines § 15164, subd. (e)).

Consequently, once an EIR or ND has been certified for a project, no subsequent EIR or ND is required under CEQA unless, based on substantial evidence:

1) Substantial changes are proposed in the project which will require major revisions of the previous Certified EIR or ND . . . due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous Certified EIR or ND . . . due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous Certified EIR was certified as complete or the ND was adopted. . . shows any of the following:

A. The project will have one or more significant effects not discussed in the previous Certified EIR or ND;
B. Significant effects previously examined will be substantially more severe than shown in the previous Certified EIR or ND;
C. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
D. Mitigation measures or alternatives which are considerably different from those analyzed in the previous Certified EIR or ND would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative (CEQA Guidelines § 15162, subd. (a); see also PRC § 21166).

Thus, if none of the above conditions are met, the City may not require preparation of a subsequent or Supplemental EIR. Rather, the City can decide that no further environmental documentation is necessary or can require that an Addendum be prepared.

This Addendum reviews changes to the approved project and to existing conditions that have occurred since the SEIR and 2012 Addendum were certified and compares environmental effects of the proposed project with those analyzed and previously disclosed under the approved project. This Addendum also considers new information of substantial importance that was not known and could not have been known with exercise of reasonable diligence at the time the SEIR was certified and evaluates whether there are new or more severe significant environmental effects associated with changes in circumstances under which project development is being undertaken. It further examines whether, as a result of any changes or any new information, a subsequent or Supplemental EIR may be required. This examination includes an analysis of provisions of Public Resources Code Section 21166 and Section 15162 of the State CEQA Guidelines and their applicability to the proposed project.

This Addendum, checklist, and attached documents constitute substantial evidence supporting the conclusion that preparation of a supplemental or subsequent EIR or ND is not required.

This Addendum addresses the conclusions of the SEIR, as supplemented by the 2012 Addendum, in light of the proposed project.

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SECTION 4: ADDENDUM CHECKLIST

The purpose of the checklist is to evaluate the proposed project in terms of any changed condition (e.g., project changes, changed circumstances, or new information of substantial importance) that may result in a changed environmental result (e.g., a new significant impact or substantial increase in the severity of a previously identified significant effect) (CEQA Guidelines § 15162).

Consistent with the thresholds used by the Lead Agency in the previous SEIR, the attached Addendum uses the standard environmental checklist categories provided in Appendix G of the CEQA Guidelines but provides summary columns for evaluation consistent with the provisions an addendum (CEQA Guidelines Sections 15162 through 15164).

A "no" answer does not necessarily mean that there are no potential impacts relative to the environmental category but that there is no change in the condition or status of the impact since it was analyzed and addressed with mitigation measures in the previously SEIR. These environmental categories might be answered with a "no" in the checklist where the proposed project does not introduce changes compared to the approved project that would result in a modification to the findings of the previously Certified SEIR.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
I. Aesthetics *Except as provided in Public Resources Code Section 21099, would the project:*					
a) Have a substantial adverse effect on a scenic vista?	Less than significant impact	No	No	No	None
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a State Scenic Highway?	Less than significant impact	No	No	No	None
c) In non-urbanized 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	No	No	No	None
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	No	No	No	None

Discussion

a) Scenic Vistas

Would the project: *Have a substantial adverse effect on a scenic vista?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that, by following goals, policies, and programs included as part of the 2012 Housing Element, General Plan, applicable zoning requirements, design guidelines, and specific plans, Pleasanton's visual resources, including hillsides and ridgelines, would largely be protected from impacts resulting from development facilitated by the 2012 Housing Element including that proposed for the project site. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded that views of surrounding scenic resources are primarily obstructed by mature trees and residential and commercial buildings and the project would not create any obstructions or conflicts with scenic resources. Furthermore, the project would conform to all applicable City guidelines and policies regarding mixed use and residential development. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

Views of surrounding scenic vistas, including Mt. Diablo to the north, the Pleasanton Ridgelands to the west, and the Pleasanton, Southeast, and Main Hills (to the west, southeast, and east of Pleasanton) are obstructed by mature trees and residential and commercial buildings. The proposed project is consistent with surrounding land uses. Therefore, the proposed project's additional fifth floor would not create any additional obstructions or conflicts with scenic vistas. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Scenic Highways

Would the project: *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a State Scenic Highway?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that, although multiple sites zoned for residential development or identified as potential sites for rezoning under the 2012 Housing Element are visible along the I-580 and I-680 corridors, development of these sites would not result in substantial damage to scenic resources, which consist primarily of the hillsides and ridgelines that surround the City, and therefore, impacts would be less than significant.

The 2012 Addendum indicated that views of the project site from I-580 are blocked by developed commercial land uses. Because the project site is not visible from I-580 and I-580 is not a designated State Scenic Highway, the project would not introduce any new impacts to views from State Scenic Highways not previously disclosed. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project is adjacent to I-580, which is designated as an Eligible State Scenic Highway but is not officially designated as a State Scenic Highway. The proposed project consist of infill development and there are no scenic resources on the project site. Furthermore, views of the project site from I-580 are blocked by commercial land uses. As such, the proposed project would not damage scenic resources within a State Scenic Highway. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) Consistency with Scenic Quality Regulations and Visual Character

Would the project: *In non-urbanized 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?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that potential adverse effects of new development on the visual character of the site and surrounding area would be reduced through the Design Review process required by Chapter 18.20 of the Pleasanton Municipal Code. As such, infill development, such as that of the proposed project, would be consistent with the character of its surrounding area and, overall, would retain the existing visual character of Pleasanton. As such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum determined that the project would be consistent with the mixed-use zoning considered for the project site by the SEIR. Furthermore, the project would undergo the Design Review process via the PUD process as required by Chapter 18.68 of the Pleasanton Municipal Code and be subject to the City-approved Housing Site Development Standards and Design Guidelines. While the project would increase the development intensity and density, it would comply with the policies of the General Plan and zoning ordinance to ensure compatibility with the context of the site and the City in general. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would be consistent with development as considered by the SEIR and consistent with the mixed use zoning considered for the project site in the SEIR. The Design Review process via the PUD process as required by Chapter 18.68 of the Pleasanton Municipal Code, which would ensure that the proposed project would be consistent with the architectural style of the surrounding area and that the heights and massing of the buildings would respect the overall context. Furthermore, the City-approved Housing Site Development Standards and Design Guidelines also include guidelines to ensure compatibility with surrounding buildings. The proposed project would further increase the development intensity and density in the area; however, it would comply with the policies of the General Plan and zoning ordinance to ensure compatibility with the context of the site and the City in general. As such, the proposed project would not conflict with applicable zoning and other regulations governing scenic quality. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Light and Glare

Would the project: *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that new residential and associated retail development would introduce artificial light from residences and outdoor parking area as well as glare. However, compliance with the State's Nighttime Sky-Title 24 Outdoor Lighting Standards and the City's General Plan policies and Municipal Code regulations regarding lighting and glare would reduce potential light and glare. As such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum indicated that the project has been designed in accordance with the City of Pleasanton's General Plan policies regarding lighting and glare as well as the Pleasanton Municipal Code regulations, including Sections 18.48.100, 18.88.040, and 18.96.020, and the site lighting guidelines of the Housing Site Development Standards and Design Guidelines. In addition, the proposed project would be consistent with Title 24 Outdoor Lighting Standards. As such, the proposed project's lighting would be appropriately designed to limit glare and spillover light as well as to limit interior and exterior illumination, and impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would increase the podium building height and therefore would result in additional residential lighting, increasing the height of such lighting and the potential for glare from the building's increased surface area. However, consistent with the approved project, the proposed project has been designed in accordance with the City of Pleasanton's General Plan policies regarding lighting and glare as well as the Pleasanton Municipal Code regulations, including Sections 18.48.100, 18.88.040, and 18.96.020, and the site lighting guidelines of the Housing Site Development Standards and Design Guidelines. As such, the proposed project's lighting would be appropriately designed to limit glare and spillover light as well as limit interior and exterior illumination. In addition, the proposed project would be consistent with Title 24 Outdoor Lighting Standards. As such, the proposed project would not introduce any new lighting or glare impacts not previously disclosed. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Aesthetics, the Addendum demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.

4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in the Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
II. Agricultural and Forest Resources *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 nonagricultural use?	Less than significant impact	No	No	No	None
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	Less than significant impact	No	No	No	None
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	No	No	No	None

Environmental Issue Area	Conclusions in the Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No impact	No	No	No	None
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use?	Less than significant impact	No	No	No	None

Discussion

a) Conversion of Important Farmland to Nonagricultural Use

Would the project: *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 nonagricultural use?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the project would not result in the convsersion of farmland to nonagricultural use.

The 2012 Addendum to the SEIR concluded that no changes had occurred to the status of the project site's non-farmland designation, as indicated by the Farmland Mapping and Monitoring Program of the California Department of Agriculture. As such, the project would continue to result in no impacts in this regard.

Proposed Project Analysis and Conclusion

No changes have occurred to the status of the project site's non-farmland designation as indicated by the Farmland Mapping and Monitoring Program of the California Department of Agriculture. There is no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance on the project site or in its vicinity. The project site is currently mapped as Urban Built-up land.[2] Thus, the proposed project would not convert any farmland to nonagricultural use. As such, no impacts would occur and the proposed project would not result in a new or more severe adverse impact to agricultural land conversion not previously identified in the SEIR.

b) Conflict with Existing Zoning for Agricultural Use or Williamson Act Contracts

Would the project: *Conflict with existing zoning for agricultural use, or a Williamson Act Contract?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the project would not result in any impacts to lands zoned for agriculture or existing Williamson Act contracts.

The 2012 Addendum to the SEIR concluded that no changes have occurred to the status of the project site's zoning and the project site continues to be unencumbered by a Williamson Act Contract. As such, the project would continue to result in no impacts in this regard.

Proposed Project Analysis and Conclusion

No changes have occurred to the status of the project site's zoning and the project site continues to be unencumbered by a Williamson Act Contract.[3] As previously discussed, the project site is currently zoned as PUD-HDR and PUD-I/C-O and has a General Plan land use designation of Business Park/Mixed Use. As such, no impacts would occur and the proposed project would not result in any new or more severe adverse impacts related to agricultural zoning or Williamson Act impacts not previously identified in the SEIR.

c) Conflict with Existing Forest Land Zoning

Would the project: *Conflict with existing zoning for forest land or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*

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2 California Department of Conservation. 2022. California Important Farmland Finder. Website: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed August 1, 2024.
3 California Department of Conservation. 2022. California Williamson Act Enrollment Finder. Website: https://maps.conservation.ca.gov/dlrp/WilliamsonAct/App/index.html. Accessed August 1, 2024.

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the project would not result in any impacts to forest land or timberland.

The 2012 Addendum to the SEIR concluded that the project site is not zoned for forest or timberland uses and does not contain any forest or timberland. As such, the project would continue to result in no impacts in this regard.

Proposed Project Analysis and Conclusion

The City of Pleasanton does not contain any land that is zoned for forest land or timberland. The project site is currently within the PUD-HDR and PUD-I/C-O zones and is currently occupied by construction activities, surface parking, and associated landscaping. As such, the proposed project would not introduce any new forest land or timber land zoning impacts not previously disclosed. Therefore, no impacts would occur and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Conversion of Forest Land to Non-Forest Use

Would the project: *Result in the loss of forest land or conversion of forest land to non-forest use?*

Summary of Housing Element Update SEIR

The SEIR concluded that the project would not result in any impacts related to the conversion or loss of agricultural land.

The 2012 Addendum to the SEIR concluded that no changes have occurred to the project or project site that would alter this conclusion. The project site does not contain any forest or timberland and there no forest or timberlands in the surrounding area. As such, the project would continue to result in no impacts in this regard.

Proposed Project Analysis and Conclusion

As discussed above, the project site does not contain forest land, timberland, or timberland zoned for production. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest uses. Therefore, no impacts would occur and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

e) Other Changes to Convert Farmland to Nonagricultural Use or Forest Land to Non-Forest Use

Would the project: *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the project would not result in any impacts related to the conversion or loss of agricultural land.

The 2012 Addendum to the SEIR concluded that no changes have occurred to the project or project site that would alter this conclusion. The project site does not contain any farmland or forest land. As such, the project would continue to result in no impacts in this regard.

Proposed Project Analysis and Conclusion

No changes have occurred to the project or project site that would alter this conclusion. The project site and surrounding area do not contain farmland or forest land. Therefore, no impacts would occur and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Agricultural Resources, the Addendum demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
III. Air Quality *Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:*					
a) Conflict with or obstruct implementation of the applicable air quality plan?	Less than significant impact	No	No	No	None
b) Violate air quality standard or contribute substantially to an existing or projected air quality violation?	Less than significant impact with mitigation incorporated	No	No	No	MM4.B-1a
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.B-1a
d) Expose sensitive receptors to substantial pollutant concentrations?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.B-1a
e) Create objectionable odors affecting a substantial number of people?	Less than significant impact with mitigation incorporated	No	No	No	None

Discussion

a) Consistency with Air Quality Management Plan

Would the project: *Conflict with or obstruct implementation of the applicable air quality plan?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the project would not conflict with the implementation Bay Area 2010 Clean Air Plan (2010 Clean Air Plan) because the projected rate of Vehicle Miles Traveled (VMT) associated with the Housing Element and associated rezonings would not be greater than the projected rate of increase in population, and the Housing Element and associated rezonings demonstrate reasonable efforts to implement control measures contained in the 2010 Clean Air Plan. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded that implementation of following Circulation Element policies of the Pleasanton General Plan 2005-2025 would include Transportation Control Measures (TCMs) from the 2010 Clean Air Plan:

Policy 3 Facilitate the free flow of vehicular traffic on major arterials.

Policy 4 In the Downtown, facilitate the flow of traffic and access to Downtown businesses and activities consistent with maintaining a pedestrian-friendly environment.

Policy 5 At gateway intersections, facilitate the flow of traffic and access into and out of the City, consistent with maintaining visual character, landscaping, and pedestrian convenience.

Policy 8 Maximize traffic safety for automobiles, transit, bicycle users, and pedestrians.

Policy 9 Work with other local jurisdictions and regional agencies such as the Metropolitan Transportation Commission (MTC), Alameda County Congestion Management Agency (ACCMA), Alameda County Transportation Improvement Authority (ACTIA), and Tri-Valley Transportation Council to plan and coordinate regional transportation improvements.

Policy 13 Phase transit improvements to meet the demand for existing and future development.

Policy 14 Encourage coordination and integration of Tri-Valley transit to create a seamless transportation system.

Policy 15 Reduce the total number of average daily traffic trips throughout the City.

Policy 16 Reduce the percentage of average daily traffic trips taken during peak hours.

Policy 17 Support the continued and expanded operation of the Livermore Amador Valley Transit Authority (LAVTA)

As stated in the 2012 Addendum to the SEIR, a project would be judged to conflict with or obstruct implementation of the 2010 Clean Air Plan if it would result in substantial new regional emissions not foreseen in the air quality planning process. The 2012 Addendum to the SEIR found that the project would not result in a substantial unplanned increase in population, employment or regional growth in VMT, or emissions, so it would not conflict with or obstruct implementation of the air quality plan. Furthermore, the analysis noted that the reduced number of dwelling units evaluated in the 2012 Addendum as compared to the SEIR would result in reduced effects to what was previously concluded and would not introduce any new impacts not previously disclosed. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The Bay Area Air Quality Management District (BAAQMD) has adopted several air quality policies and plans to address regional air quality standards, the most recent of which is the 2017 Clean Air Plan. The 2017 Clean Air Plan was adopted in April of 2017 and serves as the regional Air Quality Plan (AQP) for the Air Basin for attaining NAAQS. The primary goals of the 2017 Clean Air Plan are to protect public health and protect the climate. The 2017 Clean Air Plan acknowledges that the BAAQMD's two stated goals of protection are closely related. As such, the 2017 Clean Air Plan identifies a wide range of control measures intended to decrease both criteria pollutants[4] and greenhouse gas (GHG) emissions.[5] The 2017 Clean Air Plan also accounts for projections of population growth provided by the

[4] The EPA has established National Ambient Air Quality Standards (NAAQS) for six of the most common air pollutants—carbon monoxide, lead, ground level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as "criteria" air pollutants (or simply "criteria pollutants").

[5] A greenhouse gas (GHG) is any gaseous compound in the atmosphere that is capable of absorbing infrared radiation, thereby trapping and holding heat in the atmosphere. By increasing the heat in the atmosphere, greenhouse gases are responsible for the greenhouse effect, which ultimately leads to global warming.

Association of Bay Area Governments (ABAG) and VMT projections provided by the MTC and identifies strategies to bring regional emissions into compliance with federal and State air quality standards. A project would be judged to conflict with or obstruct implementation of the 2017 Clean Air Plan if it would result in substantial new regional emissions not foreseen in the air quality planning process.

The BAAQMD does not provide a numerical threshold of significance for project-level consistency analysis with AQPs. Therefore, the following criteria will be used for determining a project's consistency with the AQP.

- **Criterion 1:** Does the project support the primary goals of the AQP?
- **Criterion 2:** Does the project include applicable control measures from the AQP?
- **Criterion 3:** Does the project disrupt or hinder the implementation of any AQP control measures?

Criterion 1

The primary goals of the 2017 Clean Air Plan, the current AQP to date, are to:

- Attain air quality standards;
- Reduce population exposure to unhealthy air and protect public health in the Bay Area; and
- Reduce GHG emissions and protect the climate.

A measure for determining whether the proposed project supports the primary goals of the AQP is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. This measure is determined by comparing project emissions to the significance thresholds identified by the BAAQMD for construction- and operation-related regional pollutants. These significance thresholds are applied in the evaluation of environmental issue area (b), below. As discussed therein, the proposed project would not exceed the applicable regional thresholds for either construction or operations. Therefore, the proposed project would be consistent with Criterion 1.

Criterion 2

Another measure for determining whether a proposed project is consistent with the AQP is to determine whether the project is inconsistent with the growth assumptions incorporated into the AQP and, thus, whether it would interfere with the region's ability to comply with federal and California air quality standards. The development of the AQP is based in part on the land use general plan determinations of the various cities and counties that constitute the Air Basin.

While the proposed project would increase the development intensity and density, it would comply with the policies of the General Plan and zoning ordinance to ensure compatibility with the context of the site and the City in general. As such, the proposed project falls within the land uses contemplated for development by the City. As noted in Section XIV, Population and Housing, with the additional 31 residences, the proposed project would result in a total of 938 residents in a total of 336 residential units. The 336 total residential units would fall within the SEIR's assumption of the 420 residential units. Considering this information, the proposed project would not directly or indirectly result in substantial unplanned population growth. Therefore, the overall development of the project site would generally be consistent with the growth assumptions incorporated into the Clean Air Plan.

The AQPs also assume adherence to all mandatory regulations to reduce air pollution. Therefore, to conform to the assumptions in the AQP, a project must be consistent with all applicable measures contained in the applicable AQP. The Clean Air Plan contains 85 control measures to reduce air pollutants and GHGs at the local, regional, and global levels. Along with the traditional stationary, area, mobile source, and TCMs, the Clean Air Plan contains several control measures designed to protect the climate, promote mixed-use, and compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources. The Clean Air Plan also includes an account of the implementation status of control measures identified in the 2010 Clean Air Plan. The proposed project would not conflict with any applicable measures under the 2017 Clean Air Plan. Considering the information provided above, the proposed project would be consistent with Criterion 2.

Criterion 3

The proposed project would not preclude extension of a transit line or bike path, propose excessive parking beyond parking requirements, or otherwise create an impediment or disruption to implementation of any AQP control measures. The proposed project would incorporate several AQP control measures as project design features, such as utilizing asphalt which would be compliant with BAAQMD regulations, complying with energy efficiency standards contained in the 2022 California Building Standards Code (CBC), and installing landscaping across the project site. Considering this information, the proposed project would not disrupt or hinder the implementation of any AQP control measures. The proposed project is therefore consistent with Criterion 3.

Conclusion

As discussed above, the proposed project would be consistent with all three criteria. Thus, the proposed project would not conflict with the 2017 Clean Air Plan (the applicable AQP). Therefore, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Air Quality Standards or Violations

Would the project: *Violate air quality standard or contribute substantially to an existing or projected air quality violation?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the General Plan Amendment and rezonings would result in increased long-term emissions of criteria pollutants associated with construction activities that could contribute substantially to an air quality violation. Specifically, development anticipated by the SEIR would require demolition and removal of existing structures where applicable, grading, and site preparation and construction of new structures. Emissions generated during construction activities would include exhaust emissions from heavy-duty construction equipment, trucks used to haul construction materials to and from sites, worker vehicle emissions, as well as fugitive dust emissions associated with earth-disturbing activities. However, as indicated in the SEIR, implementation of mitigation would reduce this impact to less than significant. Compliance with MM 4.B-1a would ensure that impacts from fugitive dust would be less than significant as well as ensure the other construction emissions would adhere to the BAAQMD's requirements.

The 2012 Addendum to the SEIR concluded that with the implementation of MM 4.B-1a, impacts related to fugitive dust would continue to be less than significant.

Proposed Project Analysis and Conclusion

Construction of the fifth floor of the podium building and the associated 31 residences would generate construction emissions similar to those contemplated in the SEIR. As such, the implementation of MM 4.B-1a would be required to reduce impacts to less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) Cumulative Criteria Pollutant Emissions Impacts

Would the project: *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the project would have less than significant impacts related to cumulatively considerable net increases of criteria pollutants for which the project region is nonattainment after implementation of MM 4.B-1a, which requires the application of Best Management Practices (BMPs) to limit emissions of fugitive dust.

The 2012 Addendum concluded that the proposed project would reduce the number of dwelling units from a maximum of 420 dwelling units anticipated in the SEIR to 305 dwelling units and would reduce the retail square footage from 10,000 to 7,520 square feet. Construction activities would include demolition, site excavation and grading as well as general construction. Heavy-duty construction equipment, construction-related on-road trucks, and worker vehicles would also result in exhaust emissions of reactive organic gas (ROG), nitrogen oxide (NO_X), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) during construction of the proposed project. Exhaust emissions would vary depending on the number and type of construction equipment used, number of truck trips to the site, and number of workers present.

The 2012 Addendum used the California Emissions Estimator Model (CalEEMod) to quantify construction emissions. CalEEMod modeling was based on the known land uses and project information, as well as reasonable assumptions included for the purposes of modeling. On-site demolition would consist of approximately 6.7 acres of pavement removal. With an assumed depth of 3 inches of pavement removed, and a weight of 145 pounds per cubic foot of pavement, 5,305 tons of debris would be removed. Project construction was assumed to begin in 2013. Default CalEEMod construction phase lengths, equipment, and equipment hours of operation were used for all phases except architectural coatings, which was estimated to take approximately 6 months. The construction emissions were found to be below the BAAQMD thresholds of significance. As such, the project was found not to introduce any new impacts not previously disclosed in the SEIR. Impacts were found to continue to be less than significant and no mitigation was deemed necessary to reduce exhaust emissions.

The 2010 Air Quality Guidelines provide screening criteria developed for criteria pollutants and precursors. According to the 2010 Air Quality Guidelines, and as discussed in the 2012 Addendum, if the project meets the screening criteria then its air quality impacts relative to criteria pollutants may be considered less than significant. In developing the 2010 Air Quality Guidelines, BAAQMD also considered the emission levels for which a project's individual emissions would be cumulatively considerable. As shown in Table 4 of the 2012 Addendum to the SEIR, the project's land uses were found to be individually and cumulatively less than the BAAQMD's screening size for criteria air pollutants and precursors. Therefore, the project was found to have less than significant impacts individually and cumulatively. Thus, the project was found not introduce any new impacts related to cumulatively considerable net increases of nonattainment pollutants not previously disclosed. As such, impacts from operations would continue to be less than significant.

Proposed Project Analysis and Conclusion

This impact is related to the cumulative effect of a project's regional criteria pollutant emissions. By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. The thresholds of significance represent the allowable amount of emissions each project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on the project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. Construction and operational emissions are discussed separately below.

Construction

Construction Fugitive Dust

Fugitive dust (PM_{10} and $PM_{2.5}$) would be generated during earthmoving activities but would largely remain localized near the project site. The BAAQMD does not recommend a numerical threshold for fugitive dust particulate matter emissions. Instead, the BAAQMD bases the determination of significance for fugitive dust on considering the control measures to be implemented. If all appropriate emissions control measures are implemented for a project as recommended by the BAAQMD, then fugitive dust emissions during construction are not considered significant. Although the proposed additional fifth floor and additional 31 units would not involve earthmoving activities, construction activities would still have the potential to generate fugitive dust. As such, MM 4.B-1a would remain applicable throughout the duration of construction of the proposed project including the fifth floor of the podium building. With incorporation of MM 4.B-1a, impacts related to fugitive dust would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

To determine significance related to construction, estimated construction emissions can be compared with the applicable thresholds of significance established by the BAAQMD to assess ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$ construction emissions to determine significance. The applicable thresholds of significance are shown below in Table 4.

Table 4: BAAQMD Construction Thresholds

Parameter	Air Pollutants			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Significance Threshold (pounds/day)	54	54	82	54

Notes:
NO_X = oxides of nitrogen
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
ROG = reactive organic gases
Source: BAAQMD 2022 CEQA Guidelines

As indicated in the 2012 Addendum, the construction emissions from all construction activities associated with the project assessed at that time (demolition, site preparation, grading, building construction, and architectural coatings) were found to be below the recommended thresholds of significance. The additional fifth floor to the podium building and associated 31 units would only result in a slightly longer construction duration compared to what was previously analyzed but would not result in any more intense daily construction emissions. In addition, daily emissions for the same activity would be lower than those estimated in the 2012 Addendum using the most recent emission factors and most recent construction emissions minimization plan, due to improvements in technology and more stringent regulatory requirements as older, less efficient equipment is replaced by newer and cleaner equipment over time. Considering this information, the proposed project's daily construction emissions would continue to fall below the applicable thresholds shown in Table 4. Construction of the proposed project would result in less than significant impacts related to emissions of ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$. As previously discussed, the proposed project would be required to implement MM 4.B-1a for dust control BMPs recommended by the BAAQMD to reduce potential impacts related to fugitive dust emissions during project construction. With implementation of MM 4.B-1a, construction of the proposed project would have a less than significant impact.

Operation

The analysis contained in the 2012 Addendum compared the project to the BAAQMD's criteria air pollutant and precursors size screening for operational emissions. Table 5 shows the screening analysis from the 2012 Addendum, as well as a screening analysis updated for the proposed modified project.

Table 5: Criteria Air Pollutant and Precursors Screening for Operational Emissions

Land Use	Screening Size	Project Size	Percent of Screening size
Project Analyzed in the 2012 Addendum[1]			
Apartment Low-Rise	451 DU	305 DU	68%
Strip Mall	142,000 sf	7,520 sf	5%
Total Project Size Relative to the Screening Size (2011 BAAMD Sizes)			**73 %**
Proposed Project with Fifth Floor of the Podium Building and Associated 31 Dwelling Units[2]			
Apartment Low-Rise	638 DU	336 DU	53%
Daycare Center	232,000	6,600	3%
Total Project Size Relative to the Screening Size (2022 BAAMD Sizes)			**56%**

Land Use	Screening Size	Project Size	Percent of Screening size
Notes: DU = dwelling units; sf = square feet 1 2012 Addendum, using the BAAQMD's 2011 Size Screening Thresholds 2 Screening Sizes updated using the Size Screening Thresholds from the BAAQMD's 2022 CEQA Guidelines			

As shown in Table 5, the project's land uses are individually and cumulatively less than the BAAQMD's screening size for criteria air pollutants and precursors. Since emissions from operation decrease with time, BAAQMD has updated its Screening Levels since 2012. Although the BAAQMD screening thresholds from the 2022 CEQA Guidance are only designed to be used for individual land uses, the proposed project is so far below the criteria expected to result in a potentially significant impact, operational emissions are expected to fall well below the BAAQMD's regional thresholds for criteria air pollutants and precursor emissions if modeled in detail. Therefore, the project would have a less than significant impact with respect to criteria pollutants and ozone precursors, individually and cumulatively.

In summary, the proposed project would not introduce any new impacts related to cumulatively considerable net increases of nonattainment pollutants not previously disclosed. Impacts would continue to be less than significant.

Conclusion

Project construction would have less than significant impact related to emissions of ROG, NO_X, exhaust PM_{10}, and exhaust $PM_{2.5}$. The proposed project would be required to implement MM 4.B-1a for dust control BMPs recommended by the BAAQMD to reduce potential impacts related to fugitive dust emissions during project construction. As such, project construction would not result in a significant impact related to a cumulatively considerable net increase of any criteria pollutant.

Similarly, project operations resulting from the modified proposed project would not result in a significant impact in regard to resulting in a cumulatively considerable net increase of any criteria pollutant.

In summary, approval of the modified proposed project would not result in any significant effects resulting in a cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Sensitive Receptors Exposure to Toxic Air Contaminant Concentrations

Would the project: *Expose sensitive receptors to substantial pollutant concentrations?*

Summary of Housing Element Update SEIR

The SEIR concluded that the proposed project would not subject residents, neighbors or customers and employees of nearby businesses to substantial concentrations of air pollutants after incorporation of mitigation. The SEIR included MM 4.B-4, which requires project-specific health risk assessments and project design features designed to reduce air pollution exposure for project sites where screening thresholds are exceeded. As such, the SEIR concluded impacts would be less than significant after incorporation of mitigation.

The 2012 Addendum to the SEIR concluded that the project analyzed would not introduce any new substantial impacts not previously disclosed. The analysis in the 2012 Addendum noted that activities associated with site preparation and construction would generate short-term emissions of fugitive dust. The effects of construction activities would increase dustfall and locally elevated levels of PM_{10} and $PM_{2.5}$ downwind of construction activity. Construction dust has the potential for creating a nuisance at nearby properties. Consistent with BAAQMD's 2010 Air Quality Guidelines, the SEIR included MM 4.B-1a to ensure that the current BMPs would be implemented to reduce fugitive dust emissions from construction activities to less than significant. The 2012 Addendum to the SEIR concluded that implementation of MM 4.B-1a by the proposed project would ensure impacts would remain less than significant.

The analysis in the 2012 Addendum concluded that incorporation of these emission-reducing measures included as part of the project plans as well as implementation of MM 4.B-1a would ensure that construction emissions would remain less than significant.

The analysis in the 2012 Addendum found that the project would expose future residents to mobile and stationary sources of toxic air contaminants (TACs). To assess community risks and hazards, BAAQMD's 2010 Air Quality Guidelines recommend that any proposed project involving sensitive receptors should assess associated impacts within 1,000 feet, taking into account both individual and nearby cumulative sources. Cumulative sources represent the combined total risk values of each individual source within the 1,000-foot evaluation zone.

The 2010 Air Quality Guidelines methodology for mobile source risks considers highways and heavily traveled surface streets (carrying 10,000 or more daily vehicle trips) within 1,000 feet of the project site. Two roadways with daily traffic greater than 10,000 vehicles were identified within 1,000 feet of the project boundary: Owens Drive to the southwest and Hacienda Drive to the west. The BAAQMD's Highway Screening Analysis Tool was used to conservatively estimate risks associated with proximity to these roadways. Table 7 of the 2012 Addendum shows the cancer risk, chronic and acute hazard index, and annual $PM_{2.5}$ concentration from these two roadways at the closest receptor along the property boundary, which are below BAAQMD individual source significance thresholds. Therefore, the 2012 Addendum found that the project would not expose on-site residents to a significant health risk from adjacent roadways.

The 2012 Addendum included a Screening Level Cumulative Risk Analysis prepared by Environ (Environ, October 1, 2012) for the analyzed project. This Screening Level Cumulative Risk Analysis contained a detailed analysis of the BAAQMD Risk Analysis Tool and potential impacts to the project site. The neighborhood of the proposed project was found to include several existing stationary sources of air pollutants. The BAAQMD database of permitted stationary sources indicated that there were six permitted sources of air pollutants within the 1,000-foot zone of influence of the project with non-trivial TAC emissions. Risk information for permitted sources was provided by the BAAQMD. All risks for permitted stationary sources were found to be below the BAAQMD single source thresholds of significance. Additionally, the combined estimated $PM_{2.5}$ concentration, lifetime cancer risk and chronic non-cancer health risk from mobile and permitted sources were found to be below the BAAQMD cumulative Community Risks and Hazards thresholds. Cumulative risks were, therefore, found to be less than significant and no mitigation was determined to be required.

In summary, the 2012 Addendum concluded that the project would not subject residents, neighbors, or customers and employees of nearby businesses to substantial concentrations of air pollutants after incorporation of MM 4.B-1a. As such, impacts would continue to be less than significant with mitigation.

Proposed Project Analysis and Conclusion

SEIR MM 4.B-4 requires project-specific health risk assessments and project design features designed to reduce air pollution exposure for project sites where screening thresholds are exceeded. As discussed below, the modified proposed project would not introduce any new substantial impacts not previously disclosed and, therefore, remains consistent with MM 4.B-4.

Construction Localized Fugitive Dust

Activities associated with site preparation and earthmoving activities would generate short-term emissions of fugitive dust. The SEIR included MM 4.B-1a to ensure that the current BMPs would be implemented to reduce fugitive dust emissions from construction activities to less than significant. Although the proposed additional fifth floor and associated 31 units would not involve earthmoving activities, construction activities would still have the potential to generate fugitive dust. MM 4.B-1a would remain applicable throughout the duration of construction of the project. With incorporation of MM 4.B-1a, impacts related to fugitive dust would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Construction Toxic Air Contaminants Generation

The proposed additional fifth floor and associated 31 units would not result in any new demolition, site preparation, or grading. The additional fifth floor and units would require building construction and architectural coating activities, which are less intense construction activities compared to ground-disturbing activities such as grading. The air quality impact analysis performed for the 2012 Addendum assessed impacts for the reasonably worst-case construction air impacts related to the demolition, site preparation and grading phases of construction. The addition of a fifth floor to the podium building would not alter these phases of construction in any way and therefore would not result in any new or more severe construction impact than was previously identified and analyzed in the SEIR and the 2012 Addendum. As stated in the 2012 Addendum, the project plans and specifications incorporate a construction emissions minimization plan designed to reduce the creation of construction-period TACs. Specifically, equipment over 50 horsepower will be a minimum of Tier 4, and equipment over 150 horsepower will have Level 3 diesel particulate filters. These conditions would continue to apply to the proposed project, including during construction of the additional fifth floor and additional 31 units. Incorporation of these emission-reducing measures, as well as implementation of MM 4.B-

1a, would ensure that construction emissions would not result in significant impacts relating to the exposure of sensitive receptors to substantial pollutant concentrations. The impact would continue to be less than significant impact after incorporation of MM 4.B-1a.

Operational Toxic Air Contaminants Exposure

The air quality impact analysis performed for the 2012 Addendum included an analysis of the project's potential to expose future residents at the project site to existing sources of TACs, following the BAAAQ's 2010 guidance related to TACs. The addition of a fifth floor to the podium building would not locate new sensitive receptors any closer to sources of TACs compared to what was previously analyzed. Furthermore, construction of the additional fifth floor and 31 units would be subject to the latest building code standards, which require indoor air filtration systems with a Minimum Efficiency Reporting Value (MERV) of 13 or better for new residents. According to the EPA, MERV 13 filters have a greater than or equal to 50 percent efficiency rate at removing particulate matters 0.3–1.0 microns in size and greater than or equal to 85 percent efficiency rate at removing particulate matters 1.0–3.0 microns in size.[6] As such, with installation of MERV-13 filters as required by the 2022 California Building Code, the level of $PM_{2.5}$ concentration would be reduced even more. Similarly, because the MERV-13 filter would also remove diesel particulate matter (DPM), cancer risk and chronic hazard would be further reduced as well. As such, cumulative health risks would remain less than significant.

e) Objectionable Odors Exposure

Would the project: *Result in other emissions (such as those leading to odors or) adversely affecting a substantial number of people?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the proposed project would not subject residents to objectionable odors after incorporation of mitigation. Specifically, MM 4.B-5 was included to ensure that odors from a new transfer station to be constructed as part of the SEIR project would be minimized at the potential odor source appropriately.

The 2012 Addendum to the SEIR concluded that the proposed project would not include uses that have been identified by BAAQMD as potential sources

6 United States Environmental Protection Agency (EPA). 2024. Indoor Air Quality (IAQ) What is a MERV Rating? March. Website: https://www.epa.gov/indoor-air-quality-iaq/what-merv-rating. Accessed September 20, 2024.

of objectionable odors including the new transfer station. Sources of odors include manufacturing plants, agricultural operations, and industrial operations such as wastewater treatment plants and solid waste transfer stations or landfills.

As a new sensitive receptor for odors, the project is distant from the types of land uses that identified by the BAAQMD as having potential to create objectionable odors. As shown in the SEIR, the project site is beyond the 2-mile screening distance for odor sources. Therefore, the project would have a less than significant odor impact because it would not frequently create substantial objectionable odors affecting a substantial number of people. As such, impacts would continue to be less than significant and no mitigation was deemed necessary.

Proposed Project Analysis and Conclusion

As stated in the BAAQMD Air Quality Guidelines, odors are generally regarded as an annoyance rather than a health hazard. The ability to detect odors varies considerably among the population and is subjective. The BAAQMD does not have a recommended odor threshold for construction activities. However, the BAAQMD recommends operational screening criteria based on the distance between receptors and types of sources known to generate odors.

Construction

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. It is anticipated that by the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality or odor concern. These conclusions would not change as a result of the proposed additional fifth floor and 31 units.

Operation

Land uses typically associated with odors include wastewater treatment facilities, waste disposal facilities, agricultural operations, among others as shown in Table 3, Odor Screening Distances, of the BAAQMD Air Quality Guidelines. The proposed project would not be considered a known odor generator, as defined by the BAAQMD. Specifically, the proposed additional fifth floor and 31 units would not include a known odor generator. Operations of the proposed project could lead to odors from associated vehicle exhaust, laundry cleaning, indoor or outdoor cooking, and waste disposal. However, such odors generated by project operation would be small in quantity and duration and would not pose an objectionable odor impact to nearby receptors.

Conclusion

The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people from construction or operations. MM 4.B-5 from the SEIR is applicable only to transfer stations as new potential odor generators, none of which are included as part of the proposed project. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Air Quality, the Addendum demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. MM 4.B-1a from the SEIR would be required and would reduce potential impacts to below a level of significance, consistent with the analysis in the SEIR.

Applicable SEIR Mitigation Measures

MM 4.B-1a Prior to the issuance of a grading or building permit, whichever is sooner, the project applicant shall submit an air quality construction plan detailing the proposed air quality construction measures related to the project such as construction phasing, construction equipment, and dust control measures, and such plan shall be approved by the Director of Community Development. Air quality construction measures shall include Basic Construction Mitigation Measures (BAAQMD, May 2012) and, where construction-related emissions would exceed the applicable thresholds, Additional Construction Mitigation Measures (BAAQMD, May 2012) shall be instituted. The air quality construction plan shall be included on all grading, utility, building, landscaping, and improvement plans during all phases of construction.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
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 United States Fish and Wildlife Service?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.C-1a and MM 4.C-1b
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.C-1a and MM 4.C-1b
c) Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct	Less than significant with mitigation incorporated	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
removal, filling, hydrological interruption, or other means?					
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 wildlife nursery sites?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.C-1a and MM 4.C-1b
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less than significant impact	No	No	No	None
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	No	No	No	None

Discussion

a) Special-status Species

Would the project: *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 United States Fish and Wildlife Service?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that concluded that the project site is entirely within an existing urban/developed area and the removal of trees or other vegetation associated with the project could result in direct losses of nesting habitat, nests, eggs, nestlings, or roosting special-status bats; such impacts would be considered significant. As indicated in the SEIR, these impacts would require mitigation to ensure that any impacts to special-status bird and bat species are avoided or minimized. As such, the SEIR included MM 4.C-1a and 4.C-1b which would require pre-construction breeding bird and bat surveys. As such, the SEIR concluded that impacts would be less than significant with mitigation.

The 2012 Addendum to the SEIR concluded that with the implementation of MM 4.C-1a and 4.C-1b from the SEIR, the project's impacts would continue to be less than significant as concluded in the SEIR. As such, impacts would continue to be less than significant with mitigation.

Proposed Project Analysis and Conclusion

The proposed project is entirely within an urban/developed area and the removal of trees or other vegetation associated with the project could result in direct losses of nesting habitat, nests, eggs, nestlings, or roosting special-status bats. As indicated in the SEIR and 2012 Addendum, the project would implement MM 4.C-1a and 4.C-1b which would ensure that impacts to special-status bird and bat species are less than significant. No changes have occurred that would alter this conclusion. The addition of the 31 residential units would not result in an increase in the development footprint as the proposed project footprint would be the same as previously analyzed. As such, impacts would be less than significant with mitigation and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Sensitive Natural Communities and Riparian Habitat

Would the project: *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that construction of the project may result in degradation of water quality and aquatic habitat; degradation of wetland habitat; and accidental discharge of sediment or toxic materials into wetlands. The project would be required to comply with the City's General Plan Policies. Adherence to these policies would provide protection for identified riparian habitat along Tassajara Creek. The proposed project contains mature trees that are part of the riparian corridor that could serve as habitat for special-status species or other species of concern. As indicated in the SEIR, the proposed project would require the implementation of MM 4.C-2 which would require riparian and wetland setbacks 20 feet from the edge of riparian vegetation on top of bank. As such, the SEIR concluded that impacts would be less than significant with mitigation.

The 2012 Addendum to the SEIR concluded that MM 4.C-2 adequately ensures that any impacts to special-status species within the Tassajara Creek riparian corridor are avoided or minimized. As such, impacts would continue to be less than significant with mitigation.

Proposed Project Analysis and Conclusion

The addition of the 31 residential units would not prohibit implementation of General Plan policies related to riparian and wetland setbacks or SEIR MM 4.C-2. No changes have occurred that would alter the conclusion made in the SEIR. Implementation of the proposed project would not change the removal of vegetation nor does it change proposed project setbacks. As such, MM 4.C-2 has already been implemented as part of the 2012 Addendum and is not required for this modification. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) State or Federally Protected Waters and Wetlands

Would the project: *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?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that construction of the project may result in degradation of water quality and aquatic habitat, degradation of wetland habitat, and accidental discharge of sediment or toxic materials into wetlands. The project would be required to comply with the City's General Plan Policies. Adherence to these policies would provide adequate protection for wetland habitats. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded that adherence to the City's General Plan Policies would provide adequate protection for wetland habitats. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project site does not contain any State or federal protected waters or wetlands. Additionally, as previously discussed, the proposed project would be required to comply with the City's General Plan Policies which would provide protection for wetland habitats. No changes have occurred that would alter the conclusion in the SEIR. The addition of the 31 residential units would not prohibit General Plan compliance. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Fish and Wildlife Movement Corridors

Would the project: *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 wildlife nursery sites?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that that while the project site is developed and lacks habitat value, Tassajara Creek and landscaped areas within the vicinity provide wildlife corridors for fish, waterfowl, other birds, bats, and mammals. As indicated in the SEIR, this impact would require implementation of MM

4.C-1a, 4.C-1b, and 4.C-2. As such, the SEIR concluded impacts would be less than significant with mitigation.

The 2012 Addendum to the SEIR concluded that implementation of MM 4.C-1a, 4.C-1b, and 4.C-2 would ensure that any impacts to special-status species within the Tassajara Creek riparian corridor are avoided or minimized. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The project site has been previously developed, is currently under redevelopment, and is generally devoid of habitat value. Tassajara Creek within the vicinity provide wildlife corridors for fish, waterfowl, other local species. The SEIR indicated that the proposed project would require the implementation of MM 4.C-1a, 4.C-1b, and 4.C-2. No changes have occurred that would alter this conclusion and implementation of these mitigation measures would ensure that any impacts to special-status species within the Tassajara Creek riparian corridor are avoided or minimized. Note that MM 4.C-2, requiring riparian set back has already been implemented. Addition of the 31 residential units would not increase identified impacts nor prohibit implementation of identified mitigation measures. As such, impacts would be less than significant with mitigation and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

e) Local Biological Resources Policies/Ordinances Consistency

Would the project: *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the project could occur in locations where heritage trees would be adversely affected, through damage to root zones, tree canopy, or outright removal. According to the Arborist Report prepared by Hort Science (Appendix C) for the 2012 Addendum, the project site contains 457 trees, of which 97 are considered heritage trees under Chapter 17.16 of the Pleasanton Municipal Code.[7] Implementation of the project includes removal of 305 trees, 47 of which are heritage trees. The trees to be removed are ornamental species that were planted in 1987-1988 with the development of the existing California Center office complex. The General Plan Open Space and Conservation Element's Program 2.1 strongly

[7] HortScience, Inc. 2012. Arborist Report California Center Pleasanton, CA. October.

encourages preservation of heritage trees. Where preservation is not feasible, the City requires tree replacement or a contribution to the Urban Forestry Fund. Program 2.1 also indicates that no net loss of trees should be allowed. Chapter 17.16 of the Municipal Code provides adequate protection for heritage trees in the City of Pleasanton and required compliance would enable the project to avoid significant impacts to trees. As such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum concluded that with adherence to the City's tree ordinance, impacts would be less than significant. As such, the impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

Addition of the 31 residential units in the podium building would not result in any additional removal of trees nor would it prohibit the implementation of applicable regulations related to tree protection. As such, Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

f) Habitat Conservation Plan/Natural Community Conservation Plan Consistency

Would the project: *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the proposed project would not conflict with a Habitat Conservation Plan or Natural Community Conservation Plan because the City is not located within such a designated area. As such, the SEIR concluded that no impact would occur.

The 2012 Addendum to the SEIR concluded that no changes have occurred that would alter the conclusion of the SEIR. As such, the project would continue to have no impact.

Proposed Project Analysis and Conclusion

Consistent with the discussion and analysis in the SEIR, the proposed project site is not located within a Habitat Conservation Plan or Natural Community Conservation Plan. No changes have occurred that would alter the conclusion of the SEIR and the 2012 Addendum. As such, no impact would occur and the proposed project would not result in a new or more severe adverse impact that would not previously identified in the SEIR.

Conclusion

With regards to Biological Resources, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. MM 4.C-1a and 4.C-1b from the SEIR would be required and would reduce potential impacts to below a level of significance, consistent with the analysis in the Housing Element Update SEIR.

Applicable SEIR Mitigation Measures

MM 4.C-1a Pre-construction Breeding Bird Surveys

The City shall ensure that prior to development of all potential sites for rezoning (Sites 1-4, 6-11, 13, 14, and 16–21) and each phase of project activities that have the potential to result in impacts on breeding birds, the project applicant shall take the following steps to avoid direct losses of nests, eggs, and nestlings and indirect impacts to avian breeding success:

- If grading or construction activities occur only during the nonbreeding season, between August 31 and February 1, no surveys will be required.
- Pruning and removal of trees and other vegetation, including grading of grasslands, should occur whenever feasible, outside the breeding season (February 1 through August 31). During the breeding bird season (February 1 through August 31), a qualified biologist will survey activity sites for nesting raptors and passerine birds not more than 14 days prior to any ground-disturbing activity or vegetation removal. Surveys will include all line-of-sight trees within 500 feet (for raptors) and all

vegetation (including bare ground) within 250 feet for all other species.

- Based on the results of the surveys, avoidance procedures will be adopted, if necessary, on a case-by-case basis. These may include construction buffer areas (up to several hundred feet in the case of raptors) or seasonal avoidance.
- Bird nests initiated during construction are presumed to be unaffected, and no buffer would be necessary, except to avoid direct destruction of a nest or mortality of nestlings.
- If pre-construction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs that have been determined to be unoccupied by nesting or other special-status birds may be pruned or removed.

MM 4.C-1b Pre-construction Bat Surveys

Conditions of approval for building and grading permits issued for demolition and construction [of the project] shall include a requirement for pre-construction special-status bat surveys when large trees are to be removed or underutilized or vacant buildings are to be demolished. If active day or night roosts are found, the bat biologist shall take actions to make such roosts unsuitable habitat prior to tree removal or building demolition. A no-disturbance buffer of 100 feet shall be created around active bat roosts being used for maternity or hibernation purposes. Bat roosts initiated during construction are presumed to be unaffected, and no buffer would [be] necessary.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
V. Cultural and Tribal Cultural Resources *Would the project:*					
a) Cause a substantial adverse change in the significance of a historical resource as pursuant to Section 15064.5?	Less than significant impact	No	No	No	None
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Less than significant impact	No	No	No	None
c) Disturb any human remains, including those interred outside of formal cemeteries?	Less than significant impact	No	No	No	MM 4.D-4
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:					
d) 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	No conclusion was made in the SEIR or the Addendum regarding the significance. As such, no significant impact was identified.	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
e) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.	No conclusion was made in the SEIR or the Addendum regarding the significance. As such, no significant impact was identified.	No	No	No	None

Discussion

Note: For the purposes of this Addendum, and consistent with current accepted practices, the discussion and analysis regarding potential impacts to paleontological resources is included in Section VII, Geology, Seismicity, and Soils.

a) Historical Resources

Would the project: *Cause a substantial adverse change in the significance of a historical resource as pursuant to Section 15064.5?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that there is no information indicating the presence of historic structures in the vicinity of the project site. Examination of historic aerial photography of the project site dating back to 1939 shows the area in agricultural use until the early 1980s. The current California Center development and associated parking lots were constructed in the mid-1980s and thus does not meet the threshold of being a historic resource. The SEIR also concluded that the site is located in a “Low Sensitivity” zone for cultural resources, which include historical resources, because the site is not located within the Downtown Historic Neighborhoods and Structure Area (refer to Figure 4.D-1 of the SEIR) and no other historic structures were identified in the vicinity of the proposed project. While other sites considered in the SEIR were identified as having potentially significant impacts requiring mitigation, the project site was not identified as such. Therefore, for the purposes of this analysis, and because there are no historical resources on the project site, the SEIR is considered to have concluded that impacts would be less than significant at this project site in regard to historical resources.

The 2012 Addendum to the SEIR concluded that no changes have occurred that would alter the conclusion of the SEIR. As such, the project would continue to have less than significant impacts and mitigation from the SEIR would not be applicable.

Proposed Project Analysis and Conclusion

The proposed project is consistent with the findings of the previous Certified SEIR and 2012 Addendum. The records search results conducted at the Northwest Information Center (NWIC) on September 6, 2024, indicated that two historic resources have been recorded within the 0.5-mile search radius, none of which are located within the proposed project site. Additionally, the desktop survey confirmed that no cultural resources would be impacted due to the nature of the proposed project. The analysis did not reveal any significant changes from what was evaluated and disclosed in the previous SEIR and 2012 Addednum. As such, no new impacts would occur, and the proposed project would not result in a new or more severe adverse impact that were not previously identified in the previously Certified SEIR.

b) Archaeological Resources

Would the project: *Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that project-related construction activities involving ground disturbance during construction could result in significant impacts if any unknown culturally significant sites are discovered. The project site clearly lies within the flat valley section of the City, in an area that has been extensively disturbed by agricultural activities for at least 40 years and subsequent development in the 1980s. Therefore, the potential for archaeological resources to remain at the site is low. While other sites considered in the SEIR were identified as having potentially significant impacts in this regard, the project site was not identified as such. Therefore, for the purposes of this analysis, and because of historical on-site disturbance on the project site, the SEIR is considered to have concluded that impacts would be less than significant at this project site in regard to archaeological resources.

The 2012 Addendum to the SEIR concluded that the City requires a standard condition of approval for projects requiring Planning Department approval that would require that all construction stop in the event that cultural resources were uncovered during excavation. With implementation of this standard condition, the project would be expected to have a less than significant effect on unknown cultural resources. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project is consistent with the findings of the previously Certified SEIR and 2012 Addendum. The records search results conducted at the NWIC on September 6, 2024, indicated that four cultural resources (two pre-contact and two historic) were indentified within the 0.5-mile search radius, none of which are located within the proosed project site. Further, the Sacred Land Files search conducted by the Native American Heritage Commission (NAHC) on September 9, 2024, failed to locate any Tribal Cultural Resources (TCRs). Additionally, the desktop survey confirmed that no known cultural resources would be impacted due to the nature of the proposed project.

Therefore, the analysis did not reveal any new significant changes and remains consistent with the findings of the previously Certified SEIR and 2012 Addendum. As such, no new impacts would occur, and the proposed project would not result in a new or more severe adverse impact that were not previously identified in the previously Certified SEIR.

c) Burial Sites

Would the project: *Disturb any human remains, including those interred outside of formal cemeteries?*

Summary of Housing Element Update SEIR

The SEIR concluded that there is no indication in the archaeological record that the project site has been used for human burial purposes in the recent or distant past. However, in the unlikely event that human remains are discovered during project construction, including those interred outside of formal cemeteries, human remains could be inadvertently disturbed, which would be a significant impact. The City requires a standard condition of approval for projects requiring Planning Department approval that would require that all construction stop in the event that cultural resources were inadvertently uncovered during excavation. In addition, the SEIR included MM 4.D-4, which states requirements in the event human remains are discovered during grading and construction. With implementation of the City's standard conditions of approval and MM 4.D-4, the SEIR concluded that impacts would be less than significant with mitigation.

The 2012 Addendum to the SEIR concluded that no changes have occurred that would alter the conclusion of the SEIR. As such, impacts would continue to be less than significant with the implementation of mitigation.

Proposed Project Analysis and Conclusion

The NWIC records search results did not identify any burial sites, human remains, or formal cemeteries within the proposed project site or the 0.5-mile search radius. Subsurface Archaeological Sensitivity Assessment looks at four variables in determining the probability of encountering a prehistoric burial site, those being: (1) age of the underlying soil contemporaneous with period of human occupation of the area; (2) proximity to permanent or semi-permanent water sources capable of supporting long-term or seasonal occupation of the area; and (3) flat or gently sloped topography conducive to human habitation. Geologic mapping indicated that the proposed project site is underlain by Holocene deposits, which is contemporaneous with human occupation of California. Furthermore, the site is generally flat and therefore conducive to human habitation. Therefore, the possibility of inadvertent discovery remains. While the project site has already been graded, construction activities related to the construction of the podium building still have the potential to disturb soils and therefore, MM 4.D-4 would still apply and would reduce impacts to a less than significant level. As such, no new impacts would occur, and the proposed project would not result in a new or more severe adverse impact that were not previously identified in the previously Certified SEIR.

d) Listed or Eligible 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 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)?*

Summary of Housing Element Update SEIR and Addendum

This checklist question was not included as a separate threshold in the SEIR and the 2012 Addendum because this checklist question did not exist at the time the SEIR and Addendum were prepared. No conclusion was made in the SEIR or the 2012 Addendum regarding the significance level of impacts related causing an adverse change in the significance of a TCR, defined in Public Resources Code Section 21074 as either a site, feature, place, or 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 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).

Proposed Project Analysis and Conclusion

No impacts related to TCRs were discussed or analyzed in the previously certified SEIR and 2012 Addendum. NWIC records search results did not identify any TCRs within the project site. Additionally, the NACH SLF search came back negative. As such no new impacts would occur, and the proposed project would not result in new or more severe adverse impacts.

e) Lead Agency Determined 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 resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

Summary of Housing Element Update SEIR and Addendum

This checklist question was not included in the SEIR and the 2012 Addendum because this checklist question did not exist at the time the SEIR and Addendum were prepared. No conclusion was made in the SEIR or the 2012 Addendum regarding the significance level of impacts related causing an adverse change in the significance of a TCR, defined in Public Resources Code Section 21074 as either a site, feature, place, or 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 resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Proposed Project Analysis and Conclusion

Assembly Bill (AB) 52 and Senate Bill (SB) 18 consultation was not conducted by the Lead Agency in the previously Certified SEIR and 2012 Addendum. The recent records search conducted at the NAHC for TCRs on September 9, 2024, and at the NWIC on September 6, 2024, came back negative for previously unidentified TCRs. Thus, no new impacts would occur, and the proposed project would not result in new or more severe adverse impacts.

Conclusion

With regards to Cultural and Tribal Cultural Resources, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. MM 4.D-4 from the SEIR would be required and would reduce potential impacts to below a level of significance consistent with the analysis is the SEIR.

Applicable SEIR Mitigation Measures

MM 4.D-4 In the event that human remains are discovered during grading and construction of development facilities by the Housing Element, work shall stop immediately. There shall be no disposition of such human remains, other than in accordance with the procedures and requirements set forth in California Health and Safety Code Section 7050.5 and Public Resources Section 5097.98. These code provisions require notification of the County Coroner and the Native American Heritage Commission, who in turn must notify the persons believed to be most likely descended from the deceased Native American for appropriate disposition of the remains.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
VI. Energy *Would the project:*					
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No conclusion was made in the SEIR or the Addendum regarding the significance. As such, no significant impact was identified.	No	No	No	None
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	No conclusion was made in the SEIR or the Addendum regarding the significance. As such, no significant impact was identified.	No	No	No	None

Discussion

a) Energy Use

Would the project: *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Summary of Housing Element Update SEIR and Addendum

This checklist question was not included in the SEIR or the 2012 Addendum as a separate threshold because this checklist question was not included as part of Appendix G at the time the SEIR and Addendum were prepared. No conclusion was made in the SEIR or the Addendum regarding the significance level of the project's impacts related to wasteful, inefficient, or unnecessary consumption of energy resources.

Proposed Project Analysis and Conclusion

Energy use consumed by typical mixed-use development projects includes natural gas, electricity, and fuel consumption from construction and operations of the project.

Construction

Construction of the proposed project would result in energy consumption through the transportation of building materials and through the use of heavy-duty construction equipment. Petroleum-based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks. For instance, the on-site equipment used during the construction of the proposed project could include gasoline- and diesel-powered construction and transportation equipment, including trucks, bulldozers, front-end loaders, forklifts, and cranes.

The overall construction schedule and process are designed to be efficient to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully due to the added expense of renting, maintaining, and fueling the equipment.

In addition, the proposed project only involves the addition of the fifth floor of the podium building and additional 31 units, which would not introduce any new construction energy consumption sources and would only extend the vertical building construction phase by a minimal amount. Therefore, the proposed project would not introduce any new or more severe energy consumption component than what was previously identified for the approved project.

Operation

The proposed project would consume energy as part of building operations and transportation activities. The proposed project, including the fifth floor of the podium building and additional 31 units, would be designed following Title 24 and California's Energy Efficiency Standards, as applicable. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC] and water heating systems), and indoor and outdoor lighting. Incorporating the Title 24 standards into the proposed project's design would ensure that the proposed project would not result in the use of energy in a wasteful manner. In addition, the project is located in an urbanized portion of the City of Pleasanton and would not result in unusually long trip lengths for future employees, guests, or visitors. Considering the proposed project's location in a built-up environment and the project design features incorporated to reduce energy consumption, project operations would not be wasteful, inefficient, or unnecessary.

Conclusion

As discussed above, approval of the proposed project would not result in any significant effects relating to the wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Energy Efficiency and Renewable Energy Standards Consistency

Would the project: *Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?*

Summary of Housing Element Update SEIR and Addendum

This checklist question was not included in the SEIR or the 2012 Addendum as a separate threshold because this checklist question was not included as part of Appendix G at the time the SEIR and Addendum were prepared. However, the SEIR discussed both energy efficiency and renewable energy throughout the SEIR. For example, in the discussion of Aesthetics the SEIR states that all new developments in Pleasanton would be subject to Title 24 requirements, which requires new development to adopt energy efficiency standards for outdoor lighting for the public and private sector, among other things. No conflicts with or obstruction of a State or local plan for renewable energy or energy efficiency were identified.

Proposed Project Analysis and Conclusion

As noted previously, incorporating the Title 24 standards into the proposed project's design would ensure that the proposed project would not result in the use of energy in a wasteful manner. The proposed project's electricity provider would also be required to meet the State's future objective of 60 percent of in-State electricity sales being generated from renewable energy sources by 2030. The proposed project would comply with existing State and local energy standards and with energy conservation policies contained in the General Plan and related GHG reduction measures listed in the GHG discussion below (see Section VIII. Greenhouse Gas Emissions). As such, the proposed project would not conflict with State or local renewable or energy efficiency objectives. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Energy, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts:	New Information Requiring New Analysis or Verification>	Applicable Mitigation Measures
VII. Geology, Seismicity, 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.	Less than significant impact	No	No	No	None
ii) Strong seismic ground shaking?	Less than significant impact	No	No	No	None
iii) Seismic-related ground failure, including liquefaction?	Less than significant impact	No	No	No	None
iv) Landslides?	Less than significant impact	No	No	No	None
b) Result in substantial soil erosion or the loss of topsoil?	Less than significant impact	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve:			Applicable Mitigation Measures
		New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts:	New Information Requiring New Analysis or Verification>	
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	No	No	No	None
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	No	No	No	None
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	Less than significant impact	No	No	No	None
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.D-3

Discussion

a) Earthquakes

Would the project: *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; (ii) Strong Seismic Ground Shaking; (iii) Seismic-related ground failure, including liquefaction; or (iv) Landslides.*

i) Surface Fault Rupture

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the development facilitated by the proposed Housing Element would result in a less than significant impact related to surface fault rupture. The SEIR identified the Calaveras fault zone (an established Earthquake Fault Zone [EFZ]) as being within the City but not within the project site. As such, the SEIR concluded that the impact would be less than significant.

The 2012 Addendum to the SEIR concluded that no changes had occurred to the project site and the project would not result in an impact related to surface fault rupture. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

The project site is not within an established EFZ. The nearest EFZ is the Pleasanton fault zone (approximately 0.67-mile northwest of the project site) and the Calaveras fault zone (approximately 2.6 mile west of the project site). As the project site is not within an established EFZ, the impact would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

ii) Strong Seismic Ground Shaking

Summary of Housing Element Update SEIR

The SEIR concluded that ground shaking in the City could occur and could cause significant damage to structures. However, the SEIR indicates that the project would be subject to the goals and policies of the City General Plan, which would minimize the risk from ground shaking by requiring a site-specific soil and geotechnical study with recommendations to minimize seismic hazards. The SEIR further concluded that compliance with the CBC is State law and required as a condition of building permits. Compliance with CBC (as adopted by the City) would mitigate structural failure resulting from strong seismic ground shaking. As such, the SEIR concluded that the impact would be less than significant.

The 2012 Addendum to the SEIR concluded that no changes had occurred to the project site and the project would not introduce any new impacts related to strong seismic ground shaking. The project would be subject to the CBC as adopted by the City. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

As discussed above, the project site is in proximity to the Pleasanton and Calaveras fault zones, which are established EFZs. Other nearby faults that could generate strong seismic ground shaking at the project site include the Verona fault (3.8 miles south of the project site) and the Las Positas fault (approximately 7.2 miles southeast of the project site). Consistent with the SEIR and the 2012 Addendum, construction of the podium building including the fifth floor and additional 31 units would be required to comply with the current version of the CBC (2022) and the City General Plan, which would ensure that structures associated with the proposed project would be designed to withstand strong seismic ground shaking. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

iii) Seismic-related Ground Failure, Including Liquefaction

Summary of Housing Element Update SEIR

The SEIR concluded that seismic-related ground failure, including liquefaction, is a risk that exists throughout much of the City. The SEIR identified the project site as being within an established liquefaction hazard zone. The SEIR concluded that compliance with the CBC would ensure that buildings constructed as part of the project would be designed to withstand the potential effects of liquefaction and other seismic-related ground failures. As such, the impact would be less than significant.

The 2012 Addendum concluded that no changes had occurred to the project site and the project would not introduce any new impacts related to seismic-related ground failure, including liquefaction with the incorporation of CBC compliance. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

Consistent with the SEIR and the 2012 Addendum, the project site is within an established liquefaction hazard zone. Construction of the podium building, including the fifth floor and additional 31 units would be required to comply with the current version of the CBC (2022) and the City General Plan, which would ensure that structures associated with the proposed project would be designed to withstand the potential effects of liquefaction. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

iv) Seismic-related Ground Failure, Including Landslides

Summary of Housing Element Update SEIR

The SEIR concluded that, due to the flat topography and existing development at the project site, the development facilitated by the proposed General Plan would not expose people or structures to landslides. The SEIR concluded that the impact would be less than significant.

The 2012 Addendum concluded that no changes had occurred at the project site that would alter the conclusions made in the SEIR and the impact would remain less than significant.

Proposed Project Analysis and Conclusion

Consistent with the SEIR and the 2012 Addendum, the project site is in a developed area with flat topography. The project as approved was required to undergo geotechnical evaluation (consistent with the 2022 CBC) to ensure that the any potential risks associated with landslides would be addressed. Construction of the fifth floor and additional 31 units would not change this requirement or conclusion. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Soil Erosion or Topsoil Loss

Would the project: *Result in substantial soil erosion or the loss of topsoil?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the potential impacts related to erosion as the result of site grading would be less than significant. Additionally, the SEIR indicated that the project site would be required to adhere to the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, which contains requirements for erosion control of exposed soils including implementation of a Stormwater Prevention Plan's Best Management Practices. In addition, policies in the Public Safety Element of the General Plan minimize the risk of soil erosion and mitigate its effects further (Goal 1, Policy 2; Goal 2, Policy 5). As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded no changes to the project site or regulatory conditions have occurred that would alter the conclusion of the SEIR. As such, the impact would continue be less than significant.

Proposed Project Analysis and Conclusion

Consistent with the SEIR and the 2012 Addendum, the proposed project would be required to be permitted under the NPDES General Permit. Compliance with the NPDES General Permit would reduce the amount of soil erosion that could occur during construction of the project site. Construction of the fifth floor and additional 31 units would not change this requirement or conclusion. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) Unstable Geologic Location

Would the project: *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 landsliding, lateral spreading, subsidence, liquefaction, or collapse?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that residential development would be required to implement geotechnical tests and reports specific to the development site to identify the suitability of soils and measures to minimize unsuitable soil conditions must be applied. The SEIR also indicated that the design of foundation support must conform to the analysis and implementation criteria described in the CBC, Chapters 16 and 18. Adherence to the City's codes and policies would ensure maximum practicable protection from unstable soils. As such, the SEIR concluded less than significant impacts would occur.

The 2012 Addendum concluded that, in accordance with Goal 2, Policy 5, a Geotechnical Feasibility Investigation has been prepared for the proposed project. The Geotechnical Feasibility Investigation recommended the completion of a design-level geotechnical investigation, which would develop detailed recommendations for design and construction. Programs 5.1, 5.2, and 5.3 of Goal 2, Policy 5 of the Public Safety Element of the

General Plan require a site-specific geotechnical engineering study and mitigation measures to mitigate potential geologic safety hazards for a project site. Mitigation measures identified by the site engineering studies must be incorporated into the project design. Consistent with these policies, a design-level geotechnical investigation was required as well as the implementation of recommended design features to ensure geologic stability. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

As discussed above, the project site is within an established liquefaction hazard zone. Addition of a fifth story and 31 additional units to the podium building would, like the approved project, require implementation of applicable General Plan goals, policies, and programs as well as a design-level geotechnical investigation. As such, the proposed project would be designed consistent with a site-specific geotechnical report to ensure that the potential impacts of developing on unstable soil would be reduced. Therefore, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Expansive Soils

Would the project: *Be located on expansive soil, creating substantial direct or indirect risks to life or property?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that expansive soils are typically found within the upper 5 feet of ground surface and are often found in low-lying alluvial valleys such as the valley in which the City of Pleasanton is located. The SEIR indicated that adherence to the City's codes and policies, and the CBC, Chapter 16 and 18, would ensure maximum practicable protection from expansive soils would be implemented, thereby reducing impacts to a less than significant level. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum concluded that, in accordance with Goal 2, Policy 5, a Geotechnical Feasibility Investigation had been prepared for the project. The Geotechnical Feasibility Investigation indicated that the project site is underlain by areas of moderately expansive silty clay. It was recommended that conventionally reinforced slabs-on-grade constructed at grade should have sufficient reinforcement and be supported on a layer of non-expansive fill and footings should extend below the zone of seasonal moisture fluctuation. Programs 5.1, 5.2, and 5.3 of Goal 2, Policy 5, of the Public Safety

Element of the General Plan requires a site-specific geotechnical engineering study and mitigation measures to mitigate potential geologic safety hazards for a project site. Mitigation measures identified by the site engineering studies must be incorporated into the project design. Consistent with these policies, the project was required to implement a design-level geotechnical investigation and implement recommended mitigation measures. The project would not introduce any new impacts related to expansive soils not previously disclosed. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

Consistent with the SEIR and the 2012 Addendum, expansive soil has been identified at the project site. Addition of a fifth story and 31 additional units to the podium building would, like the approved project, require implementation of applicable General Plan goals, policies, and programs as well as a design-level geotechnical investigation. As such, the proposed project would be designed consistent with a site-specific geotechnical report to ensure that the potential impacts expansive soils would be reduced. Therefore, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

e) Wastewater Disposal Systems

Would the project: *Have soils incapable of supporting the use of septic tanks or other alternative wastewater disposal systems where sewers are not available?*

Summary of Housing Element Update SEIR and Addendum

The SEIR did not analyze the use of septic tanks. However, the 2012 Addendum concluded the project would be required to connect to the City sewer system and would not utilize a septic tank or alternative wastewater disposal system. As such, no impact would occur with regards to the use of a septic system or alternative wastewater disposal system.

Proposed Project Analysis and Conclusion

The proposed project would connect to the City sewer system and would not utilize a septic tank or alternative wastewater disposal system. Addition of the fifth floor or 31 units to the podium building would not change this design. As such, no impact would occur and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

f) Destruction of Paleontological Resource or Unique Geologic Feature

Would the project: *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded (see Section 4-D, Cultural Resources) that Pleasanton is directly underlain by Quaternary Alluvium, which is unlikely to contain vertebrate fossils. However, it is possible that the City is also underlain by older Quaternary deposits that are known to contain vertebrate fossils. Fossils have been found within 5 miles of areas in similar deposits. Therefore, the City has moderate paleontological sensitivity. While shallow excavation or grading is unlikely to uncover paleontological resources, deeper excavation into older sediments may uncover significant fossils.

If a paleontological resource is uncovered and inadvertently damaged, the impact to the resource could be substantial. As previously indicated, the City has moderate paleontological sensitivity, and it is possible that paleontological resources could be disturbed during deeper construction activities such as the excavation of the underground garage. Therefore, implementation of the proposed project could result in significant impacts to paleontological resources. The City requires a standard condition of approval for projects requiring Planning Department approval that would require that all construction stop in the event that paleontological resources were uncovered during excavation. With implementation of this standard condition, future projects in the Planning Area would be expected to have a less than significant effect on unknown paleontological resources. In addition, the SEIR included MM 4.D-3, which requires construction activity to cease in the event that paleontological resources are encountered during the course of development. As such, the SEIR concluded impacts would be less than significant with mitigation.

The 2012 Addendum to the SEIR concluded no changes have occurred that would change the conclusion of the SEIR. As such, impacts would continue to be less than significant with mitigation.

Proposed Project Analysis and Conclusion

The proposed project would not require any new ground disturbance that was not analyzed in the SEIR and the 2012 Addendum. The City standard conditions of approval and mitigation measure that were identified in the SEIR and identified as appliable in the 2012 Addendum would still be applicable to the project, which would reduce the potential impact to paleontological resources. Implementation of the additional fifth story and associated residences would not change the need for or prohibit the implementation of MM 4.D-3.

The impact would be less than significant with the implementation of mitigation and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Geology, Seismicity, and Soils, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. MM 4.D-3 from the SEIR would be required and would reduce potential impacts to below a level of significance consistent with the analysis is the SEIR.

Applicable SEIR Mitigation Measures

MM 4.D-3 In the event that paleontological resources are encountered during the course of development, all construction activity must temporarily cease in the affected area(s) until the uncovered fossils are properly assessed by a qualified paleontologist and subsequent recommendations for appropriate documentation and conservation are evaluated by the Lead Agency. Excavation or disturbance may continue in other areas of the site that are not reasonably suspected to overlie adjacent or additional paleontological resources.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
VIII. Greenhouse Gas Emissions *Would the project:*					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant impact	No	No	No	None
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant impact	No	No	No	None

Discussion

a, b) Greenhouse Gas Emissions Generation and Greenhouse Gases Emissions Reduction Plan Conflict

Would the project: *a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that, because the quantifiable thresholds established in the BAAQMD 2011 Air Quality Guidelines were based on AB 32 reduction strategies, a project cannot exceed the numeric thresholds without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The SEIR utilized the

BAAQMD's 2011 plan-level threshold of 6.6 metric tons of carbon dioxide equivalent (MT CO_2e) per service population (SP) per year to determine significance.

The SEIR quantified emissions from the development of the project site as a component of the development facilitated by the Housing Element and associated rezonings. URBEMIS2002 and the BAAQMD's Greenhouse Gas Model (BGM) were used to quantify emissions in the SEIR. For the analysis included in the 2012 Addendum, the CalEEMod program was used to estimate construction and operational emission of greenhouse gases for the proposed project.

Project construction emissions were calculated in the 2012 Addendum as 2,471 MT CO_2e, to be emitted over the construction period. Construction emissions are generally considered separately from operational emissions because construction emissions are a one-time event, while operational emissions would be continuous over the life of the project. The 2010 Air Quality Guidelines do not contain a threshold for construction generated greenhouse gases but recommend quantification and disclosure of these emissions.

Total operational emissions were estimated at 2,883 MT CO_2e in the 2012 Addendum. The SEIR indicates an average of 2.79 persons per household. Therefore, the project is assumed to accommodate 851 residents. The number of employees is unknown. At an SP of 851, the project would generate approximately 3.4 MT CO_2e per service person at year 2020. The addition of project employees would further reduce the MT CO_2e per service person. Therefore, the project would not exceed the BAAQMD's 2011 thresholds and would not have a significant generation of greenhouse gases.

The City adopted a Climate Action Plan as part of the adoption of the SEIR. As described in the SEIR, the Climate Action Plan includes the project site in its community-wide analysis of VMT and associated greenhouse gas emissions. The SEIR analysis of the Climate Action Plan shows that the City of Pleasanton can meet a community-wide 2020 emissions reduction target that is consistent with the provisions of AB 32, as interpreted by BAAQMD. The SEIR further found that the Housing Element, associated rezonings, and Climate Action Plan would improve the local jobs-housing balance and provide for additional greenhouse gas emissions mitigation and would not conflict with AB 32 or any plan, policy, or regulation regarding greenhouse gases. The project assessed in the 2012 Addendum would construct 305 dwelling units and 7,520 square feet of retail space on a mixed-use site, consistent with the parameters analyzed within the SEIR. Therefore, the project would not conflict with City's Climate Action Plan or any other applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded that applying the City's General Plan Policies and Climate Action Plan, the project would not result in the City exceeding the levels set forth above. As such, impacts were found to continue to be less than significant.

Proposed Project Analysis and Conclusion

GHG emissions associated with development of the proposed project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal.

The City of Pleasanton's Council adopted an updated Climate Action Plan (CAP 2.0) in February 2022, with minor revisions in February 2023. CAP 2.0 updates the City's original CAP, which was adopted in 2012. CAP 2.0 outlines local actions to reduce GHG emissions, enhance environmental sustainability, and prepare for climate change.[8]

To assess the modified proposed project's generation of GHG emissions and their potential to cause a significant impact, the proposed project is analyzed for its consistency with the City's CAP 2.0. In regard to demonstrating project consistency with applicable GHG plans, the proposed project must be consistent with a local GHG reduction strategy (BAAQMD Threshold B) or meet the minimum project design elements recommended by BAAQMD (BAAQMD Threshold A). Threshold B is being applied to the analysis of this project as the City has adopted a qualified CAP that includes a CAP Consistency Checklist.

Construction GHG Emissions

GHG emissions associated with development of the proposed project would occur short-term from construction activities, consisting primarily of emissions

[8] City of Pleasanton. 2024. Key Initiatives, Climate Action Plan. Website: https://www.cityofpleasantonca.gov/our-government/key-initiatives/climate-action-plan/. Accessed September 20, 2024.

from equipment exhaust and worker and vendor trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions. BAAQMD encourages the incorporation of BMPs during construction. As noted in the project description, the project plans and specifications incorporate a construction emissions minimization plan designed to reduce the creation of construction-period TACs. The construction emissions minimization plan may also reduce GHG emissions during construction where feasible and applicable. Therefore, the construction GHG emissions would have less than significant impact and would not conflict with any GHG plans or policies.

Operational GHG Emissions

To assess operational-related GHG emissions and their potential to cause a significant impact, the proposed project is analyzed for its consistency with the City's CAP 2.0. In regard to demonstrating project consistency with applicable GHG plans, the proposed project will similarly demonstrate consistency with City and State GHG reduction strategies and goals and result in less than significant CEQA impacts through compliance with the CAP 2.0 GHG Emission Compliance Checklist.

The CAP 2.0 Checklist sets forth several strategies for GHG reductions across areas including energy, waste, and water. The proposed project (including the additional fifth floor and associated 31 dwelling units) will be subject to and comply with the requirements generally applicable to new construction and covered projects (which includes new residential construction), accounting for economic and technological feasibility considerations as allowed by CAP 2.0. As noted in the CAP 2.0 Checklist, a completed copy of the Checklist is required to accompany discretionary applications submittals. Some examples of GHG reduction measures consistent with CAP 2.0 are presented below:

Green Building Standards

- The proposed project will comply with the latest version of mandatory measures in the California Green Building Standards Code (CALGreen).

Energy

- The proposed project will include installation of solar photovoltaics (PV) systems at time of new construction that meet the power needs of the additional 31 dwelling units.

- The proposed project will install electric vehicle charging infrastructure as required by code standards.

Waste

- The proposed project will comply with Municipal Code requirements for cement and asphalt recycling and reuse.

Water

- The proposed project will comply with Municipal Code requirements and the City's Water Efficient Landscape Ordinance.

As noted above, the proposed project is consistent with the CAP 2.0. The proposed project (the additional fifth floor and associated 31 dwelling units) would also be constructed in conformance with the 2022 CALGreen and the Title 24 Building Codes, which requires high-efficiency water fixtures, water efficient irrigation systems, and compliance with current energy efficiency standards. Compliance with these standards ensures compliance with State and federal plans, policies, and regulations applicable to GHG emissions. Thus, the proposed project would result in a less than significant impact.

Therefore, the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Greenhouse Gas Emissions, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
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	No	No	No	None
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 with mitigation incorporated	No	No	No	None
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	No	No	No	None
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section	Less than significant impact with mitigation incorporated	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
65962.5 and, as a result, would it create a significant hazard to the public or the environment?					
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 or excessive noise for people residing or working in the project area?	Less than significant impact with mitigation	No	No	No	MM 4.G-5 (part c.)
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	No impact	No	No	No	None
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than significant impact	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve:			Applicable Mitigation Measures
		New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	
h) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	Less than significant impact	No	No	No	None

Discussion

a) Routine Transport, Use, or Disposal of Hazardous Materials

Would the project: *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that residential and retail development consistent with the proposed Housing Element would involve demolition activities and use of construction equipment that would require the use of hazardous materials such as fuel or solvents. These materials could accidentally spill and may cause a potentially significant impact to the public and/or environment. However, the SEIR indicated development such as the proposed project would be required to comply with all applicable regulations for management of hazardous materials during construction and demolition. These policies include Title 22 and 26 of the California Code of Regulations governing hazardous material transport, Title 8 Standards for handling asbestos and lead during demolition/construction, and Title 19 of the California Code of Regulations and Chapter 6.95 of the Health and Safety Code for site remediation. In addition, the Pleasanton General Plan’s Public Safety Element’s Goal 5 and Policies 16 through 19 include regulations regarding the use and transport of hazardous materials and waste. Compliance with these regulations would ensure potential hazards resulting from the use of hazardous materials during construction activities would be less than significant. Furthermore, because the project site does not contain any buildings or structures, it is unlikely that demolition activities would encounter lead or asbestos.

The SEIR also concluded that new residential development, such as the proposed project, may routinely use commonly available hazardous substances such as fuels, lubricants, and household cleaners. The project would also consist of retail operators that would be likely to use similar substances. However, such use typically consists of limited quantities and would not be expected to present a significant risk to the environment. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded no changes have occurred to the project site or to the proposed development that would alter the conclusion of the SEIR. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

Construction of the fifth floor and 31 residential units within the podium building would not change the transport, use, or disposal of hazardous materials at the project site. Consistent with the SEIR and the 2012 Addendum to the SEIR, the proposed project would comply with all applicable regulations for management of hazardous materials during construction, as well as the Pleasanton General Plan's Public Safety Element's goals and policies. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Hazardous Materials Risk of Upset

Would the project: *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?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that construction of residences and retail uses on sites for rezoning would disturb soils that could be contaminated from past releases of hazardous substances into the soil or groundwater. The project site was not identified in the SEIR as potentially containing contaminated soil or groundwater. Nonetheless, implementation of MM 4.G-2 as required by the SEIR required both the preparation of a Phase I Environmental Site Assessment (ESA) to determine the potential presence of on-site contamination and the provision of documentation indicating that any on-site contamination has been appropriately remediated. As such, with the implementation of MM 4.G-2 and adherence to General Plan Policy 17, the SEIR concluded that impacts would be less than significant with mitigation.

As a part of the 2012 Addendum a Phase I ESA was prepared for the project site, which indicated no evidence of recognized environmental constraints such as contaminated soil or groundwater are present at the project site. As such, with the implementation of MM 4.G-2, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

On-site conditions have not changed such that contaminated soil or groundwater have been identified on-site. Construction of the proposed project would not change this condition nor would it introduce any new impacts related to hazardous material upset or accident that was not analyzed in the SEIR and the 2012 Addendum. MM 4.G-2 has already been implemented and is satisfied; no further mitigation is necessary. Impacts would be less than significant, and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) Hazardous Emissions Proximate to a School

Would the project: *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the that development facilitated by the Housing Element would not result in the handling of significant quantities of hazardous materials, substances, or wastes; therefore, risk of hazardous material releases within the vicinity of schools would be less than significant.

The 2012 Addendum to the SEIR concluded the project site is not located within 0.25 mile of a school and, therefore, would not introduce any new impacts related to hazardous materials in proximity to schools not previously disclosed. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

The Cozy Nest Daycare is approximately 200 feet northeast of the project site and the Kidsplanet Daycare is approximately 0.25 mile west of the project site. Furthermore, a daycare center is now planned for the northwestern corner of the project site. However, as stated above, the proposed project would not require the handling of significant quantities of hazardous materials, substances, or wastes and addition of the fifth floor and 31 residences to the podium building would not change this conclusion. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Hazardous Materials Sites, Government Code Section 65962.5 Sites

Would the project: *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that development of sites known to be contaminated by hazardous materials or wastes could occur on potential sites for rezoning. However, the project site was not identified by the SEIR as containing hazardous materials. Nonetheless, the SEIR indicated that with implementation of MM 4.G-2 and adherence to General Plan Policy 17 would ensure impacts related to hazardous material sites are addressed. As such, the SEIR concluded that impacts would be less than significant with mitigation.

As a part of the 2012 Addendum a Phase I ESA was prepared for the project site in accordance with MM 4.G-2 confirming the site is not included on a list of hazardous materials sites. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

According to the California State Water Resources Control Board (State Water Board) GeoTracker database and the California Department of Toxic Substances Control (DTSC) EnviroStor database, the project site is not on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List). As indicated, MM 4.G-2, requiring a Phase I ESA, has been satisfied for the project site and no on-site contamination or site listing has been identified. No further mitigation is applicable or necessary. Construction of the fifth floor and 31 residences would not change this conclusion. The impacts would be less than significant, and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

e) and f) Public and Private Airport Safety

Would the project: *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 or excessive noise for people residing or working in the project area?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that a conflict between the Livermore Municipal Airport Land Use Compatibility Plan (ALUCP) and potential rezoning sites for housing development was not anticipated. However, at the time the SEIR was written, the ALUCP was being revised; therefore, the SEIR indicated that, without specific project site details and a newly adopted ALUCP, additional analysis regarding residential development consistency with the Livermore Municipal Airport would be speculative. As such, the SEIR included MM 4.G-5 requiring compliance with the ALUCP and verification of compliance with the Federal Aviation Administration (FAA) Part 77 air space. As such, the SEIR concluded impacts would be less than significant with mitigation.

The SEIR concluded that no private airstrips exist in the vicinity of the City and therefore no related impacts would occur.

The 2012 Addendum concluded that the project site is located approximately 3 miles west of the Livermore Municipal Airport and is not within Airport Protection Area (APA), Airport Influence Area (AIA), or Federal Aviation Regulation (FAR) Part 77 height restriction space as indicated in the ALUCP. Furthermore, none of the proposed on-site buildings would exceed 200 feet in height.

The 2012 Addendum indicated that MM 4.G-5 (part a) does not apply and the project site is not regulated by the newly adopted ALUCP. Furthermore, MM 4.G-5 (part b) does not apply to the project. However, as required MM 4.G-5 (part c), prior to the issuance of a grading or building permit for the proposed project, verification of compliance with the FAA Part 77 would be required. With the implementation of this mitigation the project would not introduce any new impacts related to air safety not previously disclosed. As such, impacts would continue to be less than significant with mitigation.

The SEIR concluded that no private airstrips exist in the vicinity of the City and therefore no related impacts would occur. Similarly, the 2012 Addendum indicated that not changes have occurred that would result in potential impacts related to private airstrips and, as such, no impact would continue to occur.

Proposed Project Analysis and Conclusion

The addition of the fifth floor and 31 residential units to the podium building would modify the total height of the podium building to 68 feet and 11 inches from the existing grade to the podium building roof.

As discussed above, the project site is not within the APA, AIA, or FAR Part 77 height restriction space as indicated in the ALUCP.

Consistent with the SEIR, the podium building would not exceed 200 feet in height. Consistent with the 2012 Addendum to the SEIR, MMs 4-G (parts a and b) would not apply to the proposed project. However, MM 4.G-5 (part c) would apply and would require verification of compliance with the FAA Part 77 prior to the issuance of a grading or building permit. As such, impacts would be less than significant with the implementation of mitigation, and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

g) Emergency Response and Evacuation

Would the project: *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that the buildout of the proposed Housing Element would not interfere with current guidelines set forth in the Pleasanton Comprehensive Emergency Management Plan. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum concluded no changes have occurred that would alter the conclusion of the SEIR. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

No changes have occurred that would alter the conclusions made in the SEIR and the 2012 Addendum. The proposed project would not interfere with current guidelines for emergency response and evacuation. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

h) Wildland Fires

Would the project: *Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that all the sites considered for rezoning, including the project site, are located outside of the designated wildland-urban interface threat areas within Pleasanton. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum concluded the project would be required to comply with policies of the Public Safety Element of the City of Pleasanton General Plan and the Pleasanton Building Code that set standards for building sprinklers, fire response systems, and built-in fire protection systems. No changes have occurred to the status of the project site's location outside of the wildland-urban interface area. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

No changes have occurred to the status of the project site's location outside of the wildland-urban interface area. Consistent with the SEIR and the 2012 Addendum, the project would be required to comply with policies of the Public Safety Element of the City of Pleasanton General Plan and the Pleasanton Building Code that set standards for building sprinklers, fire response systems, and built-in fire protection systems. As such, the impact would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Hazards and Hazardous Materials, the consistency checklist demonstrates that:

1. No peculiar impacts related to the proposed project or its site have been identified.
2. There are no potentially significant off-site and/or cumulative impacts which were not discussed by the Housing Element Update FEIR.
3. No substantial new information has been identified which results in an impact which is more severe than anticipated by the Housing Element Update FEIR.

4. MM 4.G-5 (part c.) from the SEIR would be required and would reduce potential impacts to below a level of significance consistent with the analysis is the SEIR.

Applicable SEIR Mitigation Measures

MM 4.G-5c The following condition shall be included in any PUD development approval : Prior to the issuance of a grading permit or building permit, whichever is sooner, the project applicant shall submit verification from the FAA, or other verification to the satisfaction of the City Engineer or Chief Building Official, of compliance with the FAA Part 77 (Form 7460 review) review for construction on the project site.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification	Applicable Mitigation Measures
X. Hydrology and Water Quality *Would the project:*					
a) Violate any water quality standards or waste discharge requirements?	Less than significant impact	No	No	No	None
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	Less than significant impact	No	No	No	None
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion	Less than significant impact	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification	Applicable Mitigation Measures
or siltation on-site or off-site?					
(d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site?	Less than significant impact				
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	Less than significant impact	No	No	No	None
f) Otherwise substantially degrade water quality?	Less than significant impact	No	No	No	None
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance	Less than significant impact	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification	Applicable Mitigation Measures
Rate Map or other flood hazard delineation map?					
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows;	Less than significant impact	No	No	No	None
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	Less than significant impact	No	No	No	None
j) Result in inundation by seiche, tsunami or mudflow?	Less than significant impact	No	No	No	None

Discussion

a) , d), e), f) Water Quality, Flooding or Polluted Runoff

Would the project: *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? Or*

Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site? Or

Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? Or

Otherwise substantially degrade water quality?

Summary of Housing Element Update SEIR and Addendum

The SEIR stated that development projects facilitated by the Housing Element, specifically those on the potential sites for rezoning, could affect drainage patterns and create new impervious surfaces that cause changes to stormwater flows and water quality. However, compliance with the Alameda Countywide Clean Water Program (ACCWP) NPDES Permit and implementation of the related Construction Storm Water Pollution Prevention Program (SWPPP) would require future development at potential sites for rezoning to incorporate BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. Further, the C.3 provision of the ACCWP NPDES Permit requires that there be no net increase in stormwater rates and runoff at a potential site for rezoning after project construction through preparation of a hydromodification and stormwater management plan. Development proposals, including grading and drainage plans will be reviewed by the City's Engineering Division of the Community Development Department for compliance with City ordinance codes regarding flooding and drainage (including properly sized storm sewers and building within FEMA flood hazard zones). For these reasons, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum to the SEIR concluded the proposed project would not introduce any new water quality, flooding, or polluted runoff related impacts not previously disclosed in the SEIR. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would include the addition of a fifth floor (and 31 additional residential units) to the podium building. The addition of the fifth floor would not require more ground disturbance than what was already analyzed in the SEIR and the 2012 Addendum. Consistent with the SEIR and the 2012 Addendum, the proposed project would be required to comply with the NPDES General Permit and would be required to prepare and implement a SWPPP and its associated BMPs. As such, impacts would be less than significant, and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Groundwater

Would the project: *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Summary of Housing Element Update SEIR

The SEIR concluded that development of impervious surfaces on rezoning sites could potentially reduce groundwater infiltration and that the addition of new housing and retail space would result in an increase in consumption of municipal water supply, which could potentially increase demand on groundwater supplies. However, the SEIR concluded impacts would be less than significant because the City has already planned for the residential growth and because the Housing Element includes policies to protect water supplies. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum concluded because the development of the project site was considered in the SEIR and is now included in the City of Pleasanton's General Plan, the project site's growth has been included in future water supply planning and would not deplete groundwater supplies. Furthermore, the project site currently contains mostly impervious surfaces in the form of parking lots and does not provide substantial groundwater recharge. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would include the addition of a fifth floor (and 31 additional residential units) to the podium building. The construction of the proposed project would not introduce any new impacts related to the use of groundwater or groundwater recharge. Impervious surface amounts would not be altered. The addition of a fifth floor to the podium building and related 31 residential units may result in additional demand for groundwater supplies. However, the number of residential units on-site would still be below the 420 units analyzed in the SEIR and planned for by the City. As such, impacts would be less than significant, and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) Drainage Resulting in Erosion or Flooding

Would the project: *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on-site or off-site?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that through the compulsory implementation of NPDES Construction General Permit requirements, including preparation of a SWPPP, compliance with Goal 6 of the Public Facilities and Community Programs Element of the General Plan, and, once constructed, implementation of C.3 requirements, development of housing sites would have less than significant impacts with respect to on-site and off-site erosion or flooding.

The 2012 Addendum indicated that the project would be required to demonstrate compliance with these regulations as part of issuance of building and/or grading permits. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

Construction of the podium building would abide by the above-mentioned regulations. Addition of the fifth floor and 31 residential units to the podium building would not prohibit the compliance and implementation of applicable regulations related to erosion flooding. As such, the impact would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

g), h), i), j) Flood Hazard

Would the project: *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? Or*

Place within a 100-year flood hazard area structures that would impede or redirect flood flows? Or

Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? Or

Result in inundation by seiche, tsunami or mudflow?

Summary of Housing Element Update SEIR

The SEIR concluded that development proposals resulting from the Housing Element would be reviewed by the City's Engineering Division of the Community Development Department for compliance with City ordinance codes regarding flooding and drainage, including properly sized storm sewers and building within FEMA flood hazard zones. The SEIR concluded that no impacts would occur related to seiche, tsunami, or mudflow because the City is inland from the ocean and in a relatively flat area. Furthermore, the SEIR indicated that most of the City of Pleasanton is within the 5- to 40-minute inundation area in the event of the failure of Del Valle Dam. However, catastrophic dam failure is considered highly unlikely. The SEIR indicated that compliance with applicable regulations would ensure that the impacts of development within flood hazard zones would be less than significant or, in the case of seiche, tsunami or mudflow, no impact would occur.

The 2012 Addendum concluded that the project is not located in significant flood hazard zone, a levee failure zone, or in a location susceptible to seiche, tsunami, or mudflow. As such, the impacts would continue to be less than significant or in the case of seiche, tsunami, or mudflow no impact would occur.

Proposed Project Analysis and Conclusion

The addition of the fifth floor and associated 31 residential units would not change the potential for inundation to occur on-site. Impacts would be less than significant, or in the case of seiche, tsunami, or mudflow no impact, and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Hydrology and Water Quality, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously

Certified SEIR or an impact which is more severe than shown in the Certified SEIR.

4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification	Applicable Mitigation Measures
XI. Land Use and Planning *Would the project:*					
a) Physically divide an established community?	Less than significant impact	No	No	No	None
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	No	No	No	None
c) Conflict with any Habitat Conservation Plan or Natural Communities Conservation Plan	Less than significant impact	No	No	No	None

Discussion

a) Division of an Established Community

Would the project: *Physically divide an established community?*

Summary of Housing Element Update SEIR and 2012 Addendum

The SEIR indicated that sites selected for rezoning met certain criteria established by the City as being suitable for multi-family housing development, including compatibility with surrounding residential development and location within existing neighborhoods. As such, the SEIR concluded construction of residential units and retail as allowed by the Housing Element would result in less than significant impacts related to the division of an established community.

The 2012 Addendum concluded that the project would be consistent with surrounding uses and therefore would not introduce any new impacts in this regard. Impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The addition of the fifth floor and 31 residences to the podium building would be consistent with surrounding existing uses and would not physically divide an established community. As such, the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Conflict with Applicable Land Use Plans, Policies, or Regulations

Would the project: *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?*

Summary of Housing Element Update SEIR and 2012 Addendum

The SEIR indicated that several of the potential sites for rezoning are located in areas that could result in conflicts with General Plan policies related to air quality and noise, due to their proximity to point sources of air pollution and to noise sources, if not properly addressed. However, the SEIR indicated that compliance with mitigation set forth in SEIR Section 4.B, Air Quality and 4.J, Noise, as well as consistency with applicable policies of the Housing Element would ensure that sites rezoned for residential and retail development would be consistent with the General Plan and as such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum indicated that the project is consistent with the vision of the Hacienda Business Park to move toward more mixed-use development. The project's residential and commercial use is also consistent with the General Plan designation of Business Park/Mixed Use. The 2012 Addendum also concluded that the project would be consistent with the PUD – HDR zoning designation as well as applicable zoning requirements, such as density and parking. In addition, the project was designed to be consistent with the Housing Site Development Standards and Design Guidelines including the provision of pedestrian and bicycle connections, group usable open space, landscaping, and lighting.

Furthermore, the project was required to go through the PUD process ensuring consistency with the Housing Site Development Standards and Design Guidelines and Hacienda Business Park Desing Guidelines. As such, the 2012 Addendum concluded that because the project was designed to be consistent with existing General Plan and Zoning Designations, as well as the Housing Site Development Standards and Design Guidelines, and because the project required additional PUD review, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would add a fifth floor and the associated 31 residential units to the podium building. The project site would continue to consist of mixed uses and would therefore continue to be consistent with General Plan land use designations. The proposed project would increase on-site residential density from the approved 36.3 housing units per acre to 40 housing units per acres. This is consistent with the allowable PUD-HDR zoning density of no more than 40 housing units per acre. The additional residential units would be constructed consistent with the design of the approved podium building and would continue to be consistent with Housing Site Development Standards and Design Guidelines. As such, the proposed project would not introduce any new impacts in this regard. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) Conflict with habitat or natural communities plan

Would the project: *Conflict with any applicable Habitat Conservation Plan or Natural Communities Conservation Plan?*

Summary of Housing Element Update SEIR and 2012 Addendum

The SEIR concluded that no impact would occur with respect to conflicts with a habitat or Natural Community Conservation Plan because the City is not located within such a designated area.

The 2012 Addendum indicated that no changes occurred that would alter this conclusion.

Proposed Project Analysis and Conclusion

No changes have occurred that would alter this conclusion. No impacts would occur and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Land Use and Planning, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
XII. Mineral Resources *Would the project:*					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	No impact	No	No	No	None
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	No	No	No	None

Discussion

a, b) Loss of Minerals Resources of Statewide or Local Importance

Would the project: a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?*

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?*

Summary of Housing Element Update SEIR and Addendum

The Housing Element Update FEIR indicated that most of the sites are urban infill sites and are developed or partially developed with existing uses and concluded that no activities related to mineral resources currently occur within the potential sites for housing and none of the sites are designated for this use. These conditions preclude the possibility of impacts on mineral resources; therefore, the SEIR concluded that there would be no impacts associated with mineral resources.

The 2012 Addendum to the SEIR concluded that no changes have occurred that would alter the conclusion of the SEIR in this respect. As such, the project would continue to have no impact.

Proposed Project Analysis and Conclusion

No changes have occurred that would alter the conclusion of the SEIR and the 2012 Addendum. As such, no impact would occur and the proposed project would not result in a new or more severe adverse impact that would not previously identified in the SEIR.

Conclusion

With regards to Mineral Resources, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	New Information, More Severe Adverse Impact?
XIII. Noise *Would the project:*					
a) Expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.J-1 and MM 4.J-6c
b) Expose persons to or generation of excessive groundborne vibration or groundborne noise levels?	Less than significant impact with mitigation incorporated	No	No	No	None
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Less than significant impact with mitigation incorporated	No	No	No	None
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.J-1 and MM 4.J-6c
e) For a project located within an	No impact	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	New Information, More Severe Adverse Impact?
airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, would the project expose people residing or working in the project area to excessive noise levels?					

Discussion

a) Substantial Noise Increase in Excess of Standards or Existing Levels

Would the project:

a) Expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that construction activities on rezoning sites would involve the use of heavy equipment, in addition to small power tools, generators, and hand tools that would be sources of noise. Noise would vary based on construction location relative to receptors and type and quantity of construction equipment. The SEIR concluded that because the development projects would be required to comply with Municipal Code 9.04.100, individual project construction equipment would not produce a noise in excess of 83 decibels (dB) equivalent noise level (L_{eq}) at a distance of 25 feet, nor would total construction noise exposure exceed 86 dB L_{eq} outside of project boundaries. In addition, to ensure construction noise resulting from project development resulted in less than significant impacts, the SEIR included MM 4.J-1, which requires the project to comply with applicable construction noise exposure criteria. As such, the SEIR concluded impacts would be less than significant with mitigation.

The 2012 Addendum concluded the nearest sensitive receptors to the project site consists of multi-family residences located approximately 160 feet to the southwest and approximately 180 feet to the southeast. As indicated in Table 4.J-5 of the SEIR, the use of pneumatic tools would be one of the loudest pieces of construction equipment with an 85 dB maximum noise level (L_{max}) at 50 feet. At a distance of 160 feet pneumatic tool noise would be at a level of approximately 75 dB L_{max} and would not exceed the acceptable maximum noise levels at the nearby receptors. However, MM 4.J-1 would still be required and with its implementation, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

Construction

No additional equipment or additional construction phases are necessary to implement the proposed project beyond what was previously evaluated in the SEIR and Addendum and approved by the City. As the 2012 Addendum requires and consistent with the SEIR, the project would abide by construction noise limits outlined by Municipal Code 9.04.100 and would be required to implement MM 4.J-1. As such, the project would not introduce any new impacts related to construction noise not previously identified in the SEIR and impacts would continue to be less than significant with the implementation of mitigation

Operation

Traffic Noise Impacts

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that traffic noise level increases from traffic pattern changes due to the land use changes on the rezoning sites would be expected in the range of 1 to 3 dB along some roadway segments. The SEIR concluded that project-related traffic noise level increases of 1 dB along two segments (Hopyard Road between West Las Positas Boulevard and Valley Avenue, and Stoneridge Drive between West Las Positas Boulevard and

Santa Rita Road) may increase traffic noise exposure to above 60 dB day/night average noise level (L_{dn}) within single-family residential back yards and therefore would be potentially significant.

The SEIR also considered roadway noise impacts in the cumulative (year 2035) noise scenario. Potentially significant, cumulatively considerable traffic noise increases were identified along two additional roadway segments: Stoneridge Drive between Johnson Drive and Hopyard Road, and Hopyard Road between Stoneridge Drive and West Las Positas Boulevard. At these locations, increased traffic noise exposure may exceed the City's 60 dB L_{dn} limit within neighboring single-family residential backyards and therefore, would also be potentially significant.

As a part of the 2012 Addendum, to determine the project's potential contribution to these traffic noise impacts, a Noise Assessment Study was prepared by Edward L. Pack Associates, Inc. dated December 17, 2012 (Appendix G of the 2012 Addendum).[9] As indicated therein, project-generated traffic noise exposure would be below the 60 dB L_{dn} limit of the City of Pleasanton Noise Element standards at all receptor locations along roadways identified in the Traffic Impact Analysis prepared by Fehr & Peers in support of the 2012 Addendum (Appendix H of the 2012 Addendum).[10]

The roadway segments identified in the SEIR as having potentially significant impacts under the project and cumulative scenarios are not located in the project vicinity. The Noise Assessment Study focused on roadway segments in the project vicinity, which would experience the greatest increase in traffic noise. For the 2012 project, the segment of West Las Positas from Stoneridge Drive to Santa Rita Road (nearest to the impacted segment of Stoneridge Drive identified in the SEIR) would experience a traffic generated noise exposure of 42 to 51dB L_{dn}, well below the acceptable 60 dB L_{dn} limit.

The 2012 Addendum concluded that because all impacted roadway segments identified in the SEIR are located farther away from the project site, the project's contribution would be even smaller and would not represent a considerable contribution to the existing plus project or cumulative impacts identified in the SEIR. As such, the 2012 project would not introduce any new project-related traffic noise impacts not previously disclosed. Impacts related

9 Edward L. Pack Associates, Inc. 2012. Noise Assessment Study. December 17.
10 Fehr & Peers. 2012. Traffic Assessment for Residences at California Center.

to the project as considered in 2012 would be less than significant and less than those concluded in the SEIR.

The SEIR also concluded that developments on rezoned sites may be exposed to exterior traffic noise in excess of 65 dB and interior traffic-related noise exposure in excess of the acceptable 45 dB Ldn threshold; therefore, impacts would be potentially significant. Residential development is required to comply with Title 24 of the California Code of Regulations, which requires an interior noise exposure of 45 dB L_{dn}/CNEL or less within any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard. To ensure compliance and reduce impacts to less than significant, the SEIR included MM 4.J-5b and 4.J-5c, which requires buildings to be built to California interior noise insulation standards and any locations of outdoor activity for sensitive uses associated with the project site be designed so that the noise exposure from traffic does not exceed 65 dB L_{dn} at these activity areas. As such, the SEIR concluded impacts would be less than significant with mitigation.

The 2012 Addendum to the SEIR concluded that exterior and interior noise exposures at the proposed project site would be within the limits of the City of Pleasanton and Title 24 standards under current and future conditions. Provision of the Noise Assessment Study to the City of Pleasanton fulfilled the requirements of both MM 4.J-5b and 4.J-5c. As such, impacts would continue to be less than significant.

Stationary Operational Noise Impacts-Mechanical Equipment Operations

The SEIR concluded that development on rezoned sites could be exposed to stationary noise sources (e.g., industrial/ commercial area loading noise and late or 24-hour operations noise) and impacts would be potentially significant. To ensure impacts would be reduced to a less than significant level, the SEIR included the following MM 4.J-6a and 4.J-6c, which require, as applicable to the project, site-specific acoustical assessments to determine noise exposure, impact, and mitigation regarding non-transportation sources and noise disclosures and noise complaint procedures for new residents at the project site. As such, the SEIR concluded impacts would be less than significant with mitigation.

The 2012 Addendum concluded that a Noise Assessment Study was prepared for the project and indicated that no additional measures were needed to ensure that interior or exterior noise levels remain below acceptable standards. While the project site is located adjacent to a commercial area that includes a Walmart and Kohl's department store, loading areas for these establishments are located on the far side of the buildings, away from the project site, and the Noise Assessment Study indicated that traffic associated with the retail center does not significantly affect the noise environment. The Noise Assessment Study indicated that exterior and interior noise levels would be below acceptable levels at the project site and no additional measures would be needed to attenuate noise levels. As such, the Noise Assessment Study fulfills the requirements of MM 4.J-6a. With the implementation of MM 4.J-6c, requiring implementation of noise disclosures and noise complaint procedures, impacts would continue to be less than significant with mitigation.

Proposed Project Analysis and Conclusion

Stationary Noise

Addition of the podium building fifth floor and associated 31 residential units would not introduce any new stationary noise source exposure. As indicated in the Noise Assessment Study, exterior and interior noise levels would be below acceptable levels for the project site. The additionally proposed fifth floor would not change this conclusion nor would it prohibit or change the need for or implementation of MM 4.J-6c. As such, impacts would continue to be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Construction

The proposed project modifications would include an addition of a fifth floor to the podium building and an additional 31 residential units.

The construction noise impact analysis performed for the 2012 Addendum identified that the reasonable worst-case construction noise impacts were related to the demolition, site preparation, and grading phases of construction. The addition of a fifth floor to the podium building would not alter these loudest phases of construction in any way and would not introduce any new construction noise sources and therefore would not result in any new or more sever construction noise impact than was previously identified and analyzed in the SEIR and the 2012 Addendum.

Therefore, similar to the findings of the SEIR and the 2012 Addendum, with implementation of best management noise reduction practices, required compliance of the proposed project with the noise ordinance requirements of Section 9.04.100 of the Municipal Code, and implementation of identified

MM 4.J-1, construction noise impacts would be reduced to less than significant.

Operation

Traffic Noise Impacts

The proposed project modifications would include an addition of a fifth floor to the podium building and an additional 31 residential units.

As identified in the SEIR and the 2012 Addendum, the proposed project's contribution to traffic noise levels would not represent a considerable contribution to the existing plus project or cumulative impacts.

Based on the traffic study prepared for the approved project, the 305 apartment units for the approved project would generate 156 AM and 189 PM peak-hour trips. However, the 336 apartment units of the proposed project would generate 134 AM and 171 PM peak-hour trips. This anticipated trip reduction is due to a change between the ninth and eleventh editions of the Trip Generation Manual. Therefore, the proposed project would not result in any increase in traffic noise levels compared to what was already previously identified and analyzed for the approved project.

As a result, project-related traffic noise impacts would remain less than significant without mitigation. Therefore, there are no environmental effects that are peculiar to the proposed project. The proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR or the 2012 Addendum.

Stationary Operational Noise Impacts-Mechanical Equipment Operations

The proposed project modifications would include an addition of a fifth floor to the podium building and an additional 31 residential units.

These modifications would not introduce any new stationary noise sources to the project vicinity or alter proposed stationary noise sources that were previously identified and analyzed. Therefore, the proposed project would not result in a new or more severe adverse impact related to operational stationary noise sources that was not previously identified in the SEIR or the 2012 Addendum.

b) Groundborne Vibration/Noise Levels

Would the project:	*Expose persons to or generation of excessive groundborne vibration or groundborne noise levels?*

Summary of Housing Element Update SEIR

The SEIR concluded that vibration exposure at neighboring sensitive uses, which are expected to be greater than 100 feet removed from the rezoned construction sites, would not be expected to exceed the applicable criteria outlined by the California Department of Transportation (Caltrans) Transportation and Construction-Induced Vibration Guidance Manual except in situations where pile driving occurs. Should pile driving occur, the SEIR concluded that implementation of MM 4.J-2 would reduce construction-related vibration to a less than significant level. As such, the SEIR concluded impacts would be less than significant with mitigation with the implementation of mitigation.

The 2012 Addendum to the SEIR concluded the project would not introduce any new construction-related vibration impacts not previously disclosed. The project site is more than 100 feet from nearby sensitive receptors; therefore, typical construction vibration levels would not exceed acceptable levels at nearby receptors. According to the Geotechnical Feasibility Investigation (Cornerstone Earth Group 2012), project site soils can accommodate conventional shallow footings or mat foundations; therefore, pile driving would not be required, and implementation of MM 4.J-2 would not be required. As such impacts would be less than significant and no mitigation is needed.

Proposed Project Analysis and Conclusion

Construction

The addition of a fifth floor to the podium building would not result in any changes to construction-related vibration from what was previously analyzed and would not introduce any new construction vibration sources. Therefore, the proposed project would not result in any new or more sever construction vibration impact that was not previously identified and analyzed in the SEIR and the 2012 Addendum and the impact would remain less than significant.

Operation

The addition of a fifth floor to the podium building would not result in any changes to what was previously analyzed and would not introduce any new operational vibration sources. Therefore, the proposed project would not result in any new or more severe operational vibration impact that was not previously identified and analyzed in the SEIR and the 2012 Addendum and the impact would remain less than significant.

c) Excessive Noise Levels from Airport Activity

Would the project: *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?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that maximum noise levels from aircraft departures to the west from Livermore Municipal Airport may exceed the applicable 50/55 dB L_{max} criteria within habitable rooms at sites near the left-hand pattern of Runway 25L, resulting in potentially significant impacts. To ensure impacts would be reduced to a less than significant level, the SEIR included MM 4.J-7 for sites located in affected areas. As such, the SEIR concluded impacts would be less than significant with the implementation of mitigation.

The 2012 Addendum to the SEIR concluded the approved project would not introduce any new aviation noise impacts not previously disclosed. The proposed project is not located near the left-hand pattern of Runway 25L and, therefore, would not be exposed to aircraft-related noise. As such, impacts would continue to be less than significant and no mitigation is needed.

Proposed Project Analysis and Conclusion

The proposed project modifications would include an addition of a fifth floor to the podium building and an additional 31 residential units. These modifications would not change the location of the project (i.e., locate it closer to an airport) nor result in any changes to potential airport noise impacts. Therefore, implementation of the project would not expose persons residing or working in the project vicinity to noise levels from airport activity that would be in excess of normally acceptable standards for the proposed land use development, and no impact would occur. Therefore, there are no environmental effects that are peculiar to the proposed project. The proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR or the 2012 Addendum and no mitigation is required.

Conclusion

With regards to Noise, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. MM 4.J-1 and 4.J-6c from the SEIR would be required and would reduce potential impacts to below a level of significance, consistent with the analysis in the SEIR.

Applicable SEIR Mitigation Measures

MM 4.J-1 In addition to requiring that all project developers comply with the applicable construction noise exposure criteria established within the City's Municipal Code 9.04.100, the City shall require developers on the potential sites for rezoning to implement construction best management practices to reduce construction noise, including:

a. Locate stationary construction equipment as far from adjacent occupied buildings as possible.
b. Select routes for movement of construction-related vehicles and equipment so that noise-sensitive areas, including residences, and outdoor recreation areas, are avoided as much as possible. Include these routes in materials submitted to the City of Pleasanton for approval prior to the issuance of building permits.
c. All site improvements and construction activities shall be limited to the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday. In addition, no construction shall be allowed on State and federal holidays. If complaints are received regarding the Saturday construction hours, the Community Development Director may modify or revoke the Saturday construction hours. The Community Development Director may allow earlier "starttimes" for specific construction activities (e.g., concrete foundation/floor pouring), if it can

be demonstrated to the satisfaction of the Community Development Director that the construction and construction traffic noise will not affect nearby residents.

d. All construction equipment must meet DMV noise standards and shall be equipped with muffling devices.

e. Designate a noise disturbance coordinator who will be responsible for responding to complaints about noise during construction. The telephone number of the noise disturbance coordinator shall be conspicuously posted at the construction site and shall be provided to the City of Pleasanton. Copies of the construction schedule shall also be posted at nearby noise-sensitive areas.

MM 4.J-6c The City shall require noise disclosures and noise complaint procedures for new residents at the project site. The requirement shall include a) a disclosure of potential noise sources in the project vicinity; b) establish procedures and a contact phone number for a site manager the residents can call to address any noise complaints.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
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	No	No	No	None
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	Less than significant impact	No	No	No	None

Discussion

a) Growth Inducement

Would the project: *Induce substantial 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)?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that development of all the sites considered for rezoning could result in substantial population growth, resulting in significant impacts. However, the SEIR indicated that not all of the sites considered for rezoning would actually be rezoned and, in fact, only nine of the 21 sites contemplated for rezoning under the SEIR have been rezoned. The remaining sites considered for rezoning are not expected to be rezoned as they are not needed to meet the City of Pleasanton's Regional Housing Needs Allocation. Furthermore, the SEIR indicated that implementation of Housing Element policies would reduce any potential impacts related to future population and housing to less than significant while still meeting Regional Housing Needs Allocation (RHNA) need and without stressing the City's current infrastructure. As such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum to the SEIR concluded that the project site is one of the nine sites that have been rezoned by the City for the development of residential uses to ensure housing allocations of the RHNA are met. Under the SEIR, the project site was contemplated as containing up to 420 residences and up to 10,000 square feet of retail space. Under the 2012 Addendum the project site was assumed to develop 305 residences that, at a rate of 2.79 persons per household, would house approximately 851 people and therefore be within the SEIR assumptions. Furthermore, the proposed 7,520 square feet of retail space would be expected to provide additional jobs, resulting in indirect population growth; however, this nominal amount of retail space would not be expected to create enough jobs to create substantial population growth. The project, as considered in the 2012 Addendum, would not include the extension of road or infrastructure that could result in indirect population growth. The project would develop less than maximum number of residential units and retail space considered in the SEIR and would assist the City in meeting the housing allocation as determined by RHNA. Furthermore, it has been designed to be consistent with the policies included in the Housing Element. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The City has a current estimated average of 2.62 persons per household, a decrease since the 2012 Addendum in which persons per household was indicated as 2.79.[11] The proposed project's additional 31 residences would result in approximately 87 additional residents based on the 2.79 persons per household estimate. As such, the proposed project would result in a total of 938 residents in a total of 336 residences, well within the SEIR's assumption of the 420 residences. No other changes to the project would occur that would result in direct or indirect population growth. Impacts would be less than

[11] State of California, Department of Finance. 2024. E-5 Population Housing Estimates for Cities, Counties and the State, 2022-2024. Website: https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2024/ Accessed October 3, 2024.

significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Housing Displacement/Replacement Housing

Would the project: *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

Summary of Housing Element Update FEIR

The SEIR concluded that that impacts related to the displacement of existing homes, necessitating the construction of replacement housing elsewhere would be less than significant. Additionally, the SEIR concluded that development of potential sites for rezoning, such as the proposed project, would not displace residents but would build on existing neighborhoods by utilizing infill development, would be compatible with surrounding residential development, and would be consistent with land use and housing policies in the General Plan. As such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum also indicated that the project site does not contain any housing. The 2012 Addendum concluded that the project would result in the addition of 305 residences that would assist the City in meeting RHNA needs. Thus, the approved project would not result in the displacement of people or housing. As such, impacts would continue to be less than significant in this regard.

Proposed Project Analysis and Conclusion

The project site is currently being developed with residential and commercial uses. No housing previously existed on-site. The proposed project would add an additional 31 units to the residences being constructed. Therefore, the proposed project plan would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. Instead, it would provide additional housing. The intended use of the proposed project site is to provide necessary housing for the City and its residents. Therefore, no impacts related to population and housing would occur and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Population and Housing, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
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	No	No	No	None
b) Police protection?	Less than significant impact	No	No	No	None
c) Schools?	Less than significant impact	No	No	No	None
d) Other public facilities?	Less than significant impact	No	No	No	None

Discussion

a) Need for New or Altered Fire Protection Facilities

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 fire protection?*

Summary of Housing Element Update SEIR and Addendum

The SEIR indicated that all the proposed rezoning sites, including the project site, are located within a 5-minute response radius of a fire station; and, as required by the General Plan's Public Safety Element, Program 8.2, new development would be required to pay for related fire safety improvement needs it generated. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded the proposed project would result in an increase in demand for fire protection. However, the project is located approximately 0.4 mile from the nearest fire station, is within a 5-minute response radius, and is not located in an area designated as a Special Fire Protection Area. In accordance with General Plan's Public Safety Element, Program 8.2, the project developer is required to pay a Public Facilities Fee that provides for the fire safety improvement needs generated by the proposed project related to both the housing and retail components. Payment of this fee would effectively mitigate any increase in demand for services. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would result in a podium building fifth floor and associated 31 residential units. The SEIR considered the construction of up to 420 residential units and 10,000 square feet of retail space on the project site, which exceeds the demand for fire protection services that would be expected of the project's reduced residential and retail uses. The addition of the 31 residential units would not result in an increase in the demand for fire protection services that was previously analyzed. As such, impacts would continue to be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Need for New or Altered Police Protection Facilities

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 police protection?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that new development on sites proposed for rezoning would increase demand for police services. However, General Plan Public Safety Element's Program 26.2 requires that all new development pay for police safety improvements required of that development. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum to the SEIR concluded the proposed project would result in increased demands for police services that could result in increased response times. However, in accordance with Program 26.2, the project developer would be required to pay for police safety improvements required of the proposed project, which would provide for capital facilities and equipment costs. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would result in a podium building fifth floor and associated 31 residential units. The SEIR considered the construction of up to 420 residential units and 10,000 square feet of retail space on the project site, which exceeds the demand for police protection services that would be expected of the project's reduced residential and retail uses. The addition of the 31 residential units would not result in an increase in the demand for fire protection services that was previously analyzed. As such, impacts would continue to be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR and the Addendum.

c) Need for New or Altered School Facilities

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 schools?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that new development on sites proposed for rezoning, such as the project site, would increase enrollment at schools, which could require additional facilities and staff. The SEIR concluded that with the payment of developer fees as collected by the Pleasanton Unified School District, impacts to schools would be less than significant.

The 2012 Addendum concluded that the project would result in increased enrollment at nearby schools. However, the project developer would be required to pay fees to the Pleasanton Unified School District that would cover facility costs created by the residential development. The 2012 Addendum concluded the project would not introduce any new impacts related to school services not previously disclosed. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would result in on-site residential units increasing to 336. Related increases in enrollment at nearby schools would occur. However, the SEIR considered the construction of up to 420 residential units and 10,000 square feet of retail space on the project site, which exceeds the demand for school facilities that would be expected of the proposed project's reduced residential and retail uses. No changes have occurred that would alter the conclusion of the SEIR and the proposed project would be required to pay fees to the Pleasanton Unified School District. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Other Public Facilities

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 other public facilities.*

Summary of Housing Element Update SEIR and Addendum

The SEIR did not specifically address public facility services other than fire, police, school, and recreation facilities. The Supplemental EIR indicated that additional population resulting from sites rezoned for residential development, including the project site, could result in impacts to park services. The SEIR concluded that because the City plans to build approximately 131 acres of new community parks in Pleasanton by 2025, impacts to park services would be less than significant.

The 2012 Addendum to the SEIR concluded that residential development of the project site has been planned for and it is located in an urbanized area currently served by a variety of public facilities; therefore, the proposed infill project would not be expected to significantly change or impact public services or require the construction of new or remodeled public service facilities. As previously noted, the project is required to pay applicable development fees related to incremental increases in demand on public services. As such, the 2012 Addendum concluded impacts would be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would increase on-site residents and therefore could result in increased use of park, library, or other public facilities. However, consistent with the 2012 Addendum, the proposed project would result in less than the number of on-site residents considered int the SEIR. Accordingly, the proposed project would not result in the need for expanded or additional government facilities. Furthermore, the proposed project would be required to pay applicable development fees related to incremental increases in demand on public services. As such, impacts would continue to be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Public Services, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
XVI. Recreation *Would the project:*					
a) 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	No	No	No	None
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	Less than significant impact	No	No	No	None

Discussion

a) Effects of Increased Use of Parks

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; or*

Summary of Housing Element Update SEIR and Addendum

The SEIR indicated that rezoned sites, such as the project site, would result in additional residents and a corresponding increased demand for park and recreational facilities. However, because the City plans to build approximately 131 acres of new community parks by 2025, the City would be able to offer 5.9 acres of parkland per capita and would exceed the goal of 5 acres per capita. As such, the SEIR concluded that impacts to recreational facilities would be less than significant.

The 2012 Addendum concluded that the project would not be expected to create a significant demand for park services. The proposed project would provide on-site recreation amenities to serve the existing residents that would decrease the project's overall demand for public recreational facilities. As noted in the SEIR, the City plans to build additional parks to serve the expected population growth of the City, including the population growth of the proposed project as considered in the Housing Element. Increased recreational facility use resulting from the project has been planned for in the General Plan. As such, impacts would continue to be less than significant impacts.

Proposed Project Analysis and Conclusion

As discussed in Section XIV, Population and Housing, the proposed project's additional 31 residences would result in approximately 87 additional residents based on the 2.79 persons per household estimate. As such, the proposed project would result in a total of 938 residents in a total of 336 residences, well within the SEIR's assumption of 420 residences. The additional residents would also be served by on-site recreation amenities that would decrease the project's overall demand for public recreational facilities. As such, significant increased use in existing parks would not be expected and the proposed project would continue to be within the assumed population growth accounted for in the SEIR. Therefore, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR

b) Effects from Provision of Parks or Recreational Facilities

Would the project: *include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?*

Summary of Housing Element Update SEIR and Addendum

The SEIR indicated that that future park development has been planned and accounted for in the General Plan and the impacts of this development have been analyzed in the General Plan EIR. Therefore, the SEIR concluded that adverse physical impacts associated with new parks and recreational facilities would be less than significant.

The 2012 Addendum to the SEIR concluded that the proposed project would include recreational amenities, including a pool and spa, a fitness building, a community building with community kitchen, an outdoor barbeque area, a children's playground, a play lawn, two bicycle/pedestrian connections to the future Tassajara Canal Trail, pet zones, and garden areas. The environmental effects of constructing these components were considered in the 2012 Addendum, and the implementation of mitigation and compliance with applicable regulations, as discussed throughout the 2012 Addendum and herein, would ensure that any potential impacts are reduced to less than significant. Furthermore, increased off-site recreational facility use resulting from the proposed project has been planned for in the General Plan and analyzed by the General Plan EIR. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

Addition of the 31 additional residential units would not result in construction of parks or recreational facilities beyond what was considered in the 2012 Addendum. Furthermore, the additional residential population would be appropriately served by on-site and off-site existing recreational facilities. Therefore, impacts would be less than significant and the proposed project would not result in anew or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Recreation, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve:			Applicable Mitigation Measures
		New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	
XVII. Transportation *Would the project:*					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Less than significant impact	No	No	No	None
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Significant and unavoidable impact	No	No	No	MM 4.N-7

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	Less than significant impact with mitigation	No	No	No	MM 4.G-5 (part c.)
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less than significant impact	No	No	No	None
e) Result in inadequate emergency access?	Less than significant impact	No	No	No	None
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Less than significant impact	No	No	No	None

Discussion

a) Consistency with Applicable Transportation Plans and Policies

Would the project: *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that development facilitated by the rezoning of sites for residential development would be consistent with applicable transportation policies establishing effectiveness. The SEIR concluded that development facilitated by rezonings would result in less than significant impacts to levels of service at the local study intersections under existing plus project conditions because all of the study intersections would continue to operate at LOS D or better during both peak periods evaluated. Further, because the rezonings would be consistent with the Housing Element of the General Plan, it is also consistent with other applicable transportation related policies of the General Plan. As such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum noted that the SEIR assumed that the proposed project site would be built out to include up to 420 residences and up to 10,000 square feet of retail space. However, the project as considered in the 2012 Addendum includes only 305 residences and 7,520 square feet of retail space; therefore, the SEIR over estimated traffic increases. As indicated in the Transportation Assessment prepared for the 2012 Addendum, in the near-term and cumulative conditions, both without and with the project, the signalized intersections were expected to continue operating at overall acceptable service levels. Unacceptable service levels (LOS E and F) were identified at the project driveways; however, the City's LOS D or better standard, as established in the General Plan Circulation Element, applies only to major intersections. Therefore, the project driveways do not need to meet the LOS D or better standard per the General Plan. Therefore, impacts to LOS at the project's driveways would be considered less than significant. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

A Transportation Impact Analysis (Appendix C) was prepared for the proposed project, focusing on the changes proposed since the project was analyzed in the 2012 Addendum. As indicated therein, all study intersections would operate acceptably during existing with proposed project conditions. In addition, all study intersections would operate acceptably during the cumulative with proposed project conditions except for the intersection of the main project driveway and Owens Drive. The minor street movement at this intersection would function at an unacceptable level with either the approved or currently proposed project, consistent with the findings of the 2012 Addendum. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Consistency with Applicable Transportation Program

Would the project: *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

Summary of Housing Element Update SEIR and Addendum

The SEIR indicated that development facilitated by the rezoning of sites for residential development would be consistent with applicable transportation policies establishing effectiveness. However, the SEIR concluded that development facilitated on the potential sites for rezoning, such as the proposed project, would result in significant unavoidable impacts to the regional roadway network, under both Year 2015 and Year 2025 scenarios, to the Sunol Boulevard (First Street) roadway segment between Vineyard Avenue and Stanley Boulevard and to the Hopyard Road roadway segment (Year 2025 only) between Owens Drive and Interstate 580 (I-580). Development would worsen pre-existing LOS F conditions and would increase the volume to capacity ratio by more than 0.03. As indicated in the SEIR, widening of these roadways is not feasible or desirable due to the surrounding built environment and improvements to nearby parallel corridors to create more attractive alternative routes and additional capacity is preferred. As such, the SEIR included MM 4.N-7 and concluded that impacts would be significant and unavoidable.

The 2012 Addendum indicated that the project would not cause any study intersections to operate below acceptable LOS standards. Further, it concluded that because the project is consistent with the Housing Element of the General Plan, it is also consistent with other applicable transportation related policies of the General Plan. Finally, it concluded that the project would be required to pay any applicable fair-share fees as required by MM 4.N-7. Furthermore, the project would result in a reduced contribution to the significant and unavoidable impact because the project includes fewer residential units and retail space than analyzed in the SEIR. As such, impacts would continue to be significant and unavoidable but to a lesser degree.

Proposed Project Analysis and Conclusion

As indicated by the Traffic Impact Analysis (TIA) prepared for the proposed project (Appendix C), the project changes would not cause any study intersections to operate below appliable and acceptable LOS standards. MM 4.N-7 would continue to be applicable to compensate for the proposed project's contribution to regional roadway impacts. While the proposed project would increase the number of on-site residences, it would still be below the 420 residences contemplated for the project site by the SEIR. Further, the proposed project would continue to be consistent with the Housing Element of the General Plan and other applicable transportation related policies. Impacts would continue to be significant and unavoidable, but to a lesser degree, and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

c) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that because development consistent with the Housing Element Update would be subject to all applicable State, regional, and City guidelines, standards, and specifications related to service standards, including, but not limited to, those provided in the Hacienda Design Guidelines, Vineyard Avenue Corridor Specific Plan, the City of Pleasanton Bicycle and Pedestrian Master Plan, and CAP 2.0, it would not conflict with adopted policies, plans, or programs.

The 2012 Addendum concluded that the project would be consistent with the Housing Element of the General Plan and therefore would also be consistent with other applicable transportation related policies. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

As indicated by the TIA prepared for the proposed project (Appendix C), a complete and comprehensive system of sidewalks exists on all roadways serving the project site. Crosswalks with pedestrian signal heads and actuation are present at all existing signalized intersections. The project includes a network of on-site sidewalks and pedestrian linkages. Crosswalks would be installed at the internal intersections wherein substantial numbers of pedestrians are expected to cross. Implementation of the additional podium building fifth floor and associated 31 residences would not change this or the project's consistency with the Housing Element of the General Plan. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Air Traffic Patterns

Would the project: *Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?*

Summary of Housing Element Update SEIR

The SEIR concluded that a conflict between the Livermore Municipal ALUCP and potential rezoning sites for housing development was not anticipated. However, at the time the SEIR was written, the ALUCP was being revised; therefore, the SEIR indicated that, without specific project site details and a newly adopted ALUCP, additional analysis regarding residential development consistency with the Livermore Municipal Airport would be speculative. As such, the SEIR included MM 4.G-5 requiring compliance with the ALUCP and verification of compliance with the FAA Part 77 air space.

The 2012 Addendum indicated that a revised ALUCP has been completed. The project site is located approximately 3 miles west of the Livermore Municipal Airport and is not located within APA, AIA, or FAR Part 77 height restriction space as indicated by the ALUCP. Nonetheless, as required by part c. of the SEIR's MM HAZ-4.G-5, prior to the issuance of a grading or building permit for the proposed project, verification of compliance with FAR Part 77 would be required. With implementation of mitigation required in the SEIR, the 2012 Addendum concluded that impacts would be less than significant.

Proposed Project Analysis and Conclusion

The site is already graded and under construction with the exception of the podium building and therefore HAZ-4.G-5 part a and b have been satisfied. The 31 additional residential units and additional story on the podium building would result in a building height increase. As such, prior to the issuance of the building permit for the podium building, implementation of HAZ 4.G-5 (part c.) would be required to confirm no conflict with aviation air space would occur. As such, impacts would be less than significant with the implementation of mitigation and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

e) Roadway Safety Hazards

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

Summary of Housing Element Update SEIR and Addendum

The Supplemental EIR concluded that impacts related to roadway hazards and traffic safety would be less than significant because each individual residential development would be required to adhere to design standards and traffic safety protocols outlined in the City's General Plan, Caltrans's Highway Design Manual, the California Manual of Uniform Traffic Control Devices, and the City Standard Specifications and Details.

The 2012 Addendum concluded that roadway hazards related to emergency access, sight distances, accidents rates, and delivery vehicle access would not result in any new impacts related to roadway hazards not previously disclosed and impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

Addition of the 31 residences to the podium building would not change the type of use or configuration of the project site. Therefore, it would not substantially increase hazards due to a geometric design feature or incompatible uses. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

f) Emergency Access

Would the project: *Result in inadequate emergency access?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that impacts related to emergency access would be less than significant because development facilitated by the proposed Housing Element, such as the project, would not significantly alter or modify the circulation system in the Planning Area and therefore would not adversely affect travel times of emergency vehicles. Further, compliance with the City's Fire Code and Subdivision regulations would ensure adequate on-site emergency vehicle access. As such, the SEIR concluded that impacts would be less than significant.

The 2012 Addendum to the SEIR concluded that, based on the level of access to the site and the extent of the internal roadway system, the project is not expected to result in inadequate emergency access. The project's plans are subject to review by the City and the Fire Department as part of the standard building permit process to ensure consistency with the City's Fire Code to allow apparatus access and maneuverability. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

As indicated in the Transportation Impact Analysis prepared for the proposed project (Appendix C), adequate emergency vehicle access is provided to the project site. Addition of the 31 residential units would not alter site access and therefore would not alter this conclusion. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Transportation, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. MM 4.N-7 and MM 4.G-5 part c from the SEIR would be required and would reduce potential impacts to the fullest extent feasible, consistent with the analysis in the SEIR.

Applicable SEIR Mitigation Measures

MM 4.N-7 The City shall require developers on the potential sites for rezoning to contribute fair-share funds through the payment of the City of Pleasanton and Tri-Valley Regional traffic impact fees to help fund future improvements to local and regional roadways.

MM 4.G-5-c The following condition shall be included in any PUD development approval for all the potential sites for rezoning: Prior to the issuance of a grading permit or building permit, whichever is sooner, the project applicant shall submit verification from the FAA, or other verification to the satisfaction of the City Engineer or Chief Building Official, of compliance with the FAA Part 77 (Form 7460 review) review for construction on the project site.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
XVIII. Utilities and Service Systems *Would the project:*					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Less than significant impact	No	No	No	None
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Less than significant impact	No	No	No	None
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Less than significant impact	No	No	No	None
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Less than significant impact with mitigation incorporated	No	No	No	MM 4.L-2
e) Result in a determination by the wastewater	Less than significant impact	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?					
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Less than significant impact	No	No	No	None
g) Comply with federal, State, and local statutes and regulations related to solid waste?	Less than significant impact	No	No	No	None

Discussion

a) Wastewater treatment requirements of the RWQCB

Would the project: *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Summary of Housing Element Update SEIR and Addendum

The SEIR did not indicate that impacts would occur regarding the exceedance of wastewater treatment requirements of the Regional Water Quality Control Board (RWQCB).

The 2012 Addendum indicated the project would be served by the City of Pleasanton's sewer collection services, which directs wastewater to the Dublin-San Ramon Services District's Regional Wastewater Treatment Facility. The treatment facility treats and disposes of wastewater in accordance with applicable requirements of the RWQCB. As such, the impact would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed addition of the 31 residential units would not change the project's sewage collection services. The project would be served by the Dublin-San Ramon Services District's Regional Wastewater Treatment Facility which operates in compliance with the RWQCB. Impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Construction or Expansion of Water Treatment or Stormwater Drainage Facilities

Would the project: *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

and

c) Stormwater Drainage facilities

Would the project: *Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Summary of Housing Element Update SEIR and 2012 Addendum

The SEIR indicated that development on rezoned sites would increase demand for water. The Supplemental EIR concluded that because the City of Pleasanton has planned for such residential growth by supporting Zone 7's capital improvement projects impacts related to the construction or expansion of water treatment facilities would be less than significant. The Supplemental EIR also concluded that because sufficient wastewater treatment capacity is available now and in the future at the Dublin-San Ramon Services District Regional Wastewater Treatment Facility, impacts related to the construction or expansion of wastewater treatment facilities would be less than significant.

The SEIR also indicated that because housing sites would be required to abide by C.3 provisions of the ACCWP NPDES permit, requiring that there be no net increase in stormwater rates and runoff after project construction, and implementation of the permit would occur throughout review and approval of applicable permits and grading and drainage plans, impacts related to stormwater drainage facilities would be less than significant.

The 2012 Addendum indicated that the project's 305 residential units and 7,520 square feet of retail space would be expected to require only a small portion of the water and wastewater service increases contemplated in the Supplemental EIR, because it analyzed rezoning 21 sites for residential development where the City ultimately chose only nine sites to implement the rezoning. Therefore, the project would not require the unplanned construction or expansion of water or wastewater treatment facilities.

The 2012 Addendum also confirmed that it the project is required to abide by c.3 provisions ACCWP NPDES and that sufficient bioretention treatment areas would slow stormwater rates to ensure no net increase. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would increase the need for water and wastewater facilities compared to the approved project evaluated in the 2012 Addendum commensurate to the increase in 31 residential units. However, because the proposed project would still be within the maximum of 420 units planned for the site as well as the acceptable density, and because the SEIR analyzed significantly more sites for rezoning that has or will occur, such increase would not be significant. Furthermore, the addition of the 31 residential units would not increase impervious surfaces nor change planned bioretention or stormwater treatment areas beyond what was evaluated and approved in the SEIR. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

d) Water Supply

Would the project: *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that new development as facilitated on the potential sites for rezoning would increase demand for water and could require new water supply sources. However, because the City has already planned for this growth by supporting Zone 7's capital improvement projects to secure more water and the residential development contemplated in the SEIR would not exceed Zone 7's allocated of contractual water supply, sufficient water supply exists and impacts would be less than significant. To further ensure supply is adequate, the City's 2011 Water Supply Assessment (WSA) includes a condition of approval for residential development on the potential sites for rezoning, including the project site. The WSA's condition of approval was included in the SEIR as MM 4.L-2, which requires the applicant to submit written verification from Zone 7 Water Agency or the City of Pleasanton's Utility Planning Division that water is available for the project. With the implementation of MM 4.L-2 and applicable water conserving programs included in the General Plan's Water Element, the SEIR concluded that impacts on water supply would be less than significant.

The 2012 Addendum to the SEIR concluded the project would require water service in excess of what is currently used at the project site. However, the project would include water saving features such as low-flow fixtures, high-efficiency irrigation systems, drought tolerate native landscaping, and minimized turf areas. The SEIR considered the construction of up to 420 residential units and 10,000 square feet of retail space on the project site, which exceeds the water usage that would be expected of the project's reduced residential and retail uses. Accordingly, the project's expected water uses were considered at a greater amount in the SEIR. As such, impacts would continue to be less than significant with the implementation of mitigation.

Proposed Project Analysis and Conclusion

The 2020 Urban Water Management Plan (UWMP) includes a supply and demand assessment for projected years between 2025 and 2045 for normal, single, and multiple dry years. For each scenario the UWMP indicates that the City would be able to meet the projected water demand based on the available supply. The demands are expected to be met with groundwater, imported water, and recycled water supplies.[12] The UWMP accounts for projected water demand based on water consumption by single- and multi-family residences, commercial, and institutional/government customers. The UWMP also accounts for projected land use, population, economic growth, and future conservation.[13]

The UWMP indicates that the City would have sufficient water supply for normal, single, and multiple dry years. Based on the City's 10-year base daily per capita water use of 246 gallons per capita per day (GPCD) for the 881 people generated under the proposed project, this would result in 216,726 gallons or 0.67 acre-feet of water. As noted in the UWMP, the projected

[12] City of Pleasanton. 2021. 2020 Urban Warer Management Plan. Website: https://www.cityofpleasantonca.gov/assets/our-government/public-works/water-conservation/2020-urban-water-management-plan.pdf. Accessed August 8, 2024.

[13] Ibid.

Citywide water use in 2025 is 18,240 acre-feet. Therefore, the small projected water use of the proposed project can be reasonably considered a part of the existing demand projections in the UWMP. Because the addition of the podium building fifth story and associated 31 residences would increase the need for water supply, MM 4.L-2 would apply to further ensure impacts are less than significant. Accordingly, the project's expected water uses were considered at a greater amount in the SEIR. As such, impacts would continue to be less than significant with the implementation of mitigation.

e) Wastewater Capacity

Would the project: *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that because sufficient wastewater treatment capacity is available now and in the future at the Dublin-San Ramon Services District Regional Wastewater Treatment Facility, impacts related to wastewater capacity would be less than significant.

The 2012 Addendum similarly concluded and sufficient capacity is available and impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed project would result in a podium building fifth floor and associated 31 residential units. The SEIR considered the construction of up to 420 residential units and 10,000 square feet of retail space on the project site. Therefore, while the proposed project would increase wastewater production and the need for wastewater treatment capacity, it would still be within the amount anticipated by the SEIR. Furthermore, the proposed project is consistent with planned development on which wastewater treatment capacity planning is based. As such, impacts would continue to be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

f, g) Solid Waste Capacity, Reduction Goals and Regulations Consistency

Would the project: *f) 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 and*

g) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

Summary of Housing Element Update SEIR and Addendum

The SEIR concluded that development on rezoned sites would contribute to an increase in solid waste generation within the City of Pleasanton. The Supplemental EIR concluded that because waste would be diverted from landfills pursuant to AB 939, sufficient space remains at the Vasco Landfill for waste that cannot be diverted, and residential projects are required to implement a Waste Diversion Plan consistent with General Plan Program 26.18. The SEIR also concluded that impacts related to solid waste regulations would be less than significant because of the City's compliance with AB 939 and General Plan Program 26.18 requiring Waste Diversion Plans to be implemented by residential development. As such, the SEIR concluded impacts would be less than significant.

The 2012 Addendum concluded that the would be expected to produce solid waste to be disposed of at the Vasco Road Landfill via the Pleasanton Garbage Service. The project would implement a Waste Diversion Plan consistent with General Plan Program 26.18, which would include on-site disposal, composting, and recycling facilities, as well as construction debris and disposal recycling. This plan was reviewed and approved by the City as part of the land entitlement process. As such, impacts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The proposed addition of 31 residential units would result in an increase in solid waste. However, the increased total of 336 residential units is still below the total of 420 residential units considered for the project site in the SEIR. Therefore, the overall project would produce less solid waste than previously considered and could be readily accommodated at the Vasco Landfill. According to the California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Information System (SWIS), the Vasco

Road Landfill has a maximum daily capacity of 2,518 tons per day and a remaining capacity of 11,560,000 Cubic Yards. [14]

CalReycle provides a solid waste generation factor to estimate the amount of solid waste generated by residential projects. Using a generation rate of 12.23 pounds (lbs) per household per day for residential development, the proposed project would generate approximately 4,109.28 lbs per day of solid waste, or approximately 2.05 tons per day (based on 336 residential units)—which represent less than 1 percent of the maximum daily capacity of the landfill.[15]

Therefore, the Vasco Road Landfill would have sufficient capacity to serve the proposed project and solid waste generated during construction and operations would represent a negligible increase compared to the daily permitted tonnage. Impacts would continue to be less than significant in this regard.

Implementation of the additional fifth story and associated 31 residential units would not prohibit the implementation of a Waste Diversion Plan consistent with General Plan Program 26.18, which would include on-site disposal, composting, and recycling facilities, as well as construction debris and disposal recycling. As such, the proposed project would not introduce any new impacts related to landfill capacity not previously disclosed. Therefore, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Utilities and Service Systems, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.

[14] California Department of Resources and Recycling and Recovery (CalRecycle). 2024. Website. https://www2.calrecycle.ca.gov/SolidWaste/Site. Accessed August 6,2024

[15] California Department of Resources and Recycling and Recovery (CalRecycle). 2024. Website: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates. Accessed August 6, 2024.

3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.
5. MM 4.L-2 from the SEIR would be required and would reduce potential impacts to below a level of significance consistent with the analysis is the SEIR.

Applicable SEIR Mitigation Measures

MM 4.L-2 Prior to the recordation of a Final Map, the issuance of a grading permit, the issuance of a building permit, or utility extension approval to the site, whichever is sooner, the applicant shall submit written verification from Zone 7 Water Agency or the City of Pleasanton's Utility Planning Division that water is available for the project. To receive the verification, the applicant may need to offset the project's water demand. This approval does not guarantee the availability of sufficient water capacity to serve the project. Development consistent with the Housing Element Update would result in a significant unavoidable impact with respect to water supply and the Housing Element Update's incremental contribution to the cumulative impact is significant. Accordingly, in certifying the Housing Element Update FEIR, the City made findings that there is no available feasible mitigation and impacts would be significant and unavoidable. Accordingly, the City adopted a Statement of Overriding Considerations.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
XIX. 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?	Not applicable	No	No	No	None
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?	Not applicable	No	No	No	None
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?	Not applicable	No	No	No	None
d) Expose people or structures to significant risks,	Not applicable	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts:	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?					

Discussion

a) Emergency Response/Evacuation Plan Consistency

Would the project: *If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, substantially impair an adopted emergency response plan or emergency evacuation plan?*

Summary of Housing Element Update SEIR and Addendum

As discussed in the SEIR, according to the California Department of Forestry and Fire Protection, much of the outer areas of Pleasanton are located in wildland-urban interface threat areas. Risks associated with wildfires vary according to land use, environmental conditions, and availability of fire protection services. The central core of Pleasanton is not considered to be an area of high risk, which includes the potential sites for rezoning. Additionally, Section 8, Hazards and Hazardous Materials of the SEIR concluded that the buildout of the proposed Housing Element would not interfere with current guidelines set forth in the Pleasanton Comprehensive Emergency Management Plan.

Additionally, Section 8, Hazards and Hazarodus Materials of the 2012 Addendum concluded no changes have occurred that would alter the conclusion made in the SEIR. As such, it can reasonably be concluded that the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and imapcts would continue to be less than significant.

Proposed Project Analysis and Conclusion

The project site is not located in a Fire Hazard Severity Zone (FHSZ) and is designated as a Local Responsibility area (LRA).[16] Addition of the podium building's fifth floor and associated 31 residential units would not change this. As such, impacts would be less than significant.

b) Expose Project Occupants to Pollutant Concentrations from Wildfire

Would the project: *If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, 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?*

Summary of Housing Element Update SEIR and Addendum

As indicated in the SEIR, the central core of Pleasanton is not considered to be an area of high wildfire risk, which includes the potential sites for rezoning. The SEIR and 2012 Addendum did not identify any impacts regarding the exposure of project occupants to pollutant concentrations from wildfire.

Proposed Project Analysis and Conclusion

The project site is not located in an FHSZ and is designated as an LRA.17 The project site is located 2.61 miles south of land identified as a moderate and high FHSZ within a State Responsibility Area (SRA). The nearest Very High FHSZ is located approximately 8.32 miles southeast of the project site. The project site is mostly surrounded by urbanized uses. The proposed project would not include new or more pronounced slopes and is not located in an area that would experience significantly different prevailing winds, nor is it located in a location where occasional wind events would pose a significant additional risk related to wildfire spread. Furthermore, as part of the proposed project, landscaping would be managed and vegetation would be managed as to not provide fuel for a wildfire. Addition of a fifth story and associated residential units to the podium building would not change these conclusions. As such, the proposed project would not result in significant impacts related to the exposure of project applicants to pollutant concentrations due to

[16] California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in State Responsibility Area. Website: https:// calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed September 13, 2024.

[17] California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in State Responsibility Area. Website: https:// calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed September 13, 2024.

slope, prevailing winds, and other factors that may exacerbate wildfire risks. Impacts would be less than significant.

c) Infrastructure that Exacerbates Fire Risk

Would the project: *If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, 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?*

Summary of Housing Element Update SEIR

According to the SEIR, the sites identified in the SEIR are not considered to be areas at high risk of wildfire. Neither the SEIR nor the 2012 Addendum identified any potentially significant impacts.

Proposed Project Analysis and Conclusion

The project site is not located in an FHSZ and is designated as an LRA.[18] The project site is located in an urbanized area of the City and would connect to existing infrastructure that currently serves the site and the surrounding area. Construction activities may temporarily increase fire risk due to equipment use at the project site that could be sources of ignition. Standard construction BMPs would reduce risk of fire and ensure that construction workers respond appropriately should fire result during construction activities. The proposed project does not require the installation or maintenance of infrastructure specifically for the purposes of reducing wildfire risk. The proposed project would include typical on-site infrastructure including roads, fire hydrants, and underground utilities. Addition of a fifth story and associated residential units to the podium building would not change these conclusions. Therefore, the proposed project would not exacerbate fire risk. Impacts would be less than significant.

[18] California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in State Responsibility Area. Website: https:// calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed September 13, 2024.

d) Flooding and Landslide Hazards Due To Post-fire Slope Instability/Drainage Changes

Would the project: *If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, 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?*

Summary of Housing Element Update SEIR and Addendum

The SEIR and 2012 Addendum did not identify any impacts regarding flooding and landslide hazards due to post-fire instability.

Proposed Project Analysis and Conclusion

The project site is not located in an FHSZ and is designated as an LRA.[19] The project site is flat and is not located within an area identified as having a potential for landslides by the California Geological Survey.[20] The proposed project does not have other features with the potential to exacerbate wildfire, downstream flooding, or landslide risks. The project site is also not located in an area subject to flood hazards. Therefore, the proposed project would not be susceptible to slope disturbance such as runoff, instability, or drainage changes due to post-fire instability. As such, impacts would be less than significant.

Conclusion

With regards to Wildfire, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.
2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.

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19 California Department of Forestry and Fire Protection (CAL FIRE). 2024. Fire Hazard Severity Zones in State Responsibility Area. Website: https:// calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed September 13, 2024.

20 California Department of Conservation. 2024. Landslide Inventory. Website: https;// maps.conservation.ca.gov/cgs/lsi/app/. Accessed September 13, 2024.

4. No mitigation measures are necessary because the specific impacts related to the proposed project would be less than significant.

Applicable SEIR Mitigation Measures

None.

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
XX. Mandatory Findings of Significance					
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	Less than significant impact with mitigation incorporated	No	No	No	None
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the	Significant and unavoidable with mitigation	No	No	No	None

Environmental Issue Area	Conclusions in Previous Certified SEIR	Do the Proposed Changes Involve: New or More Severe Impacts?	New Circumstances Involving New or More Severe Impacts?	New Information Requiring New Analysis or Verification?	Applicable Mitigation Measures
incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?					
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	Less than significant impact with mitigation incorporated	No	No	No	None

Discussion

a) Potential Degradation to Environment and Examples of California History or Prehistory

Does the project: *Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

Summary of Housing Element Update SEIR

The SEIR concluded that the development of the potential sites considered for rezoning could result in significant impacts regarding the potential to degrade the quality of the environment, including effects on animals or plants. It also found that there would be a potentially significant impact to prehistoric cultural resources and a significant impact to historic resources. However, the SEIR indicated that the implementation of mitigation measures would reduce these impacts to less than significant.

Similarly, the 2012 Addendum indicated that mitigation identified in the SEIR would be required to reduce the project's impacts to a less than significant level. As such, impacts would continue to be less than significant with the implementation of mitigation.

Proposed Project Analysis and Conclusion

As discussed herein, mitigation from the SEIR is required to reduce the proposed project's impacts to a less than significant level. With the implementation of mitigation measures as identified herein, the proposed project does not have the potential to significantly degrade the quality of the environment, including effects on animals or plants, or to eliminate historic or prehistoric resources. As such, impacts would be less than significant and the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

b) Cumulatively Considerable Impacts

Does the project: *Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Summary of Housing Element Update SEIR

The SEIR concluded that development of the potential sites considered for rezoning, in combination with potential development in the surrounding areas, would result in significant and unavoidable impacts under cumulative conditions related to transportation. As indicated in the SEIR, transportation impacts are considered significant and unavoidable on regional roadways under the buildout of the General Plan as the City would not be fully responsible for addressing feasible infrastructure improvements on regional roadways.

Similarly, the 2012 Addendum concluded that the project's contribution to traffic on regional roadways would contribute to this significant and unavoidable impact that is cumulatively considerable. As concluded in the SEIR, this impact would be significant and unavoidable. The 2012 Addendum determined that the project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Proposed Project Analysis and Conclusion

Addition of the podium building's fifth floor and associated 31 residential units would result in additional residences that would add to traffic trips generated by the project. However, as indicated herein, overall estimated trip generation would be reduced compared to the approved project evaluated in the 2012 Addendum. As such, the proposed project's contribution to traffic on regional roadways would be consistent with the development envisioned in the SEIR, remain consistent with the approved project evaluated in the 2012 Addendum, and would not have cumulatively considerable contribution to any impacts.

c) Adverse Effects on Human Beings?

Does the project: *Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?*

Summary of Housing Element Update SEIR

The SEIR concluded that implementation of rezoning for housing development would have less than significant impacts related to direct or indirect adverse effects on human beings after the implementation of mitigation.

Similarly, the 2012 Addendum concluded that the project would not cause substantial adverse impacts on human beings with the implementation of mitigation.

Proposed Project Analysis and Conclusion

Based on the responses provided herein, the proposed project would not cause substantial adverse effects on human beings, either directly or indirectly, because the project's potential impacts would be mitigated to a less than significant level, with the exception of regional traffic impacts (which would not have substantial adverse effects on human beings). Therefore, the proposed project would not result in a new or more severe adverse impact that was not previously identified in the SEIR.

Conclusion

With regards to Mandatory Findings, the consistency checklist demonstrates that:

1. No substantial changes are proposed in the project which will require major revisions of the previously Certified SEIR.

2. No substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previously Certified SEIR.
3. No new information of substantial importance has been identified which results in a significant effect not discussed in the previously Certified SEIR or an impact which is more severe than shown in the Certified SEIR.
4. MM 4.B-1a, 4.C-1a, 4.C-1b, 4.D-4, 4.D-3, 4.J-1 and 4.J-6c from the SEIR would be required and would reduce potential impacts to below a level of significance, consistent with the analysis in the SEIR.

Applicable SEIR Mitigation Measures

Implement to MM 4.B-1a, MM 4.C-1a, MM 4.C-1b, MM 4.D-4, MM 4.D-3, MM 4.J-1, and MM 4.J-6c.

SECTION 5: FINDINGS

As illustrated in the preceding checklist, the proposed project is found to be in conformance with the analysis and conclusions of the previously Certified SEIR and 2012 Addendum. The SEIR and 2012 Addendum adequately anticipated and described the impacts of the proposed project. Consistent with the mandate in the State CEQA Guidelines Section 15164, no further environmental review is required based on the following findings:

1. There are no substantial changes proposed by the proposed project or under the circumstances in which the proposed project would be undertaken that would require major revisions of the SEIR.
2. The proposed revisions do not require preparation of a new subsequent or Supplemental EIR due to either (1) the involvement of new significant environmental effects, (2) a substantial increase in the severity of previously identified significant effects, or (3) new information of substantial importance.
3. No mitigation measures or alternatives previously found not to be feasible would in fact be feasible nor has the proposed project proponent declined to adopt any additional mitigation measures or alternatives that would substantially reduce one or more significant effects on the environment.
4. Applicable mitigation measures from the previous SEIR are identified and discussed in this Addendum.

Conclusions

No further action is required, and a Notice of Determination (pursuant to CEQA Guidelines Section 15094) can be filed indicating that the proposed project is eligible for an exemption from additional environmental review under CEQA Guidelines Section 15164.

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SECTION 6: LIST OF PREPARERS

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Appendix A: Biological Resources Supporting Information

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Query Criteria: Quad IS (Dublin (3712168) OR Hayward (3712261) OR Las Trampas Ridge (3712271) OR Diablo (3712178) OR Tassajara (3712177) OR Livermore (3712167) OR La Costa Valley (3712157) OR Niles (3712158) OR Newark (3712251))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Acipenser medirostris pop. 1 green sturgeon - southern DPS	AFCAA01031	Threatened	None	G2T1	S1	SSC
Actinemys marmorata northwestern pond turtle	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1	1B.1
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G5	S2	4.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos auriculata Mt. Diablo manzanita	PDERI04040	None	None	G2	S2	1B.3
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	PDERI04273	None	None	G5T2	S2	1B.2
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus occidentalis western bumble bee	IIHYM24252	None	Candidate Endangered	G3	S1	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S3	SSC
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chloropyron palmatum palmate-bracted bird's-beak	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S2	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2Q	S2	
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061	None	None	G4T1	S2	
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eriogonum truncatum Mt. Diablo buckwheat	PDPGN085Z0	None	None	G1	S1	1B.1
Eryngium aristulatum var. hooveri Hoover's button-celery	PDAPI0Z043	None	None	G5T1	S1	1B.1
Eryngium jepsonii Jepson's coyote-thistle	PDAPI0Z130	None	None	G2	S2	1B.2
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S2	
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2?	S2?	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S2	FP
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S3	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Malacothamnus hallii Hall's bushmallow	PDMAL0Q0F0	None	None	G2	S2	1B.2
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Melospiza melodia pusillula Alameda song sparrow	ABPBXA301S	None	None	G5T2T3	S2	SSC
Microcina lumi Lum's micro-blind harvestman	ILARA47050	None	None	G1	S1	
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T3Q	S3	SSC
Phacelia phacelioides Mt. Diablo phacelia	PDHYD0C3Q0	None	None	G2	S2	1B.2
Plagiobothrys glaber hairless popcornflower	PDBOR0V0B0	None	None	GX	SX	1A
Polemonium carneum Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G2	S2	1B.2
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S2	FP
Rana boylii pop. 4 foothill yellow-legged frog - central coast DPS	AAABH01054	Threatened	Endangered	G3T2	S2	
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Ravenella exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S3	FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S3	
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3	SSC
Sorex vagrans halicoetes salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
Spergularia macrotheca var. longistyla long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2
Spirinchus thaleichthys longfin smelt	AFCHB03010	Proposed Endangered	Threatened	G5	S1	
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Streptanthus hispidus Mt. Diablo jewelflower	PDBRA2G0M0	None	None	G2	S2	1B.3
Stuckenia filiformis ssp. alpina northern slender pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2
Suaeda californica California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
Sycamore Alluvial Woodland Sycamore Alluvial Woodland	CTT62100CA	None	None	G1	S1.1	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3	2B.3
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 99

CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

5 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [**1A:1B:2A:2B:3:4**] Fed List is one of [**FE:FT:FC**] **or** State List is one of [**CE:CT:CR:CC**] , Quad is one of [**3712168:3712261:3712271:3712178:3712177:3712167:3712157:3712158:3712251**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	FE	CE	G1	S1	1B.1	Yes	1974-01-01	 © 2015 Zoya Akulova
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	FT	CE	G1	S1	1B.1	Yes	1974-01-01	 © 2011 Dylan Neubauer
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	FE	None	G1	S1	1B.1	Yes	1974-01-01	 © 2013 Neal Kramer
Suaeda californica	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	FE	None	G1	S1	1B.1	Yes	1988-01-01	No Photo Available

Showing 1 to 5 of 5 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 16 August 2024].

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Alameda County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
San Joaquin Kit Fox Vulpes macrotis mutica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern Sternula antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) Masticophis lateralis euryxanthus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5524	Threatened
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened
Foothill Yellow-legged Frog Rana boylii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5133	Threatened
Western Spadefoot Spea hammondii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week

12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season ( )

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

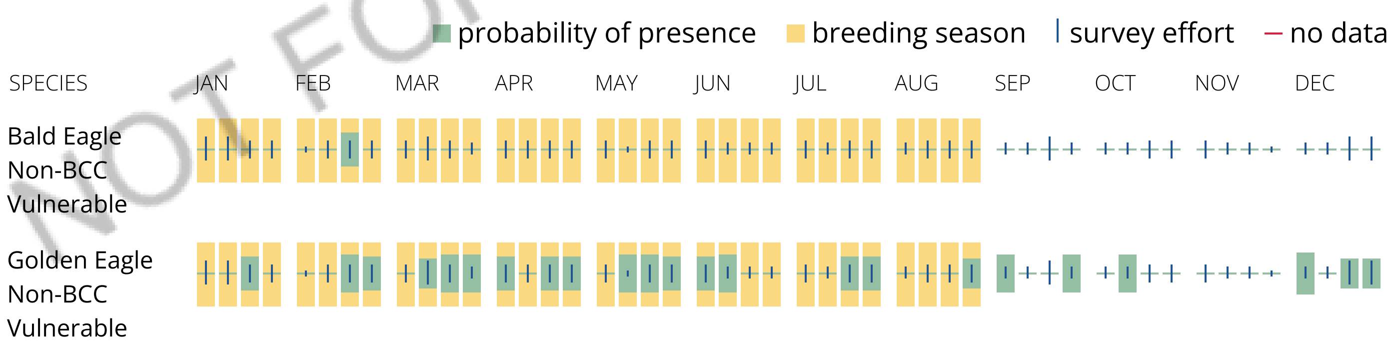
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network (AKN)](). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-

golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Spinus lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Northern Harrier Circus hudsonius — Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Nuttall's Woodpecker Dryobates nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Western Gull Larus occidentalis — Breeds Apr 21 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

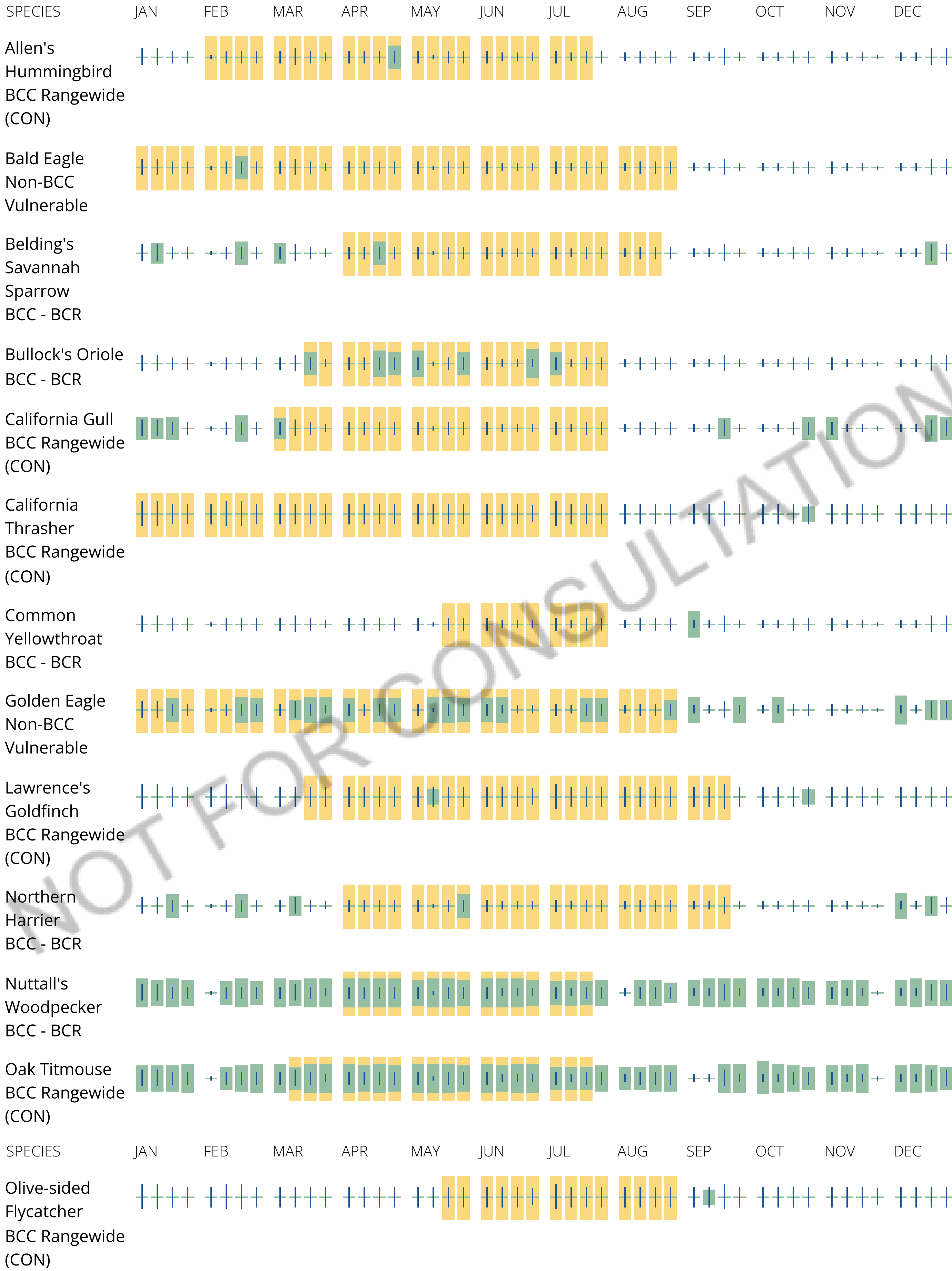
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

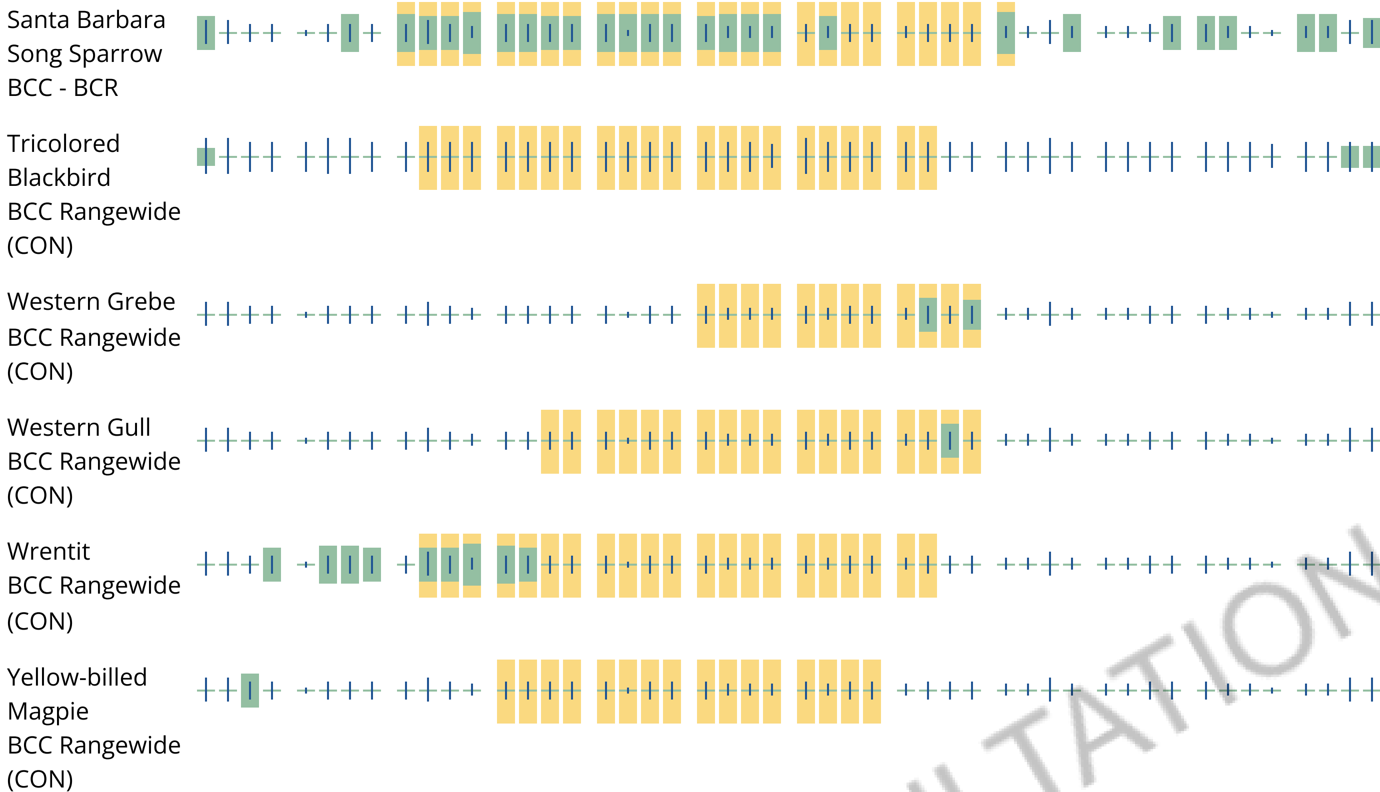
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data


SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Allen's Hummingbird
BCC Rangewide (CON)
Bald Eagle
Non-BCC Vulnerable
Belding's Savannah Sparrow
BCC - BCR
Bullock's Oriole
BCC - BCR
California Gull
BCC Rangewide (CON)
California Thrasher
BCC Rangewide (CON)
Common Yellowthroat
BCC - BCR
Golden Eagle
Non-BCC Vulnerable
Lawrence's Goldfinch
BCC Rangewide (CON)
Northern Harrier
BCC - BCR
Nuttall's Woodpecker
BCC - BCR
Oak Titmouse
BCC Rangewide (CON)
SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Olive-sided Flycatcher
BCC Rangewide (CON)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact

Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies.

Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Appendix B:
Cultural Resources Supporting Information

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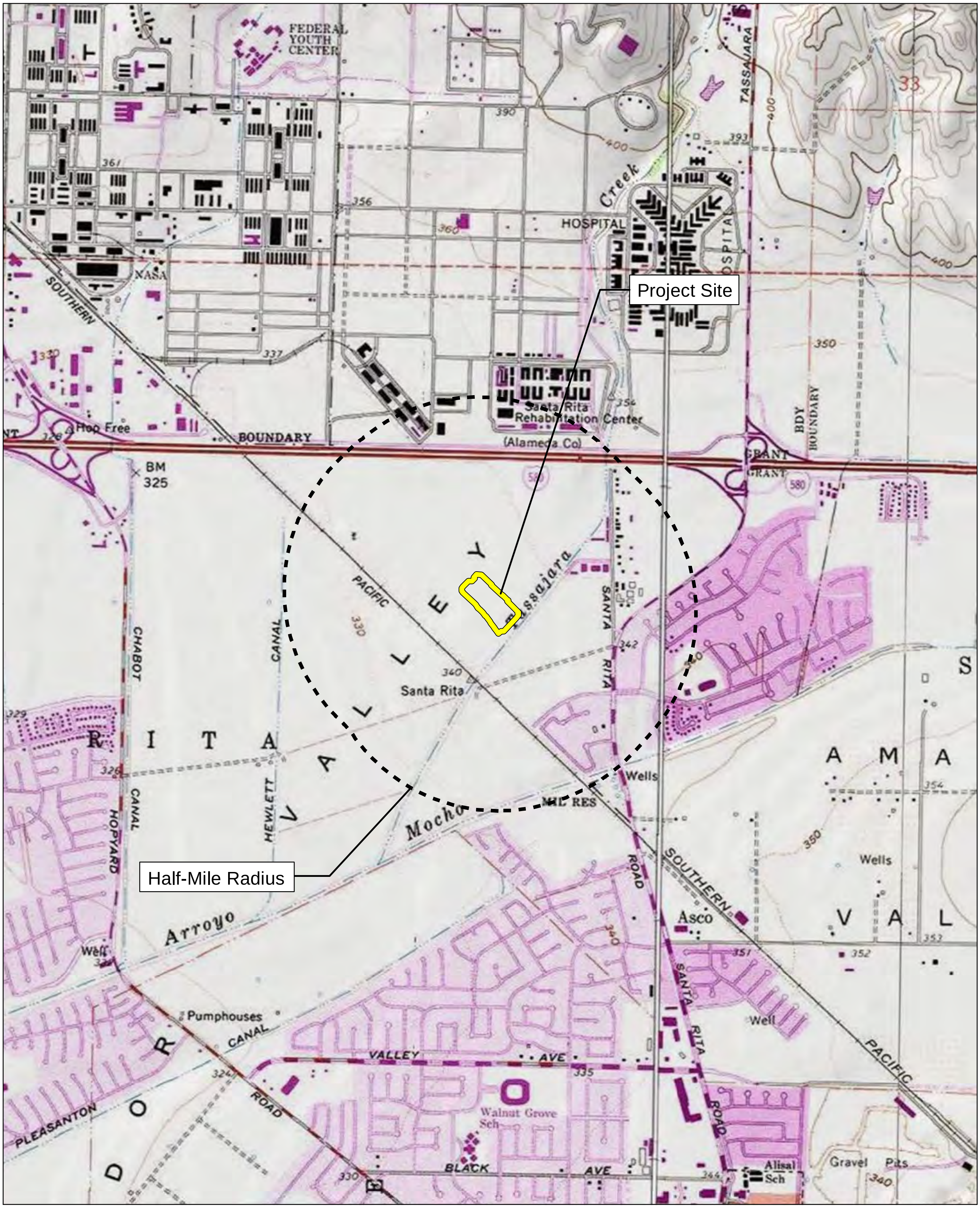

Source: USGS Dublin & Livermore 7.5' Quadrangles / T03S R01E Sections 4, 5, 8, 9

Project Site Source: USGS Dublin 7.5' Quadrangle / T03S R01E Sections 5, 8

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Record Search Map

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-01-000139	CA-ALA-000413	Resource Name - Santa Rita Village	Site	Prehistoric	AP09; AP11; AP15	1978 (M. Clark, S. Slater, Holman & Associates)	S-002458, S-002780, S-002806, S-002866, S-013789, S-013878, S-019834, S-033600, S-039148, S-046556, S-047534, S-049780
P-01-001776		Other - JR-3; Other - JR-3 (w); Other - JR-3(e); Resource Name - Arroyo Mocho Canal	Structure, Site	Historic	HP20	1994 ([none], Woodward-Clyde Consultants); 2006 (Christopher Canzonieri, Basin Research Associates)	S-010678, S-017993, S-019786, S-019834, S-046556, S-047534, S-053003, S-054205
P-01-002110	CA-ALA-000467	Resource Name - H&A-HBP-1	Site	Prehistoric	AP02; AP15	1982 (S. Slater; R. Wiberg, Holman & Associates)	S-019834, S-033600
P-01-012187		Resource Name - Tassajara Creek Canal	Structure	Historic	HP20	2017 (Heidi Koenig, ESA)	S-053003, S-054205, S-054881

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-002780		1981	Robert A. Stillinger	An Archaeological Survey of the Proposed Hacienda Business Park, Tract 4857, Pleasanton, California	Cultural Resources Facility, Sonoma State University	01-000139
S-006516		1984	Miley Paul Holman	Field Testing of the Abijah Baker House, Hacienda Business Park, and Further Testing for Buried Archaeological Resources, Pleasanton, Alameda County, California	Holman & Associates	
S-047534	Agency Nbr - (CWSRF) No. C-06-8024-110; Agency Nbr - SCH #2014062084; OHP PRN - EPA_2014_1212_001	2014		Section 106 Cultural Resources Investigation Report, City of Pleasanton Recycled Water Project (CWSRF) No. C-06-8024-110	SMB Environmental, Inc.	01-000066, 01-000139, 01-001775, 01-001776, 01-001783
S-047534a		2015		Update to the Section 106 Cultural Resources Investigation Report, Recycled Water Project	SMB Environmental, Inc.	
S-047534b		2015	Steve Brown, Daniel Shoup, and Steve Kirkpatrick	Section 106 Cultural Resource Issues with City of Pleasanton's Recycled Water Project (letter report)	SMB Environmental, Inc., Archaeological/Historical Consultants, City of Pleasanton, CA	
S-047534c		2015	Carol Roland-Nawi and Cedric Irving	EPA_2014_1212_001; Section 106 Consultation for the Pleasanton Recycled Water Project, City of Pleasanton, Alameda County, California	Office of Historic Preservation; State Water Resources Control Board	
S-047534d		2014		Mitigation Monitoring and Reporting Program, City of Pleasanton, Recycled Water Project, Final Initial Study/Mitigated Negative Declaration, SCH #2014062084	SMB Environmental, Inc.	
S-047534e				Inadvertent Discovery Plan-A Plan and Procedure for Dealing with the Inadvertent Discovery of Cultural Resources, City of Pleasanton's Recycled Water Project		

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento, California 95691
(916) 373-3710
nahc@nahc.ca.gov

September 9, 2024

Dana DePietro
First Carbon Solutions

Via Email to: ddepietro@fcs-intl.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Avalon Residences Project, Alameda

To Who it May Concern:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;

- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Mathew.Lin@nahc.ca.gov

Sincerely,

Mathew Lin

Mathew Lin
Cultural Resources Analyst

Attachment

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person
Alameda	Amah Mutsun Tribal Band	N	Ed Ketchum, Vice-Chairperson
	Amah Mutsun Tribal Band	N	Valentin Lopez, Chairperson
	Amah MutsunTribal Band of Mission San Juan Bautista	N	Irene Zwierlein, Chairperson
	Confederated Villages of Lisjan Nation	N	Deja Gould, Language Program Manager
	Confederated Villages of Lisjan Nation	N	Cheyenne Gould, Tribal Cultural Resource Manager
	Confederated Villages of Lisjan Nation	N	Corrina Gould, Chairperson
	Costanoan Rumsen Carmel Tribe	N	Samuel Rodriguez, Cultural Resource Officer
	Costanoan Rumsen Carmel Tribe	N	Henry Muñoz, Cultural Resource Officer
	Costanoan Rumsen Carmel Tribe	N	Carla Munoz, Tribal Council
	Indian Canyon Mutsun Band of Costanoan	N	Kanyon Sayers-Roods, MLD Contact

Indian Canyon Mutsun Band of Costanoan	N	Ann Marie Sayers, Chairperson
Muwekma Ohlone Tribe of the SF Bay Area	N	Richard Massiatt, Councilmember/MLD Tribal Rep.
Muwekma Ohlone Tribe of the SF Bay Area	N	Charlene Nijmeh, Chairperson
Northern Valley Yokut / Ohlone Tribe	N	Timothy Perez, Tribal Compliance Officer
Northern Valley Yokut / Ohlone Tribe	N	Katherine Perez, Chairperson
Tamien Nation	N	Quirina Luna Geary, Chairperson
Tamien Nation	N	Lillian Camarena, Secretary
Tamien Nation	N	Johnathan Wasaka Costillas, THPO
The Ohlone Indian Tribe	N	Desiree Vigil, THPO
The Ohlone Indian Tribe	N	Andrew Galvan, Chairperson

	The Ohlone Indian Tribe	N	Vincent Medina, Cultural Leader
	Wilton Rancheria	F	Cultural Preservation Department,
	Wilton Rancheria	F	Herbert Griffin, Executive Director of Cultural Preservation
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson

This list is current only as of the date of this document. Distribution of this list does not relieve any person of sta

This list is only applicable for consultation with Native Ame

Native American Heritage Commission
Native American Contact List
Alameda County
9/9/2024

Contact Address	Phone #	Fax #	Email Address
	(530) 578-3864		aerieways@aol.com
P.O. Box 5272 Galt, CA, 95632	(916) 743-5833		vjltestingcenter@aol.com
3030 Soda Bay Road Lakeport, CA, 95453	(650) 851-7489	(650) 332-1526	amahmutsuntribal@gmail.com
10926 Edes Ave Oakland, CA, 94603	(510) 575-8408		cvltribe@gmail.com
10926 Edes Ave Oakland, CA, 94603	(510) 575-8408		cvltribe@gmail.com
10926 Edes Avenue Oakland, CA, 94603	(510) 575-8408		cvltribe@gmail.com
29539 Oakbridge Dr Menifee, CA, 92586	(760) 681-6860		crct.crd@gmail.com
108 South Acacia Rialto, CA, 92376	(909) 254-1610		crct.crd@gmail.com
	(415) 690-3110		crct.crd@gmail.com
1615 Pearson Court San Jose, CA, 95122	(408) 673-0626		kanyon@kanyonkonsulting.com

P.O. Box 28 Hollister, CA, 95024	(831) 637-4238		ams@indiancanyons.org
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1169 S. Main Street, Ste. 336 Manteca, CA, 95377	(408) 464-2892		cnijmeh@muwekma.org
P.O. Box 717 Linden, CA, 95236	(209) 662-2788		huskanam@gmail.com
P.O. Box 717 Linden, CA, 95236	(209) 649-8972		canutes@verizon.net
PO Box 8053 San Jose, CA, 95155	(707) 295-4011		qgeary@tamien.org
336 Percy Street Madera, CA, 93638	(559) 363-5914		Lcamarena@tamien.org
10721 Pingree Road Clearlake Oaks, CA, 94523	(925) 336-5359		thpo@tamien.org
259 Winwood Avenue Pacifica, CA, 94044	(650) 290-0245		dirwin0368@yahoo.com
P.O. Box 3388 Fremont, CA, 94539	Phone: (510) 882-0527	(510) 687-9393	chochenyo@AOL.com

Native American Heritage Commission
Native American Contact List
Alameda County
9/9/2024

17365 Via Del Rey San Lorenzo, CA, 94580	(510) 610-7587		vincent.d.medina@gmail.com
9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		cpd@wiltonrancheria-nsn.gov
9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		hgriffin@wiltonrancheria-nsn.gov
1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com

tutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources C

erican tribes under Public Resources Code Sections 21080.3.1 for the proposed Avalon Residences Project, Alameda Cour

Cultural Affiliation	Counties	Last Updated
Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Monter	7/20/2023
Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Monterey,San Benito,San Francisco,San Joaquin,San	7/20/2023
Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	
Bay Miwok Ohlone Delta Yokut	Alameda,Contra Costa,Sacramento,San Joaquin,Santa Clara,Solano,Stanislaus	3/22/2023
Bay Miwok Ohlone Delta Yokut	Alameda,Contra Costa,Sacramento,San Joaquin,Santa Clara,Solano,Stanislaus	3/22/2023
Bay Miwok Ohlone Delta Yokut	Alameda,Contra Costa,Sacramento,San Joaquin,Santa Clara,Solano,Stanislaus	3/22/2023
Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	7/17/2024
Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	7/17/2024
Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa	7/17/2024
Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	3/15/2024

Costanoan	Alameda,Contra Costa,Merced,Monterey,San Benito,San Francisco,San Mateo,Santa Clara,Santa Cruz,Stanislaus	3/15/2024
Costanoan	Alameda,Contra Costa,Marin,Merced,Napa,Sacramento,San Francisco,San Joaquin,San Mateo,Santa	3/28/2024
Costanoan	Alameda,Contra Costa,Marin,Merced,Napa,Sacramento,San Francisco,San Joaquin,San Mateo,Santa	3/28/2024
Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	11/21/2023
Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	4/30/2024
Costanoan	Alameda,San Mateo,Santa Clara,Stanislaus	4/11/2023
Costanoan	Alameda,San Mateo,Santa Clara,Stanislaus	4/11/2023
Costanoan	Alameda,San Mateo,Santa Clara,Stanislaus	4/11/2023
Bay Miwok Ohlone Patwin Plains Miwok	Alameda,Contra Costa,San Francisco,San Mateo,Santa Clara	11/30/2023
Bay Miwok Ohlone Patwin Plains Miwok	Alameda,Contra Costa,San Francisco,San Mateo,Santa Clara	7/24/2023

Bay Miwok Ohlone Patwin Plains Miwok	Alameda,Contra Costa,San Francisco,San Mateo,Santa Clara	7/24/2023
Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023
Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023
Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San	6/19/2023

:ode and section 5097.98 of the Public Resources Code.

ıty.

Record: PROJ-2024-004703
Report Type: AB52 GIS
Counties: Alameda
NAHC Group: All

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New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

September 9, 2024

Confederated Villages of Lisjan Nation
Cheyenne Gould, Tribal Cultural Resource Manager
10926 Edes Ave
Oakland, CA, 94603

Subject: Proposed Avalon Residences Project

Dear Cheyenne Gould:

FirstCarbon Solutions (FCS) is preparing an Addendum to the City's 2012 Housing Element and Climate Action Plan Amendment and Rezoning Supplemental Environmental Impact Report (SEIR) for the proposed Avalon Residences Project in the City of Pleasanton. As part of the environmental review process, we are conducting a cultural resources assessment.

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Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

Enclosed

Attachment A: Record Search Map

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New York
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Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

September 9, 2024

Costanoan Rumsen Carmel Tribe
Carla Muñoz, Tribal Council
108 South Acacia
Rialto, CA, 92376

Subject: Proposed Avalon Residences Project

Dear Carla Muñoz:

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Walnut Creek, CA 94597

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Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

September 9, 2024

Tamien Nation
Lillian Camarena, Secretary
336 Percy Street
Madera, CA, 93638

Subject: Proposed Avalon Residences Project

Dear Lillian Camarena:

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FIRSTCARBON SOLUTIONS™

Sincerely,

Dana DePietro

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56 Broome Corporate Parkway
Conklin, NY 13748

September 9, 2024

Confederated Villages of Lisjan Nation
Corrina Gould, Chairperson
10926 Edes Ave
Oakland, CA, 94603

Subject: Proposed Avalon Residences Project

Dear Chairperson Corrina Gould:

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September 9, 2024

Tamien Nation
Johnathan Wasaka Costillas, THPO
10721 Pingree Road
Clearlake Oaks, CA, 94523

Subject: Proposed Avalon Residences Project

Dear Lillian Camarena:

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AN ADEC INNOVATION

FIRSTCARBON SOLUTIONS™

Sincerely,

Dana DePietro

Dana Douglas DePietro, PhD
Director of Cultural Resources
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September 9, 2024

Wilton Rancheria
Cultural Preservation Department
9728 Kent Street
Elk Grove, CA, 95624

Subject: Proposed Avalon Residences Project

Wilton Rancheria Cultural Preservation Department:

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September 9, 2024

Confederated Villages of Lisjan Nation
Deja Gould, Language Program Manager
10926 Edes Ave
Oakland, CA, 94603

Subject: Proposed Avalon Residences Project

Dear Deja Gould:

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56 Broome Corporate Parkway
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September 9, 2024

The Ohlone Indian Tribe
Andrew Galvan, Chairperson
P.O. Box 3388
Fremont, CA, 94539

Subject: Proposed Avalon Residences Project

Dear Chairperson Galvan:

FirstCarbon Solutions (FCS) is preparing an Addendum to the City's 2012 Housing Element and Climate Action Plan Amendment and Rezoning Supplemental Environmental Impact Report (SEIR) for the proposed Avalon Residences Project in the City of Pleasanton. As part of the environmental review process, we are conducting a cultural resources assessment.

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Sincerely,

Dana DePietro

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

Enclosed

Attachment A: Record Search Map

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September 9, 2024

Tamien Nation
Quirina Luna Geary, Chairperson
PO Box 8053
San Jose, CA, 95155

Subject: Proposed Avalon Residences Project

Dear Chairperson Geary:

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FIRSTCARBON SOLUTIONS™

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September 9, 2024

Wilton Rancheria
Herbert Griffin, Executive Director of Cultural Preservation
9728 Kent Street
Elk Grove, CA, 95624

Subject: Proposed Avalon Residences Project

Dear Herbert Griffin:

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September 9, 2024

Costanoan Rumsen Carmel Tribe
Henry Muñoz, Cultural Resource Officer
108 South Acacia
Rialto, CA, 92376

Subject: Proposed Avalon Residences Project

Dear Henry Muñoz:

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September 9, 2024

Northern Valley Yokut / Ohlone Tribe
Katherine Perez, Chairperson
P.O. Box 717
Linden, CA, 95236

Subject: Proposed Avalon Residences Project

Dear Katherine Perez:

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FIRSTCARBON SOLUTIONS™

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September 9, 2024

Amah Mutsun Tribal Band
Ed Ketchum, Vice-Chairperson
P.O. Box 5272
Galt, CA, 95632

Subject: Proposed Avalon Residences Project

Dear Vice-Chairperson Ed Ketchum:

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September 9, 2024

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632

Subject: Proposed Avalon Residences Project

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September 9, 2024

Muwekma Ohlone Tribe of the SF Bay Area
Richard Massiatt, Councilmember/MLD Tribal Rep.
1169 S. Main Street, Ste. 336
Manteca, CA, 95377

Subject: Proposed Avalon Residences Project

Dear Richard Massiatt:

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September 9, 2024

The Ohlone Indian Tribe
Vincent Medina, Cultural Leader
17365 Via Del Rey
San Lorenzo, CA, 94580

Subject: Proposed Avalon Residences Project

Dear Vincent Medina:

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Deposit, NY 13754

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September 9, 2024

Muwekma Ohlone Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
1169 S. Main Street, Ste. 336
Manteca, CA, 95377

Subject: Proposed Avalon Residences Project

Dear Chairperson Nijmeh:

FirstCarbon Solutions (FCS) is preparing an Addendum to the City's 2012 Housing Element and Climate Action Plan Amendment and Rezoning Supplemental Environmental Impact Report (SEIR) for the proposed Avalon Residences Project in the City of Pleasanton. As part of the environmental review process, we are conducting a cultural resources assessment.

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Sincerely,

Dana DePietro

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

Enclosed

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September 9, 2024

Costanoan Rumsen Carmel Tribe
Samuel Rodriguez, Cultural Resource Officer
29539 Oakbridge Dr
Menifee, CA, 92586

Subject: Proposed Avalon Residences Project

Dear Samuel Rodriguez:

FirstCarbon Solutions (FCS) is preparing an Addendum to the City's 2012 Housing Element and Climate Action Plan Amendment and Rezoning Supplemental Environmental Impact Report (SEIR) for the proposed Avalon Residences Project in the City of Pleasanton. As part of the environmental review process, we are conducting a cultural resources assessment.

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September 9, 2024

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024

Subject: Proposed Avalon Residences Project

Dear Chairperson Ann Marie Sayers:

FirstCarbon Solutions (FCS) is preparing an Addendum to the City's 2012 Housing Element and Climate Action Plan Amendment and Rezoning Supplemental Environmental Impact Report (SEIR) for the proposed Avalon Residences Project in the City of Pleasanton. As part of the environmental review process, we are conducting a cultural resources assessment.

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AN **ADEC** INNOVATION

FIRSTCARBON SOLUTIONS™

Sincerely,

Dana DePietro

Dana Douglas DePietro, PhD
Director of Cultural Resources
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September 9, 2024

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court
San Jose, CA, 95122

Subject: Proposed Avalon Residences Project

Dear Kanyon Sayers-Roods:

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AN ADEC INNOVATION

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September 9, 2024

Northern Valley Yokut / Ohlone Tribe
Timothy Perez, Tribal Compliance Officer
P.O. Box 717
Linden, CA, 95236

Subject: Proposed Avalon Residences Project

Dear Timothy Perez:

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September 9, 2024

The Ohlone Indian Tribe
Desiree Vigil, THPO
259 Winwood Avenue
Pacifica, CA, 94044

Subject: Proposed Avalon Residences Project

Dear Desiree Vigil:

FirstCarbon Solutions (FCS) is preparing an Addendum to the City's 2012 Housing Element and Climate Action Plan Amendment and Rezoning Supplemental Environmental Impact Report (SEIR) for the proposed Avalon Residences Project in the City of Pleasanton. As part of the environmental review process, we are conducting a cultural resources assessment.

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September 9, 2024

Wuksachi Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906

Subject: Proposed Avalon Residences Project

Dear Chairperson Woodrow:

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September 9, 2024

Amah Mutsun Tribal Bandof Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA, 95453

Subject: Proposed Avalon Residences Project

Dear Chairperson Zwierlein:

FirstCarbon Solutions (FCS) is preparing an Addendum to the City's 2012 Housing Element and Climate Action Plan Amendment and Rezoning Supplemental Environmental Impact Report (SEIR) for the proposed Avalon Residences Project in the City of Pleasanton. As part of the environmental review process, we are conducting a cultural resources assessment.

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Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
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Enclosed

Attachment A: Record Search Map

Prepared by
FEHR PEERS
100 Pringle Avenue
Suite 600
Walnut Creek, CA 94596

December 2024

Transportation Impact Analysis

Avalon Pleasanton

Prepared for:
First Carbon Solutions
The City of Pleasanton

Avalon Pleasanton

Transportation Impact Analysis

Prepared for:

First Carbon Solutions &
The City of Pleasanton

December 2024

WC24-4091.00

FEHR & PEERS

Table of Contents

Appendices

Appendix A: Traffic Count Worksheets

Appendix B: Detailed Intersection LOS Calculation Worksheets

Appendix C: Queue Worksheets

Appendix D: Signal Warrant Sheets

List of Figures

List of Tables

1. Introduction

This report presents the results of the Transportation Impact Analysis (TIA) prepared for the proposed Avalon Pleasanton residential development project located at the Rosewood Drive and Owens Drive intersection in Pleasanton, California. This chapter discusses the study's purpose, report organization, criteria used to identify significant impacts, study area, and analysis methods.

Study Purpose and Project Description

The project site, located in the northeast corner of the Rosewood Drive and Owens Drive intersection, is currently occupied by a parking lot which serves the neighboring California Center office complex. The parcel is bound by Owens Drive to the southeast, Rosewood Drive to the north, the California Center to the northwest and Tassajara Creek to the south, as shown on **Figure 1**. **Figure 2** presents the project's conceptual site plan.

The project would construct 336 multi-family residential units and a 7,520 square foot day care facility. The day care facility would be in the southwest corner of the project site directly adjacent to the Rosewood Drive/Owens Drive intersection. A total of 551 parking spaces would be provided on site for residential uses, including spaces provided within internal parking garages and at-grade parking on the site's various internal roadways. Twenty-seven parking spaces would be provided for the day care facility.

A similar mixed use residential project was approved on the site in 2012. That project, the "Residences at California Center" project proposed 305 multi-family residential units and a 7,520 square foot retail space on the same site. Residential development on the site was included and approved part of the City of Pleasanton's 2012 Housing Element and associated environmental documentation (*2012 Housing Element and Climate Action Plan Amendment and Rezoning Final Supplemental Environmental Impact Report*, City of Pleasanton, 2012). As such, this traffic study focuses on the differences in effects between the currently proposed project (336 units with day care center) in comparison to the prior project (305 units with retail).

The purpose of this analysis is to identify the transportation effects of the project, including potential effects on pedestrian facilities, transit services, bicycle facilities, potential hazards, and emergency vehicle access. In addition, intersection levels of service (LOS) were calculated to assess the project's consistency with City General Plan operational thresholds. As the development was included and approved in the city's prior 2012 Housing Element FEIR, other environmental topics such as vehicle miles traveled (VMT) are not included in this evaluation.

Study Locations and Analysis Scenarios

Project consistency with General Plan roadway operational standards at study area roadway facilities were determined by measuring the effect project traffic would have on intersections during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. A total of seven intersections were selected as study locations in consultation with City of Pleasanton staff, based on the amount of vehicle traffic the project could add to the intersection and projected intersection levels of service presented in the Pleasanton General Plan. The project's potential effects were assessed at the following seven locations:

- Hacienda Drive/I-580 Westbound Ramps
- Hacienda Drive/I-580 Eastbound Ramps
- Hacienda Drive/Owens Drive
- Rosewood Drive/Owens Drive
- West Las Positas Boulevard/Owens Drive
- Project Driveway West/Owens Drive
- Project Driveway East/Owens Drive

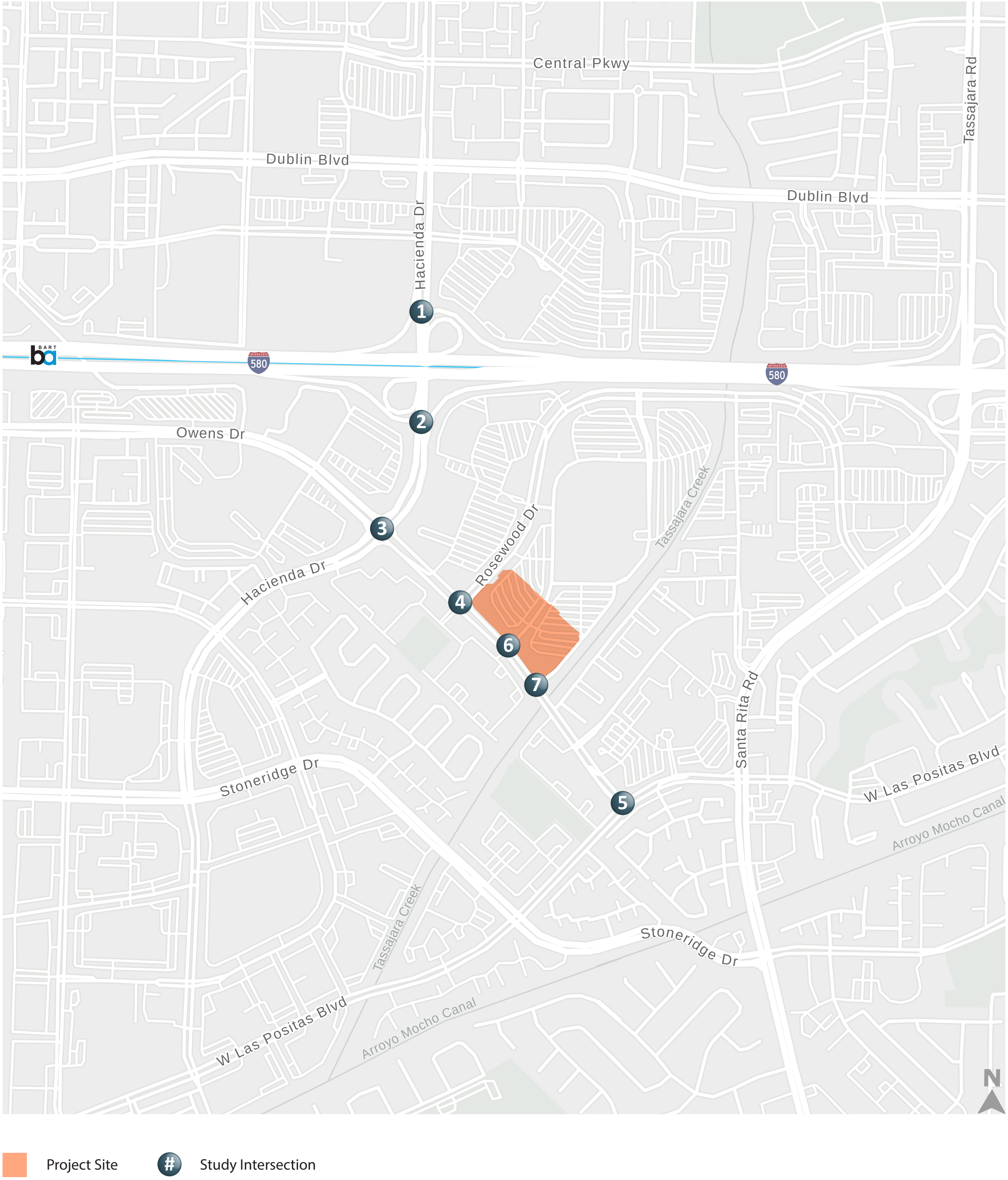
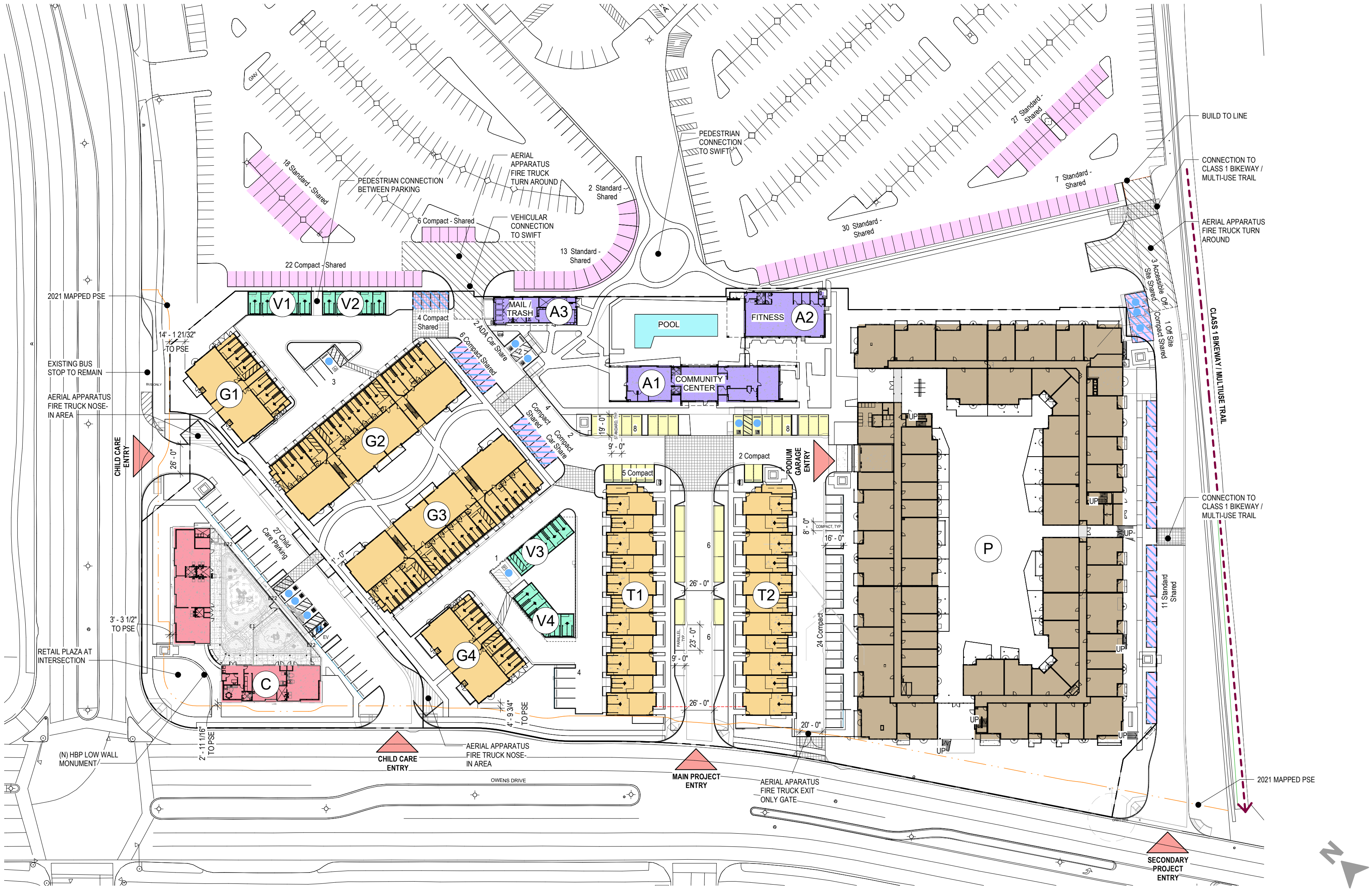


Figure 1

Project Study Area

WC24-4114_1_StudyArea



Site Plan Source: PYATOK architecture + urban design, 05/01/2024

Figure 2

Project Site Plan

Analysis Methods

Level of Service

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined, ranging from LOS A (free-flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and operations are designated LOS F.

Signalized Intersections

Traffic conditions at signalized intersections were evaluated using methods developed by the Transportation Research Board (TRB), as documented in the *Highway Capacity Manual 2000 Edition* for vehicles using the analysis software Synchro 12.0. The HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay is summarized in **Table 1**.

Unsignalized Intersections

For unsignalized (all-way stop controlled and side-street stop controlled) intersections, the *Highway Capacity Manual 2000 Edition* method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. **Table 2** summarizes the relationship between LOS and delay for unsignalized intersections. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop-controlled intersections.

Table 1: Signalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	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.	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: *Highway Capacity Manual 2000 Edition* (Transportation Research Board).

Table 2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic, delays where intersection capacity exceeded	> 50.0

Source: *Highway Capacity Manual 2000 Edition* (Transportation Research Board).

Regulatory Setting and Significance Criteria

Significance criteria are used to determine whether a project’s impact on the environment is considered significant and therefore requires mitigation under the requirements of the California Environmental Quality Act (CEQA). CEQA guidelines were recently updated to eliminate use of vehicle-delay based metrics, such as intersection level of service, in environmental documents with vehicle miles of travel identified as the most appropriate metric to evaluate a project’s transportation impacts. This change promotes the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

In addition to the CEQA significance criteria, the City of Pleasanton strives to maintain a balanced transportation system, which includes maintaining traffic operations within a certain delay range, based on policies contained in the General Plan. Therefore, the project is also evaluated against a set of General Plan thresholds, as described below. While deficiencies identified through this may not result in CEQA impacts and mitigation, the analysis can be used to identify transportation system improvements that could be conditioned on project development.

A similar mixed use residential project was approved on the site in 2012. That project, the "Residences at California Center" project proposed 305 multi-family residential units and a 7,520 square foot retail space on the same site. Residential development on the site was included and approved part of the City of Pleasanton's 2012 Housing Element and associated environmental documentation (*2012 Housing Element and Climate Action Plan Amendment and Rezoning Final Supplemental Environmental Impact Report*, City of Pleasanton, 2012). As such, this traffic study focuses on the differences in effects between the currently proposed project (336 units with day care center) in comparison to the prior project (305 units with retail).

CEQA Significance Thresholds

For this study, based on the updated Appendix G Environmental Checklist Form, City of Pleasanton and Tri-Valley Transportation Plan and Action Plan, a significant transportation-related impact could occur if the project would:

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

   Roadway System – The project would create a significant impact related to the roadway system if any of the following criteria are met:

   1. At unsignalized intersections, the project results in any of the traffic signal warrants included in the *CA Manual on Uniform Traffic Control Devices* (MUTCD) to be satisfied, or for a location where any of the warrants are satisfied prior to the project, the project increases travel through the controlled approach by 10 or more vehicles.

   2. The project creates the potential for excessive vehicle queue spillback that could periodically block or interfere with pedestrian, bicycle, or transit facilities.

   Transit System - The project would create a significant impact related to transit service if the following criterion is met:

   1. Conflict with an existing or planned transit facility;

   2. Conflict with transit policies adopted by the City of Pleasanton, Alameda CTC, Wheels (LAVTA), or BART for their respective facilities in the planning area; or

3. Disrupt existing transit services or facilities.[1]

Bicycle System - The project would create a significant impact related to the bicycle system if any of the following criteria are met:

1. Disrupt existing bicycle facilities; or
2. Interfere with planned bicycle facilities; or
3. Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.

Pedestrian System - The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

1. Disrupt existing pedestrian facilities; or
2. Interfere with planned pedestrian facilities; or
3. Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.

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

C. Result in inadequate emergency access?

General Plan/Operational Thresholds

Although vehicle level of service, and other delay-based metrics cannot be used to determine significant impacts under CEQA, the City of Pleasanton strives to maintain a balanced transportation system, which includes maintaining traffic operations within a certain delay range, based on policies contained in the General Plan. Additionally, a project's effect on overall travel operations provides decision makers with additional information to consider in the entitlement process and allows for the identification of potential improvements or project changes that could minimize the overall transportation system effect of a project on the surrounding community.

The following criteria are applied to develop recommendations designed to enhance mobility for all travel modes, including transit vehicles, without degrading or precluding the provision of planned bicycle, pedestrian, and transit facilities. Intersection or roadway improvements may be recommended under the following circumstances:

- The project deteriorates the operations of a signalized intersection from acceptable to unacceptable based on the level of service standard established in the General Plan.

[1] This includes disruptions caused by proposed-project driveways on transit streets and impacts to transit stops/shelters; and impacts to transit operations from traffic improvements proposed or resulting from a project.

- The project adds ten or more trips to an intersection projected to operate at an unacceptable level E or F prior to the addition of project traffic.
- The project deteriorates the operations of a controlled movement at an unsignalized intersection from LOS E or better to LOS F, or at intersections where a controlled movement already operates at LOS F, one of the following:
  - Project traffic results in satisfaction at the peak hour volume traffic signal warrant;
  - Project traffic increases minor movement delay by more than 30 seconds; or
  - Where the peak hour volume signal warrant is met without Project traffic and delay cannot be measured, Project increases traffic by 10 or more vehicles per lane on the controlled approach.
- The addition of project traffic at a study intersection would result in the 95th percentile vehicle queue exceeding the available storage or would increase 95th percentile queue where the queue already exceeds the available storage space (for example, vehicle queues spilling back from ramp terminal intersections to the freeway mainline, or vehicle queues extending beyond the available turn pocket length, impeding travel in the adjacent lanes).

Report Organization

This report is organized into five chapters as described below:

- **Chapter 1 – Introduction** discusses the purpose and organization of the report.
- **Chapter 2 – Existing Conditions** describes the transportation system in the project vicinity, including the surrounding roadway network morning, existing bicycle, pedestrian, and transit facilities.
- **Chapter 3 – Project Characteristics** presents relevant project information, such as the project components and project trip generation, distribution, and assignment.
- **Chapter 4 – Site Plan Review** describes project access and circulation for all travel modes.
- **Chapter 5 – Traffic Operations** addresses the existing and cumulative vehicle travel conditions in the vicinity of the project site without and with the project, including intersection levels of service and vehicle queues.

2. Existing Conditions

This chapter describes the existing transportation conditions in the study area, including the roadway network and the transit, pedestrian, and bicycle facilities in the vicinity of the project site.

Roadway System

Regional access to the project site is provided by SR-84, I-680 and I-580. Local access to the site is provided by Rosewood Drive and Owens Drive.

Regional Roadways

Interstate 680 (I-680) is a major north-south freeway that connects Fairfield to San Jose via Concord, Walnut Creek, and Pleasanton. I-680 is located east of the project site. Project traffic would access I-680 to and from the east using the signalized ramp terminal intersections at Stoneridge Drive. Within the study area, I-680 has three to four general purpose travel lanes. Express Lanes are provided in each direction for vehicles with two or more people, or people driving who pay a toll north of the I-580 interchange. The speed limit of the facility is 65 miles-per-hour.

Interstate 580 (I-580) is an east-west auxiliary Interstate Highway running from San Rafael to Tracy, California, serving as a main artery between Tracy, the Tri-Valley, and the central Bay Area, providing connectivity to cities such as Oakland, San Francisco, and San Jose. I-580 is located north of the project site. The most direct access to I-580 from the site is at Hacienda Road. I-580 also features BART tracks in its median where the BART Blue Line operates. I-580 is approximately 0.6 miles north of the project site and can be accessed via Santa Rita Road or Hacienda Drive. It has six lanes of travel in the eastbound direction and five lanes in the westbound direction. The posted speed limit adjacent to the City of Pleasanton is 65 mph. Express lanes are also provided on I-580 east of Hopyard Road.

Local Roadways

Owens Drive is an east/west connector through the office spaces of Hacienda Business Park. Owens Drive forms the southern boundary of the project site. The roadway provides two lanes of travel in each direction. Owens Drive connects to Hacienda Drive and West Las Positas Boulevard, facilitating access to the Hacienda Business Park. Sidewalks and Class II unbuffered bike lanes are provided on both sides of the street along its length. The posted speed limit is 40 mph. Parking is not permitted on Owens Drive.

Rosewood Drive is a loop-oriented connector street through the office spaces of Hacienda Business Park. Rosewood Drive forms the western boundary of the project site. The roadway provides two lanes of travel in each direction. Owens Drive connects this road to Hacienda Drive and Santa Rita Road. Sidewalks and Class II bike lanes with 2-foot buffers are provided on both sides of the street along its length. The posted speed limit is 40 mph. Parking is not permitted on Rosewood Drive.

Hacienda Drive is a north/south major arterial located about 0.3 miles northwest of the project site. It is accessed via Owens Drive. The roadway has three lanes of travel in each direction and connects to the Hacienda Business Park, I-580, and the City of Dublin to the north. Sidewalks and Class II unbuffered bike lanes are provided on each side of the street. The posted speed limit is 40 mph. Parking is not permitted on Hacienda Drive.

West Las Positas Boulevard is a north/south minor arterial roadway located about 0.3 miles southeast of the project site. To the east of Santa Rita Road, Wesst Las Positas serves as a local connector road. West Las Positas Boulevard connects to Owens Drive and Santa Rita Road, providing connectivity to the Hacienda Business Park and residential neighborhoods to the east and west of the project site. The boulevard features three lanes of travel in each direction west of Santa Rita Road, two lanes between Santa Rita Road and Weymouth Court, and one lane east of Weymouth Court. Sidewalks are present on both sides of the street along its entire length. Class II unbuffered bike lanes are available west of Hacienda Drive and east of Santa Rita Road, while a Class III bike boulevard is provided between Hacienda Drive and Santa Rita Road. The posted speed limit is 40 mph west of Santa Rita Road and 35 mph east of Santa Rita Road. Parking is not permitted west of Santa Rita Road but is available east of Santa Rita Road.

Santa Rita Road is a north/south major arterial located about 0.5 miles southeast of the project site. Santa Rita Road is accessed via West Las Positas Boulevard. Santa Rita Road provides three lanes of travel in each direction, with turn pockets at intersections. The road connects to downtown Pleasanton to the south and I-580 and the City of Dublin to the north, where it continues as Tassajara Road. Sidewalks and Class II unbuffered bike lanes are provided on both sides of the street along its entire length. The posted speed limit is 45 mph north of Mohr Avenue and 35 mph south of Mohr Avenue. Parking is not provided on Santa Rita Road.

Stoneridge Drive is an east/west major arterial located about 0.5 miles south of the project site. It is accessed via Owens Drive or Hacienda Drive. The roadway has two lanes of travel in each direction and provides connectivity to the Hacienda Business Park, I-680, Stoneridge Mall, and Hacienda Drive to the west, and residential areas and the City of Livermore to the east. Sidewalks are provided on each side of the street. Class II unbuffered bike lanes are present along the roadway between the I-680 off/on-Ramps and the east end, where it continues as West Jack London Blvd in Livermore. The posted speed limit is 40 mph west of Santa Rita Road and 35 mph east of Santa Rita Road. Parking is not permitted on Stoneridge Drive.

Existing Transit Service

Transit service in the area is provided by Wheels, Pleasanton Rides (Pleasanton Paratransit Service), Bay Area Rapid Transit (BART), and Altamont Commuter Express (ACE), as illustrated in **Figure 2**.

Wheels (Livermore Amador Valley Transit [LAVTA]) provides fixed-route and paratransit service throughout the Cities of Dublin, Pleasanton, and Livermore, and provides connections to other transit service providers. Wheels buses connect major destinations within the Cities of Dublin, Pleasanton, and Livermore, including Downtown areas, employment centers and destinations such as the Hacienda

Business Park, Bernal Corporate Park, Stoneridge Mall, and transit hubs, including BART and ACE stations. Wheels bus schedules are also coordinated with ACE and BART trains during peak commute hours.

Route 10R provides services to the project site. Route 10R provides rapid service to all three cities in the Tri-Valley, connecting the East Dublin/Pleasanton BART station, downtown Pleasanton, and the Livermore Transit. This route connects the project site to the East Dublin/Pleasanton BART station with 20-minute headways from Owens Drive & Rosewood Drive west bound bus stop between 7:00 AM and 8:00PM. The travel time between this project location and the BART station via transit is typically 11 minutes. The 10R also provides the project site with access to the Altamont Commuter Express with headways of 20 minutes with trips timed to meet ACE trains. The travel time between the project site and the ACE station is typically 28 minutes by transit and 11 minutes by driving. Transit stops near the project site are located on the north and south sides of Owens Drive as well as on West Las Positas Road. All transit stops provide bus pullouts and each transit stop provides a covered shelter with a bench. Routes 3, 54, and 70X also run near the project site on Owens Drive west of Hacienda Drive as well as on Hacienda Drive, which also provide service to the ACE train south of the project site.

Pleasanton Rides provides scheduled door-to-door shared ride services for registered residents of Pleasanton and Sunol who are age 70 and over. Transportation is provided between 8:00 AM and 5:00 PM, Monday, Wednesday, and Friday. Rides can be scheduled up to 7 days in advance and no later than 24 hours before the desired ride time. Destinations include all locations in Pleasanton, and select locations in Dublin and Livermore, like Kaiser and the VA Medical Center.

BART provides regional transportation connections to much of the Bay Area and the Dublin/Pleasanton line provides direct access to San Francisco, with several stops in Oakland where connections may be made to other lines. The closest stop to the project site is the Dublin/Pleasanton Station, which is approximately 0.8 miles northwest of the project site. The BART Blue Line, also known as the Dublin/Pleasanton to Daly City Line, is a Bay Area Rapid Transit (BART) line that runs between Dublin/Pleasanton Station and Daly City Station. It provides connections across the Bay Area, notably to Oakland, OAK Airport, San Francisco, and SFO Airport. The Blue Line operates at a 20-minute frequency on both weekdays and weekends.

The **Altamont Commuter Express** (ACE) operates weekday train service between Stockton and San Jose with a stop in Downtown Pleasanton. During the morning commute period only westbound service from the Central Valley to San Jose is provided, while only eastbound service is provided in the afternoon/evening commute period. Pre COVID-19, there were typically four morning trains through Pleasanton between 5:33 AM and 8:18 AM, and four evening trains between 4:28 PM and 7:31 PM. Travel time from Stockton to Pleasanton is approximately one hour and fifteen minutes, while travel time from Pleasanton to San Jose is approximately one hour. ACE Service is currently reduced with two trains in each direction, and no weekend service. The Pleasanton ACE station is located just under three miles south of the study area on Pleasanton Avenue at Bernal Avenue. Wheels provides shuttle services between the ACE and BART stations via the 10R route, which serve the transit stops near the project site.

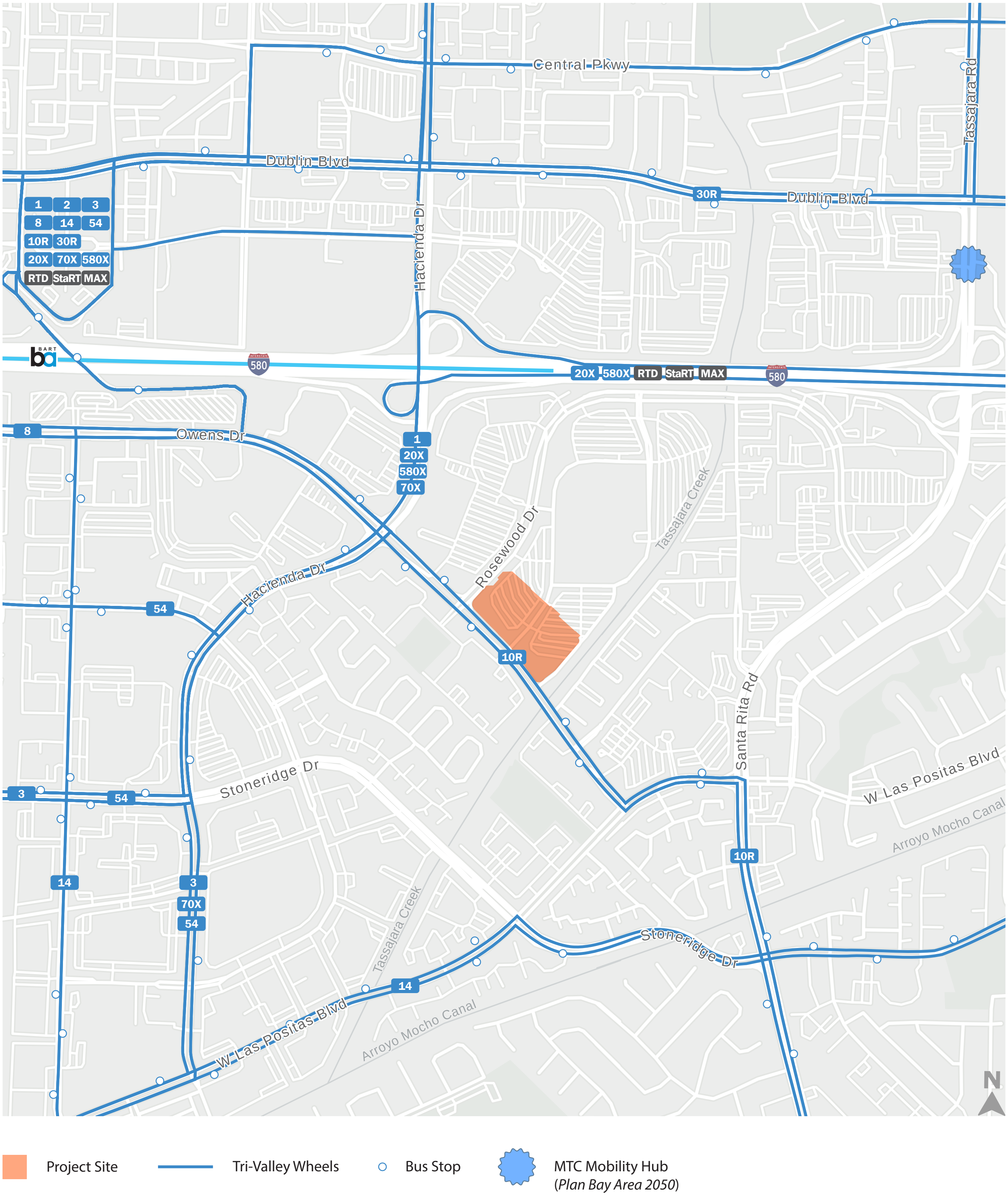


Figure 3

Existing Transit Facilities

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Existing Pedestrian and Bicycle Facilities

This section describes the existing pedestrian and bicycle facilities in the vicinity of the project site.

Pedestrian Facilities

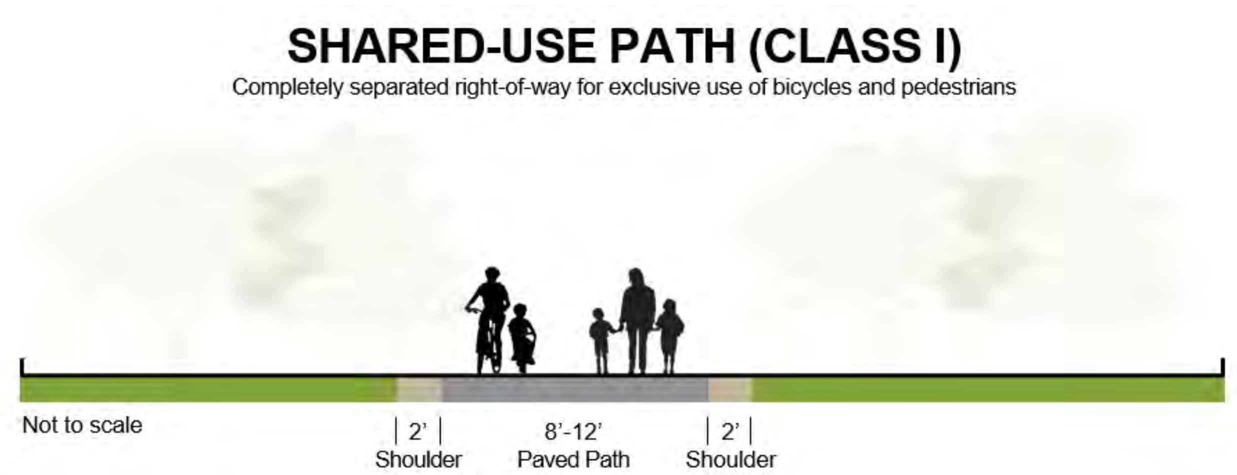
Pedestrian facilities include sidewalks, pathways, crosswalks, and pedestrian signals. A complete and comprehensive system of sidewalks exists on all roadways serving the project site. Crosswalks with pedestrian signal heads and actuation are present at all existing signalized intersections.

The most direct route with pedestrian facilities for people walking from the project site to/from the Dublin/Pleasanton BART station is via sidewalks on Owens Drive. The nearest school to the site, Fairlands Elementary School, can be accessed via sidewalks on Owens Drive and West Las Positas Drive.

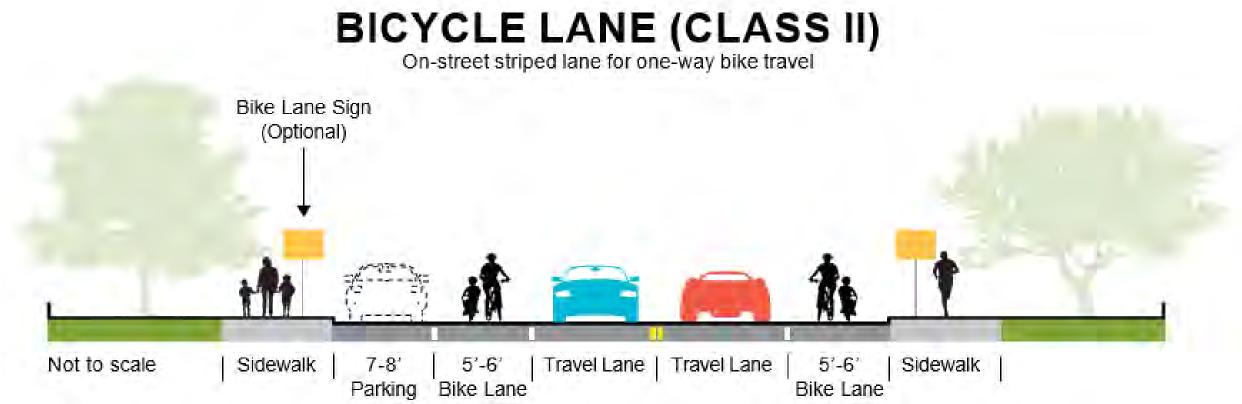
Bicycle Facilities

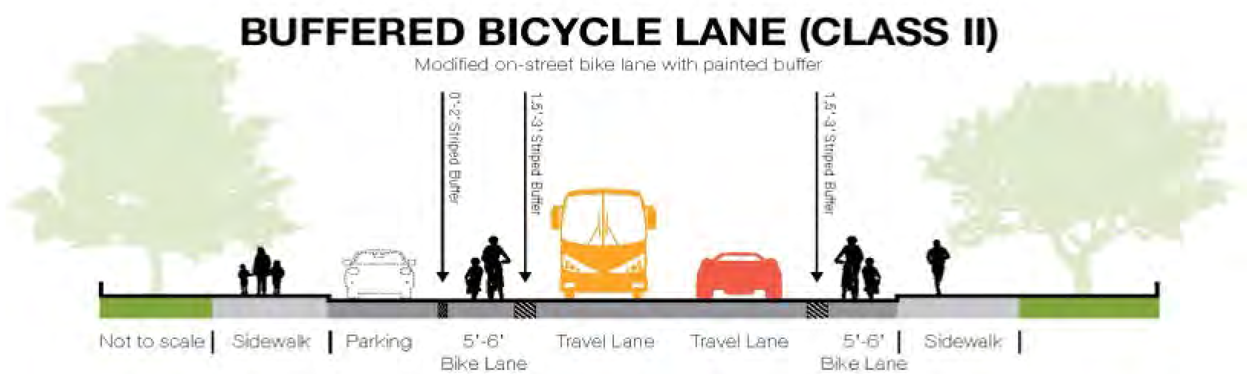
Bicycle facilities in Pleasanton include the general types described below. The graphics following the description of each type of bicycle facility are the minimum American Association of State Highway and Transportation Officials (AASHTO) standards for each type of bike facility to provide a general depiction of each type of bicycle facility. Within the City of Pleasanton, these standards provide a framework for future implementation but depending on the circumstances and where feasible, the City of Pleasanton has chosen to go above and beyond AASHTO standards.

- Bike paths (Class I) – Paved trails that are separated from roadways. There are also several unpaved off-street trails within Pleasanton. These facilities are typically shared with pedestrians, although bicycles must yield to pedestrians. Vehicle crossflow is minimized.

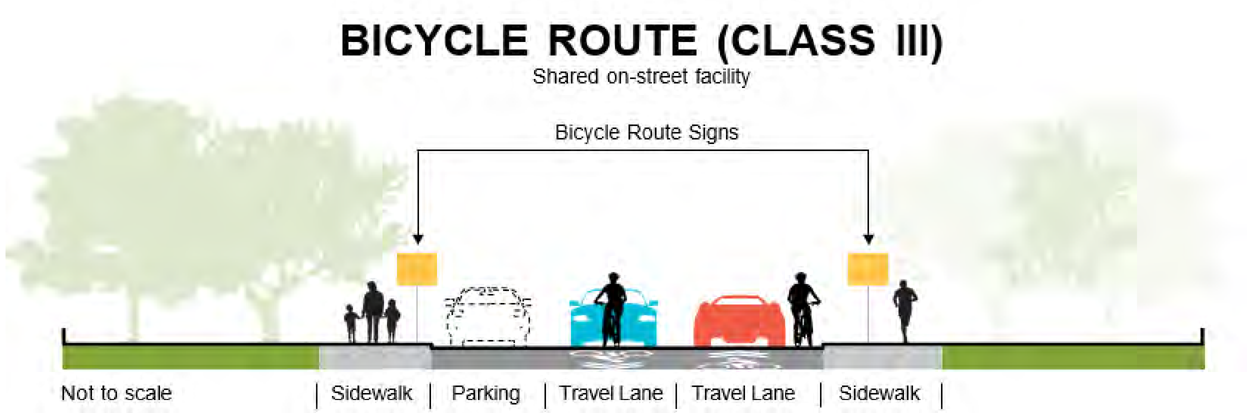


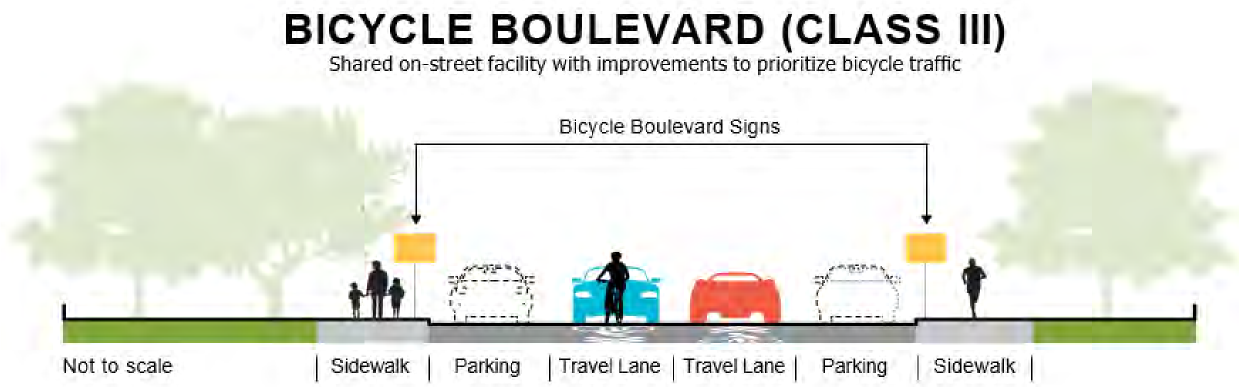
- Bike lanes (Class II) provide restricted right-of-way and are designated for the use of people bicycling with a striped lane on a street. Bicycle lanes are generally five feet wide. Adjacent vehicle parking and vehicle/pedestrian crossflow are permitted. Bike lanes may also provide a painted buffer between the bike lane and the vehicle travel lane.



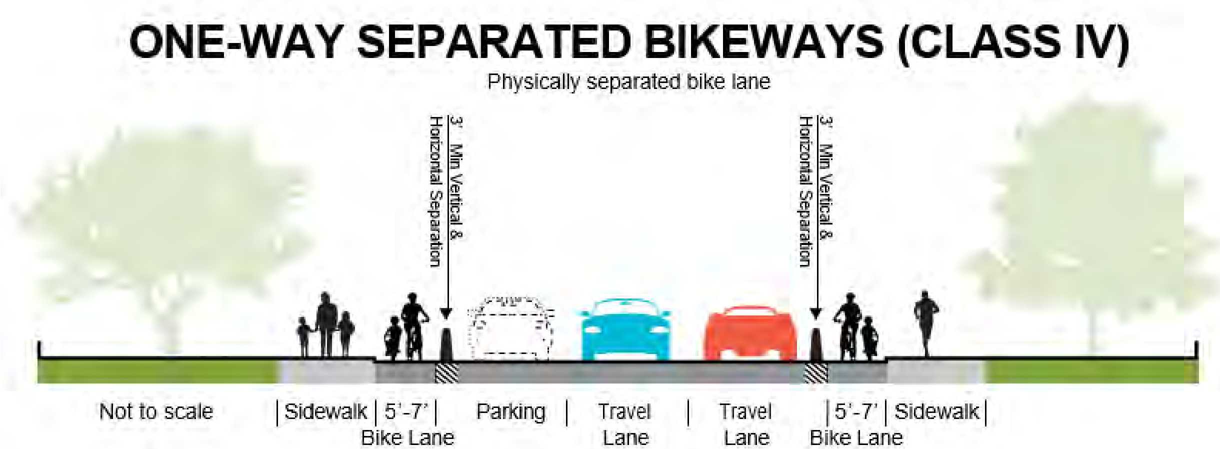


- Bike routes (Class III) provide for a right-of-way designated by signs or pavement markings (sharrows) for shared use with motor vehicles. Sharrows are a type of pavement marking (bike and arrow stencil) placed to guide bicyclists to the best place to ride on the road, avoid car doors, and remind drivers to share the road with cyclists.





- Side Paths – An off-street facility located adjacent to a roadway that is shared with pedestrians. These paths may be paved or unpaved.
- Separated Bikeways (Class IV) - Separated bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated Bikeways were adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking.



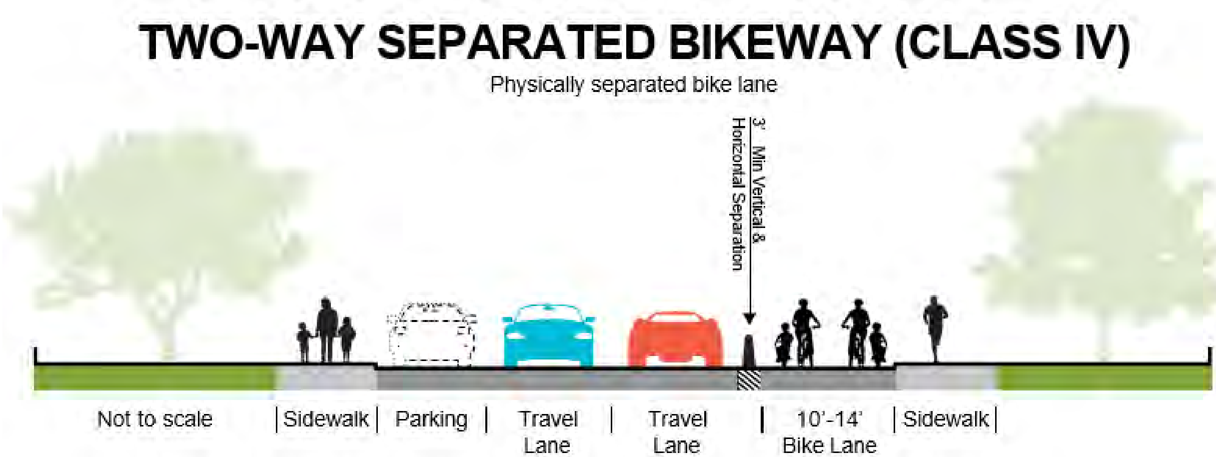
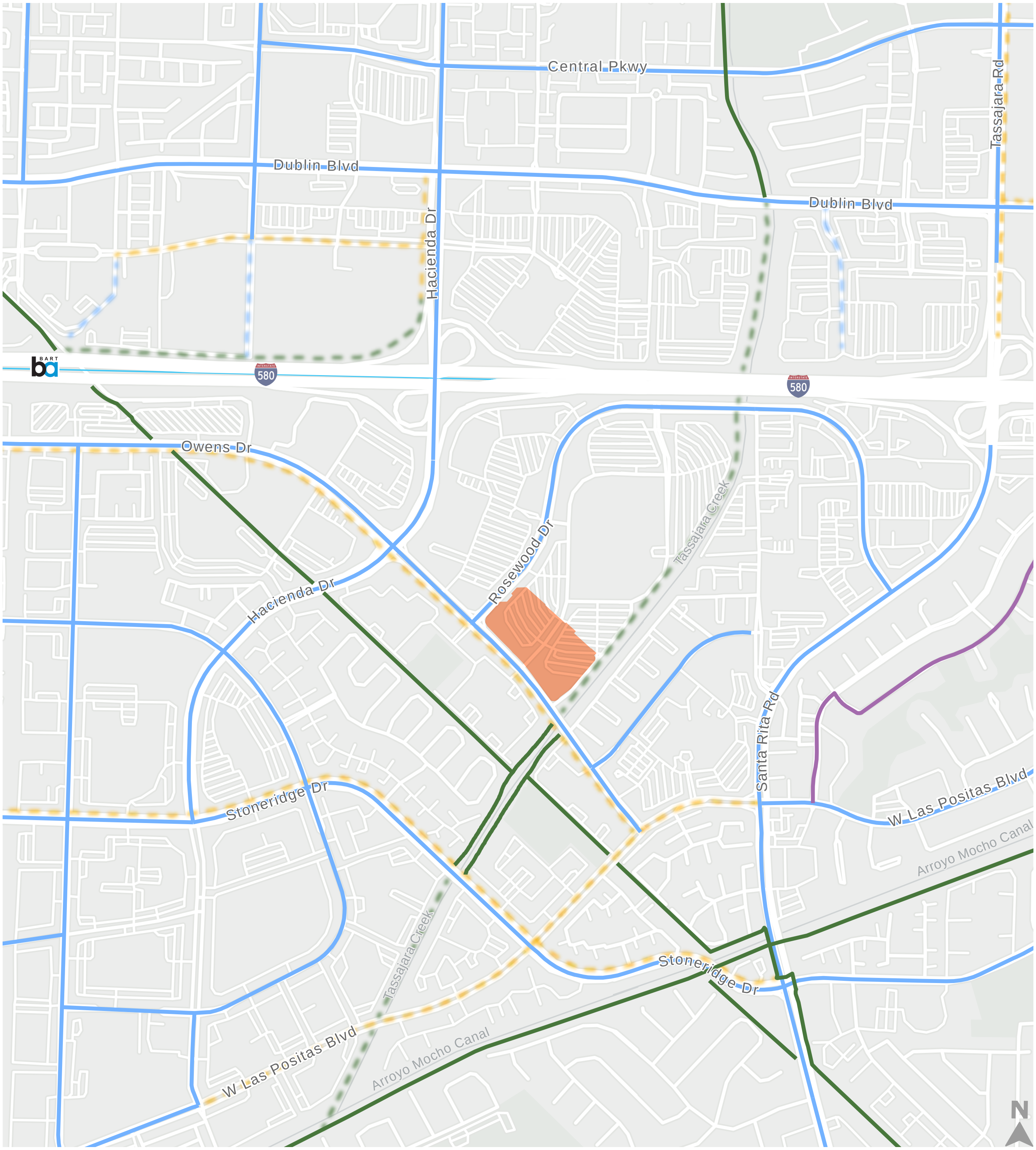


Figure 4 shows the extent of existing and planned bicycle facilities in Pleasanton. In the immediate study area, there are Class II bike lanes along Owens Drive, Rosewood Drive, Hacienda Drive, West Las Positas Boulevard (east of Santa Rita Road), Santa Rita Road, and Stoneridge Drive. The Iron Horse Trail is a Class I shared-use bicycle path, spanning from Concord to Livermore. The Iron Horse Trail is approximately 1,000 feet southwest of the project site, which can be directly accessed through Owens Plaza Park from the project site. Class IV separated bikeways are planned on Owens Drive, Stoneridge Drive west of Santa Rita Road and West Las Positas Boulevard west of Santa Rita Road.



Project Site

	Existing	*Proposed*
Class 1 Bike Path		
Class 2 Bike Lane		
Class 3 Bike Route		
Class 4 Separated Bikeway		

Figure 4

Existing and Proposed Bicycle Facilities

WC24-4114_4_BikeFac

Existing Intersection Volumes

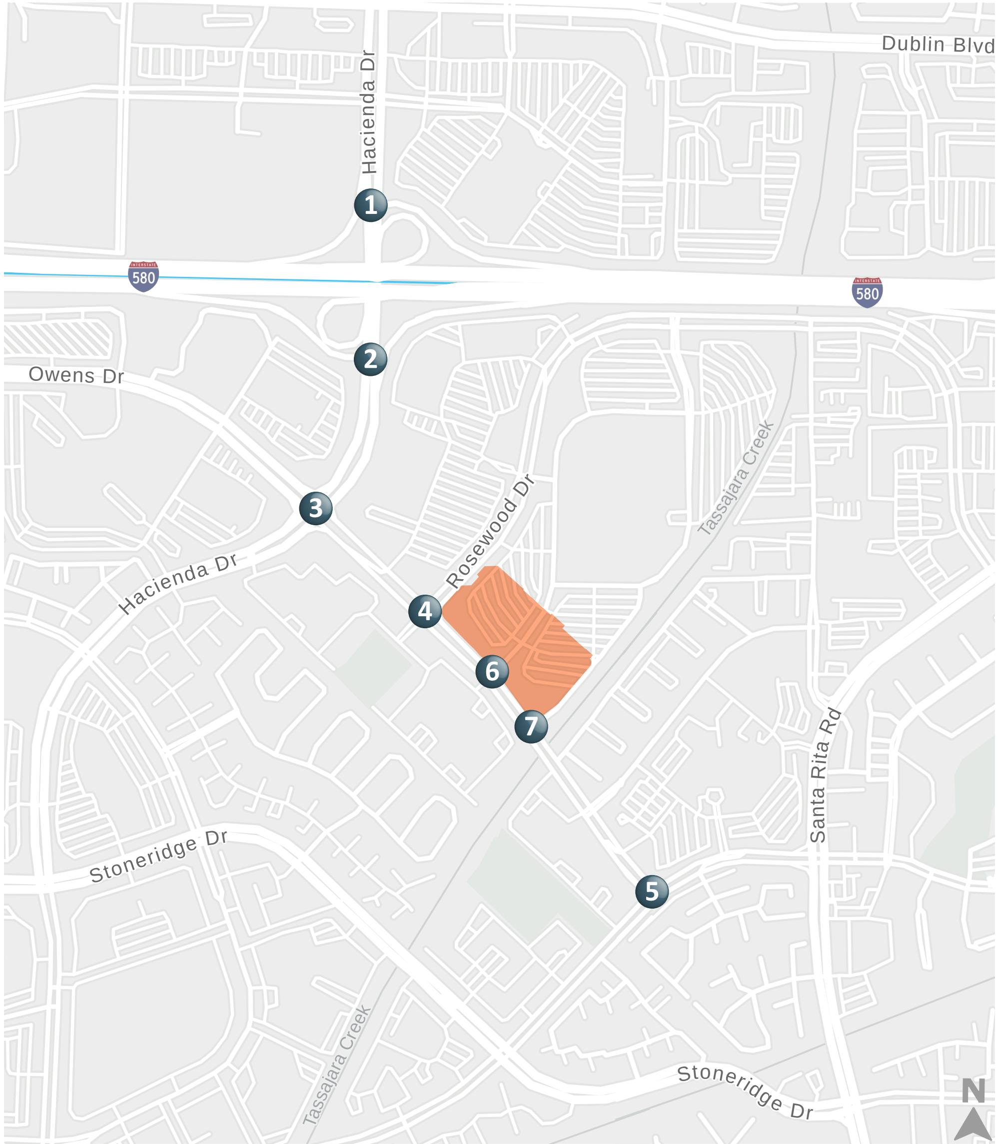
Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were conducted at the study intersections in February and July of 2024 including separate counts of trucks, pedestrians, and bicyclists. For the study intersections, the single hour with the highest traffic volumes during the count periods was identified. The peak hour volumes are presented in **Figure 5** along with the existing lane configuration and traffic control. Traffic count worksheets are provided in **Appendix A**.

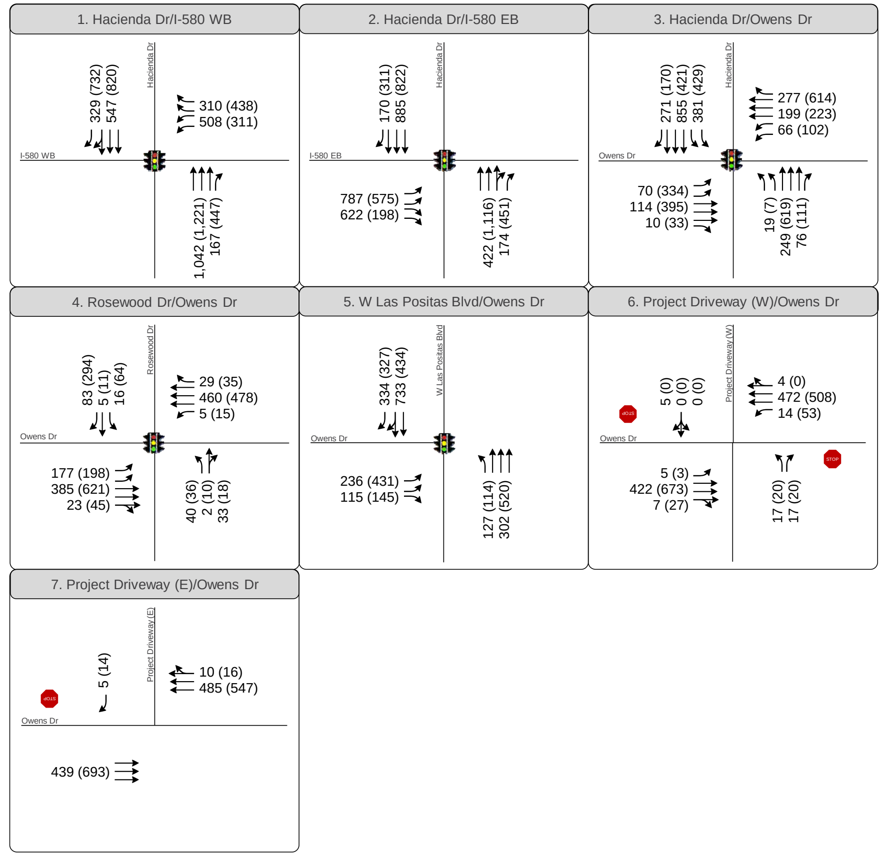
Existing Intersection Operations

Level of Service

Existing intersection operations were evaluated using the methodology described in Chapter 1. The analysis was based on the volumes, lane configurations and traffic control shown on **Figure 5**. Observed peak hour factors[2] were used at all intersections for the existing conditions analysis. Truck, pedestrian, and bicycle activity was factored into the analysis. The intersection operations results are summarized in **Table 3**. Detailed intersection LOS calculation worksheets are provided in **Appendix B**.

[2] The relationship between the peak 15-minute flow rate and the full hourly volume is given by the peak-hour factor (PHF) as shown in the following equation: PHF=Hourly volume/(4* volume during the peak 15 minutes of flow). The analysis of level of service is based on peak rates of flow occurring within the peak hour because substantial short-term fluctuations typically occur during an hour.





XX (YY) AM (PM) Peak Hour Traffic Volumes — Signalized Intersection — STOP Stop Sign

Project Site — # Study Intersection

Figure 5

Existing Peak Hour
Traffic Volumes, Lane Configurations, and Traffic Control

Table 3: Existing Conditions – Intersection Operations

	Intersection	Control[1]	Peak Hour[2]	Existing Conditions	
				Delay[3]	LOS
1	Hacienda Drive & I-580 Westbound Ramps	Signal	AM	8.4	A
			PM	7.3	A
2	Hacienda Drive & I-580 Eastbound Ramps	Signal	AM	14.9	B
			PM	10.4	B
3	Hacienda Drive & Owens Drive	Signal	AM	13.5	B
			PM	19.7	B
4	Rosewood Drive & Owens Drive	Signal	AM	8.8	A
			PM	8.1	A
5	West Las Positas Boulevard & Owens Drive	Signal	AM	12.2	B
			PM	11.8	B
6	Project Driveway West & Owens Drive	SSSC	AM	0.7 (13.9)	A (B)
			PM	1.0 (19.6)	A (C)
7	Project Driveway East & Owens Drive	SSSC	AM	0.1 (9.7)	A (A)
			PM	0.1 (9.6)	A (A)

1. Existing intersection traffic control type (Signal = Signalized, SSSC = Side-Street Stop-Control)
2. AM = Weekday morning peak hour; PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized intersections. Side-Street Stop-Control intersection delay presented as Whole Intersection Average Delay (Worst Movement Delay).
4. Delay calculated per HCM 2000 methodologies.

Bold indicates potentially unacceptable operations.
Source: Fehr & Peers, December 2024.

As shown in **Table 3**, all study intersections operate acceptably during existing conditions.

Vehicle Queues

Although all the study intersections currently operate within the standards set by the City of Pleasanton, there may be periodic vehicle queue spillback and delays greater than shown in **Table 3** for some movements. **Table 4** presents the 95th percentile vehicle queue results for turn movements with exclusive lanes at signalized intersections. Queue worksheets are provided in **Appendix C**.

Table 4: Existing Conditions – 95th Percentile Queues

Intersection		Movement	Storage Length (ft)[1]	AM Peak Period	PM Peak Period
1	Hacienda Drive & I-580 Westbound Ramps	WBL	1,350	150	100
		WBR	1,350	75	125
		NBT	960	50	100
		SBT	550	75	125
2	Hacienda Drive & I-580 Eastbound Ramps	EBL	1,230	250	150
		EBR	1,230	150	50
		NBT	960	50	150
		NBR	960	25	50
		SBT	780	150	100
3	Hacienda Drive & Owens Drive	EBL	370	75	225
		EBT	640	50	150
		WBL	160	50	100
		WBT	790	75	100
		NBL	350	25	25
		NBT	640	100	250
		SBL	450	200	275
		SBT	920	225	125
4	Rosewood Drive & Owens Drive	EBL	200	100	100
		EBT	790	100	150
		WBL	140	25	50
		WBT	1,460	125	125
		NBL	100	50	50
		NBT	100	25	25
		SBL	940	25	50
		SBT	940	25	25
5	West Las Positas Boulevard & Owens Drive	EBL	540	100	175
		EBR	540	50	50
		NBL	180	125	125
		NBT	270	25	75
		SBT	940	225	150
		SBR	940	50	50

Notes:
1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold indicates queue potentially extends beyond available storage.
Source: Fehr & Peers, December 2024.

3. Project Characteristics

This chapter provides a review of the trip generation, distribution and assignment analysis completed for the project. The proposed project trip generation, trip distribution, and trip assignment allow for an evaluation of project effects on the surrounding roadway network. The amount of project traffic estimated to be added to the transportation system after completion of the project was estimated using a three-step process:

1. **Trip Generation** – The amount of vehicle traffic entering/exiting the site was estimated.
2. **Trip Distribution** – The directions of trips to compatible land uses and their general routes of approach/departure to the project site were identified.
3. **Trip Assignment** – Trips were then assigned to specific roadway segments and intersection turning movements based on likely paths of travel.

Project Description

The project would construct 336 multi-family residential units and a 7,520 square foot day care facility on a site located in the northeast corner of the Rosewood Drive and Owens Drive intersection. The day care facility would be in the southwest corner of the project site directly adjacent to the Rosewood Drive/Owens Drive intersection. A total of 551 parking spaces would be provided on site for residential uses, including spaces provided within internal parking garages and at-grade parking on the site's various internal roadways. Twenty-seven parking spaces would be provided for the day care facility. The project site is currently occupied by a parking lot which serves the neighboring California Center office complex. The parcel is bound by Owens Drive to the southeast, Rosewood Drive to the north, the California Center to the northwest and Tassajara Creek to the south.

A similar mixed use residential project was approved on the site in 2012. That project, the "Residences at California Center" project proposed 305 multi-family residential units and a 7,520 square foot retail space on the same site. Residential development on the site was included and approved part of the City of Pleasanton's 2012 Housing Element and associated environmental documentation (2012 Housing Element and Climate Action Plan Amendment and Rezoning Final Supplemental Environmental Impact Report, City of Pleasanton, 2012). As such, this traffic study focuses on the differences in effects between the currently proposed project (336 units with day care center) in comparison to the prior project (305 units with retail).

Access to the site would be provided via several roadway connections to the external street network, as illustrated in Figure 2. This includes three access points on Owens Drive and one on Rosewood Drive. Project traffic would also be able to enter and exit via the California Center driveways to the northeast via internal roadway connections to the neighboring site. The two driveways providing access to the day care center would permit right turn in/right turn out movements only, with left turn movements being prohibited by the existing raised landscaped median. The two other access points on Owens Drive, providing access to the residential uses, would be full movement driveways, allowing both left and right turns in and out. Left turn movements into and out of the southernmost driveway on Owens Drive would be accommodated via modifications to the median that would be made by the project.

Project Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Project trip generation estimates are prepared for the one-hour peak period during the weekday morning and evening commute when traffic volumes on the adjacent streets are typically the highest, as well as for the 24-hour weekday period. **Table 5** presents the trip generation characteristics of the project currently approved to be developed on the site. These figures are based on data from the traffic assessment prepared for the approved project (*Transportation Assessment for Residences at California Center*, Fehr & Peers, December 4, 2012). It should be noted that these estimates are based on rates from the Institute of Transportation Engineers, *Trip Generation Manual, 9th Edition*. This national compendium of data on the trip generation characteristics of various land uses in the United States is periodically updated as new information becomes available. The current version of this reference is the *Trip Generation Manual, 11th Edition.*

Table 5: Approved Project Vehicle Trip Generation

Land Use	Size	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Apartments	305 units	31	125	156	123	66	189
Retail	7,520 square feet	4	3	7	13	15	28
TOTAL		***35***	***128***	***163***	***136***	***81***	***217***

Source: *Transportation Assessment for Residences at California Center*, Fehr & Peers, December 4, 2012; *ITE Trip Generation Manual, 9th Edition*

To estimate the level of traffic that could be generated by the project, trip generation estimates were developed based on trip generation rates presented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* for the multi-family housing and day care center uses. To account for interactions between the residential and day care center land uses (e.g. residents of the apartments using the day care facility), a mixed-use adjustment was applied. This adjustment was based on data from the Institute of Transportation Engineers, *Trip Generation Handbook, 3rd Edition*. **Table 6** presents the trip generation results for the currently proposed project.

Table 6: Proposed Project Vehicle Trip Generation

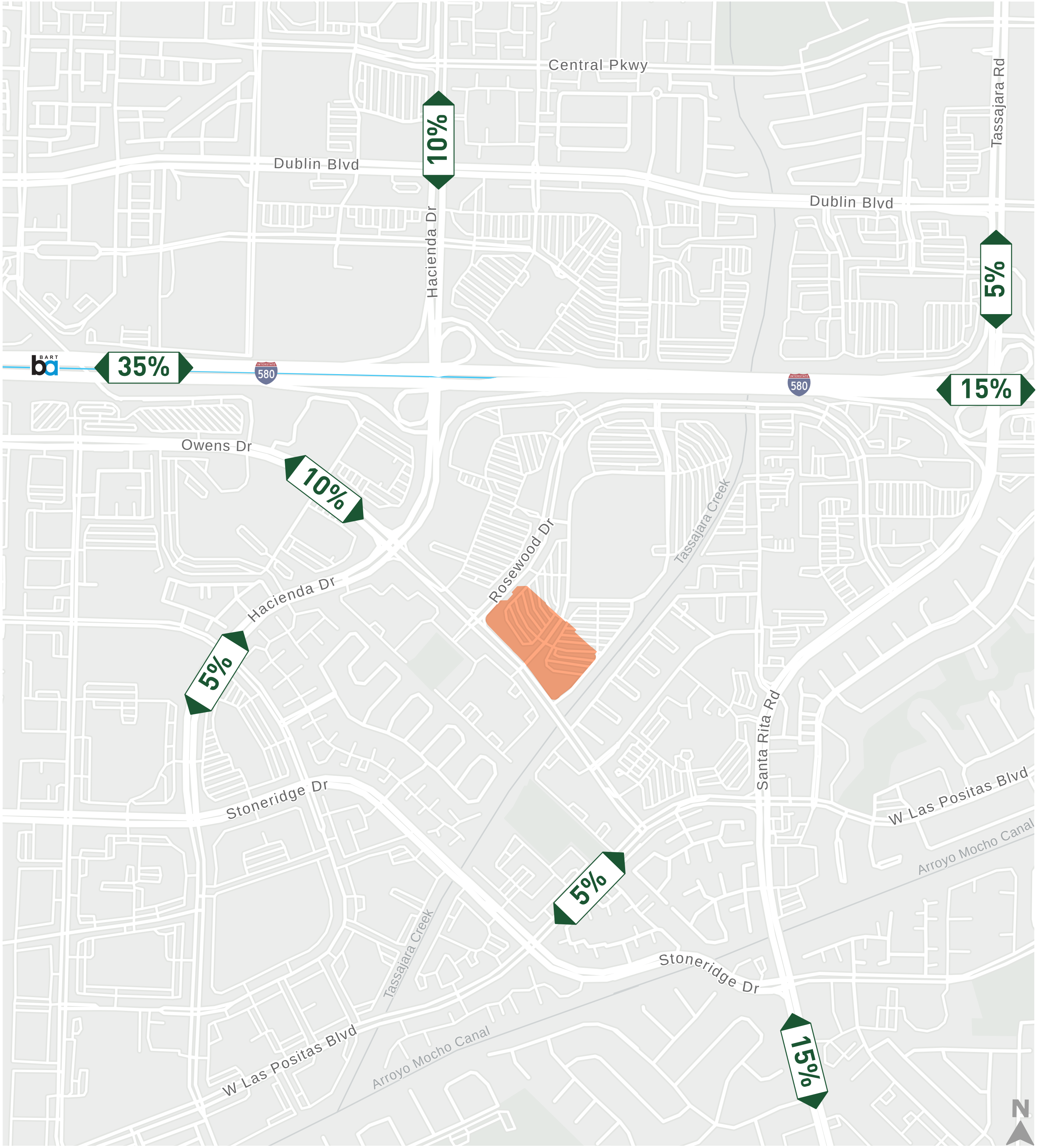
Land Use	Size	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Apartments	336 units	32	102	134	108	63	171
Day Care	7,520 square feet	44	39	83	39	45	84
Mixed Use Reduction	10% of Day Care Trips	(4)	(4)	(8)	(4)	(5)	(9)
TOTAL		***72***	***137***	***209***	***143***	***103***	***246***

Source: *ITE Trip Generation Manual, 11th Edition*
Notes:
1. Based on *Trip Generation* (11th Edition) trip generation rates for land use 220, Multifamily Housing (Low-Rise)
2. Based on *Trip Generation* (11th Edition) trip generation rates for land use 565, Day Care Center

Source: Fehr & Peers, December 2024

Project Trip Distribution & Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. The project trip distribution was estimated based on a select zone analysis using the City of Pleasanton model, project site access, existing traffic count data, existing travel patterns, and the location of complementary land uses. The resulting trip distribution is shown in **Figure 6**. Project trip assignment refers to project trip loading on specific roadway segments and intersection turning movements in the study area, as shown in **Figure 7**.



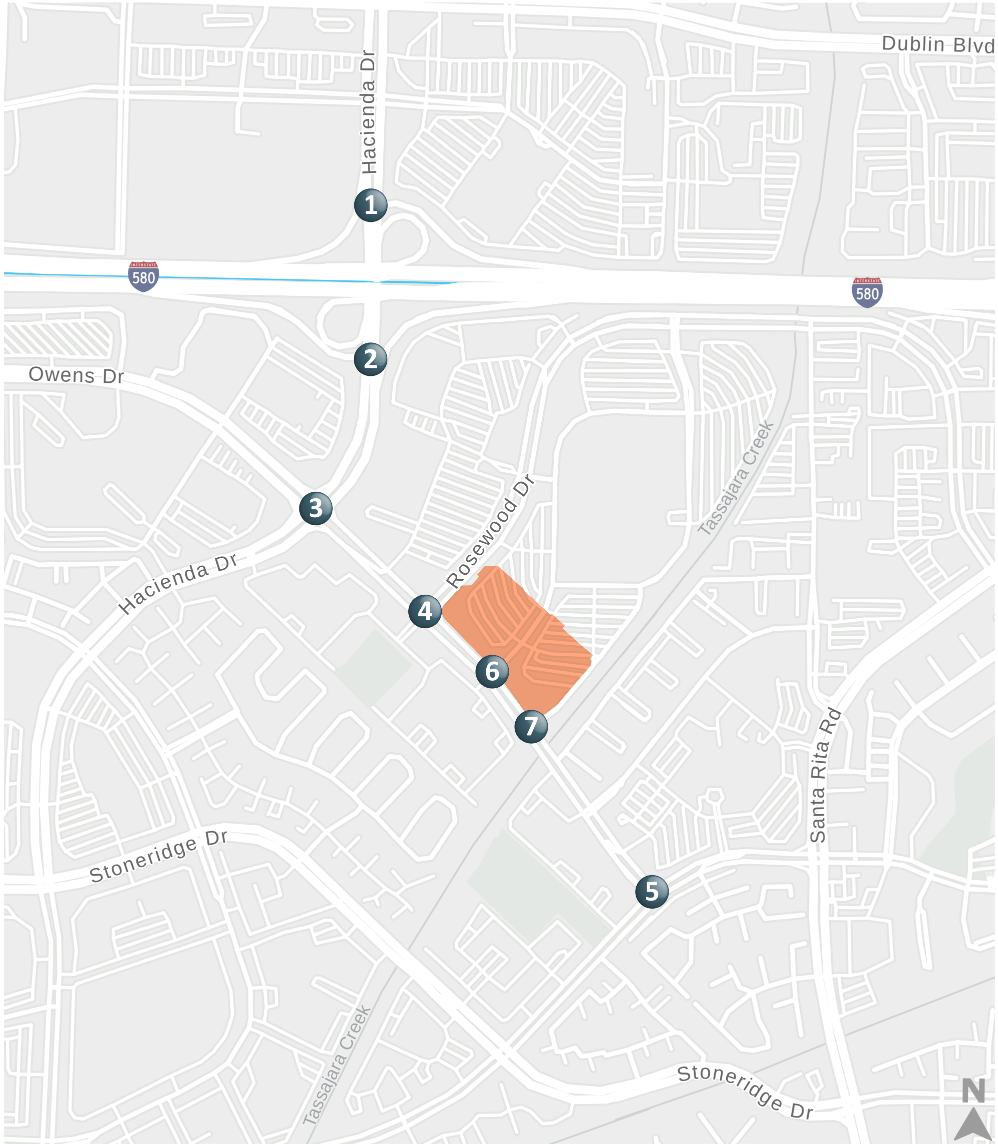
Project Site

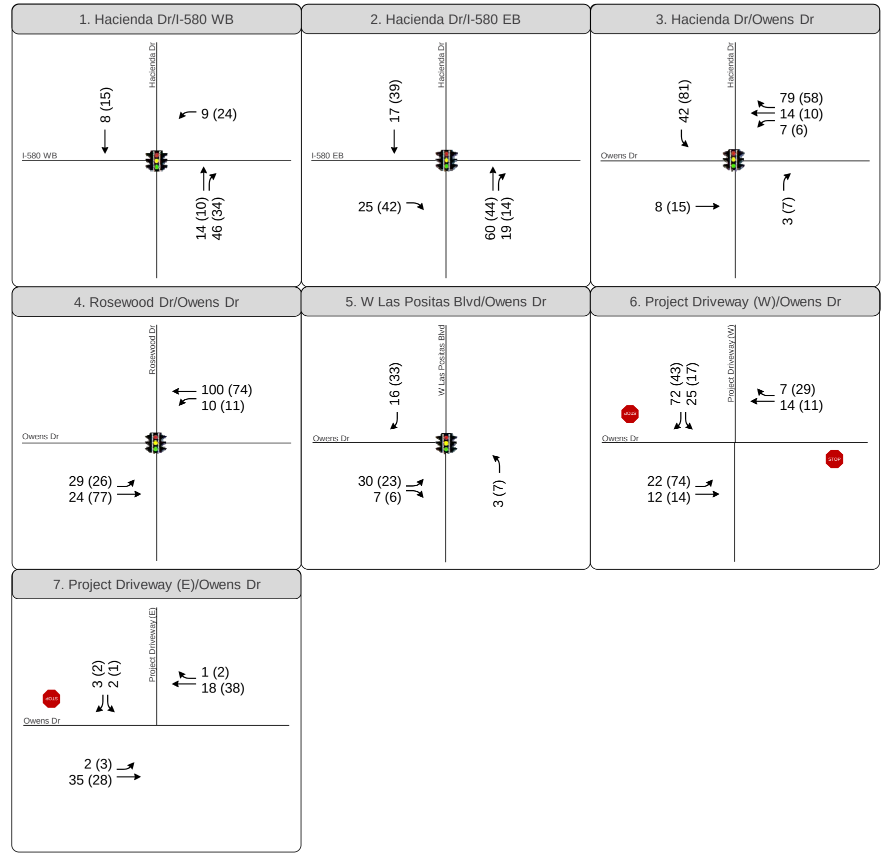
XX% Project Trip Distribution

Figure 6

Project Trip Distribution

WC24-4114_6_TripDistro





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

Figure 7

Project Trip Assignment

WC23-3955_1_StudyArea

4. Site Plan Review

This chapter analyzes site access and internal circulation for vehicles, pedestrians, bicycles, and emergency vehicles based on the site plan presented previously on **Figure 2**.

Vehicular Site Access and Circulation

Access to the site would be provided via several roadway connections to the external street network, as illustrated in Figure 2. This includes three access points on Owens Drive and one on Rosewood Drive. Project traffic would also be able to enter and exit via the California Center driveways to the northeast via internal roadway connections to the neighboring site. The two driveways providing access to the day care center would permit right turn in/right turn out movements only, with left turn movements being prohibited by the existing raised landscaped median. The two other access points on Owens Drive, providing access to the residential uses, would be full movement driveways, allowing both left and right turns in and out. Left turn movements into and out of the southernmost driveway on Owens Drive would be accommodated via modifications to the median that would be made by the project.

As illustrated in Figure 2, internal circulation within the site would be provided via a network of two-lane roadways extending through the site. The traffic analysis conducted identified that the two-lane internal roadways would be adequate to serve internal traffic forecasts.

The posted speed limit on Owens Drive and Rosewood Drive is 40 miles per hour. Table 201.1 of the Caltrans Highway Design Manual (HDM) states that the stopping sight distance standard for a design speed of 45 miles per hour (five miles per hour over the speed limit) is 360 feet. Adequate sight distance appears to be provided at most project driveways. However, the sight distance to the south from the southern project driveway on Owens Drive is limited by landscaping and fencing and may not be adequate to provide for an acceptable stopping sight distance. As the project's design is finalized, these sight distances should be checked by the registered site Civil Engineer, and the project should make any modifications necessary to provide adequate driveway sight distance.

> ***Site Recommendation 1:*** The final site plan for the project should be analyzed by the project's civil engineer to ensure that adequate sight distance of at least 360 feet is provided at all driveways. Particular focus should be given to the available sight distance to the south from the southern project driveway on Owens Drive. No objects (landscaping, monument signs, etc.) greater than three feet in height should be allowed within the sight distance triangles at driveway intersections. Review available speed survey information from the City and adjust required sight distance if necessary. If inadequate sight distance is identified, appropriate modifications should be made as part of the project.

> ***Improvement Recommendation 2:*** The site plan shows a long dead-end parking at-grade parking aisle serving 24 ninety-degree parking spaces between the T2 and the main residential building. Vehicles traveling along this aisle are provided with no space to turn around and exit

should all the parking spaces be occupied. The final space in the aisle should be hatched and striped for no parking to allow turnarounds to be made, or other provisions for a turnaround should be accounted for on the site plan.

Emergency Vehicle Access

Several factors determine whether a project has sufficient access for emergency vehicles, including:

1. Number of access points (both public and emergency access only)
2. Width of access points
3. Width of internal roadways

As previously discussed, there are five vehicular access points to the project site. Emergency vehicles can access the site from all four directions. The main internal roadways are 26 feet wide with the minor alleyways being 20 feet in width. Adequate emergency vehicle access is provided to the project site.

Improvement Recommendation 3: Provide emergency vehicle turning movement analysis that demonstrates the ability of a standard Alameda County Fire Truck to maneuver through project site.

Pedestrian Access and Circulation

A complete and comprehensive system of sidewalks exists on all roadways serving the project site. Crosswalks with pedestrian signal heads and actuation are present at all existing signalized intersections. The project includes a network of on-site sidewalks and pedestrian linkages. Crosswalks would be installed at internal intersections wherein substantial numbers of pedestrians are expected to cross, as illustrated in **Figure 2**. One notable gap in the proposed pedestrian system is present on the project's conceptual site plan.

Improvement Recommendation 4: The conceptual project site plan (Figure 2) does not show a sidewalk between the center and southern driveways on Owens Drive. The plan should be updated to reinstall this important link in the pedestrian network.

Bike Access and Circulation

In the vicinity of the site, there are Class II bike lanes along Owens Drive, Rosewood Drive, Hacienda Drive, West Las Positas Boulevard, Santa Rita Boulevard, and Stoneridge Drive, and a Class III Bike Boulevard on West Las Positas Boulevard. The Iron Horse Trail is a Class I shared-use bicycle path, spanning from Concord to Livermore. The Iron Horse Trail is approximately 1,000 feet southwest of the project site, which can be directly accessed through Owens Plaza Park from the project site. Figure 2, the project's site plan, does not show existing class II bike lanes on Owens Drive or Rosewood Drive. However, connections to a future Class I path along the adjacent Tassajara Creek are shown.

Improvement Recommendation 5: Show the existing Class II bicycle lanes on Rosewood Drive and Owens Drive on the project's site plan. Design and include appropriate modifications to the bike lanes at locations where the project's driveways cross these facilities (green hatched markings and other modifications as needed).

Improvement Recommendation 6: The project's site plan does not show the locations and number of on-site bicycle parking. Update to provide on-site short and long-term bicycle parking in accordance with city requirements. The *Hacienda Design Guidelines Section 2.7 Bicycle Parking* provides rates of long and short-term bicycle parking for residential uses. Long-term bicycle parking shall be provided at 0.8 stalls per residential unit, and short-term bicycle parking shall be provided at one stall per 25 residential units. A total of 244 long-term and 12 short-term bicycle stalls shall be provided to the residents. Long-term bicycle spaces may be discounted by designated rooms/structure or in private garages.

Transit Facilities

Transit stops near the project site are located on the north and south sides of Owens Drive as well as on West Las Positas Road. All transit stops provide bus pullouts and each transit stop provides a covered shelter with a bench. Routes 3, 54, and 70X also run near the project site on Owens Drive west of Hacienda Drive as well as on Hacienda Drive, which also provide service to the ACE train south of the project site. There is an existing transit stop with shelter and bench on the project's Rosewood Drive frontage, however, no bus routes currently serve this stop. The stop and its amenities would be retained by the project for potential future service.

Parking

City of Pleasanton requirements for parking, based on the *Hacienda TOD Standards and Design Guidelines* (City of Pleasanton, March 1, 2011), were reviewed. For residential uses, one and a half spaces are required per unit. Additionally, for every ten apartment units there must be a visitor parking space. For residential uses results in a total of 538 spaces are required, as shown in **Table 7**. For the daycare area, three stalls for every 1,000 square feet are required, for a total parking requirement of 23 spaces. The Project requires a total combined parking requirement of 561 spaces.

Table 7: City Code Automobile Parking Requirements

Land Use	Size	Parking Code Requirement	Parking Spaces Required	Parking Supply
Apartments	336 Units	1.5 per unit	504	551
	Visitor	1 per 10 units	34	
Daycare	7,520 sq. ft.	3 per 1,000 sq. ft.	23	27
Total Requirement			***561***	***578***

Source: Hacienda TOD Standards and Design Guidelines, City of Pleasanton, March 2011.

The *Parking Generation Manual, 6th Edition,* provides expected parking demand based on land use. The residential uses are classified as Low-rise Multifamily Housing with two or more bedrooms (land use code #220). The day care use is classified under as Day Care Center (land use code #565). As shown in **Table 8**, the total expected parking demand would be 450 spaces, which is less than the total parking supply.

Table 8: Automobile Parking Demand

Land Use	Size	Parking Rate	Parking Spaces Demanded	Total Parking Supply
Condominiums	336 Units	1.27	427	551
Daycare	18 Employees	1.25	23	27
Total Demand			***450***	***578***

Source: Parking Generation Manual, 6th Edition.

5. Traffic Operations

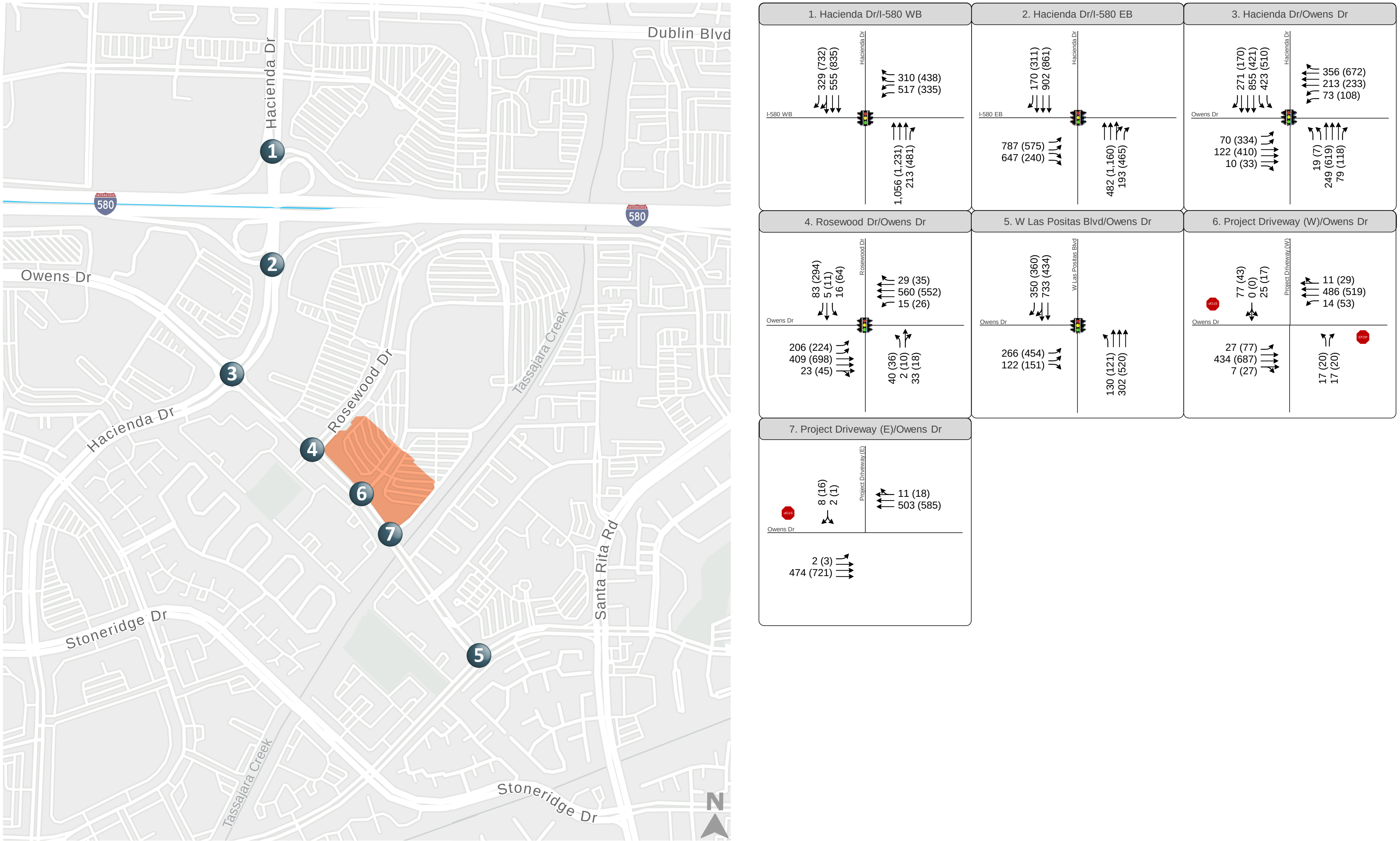
This chapter evaluates off-site traffic operations under Existing and Cumulative conditions without and with the project.

Existing with Project Conditions

As discussed earlier in this study, a similar mixed use residential project was previously approved on the site. To compare the differences in effects between the currently proposed project (336 units with day care center) and the prior project (305 units with retail), the "with project" scenarios considered include two disparate scenarios with the currently proposed project and the previously approved project's trip assignments added on to existing traffic volumes.

Intersection Operations

Intersections were evaluated under Existing with Project conditions using the methods described in Chapter 1. The Existing with Project analysis results are presented in **Table 9**, based on the traffic volumes and intersection configurations presented in **Figure 8**, along with the results for Existing conditions.



XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign

Project Site | # Study Intersection

Figure 8

Existing With Project Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control

WC23-3955_1_StudyArea

Table 9: Existing with Project Conditions – Intersection Operations

	Intersection	Control[1]	Peak Hour[2]	Existing Conditions		Existing with Approved Project		Existing with Proposed Project	
				Delay[3]	LOS	Delay	LOS	Delay	LOS
1	Hacienda Drive & I-580 Westbound Ramps	Signal	AM	8.4	A	8.4	A	8.3	A
			PM	7.3	A	7.3	A	7.4	A
2	Hacienda Drive & I-580 Eastbound Ramps	Signal	AM	14.9	B	14.9	B	14.9	B
			PM	10.4	B	10.4	B	10.5	B
3	Hacienda Drive & Owens Drive	Signal	AM	13.5	B	13.5	B	13.6	B
			PM	19.7	B	20.4	C	20.7	C
4	Rosewood Drive & Owens Drive	Signal	AM	8.8	A	8.9	A	9.7	A
			PM	8.1	A	8.2	A	9.8	A
5	West Las Positas Boulevard & Owens Drive	Signal	AM	12.2	B	12.8	B	12.7	B
			PM	11.8	B	12.4	B	12.4	B
6	Project Driveway West & Owens Drive	SSSC	AM	0.7 (13.9)	A (B)	2.0 (16.1)	A (C)	2.2 (17.4)	A (C)
			PM	1.0 (19.6)	A (C)	2.0 (26.6)	A (D)	2.4 (30.5)	A (D)
7	Project Driveway East & Owens Drive	SSSC	AM	0.1 (9.7)	A (A)	0.4 (14.5)	A (B)	0.2 (11.8)	A (B)
			PM	0.1 (9.6)	A (A)	0.3 (12.4)	A (B)	0.2 (10.2)	A (B)

Notes:
1. Existing intersection traffic control type (Signal = Signalized, SSSC = Side-Street Stop-Control)
2. AM = Weekday morning peak hour; PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized intersections. Side-Street Stop-Control intersection delay presented as Whole Intersection Average Delay (Worst Movement Delay).
4. Delay calculated per HCM 2000 methodologies.

Bold indicates potentially unacceptable operations.
Source: Fehr & Peers, December 2024.

As shown in **Table 9**, all study intersections operate acceptably during Existing with Project conditions.

Vehicle Queues

Although the study intersections generally operate within the standards set by the City of Pleasanton, there can be periodic vehicle queue spillback and delays greater than shown in **Table 9** for some movements. For signalized intersections, **Table 10** presents the 95th percentile vehicle queue results. As seen in the table, these queues are not anticipated to exceed storage lengths for all movements. Queue worksheets are provided in **Appendix C**.

Table 10: Existing with Project Conditions – 95th Percentile Queues

	Intersection	Movement	Storage Length (ft)[1]	Existing Conditions		Existing With Approved Project		Existing With Proposed Project	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Hacienda Drive & I-580 Westbound Ramps	WBL	1,350	150	100	150	100	150	100
		WBR	1,350	75	125	75	125	75	125
		NBT	960	50	100	75	100	75	100
		SBT	550	75	125	75	125	75	125
2	Hacienda Drive & I-580 Eastbound Ramps	EBL	1,230	250	150	250	150	250	150
		EBR	1,230	150	50	150	50	150	50
		NBT	960	50	150	75	150	75	150
		NBR	960	25	50	25	50	25	50
		SBT	780	150	100	150	100	175	100
3	Hacienda Drive & Owens Drive	EBL	370	75	225	75	225	75	225
		EBT	640	50	150	50	150	50	150
		WBL	160	50	100	75	100	75	100
		WBT	790	75	100	75	100	75	100
		NBL	350	25	25	25	25	25	25
		NBT	640	100	250	100	250	100	250
		SBL	450	200	275	225	300	225	325
		SBT	920	225	125	225	125	225	125
4	Rosewood Drive & Owens Drive	EBL	200	100	100	100	100	100	100
		EBT	790	100	150	100	150	100	150
		WBL	140	25	50	25	50	50	50
		WBT	1,460	125	125	125	125	150	125
		NBL	100	50	50	50	50	50	50
		NBT	100	25	25	25	25	25	25
		SBL	940	25	50	25	50	25	50
		SBT	940	25	25	25	25	25	25
5	West Las Positas Boulevard & Owens Drive	EBL	540	100	175	125	175	100	175
		EBR	540	50	50	50	50	50	50
		NBL	180	125	125	125	125	125	125
		NBT	270	25	75	25	75	25	75
		SBT	940	225	150	225	175	225	175
		SBR	940	50	50	50	50	50	50

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

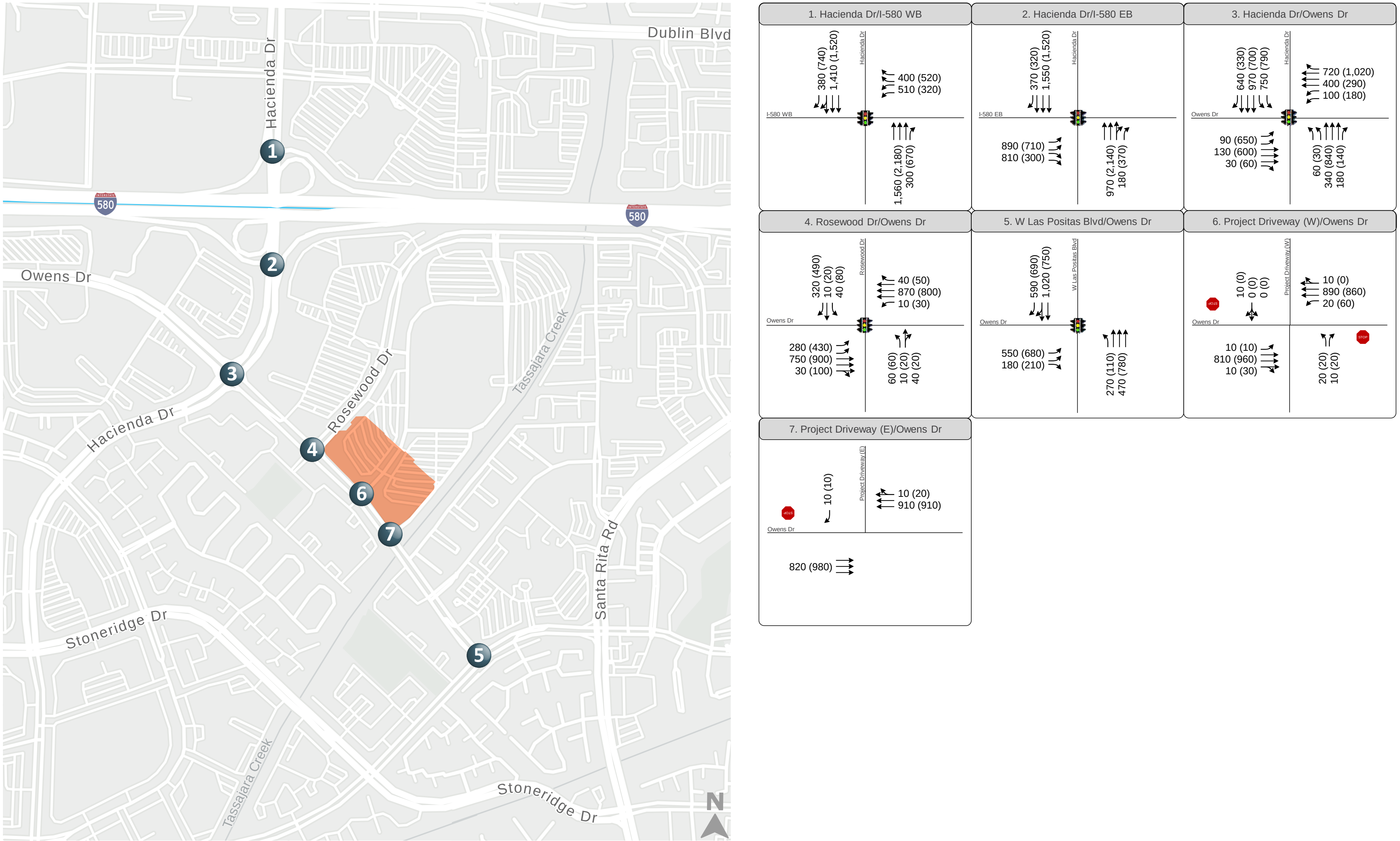
Source: Fehr & Peers, December 2024.

Cumulative without Project Conditions

This section discusses cumulative traffic conditions without traffic that will be generated by the project. The cumulative condition represents conditions in the 2040 horizon year, based on forecasts from the City of Pleasanton travel demand model. The cumulative forecasts reflect conditions with buildout of the City's General Plan and the implementation of the recently approved Housing Element Update, 6th Cycle. Traffic conditions without the project under this future scenario reflect traffic increases due to nearby and regional development along with background roadway network changes and street improvements. The forecasted Cumulative without Project Conditions traffic volumes were then used as the baseline to identify the project's effects on the operations of the circulation system. Traffic volumes for the Cumulative without Project scenario are presented in **Figure 9**.

Intersection Operations

Cumulative conditions without the addition of project generated traffic were evaluated using the methods described in Chapter 1. The analysis results are presented in **Table 11**, based on the traffic volumes and lane configurations presented in **Figure 9**.



XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign

Project Site | # Study Intersection

Figure 9

Cumulative Without Project Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control

WC23-3955_1_StudyArea

Table 10: Cumulative without Project Peak Hour Intersection LOS Summary

	Intersection	Control[1]	Peak Hour[2]	Cumulative Conditions	
				Delay[3]	LOS
1	Hacienda Drive & I-580 Westbound Ramps	Signal	AM PM	8.4 9.9	A A
2	Hacienda Drive & I-580 Eastbound Ramps	Signal	AM PM	17.1 14.2	B B
3	Hacienda Drive & Owens Drive	Signal	AM PM	15.8 33.3	B C
4	Rosewood Drive & Owens Drive	Signal	AM PM	9.9 10.6	A B
5	West Las Positas Boulevard & Owens Drive	Signal	AM PM	26.9 17.5	C B
6	Project Driveway West & Owens Drive	SSSC	AM PM	0.8 (32.0) 1.0 (30.5)	A (D) A (D)
7	Project Driveway East & Owens Drive	SSSC	AM PM	0.1 (11.4) 0.1 (10.6)	A (B) A (B)

1. Existing intersection traffic control type (Signal = Signalized, SSSC = Side-Street Stop-Control)
2. AM = Weekday morning peak hour; PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized intersections. Side-Street Stop-Control intersection delay presented as Whole Intersection Average Delay (Worst Movement Delay).
4. Delay calculated per HCM 2000 methodologies.

Bold indicates potentially unacceptable operations.
Source: Fehr & Peers, December 2024.

As shown in **Table 11**, all study intersections operate acceptably during cumulative without project conditions.

Vehicle Queues

Table 12 presents the 95th percentile vehicle queue results for signalized study intersections in the Cumulative without Project scenario. Queue worksheets are provided in **Appendix C**. The following queues were found to exceed the available storage:

- Hacienda Drive & Owens Drive – Eastbound Left Turn Lane – PM Peak Hour
- Hacienda Drive & Owens Drive – Southbound Left Turn – AM and PM Peak Hours
- West Las Positas Boulevard & Owens Drive – Northbound Left Turn – AM Peak Hour

Table 12: Cumulative without Project Conditions – 95th Percentile Queues

	Intersection	Movement	Storage Length (ft)[1]	Cumulative Conditions	
				AM Peak Period	PM Peak Period
1	Hacienda Drive & I-580 Westbound Ramps	WBL	1,350	150	100
		WBR	1,350	125	150
		NBT	960	125	300
		SBT	550	200	250
2	Hacienda Drive & I-580 Eastbound Ramps	EBL	1,230	300	200
		EBR	1,230	200	75
		NBT	960	125	375
		NBR	960	50	50
		SBT	780	350	150
3	Hacienda Drive & Owens Drive	EBL	370	75	**475**
		EBT	640	50	225
		WBL	160	75	150
		WBT	790	150	125
		NBL	350	50	50
		NBT	640	125	350
		SBL	450	**475**	**650**
		SBT	920	275	225
4	Rosewood Drive & Owens Drive	EBL	200	150	200
		EBT	790	175	225
		WBL	140	25	50
		WBT	1,460	225	200
		NBL	100	75	75
		NBT	100	50	50
		SBL	940	50	75
		SBT	940	25	25
5	West Las Positas Boulevard & Owens Drive	EBL	540	250	300
		EBR	540	75	75
		NBL	180	**300**	125
		NBT	270	50	100
		SBT	940	525	350
		SBR	940	75	75

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

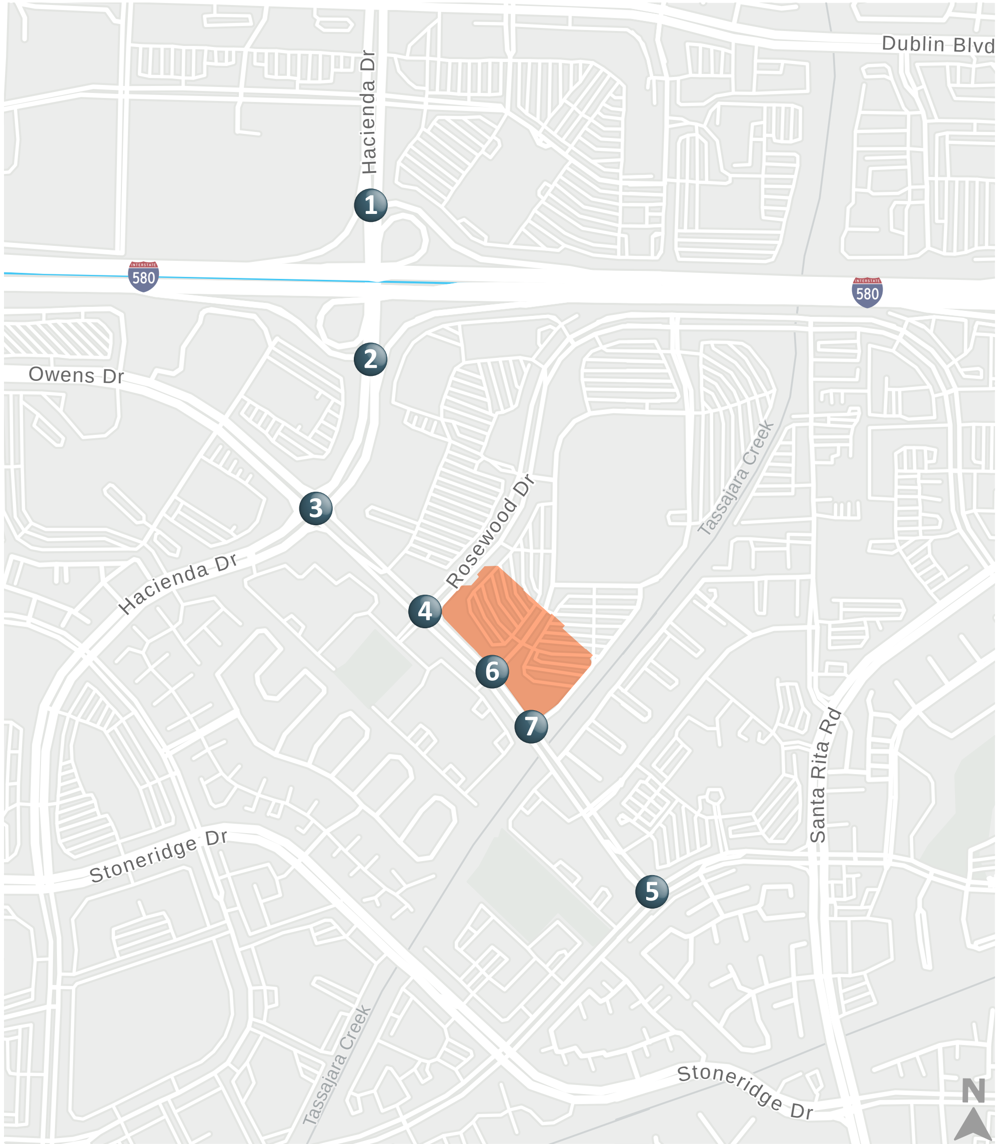
Bold indicates queue potentially extends beyond available storage.
Source: Fehr & Peers, December 2024.

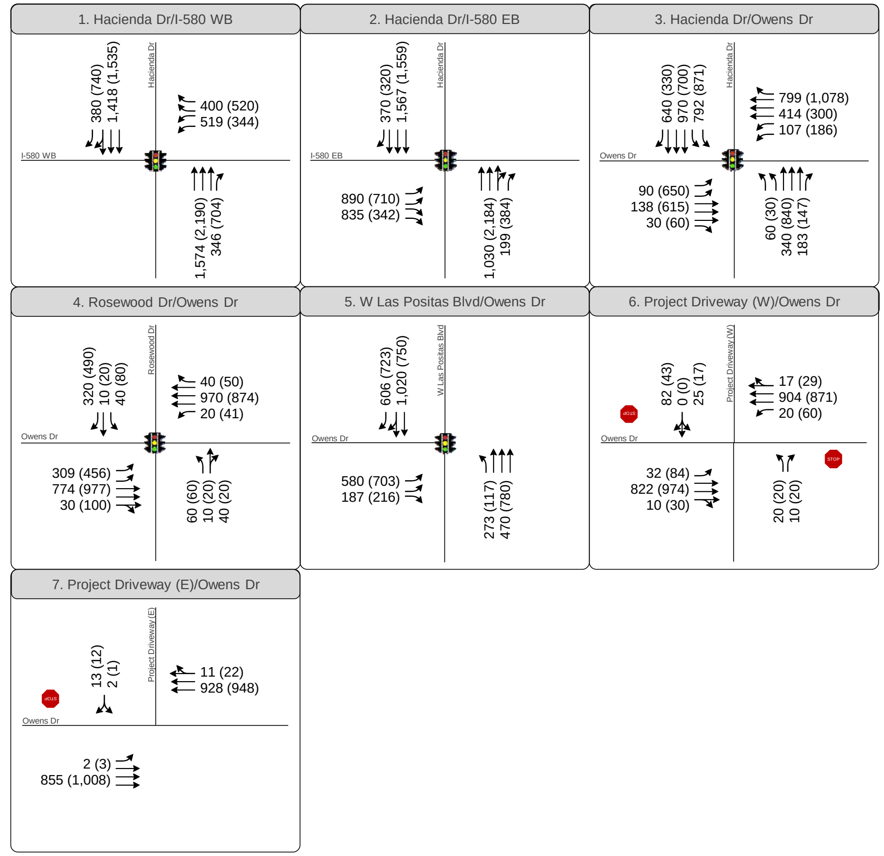
Cumulative with Project Conditions

As discussed in the Existing with Project scenario, a similar mixed use residential project was previously approved on the site. To compare the differences in effects between the currently proposed project and the prior project, the "with project" scenarios include two disparate scenarios with the currently proposed project and the previously approved project's trip assignments added on to cumulative traffic volumes.

Intersection Operations

Intersections were evaluated under Cumulative with Project conditions using the methods described in Chapter 1. The Cumulative with Project results are presented in **Table 13**, based on the traffic volumes and intersection configurations presented in **Figure 10**, along with the results for Cumulative conditions.





XX (YY) AM (PM) Peak Hour Traffic Volumes — Signalized Intersection — Stop Sign

Project Site — # Study Intersection

Figure 10

Cumulative With Project Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control

WC23-3955_1_StudyArea

Table 11: Cumulative with Project Peak Hour Intersection LOS Summary

	Intersection	Control[1]	Peak Hour[2]	Cumulative Conditions		Cumulative with Approved Project		Cumulative with Proposed Project	
				Delay[3]	LOS	Delay	LOS	Delay	LOS
1	Hacienda Drive & I-580 Westbound Ramps	Signal	AM	8.4	A	8.4	A	8.4	A
			PM	9.9	A	9.9	A	10.0	A
2	Hacienda Drive & I-580 Eastbound Ramps	Signal	AM	17.1	B	17.1	B	17.4	B
			PM	14.2	B	14.4	B	14.6	B
3	Hacienda Drive & Owens Drive	Signal	AM	15.8	B	15.9	B	16.0	B
			PM	33.3	C	36.3	D	38.1	D
4	Rosewood Drive & Owens Drive	Signal	AM	9.9	A	10.0	A	11.4	B
			PM	10.6	B	10.8	B	11.3	B
5	West Las Positas Boulevard & Owens Drive	Signal	AM	26.9	C	28.3	C	28.1	C
			PM	17.5	B	18.5	B	18.5	B
6	Project Driveway West & Owens Drive	SSSC	AM	0.8 (32.0)	A (D)	**2.7 (44.6)**	**A (E)**	**2.8 (52.4)**	**A (F)**
			PM	1.0 (30.5)	A (D)	**2.2 (48.4)**	**A (E)**	**2.6 (56.3)**	**A (F)**
7	Project Driveway East & Owens Drive	SSSC	AM	0.1 (11.4)	A (B)	0.5 (31.0)	A (D)	0.2 (17.4)	A (C)
			PM	0.1 (10.6)	A (B)	0.2 (18.7)	A (C)	0.1 (12.4)	A (B)

Notes:
1. AM = Weekday morning peak hour; PM = Weekday evening peak hour
2. Whole intersection average delay reported for signalized intersections. TWSC delay presented as Whole Intersection Average Delay (Worst Movement Delay).
3. Delay calculated per HCM 2000 methodologies.

Bold indicates unacceptable operations.
Source: Fehr & Peers, December 2024

As shown in **Table 13**, all study intersections operate acceptably during Cumulative with Project conditions except for the intersection of the main project driveway and Owens Drive. The minor street movement at this intersection would function at an unacceptable level with either the approved or currently proposed project (LOS E and F respectively). Peak hour warrants for the installation of a traffic signal would be satisfied at this location with the forecast cumulative plus project volumes (calculation sheets in **Appendix D**).

> ***Improvement Recommendation 7*** – Monitor traffic volumes and install a traffic signal at the project's main intersection with Owens Drive if volumes increase to a level wherein the installation of a signal is warranted.

Vehicle Queues

Table 14 presents the 95th percentile vehicle queue results for signalized study intersections in the Cumulative with Project scenario. Queue worksheets are provided in **Appendix C**. The following queues were found to exceed the available storage:

- Hacienda Drive & Owens Drive – Eastbound Left Turn Lane – PM Peak Hour
- Hacienda Drive & Owens Drive – Southbound Left Turn – AM and PM Peak Hours
- West Las Positas Boulevard & Owens Drive – Northbound Left Turn – AM Peak Hour

Table 14: Cumulative with Project Conditions – 95th Percentile Queues

Intersection		Movement	Storage Length (ft)[1]	Cumulative Conditions		Cumulative with Approved Project		Cumulative with Proposed Project	
				AM Peak Period	PM Peak Period	AM Peak Period	PM Peak Period	AM Peak Period	PM Peak Period
1	Hacienda Drive & I-580 Westbound Ramps	WBL	1350	150	100	150	100	150	100
		WBR	1350	125	150	125	150	125	150
		NBT	960	125	300	125	300	125	300
		SBT	550	200	250	200	250	200	250
2	Hacienda Drive & I-580 Eastbound Ramps	EBL	1230	300	200	300	200	300	200
		EBR	1230	200	75	200	75	200	75
		NBT	960	125	375	125	400	125	425
		NBR	960	50	50	50	50	50	50
		SBT	780	350	150	350	175	375	175
3	Hacienda Drive & Owens Drive	EBL	370	75	**475**	75	**475**	75	**475**
		EBT	640	50	225	50	225	75	225
		WBL	160	75	150	100	150	100	150
		WBT	790	150	125	150	125	150	125
		NBL	350	50	50	50	50	50	50
		NBT	640	125	350	125	350	125	350
		SBL	450	**475**	**650**	**500**	***700***	**525**	***725***
		SBT	920	275	225	275	225	275	225
4	Rosewood Drive & Owens Drive	EBL	200	150	200	150	200	150	200
		EBT	790	175	225	175	225	175	250
		WBL	140	25	50	25	50	50	75
		WBT	1460	225	200	250	225	275	225
		NBL	100	75	75	75	75	75	75
		NBT	100	50	50	50	50	50	50
		SBL	940	50	75	50	75	50	75
		SBT	940	25	25	25	25	25	25
5	West Las Positas Boulevard & Owens Drive	EBL	540	250	300	275	325	275	325
		EBR	540	75	75	75	75	75	75
		NBL	180	**300**	125	**300**	125	**300**	125
		NBT	270	50	100	50	100	50	100
		SBT	940	525	350	525	350	525	350
		SBR	940	75	75	75	75	75	75

Notes:

2. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

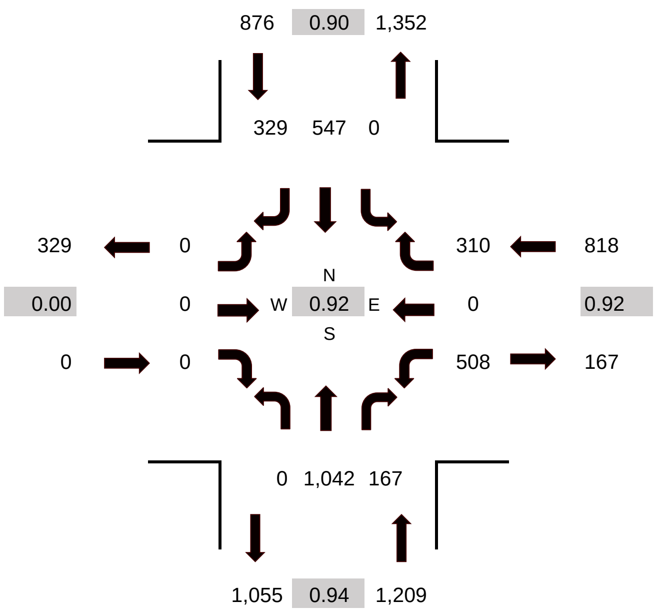
Bold indicates queue potentially extends beyond available storage.
Bold italic indicates a potential community concern.
Source: Fehr & Peers, December 2024.

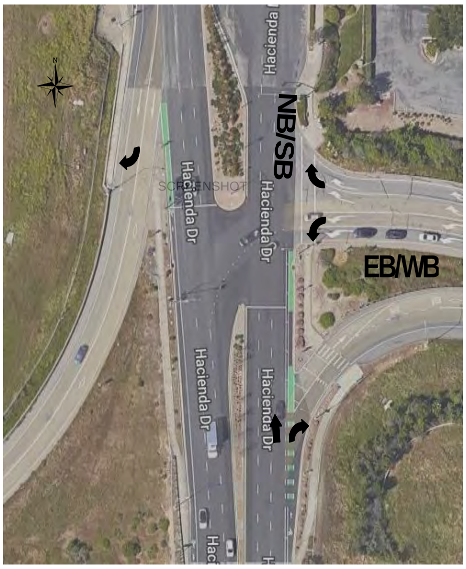
Traffic associated with the project was found to increase the southbound left turn queue at the Hacienda Drive/Owens Drive intersection in the Cumulative plus Project scenario in the PM peak hour. Project traffic would increase the queue length at this location by 25 feet from 700 feet to 725 feet where the available storage is 450 feet. This is a violation of the City's policies.

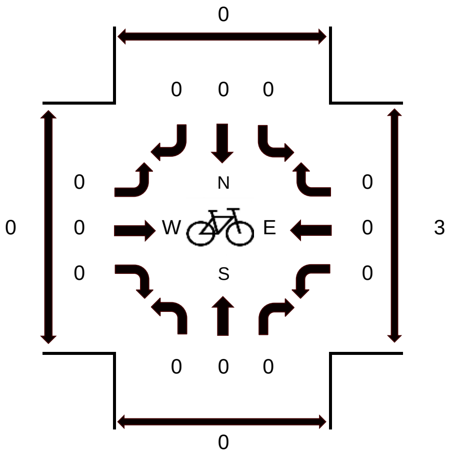
> ***Improvement Recommendation 8*** – Monitor traffic volumes and install a modification to accommodate the queue if the storage is found to exceed the available storage in the future. The proximity of the I-580 Eastbound Ramps/Hacienda Drive intersection constrains the ability of lengthening the existing double left turn pocket on the southbound approach. However, restriping a southbound through lane to a third left turn lane would result in the queue being accommodated within the available storage. With this geometric modification the intersection would function at LOS D in the Cumulative plus Project scenario (within the City's LOS policies).

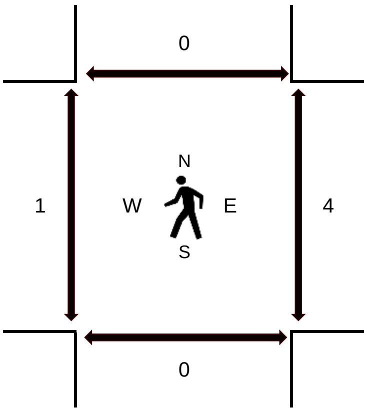
Appendix A:
Traffic Count Worksheets

AimTD LLC **ID53** HaciendaDr_at_I580WBRamps **Date and Start Time:** February 29, 2024 Thursday at 7:00 AM
City: Pleasanton **Peak Rolling Hour** 8:00 AM - 9:00 AM **Peak 15-Minutes** 8:20 AM - 8:35 AM





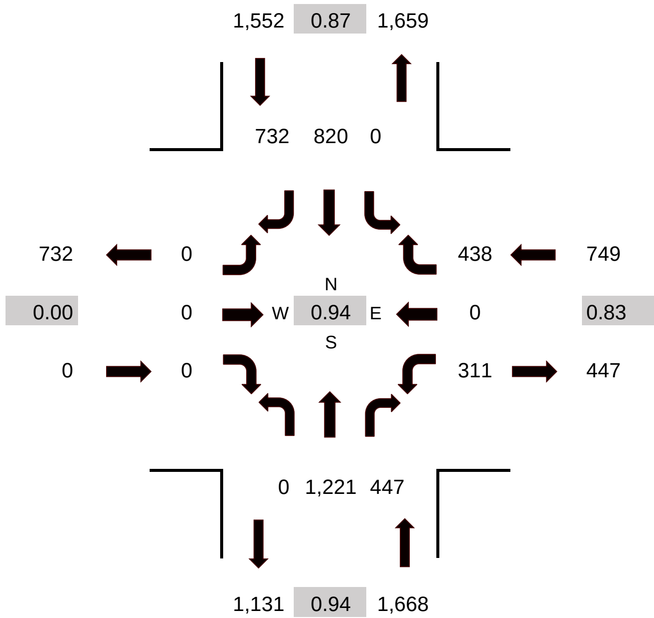


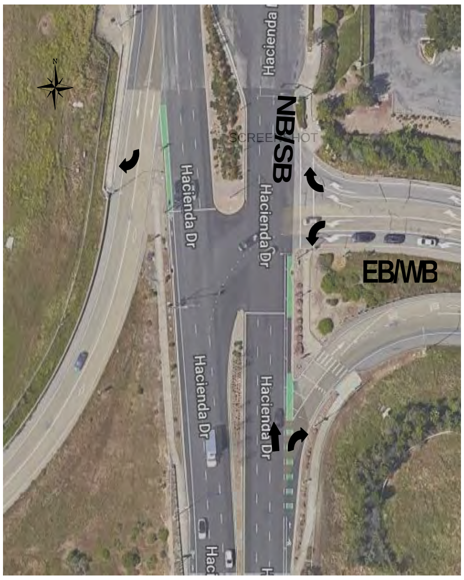


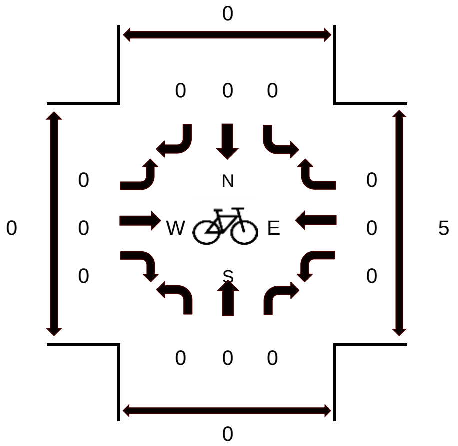
5-Minute Count Starting at:	I580 WB RAMPS Eastbound Left	Thru	Right	I580 WB RAMPS Westbound Left	Thru	Right	HACIENDA DR Northbound Left	Thru	Right	HACIENDA DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
7:00 AM	0	0	0	20	0	24	0	34	13	0	16	14	121	121	0	0	0	0
7:05 AM	0	0	0	29	0	25	0	38	9	0	22	23	146	267	0	0	0	0
7:10 AM	0	0	0	17	0	17	0	32	8	0	34	17	125	392	0	0	0	0
7:15 AM	0	0	0	21	0	13	0	35	5	0	20	33	127	519	0	0	0	0
7:20 AM	0	0	0	31	0	26	0	36	13	0	21	17	144	663	0	0	0	0
7:25 AM	0	0	0	36	0	38	0	38	13	0	22	25	172	835	0	0	0	0
7:30 AM	0	0	0	34	0	16	0	33	13	0	25	25	146	981	1	0	0	0
7:35 AM	0	0	0	35	0	26	0	49	18	0	42	19	189	1,170	0	0	0	0
7:40 AM	0	0	0	35	0	30	0	54	15	0	25	22	181	1,351	0	0	0	0
7:45 AM	0	0	0	32	0	27	0	61	11	0	29	12	172	1,523	0	0	0	0
7:50 AM	0	0	0	31	0	25	0	68	17	0	28	32	201	1,724	1	0	0	0
7:55 AM	0	0	0	59	0	29	0	53	13	0	34	29	217	1,941	1	0	0	0
8:00 AM	0	0	0	39	0	25	0	86	16	0	28	31	225	2,045	0	0	0	0
8:05 AM	0	0	0	38	0	30	0	95	12	0	40	30	245	2,144	0	0	0	0
8:10 AM	0	0	0	55	0	27	0	74	11	0	42	35	244	2,263	0	0	0	0
8:15 AM	0	0	0	45	0	27	0	76	13	0	27	44	232	2,368	0	0	0	0
8:20 AM	0	0	0	41	0	20	0	90	13	0	64	30	258	2,482	0	0	0	0
8:25 AM	0	0	0	54	0	32	0	94	23	0	43	30	276	2,586	0	0	0	0
8:30 AM	0	0	0	51	0	24	0	91	12	0	50	27	255	2,695	0	0	0	0
8:35 AM	0	0	0	36	0	16	0	92	10	0	30	19	203	2,709	2	0	0	0
8:40 AM	0	0	0	38	0	17	0	77	16	0	55	21	224	2,752	1	0	0	0
8:45 AM	0	0	0	34	0	37	0	89	11	0	62	15	248	2,828	0	1	0	0
8:50 AM	0	0	0	46	0	24	0	88	15	0	65	26	264	2,891	0	0	0	0
8:55 AM	0	0	0	31	0	31	0	90	15	0	41	21	229	2,903	1	0	0	0

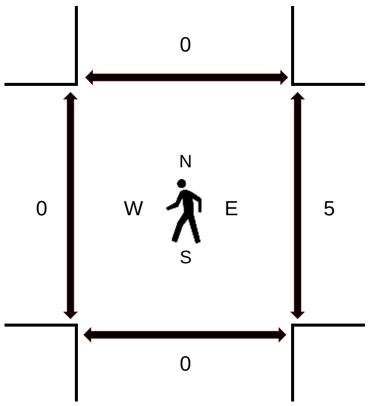
Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	0	0	0	508	0	310	0	1,042	167	0	547	329	2,903
Articulated Trucks	0	0	0	2	0	5	0	0	0	0	2	1	10
Buses	0	0	0	2	0	3	0	2	0	0	4	1	12
Single-Unit Trucks	0	0	0	1	0	6	0	14	8	0	9	9	47
Lights	0	0	0	503	0	296	0	1,026	159	0	532	318	2,834

AimTD LLC **ID53** HaciendaDr_at_I580WBRamps **Date and Start Time:** February 28, 2024 Wednesday at 4:30 PM
City: Pleasanton **Peak Rolling Hour** 5:00 PM - 6:00 PM **Peak 15-Minutes** 5:10 PM - 5:25 PM







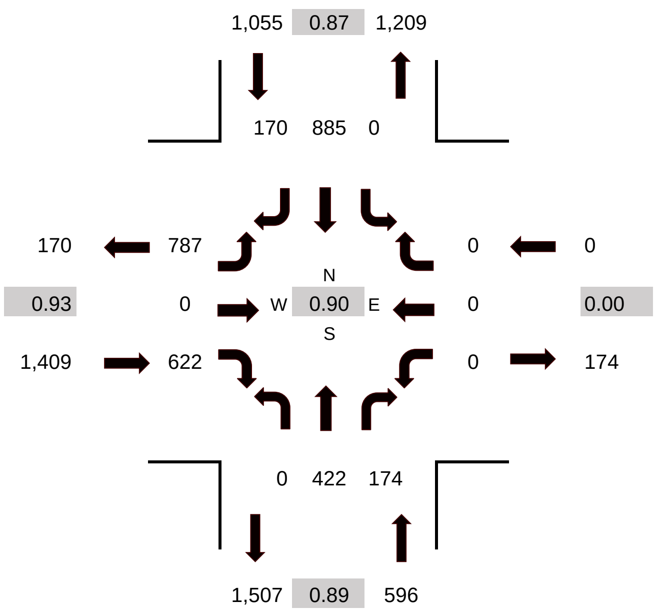


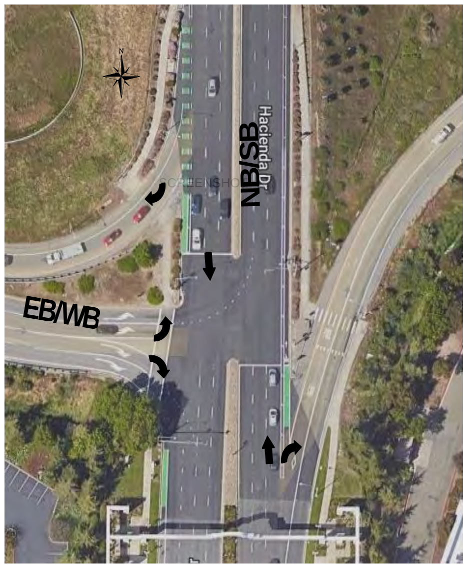
5-Minute Count Starting at:	I580 WB RAMPS Eastbound Left	Thru	Right	I580 WB RAMPS Westbound Left	Thru	Right	HACIENDA DR Northbound Left	Thru	Right	HACIENDA DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
4:30 PM	0	0	0	16	0	34	0	78	43	0	61	63	295	295	2	0	0	0
4:35 PM	0	0	0	14	0	30	0	73	47	0	57	52	273	568	0	0	0	0
4:40 PM	0	0	0	20	0	28	0	87	49	0	52	70	306	874	1	0	0	0
4:45 PM	0	0	0	15	0	24	0	78	43	0	74	49	283	1,157	0	0	0	0
4:50 PM	0	0	0	22	0	33	0	84	45	0	42	47	273	1,430	2	1	0	0
4:55 PM	0	0	0	15	0	21	0	90	34	0	53	44	257	1,687	0	0	0	0
5:00 PM	0	0	0	22	0	34	0	88	37	0	67	71	319	2,006	0	0	0	0
5:05 PM	0	0	0	21	0	29	0	99	50	0	67	77	343	2,349	1	0	0	0
5:10 PM	0	0	0	32	0	26	0	99	49	0	75	84	365	2,714	2	0	0	0
5:15 PM	0	0	0	22	0	36	0	105	38	0	72	71	344	3,058	1	0	0	0
5:20 PM	0	0	0	22	0	30	0	117	35	0	82	61	347	3,405	1	0	0	0
5:25 PM	0	0	0	25	0	35	0	102	44	0	69	58	333	3,738	0	0	0	0
5:30 PM	0	0	0	19	0	34	0	84	41	0	82	62	322	3,765	0	0	0	0
5:35 PM	0	0	0	23	0	46	0	114	37	0	70	47	337	3,829	0	0	0	0
5:40 PM	0	0	0	30	0	37	0	115	23	0	66	59	330	3,853	0	0	0	0
5:45 PM	0	0	0	23	0	40	0	89	36	0	82	52	322	3,892	0	0	0	0
5:50 PM	0	0	0	37	0	51	0	109	25	0	38	48	308	3,927	0	0	0	0
5:55 PM	0	0	0	35	0	40	0	100	32	0	50	42	299	3,969	0	0	0	0
6:00 PM	0	0	0	13	0	31	0	114	32	0	76	48	314	3,964	1	0	0	0
6:05 PM	0	0	0	18	0	26	0	105	37	0	60	46	292	3,913	1	0	0	0
6:10 PM	0	0	0	20	0	35	0	90	44	0	66	48	303	3,851	1	0	0	0
6:15 PM	0	0	0	12	0	30	0	61	31	0	65	59	258	3,765	0	0	0	0
6:20 PM	0	0	0	10	0	20	0	84	29	0	65	35	243	3,661	0	0	0	0
6:25 PM	0	0	0	18	0	25	0	71	32	0	63	48	257	3,585	0	0	0	0

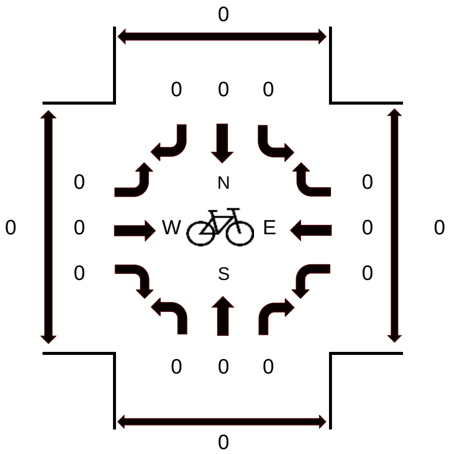
Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	0	0	0	311	0	438	0	1,221	447	0	820	732	3,969
Articulated Trucks	0	0	0	0	0	0	0	0	1	0	1	1	3
Buses	0	0	0	5	0	0	0	0	1	0	3	0	9
Single-Unit Trucks	0	0	0	2	0	0	0	0	2	0	1	4	9
Lights	0	0	0	304	0	438	0	1,221	443	0	815	727	3,948

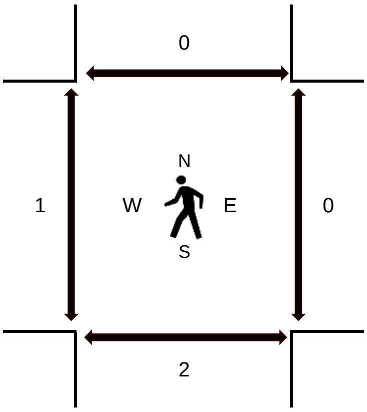
AimTD LLC **ID54** HaciendaDr_at_I580EBRamps **Date and Start Time:** February 29, 2024 Thursday at 7:00 AM

City: Pleasanton **Peak Rolling Hour** 8:00 AM - 9:00 AM **Peak 15-Minutes** 8:20 AM - 8:35 AM







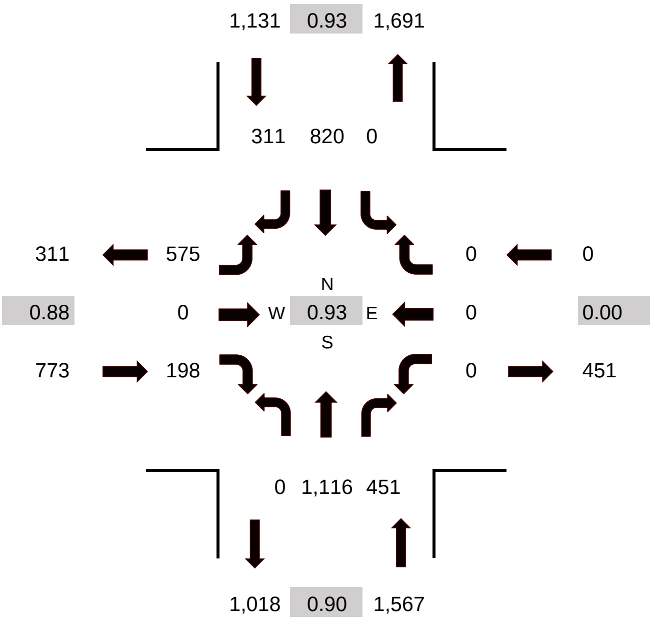


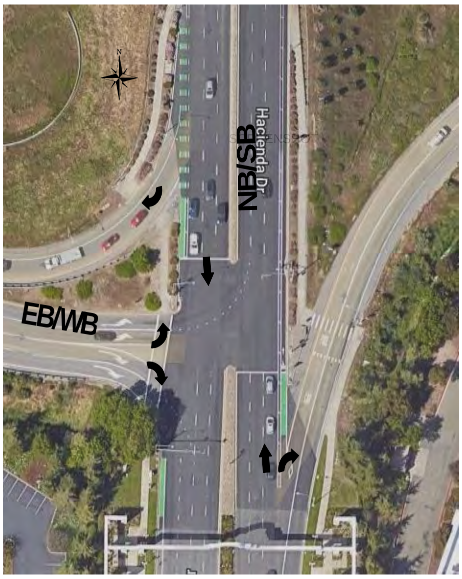
5-Minute Count Starting at:	I580 EB RAMPS Eastbound			I580 EB RAMPS Westbound			HACIENDA DR Northbound			HACIENDA DR Southbound			Total	Rolling Hour	Pedestrian Crossings			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			E	W	N	S
7:00 AM	29	0	29	0	0	0	0	18	9	0	28	8	121	121	0	0	0	0
7:05 AM	30	0	12	0	0	0	0	17	9	0	40	11	119	240	0	0	0	0
7:10 AM	24	0	20	0	0	0	0	16	6	0	32	19	117	357	0	0	0	0
7:15 AM	29	0	23	0	0	0	0	11	4	0	33	8	108	465	0	0	0	0
7:20 AM	29	0	22	0	0	0	0	20	6	0	40	7	124	589	0	0	0	0
7:25 AM	31	0	26	0	0	0	0	20	3	0	49	9	138	727	0	0	0	0
7:30 AM	27	0	25	0	0	0	0	19	4	0	51	8	134	861	0	0	0	0
7:35 AM	39	0	29	0	0	0	0	28	15	0	60	17	188	1,049	0	0	0	0
7:40 AM	46	0	51	0	0	0	0	23	7	0	45	15	187	1,236	0	0	0	0
7:45 AM	46	0	42	0	0	0	0	26	14	0	48	13	189	1,425	0	0	0	0
7:50 AM	59	0	44	0	0	0	0	28	14	0	51	8	204	1,629	0	0	0	0
7:55 AM	46	0	47	0	0	0	0	20	11	0	81	12	217	1,846	0	0	0	0
8:00 AM	69	0	38	0	0	0	0	33	12	0	56	11	219	1,944	0	0	0	0
8:05 AM	70	0	42	0	0	0	0	37	8	0	64	14	235	2,060	0	0	0	0
8:10 AM	63	0	59	0	0	0	0	22	8	0	79	18	249	2,192	0	0	0	0
8:15 AM	52	0	60	0	0	0	0	37	11	0	62	10	232	2,316	0	0	0	0
8:20 AM	72	0	55	0	0	0	0	31	20	0	94	11	283	2,475	0	0	0	0
8:25 AM	66	0	52	0	0	0	0	51	18	0	84	13	284	2,621	0	0	0	0
8:30 AM	75	0	59	0	0	0	0	28	16	0	84	17	279	2,766	0	0	0	0
8:35 AM	66	0	57	0	0	0	0	36	17	0	53	13	242	2,820	0	0	0	0
8:40 AM	56	0	46	0	0	0	0	37	20	0	77	16	252	2,885	0	1	0	2
8:45 AM	69	0	60	0	0	0	0	31	23	0	82	14	279	2,975	0	0	0	0
8:50 AM	59	0	43	0	0	0	0	44	10	0	92	19	267	3,038	0	0	0	0
8:55 AM	70	0	51	0	0	0	0	35	11	0	58	14	239	3,060	0	0	0	0

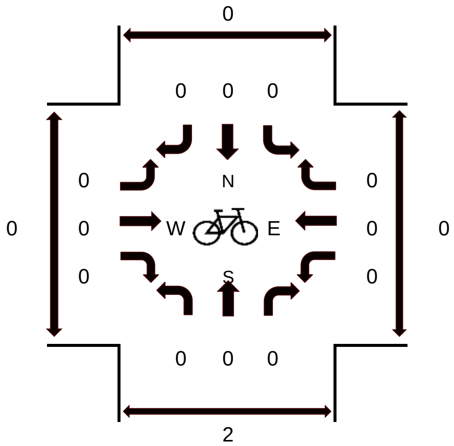
Peak Hour	Eastbound			Westbound			Northbound			Southbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
All Vehicles	787	0	622	0	0	0	0	422	174	0	885	170	3,060
Articulated Trucks	0	0	1	0	0	0	0	0	2	0	2	2	7
Buses	2	0	1	0	0	0	0	0	5	0	4	2	14
Single-Unit Trucks	13	0	4	0	0	0	0	9	6	0	3	7	42
Lights	772	0	616	0	0	0	0	413	161	0	876	159	2,997

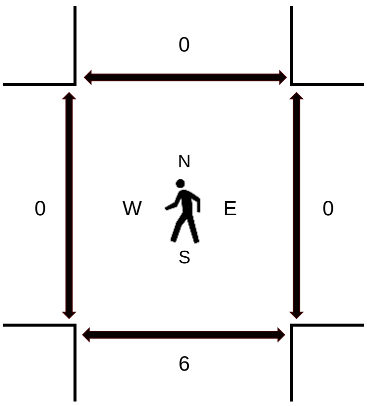
AimTD LLC **ID54** HaciendaDr_at_I580EBRamps **Date and Start Time:** February 28, 2024 Wednesday at 4:30 PM

City: Pleasanton **Peak Rolling Hour** 5:05 PM - 6:05 PM **Peak 15-Minutes** 5:10 PM - 5:25 PM







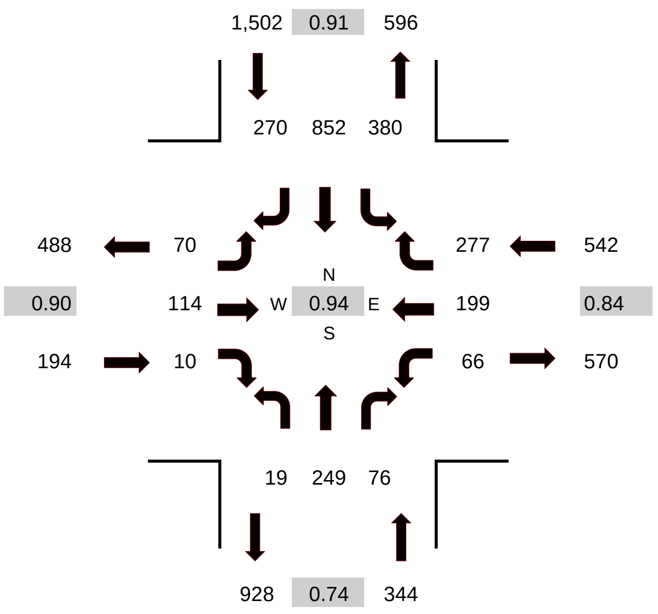


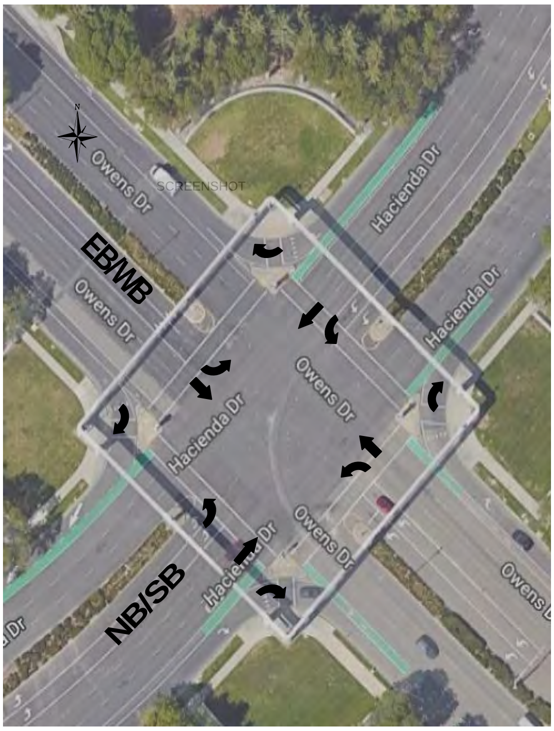
5-Minute Count Starting at:	I580 EB RAMPS Eastbound Left	Thru	Right	I580 EB RAMPS Westbound Left	Thru	Right	HACIENDA DR Northbound Left	Thru	Right	HACIENDA DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
4:30 PM	35	0	14	0	0	0	0	86	32	0	51	26	244	244	0	0	0	1
4:35 PM	39	0	15	0	0	0	0	81	39	0	54	17	245	489	0	0	0	0
4:40 PM	44	0	24	0	0	0	0	92	47	0	45	27	279	768	0	0	0	0
4:45 PM	35	0	18	0	0	0	0	86	32	0	59	30	260	1,028	0	1	0	0
4:50 PM	52	0	22	0	0	0	0	77	42	0	47	17	257	1,285	0	0	0	1
4:55 PM	41	0	11	0	0	0	0	83	31	0	45	23	234	1,519	0	0	0	0
5:00 PM	43	0	15	0	0	0	0	82	59	0	58	31	288	1,807	0	0	0	0
5:05 PM	48	0	15	0	0	0	0	101	41	0	66	22	293	2,100	0	0	0	4
5:10 PM	38	0	13	0	0	0	0	110	39	0	73	34	307	2,407	0	0	0	0
5:15 PM	50	0	21	0	0	0	0	93	53	0	65	29	311	2,718	0	0	0	0
5:20 PM	58	0	18	0	0	0	0	94	45	0	74	30	319	3,037	0	0	0	0
5:25 PM	48	0	25	0	0	0	0	98	40	0	68	26	305	3,342	0	0	0	0
5:30 PM	34	0	23	0	0	0	0	91	30	0	79	22	279	3,377	0	0	0	0
5:35 PM	53	0	14	0	0	0	0	98	27	0	67	26	285	3,417	0	0	0	0
5:40 PM	51	0	17	0	0	0	0	87	43	0	66	30	294	3,432	0	0	0	0
5:45 PM	38	0	17	0	0	0	0	87	33	0	77	28	280	3,452	0	0	0	0
5:50 PM	51	0	8	0	0	0	0	83	36	0	60	15	253	3,448	0	0	0	0
5:55 PM	52	0	15	0	0	0	0	80	24	0	70	15	256	3,470	0	0	0	1
6:00 PM	54	0	12	0	0	0	0	94	40	0	55	34	289	3,471	0	0	0	1
6:05 PM	52	0	19	0	0	0	0	90	32	0	47	31	271	3,449	0	0	0	1
6:10 PM	39	0	24	0	0	0	0	95	32	0	59	27	276	3,418	0	0	0	0
6:15 PM	31	0	20	0	0	0	0	61	30	0	43	34	219	3,326	0	0	0	0
6:20 PM	51	0	17	0	0	0	0	62	32	0	41	34	237	3,244	0	0	0	0
6:25 PM	44	0	21	0	0	0	0	59	30	0	54	25	233	3,172	0	0	0	0

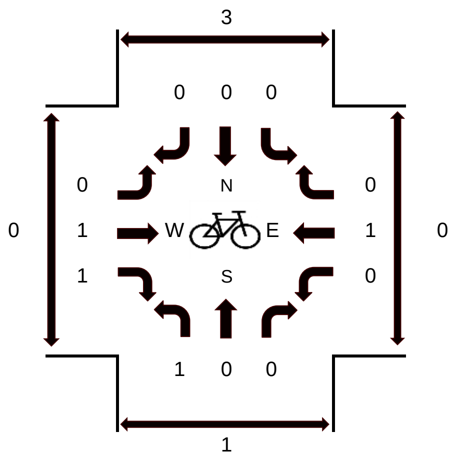
Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	575	0	198	0	0	0	0	1,116	451	0	820	311	3,471
Articulated Trucks	0	0	0	0	0	0	0	2	1	0	1	0	4
Buses	0	0	3	0	0	0	0	1	2	0	5	3	14
Single-Unit Trucks	1	0	9	0	0	0	0	2	2	0	2	1	17
Lights	574	0	186	0	0	0	0	1,111	446	0	812	307	3,436

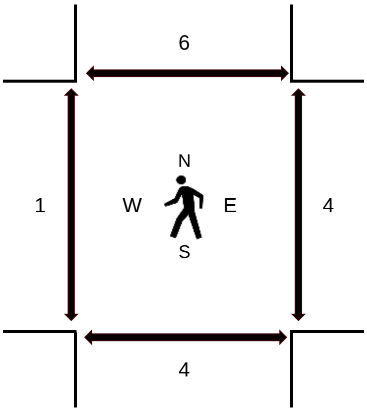
AimTD LLC **ID55** OwensDr_at_HaciendaDr **Date and Start Time:** February 29, 2024 Thursday at 7:00 AM

City: Pleasanton **Peak Rolling Hour** 8:00 AM - 9:00 AM **Peak 15-Minutes** 8:20 AM - 8:35 AM





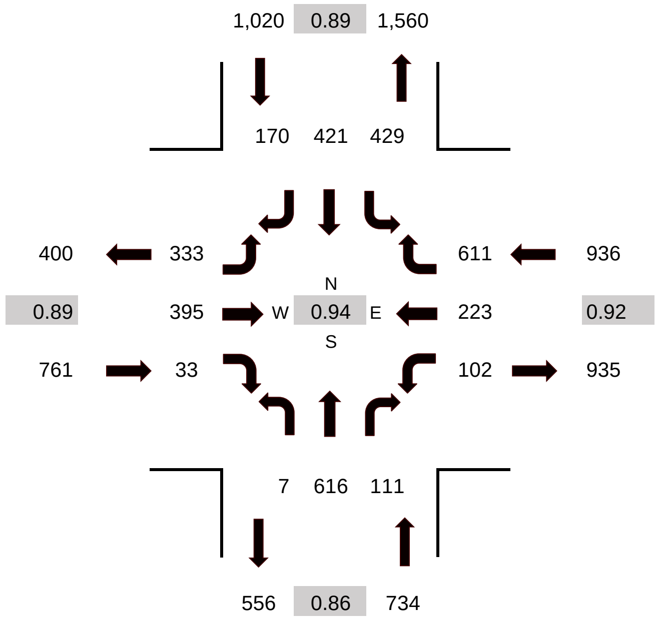


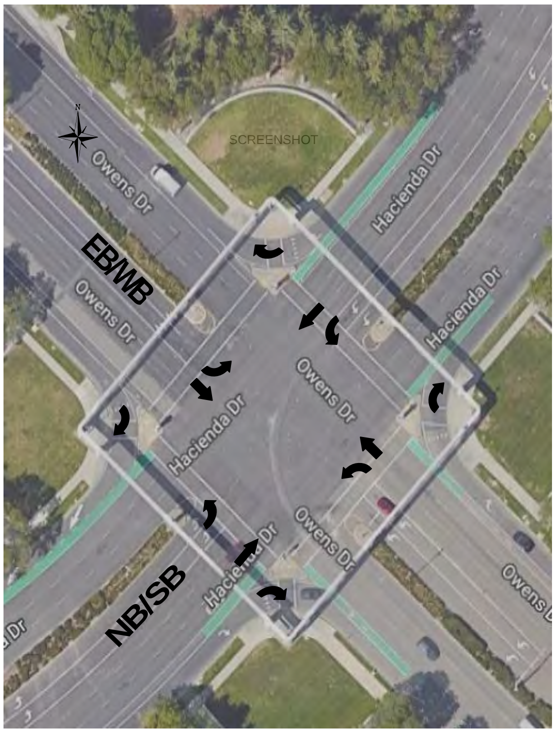


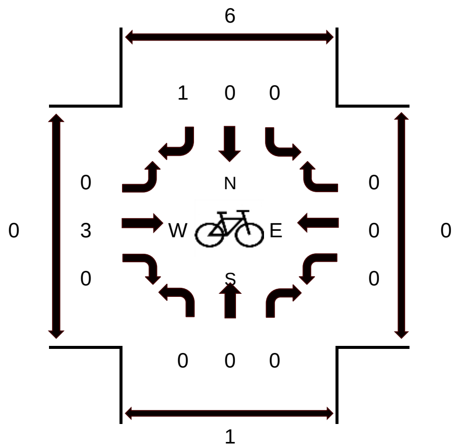
5-Minute Count Starting at:	OWENS DR Eastbound Left	Thru	Right	OWENS DR Westbound Left	Thru	Right	HACIENDA DR Northbound Left	Thru	Right	HACIENDA DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
7:00 AM	2	4	0	2	14	16	2	3	2	20	14	18	97	97	0	0	0	0
7:05 AM	0	10	0	1	15	14	0	10	1	7	25	24	107	204	0	0	0	0
7:10 AM	1	3	1	1	11	10	2	10	0	15	20	17	91	295	0	1	0	1
7:15 AM	2	7	0	5	7	8	1	7	4	13	24	19	97	392	0	0	0	0
7:20 AM	3	6	2	3	21	11	2	9	0	11	31	19	118	510	0	0	0	1
7:25 AM	2	10	0	8	28	17	1	3	2	15	22	24	132	642	0	0	1	1
7:30 AM	5	10	0	3	12	14	0	6	4	20	42	17	133	775	0	0	0	0
7:35 AM	4	12	0	2	16	32	1	9	6	22	41	17	162	937	0	0	0	0
7:40 AM	1	8	0	4	14	21	0	9	4	26	52	21	160	1,097	0	0	0	1
7:45 AM	7	10	2	6	20	22	1	12	3	42	46	18	189	1,286	1	0	0	0
7:50 AM	5	11	1	2	22	23	1	16	2	30	49	20	182	1,468	0	0	0	0
7:55 AM	6	9	0	8	13	17	0	12	3	31	64	28	191	1,659	0	0	0	0
8:00 AM	7	10	1	5	13	26	0	11	8	27	61	18	187	1,749	0	1	0	0
8:05 AM	2	8	1	5	19	24	2	16	6	12	52	28	175	1,817	1	0	0	0
8:10 AM	8	9	1	9	21	20	0	17	4	51	74	23	237	1,963	0	0	0	2
8:15 AM	6	7	2	2	12	18	3	15	3	33	77	17	195	2,061	0	0	1	0
8:20 AM	12	7	2	5	17	19	2	28	3	32	80	24	231	2,174	0	0	0	0
8:25 AM	9	7	0	9	18	27	3	22	2	28	91	18	234	2,276	0	0	3	0
8:30 AM	3	7	1	4	16	18	1	22	7	38	73	30	220	2,363	0	0	0	0
8:35 AM	5	15	1	3	12	19	1	39	4	26	72	22	219	2,420	1	0	0	1
8:40 AM	6	8	0	4	13	22	2	23	10	36	60	22	206	2,466	1	0	1	0
8:45 AM	3	12	0	5	25	28	1	29	8	34	86	23	254	2,531	1	0	0	1
8:50 AM	4	7	1	11	17	30	3	13	8	34	69	26	223	2,572	0	0	0	0
8:55 AM	5	17	0	4	16	26	1	14	13	29	57	19	201	2,582	0	0	1	0

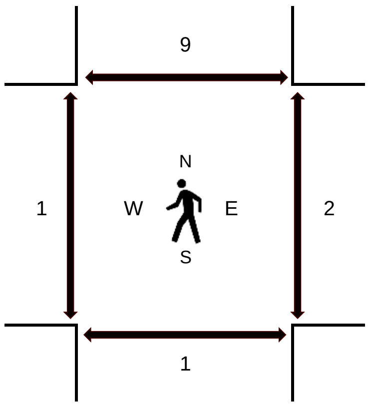
Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	70	114	10	66	199	277	19	249	76	380	852	270	2,582
Articulated Trucks	0	1	0	0	0	1	0	1	0	2	0	1	6
Buses	0	4	2	0	4	0	2	5	0	0	3	2	22
Single-Unit Trucks	3	0	1	0	2	8	0	4	3	3	4	0	28
Lights	67	109	7	66	193	268	17	239	73	375	845	267	2,526

AimTD LLC **ID55** OwensDr_at_HaciendaDr **Date and Start Time:** February 28, 2024 Wednesday at 4:30 PM
City: Pleasanton **Peak Rolling Hour** 5:05 PM - 6:05 PM **Peak 15-Minutes** 5:10 PM - 5:25 PM





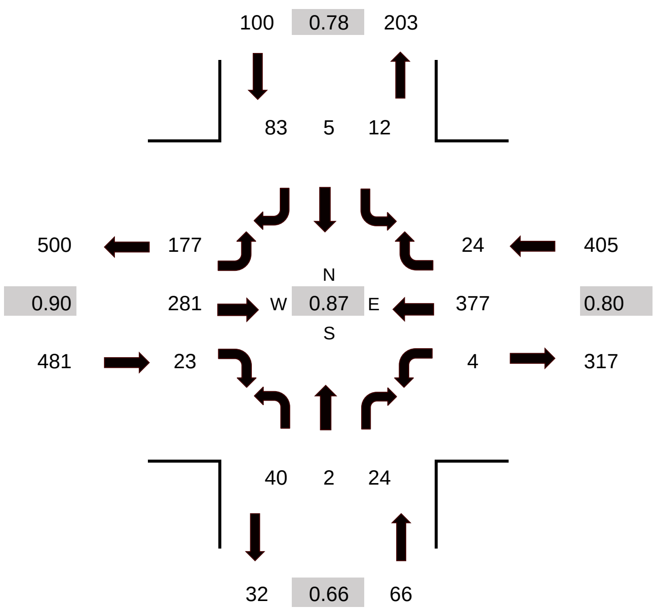


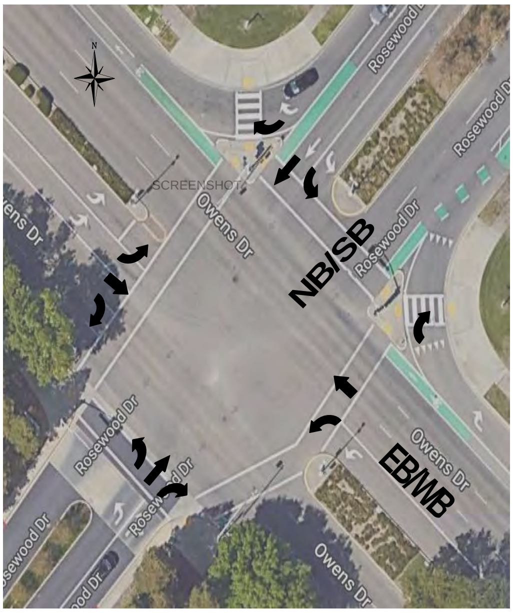


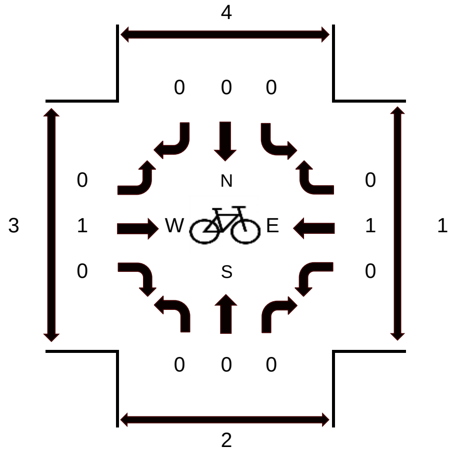
5-Minute Count Starting at:	OWENS DR Eastbound Left	Thru	Right	OWENS DR Westbound Left	Thru	Right	HACIENDA DR Northbound Left	Thru	Right	HACIENDA DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
4:30 PM	18	23	0	5	18	64	1	41	9	33	24	12	248	248	0	2	1	2
4:35 PM	31	27	2	3	18	46	0	49	9	30	35	8	258	506	0	0	0	0
4:40 PM	43	27	2	11	16	50	1	44	9	31	26	11	271	777	0	0	0	0
4:45 PM	16	18	4	11	19	51	1	37	13	38	17	8	233	1,010	0	0	3	1
4:50 PM	23	25	3	9	16	49	2	64	8	31	35	12	277	1,287	0	0	0	0
4:55 PM	17	19	2	3	19	44	2	55	12	30	21	10	234	1,521	0	1	0	1
5:00 PM	42	37	1	12	15	55	0	38	12	34	23	9	278	1,799	1	0	0	0
5:05 PM	23	23	3	7	11	64	0	76	3	33	32	10	285	2,084	0	0	1	0
5:10 PM	35	31	2	11	23	57	1	48	12	38	34	14	306	2,390	0	0	0	0
5:15 PM	31	30	1	9	14	59	0	64	10	38	36	19	311	2,701	0	0	1	0
5:20 PM	33	47	4	5	17	44	2	49	14	33	38	12	298	2,999	0	0	2	0
5:25 PM	20	24	5	6	15	47	0	59	6	56	33	13	284	3,283	0	0	0	0
5:30 PM	17	34	3	7	23	62	0	41	12	39	30	13	281	3,316	1	0	0	0
5:35 PM	27	36	2	12	20	54	0	45	6	37	48	18	305	3,363	0	0	0	0
5:40 PM	46	41	1	10	24	39	1	56	10	27	22	16	293	3,385	0	0	1	0
5:45 PM	17	25	4	8	15	42	2	52	7	34	49	12	267	3,419	0	0	0	0
5:50 PM	24	25	2	9	17	41	0	53	15	27	42	12	267	3,409	0	0	2	0
5:55 PM	19	27	2	4	29	59	1	21	9	34	28	18	251	3,426	0	0	2	1
6:00 PM	41	52	4	14	15	43	0	52	7	33	29	13	303	3,451	1	1	0	0
6:05 PM	16	21	2	9	13	55	4	60	8	36	23	13	260	3,426	0	0	0	0
6:10 PM	24	24	3	8	16	51	1	41	7	32	15	14	236	3,356	0	0	1	0
6:15 PM	14	19	3	7	10	46	2	26	7	34	25	8	201	3,246	0	0	0	0
6:20 PM	32	37	5	7	16	41	0	23	9	36	21	8	235	3,183	0	0	4	0
6:25 PM	8	17	3	7	11	42	1	26	7	41	22	13	198	3,097	0	0	1	0

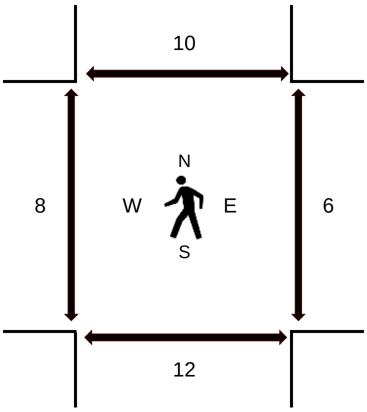
Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	333	395	33	102	223	611	7	616	111	429	421	170	3,451
Articulated Trucks	0	1	0	0	0	2	0	1	0	0	1	0	5
Buses	3	4	3	1	3	0	2	0	0	1	3	4	24
Single-Unit Trucks	0	1	0	0	0	3	0	1	0	8	2	1	16
Lights	330	389	30	101	220	606	5	614	111	420	415	165	3,406

AimTD LLC **ID60** OwensDr_at_RosewoodDr **Date and Start Time:** February 29, 2024 Thursday at 7:00 AM
City: Pleasanton **Peak Rolling Hour** 8:00 AM - 9:00 AM **Peak 15-Minutes** 8:45 AM - 9:00 AM





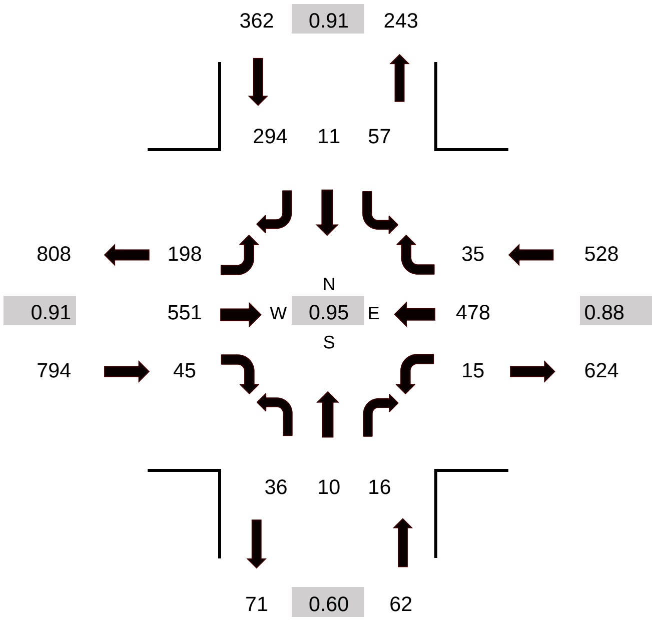


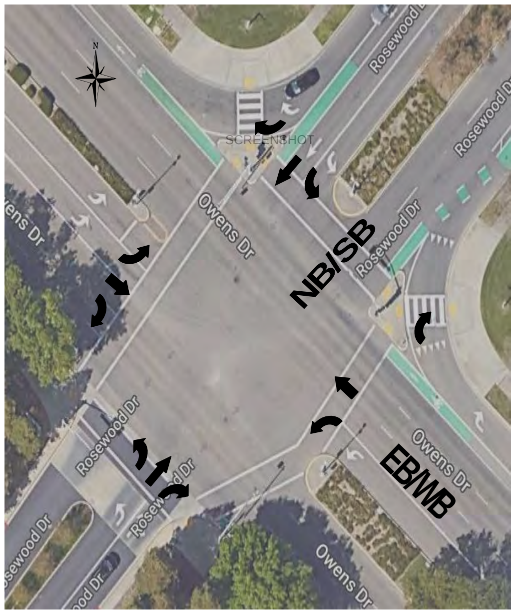


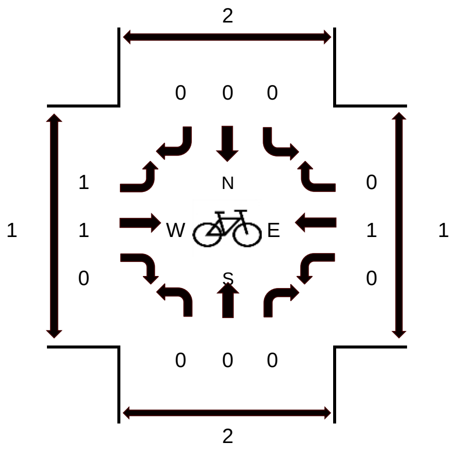
5-Minute Count Starting at:	OWENS DR Eastbound Left	Thru	Right	OWENS DR Westbound Left	Thru	Right	ROSEWOOD DR Northbound Left	Thru	Right	ROSEWOOD DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
7:00 AM	9	10	0	0	20	0	6	0	2	1	0	3	51	51	0	0	0	0
7:05 AM	5	13	0	0	21	0	2	0	1	2	0	3	47	98	0	0	0	1
7:10 AM	5	11	0	1	19	0	0	0	1	0	0	6	43	141	0	0	1	0
7:15 AM	9	11	1	1	14	1	2	0	1	0	0	2	42	183	1	1	0	0
7:20 AM	5	6	0	0	38	4	2	0	1	0	1	1	58	241	1	0	1	0
7:25 AM	3	18	1	0	31	1	6	0	2	1	0	6	69	310	0	0	0	0
7:30 AM	6	13	2	0	25	2	3	0	0	3	1	2	57	367	0	0	0	1
7:35 AM	6	23	0	0	30	2	5	1	2	0	0	7	76	443	1	0	1	0
7:40 AM	10	19	0	0	32	0	2	1	0	2	0	12	78	521	0	1	0	0
7:45 AM	12	27	1	2	39	0	4	0	2	4	0	5	96	617	0	1	0	0
7:50 AM	5	31	1	0	26	0	4	1	1	0	0	4	73	690	0	0	0	0
7:55 AM	9	32	1	1	29	2	2	0	2	1	0	4	83	773	0	1	0	0
8:00 AM	12	23	2	0	34	2	5	0	8	3	0	7	96	818	0	1	0	0
8:05 AM	6	19	1	0	36	1	3	1	1	0	0	6	74	845	2	1	0	1
8:10 AM	8	36	1	1	27	1	6	0	1	0	0	5	86	888	0	2	0	1
8:15 AM	22	25	3	1	25	1	3	0	2	0	1	1	84	930	0	0	0	0
8:20 AM	14	22	2	1	29	1	1	0	1	0	1	11	83	955	3	1	0	2
8:25 AM	13	22	2	0	44	0	1	0	0	2	1	10	95	981	0	0	1	0
8:30 AM	16	24	1	1	27	2	4	0	0	2	0	5	82	1,006	0	0	0	0
8:35 AM	12	18	0	0	23	2	3	0	1	1	0	2	62	992	0	0	1	0
8:40 AM	16	26	5	0	17	3	5	0	0	1	1	12	86	1,000	0	0	0	1
8:45 AM	22	19	1	0	43	5	4	1	1	1	1	8	106	1,010	0	0	0	2
8:50 AM	18	24	1	0	43	2	2	0	5	1	0	6	102	1,039	1	2	1	1
8:55 AM	18	23	4	0	29	4	3	0	4	1	0	10	96	1,052	0	1	7	4

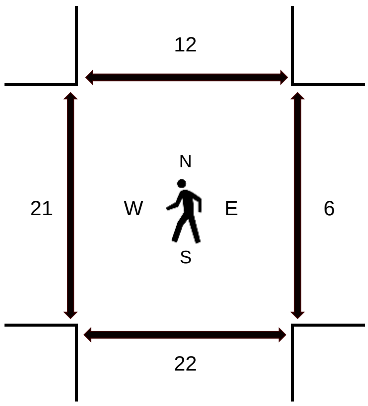
Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	177	281	23	4	377	24	40	2	24	12	5	83	1,052
Articulated Trucks	1	1	0	0	1	0	0	0	0	0	0	0	3
Buses	0	4	0	0	4	0	0	0	0	0	0	0	8
Single-Unit Trucks	2	3	0	0	4	0	0	0	0	0	0	5	14
Lights	174	273	23	4	368	24	40	2	24	12	5	78	1,027

AimTD LLC **ID60** OwensDr_at_RosewoodDr **Date and Start Time:** February 28, 2024 Wednesday at 4:30 PM
City: Pleasanton **Peak Rolling Hour** 5:05 PM - 6:05 PM **Peak 15-Minutes** 5:05 PM - 5:20 PM







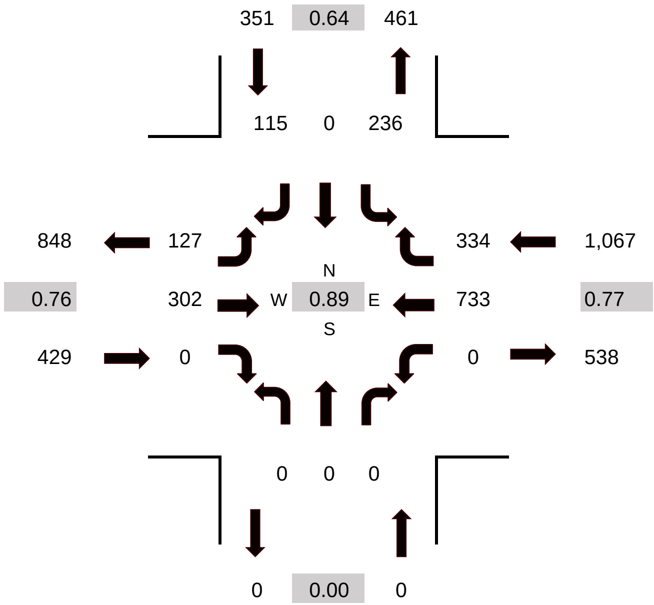


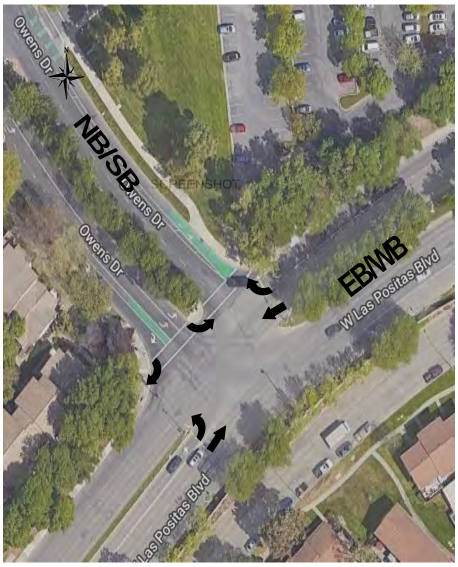
5-Minute Count Starting at:	OWENS DR Eastbound Left	Thru	Right	OWENS DR Westbound Left	Thru	Right	ROSEWOOD DR Northbound Left	Thru	Right	ROSEWOOD DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
4:30 PM	15	36	4	1	48	3	4	1	0	2	0	32	146	146	0	0	0	0
4:35 PM	11	45	1	0	31	3	2	1	0	2	1	26	123	269	0	1	0	0
4:40 PM	11	44	2	0	48	4	2	1	1	4	0	36	153	422	0	2	1	0
4:45 PM	12	40	3	0	32	6	2	0	1	2	1	27	126	548	0	2	0	0
4:50 PM	25	35	3	0	38	1	0	1	0	7	1	17	128	676	0	1	0	0
4:55 PM	6	40	2	3	41	7	5	1	4	4	0	22	135	811	1	0	3	0
5:00 PM	14	51	3	0	42	5	1	1	2	5	0	24	148	959	0	2	0	2
5:05 PM	13	38	4	1	48	3	5	0	1	5	1	31	150	1,109	0	1	3	1
5:10 PM	17	50	3	2	50	4	5	0	0	4	2	25	162	1,271	0	0	1	1
5:15 PM	14	41	9	1	39	2	3	2	6	2	1	29	149	1,420	0	3	2	3
5:20 PM	23	58	4	1	27	4	1	0	0	5	1	20	144	1,564	2	1	0	0
5:25 PM	18	47	4	3	40	1	0	0	0	3	2	21	139	1,703	0	1	0	0
5:30 PM	13	43	2	0	45	3	1	2	2	4	1	22	138	1,695	0	2	0	1
5:35 PM	17	52	3	0	40	5	1	0	0	0	1	28	147	1,719	0	0	0	0
5:40 PM	15	55	2	3	44	3	5	1	2	4	1	20	155	1,721	0	4	0	1
5:45 PM	18	38	2	0	36	3	2	4	3	7	0	24	137	1,732	0	2	2	9
5:50 PM	24	29	2	0	29	3	7	1	1	9	0	20	125	1,729	1	3	0	0
5:55 PM	13	35	7	1	41	3	3	0	1	9	0	25	138	1,732	0	1	4	2
6:00 PM	13	65	3	3	39	1	3	0	0	5	1	29	162	1,746	3	3	0	4
6:05 PM	17	43	6	0	26	3	2	1	1	2	0	35	136	1,732	0	1	0	0
6:10 PM	18	42	1	2	26	1	3	0	0	4	0	24	121	1,691	2	1	0	2
6:15 PM	9	30	2	1	33	0	3	1	1	1	0	21	102	1,644	3	0	4	0
6:20 PM	17	38	3	1	24	0	2	0	2	3	3	28	121	1,621	0	3	0	0
6:25 PM	13	43	2	1	33	1	0	2	0	7	0	21	123	1,605	0	3	1	1

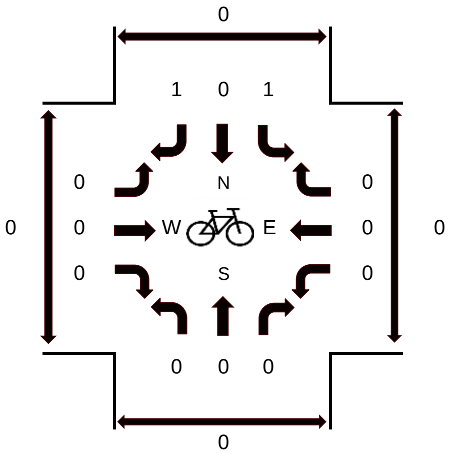
Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	198	551	45	15	478	35	36	10	16	57	11	294	1,746
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	2	2
Buses	1	4	0	0	4	0	0	0	0	0	0	1	10
Single-Unit Trucks	2	8	0	0	0	0	0	0	0	0	0	2	12
Lights	195	539	45	15	474	35	36	10	16	57	11	289	1,722

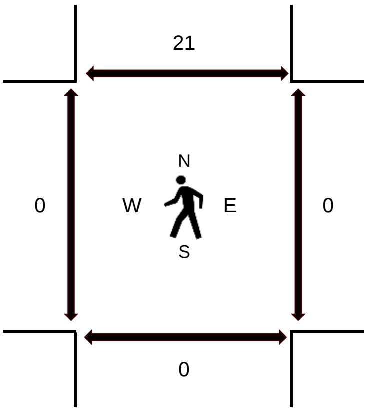
AimTD LLC **ID65** WestLasPositasBlvd_at_OwensDr **Date and Start Time:** February 29, 2024 Thursday at 7:00 AM

City: Pleasanton **Peak Rolling Hour** 7:55 AM - 8:55 AM **Peak 15-Minutes** 8:10 AM - 8:25 AM







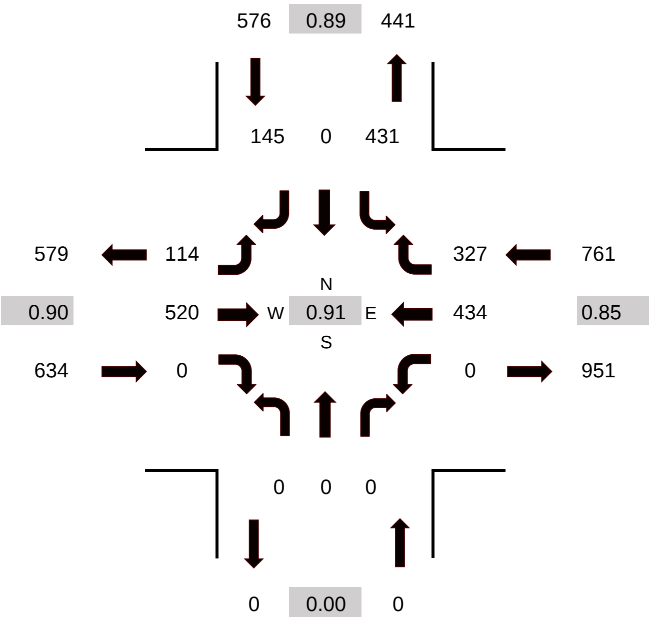


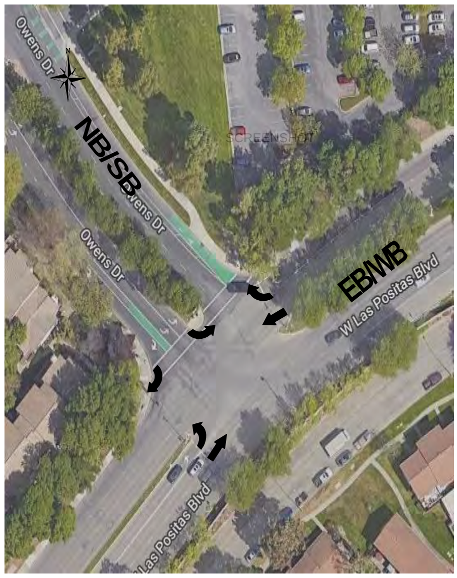
5-Minute Count Starting at:	WEST LAS POSITAS BLVD Eastbound			WEST LAS POSITAS BLVD Westbound			OWENS DR Northbound			OWENS DR Southbound				Rolling	Pedestrian Crossings			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total	Hour	E	W	N	S
7:00 AM	3	7	0	0	15	16	0	0	0	4	0	1	46	46	0	0	0	0
7:05 AM	2	10	0	0	19	13	0	0	0	6	0	2	52	98	0	0	0	0
7:10 AM	4	8	0	0	23	9	0	0	0	3	0	6	53	151	0	0	2	0
7:15 AM	4	12	0	0	21	17	0	0	0	6	0	5	65	216	0	0	0	0
7:20 AM	3	12	0	0	20	21	0	0	0	2	0	4	62	278	0	0	0	0
7:25 AM	5	7	0	0	37	15	0	0	0	9	0	3	76	354	0	0	1	0
7:30 AM	4	5	0	0	37	15	0	0	0	10	0	5	76	430	0	0	0	0
7:35 AM	4	15	0	0	34	17	0	0	0	19	0	4	93	523	0	0	1	0
7:40 AM	4	18	0	0	70	18	0	0	0	9	0	4	123	646	0	0	0	0
7:45 AM	4	30	0	0	39	27	0	0	0	15	0	15	130	776	0	0	0	0
7:50 AM	8	22	0	0	36	13	0	0	0	18	0	9	106	882	0	0	3	0
7:55 AM	16	15	0	0	41	19	0	0	0	22	0	11	124	1,006	0	0	3	0
8:00 AM	9	22	0	0	44	30	0	0	0	37	0	17	159	1,119	0	0	3	0
8:05 AM	6	26	0	0	75	32	0	0	0	31	0	5	175	1,242	0	0	1	0
8:10 AM	5	20	0	0	63	36	0	0	0	38	0	9	171	1,360	0	0	0	0
8:15 AM	4	20	0	0	86	36	0	0	0	13	0	12	171	1,466	0	0	5	0
8:20 AM	9	16	0	0	91	33	0	0	0	12	0	16	177	1,581	0	0	2	0
8:25 AM	18	25	0	0	63	26	0	0	0	16	0	8	156	1,661	0	0	3	0
8:30 AM	6	27	0	0	76	19	0	0	0	13	0	12	153	1,738	0	0	0	0
8:35 AM	17	39	0	0	60	22	0	0	0	7	0	11	156	1,801	0	0	0	0
8:40 AM	13	39	0	0	42	17	0	0	0	13	0	5	129	1,807	0	0	0	0
8:45 AM	8	24	0	0	49	32	0	0	0	17	0	4	134	1,811	0	0	4	0
8:50 AM	16	29	0	0	43	32	0	0	0	17	0	5	142	1,847	0	0	0	0
8:55 AM	8	19	0	0	31	27	0	0	0	17	0	15	117	1,840	0	0	0	0

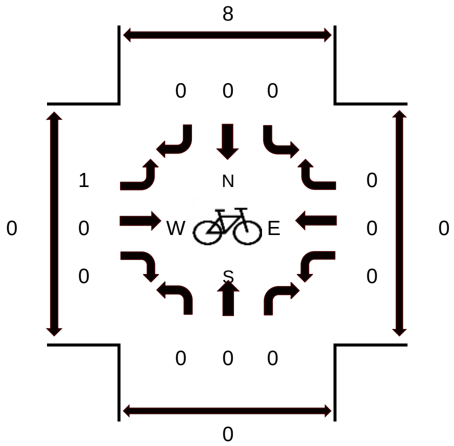
Peak Hour	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
All Vehicles	127	302	0	0	733	334	0	0	0	236	0	115	1,847
Articulated Trucks	0	0	0	0	0	1	0	0	0	1	0	0	2
Buses	0	1	0	0	2	4	0	0	0	3	0	0	10
Single-Unit Trucks	2	1	0	0	2	2	0	0	0	0	0	0	7
Lights	125	300	0	0	729	327	0	0	0	232	0	115	1,828

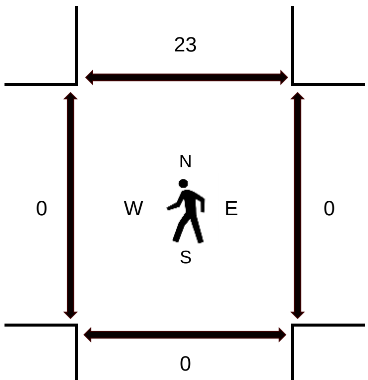
AimTD LLC **ID65** WestLasPositasBlvd_at_OwensDr **Date and Start Time:** February 28, 2024 Wednesday at 4:30 PM

City: Pleasanton **Peak Rolling Hour** 4:55 PM - 5:55 PM **Peak 15-Minutes** 5:35 PM - 5:50 PM









5-Minute Count Starting at:	WEST LAS POSITAS BLVD Eastbound Left	Thru	Right	WEST LAS POSITAS BLVD Westbound Left	Thru	Right	OWENS DR Northbound Left	Thru	Right	OWENS DR Southbound Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings E	W	N	S
4:30 PM	9	26	0	0	23	16	0	0	0	31	0	6	111	111	0	0	0	0
4:35 PM	6	58	0	0	33	18	0	0	0	29	0	10	154	265	0	0	1	0
4:40 PM	13	40	0	0	22	21	0	0	0	30	0	5	131	396	0	0	1	0
4:45 PM	8	33	0	0	35	26	0	0	0	40	0	9	151	547	0	0	0	0
4:50 PM	6	39	0	0	19	21	0	0	0	33	0	5	123	670	0	0	3	0
4:55 PM	8	36	0	0	45	34	0	0	0	38	0	9	170	840	0	0	0	0
5:00 PM	13	37	0	0	26	20	0	0	0	33	0	16	145	985	0	0	0	0
5:05 PM	8	41	0	0	41	37	0	0	0	33	0	9	169	1,154	0	0	5	0
5:10 PM	12	52	0	0	25	34	0	0	0	27	0	14	164	1,318	0	0	1	0
5:15 PM	10	45	0	0	30	22	0	0	0	39	0	13	159	1,477	0	0	0	0
5:20 PM	10	47	0	0	31	18	0	0	0	44	0	19	169	1,646	0	0	4	0
5:25 PM	8	39	0	0	48	30	0	0	0	31	0	11	167	1,813	0	0	2	0
5:30 PM	12	44	0	0	23	18	0	0	0	44	0	13	154	1,856	0	0	0	0
5:35 PM	10	51	0	0	41	31	0	0	0	31	0	5	169	1,871	0	0	2	0
5:40 PM	8	40	0	0	47	31	0	0	0	49	0	13	188	1,928	0	0	3	0
5:45 PM	9	56	0	0	42	31	0	0	0	35	0	13	186	1,963	0	0	0	0
5:50 PM	6	32	0	0	35	21	0	0	0	27	0	10	131	1,971	0	0	6	0
5:55 PM	9	39	0	0	31	27	0	0	0	31	0	6	143	1,944	0	0	0	0
6:00 PM	10	36	0	0	29	22	0	0	0	61	0	5	163	1,962	0	0	1	0
6:05 PM	8	33	0	0	31	21	0	0	0	32	0	7	132	1,925	0	0	2	0
6:10 PM	14	40	0	0	26	23	0	0	0	36	0	6	145	1,906	0	0	3	0
6:15 PM	6	45	0	0	20	20	0	0	0	17	0	6	114	1,861	0	0	0	0
6:20 PM	3	25	0	0	27	17	0	0	0	36	0	8	116	1,808	0	0	5	0
6:25 PM	4	27	0	0	21	24	0	0	0	32	0	7	115	1,756	0	0	0	0

Peak Hour	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Total
All Vehicles	114	520	0	0	434	327	0	0	0	431	0	145	1,971
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	4	0	0	0	5	0	0	9
Single-Unit Trucks	0	1	0	0	2	1	0	0	0	3	0	0	7
Lights	114	519	0	0	432	322	0	0	0	423	0	145	1,955

Prepared by National Data & Surveying Services

Rosewood Commons Dwy & Owens Dr

Peak Hour Turning Movement Count

ID: 24-080195-001
City: Pleasanton

Day: Tuesday
Date: 7/30/2024

PEAK HOURS		COUNT PERIODS
AM	08:00 AM - 09:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Rosewood Commons Dwy)

	Right	Thru	Left	U-Turn	Departing
AM	5	0	0	0	6
NOON	0	0	0	0	0
PM	0	0	0	0	0
	0	1	0	0	

EASTBOUND (Owens Dr)

	AM	NOON	PM	
Departing	406	0	531	
U-Turn	2	0	3	0
Left	3	0	0	1
Thru	290	0	662	3
Right	7	0	25	0

WESTBOUND (Owens Dr)

		PM	NOON	AM
	0	0	0	3
	3	511	0	382
	1	29	0	6
	0	20	0	5
Departing		702	0	307

NORTHBOUND (Rosewood Commons Dwy)

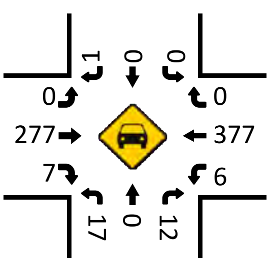
		0	1	0	1
	Departing	U-Turn	Left	Thru	Right
PM	54	0	17	0	20
NOON	0	0	0	0	0
AM	13	0	17	0	12

CONTROL

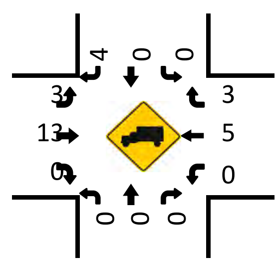
2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	732	0	1287
PHF	0.86		0.92

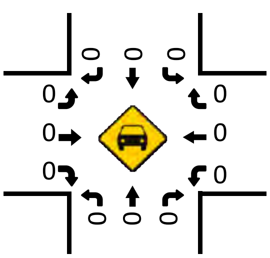
Cars (AM)



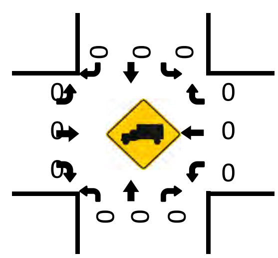
HT (AM)



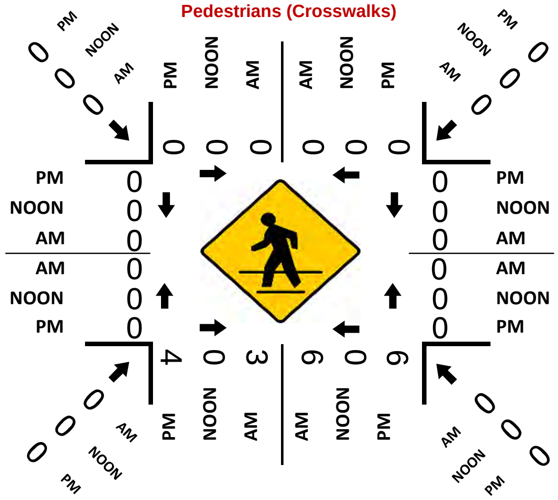
Cars (NOON)



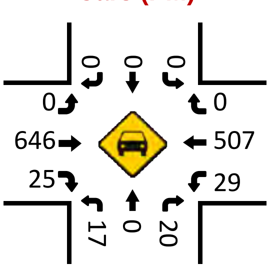
HT (NOON)



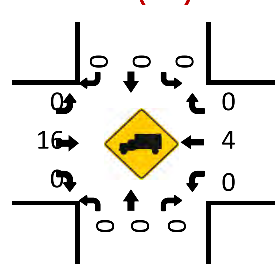
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Appendix B:
Detailed Intersection LOS Calculation Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	508	0	310	0	1042	167	0	547	329
Future Volume (vph)	0	0	0	508	0	310	0	1042	167	0	547	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	0.99
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.97	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1534		4610	1332
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1534		4610	1332
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	552	0	337	0	1133	182	0	595	358
RTOR Reduction (vph)	0	0	0	0	0	91	0	0	0	0	47	0
Lane Group Flow (vph)	0	0	0	552	0	246	0	1133	182	0	691	215
Confl. Peds. (#/hr)									4			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				15.3		15.3		38.4	65.0		38.4	65.0
Effective Green, g (s)				16.7		16.7		40.3	65.0		40.3	65.0
Actuated g/C Ratio				0.26		0.26		0.62	1.00		0.62	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				873		709		3122	1534		2858	1332
v/s Ratio Prot				c0.16		0.09		c0.22			0.15	
v/s Ratio Perm									0.12			0.16
v/c Ratio				0.63		0.35		0.36	0.12		0.24	0.16
Uniform Delay, d1				21.4		19.7		6.1	0.0		5.5	0.0
Progression Factor				1.00		1.00		0.39	1.00		1.00	1.00
Incremental Delay, d2				1.1		0.1		0.3	0.1		0.2	0.3
Delay (s)				22.5		19.8		2.6	0.1		5.7	0.3
Level of Service				C		B		A	A		A	A
Approach Delay (s/veh)		0.0			21.5			2.3			4.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	787	0	622	0	0	0	0	422	174	0	885	170
Future Volume (vph)	787	0	622	0	0	0	0	422	174	0	885	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					0.99	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4698	1348		5036	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4698	1348		5036	1536
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	874	0	691	0	0	0	0	469	193	0	983	189
RTOR Reduction (vph)	0	0	26	0	0	0	0	15	66	0	0	0
Lane Group Flow (vph)	874	0	665	0	0	0	0	498	83	0	983	189
Confl. Peds. (#/hr)			2				1					1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		custom					NA	Perm		NA	Free
Protected Phases	4		5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	19.2		29.3					34.5	34.5		24.4	65.0
Effective Green, g (s)	20.6		30.7					36.4	36.4		26.3	65.0
Actuated g/C Ratio	0.32		0.47					0.56	0.56		0.40	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1077		1303					2630	754		2037	1536
v/s Ratio Prot	c0.26		c0.24					0.11			c0.20	
v/s Ratio Perm									0.06			0.12
v/c Ratio	0.81		0.51					0.19	0.11		0.48	0.12
Uniform Delay, d1	20.4		11.9					7.0	6.7		14.3	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.06	1.00
Incremental Delay, d2	4.6		0.1					0.2	0.3		0.8	0.2
Delay (s)	25.0		12.1					7.2	7.0		16.0	0.2
Level of Service	C		B					A	A		B	A
Approach Delay (s/veh)		19.3			0.0			7.2			13.4	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	114	10	66	199	277	19	249	76	381	855	271
Future Volume (vph)	70	114	10	66	199	277	19	249	76	381	855	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	121	11	70	212	295	20	265	81	405	910	288
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	74	121	11	70	212	295	20	265	81	405	910	288
Confl. Peds. (#/hr)			4			6			4			4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.1	11.2	63.5	5.1	11.2	63.5	0.6	15.3	63.5	12.9	27.6	63.5
Effective Green, g (s)	5.1	12.9	63.5	5.1	12.9	63.5	0.6	16.6	63.5	12.9	28.9	63.5
Actuated g/C Ratio	0.08	0.20	1.00	0.08	0.20	1.00	0.01	0.26	1.00	0.20	0.46	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	273	1023	1547	273	1023	1546	32	1316	1547	690	2291	1547
v/s Ratio Prot	0.02	0.02		0.02	0.04		0.01	0.05		c0.12	c0.18	
v/s Ratio Perm			0.01			c0.19			0.05			0.19
v/c Ratio	0.27	0.12	0.01	0.26	0.21	0.19	0.63	0.20	0.05	0.59	0.40	0.19
Uniform Delay, d1	27.5	20.7	0.0	27.4	21.0	0.0	31.3	18.3	0.0	22.9	11.5	0.0
Progression 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
Incremental Delay, d2	0.2	0.0	0.0	0.2	0.0	0.3	24.3	0.0	0.1	0.8	0.0	0.3
Delay (s)	27.6	20.7	0.0	27.6	21.1	0.3	55.6	18.3	0.1	23.7	11.5	0.3
Level of Service	C	C	A	C	C	A	E	B	A	C	B	A
Approach Delay (s/veh)		22.1			11.2			16.3			12.6	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	385	23	5	460	29	40	2	33	16	5	83
Future Volume (vph)	177	385	23	5	460	29	40	2	33	16	5	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4984		1752	5036	1543	1746	1560		1748	1845	1544
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3400	4984		1752	5036	1543	1386	1560		1345	1845	1544
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	203	443	26	6	529	33	46	2	38	18	6	95
RTOR Reduction (vph)	0	6	0	0	0	0	0	32	0	0	0	0
Lane Group Flow (vph)	203	463	0	6	529	33	46	8	0	18	6	95
Confl. Peds. (#/hr)			12			10	8		6	6		8
Confl. Bikes (#/hr)			2			4						3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	8.1	29.7		0.6	22.2	51.0	6.8	6.8		6.5	6.5	51.0
Effective Green, g (s)	8.1	31.0		0.6	23.5	51.0	7.4	7.4		7.4	7.4	51.0
Actuated g/C Ratio	0.16	0.61		0.01	0.46	1.00	0.15	0.15		0.15	0.15	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	540	3029		20	2320	1543	201	226		195	267	1544
v/s Ratio Prot	c0.06	0.09		0.00	c0.11			0.00			0.00	
v/s Ratio Perm						0.02	c0.03			0.01		0.06
v/c Ratio	0.38	0.15		0.30	0.23	0.02	0.23	0.03		0.09	0.02	0.06
Uniform Delay, d1	19.2	4.3		25.0	8.3	0.0	19.3	18.7		18.9	18.7	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0		3.1	0.1	0.0	0.2	0.0		0.1	0.0	0.1
Delay (s)	19.3	4.4		28.0	8.4	0.0	19.5	18.7		19.0	18.7	0.1
Level of Service	B	A		C	A	A	B	B		B	B	A
Approach Delay (s/veh)		8.9			8.1			19.1			3.9	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	236	115	127	302	733	334
Future Volume (vph)	236	115	127	302	733	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.99	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3332	1395
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3332	1395
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	265	129	143	339	824	375
RTOR Reduction (vph)	0	104	0	0	3	191
Lane Group Flow (vph)	265	25	143	339	859	146
Confl. Peds. (#/hr)						21
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	9.5	9.5	7.6	33.1	21.5	21.5
Effective Green, g (s)	10.4	10.4	7.6	34.4	22.8	22.8
Actuated g/C Ratio	0.20	0.20	0.14	0.65	0.43	0.43
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	669	308	252	3281	1438	602
v/s Ratio Prot	c0.08		c0.08	0.07	c0.26	
v/s Ratio Perm		0.02				0.10
v/c Ratio	0.40	0.08	0.57	0.10	0.60	0.24
Uniform Delay, d1	18.5	17.3	21.1	3.4	11.5	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	1.7	0.0	0.6	0.2
Delay (s)	18.6	17.3	22.8	3.4	12.0	9.7
Level of Service	B	B	C	A	B	A
Approach Delay (s/veh)	18.2			9.2	11.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	422	7	14	472	4	17	0	17	0	0	5
Future Volume (Veh/h)	5	422	7	14	472	4	17	0	17	0	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	6	491	8	16	549	5	20	0	20	0	0	6
Pedestrians								9				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		600										
pX, platoon unblocked												
vC, conflicting volume	554			508			737	1102	177	779	1104	186
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	554			508			737	1102	177	779	1104	186
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			93	100	98	100	100	99
cM capacity (veh/h)	999			1031			292	201	823	269	201	819

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	6	196	196	106	16	220	220	115	20	20	6
Volume Left	6	0	0	0	16	0	0	0	20	0	0
Volume Right	0	0	0	8	0	0	0	5	0	20	6
cSH	999	1700	1700	1700	1031	1700	1700	1700	292	823	819
Volume to Capacity	0.01	0.12	0.12	0.06	0.02	0.13	0.13	0.07	0.07	0.02	0.01
Queue Length 95th (ft)	0	0	0	0	1	0	0	0	5	2	1
Control Delay (s/veh)	8.6	0.0	0.0	0.0	8.5	0.0	0.0	0.0	18.2	9.5	9.4
Lane LOS	A				A				C	A	A
Approach Delay (s/veh)	0.1				0.2				13.9		9.4
Approach LOS									B		A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	439	485	10	0	5
Future Volume (Veh/h)	0	439	485	10	0	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	0	601	664	14	0	7
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		989	1239			
pX, platoon unblocked						
vC, conflicting volume	679				872	229
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	679				872	229
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	895				286	766

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	200	200	200	266	266	147	7
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	14	7
cSH	1700	1700	1700	1700	1700	1700	766
Volume to Capacity	0.12	0.12	0.12	0.16	0.16	0.09	0.01
Queue Length 95th (ft)	0	0	0	0	0	0	1
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	0.0	9.7
Lane LOS							A
Approach Delay (s/veh)	0.0			0.0			9.7
Approach LOS							A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	311	0	438	0	1221	447	0	820	732
Future Volume (vph)	0	0	0	311	0	438	0	1221	447	0	820	732
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.95	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1533		4539	1348
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1533		4539	1348
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	331	0	466	0	1299	476	0	872	779
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	0	0	100	0
Lane Group Flow (vph)	0	0	0	331	0	405	0	1299	476	0	1162	389
Confl. Peds. (#/hr)									5	5		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				14.0		14.0		39.7	65.0		39.7	65.0
Effective Green, g (s)				15.4		15.4		41.6	65.0		41.6	65.0
Actuated g/C Ratio				0.24		0.24		0.64	1.00		0.64	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				805		653		3223	1533		2904	1348
v/s Ratio Prot				0.10		c0.15		c0.26			0.26	
v/s Ratio Perm									0.31			0.29
v/c Ratio				0.41		0.62		0.40	0.31		0.40	0.29
Uniform Delay, d1				21.0		22.2		5.7	0.0		5.7	0.0
Progression Factor				1.00		1.00		0.61	1.00		1.00	1.00
Incremental Delay, d2				0.1		1.3		0.3	0.5		0.4	0.5
Delay (s)				21.1		23.5		3.8	0.5		6.1	0.5
Level of Service				C		C		A	A		A	A
Approach Delay (s/veh)		0.0			22.5			2.9			4.8	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	575	0	198	0	0	0	0	1116	451	0	822	311
Future Volume (vph)	575	0	198	0	0	0	0	1116	451	0	822	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					0.99	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4701	1348		5036	1568
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4701	1348		5036	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	618	0	213	0	0	0	0	1200	485	0	884	334
RTOR Reduction (vph)	0	0	38	0	0	0	0	13	152	0	0	0
Lane Group Flow (vph)	618	0	175	0	0	0	0	1294	226	0	884	334
Confl. Peds. (#/hr)			6									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		custom					NA	Perm		NA	Free
Protected Phases			5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	16.7		26.1					37.0	37.0		27.6	65.0
Effective Green, g (s)	18.1		27.5					38.9	38.9		29.5	65.0
Actuated g/C Ratio	0.28		0.42					0.60	0.60		0.45	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	946		1167					2813	806		2285	1568
v/s Ratio Prot			0.06					c0.28			0.18	
v/s Ratio Perm	c0.18								0.17			0.21
v/c Ratio	0.65		0.15					0.46	0.28		0.39	0.21
Uniform Delay, d1	20.7		11.5					7.2	6.3		11.8	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.89	1.00
Incremental Delay, d2	1.5		0.0					0.5	0.9		0.5	0.3
Delay (s)	22.1		11.6					7.8	7.2		10.9	0.3
Level of Service	C		B					A	A		B	A
Approach Delay (s/veh)		19.4			0.0			7.6			8.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	395	33	102	223	614	7	619	111	429	421	170
Future Volume (vph)	334	395	33	102	223	614	7	619	111	429	421	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	355	420	35	109	237	653	7	659	118	456	448	181
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	355	420	35	109	237	653	7	659	118	456	448	181
Confl. Peds. (#/hr)			1			9			2			1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.4	18.4	83.6	7.9	11.9	83.6	0.6	21.4	83.6	16.9	37.7	83.6
Effective Green, g (s)	14.4	20.1	83.6	7.9	13.6	83.6	0.6	22.7	83.6	16.9	39.0	83.6
Actuated g/C Ratio	0.17	0.24	1.00	0.09	0.16	1.00	0.01	0.27	1.00	0.20	0.47	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	585	1210	1549	321	819	1545	24	1367	1548	687	2349	1548
v/s Ratio Prot	c0.10	0.08		0.03	0.05		0.00	0.13		c0.13	0.09	
v/s Ratio Perm			0.02			c0.42			0.08			0.12
v/c Ratio	0.61	0.35	0.02	0.34	0.29	0.42	0.29	0.48	0.08	0.66	0.19	0.12
Uniform Delay, d1	32.0	26.3	0.0	35.4	30.8	0.0	41.3	25.5	0.0	30.7	13.1	0.0
Progression 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
Incremental Delay, d2	1.2	0.1	0.0	0.2	0.1	0.9	2.5	0.1	0.1	1.9	0.0	0.2
Delay (s)	33.2	26.4	0.0	35.6	30.8	0.9	43.7	25.6	0.1	32.6	13.1	0.2
Level of Service	C	C	A	D	C	A	D	C	A	C	B	A
Approach Delay (s/veh)		28.2			11.8			21.9			19.1	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	621	45	15	478	35	36	10	18	64	11	294
Future Volume (vph)	198	621	45	15	478	35	36	10	18	64	11	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4969		1752	5036	1544	1736	1654		1748	1845	1539
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.74	1.00	1.00
Satd. Flow (perm)	3400	4969		1752	5036	1544	1370	1654		1357	1845	1539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	208	654	47	16	503	37	38	11	19	67	12	309
RTOR Reduction (vph)	0	8	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	208	693	0	16	503	37	38	14	0	67	12	309
Confl. Peds. (#/hr)			22			12	21		6	6		21
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	8.2	29.7		0.8	22.3	51.7	7.3	7.3		7.0	7.0	51.7
Effective Green, g (s)	8.2	31.0		0.8	23.6	51.7	7.9	7.9		7.9	7.9	51.7
Actuated g/C Ratio	0.16	0.60		0.02	0.46	1.00	0.15	0.15		0.15	0.15	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	539	2979		27	2298	1544	209	252		207	281	1539
v/s Ratio Prot	c0.06	c0.14		0.01	0.10			0.01			0.01	
v/s Ratio Perm						0.02	0.03			c0.05		c0.20
v/c Ratio	0.39	0.23		0.59	0.22	0.02	0.18	0.06		0.32	0.04	0.20
Uniform Delay, d1	19.5	4.8		25.3	8.5	0.0	19.1	18.7		19.5	18.7	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		21.0	0.1	0.0	0.2	0.0		0.3	0.0	0.3
Delay (s)	19.7	4.9		46.3	8.6	0.0	19.2	18.7		19.9	18.7	0.3
Level of Service	B	A		D	A	A	B	B		B	B	A
Approach Delay (s/veh)		8.3			9.1			19.0			4.2	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Avalon Bay TIA

5: W Las Positas Blvd & Owens Dr

Existing PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	431	145	114	520	434	327
Future Volume (vph)	431	145	114	520	434	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.97	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3254	1395
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3254	1395
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	474	159	125	571	477	359
RTOR Reduction (vph)	0	116	0	0	21	165
Lane Group Flow (vph)	474	43	125	571	560	90
Confl. Peds. (#/hr)						23
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	12.5	12.5	6.9	27.2	16.3	16.3
Effective Green, g (s)	13.4	13.4	6.9	28.5	17.6	17.6
Actuated g/C Ratio	0.27	0.27	0.14	0.57	0.35	0.35
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	913	421	242	2876	1147	492
v/s Ratio Prot	c0.14		c0.07	0.11	c0.17	
v/s Ratio Perm		0.03				0.06
v/c Ratio	0.52	0.10	0.52	0.20	0.49	0.18
Uniform Delay, d1	15.5	13.7	20.0	5.2	12.6	11.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.8	0.0	0.2	0.1
Delay (s)	15.7	13.8	20.7	5.2	12.9	11.3
Level of Service	B	B	C	A	B	B
Approach Delay (s/veh)	15.2			8.0	12.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	49.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	673	27	53	508	0	20	0	20	0	0	0
Future Volume (Veh/h)	3	673	27	53	508	0	20	0	20	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	732	29	58	552	0	22	0	22	0	0	0
Pedestrians								7			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		586										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	553			768			1060	1429	266	941	1443	185
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	553			746			1039	1410	241	920	1425	185
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			87	100	97	100	100	100
cM capacity (veh/h)	1005			841			170	125	748	203	122	822

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	3	293	293	175	58	221	221	110	22	22	0
Volume Left	3	0	0	0	58	0	0	0	22	0	0
Volume Right	0	0	0	29	0	0	0	0	0	22	0
cSH	1005	1700	1700	1700	841	1700	1700	1700	170	748	1700
Volume to Capacity	0.00	0.17	0.17	0.10	0.07	0.13	0.13	0.06	0.13	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	6	0	0	0	11	2	0
Control Delay (s/veh)	8.6	0.0	0.0	0.0	9.6	0.0	0.0	0.0	29.2	10.0	0.0
Lane LOS	A				A				D	A	A
Approach Delay (s/veh)	0.0				0.9				19.6		0.0
Approach LOS									C		A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	693	547	16	0	14
Future Volume (Veh/h)	0	693	547	16	0	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	762	601	18	0	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		977	1253			
pX, platoon unblocked						
vC, conflicting volume	619				864	209
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	619				864	209
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	98
cM capacity (veh/h)	951				291	793

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	254	254	254	240	240	138	15
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	18	15
cSH	1700	1700	1700	1700	1700	1700	793
Volume to Capacity	0.15	0.15	0.15	0.14	0.14	0.08	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	1
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	0.0	9.6
Lane LOS							A
Approach Delay (s/veh)	0.0			0.0			9.6
Approach LOS							A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	508	0	310	0	1053	167	0	550	329
Future Volume (vph)	0	0	0	508	0	310	0	1053	167	0	550	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	0.99
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.97	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1534		4610	1332
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1534		4610	1332
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	552	0	337	0	1145	182	0	598	358
RTOR Reduction (vph)	0	0	0	0	0	88	0	0	0	0	47	0
Lane Group Flow (vph)	0	0	0	552	0	249	0	1145	182	0	694	215
Confl. Peds. (#/hr)									4			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				15.3		15.3		38.4	65.0		38.4	65.0
Effective Green, g (s)				16.7		16.7		40.3	65.0		40.3	65.0
Actuated g/C Ratio				0.26		0.26		0.62	1.00		0.62	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				873		709		3122	1534		2858	1332
v/s Ratio Prot				c0.16		0.09		c0.23			0.15	
v/s Ratio Perm									0.12			0.16
v/c Ratio				0.63		0.35		0.37	0.12		0.24	0.16
Uniform Delay, d1				21.4		19.7		6.1	0.0		5.5	0.0
Progression Factor				1.00		1.00		0.41	1.00		1.00	1.00
Incremental Delay, d2				1.1		0.1		0.3	0.1		0.2	0.3
Delay (s)				22.5		19.8		2.7	0.1		5.7	0.3
Level of Service				C		B		A	A		A	A
Approach Delay (s/veh)		0.0			21.5			2.4			4.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	787	0	633	0	0	0	0	471	174	0	888	170
Future Volume (vph)	787	0	633	0	0	0	0	471	174	0	888	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					0.99	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4717	1348		5036	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4717	1348		5036	1536
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	874	0	703	0	0	0	0	523	193	0	987	189
RTOR Reduction (vph)	0	0	26	0	0	0	0	10	70	0	0	0
Lane Group Flow (vph)	874	0	677	0	0	0	0	546	90	0	987	189
Confl. Peds. (#/hr)			2				1					1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		custom					NA	Perm		NA	Free
Protected Phases	4		5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	19.2		29.4					34.5	34.5		24.3	65.0
Effective Green, g (s)	20.6		30.8					36.4	36.4		26.2	65.0
Actuated g/C Ratio	0.32		0.47					0.56	0.56		0.40	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1077		1307					2641	754		2029	1536
v/s Ratio Prot	c0.26		c0.25					0.12			c0.20	
v/s Ratio Perm									0.07			0.12
v/c Ratio	0.81		0.52					0.21	0.12		0.49	0.12
Uniform Delay, d1	20.4		11.9					7.1	6.7		14.4	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.06	1.00
Incremental Delay, d2	4.6		0.1					0.2	0.3		0.8	0.2
Delay (s)	25.0		12.1					7.3	7.1		16.1	0.2
Level of Service	C		B					A	A		B	A
Approach Delay (s/veh)		19.3			0.0			7.2			13.5	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	117	10	71	210	326	19	249	78	395	855	271
Future Volume (vph)	70	117	10	71	210	326	19	249	78	395	855	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	124	11	76	223	347	20	265	83	420	910	288
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	74	124	11	76	223	347	20	265	83	420	910	288
Confl. Peds. (#/hr)			4			6			4			4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.1	11.2	63.9	5.2	11.3	63.9	0.6	15.2	63.9	13.3	27.9	63.9
Effective Green, g (s)	5.1	12.9	63.9	5.2	13.0	63.9	0.6	16.5	63.9	13.3	29.2	63.9
Actuated g/C Ratio	0.08	0.20	1.00	0.08	0.20	1.00	0.01	0.26	1.00	0.21	0.46	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	271	1016	1547	276	1024	1546	31	1300	1547	707	2301	1547
v/s Ratio Prot	0.02	0.02		0.02	0.04		0.01	0.05		c0.12	c0.18	
v/s Ratio Perm			0.01			c0.22			0.05			0.19
v/c Ratio	0.27	0.12	0.01	0.28	0.22	0.22	0.65	0.20	0.05	0.59	0.40	0.19
Uniform Delay, d1	27.7	20.9	0.0	27.6	21.2	0.0	31.5	18.6	0.0	22.9	11.5	0.0
Progression 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
Incremental Delay, d2	0.2	0.0	0.0	0.2	0.0	0.3	29.6	0.0	0.1	0.9	0.0	0.3
Delay (s)	27.9	20.9	0.0	27.8	21.3	0.3	61.1	18.6	0.1	23.8	11.5	0.3
Level of Service	C	C	A	C	C	A	E	B	A	C	B	A
Approach Delay (s/veh)		22.3			10.8			16.7			12.7	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	401	23	5	525	29	40	2	33	16	5	83
Future Volume (vph)	179	401	23	5	525	29	40	2	33	16	5	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4986		1752	5036	1543	1746	1560		1748	1845	1544
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3400	4986		1752	5036	1543	1385	1560		1345	1845	1544
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	206	461	26	6	603	33	46	2	38	18	6	95
RTOR Reduction (vph)	0	5	0	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	206	482	0	6	603	33	46	7	0	18	6	95
Confl. Peds. (#/hr)			12			10	8		6	6		8
Confl. Bikes (#/hr)			2			4						3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	8.2	30.6		0.6	23.0	52.0	6.9	6.9		6.6	6.6	52.0
Effective Green, g (s)	8.2	31.9		0.6	24.3	52.0	7.5	7.5		7.5	7.5	52.0
Actuated g/C Ratio	0.16	0.61		0.01	0.47	1.00	0.14	0.14		0.14	0.14	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	536	3058		20	2353	1543	199	225		193	266	1544
v/s Ratio Prot	c0.06	0.10		0.00	c0.12			0.00			0.00	
v/s Ratio Perm						0.02	c0.03			0.01		0.06
v/c Ratio	0.38	0.16		0.30	0.26	0.02	0.23	0.03		0.09	0.02	0.06
Uniform Delay, d1	19.6	4.3		25.5	8.4	0.0	19.7	19.1		19.3	19.1	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		3.1	0.1	0.0	0.2	0.0		0.1	0.0	0.1
Delay (s)	19.8	4.4		28.5	8.5	0.0	19.9	19.2		19.4	19.1	0.1
Level of Service	B	A		C	A	A	B	B		B	B	A
Approach Delay (s/veh)		8.9			8.3			19.6			4.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	274	120	129	302	733	345
Future Volume (vph)	274	120	129	302	733	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.99	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3331	1394
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3331	1394
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	308	135	145	339	824	388
RTOR Reduction (vph)	0	107	0	0	3	200
Lane Group Flow (vph)	308	28	145	339	860	149
Confl. Peds. (#/hr)						21
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	10.4	10.4	7.8	33.7	21.9	21.9
Effective Green, g (s)	11.3	11.3	7.8	35.0	23.2	23.2
Actuated g/C Ratio	0.21	0.21	0.14	0.64	0.43	0.43
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	707	326	251	3246	1423	595
v/s Ratio Prot	c0.09		c0.08	0.07	c0.26	
v/s Ratio Perm		0.02				0.11
v/c Ratio	0.44	0.09	0.58	0.10	0.60	0.25
Uniform Delay, d1	18.7	17.3	21.7	3.7	12.0	10.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.0	0.0	0.6	0.2
Delay (s)	18.9	17.4	23.7	3.7	12.6	10.1
Level of Service	B	B	C	A	B	B
Approach Delay (s/veh)	18.4			9.7	11.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	425	7	14	483	11	17	0	17	30	0	60
Future Volume (Veh/h)	18	425	7	14	483	11	17	0	17	30	0	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	21	494	8	16	562	13	20	0	20	35	0	70
Pedestrians								9				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		600										
pX, platoon unblocked												
vC, conflicting volume	575			511			838	1156	178	827	1154	194
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	575			511			838	1156	178	827	1154	194
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			91	100	98	86	100	91
cM capacity (veh/h)	981			1029			224	184	822	246	184	809

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	
Volume Total	21	198	198	107	16	225	225	125	20	20	105	
Volume Left	21	0	0	0	16	0	0	0	20	0	35	
Volume Right	0	0	0	8	0	0	0	13	0	20	70	
cSH	981	1700	1700	1700	1029	1700	1700	1700	224	822	458	
Volume to Capacity	0.02	0.12	0.12	0.06	0.02	0.13	0.13	0.07	0.09	0.02	0.23	
Queue Length 95th (ft)	2	0	0	0	1	0	0	0	7	2	22	
Control Delay (s/veh)	8.8	0.0	0.0	0.0	8.6	0.0	0.0	0.0	22.6	9.5	15.2	
Lane LOS	A				A				C	A	C	
Approach Delay (s/veh)	0.4				0.2				16.1		15.2	
Approach LOS									C		C	

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	470	494	13	12	14
Future Volume (Veh/h)	2	470	494	13	12	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	3	644	677	18	16	19
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		989	1239			
pX, platoon unblocked						
vC, conflicting volume	696				908	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	696				908	236
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	97
cM capacity (veh/h)	882				270	759

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	3	215	215	215	271	271	153	35
Volume Left	3	0	0	0	0	0	0	16
Volume Right	0	0	0	0	0	0	18	19
cSH	882	1700	1700	1700	1700	1700	1700	415
Volume to Capacity	0.00	0.13	0.13	0.13	0.16	0.16	0.09	0.08
Queue Length 95th (ft)	0	0	0	0	0	0	0	7
Control Delay (s/veh)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	14.5
Lane LOS	A							B
Approach Delay (s/veh)	0.0				0.0			14.5
Approach LOS								B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	311	0	438	0	1228	447	0	832	732
Future Volume (vph)	0	0	0	311	0	438	0	1228	447	0	832	732
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.95	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1533		4541	1348
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1533		4541	1348
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	331	0	466	0	1306	476	0	885	779
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	0	0	99	0
Lane Group Flow (vph)	0	0	0	331	0	406	0	1306	476	0	1176	389
Confl. Peds. (#/hr)									5	5		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				14.1		14.1		39.6	65.0		39.6	65.0
Effective Green, g (s)				15.5		15.5		41.5	65.0		41.5	65.0
Actuated g/C Ratio				0.24		0.24		0.64	1.00		0.64	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				810		658		3215	1533		2899	1348
v/s Ratio Prot				0.10		c0.15		c0.26			0.26	
v/s Ratio Perm									0.31			0.29
v/c Ratio				0.41		0.62		0.41	0.31		0.41	0.29
Uniform Delay, d1				20.9		22.1		5.7	0.0		5.7	0.0
Progression Factor				1.00		1.00		0.61	1.00		1.00	1.00
Incremental Delay, d2				0.1		1.2		0.3	0.5		0.4	0.5
Delay (s)				21.0		23.3		3.8	0.5		6.2	0.5
Level of Service				C		C		A	A		A	A
Approach Delay (s/veh)		0.0			22.4			2.9			4.8	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	575	0	239	0	0	0	0	1147	451	0	834	311
Future Volume (vph)	575	0	239	0	0	0	0	1147	451	0	834	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					0.99	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4705	1348		5036	1568
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4705	1348		5036	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	618	0	257	0	0	0	0	1233	485	0	897	334
RTOR Reduction (vph)	0	0	36	0	0	0	0	12	154	0	0	0
Lane Group Flow (vph)	618	0	221	0	0	0	0	1323	229	0	897	334
Confl. Peds. (#/hr)			6									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		custom					NA	Perm		NA	Free
Protected Phases			5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	16.8		26.2					36.9	36.9		27.5	65.0
Effective Green, g (s)	18.2		27.6					38.8	38.8		29.4	65.0
Actuated g/C Ratio	0.28		0.42					0.60	0.60		0.45	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	952		1171					2808	804		2277	1568
v/s Ratio Prot			0.08					c0.28			0.18	
v/s Ratio Perm	c0.18								0.17			0.21
v/c Ratio	0.65		0.19					0.47	0.28		0.39	0.21
Uniform Delay, d1	20.6		11.7					7.3	6.4		11.9	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.88	1.00
Incremental Delay, d2	1.4		0.0					0.6	0.9		0.5	0.3
Delay (s)	22.0		11.7					7.9	7.2		11.0	0.3
Level of Service	C		B					A	A		B	A
Approach Delay (s/veh)		18.9			0.0			7.8			8.1	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	407	33	105	230	645	7	619	117	482	421	170
Future Volume (vph)	334	407	33	105	230	645	7	619	117	482	421	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	355	433	35	112	245	686	7	659	124	513	448	181
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	355	433	35	112	245	686	7	659	124	513	448	181
Confl. Peds. (#/hr)			1			9			2			1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.7	18.6	85.9	8.1	12.0	85.9	0.6	21.7	85.9	18.5	39.6	85.9
Effective Green, g (s)	14.7	20.3	85.9	8.1	13.7	85.9	0.6	23.0	85.9	18.5	40.9	85.9
Actuated g/C Ratio	0.17	0.24	1.00	0.09	0.16	1.00	0.01	0.27	1.00	0.22	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	581	1190	1549	320	803	1545	23	1348	1548	732	2397	1548
v/s Ratio Prot	c0.10	0.09		0.03	0.05		0.00	0.13		c0.15	0.09	
v/s Ratio Perm			0.02			c0.44			0.08			0.12
v/c Ratio	0.61	0.36	0.02	0.35	0.31	0.44	0.30	0.49	0.08	0.70	0.19	0.12
Uniform Delay, d1	33.0	27.4	0.0	36.4	31.9	0.0	42.4	26.5	0.0	31.1	12.9	0.0
Progression 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
Incremental Delay, d2	1.3	0.1	0.0	0.2	0.1	0.9	2.7	0.1	0.1	2.5	0.0	0.2
Delay (s)	34.3	27.5	0.0	36.7	32.0	0.9	45.2	26.6	0.1	33.6	13.0	0.2
Level of Service	C	C	A	D	C	A	D	C	A	C	B	A
Approach Delay (s/veh)		29.2			12.1			22.6			20.2	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	684	45	15	519	35	36	10	18	64	11	294
Future Volume (vph)	205	684	45	15	519	35	36	10	18	64	11	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4974		1752	5036	1544	1736	1654		1748	1845	1539
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.74	1.00	1.00
Satd. Flow (perm)	3400	4974		1752	5036	1544	1370	1654		1357	1845	1539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	720	47	16	546	37	38	11	19	67	12	309
RTOR Reduction (vph)	0	7	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	216	760	0	16	546	37	38	14	0	67	12	309
Confl. Peds. (#/hr)			22			12	21		6	6		21
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	8.4	30.1		0.8	22.5	52.1	7.3	7.3		7.0	7.0	52.1
Effective Green, g (s)	8.4	31.4		0.8	23.8	52.1	7.9	7.9		7.9	7.9	52.1
Actuated g/C Ratio	0.16	0.60		0.02	0.46	1.00	0.15	0.15		0.15	0.15	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	548	2997		26	2300	1544	207	250		205	279	1539
v/s Ratio Prot	c0.06	c0.15		0.01	0.11			0.01			0.01	
v/s Ratio Perm						0.02	0.03			c0.05		c0.20
v/c Ratio	0.39	0.25		0.62	0.24	0.02	0.18	0.06		0.33	0.04	0.20
Uniform Delay, d1	19.6	4.9		25.5	8.6	0.0	19.3	18.9		19.7	18.9	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		26.7	0.1	0.0	0.2	0.0		0.3	0.0	0.3
Delay (s)	19.7	4.9		52.2	8.7	0.0	19.4	18.9		20.1	18.9	0.3
Level of Service	B	A		D	A	A	B	B		C	B	A
Approach Delay (s/veh)		8.2			9.4			19.2			4.3	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	455	148	120	520	434	368
Future Volume (vph)	455	148	120	520	434	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.97	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3231	1394
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3231	1394
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	500	163	132	571	477	404
RTOR Reduction (vph)	0	119	0	0	29	173
Lane Group Flow (vph)	500	44	132	571	581	98
Confl. Peds. (#/hr)						23
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	13.3	13.3	7.3	28.9	17.6	17.6
Effective Green, g (s)	14.2	14.2	7.3	30.2	18.9	18.9
Actuated g/C Ratio	0.27	0.27	0.14	0.58	0.36	0.36
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	921	424	244	2902	1165	502
v/s Ratio Prot	c0.15		c0.08	0.11	c0.18	
v/s Ratio Perm		0.03				0.07
v/c Ratio	0.54	0.10	0.54	0.20	0.50	0.19
Uniform Delay, d1	16.3	14.3	21.0	5.3	13.1	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	1.3	0.0	0.2	0.1
Delay (s)	16.7	14.4	22.3	5.3	13.3	11.7
Level of Service	B	B	C	A	B	B
Approach Delay (s/veh)	16.1			8.5	12.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	687	27	53	518	28	20	0	20	16	0	29
Future Volume (Veh/h)	57	687	27	53	518	28	20	0	20	16	0	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	747	29	58	563	30	22	0	22	17	0	32
Pedestrians								7			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		586										
pX, platoon unblocked				1.00			1.00	1.00	1.00	1.00	1.00	
vC, conflicting volume	594			783			1228	1603	271	1090	1602	204
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	594			767			1214	1590	252	1075	1590	204
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			93			81	100	97	89	100	96
cM capacity (veh/h)	970			827			116	91	737	149	91	799

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	62	299	299	178	58	225	225	143	22	22	49
Volume Left	62	0	0	0	58	0	0	0	22	0	17
Volume Right	0	0	0	29	0	0	0	30	0	22	32
cSH	970	1700	1700	1700	827	1700	1700	1700	116	737	318
Volume to Capacity	0.06	0.18	0.18	0.10	0.07	0.13	0.13	0.08	0.19	0.03	0.15
Queue Length 95th (ft)	5	0	0	0	6	0	0	0	17	2	13
Control Delay (s/veh)	9.0	0.0	0.0	0.0	9.7	0.0	0.0	0.0	43.1	10.0	18.4
Lane LOS	A				A				E	B	C
Approach Delay (s/veh)	0.7				0.9				26.6		18.4
Approach LOS									D		C

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	714	580	30	6	19
Future Volume (Veh/h)	9	714	580	30	6	19
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	10	785	637	33	7	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		977	1253			
pX, platoon unblocked						
vC, conflicting volume	670				935	229
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	670				935	229
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	97
cM capacity (veh/h)	909				259	771

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	10	262	262	262	255	255	160	28
Volume Left	10	0	0	0	0	0	0	7
Volume Right	0	0	0	0	0	0	33	21
cSH	909	1700	1700	1700	1700	1700	1700	516
Volume to Capacity	0.01	0.15	0.15	0.15	0.15	0.15	0.09	0.05
Queue Length 95th (ft)	1	0	0	0	0	0	0	4
Control Delay (s/veh)	9.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4
Lane LOS	A							B
Approach Delay (s/veh)	0.1				0.0			12.4
Approach LOS								B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	517	0	310	0	1056	213	0	555	329
Future Volume (vph)	0	0	0	517	0	310	0	1056	213	0	555	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	0.99
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.97	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1534		4614	1332
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1534		4614	1332
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	562	0	337	0	1148	232	0	603	358
RTOR Reduction (vph)	0	0	0	0	0	88	0	0	0	0	45	0
Lane Group Flow (vph)	0	0	0	562	0	249	0	1148	232	0	698	218
Confl. Peds. (#/hr)									4			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				15.4		15.4		38.3	65.0		38.3	65.0
Effective Green, g (s)				16.8		16.8		40.2	65.0		40.2	65.0
Actuated g/C Ratio				0.26		0.26		0.62	1.00		0.62	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				878		713		3114	1534		2853	1332
v/s Ratio Prot				c0.17		0.09		c0.23			0.15	
v/s Ratio Perm									0.15			0.16
v/c Ratio				0.64		0.35		0.37	0.15		0.24	0.16
Uniform Delay, d1				21.4		19.6		6.1	0.0		5.6	0.0
Progression Factor				1.00		1.00		0.41	1.00		1.00	1.00
Incremental Delay, d2				1.2		0.1		0.3	0.2		0.2	0.3
Delay (s)				22.6		19.8		2.8	0.2		5.8	0.3
Level of Service				C		B		A	A		A	A
Approach Delay (s/veh)		0.0			21.5			2.4			4.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	787	0	647	0	0	0	0	482	193	0	902	170
Future Volume (vph)	787	0	647	0	0	0	0	482	193	0	902	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					0.99	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4702	1348		5036	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4702	1348		5036	1536
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	874	0	719	0	0	0	0	536	214	0	1002	189
RTOR Reduction (vph)	0	0	26	0	0	0	0	15	73	0	0	0
Lane Group Flow (vph)	874	0	693	0	0	0	0	568	94	0	1002	189
Confl. Peds. (#/hr)			2				1					1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		custom					NA	Perm		NA	Free
Protected Phases	4		5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	19.2		29.4					34.5	34.5		24.3	65.0
Effective Green, g (s)	20.6		30.8					36.4	36.4		26.2	65.0
Actuated g/C Ratio	0.32		0.47					0.56	0.56		0.40	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1077		1307					2633	754		2029	1536
v/s Ratio Prot	c0.26		c0.25					0.12			c0.20	
v/s Ratio Perm									0.07			0.12
v/c Ratio	0.81		0.53					0.22	0.12		0.49	0.12
Uniform Delay, d1	20.4		12.0					7.2	6.8		14.5	0.0
Progression Factor	1.00		1.00					1.00	1.00		1.06	1.00
Incremental Delay, d2	4.6		0.2					0.2	0.3		0.8	0.2
Delay (s)	25.0		12.2					7.3	7.1		16.1	0.2
Level of Service	C		B					A	A		B	A
Approach Delay (s/veh)		19.3			0.0			7.3			13.6	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	122	10	73	213	356	19	249	79	423	855	271
Future Volume (vph)	70	122	10	73	213	356	19	249	79	423	855	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	130	11	78	227	379	20	265	84	450	910	288
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	74	130	11	78	227	379	20	265	84	450	910	288
Confl. Peds. (#/hr)			4			6			4			4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.2	11.3	64.8	5.2	11.3	64.8	0.6	15.4	64.8	13.9	28.7	64.8
Effective Green, g (s)	5.2	13.0	64.8	5.2	13.0	64.8	0.6	16.7	64.8	13.9	30.0	64.8
Actuated g/C Ratio	0.08	0.20	1.00	0.08	0.20	1.00	0.01	0.26	1.00	0.21	0.46	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	272	1010	1547	272	1010	1546	31	1297	1547	729	2331	1547
v/s Ratio Prot	0.02	0.03		0.02	0.05		0.01	0.05		c0.13	c0.18	
v/s Ratio Perm			0.01			c0.25			0.05			0.19
v/c Ratio	0.27	0.13	0.01	0.29	0.22	0.25	0.65	0.20	0.05	0.62	0.39	0.19
Uniform Delay, d1	28.0	21.3	0.0	28.1	21.7	0.0	32.0	18.8	0.0	23.0	11.4	0.0
Progression 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
Incremental Delay, d2	0.2	0.0	0.0	0.2	0.0	0.4	29.6	0.0	0.1	1.1	0.0	0.3
Delay (s)	28.2	21.3	0.0	28.3	21.7	0.4	61.6	18.9	0.1	24.1	11.4	0.3
Level of Service	C	C	A	C	C	A	E	B	A	C	B	A
Approach Delay (s/veh)		22.6			10.6			16.9			13.0	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	409	23	15	560	29	40	2	33	16	5	83
Future Volume (vph)	206	409	23	15	560	29	40	2	33	16	5	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4986		1752	5036	1543	1746	1560		1748	1845	1544
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3400	4986		1752	5036	1543	1385	1560		1345	1845	1544
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	237	470	26	17	644	33	46	2	38	18	6	95
RTOR Reduction (vph)	0	5	0	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	237	491	0	17	644	33	46	7	0	18	6	95
Confl. Peds. (#/hr)			12			10	8		6	6		8
Confl. Bikes (#/hr)			2			4						3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	8.7	31.3		0.8	23.4	52.8	6.8	6.8		6.5	6.5	52.8
Effective Green, g (s)	8.7	32.6		0.8	24.7	52.8	7.4	7.4		7.4	7.4	52.8
Actuated g/C Ratio	0.16	0.62		0.02	0.47	1.00	0.14	0.14		0.14	0.14	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	560	3078		26	2355	1543	194	218		188	258	1544
v/s Ratio Prot	c0.07	0.10		0.01	c0.13			0.00			0.00	
v/s Ratio Perm						0.02	c0.03			0.01		0.06
v/c Ratio	0.42	0.16		0.65	0.27	0.02	0.24	0.03		0.10	0.02	0.06
Uniform Delay, d1	19.8	4.3		25.9	8.6	0.0	20.2	19.6		19.8	19.6	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		37.0	0.1	0.0	0.2	0.0		0.1	0.0	0.1
Delay (s)	20.0	4.3		62.8	8.7	0.0	20.4	19.6		19.9	19.6	0.1
Level of Service	B	A		E	A	A	C	B		B	B	A
Approach Delay (s/veh)		9.4			9.6			20.1			4.1	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	266	122	130	302	733	350
Future Volume (vph)	266	122	130	302	733	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.99	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3331	1395
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3331	1395
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	299	137	146	339	824	393
RTOR Reduction (vph)	0	109	0	0	3	202
Lane Group Flow (vph)	299	28	146	339	860	152
Confl. Peds. (#/hr)						21
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	10.2	10.2	7.8	33.7	21.9	21.9
Effective Green, g (s)	11.1	11.1	7.8	35.0	23.2	23.2
Actuated g/C Ratio	0.21	0.21	0.14	0.65	0.43	0.43
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	697	321	252	3258	1428	598
v/s Ratio Prot	c0.09		c0.08	0.07	c0.26	
v/s Ratio Perm		0.02				0.11
v/c Ratio	0.43	0.09	0.58	0.10	0.60	0.25
Uniform Delay, d1	18.7	17.4	21.6	3.6	11.9	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	2.0	0.0	0.6	0.2
Delay (s)	18.9	17.4	23.6	3.6	12.5	10.1
Level of Service	B	B	C	A	B	B
Approach Delay (s/veh)	18.4			9.6	11.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	434	7	14	486	11	17	0	17	25	0	77
Future Volume (Veh/h)	27	434	7	14	486	11	17	0	17	25	0	77
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	31	505	8	16	565	13	20	0	20	29	0	90
Pedestrians								9				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		600										
pX, platoon unblocked												
vC, conflicting volume	578			522			890	1190	181	854	1188	195
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	578			522			890	1190	181	854	1188	195
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			90	100	98	88	100	89
cM capacity (veh/h)	978			1019			198	174	818	233	174	808

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	31	202	202	109	16	226	226	126	20	20	119
Volume Left	31	0	0	0	16	0	0	0	20	0	29
Volume Right	0	0	0	8	0	0	0	13	0	20	90
cSH	978	1700	1700	1700	1019	1700	1700	1700	198	818	504
Volume to Capacity	0.03	0.12	0.12	0.06	0.02	0.13	0.13	0.07	0.10	0.02	0.24
Queue Length 95th (ft)	2	0	0	0	1	0	0	0	8	2	23
Control Delay (s/veh)	8.8	0.0	0.0	0.0	8.6	0.0	0.0	0.0	25.2	9.5	14.3
Lane LOS	A				A				D	A	B
Approach Delay (s/veh)	0.5				0.2				17.4		14.3
Approach LOS									C		B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	474	503	11	2	8
Future Volume (Veh/h)	2	474	503	11	2	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	3	649	689	15	3	11
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		989	1239			
pX, platoon unblocked						
vC, conflicting volume	705				920	238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	705				920	238
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	875				265	756

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	3	216	216	216	276	276	153	14
Volume Left	3	0	0	0	0	0	0	3
Volume Right	0	0	0	0	0	0	15	11
cSH	875	1700	1700	1700	1700	1700	1700	542
Volume to Capacity	0.00	0.13	0.13	0.13	0.16	0.16	0.09	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	0	2
Control Delay (s/veh)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS	A							B
Approach Delay (s/veh)	0.0				0.0			11.8
Approach LOS								B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	20.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	335	0	438	0	1231	481	0	835	732
Future Volume (vph)	0	0	0	335	0	438	0	1231	481	0	835	732
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.95	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1533		4541	1348
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1533		4541	1348
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	356	0	466	0	1310	512	0	888	779
RTOR Reduction (vph)	0	0	0	0	0	59	0	0	0	0	99	0
Lane Group Flow (vph)	0	0	0	356	0	407	0	1310	512	0	1179	389
Confl. Peds. (#/hr)									5	5		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				14.1		14.1		39.6	65.0		39.6	65.0
Effective Green, g (s)				15.5		15.5		41.5	65.0		41.5	65.0
Actuated g/C Ratio				0.24		0.24		0.64	1.00		0.64	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				810		658		3215	1533		2899	1348
v/s Ratio Prot				0.10		c0.15		c0.26			0.26	
v/s Ratio Perm									0.33			0.29
v/c Ratio				0.44		0.62		0.41	0.33		0.41	0.29
Uniform Delay, d1				21.1		22.1		5.7	0.0		5.7	0.0
Progression Factor				1.00		1.00		0.61	1.00		1.00	1.00
Incremental Delay, d2				0.1		1.2		0.3	0.5		0.4	0.5
Delay (s)				21.2		23.3		3.9	0.5		6.2	0.5
Level of Service				C		C		A	A		A	A
Approach Delay (s/veh)		0.0			22.4			2.9			4.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	575	0	240	0	0	0	0	1160	465	0	861	311
Future Volume (vph)	575	0	240	0	0	0	0	1160	465	0	861	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					0.99	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4701	1348		5036	1568
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4701	1348		5036	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	618	0	258	0	0	0	0	1247	500	0	926	334
RTOR Reduction (vph)	0	0	32	0	0	0	0	13	157	0	0	0
Lane Group Flow (vph)	618	0	226	0	0	0	0	1344	233	0	926	334
Confl. Peds. (#/hr)			6									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		custom					NA	Perm		NA	Free
Protected Phases			5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	16.8		26.2					36.9	36.9		27.5	65.0
Effective Green, g (s)	18.2		27.6					38.8	38.8		29.4	65.0
Actuated g/C Ratio	0.28		0.42					0.60	0.60		0.45	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	952		1171					2806	804		2277	1568
v/s Ratio Prot			0.08					c0.29			0.18	
v/s Ratio Perm	c0.18								0.17			0.21
v/c Ratio	0.65		0.19					0.48	0.29		0.41	0.21
Uniform Delay, d1	20.6		11.7					7.4	6.4		11.9	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.90	1.00
Incremental Delay, d2	1.4		0.0					0.6	0.9		0.5	0.3
Delay (s)	22.0		11.7					8.0	7.3		11.2	0.3
Level of Service	C		B					A	A		B	A
Approach Delay (s/veh)		18.9			0.0			7.8			8.3	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	410	33	108	233	672	7	619	118	510	421	170
Future Volume (vph)	334	410	33	108	233	672	7	619	118	510	421	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	355	436	35	115	248	715	7	659	126	543	448	181
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	355	436	35	115	248	715	7	659	126	543	448	181
Confl. Peds. (#/hr)			1			9			2			1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	14.8	18.8	87.0	8.1	12.1	87.0	0.7	21.9	87.0	19.2	40.4	87.0
Effective Green, g (s)	14.8	20.5	87.0	8.1	13.8	87.0	0.7	23.2	87.0	19.2	41.7	87.0
Actuated g/C Ratio	0.17	0.24	1.00	0.09	0.16	1.00	0.01	0.27	1.00	0.22	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	578	1186	1549	316	798	1545	27	1342	1548	750	2413	1548
v/s Ratio Prot	c0.10	0.09		0.03	0.05		0.00	0.13		c0.16	0.09	
v/s Ratio Perm			0.02			c0.46			0.08			0.12
v/c Ratio	0.61	0.37	0.02	0.36	0.31	0.46	0.26	0.49	0.08	0.72	0.19	0.12
Uniform Delay, d1	33.5	27.8	0.0	37.0	32.4	0.0	42.9	26.9	0.0	31.4	12.9	0.0
Progression 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
Incremental Delay, d2	1.4	0.1	0.0	0.3	0.1	1.0	1.9	0.1	0.1	3.0	0.0	0.2
Delay (s)	34.8	27.9	0.0	37.3	32.5	1.0	44.7	27.0	0.1	34.4	13.0	0.2
Level of Service	C	C	A	D	C	A	D	C	A	C	B	A
Approach Delay (s/veh)		29.7			12.1			22.9			20.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	698	45	26	552	35	36	10	18	64	11	294
Future Volume (vph)	224	698	45	26	552	35	36	10	18	64	11	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4975		1752	5036	1544	1736	1654		1748	1845	1539
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.74	1.00	1.00
Satd. Flow (perm)	3400	4975		1752	5036	1544	1370	1654		1357	1845	1539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	236	735	47	27	581	37	38	11	19	67	12	309
RTOR Reduction (vph)	0	7	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	236	775	0	27	581	37	38	14	0	67	12	309
Confl. Peds. (#/hr)			22			12	21		6	6		21
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	8.7	30.2		0.9	22.4	52.3	7.3	7.3		7.0	7.0	52.3
Effective Green, g (s)	8.7	31.5		0.9	23.7	52.3	7.9	7.9		7.9	7.9	52.3
Actuated g/C Ratio	0.17	0.60		0.02	0.45	1.00	0.15	0.15		0.15	0.15	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	565	2996		30	2282	1544	206	249		204	278	1539
v/s Ratio Prot	c0.07	c0.16		0.02	0.12			0.01			0.01	
v/s Ratio Perm						0.02	0.03			c0.05		0.20
v/c Ratio	0.42	0.26		0.90	0.25	0.02	0.18	0.06		0.33	0.04	0.20
Uniform Delay, d1	19.5	4.9		25.7	8.8	0.0	19.4	19.0		19.8	19.0	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		120.4	0.1	0.0	0.2	0.0		0.3	0.0	0.3
Delay (s)	19.7	5.0		146.1	9.0	0.0	19.5	19.0		20.2	19.0	0.3
Level of Service	B	A		F	A	A	B	B		C	B	A
Approach Delay (s/veh)		8.4			14.2			19.3			4.3	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	454	151	121	520	434	360
Future Volume (vph)	454	151	121	520	434	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.97	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3233	1394
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3233	1394
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	499	166	133	571	477	396
RTOR Reduction (vph)	0	121	0	0	28	170
Lane Group Flow (vph)	499	45	133	571	580	95
Confl. Peds. (#/hr)						23
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	13.2	13.2	7.3	28.7	17.4	17.4
Effective Green, g (s)	14.1	14.1	7.3	30.0	18.7	18.7
Actuated g/C Ratio	0.27	0.27	0.14	0.58	0.36	0.36
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	920	424	245	2899	1160	500
v/s Ratio Prot	c0.15		c0.08	0.11	c0.18	
v/s Ratio Perm		0.03				0.07
v/c Ratio	0.54	0.11	0.54	0.20	0.50	0.19
Uniform Delay, d1	16.2	14.3	20.8	5.3	13.0	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	1.3	0.0	0.2	0.1
Delay (s)	16.6	14.3	22.2	5.3	13.3	11.6
Level of Service	B	B	C	A	B	B
Approach Delay (s/veh)	16.0			8.5	12.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	687	27	53	519	29	20	0	20	17	0	43
Future Volume (Veh/h)	77	687	27	53	519	29	20	0	20	17	0	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	747	29	58	564	32	22	0	22	18	0	47
Pedestrians								7			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		586										
pX, platoon unblocked				1.00			1.00	1.00	1.00	1.00	1.00	
vC, conflicting volume	597			783			1288	1650	271	1136	1648	205
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	597			775			1281	1644	262	1129	1642	205
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			93			78	100	97	87	100	94
cM capacity (veh/h)	968			823			100	82	728	134	82	798

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	84	299	299	178	58	226	226	145	22	22	65
Volume Left	84	0	0	0	58	0	0	0	22	0	18
Volume Right	0	0	0	29	0	0	0	32	0	22	47
cSH	968	1700	1700	1700	823	1700	1700	1700	100	728	336
Volume to Capacity	0.09	0.18	0.18	0.10	0.07	0.13	0.13	0.09	0.22	0.03	0.19
Queue Length 95th (ft)	7	0	0	0	6	0	0	0	20	2	18
Control Delay (s/veh)	9.1	0.0	0.0	0.0	9.7	0.0	0.0	0.0	51.0	10.1	18.3
Lane LOS	A				A				F	B	C
Approach Delay (s/veh)	0.9				0.9				30.5		18.3
Approach LOS									D		C

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	721	585	18	1	16
Future Volume (Veh/h)	3	721	585	18	1	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	792	643	20	1	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		977	1253			
pX, platoon unblocked						
vC, conflicting volume	663				923	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	663				923	224
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	98
cM capacity (veh/h)	915				266	776

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	3	264	264	264	257	257	149	19
Volume Left	3	0	0	0	0	0	0	1
Volume Right	0	0	0	0	0	0	20	18
cSH	915	1700	1700	1700	1700	1700	1700	705
Volume to Capacity	0.00	0.16	0.16	0.16	0.15	0.15	0.09	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	0	2
Control Delay (s/veh)	8.9	0.0	0.0	0.0	0.0	0.0	0.0	10.2
Lane LOS	A							B
Approach Delay (s/veh)	0.0				0.0			10.2
Approach LOS								B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	510	0	400	0	1560	300	0	1410	380
Future Volume (vph)	0	0	0	510	0	400	0	1560	300	0	1410	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	0.99
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1534		4739	1332
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1534		4739	1332
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	554	0	435	0	1696	326	0	1533	413
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	554	0	399	0	1696	326	0	1571	372
Confl. Peds. (#/hr)									4			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				15.3		15.3		38.4	65.0		38.4	65.0
Effective Green, g (s)				16.7		16.7		40.3	65.0		40.3	65.0
Actuated g/C Ratio				0.26		0.26		0.62	1.00		0.62	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				873		709		3122	1534		2938	1332
v/s Ratio Prot				c0.16		0.14		c0.34			0.33	
v/s Ratio Perm									0.21			0.28
v/c Ratio				0.63		0.56		0.54	0.21		0.53	0.28
Uniform Delay, d1				21.4		21.0		7.1	0.0		7.0	0.0
Progression Factor				1.00		1.00		0.49	1.00		1.00	1.00
Incremental Delay, d2				1.1		0.6		0.5	0.2		0.7	0.5
Delay (s)				22.6		21.6		4.0	0.2		7.7	0.5
Level of Service				C		C		A	A		A	A
Approach Delay (s/veh)		0.0			22.1			3.4			6.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	0	810	0	0	0	0	970	180	0	1550	370
Future Volume (vph)	890	0	810	0	0	0	0	970	180	0	1550	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4746	1348		5036	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4746	1348		5036	1536
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	989	0	900	0	0	0	0	1078	200	0	1722	411
RTOR Reduction (vph)	0	0	25	0	0	0	0	3	80	0	0	0
Lane Group Flow (vph)	989	0	875	0	0	0	0	1095	100	0	1722	411
Confl. Peds. (#/hr)			2				1					1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		custom					NA	Perm		NA	Free
Protected Phases	4		5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	19.6		30.6					34.1	34.1		23.1	65.0
Effective Green, g (s)	21.0		32.0					36.0	36.0		25.0	65.0
Actuated g/C Ratio	0.32		0.49					0.55	0.55		0.38	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1098		1358					2628	746		1936	1536
v/s Ratio Prot	c0.29		c0.32					0.23			c0.34	
v/s Ratio Perm									0.07			0.27
v/c Ratio	0.90		0.64					0.42	0.13		0.89	0.27
Uniform Delay, d1	21.0		12.3					8.4	7.0		18.7	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.84	1.00
Incremental Delay, d2	10.2		0.8					0.5	0.4		5.8	0.4
Delay (s)	31.2		13.1					8.9	7.4		21.4	0.4
Level of Service	C		B					A	A		C	A
Approach Delay (s/veh)		22.5			0.0			8.7			17.4	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	130	30	100	400	720	60	340	180	750	970	640
Future Volume (vph)	90	130	30	100	400	720	60	340	180	750	970	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	96	138	32	106	426	766	64	362	191	798	1032	681
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	96	138	32	106	426	766	64	362	191	798	1032	681
Confl. Peds. (#/hr)			4			6			4			4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.9	14.4	86.3	7.4	15.9	86.3	5.2	14.3	86.3	31.2	40.3	86.3
Effective Green, g (s)	5.9	16.1	86.3	7.4	17.6	86.3	5.2	15.6	86.3	31.2	41.6	86.3
Actuated g/C Ratio	0.07	0.19	1.00	0.09	0.20	1.00	0.06	0.18	1.00	0.36	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	232	939	1547	291	1027	1546	204	910	1547	1229	2427	1547
v/s Ratio Prot	0.03	0.03		0.03	0.08		0.02	0.07		c0.23	0.20	
v/s Ratio Perm			0.02			c0.50			0.12			0.44
v/c Ratio	0.41	0.15	0.02	0.36	0.41	0.50	0.31	0.40	0.12	0.65	0.43	0.44
Uniform Delay, d1	38.5	29.4	0.0	37.2	29.9	0.0	38.8	31.2	0.0	23.0	14.6	0.0
Progression 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
Incremental Delay, d2	0.4	0.0	0.0	0.3	0.1	1.1	0.3	0.1	0.2	0.9	0.0	0.9
Delay (s)	39.0	29.4	0.0	37.5	30.0	1.1	39.2	31.3	0.2	23.9	14.6	0.9
Level of Service	D	C	A	D	C	A	D	C	A	C	B	A
Approach Delay (s/veh)		29.3			13.6			22.5			13.8	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	750	30	10	870	40	60	10	40	40	10	320
Future Volume (vph)	280	750	30	10	870	40	60	10	40	40	10	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	5000		1752	5036	1543	1745	1602		1747	1845	1544
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.72	1.00	1.00
Satd. Flow (perm)	3400	5000		1752	5036	1543	1378	1602		1324	1845	1544
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	322	862	34	11	1000	46	69	11	46	46	11	368
RTOR Reduction (vph)	0	4	0	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	322	892	0	11	1000	46	69	18	0	46	11	368
Confl. Peds. (#/hr)			12			10	8		6	6		8
Confl. Bikes (#/hr)			2			4						3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	10.8	38.3		0.8	28.3	62.1	9.1	9.1		8.8	8.8	62.1
Effective Green, g (s)	10.8	39.6		0.8	29.6	62.1	9.7	9.7		9.7	9.7	62.1
Actuated g/C Ratio	0.17	0.64		0.01	0.48	1.00	0.16	0.16		0.16	0.16	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	591	3188		22	2400	1543	215	250		206	288	1544
v/s Ratio Prot	c0.09	0.18		0.01	c0.20			0.01			0.01	
v/s Ratio Perm						0.03	0.05			0.03		c0.24
v/c Ratio	0.54	0.28		0.50	0.42	0.03	0.32	0.07		0.22	0.04	0.24
Uniform Delay, d1	23.4	5.0		30.5	10.6	0.0	23.3	22.4		22.9	22.2	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1		6.4	0.2	0.0	0.3	0.0		0.2	0.0	0.4
Delay (s)	24.0	5.1		36.8	10.9	0.0	23.6	22.4		23.1	22.3	0.4
Level of Service	C	A		D	B	A	C	C		C	C	A
Approach Delay (s/veh)		10.1			10.7			23.1			3.4	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	550	180	270	470	1020	590
Future Volume (vph)	550	180	270	470	1020	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.99	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3301	1387
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3301	1387
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	618	202	303	528	1146	663
RTOR Reduction (vph)	0	156	0	0	8	315
Lane Group Flow (vph)	618	46	303	528	1257	229
Confl. Peds. (#/hr)						21
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	18.1	18.1	17.5	55.5	34.0	34.0
Effective Green, g (s)	19.0	19.0	17.5	56.8	35.3	35.3
Actuated g/C Ratio	0.23	0.23	0.21	0.68	0.42	0.42
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	770	355	365	3413	1390	584
v/s Ratio Prot	c0.18		c0.17	0.10	c0.38	
v/s Ratio Perm		0.03				0.17
v/c Ratio	0.80	0.13	0.83	0.15	0.90	0.39
Uniform Delay, d1	30.6	25.8	31.7	4.9	22.7	16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	0.1	14.1	0.0	8.6	0.3
Delay (s)	36.3	25.9	45.8	4.9	31.2	17.1
Level of Service	D	C	D	A	C	B
Approach Delay (s/veh)	33.8			19.8	27.0	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	810	10	20	890	10	20	0	10	0	0	10
Future Volume (Veh/h)	10	810	10	20	890	10	20	0	10	0	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	942	12	23	1035	12	23	0	12	0	0	12
Pedestrians								9				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		600										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	1047			963			1384	2074	329	1437	2074	351
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1047			799			1240	1962	136	1295	1962	351
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			80	100	99	100	100	98
cM capacity (veh/h)	648			765			115	55	836	106	55	639

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	12	377	377	200	23	414	414	219	23	12	12
Volume Left	12	0	0	0	23	0	0	0	23	0	0
Volume Right	0	0	0	12	0	0	0	12	0	12	12
cSH	648	1700	1700	1700	765	1700	1700	1700	115	836	639
Volume to Capacity	0.02	0.22	0.22	0.12	0.03	0.24	0.24	0.13	0.20	0.01	0.02
Queue Length 95th (ft)	1	0	0	0	2	0	0	0	18	1	1
Control Delay (s/veh)	10.7	0.0	0.0	0.0	9.9	0.0	0.0	0.0	43.8	9.4	10.7
Lane LOS	B				A				E	A	B
Approach Delay (s/veh)	0.1				0.2				32.0		10.7
Approach LOS									D		B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	820	910	10	0	10
Future Volume (Veh/h)	0	820	910	10	0	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	0	1123	1247	14	0	14
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		989	1239			
pX, platoon unblocked						
vC, conflicting volume	1262				1629	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1262				1629	424
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	98
cM capacity (veh/h)	535				91	573

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	374	374	374	499	499	263	14
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	14	14
cSH	1700	1700	1700	1700	1700	1700	573
Volume to Capacity	0.22	0.22	0.22	0.29	0.29	0.15	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS							B
Approach Delay (s/veh)	0.0			0.0			11.4
Approach LOS							B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	320	0	520	0	2180	670	0	1520	740
Future Volume (vph)	0	0	0	320	0	520	0	2180	670	0	1520	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.98	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1533		4666	1348
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1533		4666	1348
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	340	0	553	0	2319	713	0	1617	787
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	25	0
Lane Group Flow (vph)	0	0	0	340	0	517	0	2319	713	0	1836	543
Confl. Peds. (#/hr)									5	5		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				16.2		16.2		37.5	65.0		37.5	65.0
Effective Green, g (s)				17.6		17.6		39.4	65.0		39.4	65.0
Actuated g/C Ratio				0.27		0.27		0.61	1.00		0.61	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				920		747		3052	1533		2828	1348
v/s Ratio Prot				0.10		c0.19		c0.46			0.39	
v/s Ratio Perm									0.47			0.40
v/c Ratio				0.37		0.69		0.76	0.47		0.65	0.40
Uniform Delay, d1				19.2		21.3		9.3	0.0		8.3	0.0
Progression Factor				1.00		1.00		1.02	1.00		1.00	1.00
Incremental Delay, d2				0.1		2.3		1.0	0.6		1.2	0.9
Delay (s)				19.3		23.5		10.5	0.6		9.5	0.9
Level of Service				B		C		B	A		A	A
Approach Delay (s/veh)		0.0			21.9			8.2			7.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	710	0	300	0	0	0	0	2140	370	0	1520	320
Future Volume (vph)	710	0	300	0	0	0	0	2140	370	0	1520	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4747	1348		5036	1568
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4747	1348		5036	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	763	0	323	0	0	0	0	2301	398	0	1634	344
RTOR Reduction (vph)	0	0	27	0	0	0	0	3	152	0	0	0
Lane Group Flow (vph)	763	0	296	0	0	0	0	2338	206	0	1634	344
Confl. Peds. (#/hr)			6									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		custom					NA	Perm		NA	Free
Protected Phases			5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	18.2		27.6					35.5	35.5		26.1	65.0
Effective Green, g (s)	19.6		29.0					37.4	37.4		28.0	65.0
Actuated g/C Ratio	0.30		0.45					0.58	0.58		0.43	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1025		1231					2731	775		2169	1568
v/s Ratio Prot			0.11					c0.49			0.32	
v/s Ratio Perm	c0.22								0.15			0.22
v/c Ratio	0.74		0.24					0.86	0.27		0.75	0.22
Uniform Delay, d1	20.4		11.2					11.6	6.9		15.6	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.72	1.00
Incremental Delay, d2	2.8		0.0					3.7	0.8		2.0	0.3
Delay (s)	23.3		11.2					15.3	7.8		13.2	0.3
Level of Service	C		B					B	A		B	A
Approach Delay (s/veh)		19.7			0.0			14.3			11.0	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	600	60	180	290	1020	30	840	140	790	700	330
Future Volume (vph)	650	600	60	180	290	1020	30	840	140	790	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	691	638	64	191	309	1085	32	894	149	840	745	351
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	691	638	64	191	309	1085	32	894	149	840	745	351
Confl. Peds. (#/hr)			1			9			2			1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	28.0	31.2	119.3	11.3	14.5	119.3	3.5	27.3	119.3	30.5	54.3	119.3
Effective Green, g (s)	28.0	32.9	119.3	11.3	16.2	119.3	3.5	28.6	119.3	30.5	55.6	119.3
Actuated g/C Ratio	0.23	0.28	1.00	0.09	0.14	1.00	0.03	0.24	1.00	0.26	0.47	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	797	1388	1549	322	683	1545	99	1207	1548	869	2347	1548
v/s Ratio Prot	c0.20	0.13		0.06	0.06		0.01	0.18		c0.25	0.15	
v/s Ratio Perm			0.04			c0.70			0.10			0.23
v/c Ratio	0.87	0.46	0.04	0.59	0.45	0.70	0.32	0.74	0.10	0.97	0.32	0.23
Uniform Delay, d1	43.9	35.8	0.0	51.8	47.5	0.0	56.7	41.9	0.0	43.9	20.0	0.0
Progression 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
Incremental Delay, d2	9.5	0.1	0.1	2.0	0.2	2.7	0.7	2.2	0.1	22.4	0.0	0.3
Delay (s)	53.4	35.9	0.1	53.7	47.6	2.7	57.4	44.1	0.1	66.3	20.0	0.3
Level of Service	D	D	A	D	D	A	E	D	A	E	B	A
Approach Delay (s/veh)		42.9			17.6			38.4			36.5	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	119.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	900	100	30	800	50	60	20	20	80	20	490
Future Volume (vph)	430	900	100	30	800	50	60	20	20	80	20	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4933		1752	5036	1544	1733	1693		1747	1845	1539
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3400	4933		1752	5036	1544	1357	1693		1342	1845	1539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	453	947	105	32	842	53	63	21	21	84	21	516
RTOR Reduction (vph)	0	12	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	453	1040	0	32	842	53	63	25	0	84	21	516
Confl. Peds. (#/hr)			22			12	21		6	6		21
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	12.9	35.2		2.2	24.5	60.9	9.6	9.6		9.3	9.3	60.9
Effective Green, g (s)	12.9	36.5		2.2	25.8	60.9	10.2	10.2		10.2	10.2	60.9
Actuated g/C Ratio	0.21	0.60		0.04	0.42	1.00	0.17	0.17		0.17	0.17	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	720	2956		63	2133	1544	227	283		224	309	1539
v/s Ratio Prot	c0.13	0.21		0.02	c0.17			0.01			0.01	
v/s Ratio Perm						0.03	0.05			0.06		c0.34
v/c Ratio	0.63	0.35		0.51	0.39	0.03	0.28	0.09		0.38	0.07	0.34
Uniform Delay, d1	21.8	6.2		28.8	12.1	0.0	22.1	21.4		22.5	21.3	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2		2.3	0.3	0.0	0.2	0.0		0.4	0.0	0.6
Delay (s)	23.1	6.3		31.2	12.4	0.0	22.4	21.5		22.9	21.4	0.6
Level of Service	C	A		C	B	A	C	C		C	C	A
Approach Delay (s/veh)		11.4			12.3			22.0			4.3	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	680	210	110	780	750	690
Future Volume (vph)	680	210	110	780	750	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.96	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3211	1389
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3211	1389
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	747	231	121	857	824	758
RTOR Reduction (vph)	0	165	0	0	32	274
Lane Group Flow (vph)	747	66	121	857	1065	211
Confl. Peds. (#/hr)						23
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	19.3	19.3	7.8	41.2	29.4	29.4
Effective Green, g (s)	20.2	20.2	7.8	42.5	30.7	30.7
Actuated g/C Ratio	0.29	0.29	0.11	0.60	0.43	0.43
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	971	448	193	3027	1394	603
v/s Ratio Prot	c0.22		c0.07	0.17	c0.33	
v/s Ratio Perm		0.04				0.15
v/c Ratio	0.77	0.15	0.63	0.28	0.76	0.35
Uniform Delay, d1	23.1	18.8	30.1	6.8	16.9	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.1	4.5	0.0	2.4	0.3
Delay (s)	26.5	18.9	34.6	6.8	19.4	13.6
Level of Service	C	B	C	A	B	B
Approach Delay (s/veh)	24.7			10.2	17.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	960	30	60	860	0	20	0	20	0	0	0
Future Volume (Veh/h)	10	960	30	60	860	0	20	0	20	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1043	33	65	935	0	22	0	22	0	0	0
Pedestrians								7			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		586										
pX, platoon unblocked				0.93			0.93	0.93	0.93	0.93	0.93	
vC, conflicting volume	936			1083			1530	2155	371	1458	2171	313
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	936			830			1311	1981	66	1233	1999	313
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			91			78	100	98	100	100	100
cM capacity (veh/h)	721			732			98	50	908	110	49	680

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	11	417	417	242	65	374	374	187	22	22	0
Volume Left	11	0	0	0	65	0	0	0	22	0	0
Volume Right	0	0	0	33	0	0	0	0	0	22	0
cSH	721	1700	1700	1700	732	1700	1700	1700	98	908	1700
Volume to Capacity	0.02	0.25	0.25	0.14	0.09	0.22	0.22	0.11	0.22	0.02	0.00
Queue Length 95th (ft)	1	0	0	0	7	0	0	0	20	2	0
Control Delay (s/veh)	10.1	0.0	0.0	0.0	10.4	0.0	0.0	0.0	52.0	9.1	0.0
Lane LOS	B				B				F	A	A
Approach Delay (s/veh)	0.1				0.7				30.5		0.0
Approach LOS									D		A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	980	910	20	0	10
Future Volume (Veh/h)	0	980	910	20	0	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	1077	1000	22	0	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		977	1253			
pX, platoon unblocked					0.98	
vC, conflicting volume	1022				1370	344
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1022				1310	344
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	98
cM capacity (veh/h)	669				146	649

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	359	359	359	400	400	222	11
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	22	11
cSH	1700	1700	1700	1700	1700	1700	649
Volume to Capacity	0.21	0.21	0.21	0.24	0.24	0.13	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	1
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS							B
Approach Delay (s/veh)	0.0			0.0			10.6
Approach LOS							B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	510	0	400	0	1571	300	0	1413	380
Future Volume (vph)	0	0	0	510	0	400	0	1571	300	0	1413	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	0.99
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1534		4739	1332
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1534		4739	1332
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	554	0	435	0	1708	326	0	1536	413
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	554	0	399	0	1708	326	0	1574	372
Confl. Peds. (#/hr)									4			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				15.3		15.3		38.4	65.0		38.4	65.0
Effective Green, g (s)				16.7		16.7		40.3	65.0		40.3	65.0
Actuated g/C Ratio				0.26		0.26		0.62	1.00		0.62	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				873		709		3122	1534		2938	1332
v/s Ratio Prot				c0.16		0.14		c0.34			0.33	
v/s Ratio Perm									0.21			0.28
v/c Ratio				0.63		0.56		0.55	0.21		0.54	0.28
Uniform Delay, d1				21.4		21.0		7.1	0.0		7.0	0.0
Progression Factor				1.00		1.00		0.50	1.00		1.00	1.00
Incremental Delay, d2				1.1		0.6		0.5	0.2		0.7	0.5
Delay (s)				22.6		21.6		4.1	0.2		7.7	0.5
Level of Service				C		C		A	A		A	A
Approach Delay (s/veh)		0.0			22.1			3.4			6.4	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	0	821	0	0	0	0	1019	180	0	1553	370
Future Volume (vph)	890	0	821	0	0	0	0	1019	180	0	1553	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4747	1348		5036	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4747	1348		5036	1536
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	989	0	912	0	0	0	0	1132	200	0	1726	411
RTOR Reduction (vph)	0	0	25	0	0	0	0	3	80	0	0	0
Lane Group Flow (vph)	989	0	887	0	0	0	0	1149	100	0	1726	411
Confl. Peds. (#/hr)			2				1					1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		custom					NA	Perm		NA	Free
Protected Phases	4		5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	19.6		30.6					34.1	34.1		23.1	65.0
Effective Green, g (s)	21.0		32.0					36.0	36.0		25.0	65.0
Actuated g/C Ratio	0.32		0.49					0.55	0.55		0.38	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1098		1358					2629	746		1936	1536
v/s Ratio Prot	c0.29		c0.32					0.24			c0.34	
v/s Ratio Perm									0.07			0.27
v/c Ratio	0.90		0.65					0.44	0.13		0.89	0.27
Uniform Delay, d1	21.0		12.3					8.5	7.0		18.7	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.84	1.00
Incremental Delay, d2	10.2		0.9					0.5	0.4		5.9	0.4
Delay (s)	31.2		13.2					9.1	7.4		21.6	0.4
Level of Service	C		B					A	A		C	A
Approach Delay (s/veh)		22.6			0.0			8.8			17.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	133	30	105	411	769	60	340	182	764	970	640
Future Volume (vph)	90	133	30	105	411	769	60	340	182	764	970	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	96	141	32	112	437	818	64	362	194	813	1032	681
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	96	141	32	112	437	818	64	362	194	813	1032	681
Confl. Peds. (#/hr)			4			6			4			4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.9	14.4	86.8	7.6	16.1	86.8	5.2	14.4	86.8	31.4	40.6	86.8
Effective Green, g (s)	5.9	16.1	86.8	7.6	17.8	86.8	5.2	15.7	86.8	31.4	41.9	86.8
Actuated g/C Ratio	0.07	0.19	1.00	0.09	0.21	1.00	0.06	0.18	1.00	0.36	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	231	934	1547	297	1032	1546	203	910	1547	1229	2430	1547
v/s Ratio Prot	0.03	0.03		0.03	0.09		0.02	0.07		c0.24	0.20	
v/s Ratio Perm			0.02			c0.53			0.13			0.44
v/c Ratio	0.42	0.15	0.02	0.38	0.42	0.53	0.32	0.40	0.13	0.66	0.42	0.44
Uniform Delay, d1	38.8	29.6	0.0	37.4	30.0	0.0	39.1	31.4	0.0	23.2	14.6	0.0
Progression 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
Incremental Delay, d2	0.4	0.0	0.0	0.3	0.1	1.3	0.3	0.1	0.2	1.0	0.0	0.9
Delay (s)	39.2	29.7	0.0	37.7	30.1	1.3	39.4	31.5	0.2	24.3	14.7	0.9
Level of Service	D	C	A	D	C	A	D	C	A	C	B	A
Approach Delay (s/veh)		29.5			13.5			22.5			14.0	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	282	766	30	10	935	40	60	10	40	40	10	320
Future Volume (vph)	282	766	30	10	935	40	60	10	40	40	10	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	5000		1752	5036	1543	1745	1601		1747	1845	1544
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.72	1.00	1.00
Satd. Flow (perm)	3400	5000		1752	5036	1543	1378	1601		1324	1845	1544
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	324	880	34	11	1075	46	69	11	46	46	11	368
RTOR Reduction (vph)	0	3	0	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	324	911	0	11	1075	46	69	18	0	46	11	368
Confl. Peds. (#/hr)			12			10	8		6	6		8
Confl. Bikes (#/hr)			2			4						3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	10.9	39.6		0.8	29.5	63.4	9.1	9.1		8.8	8.8	63.4
Effective Green, g (s)	10.9	40.9		0.8	30.8	63.4	9.7	9.7		9.7	9.7	63.4
Actuated g/C Ratio	0.17	0.65		0.01	0.49	1.00	0.15	0.15		0.15	0.15	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	584	3225		22	2446	1543	210	244		202	282	1544
v/s Ratio Prot	c0.10	0.18		0.01	c0.21			0.01			0.01	
v/s Ratio Perm						0.03	0.05			0.03		c0.24
v/c Ratio	0.55	0.28		0.50	0.44	0.03	0.33	0.07		0.23	0.04	0.24
Uniform Delay, d1	24.0	4.9		31.1	10.7	0.0	23.9	23.0		23.6	22.9	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1		6.4	0.3	0.0	0.3	0.0		0.2	0.0	0.4
Delay (s)	24.7	5.0		37.5	10.9	0.0	24.3	23.0		23.8	22.9	0.4
Level of Service	C	A		D	B	A	C	C		C	C	A
Approach Delay (s/veh)		10.1			10.7			23.7			3.5	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	588	185	272	470	1020	601
Future Volume (vph)	588	185	272	470	1020	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3297	1386
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3297	1386
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	661	208	306	528	1146	675
RTOR Reduction (vph)	0	160	0	0	9	318
Lane Group Flow (vph)	661	48	306	528	1265	229
Confl. Peds. (#/hr)						21
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	18.7	18.7	17.7	55.9	34.2	34.2
Effective Green, g (s)	19.6	19.6	17.7	57.2	35.5	35.5
Actuated g/C Ratio	0.23	0.23	0.21	0.67	0.42	0.42
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	785	362	365	3396	1380	580
v/s Ratio Prot	c0.19		c0.17	0.10	c0.38	
v/s Ratio Perm		0.03				0.17
v/c Ratio	0.84	0.13	0.84	0.16	0.92	0.39
Uniform Delay, d1	31.1	25.9	32.2	5.0	23.3	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.1	14.8	0.0	9.8	0.3
Delay (s)	39.0	25.9	46.9	5.0	33.0	17.5
Level of Service	D	C	D	A	C	B
Approach Delay (s/veh)	35.8			20.4	28.4	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	813	10	20	901	17	20	0	10	30	0	65
Future Volume (Veh/h)	23	813	10	20	901	17	20	0	10	30	0	65
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	27	945	12	23	1048	20	23	0	12	35	0	76
Pedestrians								9				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		600										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	1068			966			1485	2128	330	1485	2124	359
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1068			804			1347	2019	139	1347	2015	359
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			97			73	100	99	63	100	88
cM capacity (veh/h)	637			762			84	50	833	95	50	631

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	27	378	378	201	23	419	419	230	23	12	111
Volume Left	27	0	0	0	23	0	0	0	23	0	35
Volume Right	0	0	0	12	0	0	0	20	0	12	76
cSH	637	1700	1700	1700	762	1700	1700	1700	84	833	228
Volume to Capacity	0.04	0.22	0.22	0.12	0.03	0.25	0.25	0.14	0.27	0.01	0.49
Queue Length 95th (ft)	3	0	0	0	2	0	0	0	25	1	61
Control Delay (s/veh)	10.9	0.0	0.0	0.0	9.9	0.0	0.0	0.0	62.9	9.4	35.0
Lane LOS	B				A				F	A	D
Approach Delay (s/veh)	0.3				0.2				44.6		35.0
Approach LOS									E		D

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	851	919	13	12	19
Future Volume (Veh/h)	2	851	919	13	12	19
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	3	1166	1259	18	16	26
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		989	1239			
pX, platoon unblocked						
vC, conflicting volume	1278				1664	430
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1278				1664	430
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				81	95
cM capacity (veh/h)	528				85	568

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	3	389	389	389	504	504	270	42
Volume Left	3	0	0	0	0	0	0	16
Volume Right	0	0	0	0	0	0	18	26
cSH	528	1700	1700	1700	1700	1700	1700	180
Volume to Capacity	0.01	0.23	0.23	0.23	0.30	0.30	0.16	0.23
Queue Length 95th (ft)	0	0	0	0	0	0	0	22
Control Delay (s/veh)	11.9	0.0	0.0	0.0	0.0	0.0	0.0	31.0
Lane LOS	B							D
Approach Delay (s/veh)	0.0				0.0			31.0
Approach LOS								D

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	320	0	520	0	2187	670	0	1532	740
Future Volume (vph)	0	0	0	320	0	520	0	2187	670	0	1532	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.98	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1533		4666	1348
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1533		4666	1348
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	340	0	553	0	2327	713	0	1630	787
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	25	0
Lane Group Flow (vph)	0	0	0	340	0	517	0	2327	713	0	1849	543
Confl. Peds. (#/hr)									5	5		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				16.2		16.2		37.5	65.0		37.5	65.0
Effective Green, g (s)				17.6		17.6		39.4	65.0		39.4	65.0
Actuated g/C Ratio				0.27		0.27		0.61	1.00		0.61	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				920		747		3052	1533		2828	1348
v/s Ratio Prot				0.10		c0.19		c0.46			0.40	
v/s Ratio Perm									0.47			0.40
v/c Ratio				0.37		0.69		0.76	0.47		0.65	0.40
Uniform Delay, d1				19.2		21.3		9.4	0.0		8.4	0.0
Progression Factor				1.00		1.00		1.03	1.00		1.00	1.00
Incremental Delay, d2				0.1		2.3		1.0	0.5		1.2	0.9
Delay (s)				19.3		23.5		10.6	0.5		9.5	0.9
Level of Service				B		C		B	A		A	A
Approach Delay (s/veh)		0.0			21.9			8.3			7.6	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	710	0	341	0	0	0	0	2171	370	0	1532	320
Future Volume (vph)	710	0	341	0	0	0	0	2171	370	0	1532	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4747	1348		5036	1568
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4747	1348		5036	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	763	0	367	0	0	0	0	2334	398	0	1647	344
RTOR Reduction (vph)	0	0	27	0	0	0	0	3	152	0	0	0
Lane Group Flow (vph)	763	0	340	0	0	0	0	2371	206	0	1647	344
Confl. Peds. (#/hr)			6									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		custom					NA	Perm		NA	Free
Protected Phases			5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	18.2		27.7					35.5	35.5		26.0	65.0
Effective Green, g (s)	19.6		29.1					37.4	37.4		27.9	65.0
Actuated g/C Ratio	0.30		0.45					0.58	0.58		0.43	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1025		1235					2731	775		2161	1568
v/s Ratio Prot			0.12					c0.50			0.33	
v/s Ratio Perm	c0.22								0.15			0.22
v/c Ratio	0.74		0.28					0.87	0.27		0.76	0.22
Uniform Delay, d1	20.4		11.3					11.7	6.9		15.7	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.72	1.00
Incremental Delay, d2	2.8		0.0					4.1	0.8		2.1	0.3
Delay (s)	23.3		11.4					15.8	7.8		13.4	0.3
Level of Service	C		B					B	A		B	A
Approach Delay (s/veh)		19.4			0.0			14.7			11.2	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	612	60	183	297	1051	30	840	146	843	700	330
Future Volume (vph)	650	612	60	183	297	1051	30	840	146	843	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	691	651	64	195	316	1118	32	894	155	897	745	351
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	691	651	64	195	316	1118	32	894	155	897	745	351
Confl. Peds. (#/hr)			1			9			2			1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	28.0	31.3	119.5	11.4	14.7	119.5	3.5	27.3	119.5	30.5	54.3	119.5
Effective Green, g (s)	28.0	33.0	119.5	11.4	16.4	119.5	3.5	28.6	119.5	30.5	55.6	119.5
Actuated g/C Ratio	0.23	0.28	1.00	0.10	0.14	1.00	0.03	0.24	1.00	0.26	0.47	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	796	1390	1549	324	691	1545	99	1205	1548	867	2343	1548
v/s Ratio Prot	c0.20	0.13		0.06	0.06		0.01	0.18		c0.26	0.15	
v/s Ratio Perm			0.04			c0.72			0.10			0.23
v/c Ratio	0.87	0.47	0.04	0.60	0.46	0.72	0.32	0.74	0.10	1.03	0.32	0.23
Uniform Delay, d1	44.0	36.0	0.0	51.9	47.5	0.0	56.8	42.0	0.0	44.5	20.1	0.0
Progression 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
Incremental Delay, d2	9.6	0.1	0.1	2.2	0.2	3.0	0.7	2.2	0.1	39.8	0.0	0.3
Delay (s)	53.6	36.0	0.1	54.0	47.6	3.0	57.5	44.2	0.1	84.3	20.1	0.3
Level of Service	D	D	A	D	D	A	E	D	A	F	C	A
Approach Delay (s/veh)		43.0			17.8			38.3			45.5	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	963	100	30	841	50	60	20	20	80	20	490
Future Volume (vph)	437	963	100	30	841	50	60	20	20	80	20	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4939		1752	5036	1544	1733	1693		1747	1845	1539
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3400	4939		1752	5036	1544	1357	1693		1342	1845	1539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	460	1014	105	32	885	53	63	21	21	84	21	516
RTOR Reduction (vph)	0	11	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	460	1108	0	32	885	53	63	25	0	84	21	516
Confl. Peds. (#/hr)			22			12	21		6	6		21
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	13.1	36.0		2.2	25.1	61.8	9.7	9.7		9.4	9.4	61.8
Effective Green, g (s)	13.1	37.3		2.2	26.4	61.8	10.3	10.3		10.3	10.3	61.8
Actuated g/C Ratio	0.21	0.60		0.04	0.43	1.00	0.17	0.17		0.17	0.17	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	720	2980		62	2151	1544	226	282		223	307	1539
v/s Ratio Prot	c0.14	0.22		0.02	c0.18			0.01			0.01	
v/s Ratio Perm						0.03	0.05			0.06		c0.34
v/c Ratio	0.64	0.37		0.52	0.41	0.03	0.28	0.09		0.38	0.07	0.34
Uniform Delay, d1	22.2	6.3		29.3	12.3	0.0	22.5	21.8		22.9	21.7	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2		3.0	0.3	0.0	0.2	0.0		0.4	0.0	0.6
Delay (s)	23.6	6.4		32.3	12.6	0.0	22.7	21.8		23.3	21.7	0.6
Level of Service	C	A		C	B	A	C	C		C	C	A
Approach Delay (s/veh)		11.4			12.5			22.4			4.4	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	704	213	116	780	750	731
Future Volume (vph)	704	213	116	780	750	731
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.96	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3198	1389
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3198	1389
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	774	234	127	857	824	803
RTOR Reduction (vph)	0	167	0	0	37	281
Lane Group Flow (vph)	774	67	127	857	1092	217
Confl. Peds. (#/hr)						23
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	19.9	19.9	8.1	42.4	30.3	30.3
Effective Green, g (s)	20.8	20.8	8.1	43.7	31.6	31.6
Actuated g/C Ratio	0.29	0.29	0.11	0.60	0.44	0.44
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	975	449	195	3035	1393	605
v/s Ratio Prot	c0.23		c0.07	0.17	c0.34	
v/s Ratio Perm		0.04				0.16
v/c Ratio	0.79	0.15	0.65	0.28	0.78	0.36
Uniform Delay, d1	23.9	19.3	30.8	6.9	17.5	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.1	5.8	0.0	2.9	0.3
Delay (s)	28.1	19.3	36.7	6.9	20.4	13.9
Level of Service	C	B	D	A	C	B
Approach Delay (s/veh)	26.1			10.8	18.4	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	974	30	60	870	28	20	0	20	16	0	29
Future Volume (Veh/h)	64	974	30	60	870	28	20	0	20	16	0	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	1059	33	65	946	30	22	0	22	17	0	32
Pedestrians								7			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		586										
pX, platoon unblocked				0.93			0.93	0.93	0.93	0.93	0.93	
vC, conflicting volume	977			1099			1700	2330	377	1607	2331	331
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	977			841			1487	2165	64	1387	2166	331
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			91			66	100	98	78	100	95
cM capacity (veh/h)	695			724			64	35	910	79	35	661

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	70	424	424	245	65	378	378	219	22	22	49
Volume Left	70	0	0	0	65	0	0	0	22	0	17
Volume Right	0	0	0	33	0	0	0	30	0	22	32
cSH	695	1700	1700	1700	724	1700	1700	1700	64	910	185
Volume to Capacity	0.10	0.25	0.25	0.14	0.09	0.22	0.22	0.13	0.34	0.02	0.26
Queue Length 95th (ft)	8	0	0	0	7	0	0	0	32	2	25
Control Delay (s/veh)	10.8	0.0	0.0	0.0	10.5	0.0	0.0	0.0	87.8	9.1	31.3
Lane LOS	B				B				F	A	D
Approach Delay (s/veh)	0.6				0.7				48.4		31.3
Approach LOS									E		D

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	1001	943	34	6	15
Future Volume (Veh/h)	9	1001	943	34	6	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	10	1100	1036	37	7	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		977	1253			
pX, platoon unblocked					0.98	
vC, conflicting volume	1073				1441	364
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1073				1394	364
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	97
cM capacity (veh/h)	640				127	630

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	10	367	367	367	414	414	244	23
Volume Left	10	0	0	0	0	0	0	7
Volume Right	0	0	0	0	0	0	37	16
cSH	640	1700	1700	1700	1700	1700	1700	286
Volume to Capacity	0.02	0.22	0.22	0.22	0.24	0.24	0.14	0.08
Queue Length 95th (ft)	1	0	0	0	0	0	0	7
Control Delay (s/veh)	10.7	0.0	0.0	0.0	0.0	0.0	0.0	18.7
Lane LOS	B							C
Approach Delay (s/veh)	0.1				0.0			18.7
Approach LOS								C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	519	0	400	0	1574	346	0	1418	380
Future Volume (vph)	0	0	0	519	0	400	0	1574	346	0	1418	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	0.99
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1534		4739	1332
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1534		4739	1332
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	564	0	435	0	1711	376	0	1541	413
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	564	0	399	0	1711	376	0	1579	372
Confl. Peds. (#/hr)									4			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				15.6		15.6		38.1	65.0		38.1	65.0
Effective Green, g (s)				17.0		17.0		40.0	65.0		40.0	65.0
Actuated g/C Ratio				0.26		0.26		0.62	1.00		0.62	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				889		721		3099	1534		2916	1332
v/s Ratio Prot				c0.17		0.14		c0.34			0.33	
v/s Ratio Perm									0.25			0.28
v/c Ratio				0.63		0.55		0.55	0.25		0.54	0.28
Uniform Delay, d1				21.2		20.7		7.3	0.0		7.2	0.0
Progression Factor				1.00		1.00		0.50	1.00		1.00	1.00
Incremental Delay, d2				1.1		0.5		0.5	0.3		0.7	0.5
Delay (s)				22.3		21.2		4.2	0.3		7.9	0.5
Level of Service				C		C		A	A		A	A
Approach Delay (s/veh)		0.0			21.9			3.5			6.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	890	0	835	0	0	0	0	1030	199	0	1567	370
Future Volume (vph)	890	0	835	0	0	0	0	1030	199	0	1567	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4746	1348		5036	1536
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4746	1348		5036	1536
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	989	0	928	0	0	0	0	1144	221	0	1741	411
RTOR Reduction (vph)	0	0	25	0	0	0	0	3	89	0	0	0
Lane Group Flow (vph)	989	0	903	0	0	0	0	1163	110	0	1741	411
Confl. Peds. (#/hr)			2				1					1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot		custom					NA	Perm		NA	Free
Protected Phases	4		5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	19.6		30.8					34.1	34.1		22.9	65.0
Effective Green, g (s)	21.0		32.2					36.0	36.0		24.8	65.0
Actuated g/C Ratio	0.32		0.50					0.55	0.55		0.38	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1098		1367					2628	746		1921	1536
v/s Ratio Prot	c0.29		c0.33					0.25			c0.35	
v/s Ratio Perm									0.08			0.27
v/c Ratio	0.90		0.66					0.44	0.15		0.91	0.27
Uniform Delay, d1	21.0		12.3					8.6	7.0		19.0	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.83	1.00
Incremental Delay, d2	10.2		0.9					0.5	0.4		6.7	0.4
Delay (s)	31.2		13.2					9.1	7.5		22.6	0.4
Level of Service	C		B					A	A		C	A
Approach Delay (s/veh)		22.5			0.0			8.9			18.3	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	138	30	107	414	799	60	340	183	792	970	640
Future Volume (vph)	90	138	30	107	414	799	60	340	183	792	970	640
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1547	3400	5036	1546	3400	5036	1547	3400	5036	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	96	147	32	114	440	850	64	362	195	843	1032	681
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	96	147	32	114	440	850	64	362	195	843	1032	681
Confl. Peds. (#/hr)			4			6			4			4
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	5.9	14.5	86.9	7.6	16.2	86.9	5.2	14.4	86.9	31.4	40.6	86.9
Effective Green, g (s)	5.9	16.2	86.9	7.6	17.9	86.9	5.2	15.7	86.9	31.4	41.9	86.9
Actuated g/C Ratio	0.07	0.19	1.00	0.09	0.21	1.00	0.06	0.18	1.00	0.36	0.48	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	230	938	1547	297	1037	1546	203	909	1547	1228	2428	1547
v/s Ratio Prot	0.03	0.03		0.03	0.09		0.02	0.07		c0.25	0.20	
v/s Ratio Perm			0.02			c0.55			0.13			0.44
v/c Ratio	0.42	0.16	0.02	0.38	0.42	0.55	0.32	0.40	0.13	0.69	0.43	0.44
Uniform Delay, d1	38.9	29.6	0.0	37.4	30.0	0.0	39.1	31.4	0.0	23.6	14.7	0.0
Progression 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
Incremental Delay, d2	0.4	0.0	0.0	0.3	0.1	1.4	0.3	0.1	0.2	1.3	0.0	0.9
Delay (s)	39.3	29.7	0.0	37.7	30.1	1.4	39.5	31.5	0.2	24.9	14.7	0.9
Level of Service	D	C	A	D	C	A	D	C	A	C	B	A
Approach Delay (s/veh)		29.6			13.4			22.5			14.4	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	774	30	20	970	40	60	10	40	40	10	320
Future Volume (vph)	309	774	30	20	970	40	60	10	40	40	10	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	5001		1752	5036	1543	1745	1601		1747	1845	1544
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.75	1.00		0.72	1.00	1.00
Satd. Flow (perm)	3400	5001		1752	5036	1543	1378	1601		1324	1845	1544
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	355	890	34	23	1115	46	69	11	46	46	11	368
RTOR Reduction (vph)	0	3	0	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	355	921	0	23	1115	46	69	18	0	46	11	368
Confl. Peds. (#/hr)			12			10	8		6	6		8
Confl. Bikes (#/hr)			2			4						3
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	11.6	40.8		1.0	30.2	64.9	9.2	9.2		8.9	8.9	64.9
Effective Green, g (s)	11.6	42.1		1.0	31.5	64.9	9.8	9.8		9.8	9.8	64.9
Actuated g/C Ratio	0.18	0.65		0.02	0.49	1.00	0.15	0.15		0.15	0.15	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	607	3244		26	2444	1543	208	241		199	278	1544
v/s Ratio Prot	c0.10	0.18		0.01	c0.22			0.01			0.01	
v/s Ratio Perm						0.03	0.05			0.03		c0.24
v/c Ratio	0.58	0.28		0.88	0.46	0.03	0.33	0.07		0.23	0.04	0.24
Uniform Delay, d1	24.4	4.9		31.9	11.0	0.0	24.6	23.7		24.2	23.5	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1		123.3	0.3	0.0	0.3	0.0		0.2	0.0	0.4
Delay (s)	25.4	5.0		155.2	11.3	0.0	25.0	23.7		24.5	23.6	0.4
Level of Service	C	A		F	B	A	C	C		C	C	A
Approach Delay (s/veh)		10.7			13.7			24.4			3.6	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	580	187	273	470	1020	606
Future Volume (vph)	580	187	273	470	1020	606
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3297	1386
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3297	1386
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	652	210	307	528	1146	681
RTOR Reduction (vph)	0	162	0	0	9	321
Lane Group Flow (vph)	652	48	307	528	1266	231
Confl. Peds. (#/hr)						21
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	18.6	18.6	17.7	55.9	34.2	34.2
Effective Green, g (s)	19.5	19.5	17.7	57.2	35.5	35.5
Actuated g/C Ratio	0.23	0.23	0.21	0.68	0.42	0.42
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	782	360	366	3400	1381	580
v/s Ratio Prot	c0.19		c0.18	0.10	c0.38	
v/s Ratio Perm		0.03				0.17
v/c Ratio	0.83	0.13	0.84	0.16	0.92	0.40
Uniform Delay, d1	31.1	25.9	32.1	5.0	23.2	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.3	0.1	14.8	0.0	9.8	0.3
Delay (s)	38.4	26.0	46.9	5.0	33.0	17.5
Level of Service	D	C	D	A	C	B
Approach Delay (s/veh)	35.3			20.4	28.3	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	822	10	20	904	17	20	0	10	25	0	82
Future Volume (Veh/h)	32	822	10	20	904	17	20	0	10	25	0	82
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	37	956	12	23	1051	20	23	0	12	29	0	95
Pedestrians								9				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		600										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	1071			977			1536	2162	334	1512	2158	360
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1071			814			1399	2054	141	1374	2050	360
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			97			69	100	99	68	100	85
cM capacity (veh/h)	635			755			74	46	830	90	47	631

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	37	382	382	203	23	420	420	230	23	12	124
Volume Left	37	0	0	0	23	0	0	0	23	0	29
Volume Right	0	0	0	12	0	0	0	20	0	12	95
cSH	635	1700	1700	1700	755	1700	1700	1700	74	830	262
Volume to Capacity	0.06	0.22	0.22	0.12	0.03	0.25	0.25	0.14	0.31	0.01	0.47
Queue Length 95th (ft)	5	0	0	0	2	0	0	0	29	1	59
Control Delay (s/veh)	11.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0	74.8	9.4	30.5
Lane LOS	B				A				F	A	D
Approach Delay (s/veh)	0.4				0.2				52.4		30.5
Approach LOS									F		D

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	855	928	11	2	13
Future Volume (Veh/h)	2	855	928	11	2	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	3	1171	1271	15	3	18
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		989	1239			
pX, platoon unblocked					1.00	
vC, conflicting volume	1287				1676	432
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1287				1674	432
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	97
cM capacity (veh/h)	524				84	566

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	237	468	468	508	508	269	21
Volume Left	3	0	0	0	0	0	3
Volume Right	0	0	0	0	0	15	18
cSH	524	1700	1700	1700	1700	1700	311
Volume to Capacity	0.01	0.28	0.28	0.30	0.30	0.16	0.07
Queue Length 95th (ft)	0	0	0	0	0	0	5
Control Delay (s/veh)	0.2	0.0	0.0	0.0	0.0	0.0	17.4
Lane LOS	A						C
Approach Delay (s/veh)	0.0			0.0			17.4
Approach LOS							C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	344	0	520	0	2190	704	0	1535	740
Future Volume (vph)	0	0	0	344	0	520	0	2190	704	0	1535	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0		4.0		4.0	4.0		4.0	4.0
Lane Util. Factor				0.97		0.88		0.91	1.00		0.86	0.86
Frpb, ped/bikes				1.00		1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes				1.00		1.00		1.00	1.00		1.00	1.00
Frt				1.00		0.85		1.00	0.85		0.98	0.85
Flt Protected				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				3400		2760		5036	1533		4666	1348
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3400		2760		5036	1533		4666	1348
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	366	0	553	0	2330	749	0	1633	787
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	25	0
Lane Group Flow (vph)	0	0	0	366	0	517	0	2330	749	0	1852	543
Confl. Peds. (#/hr)									5	5		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type				Prot		Prot		NA	Free		NA	Free
Protected Phases				4		4		2			6	
Permitted Phases									Free			Free
Actuated Green, G (s)				16.2		16.2		37.5	65.0		37.5	65.0
Effective Green, g (s)				17.6		17.6		39.4	65.0		39.4	65.0
Actuated g/C Ratio				0.27		0.27		0.61	1.00		0.61	1.00
Clearance Time (s)				5.4		5.4		5.9			5.9	
Vehicle Extension (s)				2.0		2.0		3.0			3.0	
Lane Grp Cap (vph)				920		747		3052	1533		2828	1348
v/s Ratio Prot				0.11		c0.19		c0.46			0.40	
v/s Ratio Perm									0.49			0.40
v/c Ratio				0.40		0.69		0.76	0.49		0.65	0.40
Uniform Delay, d1				19.4		21.3		9.4	0.0		8.4	0.0
Progression Factor				1.00		1.00		1.03	1.00		1.00	1.00
Incremental Delay, d2				0.1		2.3		1.0	0.6		1.2	0.9
Delay (s)				19.5		23.5		10.7	0.6		9.6	0.9
Level of Service				B		C		B	A		A	A
Approach Delay (s/veh)		0.0			21.9			8.2			7.6	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	710	0	342	0	0	0	0	2184	384	0	1559	320
Future Volume (vph)	710	0	342	0	0	0	0	2184	384	0	1559	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0	4.0		4.0	2.1
Lane Util. Factor	0.97		0.88					0.86	0.86		0.91	1.00
Frpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00					1.00	1.00		1.00	1.00
Frt	1.00		0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	3400		2760					4747	1348		5036	1568
Flt Permitted	0.95		1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	3400		2760					4747	1348		5036	1568
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	763	0	368	0	0	0	0	2348	413	0	1676	344
RTOR Reduction (vph)	0	0	27	0	0	0	0	3	158	0	0	0
Lane Group Flow (vph)	763	0	341	0	0	0	0	2386	214	0	1676	344
Confl. Peds. (#/hr)			6									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm		custom					NA	Perm		NA	Free
Protected Phases			5 4					2			6	
Permitted Phases	4								2			Free
Actuated Green, G (s)	18.2		27.7					35.5	35.5		26.0	65.0
Effective Green, g (s)	19.6		29.1					37.4	37.4		27.9	65.0
Actuated g/C Ratio	0.30		0.45					0.58	0.58		0.43	1.00
Clearance Time (s)	5.4							5.9	5.9		5.9	
Vehicle Extension (s)	2.5							3.0	3.0		3.0	
Lane Grp Cap (vph)	1025		1235					2731	775		2161	1568
v/s Ratio Prot			0.12					c0.50			0.33	
v/s Ratio Perm	c0.22								0.16			0.22
v/c Ratio	0.74		0.28					0.87	0.28		0.78	0.22
Uniform Delay, d1	20.4		11.3					11.8	7.0		15.9	0.0
Progression Factor	1.00		1.00					1.00	1.00		0.73	1.00
Incremental Delay, d2	2.8		0.0					4.2	0.9		2.3	0.3
Delay (s)	23.3		11.4					16.0	7.9		13.9	0.3
Level of Service	C		B					B	A		B	A
Approach Delay (s/veh)		19.4			0.0			14.9			11.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	650	615	60	186	300	1078	30	840	147	871	700	330
Future Volume (vph)	650	615	60	186	300	1078	30	840	147	871	700	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1549	3400	5036	1545	3400	5036	1548	3400	5036	1548
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	691	654	64	198	319	1147	32	894	156	927	745	351
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	691	654	64	198	319	1147	32	894	156	927	745	351
Confl. Peds. (#/hr)			1			9			2			1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	28.0	31.2	119.5	11.5	14.7	119.5	3.5	27.3	119.5	30.5	54.3	119.5
Effective Green, g (s)	28.0	32.9	119.5	11.5	16.4	119.5	3.5	28.6	119.5	30.5	55.6	119.5
Actuated g/C Ratio	0.23	0.28	1.00	0.10	0.14	1.00	0.03	0.24	1.00	0.26	0.47	1.00
Clearance Time (s)	4.0	5.7		4.0	5.7		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	796	1386	1549	327	691	1545	99	1205	1548	867	2343	1548
v/s Ratio Prot	c0.20	0.13		0.06	0.06		0.01	0.18		c0.27	0.15	
v/s Ratio Perm			0.04			c0.74			0.10			0.23
v/c Ratio	0.87	0.47	0.04	0.61	0.46	0.74	0.32	0.74	0.10	1.07	0.32	0.23
Uniform Delay, d1	44.0	36.1	0.0	51.8	47.5	0.0	56.8	42.0	0.0	44.5	20.1	0.0
Progression 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
Incremental Delay, d2	9.6	0.1	0.1	2.2	0.2	3.3	0.7	2.2	0.1	50.8	0.0	0.3
Delay (s)	53.6	36.2	0.1	54.0	47.7	3.3	57.5	44.2	0.1	95.3	20.1	0.3
Level of Service	D	D	A	D	D	A	E	D	A	F	C	A
Approach Delay (s/veh)		43.1			17.8			38.3			51.1	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	456	977	100	41	874	50	60	20	20	80	20	490
Future Volume (vph)	456	977	100	41	874	50	60	20	20	80	20	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3400	4940		1752	5036	1544	1733	1693		1747	1845	1539
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.74	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3400	4940		1752	5036	1544	1356	1693		1342	1845	1539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	480	1028	105	43	920	53	63	21	21	84	21	516
RTOR Reduction (vph)	0	12	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	480	1121	0	43	920	53	63	25	0	84	21	516
Confl. Peds. (#/hr)			22			12	21		6	6		21
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA		Perm	NA	Free
Protected Phases	1	6		5	2			4			8	
Permitted Phases						Free	4			8		Free
Actuated Green, G (s)	13.5	34.8		3.8	25.1	62.3	9.8	9.8		9.5	9.5	62.3
Effective Green, g (s)	13.5	36.1		3.8	26.4	62.3	10.4	10.4		10.4	10.4	62.3
Actuated g/C Ratio	0.22	0.58		0.06	0.42	1.00	0.17	0.17		0.17	0.17	1.00
Clearance Time (s)	4.0	5.3		4.0	5.3		4.6	4.6		4.9	4.9	
Vehicle Extension (s)	2.0	5.0		2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	736	2862		106	2134	1544	226	282		224	307	1539
v/s Ratio Prot	c0.14	0.23		0.02	c0.18			0.01			0.01	
v/s Ratio Perm						0.03	0.05			0.06		c0.34
v/c Ratio	0.65	0.39		0.41	0.43	0.03	0.28	0.09		0.38	0.07	0.34
Uniform Delay, d1	22.3	7.1		28.2	12.7	0.0	22.7	21.9		23.1	21.9	0.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	0.2		0.9	0.3	0.0	0.2	0.0		0.4	0.0	0.6
Delay (s)	23.8	7.3		29.1	12.9	0.0	22.9	22.0		23.4	21.9	0.6
Level of Service	C	A		C	B	A	C	C		C	C	A
Approach Delay (s/veh)		12.2			13.0			22.5			4.4	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	703	216	117	780	750	723
Future Volume (vph)	703	216	117	780	750	723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	0.96	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1752	5036	3202	1388
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1752	5036	3202	1388
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	773	237	129	857	824	795
RTOR Reduction (vph)	0	169	0	0	36	283
Lane Group Flow (vph)	773	68	129	857	1082	218
Confl. Peds. (#/hr)						23
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3		6		2
Actuated Green, G (s)	20.1	20.1	8.3	42.9	30.6	30.6
Effective Green, g (s)	21.0	21.0	8.3	44.2	31.9	31.9
Actuated g/C Ratio	0.29	0.29	0.11	0.60	0.44	0.44
Clearance Time (s)	4.9	4.9	4.0	5.3	5.3	5.3
Vehicle Extension (s)	2.0	2.0	2.0	2.5	2.5	2.5
Lane Grp Cap (vph)	975	449	198	3040	1395	604
v/s Ratio Prot	c0.23		c0.07	0.17	c0.34	
v/s Ratio Perm		0.04				0.16
v/c Ratio	0.79	0.15	0.65	0.28	0.78	0.36
Uniform Delay, d1	24.1	19.5	31.1	6.9	17.6	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	0.1	5.7	0.0	2.7	0.3
Delay (s)	28.3	19.5	36.8	7.0	20.3	14.1
Level of Service	C	B	D	A	C	B
Approach Delay (s/veh)	26.2			10.9	18.4	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	974	30	60	871	29	20	0	20	17	0	43
Future Volume (Veh/h)	84	974	30	60	871	29	20	0	20	17	0	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	91	1059	33	65	947	32	22	0	22	18	0	47
Pedestrians								7			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								4.0			4.0	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		586										
pX, platoon unblocked				0.92			0.92	0.92	0.92	0.92	0.92	
vC, conflicting volume	980			1099			1757	2375	377	1651	2375	333
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	980			811			1525	2195	28	1410	2195	333
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			91			61	100	98	75	100	93
cM capacity (veh/h)	693			737			57	32	951	73	32	660

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1
Volume Total	91	424	424	245	65	379	379	221	22	22	65
Volume Left	91	0	0	0	65	0	0	0	22	0	18
Volume Right	0	0	0	33	0	0	0	32	0	22	47
cSH	693	1700	1700	1700	737	1700	1700	1700	57	951	205
Volume to Capacity	0.13	0.25	0.25	0.14	0.09	0.22	0.22	0.13	0.39	0.02	0.32
Queue Length 95th (ft)	11	0	0	0	7	0	0	0	36	2	32
Control Delay (s/veh)	11.0	0.0	0.0	0.0	10.4	0.0	0.0	0.0	103.7	8.9	30.5
Lane LOS	B				B				F	A	D
Approach Delay (s/veh)	0.8				0.6				56.3		30.5
Approach LOS									F		D

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	1008	948	22	1	12
Future Volume (Veh/h)	3	1008	948	22	1	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	1108	1042	24	1	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		977	1253			
pX, platoon unblocked					0.97	
vC, conflicting volume	1066				1429	359
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1066				1346	359
tC, single (s)	4.2				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	98
cM capacity (veh/h)	644				137	634

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	225	443	443	417	417	232	14
Volume Left	3	0	0	0	0	0	1
Volume Right	0	0	0	0	0	24	13
cSH	644	1700	1700	1700	1700	1700	504
Volume to Capacity	0.00	0.26	0.26	0.25	0.25	0.14	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s/veh)	0.2	0.0	0.0	0.0	0.0	0.0	12.4
Lane LOS	A						B
Approach Delay (s/veh)	0.0			0.0			12.4
Approach LOS							B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix C:
Queue Worksheets

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	552	337	1133	182	738	215
v/c Ratio	0.63	0.42	0.36	0.12	0.25	0.16
Control Delay (s/veh)	24.5	13.5	2.9	0.1	5.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.5	13.5	2.9	0.1	5.2	0.3
Queue Length 50th (ft)	98	38	19	0	36	0
Queue Length 95th (ft)	131	67	48	m0	63	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	974	3125	1534	2908	1332
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.35	0.36	0.12	0.25	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	874	691	513	149	983	189
v/c Ratio	0.81	0.52	0.19	0.18	0.48	0.12
Control Delay (s/veh)	27.6	12.5	6.9	2.0	16.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.6	12.5	6.9	2.0	16.4	0.2
Queue Length 50th (ft)	159	92	32	0	134	0
Queue Length 95th (ft)	#228	136	49	24	145	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1434	2643	820	2032	1536
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.48	0.19	0.18	0.48	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	74	121	11	70	212	295	20	265	81	405	910	288
v/c Ratio	0.20	0.11	0.01	0.19	0.20	0.19	0.06	0.26	0.05	0.56	0.38	0.19
Control Delay (s/veh)	33.9	22.6	0.0	34.1	22.6	0.3	37.2	22.6	0.1	28.4	12.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.9	22.6	0.0	34.1	22.6	0.3	37.2	22.6	0.1	28.4	12.4	0.3
Queue Length 50th (ft)	10	11	0	9	20	0	3	25	0	55	57	0
Queue Length 95th (ft)	52	40	0	50	64	0	21	78	0	199	205	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1961	3097	1547	1961	3096	1546	1307	3065	1547	1961	3909	1547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04	0.01	0.04	0.07	0.19	0.02	0.09	0.05	0.21	0.23	0.19

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	203	469	6	529	33	46	40	18	6	95
v/c Ratio	0.34	0.13	0.03	0.25	0.02	0.15	0.11	0.06	0.01	0.06
Control Delay (s/veh)	21.9	6.9	27.6	12.6	0.0	15.7	6.8	14.9	14.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.9	6.9	27.6	12.6	0.0	15.7	6.8	14.9	14.4	0.1
Queue Length 50th (ft)	20	10	1	28	0	9	0	3	1	0
Queue Length 95th (ft)	80	81	14	106	0	33	17	17	8	0
Internal Link Dist (ft)		438		520			318		1006	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1691	4448	436	3757	1543	767	880	745	1023	1544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.11	0.01	0.14	0.02	0.06	0.05	0.02	0.01	0.06

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	265	129	143	339	862	337
v/c Ratio	0.39	0.31	0.45	0.11	0.60	0.43
Control Delay (s/veh)	23.5	7.9	27.8	3.5	14.5	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.5	7.9	27.8	3.5	14.5	3.5
Queue Length 50th (ft)	37	0	40	10	110	0
Queue Length 95th (ft)	89	41	109	22	208	45
Internal Link Dist (ft)	516			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1483	756	731	4823	2363	1080
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.17	0.20	0.07	0.36	0.31

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	331	466	1299	476	1262	389
v/c Ratio	0.41	0.65	0.40	0.31	0.42	0.29
Control Delay (s/veh)	21.6	22.2	4.2	0.5	5.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.6	22.2	4.2	0.5	5.3	0.5
Queue Length 50th (ft)	57	77	42	0	57	0
Queue Length 95th (ft)	79	111	85	0	110	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	945	3220	1533	3003	1348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.49	0.40	0.31	0.42	0.29

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	618	213	1307	378	884	334
v/c Ratio	0.65	0.18	0.46	0.39	0.39	0.21
Control Delay (s/veh)	23.9	7.7	8.1	2.3	11.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.9	7.7	8.1	2.3	11.5	0.3
Queue Length 50th (ft)	108	18	97	0	70	0
Queue Length 95th (ft)	149	36	143	37	88	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1339	2829	959	2288	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.16	0.46	0.39	0.39	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	355	420	35	109	237	653	7	659	118	456	448	181
v/c Ratio	0.59	0.34	0.02	0.33	0.28	0.42	0.03	0.56	0.08	0.65	0.19	0.12
Control Delay (s/veh)	38.4	26.4	0.0	43.9	32.2	0.9	49.4	31.2	0.1	37.0	14.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.4	26.4	0.0	43.9	32.2	0.9	49.4	31.2	0.1	37.0	14.2	0.2
Queue Length 50th (ft)	73	57	0	23	34	0	1	93	0	93	36	0
Queue Length 95th (ft)	207	128	0	80	87	0	11	228	0	254	118	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1376	2264	1549	1376	2176	1545	917	2156	1548	1376	2928	1548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.19	0.02	0.08	0.11	0.42	0.01	0.31	0.08	0.33	0.15	0.12

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	208	701	16	503	37	38	30	67	12	309
v/c Ratio	0.35	0.20	0.08	0.24	0.02	0.12	0.08	0.21	0.03	0.20
Control Delay (s/veh)	22.2	7.4	27.3	12.9	0.0	15.3	9.6	16.1	14.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.2	7.4	27.3	12.9	0.0	15.3	9.6	16.1	14.4	0.3
Queue Length 50th (ft)	21	19	3	28	0	7	2	13	2	0
Queue Length 95th (ft)	85	129	27	106	0	30	19	46	13	0
Internal Link Dist (ft)		438		506			318		1006	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1672	4398	431	3708	1544	747	915	744	1013	1539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.16	0.04	0.14	0.02	0.05	0.03	0.09	0.01	0.20

Intersection Summary

5: W Las Positas Blvd & Owens Dr

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	474	159	125	571	581	255
v/c Ratio	0.52	0.30	0.40	0.21	0.50	0.39
Control Delay (s/veh)	20.7	6.0	27.4	5.5	14.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.7	6.0	27.4	5.5	14.7	4.2
Queue Length 50th (ft)	59	0	32	23	67	0
Queue Length 95th (ft)	154	44	108	51	148	46
Internal Link Dist (ft)	511			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1739	879	803	4774	2416	1091
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.18	0.16	0.12	0.24	0.23

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	552	337	1145	182	741	215
v/c Ratio	0.63	0.42	0.37	0.12	0.25	0.16
Control Delay (s/veh)	24.5	13.8	3.0	0.1	5.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.5	13.8	3.0	0.1	5.3	0.3
Queue Length 50th (ft)	98	39	21	0	36	0
Queue Length 95th (ft)	131	67	51	m0	64	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	972	3125	1534	2907	1332
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.35	0.37	0.12	0.25	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	874	703	556	160	987	189
v/c Ratio	0.81	0.53	0.21	0.19	0.49	0.12
Control Delay (s/veh)	27.6	12.6	7.2	2.0	16.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.6	12.6	7.2	2.0	16.5	0.2
Queue Length 50th (ft)	159	94	37	0	134	0
Queue Length 95th (ft)	#228	139	54	25	147	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1434	2647	824	2029	1536
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.49	0.21	0.19	0.49	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	74	124	11	76	223	347	20	265	83	420	910	288
v/c Ratio	0.20	0.12	0.01	0.20	0.21	0.22	0.06	0.26	0.05	0.57	0.38	0.19
Control Delay (s/veh)	34.3	22.9	0.0	34.2	22.8	0.3	37.5	22.9	0.1	28.5	12.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.3	22.9	0.0	34.2	22.8	0.3	37.5	22.9	0.1	28.5	12.4	0.3
Queue Length 50th (ft)	10	11	0	10	21	0	3	25	0	57	58	0
Queue Length 95th (ft)	53	41	0	54	68	0	21	78	0	207	206	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1945	3070	1547	1945	3071	1546	1296	3040	1547	1945	3888	1547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04	0.01	0.04	0.07	0.22	0.02	0.09	0.05	0.22	0.23	0.19

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	206	487	6	603	33	46	40	18	6	95
v/c Ratio	0.35	0.13	0.03	0.28	0.02	0.15	0.11	0.06	0.02	0.06
Control Delay (s/veh)	22.3	6.8	27.8	12.6	0.0	16.2	6.9	15.4	14.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.3	6.8	27.8	12.6	0.0	16.2	6.9	15.4	14.8	0.1
Queue Length 50th (ft)	21	11	1	34	0	9	0	4	1	0
Queue Length 95th (ft)	81	84	14	121	0	34	17	18	9	0
Internal Link Dist (ft)		438		520			318		1006	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1654	4423	426	3693	1543	751	862	729	1002	1544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.11	0.01	0.16	0.02	0.06	0.05	0.02	0.01	0.06

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	308	135	145	339	863	349
v/c Ratio	0.43	0.31	0.46	0.11	0.60	0.44
Control Delay (s/veh)	23.7	7.6	28.7	3.8	15.2	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.7	7.6	28.7	3.8	15.2	3.7
Queue Length 50th (ft)	45	0	43	11	115	0
Queue Length 95th (ft)	103	42	113	24	218	47
Internal Link Dist (ft)	516			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1445	744	712	4774	2317	1069
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.18	0.20	0.07	0.37	0.33

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	331	466	1306	476	1275	389
v/c Ratio	0.41	0.65	0.41	0.31	0.43	0.29
Control Delay (s/veh)	21.6	22.3	4.2	0.5	5.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.6	22.3	4.2	0.5	5.4	0.5
Queue Length 50th (ft)	57	78	43	0	59	0
Queue Length 95th (ft)	79	111	85	0	112	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	945	3218	1533	3000	1348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.49	0.41	0.31	0.43	0.29

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	618	257	1335	383	897	334
v/c Ratio	0.65	0.21	0.47	0.40	0.39	0.21
Control Delay (s/veh)	23.7	8.7	8.3	2.3	11.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.7	8.7	8.3	2.3	11.6	0.3
Queue Length 50th (ft)	108	25	101	0	71	0
Queue Length 95th (ft)	149	44	147	38	89	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1344	2820	958	2276	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.19	0.47	0.40	0.39	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	355	433	35	112	245	686	7	659	124	513	448	181
v/c Ratio	0.60	0.35	0.02	0.34	0.29	0.44	0.03	0.57	0.08	0.68	0.18	0.12
Control Delay (s/veh)	39.6	27.6	0.0	45.1	33.4	0.9	50.9	32.4	0.1	37.8	14.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.6	27.6	0.0	45.1	33.4	0.9	50.9	32.4	0.1	37.8	14.1	0.2
Queue Length 50th (ft)	76	61	0	25	37	0	1	98	0	109	37	0
Queue Length 95th (ft)	209	135	0	82	91	0	11	233	0	288	119	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1333	2196	1549	1333	2109	1545	889	2090	1548	1333	2875	1548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.20	0.02	0.08	0.12	0.44	0.01	0.32	0.08	0.38	0.16	0.12

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	216	767	16	546	37	38	30	67	12	309
v/c Ratio	0.36	0.21	0.08	0.26	0.02	0.12	0.08	0.21	0.03	0.20
Control Delay (s/veh)	22.2	7.5	27.5	13.0	0.0	15.6	9.7	16.3	14.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.2	7.5	27.5	13.0	0.0	15.6	9.7	16.3	14.5	0.3
Queue Length 50th (ft)	22	21	3	32	0	7	2	13	2	0
Queue Length 95th (ft)	88	143	27	115	0	30	19	47	14	0
Internal Link Dist (ft)		438		506			318		1006	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1652	4385	425	3683	1544	739	905	735	1001	1539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.17	0.04	0.15	0.02	0.05	0.03	0.09	0.01	0.20

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	500	163	132	571	610	271
v/c Ratio	0.54	0.30	0.43	0.20	0.51	0.40
Control Delay (s/veh)	21.5	6.0	28.4	5.5	14.9	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.5	6.0	28.4	5.5	14.9	4.2
Queue Length 50th (ft)	65	0	36	24	72	0
Queue Length 95th (ft)	164	45	113	51	156	47
Internal Link Dist (ft)	511			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1527	794	752	4769	2328	1070
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.21	0.18	0.12	0.26	0.25

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	562	337	1148	232	743	218
v/c Ratio	0.64	0.42	0.37	0.15	0.26	0.16
Control Delay (s/veh)	24.5	13.7	3.0	0.2	5.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.5	13.7	3.0	0.2	5.4	0.3
Queue Length 50th (ft)	100	39	21	0	37	0
Queue Length 95th (ft)	135	67	51	m0	64	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	971	3112	1534	2897	1332
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.35	0.37	0.15	0.26	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	874	719	583	167	1002	189
v/c Ratio	0.81	0.54	0.22	0.20	0.49	0.12
Control Delay (s/veh)	27.6	12.8	7.1	2.0	16.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.6	12.8	7.1	2.0	16.6	0.2
Queue Length 50th (ft)	159	97	38	0	137	0
Queue Length 95th (ft)	#228	143	56	25	152	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1434	2644	827	2025	1536
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.50	0.22	0.20	0.49	0.12

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	74	130	11	78	227	379	20	265	84	450	910	288
v/c Ratio	0.20	0.12	0.01	0.21	0.21	0.25	0.06	0.26	0.05	0.60	0.37	0.19
Control Delay (s/veh)	34.8	23.4	0.0	34.7	23.2	0.4	37.9	23.3	0.1	28.7	12.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.8	23.4	0.0	34.7	23.2	0.4	37.9	23.3	0.1	28.7	12.3	0.3
Queue Length 50th (ft)	10	12	0	11	22	0	3	26	0	63	59	0
Queue Length 95th (ft)	53	44	0	55	70	0	21	80	0	222	206	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1920	3031	1547	1920	3033	1546	1280	3001	1547	1920	3861	1547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04	0.01	0.04	0.07	0.25	0.02	0.09	0.05	0.23	0.24	0.19

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	237	496	17	644	33	46	40	18	6	95
v/c Ratio	0.38	0.14	0.08	0.30	0.02	0.15	0.11	0.06	0.02	0.06
Control Delay (s/veh)	22.7	6.9	28.3	12.8	0.0	17.1	7.2	16.3	15.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.7	6.9	28.3	12.8	0.0	17.1	7.2	16.3	15.6	0.1
Queue Length 50th (ft)	25	11	4	37	0	10	0	4	1	0
Queue Length 95th (ft)	93	87	28	131	0	35	18	18	9	0
Internal Link Dist (ft)		438		520			318		1006	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1638	4356	422	3684	1543	743	854	721	991	1544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.11	0.04	0.17	0.02	0.06	0.05	0.02	0.01	0.06

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	299	137	146	339	863	354
v/c Ratio	0.42	0.32	0.46	0.11	0.60	0.44
Control Delay (s/veh)	23.7	7.7	28.5	3.7	15.1	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.7	7.7	28.5	3.7	15.1	3.7
Queue Length 50th (ft)	43	0	43	11	114	0
Queue Length 95th (ft)	100	42	113	23	217	47
Internal Link Dist (ft)	516			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1451	748	716	4783	2326	1073
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.18	0.20	0.07	0.37	0.33

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	356	466	1310	512	1278	389
v/c Ratio	0.44	0.65	0.41	0.33	0.43	0.29
Control Delay (s/veh)	22.0	22.3	4.3	0.5	5.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	22.3	4.3	0.5	5.4	0.5
Queue Length 50th (ft)	62	78	43	0	59	0
Queue Length 95th (ft)	85	111	85	0	112	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	944	3218	1533	3000	1348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.49	0.41	0.33	0.43	0.29

Intersection Summary

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	618	258	1357	390	926	334
v/c Ratio	0.65	0.21	0.48	0.41	0.41	0.21
Control Delay (s/veh)	23.7	9.0	8.4	2.3	11.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.7	9.0	8.4	2.3	11.8	0.3
Queue Length 50th (ft)	108	26	103	0	74	0
Queue Length 95th (ft)	149	45	150	38	93	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1340	2818	961	2274	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.19	0.48	0.41	0.41	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	355	436	35	115	248	715	7	659	126	543	448	181
v/c Ratio	0.60	0.36	0.02	0.35	0.30	0.46	0.03	0.57	0.08	0.71	0.18	0.12
Control Delay (s/veh)	40.0	28.0	0.0	45.6	33.8	1.0	51.1	32.8	0.1	38.4	14.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.0	28.0	0.0	45.6	33.8	1.0	51.1	32.8	0.1	38.4	14.1	0.2
Queue Length 50th (ft)	78	63	0	26	38	0	1	100	0	118	37	0
Queue Length 95th (ft)	209	136	0	85	92	0	11	233	0	306	119	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1315	2165	1549	1315	2079	1545	876	2061	1548	1315	2850	1548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.20	0.02	0.09	0.12	0.46	0.01	0.32	0.08	0.41	0.16	0.12

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	236	782	27	581	37	38	30	67	12	309
v/c Ratio	0.38	0.22	0.12	0.28	0.02	0.12	0.08	0.21	0.03	0.20
Control Delay (s/veh)	22.4	7.6	27.5	13.3	0.0	16.0	9.9	16.8	15.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.4	7.6	27.5	13.3	0.0	16.0	9.9	16.8	15.0	0.3
Queue Length 50th (ft)	26	21	6	35	0	8	2	14	2	0
Queue Length 95th (ft)	94	149	39	124	0	31	19	47	14	0
Internal Link Dist (ft)		438		506			318		1006	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1654	4336	426	3707	1544	739	905	735	1001	1539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.18	0.06	0.16	0.02	0.05	0.03	0.09	0.01	0.20

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	499	166	133	571	608	265
v/c Ratio	0.54	0.30	0.43	0.20	0.51	0.40
Control Delay (s/veh)	21.4	6.0	28.2	5.5	15.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.4	6.0	28.2	5.5	15.0	4.2
Queue Length 50th (ft)	65	0	36	24	72	0
Queue Length 95th (ft)	163	45	114	51	155	47
Internal Link Dist (ft)	511			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1535	799	756	4769	2340	1071
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.21	0.18	0.12	0.26	0.25

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	554	435	1696	326	1574	372
v/c Ratio	0.63	0.58	0.54	0.21	0.54	0.28
Control Delay (s/veh)	24.5	21.4	4.4	0.2	8.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.5	21.4	4.4	0.2	8.4	0.5
Queue Length 50th (ft)	99	74	44	0	120	0
Queue Length 95th (ft)	132	109	m109	m0	187	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	924	3120	1534	2940	1332
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.47	0.54	0.21	0.54	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	989	900	1098	180	1722	411
v/c Ratio	0.90	0.65	0.42	0.22	0.89	0.27
Control Delay (s/veh)	34.3	14.1	9.0	2.0	23.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.3	14.1	9.0	2.0	23.1	0.4
Queue Length 50th (ft)	190	134	87	0	245	0
Queue Length 95th (ft)	#300	181	116	26	#345	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1467	2630	826	1937	1536
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.61	0.42	0.22	0.89	0.27

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	138	32	106	426	766	64	362	191	798	1032	681
v/c Ratio	0.34	0.15	0.02	0.36	0.41	0.50	0.25	0.42	0.12	0.64	0.42	0.44
Control Delay (s/veh)	44.5	30.4	0.0	44.3	31.5	1.1	45.0	33.0	0.2	28.8	16.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.5	30.4	0.0	44.3	31.5	1.1	45.0	33.0	0.2	28.8	16.5	0.9
Queue Length 50th (ft)	22	20	0	24	67	0	14	58	0	153	117	0
Queue Length 95th (ft)	68	49	0	73	133	0	50	114	0	#473	252	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1254	1987	1547	1254	1991	1546	836	1970	1547	1254	2705	1547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.07	0.02	0.08	0.21	0.50	0.08	0.18	0.12	0.64	0.38	0.44

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	322	896	11	1000	46	69	57	46	11	368
v/c Ratio	0.51	0.25	0.07	0.45	0.03	0.26	0.16	0.18	0.03	0.24
Control Delay (s/veh)	27.7	7.0	34.8	15.1	0.0	23.8	9.9	22.6	20.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.7	7.0	34.8	15.1	0.0	23.8	9.9	22.6	20.5	0.4
Queue Length 50th (ft)	47	27	3	75	0	20	3	13	3	0
Queue Length 95th (ft)	130	158	23	223	0	56	28	41	15	0
Internal Link Dist (ft)		438		520			318		967	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1329	3786	342	3081	1543	603	728	580	809	1544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.24	0.03	0.32	0.03	0.11	0.08	0.08	0.01	0.24

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	618	202	303	528	1265	544
v/c Ratio	0.80	0.40	0.83	0.15	0.91	0.61
Control Delay (s/veh)	40.3	6.9	52.6	5.1	34.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.3	6.9	52.6	5.1	34.5	5.0
Queue Length 50th (ft)	168	0	161	34	362	0
Queue Length 95th (ft)	226	51	#279	46	#507	63
Internal Link Dist (ft)	516			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	856	546	422	3659	1451	911
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.37	0.72	0.14	0.87	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	340	553	2319	713	1861	543
v/c Ratio	0.37	0.71	0.76	0.47	0.65	0.40
Control Delay (s/veh)	19.7	24.3	11.5	0.6	10.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.7	24.3	11.5	0.6	10.0	0.9
Queue Length 50th (ft)	54	99	225	0	163	0
Queue Length 95th (ft)	81	144	283	m0	237	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	924	3050	1533	2850	1348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.60	0.76	0.47	0.65	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	763	323	2341	358	1634	344
v/c Ratio	0.74	0.26	0.86	0.39	0.75	0.22
Control Delay (s/veh)	25.3	9.7	16.4	2.3	13.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.3	9.7	16.4	2.3	13.7	0.3
Queue Length 50th (ft)	134	34	285	0	98	0
Queue Length 95th (ft)	190	58	#371	37	141	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1389	2732	927	2166	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.23	0.86	0.39	0.75	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	691	638	64	191	309	1085	32	894	149	840	745	351
v/c Ratio	0.86	0.45	0.04	0.59	0.45	0.70	0.20	0.78	0.10	0.95	0.31	0.23
Control Delay (s/veh)	55.4	36.4	0.1	60.7	48.8	2.7	61.8	48.8	0.1	65.2	21.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.4	36.4	0.1	60.7	48.8	2.7	61.8	48.8	0.1	65.2	21.8	0.3
Queue Length 50th (ft)	249	144	0	71	81	0	12	230	0	321	131	0
Queue Length 95th (ft)	#473	209	0	131	119	0	34	342	0	#630	220	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	880	1500	1549	880	1399	1545	586	1388	1548	880	2377	1548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.43	0.04	0.22	0.22	0.70	0.05	0.64	0.10	0.95	0.31	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	453	1052	32	842	53	63	42	84	21	516
v/c Ratio	0.60	0.32	0.17	0.43	0.03	0.22	0.11	0.30	0.05	0.34
Control Delay (s/veh)	27.3	8.9	34.2	16.5	0.0	23.0	14.1	24.3	20.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.3	8.9	34.2	16.5	0.0	23.0	14.1	24.3	20.8	0.6
Queue Length 50th (ft)	67	35	10	69	0	18	6	24	6	0
Queue Length 95th (ft)	189	205	48	200	0	56	31	71	24	0
Internal Link Dist (ft)		438		506			318		976	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1374	3698	354	3094	1544	611	776	606	834	1539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.28	0.09	0.27	0.03	0.10	0.05	0.14	0.03	0.34

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	747	231	121	857	1097	485
v/c Ratio	0.76	0.38	0.50	0.29	0.76	0.55
Control Delay (s/veh)	32.0	5.9	39.1	6.9	21.0	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.0	5.9	39.1	6.9	21.0	4.3
Queue Length 50th (ft)	169	0	55	60	219	0
Queue Length 95th (ft)	#291	53	108	77	331	59
Internal Link Dist (ft)	511			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1076	654	530	4162	1790	979
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.35	0.23	0.21	0.61	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	554	435	1708	326	1577	372
v/c Ratio	0.63	0.58	0.55	0.21	0.54	0.28
Control Delay (s/veh)	24.5	21.4	4.4	0.2	8.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.5	21.4	4.4	0.2	8.4	0.5
Queue Length 50th (ft)	99	74	45	0	120	0
Queue Length 95th (ft)	132	109	m110	m0	187	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	924	3120	1534	2940	1332
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.47	0.55	0.21	0.54	0.28

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	989	912	1152	180	1726	411
v/c Ratio	0.90	0.66	0.44	0.22	0.89	0.27
Control Delay (s/veh)	34.3	14.3	9.1	2.0	23.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.3	14.3	9.1	2.0	23.3	0.4
Queue Length 50th (ft)	190	137	93	0	246	0
Queue Length 95th (ft)	#300	185	124	26	#347	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1467	2630	826	1935	1536
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.62	0.44	0.22	0.89	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	141	32	112	437	818	64	362	194	813	1032	681
v/c Ratio	0.34	0.16	0.02	0.37	0.42	0.53	0.26	0.42	0.13	0.65	0.42	0.44
Control Delay (s/veh)	44.8	30.6	0.0	44.5	31.7	1.3	45.3	33.3	0.2	29.1	16.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.8	30.6	0.0	44.5	31.7	1.3	45.3	33.3	0.2	29.1	16.5	0.9
Queue Length 50th (ft)	22	21	0	26	71	0	15	59	0	157	118	0
Queue Length 95th (ft)	68	50	0	77	136	0	50	114	0	#490	253	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1247	1975	1547	1247	1981	1546	831	1958	1547	1247	2690	1547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.07	0.02	0.09	0.22	0.53	0.08	0.18	0.13	0.65	0.38	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	324	914	11	1075	46	69	57	46	11	368
v/c Ratio	0.52	0.26	0.07	0.47	0.03	0.26	0.17	0.18	0.03	0.24
Control Delay (s/veh)	28.5	7.0	35.4	15.3	0.0	24.5	10.2	23.3	21.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5	7.0	35.4	15.3	0.0	24.5	10.2	23.3	21.0	0.4
Queue Length 50th (ft)	51	28	4	84	0	21	3	14	3	0
Queue Length 95th (ft)	131	163	23	243	0	56	28	41	15	0
Internal Link Dist (ft)		438		520			318		967	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1288	3750	332	2987	1543	586	708	564	786	1544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.24	0.03	0.36	0.03	0.12	0.08	0.08	0.01	0.24

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	661	208	306	528	1274	547
v/c Ratio	0.84	0.40	0.84	0.16	0.92	0.61
Control Delay (s/veh)	42.9	6.8	53.9	5.2	36.1	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.9	6.8	53.9	5.2	36.1	5.0
Queue Length 50th (ft)	182	0	163	34	366	0
Queue Length 95th (ft)	#262	52	#283	46	#513	63
Internal Link Dist (ft)	516			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	843	545	415	3602	1428	908
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.38	0.74	0.15	0.89	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	340	553	2327	713	1874	543
v/c Ratio	0.37	0.71	0.76	0.47	0.66	0.40
Control Delay (s/veh)	19.7	24.3	11.7	0.5	10.1	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.7	24.3	11.7	0.5	10.1	0.9
Queue Length 50th (ft)	54	99	228	0	165	0
Queue Length 95th (ft)	81	144	284	m0	241	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	924	3050	1533	2850	1348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.60	0.76	0.47	0.66	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	763	367	2374	358	1647	344
v/c Ratio	0.74	0.29	0.87	0.39	0.76	0.22
Control Delay (s/veh)	25.3	10.1	17.0	2.3	14.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.3	10.1	17.0	2.3	14.0	0.3
Queue Length 50th (ft)	134	40	293	0	100	0
Queue Length 95th (ft)	190	67	#395	37	151	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1389	2732	927	2161	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.26	0.87	0.39	0.76	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	691	651	64	195	316	1118	32	894	155	897	745	351
v/c Ratio	0.86	0.46	0.04	0.59	0.45	0.72	0.20	0.78	0.10	1.02	0.31	0.23
Control Delay (s/veh)	55.6	36.6	0.1	60.8	48.9	3.0	61.9	49.0	0.1	79.6	21.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.6	36.6	0.1	60.8	48.9	3.0	61.9	49.0	0.1	79.6	21.9	0.3
Queue Length 50th (ft)	250	148	0	73	83	0	12	231	0	~370	131	0
Queue Length 95th (ft)	#473	213	0	133	121	0	34	342	0	#690	220	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	879	1498	1549	879	1397	1545	586	1386	1548	879	2374	1548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.43	0.04	0.22	0.23	0.72	0.05	0.65	0.10	1.02	0.31	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	460	1119	32	885	53	63	42	84	21	516
v/c Ratio	0.61	0.34	0.17	0.44	0.03	0.23	0.12	0.30	0.05	0.34
Control Delay (s/veh)	27.7	9.1	34.7	16.7	0.0	23.5	14.3	24.8	21.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.7	9.1	34.7	16.7	0.0	23.5	14.3	24.8	21.2	0.6
Queue Length 50th (ft)	69	39	10	73	0	18	6	25	6	0
Queue Length 95th (ft)	192	222	48	210	0	56	31	71	24	0
Internal Link Dist (ft)		438		506			318		976	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1352	3657	348	3058	1544	602	765	597	821	1539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.31	0.09	0.29	0.03	0.10	0.05	0.14	0.03	0.34

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	774	234	127	857	1129	498
v/c Ratio	0.79	0.38	0.53	0.29	0.78	0.56
Control Delay (s/veh)	33.6	5.9	40.1	6.9	21.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.6	5.9	40.1	6.9	21.7	4.3
Queue Length 50th (ft)	187	0	60	60	229	0
Queue Length 95th (ft)	#311	54	112	77	347	60
Internal Link Dist (ft)	511			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1040	642	512	4107	1727	968
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.36	0.25	0.21	0.65	0.51

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	564	435	1711	376	1582	372
v/c Ratio	0.64	0.57	0.55	0.25	0.54	0.28
Control Delay (s/veh)	24.3	21.0	4.6	0.3	8.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.3	21.0	4.6	0.3	8.6	0.5
Queue Length 50th (ft)	101	73	45	0	122	0
Queue Length 95th (ft)	135	109	m110	m0	189	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	924	3100	1534	2921	1332
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.47	0.55	0.25	0.54	0.28

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	989	928	1166	199	1741	411
v/c Ratio	0.90	0.67	0.44	0.24	0.90	0.27
Control Delay (s/veh)	34.3	14.4	9.2	2.0	24.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.3	14.4	9.2	2.0	24.2	0.4
Queue Length 50th (ft)	190	140	94	0	249	0
Queue Length 95th (ft)	#300	190	125	27	#351	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1467	2630	835	1924	1536
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.63	0.44	0.24	0.90	0.27

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	147	32	114	440	850	64	362	195	843	1032	681
v/c Ratio	0.34	0.16	0.02	0.38	0.42	0.55	0.26	0.42	0.13	0.68	0.42	0.44
Control Delay (s/veh)	44.8	30.7	0.0	44.5	31.6	1.4	45.3	33.3	0.2	29.6	16.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.8	30.7	0.0	44.5	31.6	1.4	45.3	33.3	0.2	29.6	16.5	0.9
Queue Length 50th (ft)	22	22	0	27	71	0	15	59	0	165	118	0
Queue Length 95th (ft)	68	52	0	77	137	0	50	115	0	#517	253	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	1245	1973	1547	1245	1980	1546	830	1956	1547	1245	2689	1547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.07	0.02	0.09	0.22	0.55	0.08	0.19	0.13	0.68	0.38	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	355	924	23	1115	46	69	57	46	11	368
v/c Ratio	0.55	0.26	0.13	0.49	0.03	0.27	0.17	0.18	0.03	0.24
Control Delay (s/veh)	29.0	7.1	35.7	15.7	0.0	25.5	10.5	24.2	21.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.0	7.1	35.7	15.7	0.0	25.5	10.5	24.2	21.8	0.4
Queue Length 50th (ft)	58	28	8	90	0	22	3	15	3	0
Queue Length 95th (ft)	142	169	38	258	0	57	28	42	15	0
Internal Link Dist (ft)		438		520			318		967	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1272	3696	327	2949	1543	579	700	557	776	1544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.25	0.07	0.38	0.03	0.12	0.08	0.08	0.01	0.24

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	652	210	307	528	1275	552
v/c Ratio	0.83	0.40	0.84	0.16	0.92	0.61
Control Delay (s/veh)	42.4	6.8	53.9	5.2	36.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.4	6.8	53.9	5.2	36.0	5.0
Queue Length 50th (ft)	179	0	163	34	367	0
Queue Length 95th (ft)	#256	52	#284	46	#513	64
Internal Link Dist (ft)	516			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	844	547	416	3607	1430	910
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.38	0.74	0.15	0.89	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	366	553	2330	749	1877	543
v/c Ratio	0.40	0.71	0.76	0.49	0.66	0.40
Control Delay (s/veh)	20.0	24.3	11.7	0.6	10.1	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.0	24.3	11.7	0.6	10.1	0.9
Queue Length 50th (ft)	59	99	229	0	165	0
Queue Length 95th (ft)	87	144	284	m0	241	0
Internal Link Dist (ft)			889		468	
Turn Bay Length (ft)		350		200		
Base Capacity (vph)	1098	924	3050	1533	2853	1348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.60	0.76	0.49	0.66	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	763	368	2389	372	1676	344
v/c Ratio	0.74	0.29	0.87	0.40	0.78	0.22
Control Delay (s/veh)	25.3	10.1	17.3	2.3	14.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.3	10.1	17.3	2.3	14.5	0.3
Queue Length 50th (ft)	134	40	297	0	110	0
Queue Length 95th (ft)	190	67	#406	37	164	0
Internal Link Dist (ft)			1004		889	
Turn Bay Length (ft)	300	300				200
Base Capacity (vph)	1098	1389	2732	933	2161	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.26	0.87	0.40	0.78	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	691	654	64	198	319	1147	32	894	156	927	745	351
v/c Ratio	0.86	0.47	0.04	0.60	0.45	0.74	0.20	0.78	0.10	1.06	0.31	0.23
Control Delay (s/veh)	55.7	36.8	0.1	60.8	48.9	3.3	61.9	49.0	0.1	89.0	21.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.7	36.8	0.1	60.8	48.9	3.3	61.9	49.0	0.1	89.0	21.9	0.3
Queue Length 50th (ft)	250	149	0	74	83	0	12	231	0	~394	131	0
Queue Length 95th (ft)	#473	215	0	135	122	0	34	342	0	#720	220	0
Internal Link Dist (ft)		662			308			914			1004	
Turn Bay Length (ft)	375		375	175			340			450		
Base Capacity (vph)	878	1494	1549	878	1395	1545	585	1385	1548	878	2372	1548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.44	0.04	0.23	0.23	0.74	0.05	0.65	0.10	1.06	0.31	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	480	1133	43	920	53	63	42	84	21	516
v/c Ratio	0.63	0.36	0.22	0.46	0.03	0.23	0.12	0.30	0.06	0.34
Control Delay (s/veh)	28.4	10.4	34.8	16.9	0.0	24.0	14.6	25.3	21.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.4	10.4	34.8	16.9	0.0	24.0	14.6	25.3	21.6	0.6
Queue Length 50th (ft)	76	76	14	80	0	19	6	26	6	0
Queue Length 95th (ft)	200	230	59	220	0	56	31	71	24	0
Internal Link Dist (ft)		438		506			318		976	
Turn Bay Length (ft)	225		150		300	115				100
Base Capacity (vph)	1319	3566	339	2996	1544	588	747	583	802	1539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.32	0.13	0.31	0.03	0.11	0.06	0.14	0.03	0.34

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	773	237	129	857	1118	501
v/c Ratio	0.78	0.38	0.54	0.29	0.78	0.56
Control Delay (s/veh)	33.3	5.8	40.0	7.0	21.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.3	5.8	40.0	7.0	21.6	4.3
Queue Length 50th (ft)	181	0	59	60	226	0
Queue Length 95th (ft)	#311	55	114	77	343	60
Internal Link Dist (ft)	511			425	465	
Turn Bay Length (ft)			200			
Base Capacity (vph)	1014	634	500	4124	1689	958
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.37	0.26	0.21	0.66	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix D:
Signal Warrant Sheets

FEHR & PEERS

		Project	Avalon Bay TIA
Major Street	Owens Dr	Scenario	Cumulative Plus 2011 Project
Minor Street	Project Driveway West	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	30	23	20
Through	0	0	813	901
Right	10	65	10	17
Total	30	95	846	938

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	44.6
Approach with Worst Case Delay	NB
Total Vehicles on Approach	30

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative Plus 2011 Project	**0.4**	**95**	**1,909**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

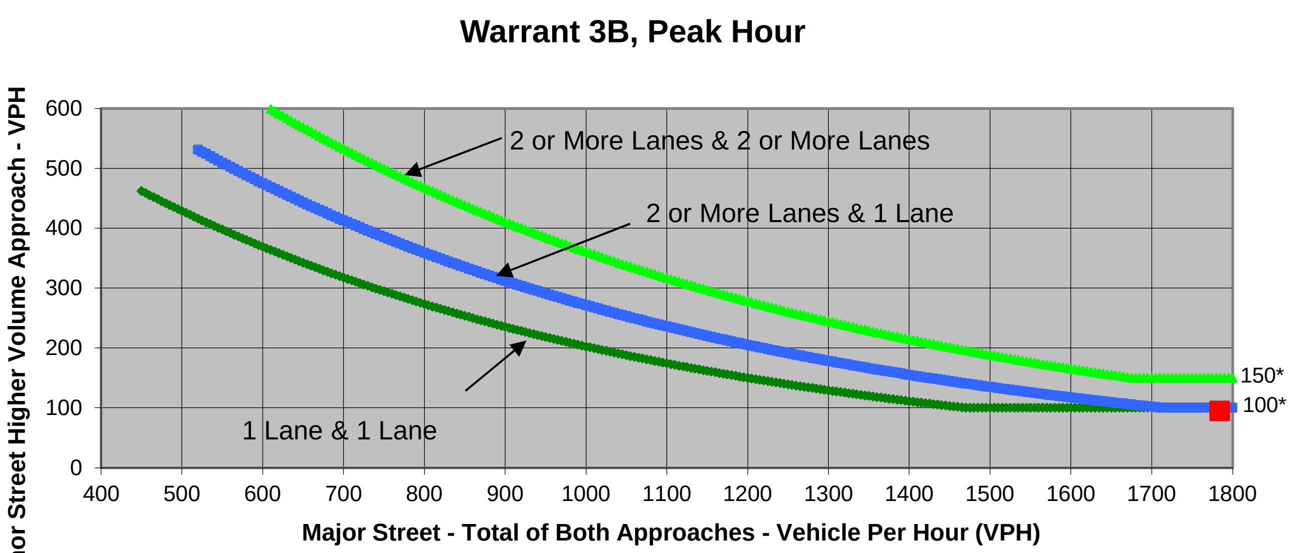
		Project	Avalon Bay TIA
Major Street	Owens Dr	Scenario	Cumulative Plus 2011 Project
Minor Street	Project Driveway West	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	30	23	20
Through			813	901
Right	10	65	10	17
Total	30	95	846	938

Major Street Direction

	North/South
x	East/West



* 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 Control Devices*, Caltrans, 2014

	Major Street Owens Dr	Minor Street Project Driveway West	Warrant Met
Number of Approach Lanes	**3**	**1**	**NO**
Traffic Volume (VPH) *	**1,784**	**95**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Owens Dr	Project	Avalon Bay TIA
Minor Street	Project Driveway West	Scenario	Cumulative Plus 2011 Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	16	64	60
Through	0	0	974	870
Right	20	29	64	28
Total	40	45	1,102	958

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	48.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	40

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative Plus 2011 Project	**0.5**	**45**	**2,145**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

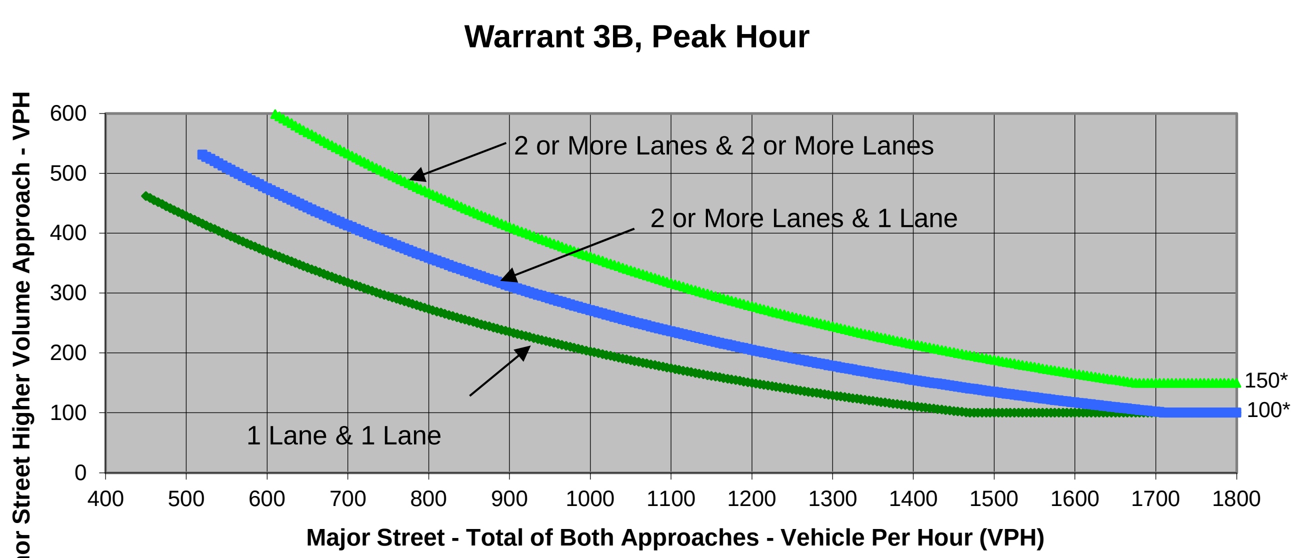
Major Street	Owens Dr		Project	Avalon Bay TIA
Minor Street	Project Driveway West		Scenario	Cumulative Plus 2011 Project
			Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	16	64	60
Through			974	870
Right	20	29	64	28
Total	40	45	1,102	958

Major Street Direction

	North/South
x	East/West



* 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 Control Devices*, Caltrans, 2014

	Major Street Owens Dr	Minor Street Project Driveway West	Warrant Met
Number of Approach Lanes	**3**	**1**	**NO**
Traffic Volume (VPH) *	**2,060**	**45**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	Avalon Bay TIA
Major Street	Owens Dr	Scenario	Cumulative Plus Project
Minor Street	Project Driveway West	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	25	32	20
Through	0	0	822	904
Right	10	82	10	17
Total	30	107	864	941

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	52.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	30

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative Plus Project	**0.4**	**107**	**1,942**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

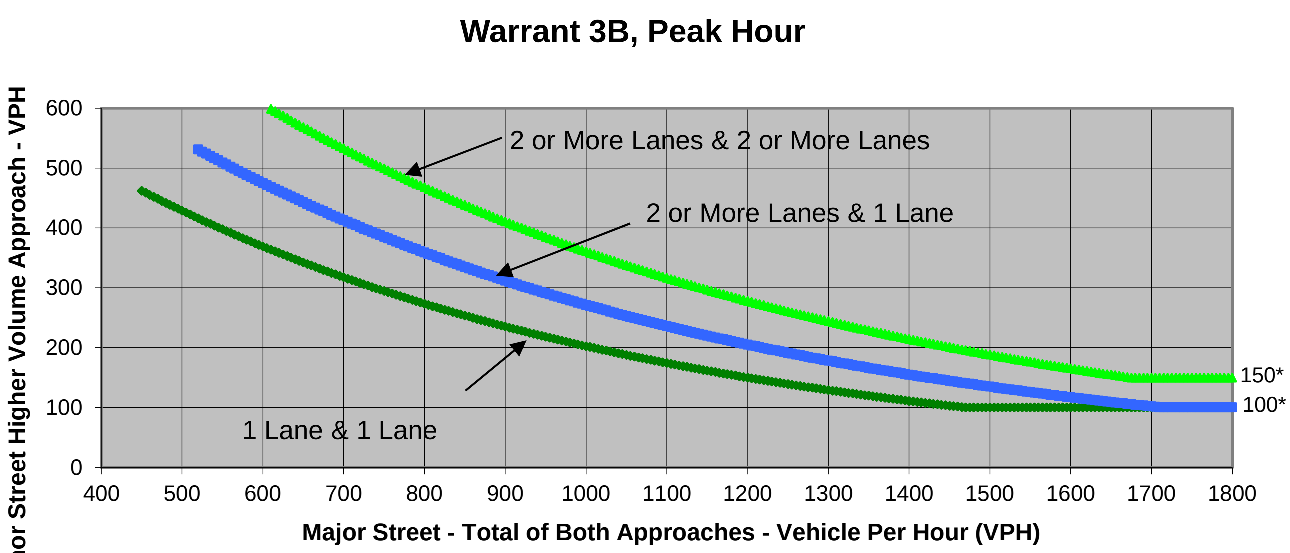
		Project	Avalon Bay TIA
Major Street	Owens Dr	Scenario	Cumulative Plus Project
Minor Street	Project Driveway West	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	25	32	20
Through			822	904
Right	10	82	10	17
Total	30	107	864	941

Major Street Direction

	North/South
x	East/West



* 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 Control Devices*, Caltrans, 2014

	Major Street Owens Dr	Minor Street Project Driveway West	Warrant Met
Number of Approach Lanes	**3**	**1**	**YES**
Traffic Volume (VPH) *	**1,805**	**107**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	Avalon Bay TIA
Major Street	Owens Dr
Minor Street	Project Driveway West
Scenario	Cumulative Plus Project
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	17	84	60
Through	0	0	974	871
Right	20	43	30	29
Total	40	60	1,088	960

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	56.3
Approach with Worst Case Delay	NB
Total Vehicles on Approach	40

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative Plus Project	**0.6**	**60**	**2,148**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

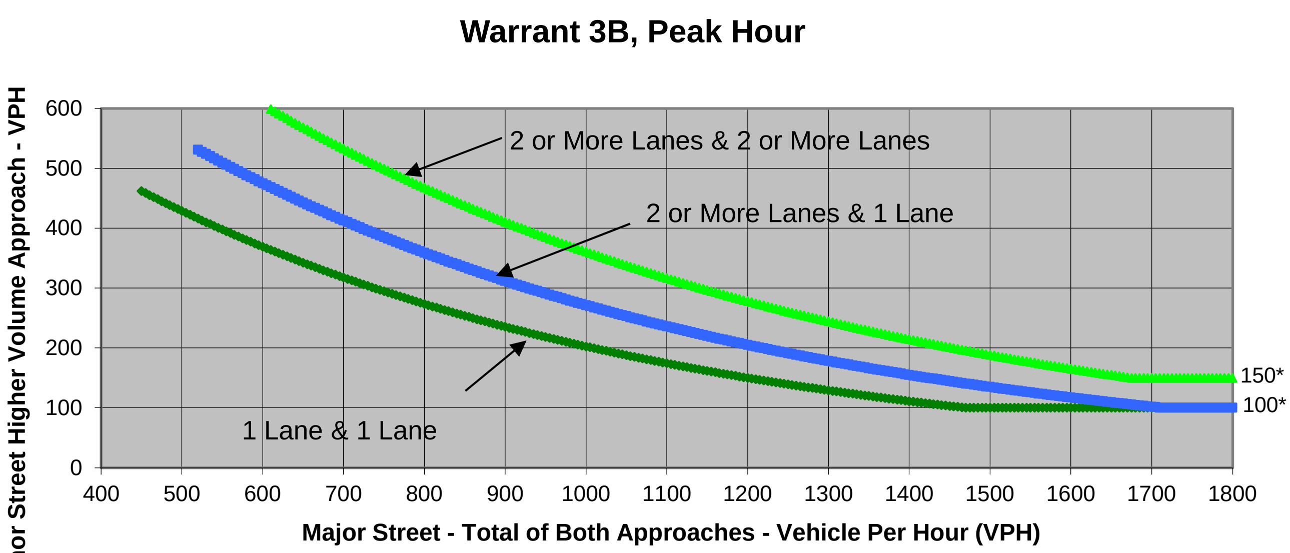
		Project	Avalon Bay TIA
Major Street	Owens Dr	Scenario	Cumulative Plus Project
Minor Street	Project Driveway West	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	20	17	84	60
Through			974	871
Right	20	43	30	29
Total	40	60	1,088	960

Major Street Direction

	North/South
x	East/West



* 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 Control Devices*, Caltrans, 2014

	Major Street Owens Dr	Minor Street Project Driveway West	Warrant Met
Number of Approach Lanes	**3**	**1**	**NO**
Traffic Volume (VPH) *	**2,048**	**60**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

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