Appendix A

Scoping Documents

City of La Verne

Notice of Preparation of Environmental Impact Report

Date: October 1, 2020

To: State Clearinghouse, Public Agencies, Interested Parties

Subject: Notice of Preparation of a Draft Environmental Impact Report

Project Title: Project No. PLN 20-09155 – Amherst Residential Development Project

Location: 2820 Amherst Street, La Verne, CA 91750

Parcel No.: 8666-021-902

The City of La Verne (City), as lead agency under the California Environmental Quality Act (CEQA), plans to prepare an environmental impact report (EIR) pursuant to CEQA. In accordance with Section 15082 of the CEQA Guidelines, the City is issuing this Notice of Preparation (NOP) to inform you that an EIR will be prepared, and to provide an opportunity for a meaningful response related to the scope and content of the EIR, including the potentially significant environmental issues, reasonable alternatives, and mitigation measures.

Project Description

The proposed project would involve the development of up to 42 single-family dwelling units, and on-site recreational amenities on an approximately 5.3-acre site. The project would also maintain access to the City's adjacent facilities. Proposed entitlements include:

- **General Plan Amendment** to change the land use designation from Low Density Residential (LDR) to Medium Density Residential (MDR).
- **Zone Change** to change the zoning of the entire property from Planned Residential Development (PR3D) to Specific Plan.
- **Approval of the Amherst Specific Plan** by City ordinance.
- **Certification of an Environmental Impact Report** prepared in accordance with CEQA.
- **Tentative Tract Map** prepared for the Amherst Specific Plan area and processed through the City in accordance with Chapter 16 of the La Verne Municipal Code and the Subdivision Map Act, which requires approval of the Planning Commission and/or City Council.
- **Development Review Committee** approval of a precise plan for development within the Amherst Specific Plan area is required before building permits may be issued.

A more detailed project description will be provided in the project Initial Study to be posted on the City website; see *Project Information Available* herein.

Scope of the Environmental Impact Report

The City is preparing an Initial Study to evaluate the potentially significant impacts of the proposed project. The Initial Study will be available on the City's website; see *Project Information Available* herein. Based on the preliminary results of the Initial Study, the following topics warrant additional consideration in an EIR:

- Transportation – conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) related to vehicle miles travelled. The City will also be providing a traffic capacity analysis for informational purposes in the EIR given the communities expressed interest in this subject, though it will not be considered in determining mitigation or significance under CEQA, consistent with new requirements that went into effect on July 1, 2020.

- Tribal cultural resources—the City is in consultation with Tribes regarding the project and the results of consultation will be included in the EIR.

The Initial Study indicates that the project would have no impact, or less than significant impacts, related to the following subjects, and thus would not warrant further evaluation in an EIR:

- Aesthetics
- Agriculture and Forestry
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

Responsible Agencies

In accordance with Section 15082 of the CEQA Guidelines, this NOP is being sent to the Office of Planning and Research, Responsible Agencies, Trustee Agencies, and other interested parties. Agencies are requested to review the project description provided in this NOP and provide comments on environmental issues related to their respective statutory responsibilities. If you are an authorized representative of a Responsible Agency, or a Trustee Agency, a transportation planning agency, agency with transportation facilities that may be affected, or a Federal agency involved in approving or funding the proposed project, the City of La Verne encourages you to express the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the Environmental Impact Report for this proposed project if it will consider a permit or other approval for the proposed project.

Public Review and Comment

The City is requesting comments as to the scope and content of the EIR. Please provide your comments before 5:00 p.m. on **November 2, 2020**, to the address below. Be sure to include the name, phone number, and address of your agency's contact person in your response.

Candice Bowcock
Department of Community Development
City of La Verne
3660 D Street
La Verne, California 91750
Phone: (909)-596-8706 | Email: cbowcock@cityoflaverne.org

Project Information Available

An Initial Study is being prepared for the project and will be available on the City's website at: https://www.cityoflaverne.org/index.php/documents/community-development/current-planning-projects.

A project information video will also be posted on the City's website at: Cityoflaverne.org/Amherst.

Amherst Residential Development

Initial Study

prepared by

City of La Verne
Planning Division, Department of Community Development
3660 "D" Street
La Verne, California 91750
Contact: Candice Bowcock, Principal Planner

prepared with the assistance of

Rincon Consultants, Inc.
1980 Orange Tree Lane, Suite 105
Redlands, California 92374

October 2020

rincon
RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

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Table of Contents

Tables

Figures

Appendices

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Initial Study

1. Project Title

Amherst Residential Development Project (project)

2. Lead Agency Name and Address

City of La Verne
3660 D Street
La Verne, California 91750

3. Contact Person and Phone Number

Candice Bowcock, Principal Planner
909-596-8706

4. Project Location

The 5.7-acre project site is located at 2820 Amherst Street situated at the eastern city limit within the City of La Verne, Los Angeles County, California. The project site is composed of two parcels (Assessor Parcel Number 8666-021-902, and 866-021-904), approximately 450 feet in width along the Amherst Street frontage, and 630 feet in depth.

The project site is approximately 0.25 mile south of State Route 210 (SR 210), and 0.5 mile north of the historic State Route 66 (SR 66) known as Foothill Boulevard. Regional access to the site is available from the south via Interstate 10 (I-10) Freeway and from the east and west via the SR 210. Local access is available at the Fruit Avenue on- and off-ramps, approximately one mile northwest of the site. Direct access is provided to the project site via Amherst Street and Williams Avenue, which intersect Fruit Street and SR 66 and provide access to the greater regional vehicular circulation network.

The site is used primarily for agriculture as a plant nursery, with approximately 220,000 square feet being used for outdoor plant cultivation and approximately 20,300 square feet used for six greenhouses.

The site is predominately flat, with a gentle slope from 1,219 above mean sea level (amsl) in the southwest corner of the project to 1,240 amsl in the northeast corner. The site drains to the southwest. The nearest bus stop is located approximately 0.5-mile to the southwest, at the intersection of SR 66 and Falcon Street.

The project is bound by a mobile home park (multi-family residential) to the south and west, single-family residences to the north and east, and the City-owned and operated Amherst Groundwater Treatment Plan/Reservoir to the northeast. Figure 1 shows the regional context of the project site, and Figure 2 shows the project site in its neighborhood context.

The Amherst Specific Plan provides a detailed description of the proposed land uses, infrastructure, and implementation requirements for the proposed project.

Figure 1 Regional Location

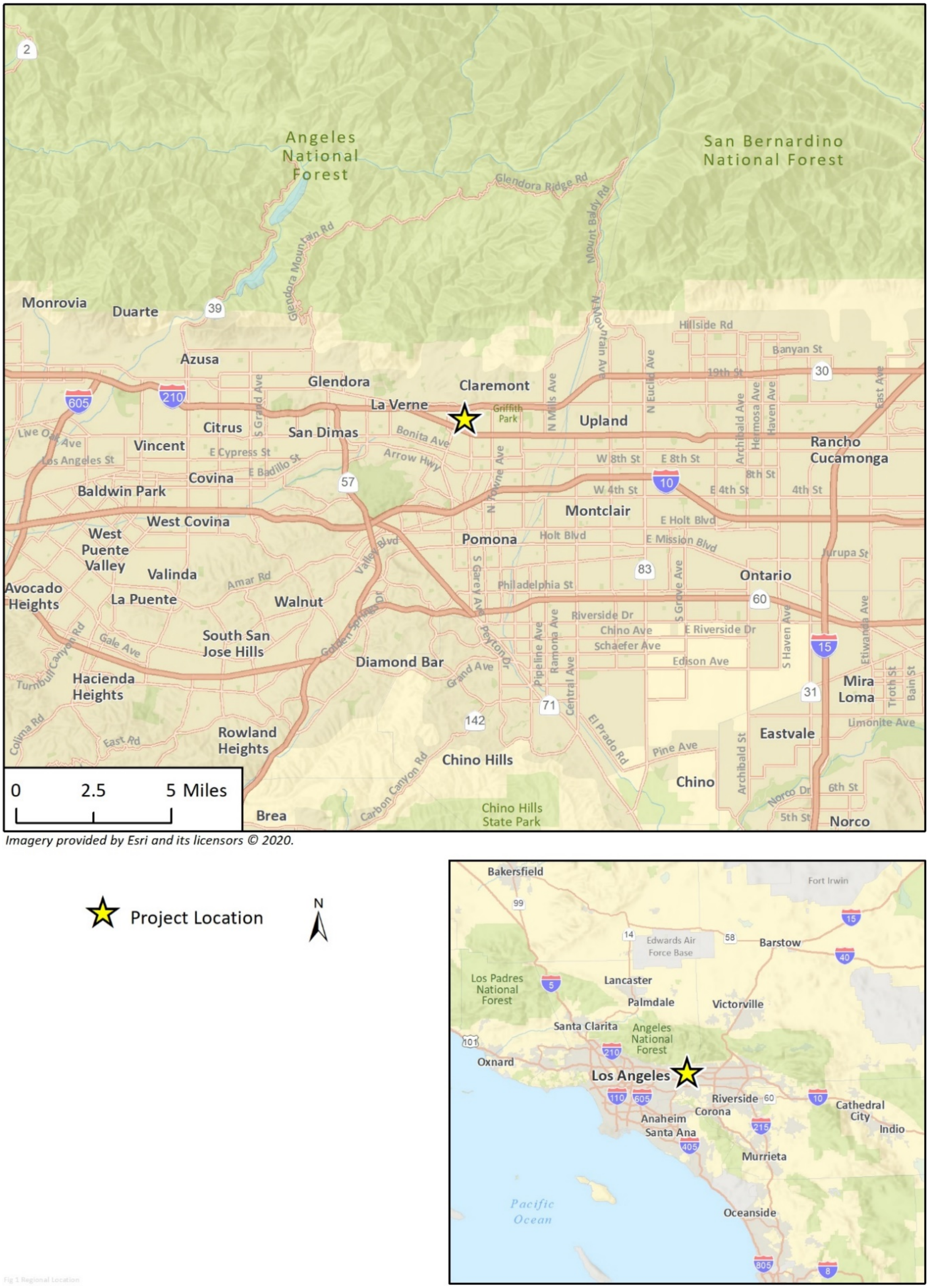
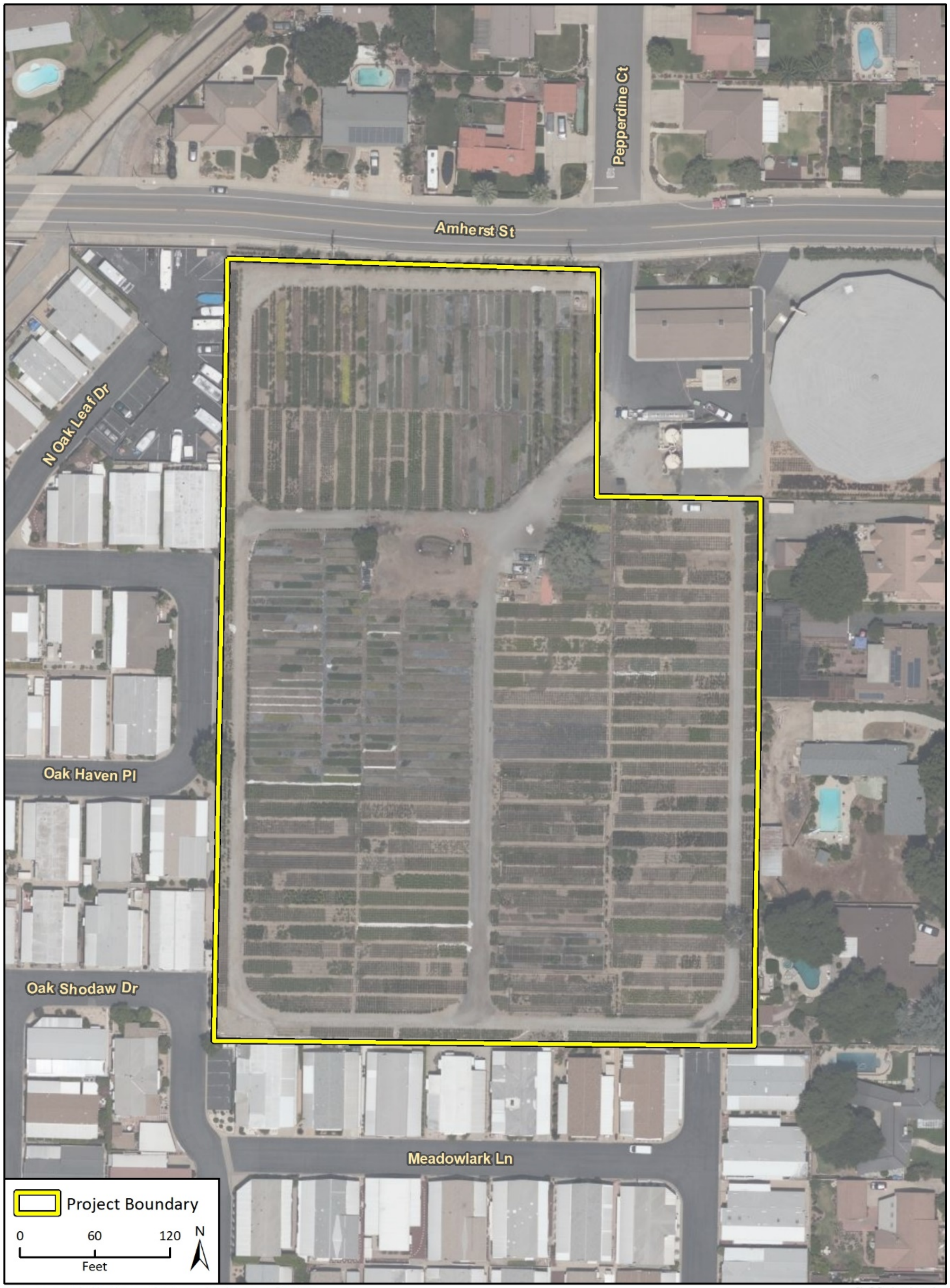


Figure 2 Project Location



Imagery provided by Microsoft Bing and its licensors © 2020.

Fig 2 Project Location

5. Project Sponsor's Name and Address

MJW Investment Group, LLC.
27702 Crown Valley Parkway, Suite D-4 197
Ladera Ranch, California 92694

6. General Plan Designation

According to the General Plan, the Amherst Specific Plan area is located within Neighborhood 5, Foothill Corridor. The General Plan land use plan designates the Amherst Specific Plan area as Low Density Residential (LDR).

7. Zoning

The City's current zoning designation for the Amherst Specific Plan area is "Planned Residential Development 3 DU/AC Detached" (PR3D).

8. Description of Project

Background

The project site was previously owned by the City, which operates the 1.5-acre Amherst Groundwater Treatment Plant/Reservoir on-site, adjacent to the northeast of the project site. The City would retain the water treatment facility via lot line adjustment of the property. The approximately 5.7 remaining acres were leased to West Covina Wholesale, a local business that operates a plant nursery on-site. These remaining 5.7 acres are proposed for residential development, with access from the project site to the treatment facility to remain.

Project Overview

The project would develop up to 42 single-family dwelling units, and on-site recreational amenities, on a 5.7-acre site, for an overall density of 7.8 units per acre under the Amherst Specific Plan. Park space would be accessible to residents within the development, as well as to the public. Access to the adjacent Amherst Groundwater Treatment facility through the project site would remain after build-out of the Amherst Specific Plan.

The project would develop a total of 42 two-story residences, with 19 residences featuring a Plan 1 layout of 2,002 square feet (SF) of living space and 415 SF garage, and 23 residences featuring a Plan 2 layout of 2,411 SF of living space and 418 SF garage. Table 1 provides a development summary for the project.

Table 1 Development Summary

Development Standards	Requirements
Maximum Units	42 dwelling units
Density	8 dwelling units per acre
Minimum Lot Area	3,350 SF
Minimum Lot Dimensions	45 feet wide by 75 feet deep
Height	
Maximum Building Height	28 feet and two stories
Setbacks and Separation	
Minimum Building Setback from Amherst Street Right-of-Way	25 feet
Minimum Distance from Garage Door to Internal Loop Roads	18 feet
Minimum Front Setback	12 feet
Interior Side Setback	5 feet
Interior Rear Setback	15 feet
Minimum Building Separation	10 feet
Parking	
Minimum Parking Required per Dwelling Unit	Two spaces within garage and two on the driveway

Source: Draft Amherst Specific Plan 2020 (Appendix A)

Project Architecture Design

Proposed building design would implement Mediterranean and traditional architectural themes that are compatible with residential development within the City. Architecture within the Amherst Specific Plan area would reflect the design philosophies of Craftsman and Santa Barbara architectural styles. The Santa Barbara architectural style is a derivative of Spanish-themed architecture and would incorporate aspects of Mediterranean style, such as arched openings, red-tile roofs, white and beige stucco walls, and dark wood trims. The Craftsman style is an American domestic style of architecture that features low pitched roofs, tapered columns and supports, and exposed wooden structural and decorative elements.

Project Landscape Design

All landscape would be climate appropriate and use efficient irrigation systems. The use of turf in front yards is discouraged and would be minimized throughout the Amherst Specific Plan area. There are three types of open spaces within the project area: private yard space, common area landscape, and public open space. All project landscaping will be required to meet the City's Water Efficient Landscape Ordinance (La Verne Municipal Code 18.118).

Private yard space would be composed of front, rear, and side yards. These landscape areas would be maintained by the property owner upon which the yard is situated. Water-wise landscape principles would be encouraged in these privately maintained spaces.

Common open space would be composed of parkways, community entry features, and other landscaped areas within the community that would be maintained by a community homeowners association (HOA). Landscaping in these areas would be designed with water-wise principles, with a consistent landscaping palette that contributes to overall project sense-of place.

Public open space within the project would be provided in the form of a 0.25-acre pocket park to be dedicated to the City and located adjacent to the project entry. This area would serve as a landscaped gateway to the project and provide outdoor recreation opportunities to project residents and the public. The conceptual design for the pocket park is shown in Figure 3. Park amenities may include, but are not limited to:

- Event lawn/turf
- Picnic Tables
- Built in BBQ and buffet counter area
- Wood structure with string-lighting
- Fire-pit with group lounge seating
- Enhanced paving
- Dog-bag station
- Bike Racks
- Benches

Walls and fences within the Amherst Specific Plan area are intended to contribute to the sense-of-place for the project site, provide privacy and access control to privately owned areas, and facilitate safe recreational activities in the pocket park. Any wall or fence erected within the Amherst Specific Plan area must complement the overall architectural theme of the community.

Project Circulation

Two existing driveways from Amherst Street currently provide access to the property. These easternmost driveway will remain and continue to provide access to the treatment facility. In addition, a central driveway will be constructed for the project entry, emergency access, and delivery access for the adjacent groundwater treatment plant/reservoir. Pedestrian circulation would be provided throughout the development via a system of interior sidewalks.

Project Infrastructure Plan

Potable water service for the Amherst Specific Plan area is provided by the City of La Verne Water and Utility Division. Other than abutting improvements, there are no off-site improvements to domestic water lines proposed as part of the project. Proposed water system improvements within the Amherst Specific Plan area include eight-inch water distribution lines that provide potable water service to dwelling units within the project site. These new facilities would connect to an existing domestic water line located within the Amherst Street right-of-way.

Sewer service for the Amherst Specific Plan area is provided by the City of La Verne Sewer Division. Proposed eight-inch on-site sewer lines will connect to off-site City main lines. Proposed off-site sewer improvements would occur at the southeast corner of the Amherst Specific Plan area to connect the project to existing sewer main lines within the right-of-way of Williams Avenue. These new improvements would traverse an easement area within an adjacent parcel to connect to existing sewer main lines located within the right-of-way of Williams Avenue.

Figure 3 Conceptual Site and Landscape Plan

Conceptual landscape plan may be subject to change based on final design and engineering.

Source: Studio PAD

Development within the Amherst Specific Plan area would utilize existing storm drain line infrastructure owned and maintained by the adjacent Twin Oaks Park mobile home park. Under an easement agreement, a new storm drain pipe is proposed to be constructed from the southwest corner of the project; through the mobile home park to an existing on-site catch basin which connects via a storm drain pipe directly to the Los Angeles County Flood Control District's (LACFCD) Live Oak Wash flood control channel. Runoff occurring on-site would be collected by a system of surface gutters and conveyed to new catch basins to be located within the Amherst Specific Plan area. These catch basins would collect and funnel water into stormwater pipes to the southern portion of the western property boundary, and into a main storm drain.

The main storm drain would flow westerly through the adjacent mobile home park toward the intersection of N. Oak Leaf Drive and Great Oak Lane, where stormwater runoff would discharge into an existing catch basin and storm drain infrastructure, owned and maintained by the Twin Oaks Park mobile home park.

Project Construction

The Amherst Specific Plan would be built out in one complete phase over a period of one to two years with construction estimated to be completed sometime between 2022 and 2023. Actual build-out would be subject to market and economic conditions, jurisdictional processing of approvals, and infrastructure timing, and may vary from the construction phasing currently anticipated. Project development would include all on-site infrastructure improvements necessary to service the project including, but not limited to:

- Grading of the Amherst Specific Plan area
- Water distribution lines and related infrastructure
- Sewer distribution lines and related infrastructure
- Storm water lines and related infrastructure
- Other utility services (e.g., electricity, cable television, telephone, etc.)
- Improvements associated with the on-site private streets and drives

Based on preliminary earthwork estimates, project grading would require approximately 7,092 cubic yards (cy) of cut and 5,443 cy of fill. Anticipated depth of excavation will be 6.44 feet. Excess soil of approximately 1,649 cy excavated from the project site would be exported and disposed of off-site.

Required Approvals

The project would require the following approvals by the La Verne City Council (with exception to the Tentative Tract Map):

- A General Plan Amendment to change the land use designation of the property from Low Density Residential (LDR) to Medium Density Residential (MDF).
- A Zone Change to change zoning of the entire property from the current Planned Residential Development (PR3D) to Specific Plan.
- Approval of the Amherst Specific Plan by City ordinance.
- Certification of an Environmental Impact Report (EIR) prepared in accordance with the California Environmental Quality Act (CEQA). The City of La Verne will consider certification of the EIR prior to taking action on the other requested approvals.

- A Tentative Tract Map (TTM) prepared for the Amherst Specific Plan area and processed through the City in accordance with Chapter 16 of the La Verne Municipal Code and the Subdivision Map Act, which requires approval of the Planning Commission and/or City Council.
- Development Review Committee approval of a Precise Plan for development within the Amherst Specific Plan area is required before building permits may be issued.
- Tree Removal Permit for the removal of a 42-inch caliper Deodar cedar to be considered by the Development Review Committee.

9. Surrounding Land Uses and Setting

The project site is surrounded by external influences that impact the design of the project. Figure 2 shows the project site and surrounding land uses. Existing land uses and influences are described below:

- The Amherst Groundwater Treatment Plant and reservoir located adjacent to the Amherst Specific Plan area. This 1.5-acre facility requires delivery vehicular access through the project site.
- The adjacent Twin Oaks Mobile Home Park located south and west of the project site.
- The adjacent one- and two-story single-family homes to the north and east of the project site.
- Proximity to SR 210, SR 66 (Foothill Boulevard), and I-10 transportation corridors.
- Proximity to Foothill Transit Routes 291, 690, and 188, with the nearest bus stop located approximately 0.4 mile to the south of the project site.
- Proximity to the Metrolink San Bernardino Line, which includes a stop at the Pomona North Metrolink Station, located approximately 1.8 miles to the south of the project site.

10. Other Public Agencies Whose Approval is Required

The City of La Verne is the lead agency with responsibility for approving the project.

11. Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

The Native American Heritage Commission (NAHC) provided the City of La Verne with a list of eight tribes to contact because of their traditional and cultural affiliation with the geographic area in which the project is located. Based on this list, and in accordance with Public Resources Code (PRC) Section 21080.3.1., the City sent consultation request letters to eight tribes and received responses from the Gabrieleño Band of Mission Indians – Kizh Nation, and the San Manuel Band of Mission Indians, requesting further consultation; and one response from the Quechan Indian Tribe, with no comment on the project. Following the request from the Gabrieleño Band of Mission Indians – Kizh Nation and the San Manuel Band of Mission Indians, consultation between the City and tribal representatives is ongoing.

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
■	Biological Resources	■	Cultural Resources	☐	Energy
■	Geology/Soils	☐	Greenhouse Gas Emissions	☐	Hazards & Hazardous Materials
☐	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	■	Transportation	■	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	■	Mandatory Findings of Significance

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

■ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Candice Bowcock
Signature

10/05/20
Date

Candice Bowcock
Printed Name

Principal Planner
Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in PRC Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	□	□	■	□
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	□	□	□	■
c. 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 a 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?	□	□	■	□
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	□	□	■	□

a. Would the project have a substantial adverse effect on a scenic vista?

Scenic vistas can be impacted by development through the construction of a structure which blocks the view of a vista or by impacting the vista itself, for example, through development of a scenic hillside. The project site is currently used for agricultural purposes by West Covina Wholesale, a wholesale plant nursery. The project site has six agriculture-related structures located at the middle bottom portion of the property and is surrounded by residential development, and adjacent to the groundwater treatment plant/reservoir. The City of La Verne General Plan states, “any development that is proposed within the scenic vista areas are designed so views of the mountains or the canyons will not be compromised” (La Verne 1998). The project site is not within scenic vista areas, but is located approximately 1.5 miles from them, which can be seen along roadway corridors and in breaks between development in the area.

The project site is zoned PR3D (3 detached dwelling units per acre), with a General Plan use of Low Density Residential. The project would construct single-family residential structures that average 30 feet in height. While the surrounding hillsides can be seen from certain locations in the project vicinity, the proposed structures are consistent with development standards for medium density residential developments. The proposed structures would not significantly impact views of the surrounding hillsides and, therefore, would have a less than significant impact on scenic vistas, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

The project site is not within or adjacent to a designated State scenic highway, as identified by the California Department of Transportation (Caltrans). The nearest designated State scenic highway is a portion of State Route 57 (SR 57), approximately 4.3 miles to the southwest of the project site (Caltrans 2011). Therefore, the project site is not visible from a scenic highway. Furthermore, the project would not result in damage to scenic resources including rock outcroppings, trees, or historic buildings. Therefore, there would be no impacts related to scenic resources near a designated State scenic highway, and no further analysis of this issue is necessary.

NO IMPACT

c. Would the project 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 a 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?

The project site is surrounded by residential development, is adjacent to the groundwater treatment plant/reservoir, and is located in an urbanized area of the City. The project would redevelop the site that is currently used for agricultural purposes into medium-density residential. The project would be similar in visual character, height, and architectural style as surrounding existing uses. The project would be required to comply with all applicable development standards within City of La Verne Municipal Code (LVMC) prior to approval. Standards include building scale, frontage and site layout, street scape, open space, parking, signage, and architecture. Adherence to the LVMC is addressed in the Amherst Specific Plan. Therefore, with adherence to these standards, the project would not impact scenic quality in the area and impacts would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The development of the project would increase the intensity of lighting on the project site, from that of the existing agricultural use to the proposed residential units. New sources of light and glare from the project would come from windows, outdoor landscaping and safety lighting, and light and glare from the increase in vehicles accessing the project site. All outdoor lighting would comply with the development standards in the City's Zoning Code Section 18.36.180 (La Vern 2020a).

The project site is surrounded by residential development, and is adjacent to a groundwater treatment plant/reservoir. The former emits a daytime and nighttime light and glare in the area typical for these uses, while the treatment plant is dominated by daytime glare from the concrete interspersed with landscape greenery, and nighttime security light. Implementation of the project would not significantly increase the ambient lighting in the project vicinity. Therefore, with compliance with lighting regulations in the City, the project would have a less than significant impact on light and glare in the area, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)); timberland (as defined by PRC Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	■	☐

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The project site is currently being used for agricultural purposes but is not designated as Prime Farmland, Unique Farmland, or Farmland of statewide importance (Farmland) as shown on the California Important Farmland Finder (California Department of Conservation 2016). According to the City's current General Plan, the City is largely urbanized with limited agricultural land approximately 1.5 miles northwest of the project site west of the Live Oak Reservoir. Though the project site is currently being used for agricultural purposes, and the PR3D zoning allows agricultural uses, neither the project site nor surrounding parcels are shown as Prime Farmland, Unique Farmland, or Farmland of Statewide importance, on maps prepared pursuant to the Farmlands

Mapping and Monitoring Program. Therefore, the project would result in a less than significant impact, and no further analysis of this issue is necessary.

NO IMPACT

b. *Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*

The project site is currently zoned PR3D (three detached dwelling units per acre). Although PR3D zoning allows for agricultural uses, the primary use is intended for residential. Furthermore, neither the site nor nearby lands are enrolled under the Williamson Act. As such, implementation of the project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and no impact would occur in this regard. In addition, the adjacent properties are developed. Therefore, no impact would occur as a result of the project, and no further analysis of this issue is necessary.

NO IMPACT

c. *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)); timberland (as defined by PRC Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*

As discussed above under response '2.b,' the project site is currently zoned PR3D. No forest land or timberland zoning is present on the project site or in the surrounding area. As such, future development of the project would not conflict with existing zoning for forest land or timberland and would not result in the loss of or conversion of forestland. Therefore, no impact would occur as a result of the project, and no further analysis of this issue is necessary.

NO IMPACT

d. *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

No forest land exists on the project site or in the surrounding area. As such, future development of the project would not result in the loss of forest land or conversion of forest land to non-forest use. Therefore, no impact would occur as a result of the project, and no further analysis of this issue is necessary.

NO IMPACT

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

The project would convert the site of a commercial nursery to residential development. The project is site is surrounded by developed land use, and none of the surrounding uses include agriculture or forest uses. Although the existing PR3D zoning allows for agricultural uses, the primary use is intended for residential. Given these considerations, the anticipated changes in the project site are not expected to involve other changes in the environment that would result in further conversion of farm or forest land. Therefore, impacts to agricultural land use would be less than significant, and there would be no impact to forest use. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	□	□	■	□
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?	□	□	■	□
c. Expose sensitive receptors to substantial pollutant concentrations?	□	□	■	□
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	□	□	■	□

Air Quality Standards and Attainment

The project site is in the South Coast Air Basin (Basin), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, and all of Orange County. The Basin is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). As the local air quality management agency, the SCAQMD is required to monitor air pollutant levels to ensure that State and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards.

Depending on whether the standards are met or exceeded, the Basin is classified as being in “attainment” or “non-attainment.” Under State law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The SCAQMD is in non-attainment for the federal standards for ozone and $PM_{2.5}$ (fine particulate matter which measures no more than 2.5 microns in diameter) and the State standards for ozone, PM_{10} (small particulate matter which measures no more than 10 microns in diameter), and $PM_{2.5}$. The Los Angeles County portion of the Basin is also designated non-attainment for lead (SCAQMD 2016). The Basin is designated unclassifiable or in attainment for all other federal and State standards. The health effects associated with criteria pollutants for which the Basin is in non-attainment are described in Table 2.

Table 2 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM_{10})	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).[1]
Suspended particulate matter ($PM_{2.5}$)	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma.[a]
Lead	(1) Short-term overexposures: lead poisoning can cause (a) anemia, (b) weakness, (c) kidney damage, and (d) brain damage; (2) long-term exposures: long-term exposure to lead increases risk for (a) high blood pressure, (b) heart disease, (c) kidney failure, and (d) reduced fertility.

[1] More detailed discussion on the health effects associated with exposure to suspended particulate matter can be found in the following document: United States Environmental Protection Agency (USEPA), Air Quality Criteria for Particulate Matter, October 2004. Available at: https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=87903.

Sources: USEPA 2018a; Centers for Disease Control and Prevention (CDC) 2019

Air Quality Management

Under State law, the SCAQMD is required to prepare an air quality improvement plan for pollutants which the SCAQMD is in non-compliance. The SCAQMD administers the Air Quality Management Plan (AQMP) for the Basin, which is a comprehensive document outlining an air pollution control program for attaining all California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The most recently adopted AQMP is the 2016 AQMP (SCAQMD 2017), which was adopted by the SCAQMD Governing Board on March 3, 2017. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017). The 2016 AQMP incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2012 AQMP, including the approval of the new federal 8-hour ozone standard of 0.070 parts per million (ppm) that was finalized in 2015.

The 2016 AQMP addresses several federal and State planning requirements and incorporates new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and meteorological air quality models. The Southern California Association of Governments' (SCAG) projections for socio-economic data (e.g., population, housing, employment by industry) and transportation activities from the 2016 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) are integrated into the 2016 AQMP. This Plan builds upon the approaches taken in the 2012 AQMP for the attainment of federal PM and ozone standards and highlights the significant amount of reductions to be achieved. It emphasizes the need for interagency planning to identify additional strategies to achieve reductions within the timeframes allowed under the federal Clean Air Act, especially in the area of mobile sources. The 2016 AQMP also includes a discussion of emerging issues and opportunities, such as fugitive toxic particulate emissions, zero-emission mobile source control strategies, and the interacting dynamics among climate, energy, and air pollution. The Plan also demonstrates strategies for attainment of the new federal 8-hour ozone standard and vehicle miles traveled (VMT) emissions offsets, pursuant to recent USEPA requirements (SCAQMD 2017).

Air Emission Thresholds

The CEQA Guidelines (Section 15064.7) provide that, when available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make determinations of significance. These thresholds are designed such that a project that would not exceed the adopted thresholds would not result in an individually or cumulatively significant impact on the Basin's air quality. Therefore, a project that does not exceed these SCAQMD thresholds would have a less than significant impact. This Initial Study conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993) and supplemental guidance provided by the SCAQMD, including recommended thresholds for emissions associated with both construction and operation of the project (SCAQMD 2015).

Table 3 presents the significance thresholds for construction and operational-related criteria air pollutant and precursor emissions being used for the purposes of this analysis. These represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. For the purposes of this analysis, the proposed project would result in a significant impact if construction or operational emissions would exceed any of the thresholds shown in Table 3.

Table 3 SCAQMD Regional Significance Thresholds

Construction Thresholds	Operational Thresholds
75 pounds per day of ROG	55 pounds per day of ROG
100 pounds per day of NO_X	55 pounds per day of NO_X
550 pounds per day of CO	550 pounds per day of CO
150 pounds per day of SO_X	150 pounds per day of SO_X
150 pounds per day of PM_{10}	150 pounds per day of PM_{10}
55 pounds per day of $PM_{2.5}$	55 pounds per day of $PM_{2.5}$

ROG: reactive organic gases; NO_x: nitrogen oxides; CO: carbon monoxide; SO_x: sulfur oxides; PM_{10}: small particulate matter which measures no more than 10 microns in diameter; $PM_{2.5}$: fine particulate matter which measures no more than 2.5 microns in diameter

Source: SCAQMD 2015

Localized Significance Thresholds

In addition to the above regional thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the *CEQA Air Quality Handbook* (1993). LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities and have been developed for NO_X (nitrogen oxides), CO (carbon monoxide), PM_{10}, and $PM_{2.5}$. LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or State ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), distance to the sensitive receptor, and project size. LSTs have been developed for emissions generated in construction areas up to five acres in size. However, LSTs only apply to emissions in a fixed stationary location and are not applicable to mobile sources, such as cars on a roadway (SCAQMD 2008a). As such, LSTs are typically applied only to construction emissions because most operational emissions are associated with project-generated vehicle trips.

The project site is located in Source Receptor Area 10 (SRA-10), Pomona/Walnut Valley (SCAQMD 2008a). The project site is approximately 5.7 acres. The SCAQMD provides LSTs for one-, two-, and five-acre project sites at distances of 82 to 1,640 feet (25 to 500 meters) from the project site boundary. Therefore, this analysis utilizes the five-acre LSTs. Construction activity would occur approximately 10 feet from the closest sensitive receptor (existing residences adjacent to the west, south, and east project site boundaries). According to the SCAQMD's publication, Final LST Methodology, projects with boundaries located closer than 82 feet to the nearest receptor should use the LSTs for receptors located at 82 feet. Therefore, the analysis below uses the LST values for 82 feet. Table 4 summarizes the LSTs for a five-acre site in SRA-10 with sensitive receptors located at a distance of 82 feet.

Table 4 SCAQMD LSTs for Construction Emissions

Pollutant	Allowable Emissions from a 5-Acre Site in SRA-10 for a Receptor 82 Feet Away
Gradual conversion of NO_X to NO_2	236
CO	1,566
PM_{10}	12
$PM_{2.5}$	7

NO_x = nitrogen oxides; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = small particulate matter which measures no more than 10 microns in diameter; $PM_{2.5}$ = fine particulate matter which measures no more than 2.5 microns in diameter

Source: SCAQMD 2009

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

A project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding the forecasts used in the development of the AQMP. The 2016 AQMP relies on local general plans and the SCAG 2016 RTP/SCS forecasts of regional population, housing, and employment growth in its own projections for managing air quality in the Basin.

The growth projections used by the SCAQMD to develop the AQMP emissions budgets are based on the population, vehicle trends, and land use plans developed in general plans and used by SCAG in the development of the 2016 RTP/SCS. As such, projects that are consistent with the growth anticipated by SCAG's growth projections and a jurisdiction's General Plan would not conflict with the AQMP. If a project is less dense than anticipated by the growth projections, the project would likewise be consistent with the AQMP.

The project would construct 42 residential units, a 0.25-acre pocket park, and on-site pedestrian and vehicle circulation paths on a 5.7-acre site that is currently occupied and in use as a plant nursery. As discussed in Section 14, *Population and Housing*, the California Department of Finance's (DOF) 2020 population estimate for La Verne is 33,300 residents (DOF 2020). Given an average household size of 2.74 persons per household for La Verne, the project would potentially add an estimated 115 residents (42 units x 2.74 persons per unit) to the City (DOF 2020).

SCAG forecasts the population of La Verne will increase to approximately 34,400 residents by the year 2045, which is an increase of approximately 1,200 persons from the current population (SCAG 2020). The level of population growth associated with the project (115 residents) would not exceed SCAG's regional population projections, and the project would not directly or indirectly induce substantial unplanned population growth. The project would account for approximately 10 percent of the City's projected population growth through year 2045. Therefore, the level of population growth associated with the proposed project would not exceed regional population projections. Furthermore, this analysis conservatively assumes that all project residents are new to La Verne, whereas the likely scenario is that some of the future project residents may already live in the City. The project would not conflict with the SCAQMD's AQMP and the population increase generated by the proposed project would not substantially alter air quality conditions in the Basin and would not generate emissions that would adversely affect regional air quality. Therefore, project impacts would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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

Air pollution is largely a cumulative impact. The non-attainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it is considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

As discussed under *Air Quality Standards and Attainment*, the Basin has been designated as a federal non-attainment area for ozone and $PM_{2.5}$ and a State non-attainment area for ozone, PM_{10}, and $PM_{2.5}$. The Basin is designated unclassifiable or in attainment for all other federal and State standards. The proposed project does not include any stationary sources of lead emissions. Therefore, implementation of the project would not result in substantial emissions of lead and this pollutant is not discussed further in this analysis.

The following analysis evaluates air pollutant emissions generated by project construction and operation compared to the regional significance thresholds established by the SCAQMD in the *CEQA Air Quality Handbook* (1993), as well as the SCAQMD LSTs. Construction and operational air pollutant emissions were modeled using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2.

Construction Emissions

Project construction would generate temporary criteria pollutant and GHG emissions from construction equipment operation on-site, construction worker vehicle trips to and from the site, and from export of materials off-site. Construction input data for CalEEMod include, but are not limited to the following applicant-provided information: (1) the schedule of construction activity; (2) the inventory construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of soil materials to be imported to the project site. The analysis assessed maximum daily emissions from individual construction activities, including site preparation, grading, building construction, paving, and architectural coating. Grading, excavation, hauling, and site preparation would involve the greatest use of heavy equipment and generation of fugitive dust. Full modeling assumptions are included in Appendix C.

Table 5 summarizes the estimated maximum daily emissions of pollutants associated with construction of the proposed project. Emissions modelling accounts for compliance with the SCAQMD Rule 403, which regulates fugitive dust emissions during the project's demolition, grading, and construction activities to minimize emissions of PM_{10} and $PM_{2.5}$ and SCAQMD Rule 1113, which regulates the volatile organic compound (VOC) content of architectural coatings to minimize emissions of reactive organic gases (ROGs) during construction activities.

Table 5 Construction Emissions (pounds/day)

	Maximum Emissions (lbs/day)[1]					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Year 2021	4.0	40.6	21.8	<0.1	10.4	6.4
Construction Year 2022	13.4	28.6	34.0	0.1	4.0	2.4
Construction Year 2023	13.2	26.2	33.8	0.1	1.7	1.3
Maximum Emissions	13.4	40.6	34.0	0.1	10.4	6.4
SCAQMD Regional Thresholds	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Maximum On-site Emissions	13.2	28.1	32.8	0.1	4.1	2.6
SCAQMD Localized Significance Thresholds (LSTs)[2]	N/A	236	1,566	N/A	12	7
Threshold Exceeded?	N/A	**No**	**No**	N/A	**No**	**No**

[1] Emissions modeling was completed using CalEEMod. Some numbers may not add up precisely due to rounding. Maximum overall construction emissions from Table 2.1 were used for summer or winter calculations, whichever was highest.

[2] For LST calculations, maximum on-site emissions are the highest emissions that would occur on the project site from on-site sources such as heavy construction equipment, and architectural coatings, and excludes off-site emissions from sources such as construction worker vehicle trips and haul truck trips.

Source: Appendix C

As shown in Table 5, construction of the project would not result in criteria pollutant emissions that would exceed the SCAQMD regional thresholds or LSTs. Therefore, project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.

Construction impacts would be less than significant, and no further analysis of this issue is necessary.

Operational Emissions

Development of the project would result in long-term air pollutant emissions over the course of operation. Emissions include area sources, energy sources, and mobile emissions. Area sources include use of consumer products, use of gas-powered landscaping equipment, and re-application of architectural coating (re-painting). Energy sources include natural gas for uses such as heating/air conditioning, appliances, lighting, and water heating. Mobile emissions include vehicle trips from project residents. Full modeling assumptions are included in Appendix C.

Table 6 summarizes the estimated maximum daily emissions of pollutants associated with operation of the project. Most project-related operational emissions would result from vehicle trips to and from the site.

Table 6 Project Operational Emissions

	Maximum Daily Emissions (lbs/day)[1]					
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	2.5	<0.1	3.5	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	0.6	2.8	8.6	<0.1	2.9	0.8
Project Emissions	3.1	2.8	12.1	<0.1	2.9	0.8
SCAQMD Regional Thresholds	55	55	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

[1] lbs/day = pounds per day; ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

Notes: All emissions modeling was completed using CalEEMod. See Appendix C for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from CalEEMod's "mitigated" results which is a term of art for the modeling output and is not equivalent to mitigation measures that may apply to the CEQA impact analysis. The CalEEMod "mitigated" results include compliance with regulations and project design features that would be included in the project. Emissions presented are the highest of the winter and summer modeled emissions.

Source: Appendix C

As shown in Table 6, project emissions would not exceed the SCAQMD regional thresholds for criteria air pollutants; therefore, project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard. Operational impacts would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The proposed project would not introduce new sensitive receptors to the project site. Off-site sensitive receptors nearest to the project site consist of single- and multi-family residences adjacent to the site to the north, south, east, and west of the project site.

Local Carbon Monoxide (CO) Hotspots

A CO hotspot is a localized concentration of CO that exceeds the State 1-hour or 8-hour CO ambient air standards (SCAQMD 2008a). Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 ppm or the federal and State eight-hour standard of 9.0 ppm (CARB 2016).

The SCAQMD conducted a detailed CO analysis for the Basin during the preparation of the 2003 AQMP. The locations selected for microscale modeling in the 2003 AQMP included high average daily traffic (ADT) intersections in the Basin, which would be expected to experience the highest CO concentrations. The highest CO concentration observed was at the intersection of Wilshire Boulevard and Veteran Avenue on the west side of the City of Los Angeles near Interstate 405, located approximately 48 miles west of the site, which has an ADT of approximately 100,000 vehicles per day. The concentration of CO at this intersection was 4.6 ppm, which is well below the 35-ppm 1-hour CO federal standard and the State standard of 20 ppm. Furthermore, the Basin has been in attainment of federal CO standards since 2007 (SCAQMD 2016). No stations in the vicinity of the project site have monitored CO in the last eight years. The highest 8-hour CO average recorded at the nearest monitoring, the Azusa monitoring station located approximately 11 miles west of the project site, was 1.13 ppm in 2012 (the most recent year for which data is available), which is well below the 8-hour CO federal and State standard of 9 ppm (CARB 2020).

As shown in Table 5, maximum daily CO construction emissions would be approximately 34 pounds and maximum on-site emissions would be approximately 33 pounds, which would not exceed the SCAQMD's regional threshold (550 pounds per day [lbs/day]) or LST (4,108 lbs/day) for CO. Likewise, as shown in Table 6, net new operational emissions from area, energy, and mobile sources combined would be approximately 13 pounds of CO emissions per day, which is below the SCAQMD regional threshold of 550 pounds. Both the SCAQMD's regional thresholds and LSTs are designed to be protective of public health. Based on the low background level of CO in the project area, ever-improving vehicle emissions standards for new cars in accordance with federal and State regulations, and the project's low level of operational CO emissions, the project would not create new hotspots or contribute substantially to existing hotspots. Localized air quality impacts related to CO hot spots would be less than significant, and no further analysis of this issue is necessary.

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SCAQMD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer, typically based on the use of standard Office of Environmental Health Hazard Assessment (OEHHA) risk-assessment methodology (OEHHA 2015). In addition, some TACs have noncarcinogenic effects. The SCAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) non-carcinogenic effects.

The greatest potential for TAC emissions associated with the proposed project would occur during construction and would be from diesel particulate emissions associated with heavy equipment operations. Diesel particulate matter emissions would be produced by heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions. As shown in Table 5, total PM_{10} construction emissions, which includes exhaust PM_{10} (representative of diesel particulate matter) and fugitive dust PM_{10} (representative of airborne particulate matter) exposure would be below SCAQMD regional and local thresholds.

According to the OEHHA, health risk assessments that determine the exposure of sensitive receptors to toxic emissions should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the project. Therefore, the duration of the proposed construction activities would constitute a small percentage of the total 30-year exposure period. Due to this relatively short period of exposure and minimal emissions on site, TACs generated during construction would not result in concentrations causing significant health risks.

Furthermore, the project does entail routine operational activities that would generate TAC emissions. Operation of the project would not result in any nonpermitted direct emissions (e.g., those from a point source such as diesel generators) or result in a substantial increase in diesel vehicles (i.e., delivery trucks). There would be no residual emissions or corresponding individual cancer risk after project construction is complete and on-site construction activities cease. As such, the project would not result in substantial TAC exposure to sensitive receptors in the vicinity of the proposed project and impacts would be less than significant. No further analysis of this issue area is necessary.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of the receiving location, each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project, which would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors would disperse rapidly from the project site, generally occur at magnitudes that would not affect substantial numbers of people and would be limited to the construction period. Impacts associated with odors during construction would be temporary and less than significant.

With respect to operation, the SCAQMD's *CEQA Air Quality Handbook* (1993) identifies land uses associated with odor complaints as agricultural uses, wastewater treatment plants, chemical and food processing plants, composting, refineries, landfills, dairies, and fiberglass molding. Residential uses are not identified on this list as a use associated with odor complaints. In addition, solid waste generated by the project would be temporarily stored in on-site trash enclosures before collection by a contracted waste hauler, ensuring that odors resulting from on-site waste would be managed and disposed of in a manner to prevent the proliferation of odors. Therefore, the project would not generate objectionable odors affecting a substantial number of people, and impacts would be less than significant. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	□	□	□	■
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	□	□	□	■
c. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	□	□	□	■
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	□	□	□	■
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	□	■	□	□
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?	□	□	□	■

a. *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 U.S. Fish and Wildlife Service?*

The project site is within an urbanized area surrounded by existing development. The project site is currently occupied by a plant nursery, which would be vacated, and existing greenhouses demolished prior to project development. The project site currently contains nursery plants and ornamental shade trees, which would be removed as part of the project. The project site is not identified as critical habitat for threatened and endangered species (U.S. Fish and Wildlife Service 2020b). In addition, the probability that federally or State listed species are present on the project site is low due to the developed nature and use of the site, surrounding development, and the lack of wildlife habitats and wilderness corridors in the vicinity of the project site. Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

b. *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

The project site is located in an urban area that lacks riparian or other sensitive habitat. There are no waterways or riparian habitat present on the project site (U.S. Fish and Wildlife Service 2020a). Therefore, the project would have no impact on riparian or sensitive habitat, and no further analysis of this issue is necessary.

NO IMPACT

c. *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?*

As discussed above in criteria 'b,' there are no waterways or riparian habitat present on the project site. Implementation of the project would not alter water flow or drainage (further discussed in Section 10, *Hydrology and Water Quality*). Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

d. *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 native wildlife nursery sites?*

As discussed above in criteria 'a' and 'b,' the project site does not contain any value as wildlife habitat due to existing uses on and adjacent to the site, and there are no waterways or riparian habitat present on the project site. Implementation of the project would not interfere with wildlife or fish movement. Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

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

There are no street trees along the project site frontage of Amherst Street. The project site currently contains nursery plants and ornamental shade trees, which would be removed as part of the project. The largest tree has a caliper of approximately 42-inches and was identified as a Deodar cedar. This tree is a protected tree under the Municipal Code (Title 18, Chapter 78), and will require a Tree Removal Permit and replacement of protected trees, as discussed in BIO-1. The remaining trees are less caliper 36-inches, and are not considered significant or heritage trees based on the size and species.

Implementation of Mitigation Measures BIO-1 would require the obtainment of a *Tree or Heritage Grove Removal Permi*t, and replacement trees pursuant to Title 18 Chapter 78 of the Municipal Code. Therefore, with implementation of mitigation measure BIO-1, impacts related to conflicts with policies or ordinances protecting biological resources would be less than significant.

Mitigation Measures

BIO-1 Protected Tree Permit and Replacement

The Applicant shall obtain a *Tree or Heritage Grove Removal Permit* for the removal of a protected tree (Deodar cedar) pursuant to the Municipal Code. Removal of the protected tree will be mitigated by the onsite replacement of the caliper 42-inch tree by at least four trees with 60-inch minimum boxes, or as further determined by the City of La Verne's Design Review Committee.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

f. *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?*

The project site is not located within an area subject to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other approved habitat conservation plan at the local, regional, or State levels (California Department of Fish and Wildlife 2019). Therefore, no impact would occur, and no further analysis of this issue is necessary.

NO IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

This section provides an analysis of the project's impacts on cultural resources, including historical and archaeological resources, as well as human remains. CEQA requires a lead agency determine whether a project may have a significant effect on historical resources (PRC Section 21084.1) and tribal cultural resources (PRC Section 21074 [a][1][A]-[B]). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources, or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CEQA Guidelines Section 15064.5[a][1-3]).

A resource shall be considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a], [b]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Rincon received search results of the California Historical Resources Information System (CHRIS) at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton on June 22, 2020. The search was performed to identify previously recorded cultural resources, as well as previously conducted cultural resources studies within the project site and a one-mile radius surrounding it. The CHRIS search included a review of available records at the SCCIC, as well as the National Register of Historic Places (NRHP), the CRHR, the Office of Historic Preservation Historic Properties Directory, the California Inventory of Historic Resources, the Archaeological Determinations of Eligibility list, and historical maps.

The SCCIC records search identified 26 cultural resources studies conducted within a one-mile radius of the project site, none of which include the project site. The records search identified eight cultural resources recorded within a one-mile radius of the project site, none of which have recorded boundaries that extend into the project site.

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

The results of the SCCIC records search indicate the presence of eight previously recorded historic-era built environment resources within a one-mile radius. Resource P-19-187085 (Mojave Road) is the nearest recorded built environment resource and is recorded 0.35 mile north of the project site. No built-environment features that may be considered historical resources are present within the project site. As such, the project will not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. Therefore, the project would have no impact to historical resources, and no further analysis of this issue is necessary.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

The site has been disturbed by previous development and no archaeological resources have been recorded within the project site. Rincon reviewed historical aerials and topographic maps from HistoricAerials.com (NETR Online 2020). These images were reviewed to identify potential cultural resource concerns on the project site. Aerial imagery from 1948 to 1953 depicts the project site as an orchard that was graded prior to 1959 (NETR Online 2020). Imagery from 1964 to 1980 depict the development of a water treatment plant within the project site. Aerial imagery from 1994 depicts the project site in a condition similar to its current condition (NETR Online 2020). Historical topographic maps from 1897 to 1946 confirm the sites history of undeveloped land with orchard and development visible on the 1955 map. The 1967 historical topographic map depicts the project site as a graded area with a water treatment plant. The project site has been disturbed by the project site's orchard history, the construction of the water treatment plant, and current use as a plant nursery.

Although no archaeological resources are known to exist within the project site, unanticipated discoveries are a possibility during ground disturbance activities. Impacts to unknown archaeological resources would be potentially significant and mitigation measures would be required.

Mitigation Measure

The following mitigation measure would reduce impacts to a less than significant level.

CR-1 Unanticipated Archaeological Resources.

If archaeological resources are encountered during ground-disturbing activities, work within 50 feet of the find shall be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be eligible for the CRHR and cannot be avoided by the project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to historical resources.

Implementation of Mitigation Measure CR-1 would reduce potential impacts to unanticipated archaeological resources to less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No cemeteries are known to exist within the project site; however, the discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County coroner has made a determination of origin and disposition pursuant to PRC 5097.98. In the event of an unanticipated discovery of human remains, the County coroner would be notified immediately. If the human remains are determined to be prehistoric, the County coroner would notify the NAHC, which would determine and notify a most likely descendant (MLD). The MLD would complete the inspection of the site within 48 hours of being granted access to the site. With adherence to existing regulations, project impacts to human remains would be less than significant. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☐	■

Natural gas service for the Specific Plan area is provided by Southern California Gas Company (SCG) through the existing lines on-site and within the right-of-way of Amherst Street. Electric service for the Specific Plan area is provided by Southern California Edison (SCE) through existing lines in the surrounding streets. Energy calculations for the project are included in Appendix C.

Electricity and Natural Gas

SCE would provide electricity to the project area. Table 7 shows the electricity consumption by sector and total for SCE for 2018, the most recent available data.

Table 7 Electricity Consumption in 2018 for the SCE Service Area

Agriculture and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
3,192	31,574	4,367	13,392	2,390	29,865	496	85,276

Notes: Usage expressed in gigawatt hours (GWh).
Source: CEC 2020a

SCE's energy sources include renewable power sources, large hydroelectric, natural gas, nuclear, and unspecified sources of power (electricity from transfers that are not traceable to specific generation sources). SCE's "Green Rate" program provides an option for residential and business customers to offset half or all of their energy usage by paying into a fund for solar energy sources (SCE 2020). Los Angeles County consumed 68,486 GWh of electricity in 2018 (CEC 2020b).

SCG would provide natural gas to the project area. Table 8 shows the natural gas consumption by sector and total for SCG for 2018, the most recent available data.

Table 8 Natural Gas Consumption in SCG Service Area in 2018

Agriculture and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Total Usage
78	913	75	1,714	229	2,147	5,156

Notes: All usage expressed in million US therms (MMThm).

Source: CEC 2020c

Petroleum

In 2018, approximately 40 percent of the State's energy consumption (3,170 trillion British Thermal Units [Btu]) was used for transportation activities (U.S. Energy Information Administration [EIA] 2020). Though California's population and economy are expected to grow, gasoline demand is projected to decline from roughly 15.8 billion gallons in 2017 to between 12.3 billion and 12.7 billion gallons in 2030, a 20 percent to 22 percent reduction. This decline comes in response to both increasing vehicle electrification and higher fuel economy for new gasoline vehicles (CEC 2018a).

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction Energy Demand

During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. The project would require demolition, site preparation, and grading, including hauling material offsite; pavement and asphalt installation; building construction; architectural coating; and landscaping and hardscaping.

The total consumption of gasoline and diesel fuel during project construction was estimated using the assumptions and factors from CalEEMod. Table 9 presents the estimated construction phase energy consumption, indicating that construction equipment, vendor trips, and worker trips would consume approximately 81,000 gallons of fuel over the project construction period. Construction energy calculations are included in Appendix C of this document.

Table 9 Project Construction Fuel Consumption

Fuel Type[1]	Gallons	MBtu[2]
Diesel Fuel (Construction Equipment)[1]	71,322.5	9,090.8
Diesel Fuel (Vendor/Haul Trips)[2]	2,421.6	308.7
Other Petroleum Fuel (Worker Trips)[3]	7,271.0	798.2
Total	**81,015.1**	**10,197.7**

Notes: Totals may not add up precisely due to rounding.

MBtu = Million British Thermal Units

[1]Fuel demand rates for construction equipment, hauling and vendor trips, and worker trips are derived from CalEEMod outputs, fuel consumptions factors for construction vehicle engines (USEPA 2018a), and fuel consumption data from the (U.S. Department of Transportation [DOT] 2018).

[2]California Reformulated Gasoline CA-GREET 3.0 fuel specification of 109,772 Btu/gallon used to identify conversion rate for fuel energy consumption for worker trips specified above. Low-sulfur Diesel CA-GREET 3.0 fuel specification of 127,460 Btu/gallon used to identify conversion rate for fuel energy consumption for vendor/haul trips and construction equipment specified above (CARB 2018).

Source: Appendix C

The construction energy estimates represent a conservative estimate because the construction equipment used in each phase of construction was assumed to be operating every day of construction, which is unlikely. According to the California Annual Retail Fuel Outlet Report Results (CEC-A15), retail diesel sales in Los Angeles County totaled approximately 253 million gallons while retail gasoline sales totaled over 3.6 billion gallons in 2018 (CEC 2020d). Therefore, diesel fuel consumption associated with project construction would account for less than 0.03 percent of annual retail diesel sales (73,744 gallons of project-related diesel fuel / 253 million gallons retail diesel fuel) and less than 0.0001 percent of annual retail gasoline sales in Los Angeles County (7,271 gallons of project-related gasoline fuel / 3.6 billion gallons retail gasoline fuel).

The project would comply with the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation, which imposes limits on idling and restricts the use of older vehicles. This would reduce fuel consumption and lead to the use of fuel-efficient vehicles on the construction site. Construction equipment would be maintained to applicable standards, and construction activity and associated fuel consumption and energy use would be temporary and typical for construction sites. Therefore, project impacts would be less than significant, and further analysis of this issue is not necessary.

Operational Energy Demand

Operation of the proposed residential units would increase area energy demand from greater electricity, natural gas, and gasoline consumption at a site with agricultural uses. Natural gas and electricity would be used for heating and cooling systems, lighting, appliances, water use, and the overall operation of the project buildings. The operations phase of the project would result in energy consumption for residence operations and equipment; outdoor lighting; and heating, ventilation, and air conditioning (HVAC). Operational electrical consumption would be equal to the residences' electrical output through a photovoltaic (PV) system, as required by 2019 Title 24 Building Energy Efficiency Standards (CCR 2019).

Gasoline consumption would be attributed to the trips generated from project residences. The estimated number of average daily trips associated with the project from CalEEMod was used to determine the energy consumption associated with fuel use from the operation of the project. The default CalEEMod trip generation estimates were used, which were slightly higher than the estimates provided in the traffic impact analysis conducted for the project (Ganddini Group, Inc.

2020). The majority of the fuel consumption would be from motor vehicles traveling to and from the project site. According to the CalEEMod calculations, the project would result in approximately 1,350,839 annual vehicle miles travelled (VMT). Table 10 shows the estimated total annual fuel consumption of the project using the estimated VMT with the assumed vehicle fleet mix obtained from CalEEMod. One gallon of gasoline is equivalent to approximately 109,786 Btu, while one gallon of diesel is equivalent to approximately 127,460 Btu (CARB 2018).

Table 10 Estimated Project Annual Transportation Energy Consumption

Vehicle Type[1]	Percent of Vehicle Trips[2]	Annual Vehicle Miles Traveled[3]	Average Fuel Economy (miles/gallon)[4]	Total Annual Fuel Consumption (gallons)	Total Fuel Consumption (MBtu)[5]
Passenger Cars	55.0	742,961	24.2	30,701	3,371
Light/Medium Trucks	36.2	489,004	17.5	27,943	3,068
Heavy Trucks/Other	8.3	112,120	6.5	17,249	2,199
Motorcycles	0.5	6,754	44.0	154	17
Total	**100.0**	1,350,839	**–**	**76,047**	**8,654**

Notes: Totals may not add up precisely due to rounding.

MBtu: Million British Thermal Units

[1] Vehicle classes provided in CalEEMod do not correspond exactly to vehicle classes in DOT fuel consumption data, except for motorcycles. Therefore, it was assumed that passenger cars correspond to the light-duty, short-base vehicle class, light/medium trucks correspond to the light-duty long-base vehicle class, and heavy trucks/other correspond to the single unit, 2-axle 6-tire or more class.

[2] Percent of vehicle trips is typically found in Table 4.4 “Fleet Mix” in CalEEMod calculations.

[3] Mitigated annual VMT found in Table 4.2 “Trip Summary Information” in CalEEMod calculations.

[4] Average Fuel Economy: U.S. Department of Energy 2019.

[5] California Reformulated Gasoline fuel specification of 109,786 Btu/gallon used to identify conversion rate for fuel energy consumption for automobile vehicle classes. Low-sulfur Diesel CA-GREET 3.0 fuel specification of 127,460 Btu/gallon used to identify conversion rate for fuel energy consumption for diesel trucks (CARB 2018).

The project would consume approximately 76,000 gallons of fuel each year for transportation uses, or approximately 8,700 MBtu in transportation energy consumption per year. The project’s natural gas demand would be served by SCG, which provided 5,156 MMthm per year in 2018 to meet service area demands. The project would consume less than one percent of SCG’s natural gas demand. Given this small fraction of regional energy consumption, the project’s estimated natural gas use would not have a substantial effect on energy supplies or place significant demand on SCG, which would serve the site.

The project would be subject to applicable building codes at the time of construction, which are continuously evolving to include more energy-efficient requirements. The project would comply with all standards set in California Building Code (CBC) Title 24, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation**.** California’s Green Building Standards Code (CALGreen; California Code of Regulations, Title 24, Part 11) requires implementation of energy efficient light fixtures and building materials into the design of new construction projects. These standards are specifically crafted for new buildings to result in energy efficient performance so that the buildings do not result in wasteful, inefficient, or unnecessary consumption of energy. The standards are updated every three years and each iteration is more energy efficient than the previous standards. In addition, as previously stated, low-rise residential buildings meeting 2019 standards will require solar PV generation equal to the operational electricity consumption.

Construction of the project would be temporary, typical of similar residential projects, and would not result in wasteful energy use due to the provision of housing. Occupancy of the proposed residential units would increase the use of electricity and natural gas on the project site than compared to the existing plant nursery use. However, project design and energy features would be in conformance with the latest version of CALGreen and Building Energy Efficiency Standards. In addition, SCE and SCG have submitted Will Serve letters to indicate their ability to serve the project (Appendix I). Therefore, project impacts would be less than significant, and no further analysis of this topic is necessary.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Senate Bill 100 (SB 100) mandates 100 percent clean electricity for California by 2045. In accordance with Chapter 15 of the LVMC, the project would be constructed in accordance with the 2019 CCR Title 24, CALGreen standards, and 2019 Building Energy Efficiency Standards and mandatory measures for new developments that support overall State and local goals for energy efficiency. Because the project would be equipped with a PV system pursuant to 2019 CCR Title 24 requirements, the project would generate renewable energy and would not conflict with statewide plans to increase the use of clean energy. Additionally, the project would include water-efficient appliances and fixtures in every residential unit in accordance with the 2019 Title 24 standards, which would reduce the energy needed to provide water to the project. Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

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7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	☐	■
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
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?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
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?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The project site, like much of the Southern California region, may experience moderate to potentially severe ground shaking from earthquakes generated on known faults within 60 miles (approximately 100 kilometers) of the project site, such as the Cucamonga Fault. According to fault maps from the California Department of Conservation (CDC), the project site is not located on or adjacent to an Alquist-Priolo Fault Zone, and there are no known active or potentially active faults trending toward or through the site (DOC 2018). The nearest earthquake zones are associated with the Cucamonga Fault Zone in the Sierra Madre Fault System, located approximately seven miles northwest of the project site. The potential for fault rupture on the project site is low, and the project would not cause direct or indirect adverse effects resulting from fault ruptures or seismic activities (CDC 2018).

Furthermore, proposed structures would be constructed to comply with the seismic design criteria of the CBC. The CBC requires various measures of all construction in California to minimize risks associated with seismic shaking. These measures include standards for structural design, necessary tests and inspections, provisions addressing building foundations, and standards for the use of certain materials (La Verne 1998). With adherence to the requirements of the CBC, as required by the La Verne Code of Ordinances, the project would result in less than significant impacts related to seismically-induced ground shaking from nearby faults. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

According to the California Department of Conservation maps for liquefication potential, the project site is not located within a liquefication hazard zone (DOC 2018). In addition, the Geotechnical Study prepared by LGC Geotechnical, Inc. (2020) evaluated the site-specific liquefaction potential based on project site soil samples, and determined that due to the absence of groundwater and the presence of stiff fine-grained soils and generally dense sandy alluvial soils in the upper 50 feet, the potential for liquefaction is considered very low to remote (LGC Geotechnical, Inc. 2020). Furthermore, as stated above in the discussion provided for criteria 'a.1' and 'a.2,' proposed structures would be constructed to comply with the seismic design criteria of the CBC. Therefore, the project would result in a less than significant impact, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The project site is generally flat, with elevations ranging from 1212 feet amsl on the southern portion of the site to approximately 1230 feet amsl on the northeastern portion of the site. According to the CDC's Earthquake Zones of Required Investigation Map, no portion of the project site is located in a landslide hazard area; the nearest landslide hazard zones are located across the

SR 210, approximately 0.5 mile north of the project site (DOC 2018). Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

Construction activities would disturb soil on the project site, resulting in potential for soil erosion and loss of topsoil. The project site is underlain by late to middle Pleistocene age, old alluvial fan deposits. The site is specifically on the southwestern extent of old alluvial fan deposits emanating from the San Dimas Canyon at the base of the San Gabriel Mountains. (LGC Geotechnical, Inc. 2020).

As noted in Section 3, *Air Quality*, the project would be required to comply with SCAQMD Rule 403 regarding incorporation of measures to reduce fugitive dust, which would reduce the potential for construction-related wind erosion (SCAQMD Rule 403(d)(2)). SCAQMD Rule 403 includes requirements for the application of water or stabilizing agents to prevent generation of dust plumes, pre-watering materials prior to the use of tarps to enclose haul trucks, stabilizing sloping surfaces using soil binders until vegetation or ground cover efficiently stabilize slopes, hydroseeding prior to rain, and washing mud and soils from equipment at the conclusion of trenching activities. Implementation of these measures pursuant to SCAQMD Rule 403 would reduce the potential for project construction to result in substantial wind erosion or loss of topsoil.

Because the project would disturb more than one acre of land, it would be subject to the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) ("Construction General Permit") adopted by the SWRCB. Compliance with the permit requires the project applicant to file a Notice of Intent with the SWRCB. Permit conditions require preparation of a project-specific Stormwater Pollution Prevention Plan (SWPPP), which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Inspection of construction sites before and after storms is also required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with existing regulatory requirements, including implementation of applicable best management practices (BMPs) related to wind and water erosion control, would reduce potential soil loss and erosion from the site. Therefore, impacts related to erosion and loss of topsoil would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

c. 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 landslide, lateral spreading, subsidence, liquefaction, or collapse?

As stated above in criteria 'a.1' through 'a.4,' the project site is not located in or adjacent to an Alquist-Priolo Fault Zone, and there are no known active or potentially active faults trending toward or through the site (DOC 2018). Furthermore, the project site is not located within a liquefication hazard zone (DOC 2018). The Geotechnical Evaluation determined that due to depth to groundwater, very low potential for liquefaction and lack of nearby "free face" conditions, the potential for lateral spreading is also considered very low to remote (LGC Geotechnical, Inc. 2020).

Pursuant to Title 15 Chapter 15.04 of the La Verne Code of Ordinances, the project would comply with CBC requirements which include foundation and structural design standards. Compliance with applicable CBC seismic standards would reduce impacts related to unstable soils. Therefore, the project would result in a less than significant impact, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

As stated above in criteria 'a.1' through 'a.4,' the project site is not located on or adjacent to an Alquist-Priolo Fault Zone, and there are no known active or potentially active faults trending toward or through the site (DOC 2018). Project site soils are anticipated to have a "Very Low" expansion potential based on soil testing completed for the site (LGC Geotechnical, Inc. 2020). Therefore, the project would have a less than significant impact, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

e. Would the project 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?

The project would be connected to the City's existing sewer system for wastewater disposal and would not require nor install a septic system. Therefore, the project would not result in impacts related to septic tanks or alternative wastewater systems, and no further analysis of this issue is necessary.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project site is underlain by late to middle Pleistocene age, old alluvial fan deposits (LGC Geotechnical, Inc. 2020). Of all the geological formations present within the City, only the Pleistocene deposits have the potential to contain fossils (Cogstone 2018). However, recent review of online databases found no fossil localities from the City. Due to the paucity of fossils recovered from Pleistocene alluvium near the San Gabriel Mountains, Pleistocene deposits found south of SR 210 are considered to have moderate but unknown sensitivity for paleontological resources, though the possibility of discovering such resources may increase beyond eight feet below the ground surface (Cogstone 2018).

Ground-disturbing activities during project construction may impact previously unknown paleontological resources that may be present below the project site surface. Therefore, construction of the project could result in direct or indirect impacts to paleontological resources that could potentially be significant and mitigation measures would be required.

Mitigation Measure

The following mitigation measure would reduce impacts to a less than significant level.

GEO-1 Paleontological Resources Management Program

The following mitigation measures shall only be implemented during ground construction activities (i.e., grading, trenching, foundation work, excavations) where ground disturbance exceeds eight feet below ground surface within project areas underlain by Pleistocene alluvial fan deposits.

a. **Mitigation and Monitoring Program.** The Paleontological Mitigation and Monitoring Program shall be supervised by a qualified paleontologist. A qualified paleontologist is an individual who meets the education and professional experience standards as set forth by the SVP (2010), which recommends the paleontologist shall have at least a Master's Degree or equivalent work experience in paleontology, shall have knowledge of California geology and local paleontology, shall be familiar with paleontological procedures and techniques, and who has worked as a paleontological mitigation project supervisor for a least one year. Monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources.

b. **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of construction, the qualified paleontologist or his or her designee, shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The WEAP shall be fulfilled at the time of a preconstruction meeting. In the event a fossil is discovered by construction personnel anywhere in the project area, all work in the immediate vicinity of the find shall cease and a qualified paleontologist shall be contacted to evaluate the find before re-starting work in the area. If it is determined that the fossil(s) is (are) scientifically significant, the qualified paleontologist shall complete the mitigation outlined below to mitigate impacts to significant fossil resources.

c. **Resource Recovery and Management Plan.** Ground-disturbing activity that does not exceed eight feet in depth in areas of low paleontological sensitivity shall not require paleontological monitoring. Any excavations within undisturbed bedrock in areas of high paleontological sensitivity (i.e., Pleistocene-aged deposits), and excavations that exceed eight feet in depth in those areas potentially underlain by Pleistocene-aged deposits (i.e., Holocene-aged alluvial sediments) shall be monitored on a full-time basis by a qualified paleontological monitor. If no fossils are observed during the first 50 percent of excavations in Holocene-aged sediments exceeding eight feet in depth, or if the qualified paleontologists can determine that excavations below nine feet are not disturbing Pleistocene-aged (or other potentially fossil-containing) sediments, then paleontological monitoring can be discontinued or reduced to spot-checking under the discretion of the qualified paleontologist, subject to approval from Los Angeles County.

   If fossils are discovered, the qualified paleontologist (or paleontological monitor) shall recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. Should larger fossils be discovered, the qualified paleontologist shall have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.

Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition and curated in a scientific institution with a permanent paleontological collection (such as the University of California Museum of Paleontology or other institution determined by the City of La Verne or Los Angeles County), along with all pertinent field notes, photos, data, and maps.

Upon completion of ground-disturbing activities (and curation of fossils if necessary), the qualified paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report shall include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated.

Implementation of Mitigation Measure GEO-1 would reduce project impacts to unanticipated paleontological resource discoveries to less than significant levels.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Overview of Climate Change and Greenhouse Gases

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons and perfluorocarbons, and sulfur hexafluoride. Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills. Different types of GHGs have varying global warming potentials (GWPs), which are the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the GHG emissions, referred to as carbon dioxide equivalent (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. CO_2 has a 100-year GWP of one. By contrast, CH_4 has a GWP of 28, meaning its global warming effect is 28 times greater than that of CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2014a).[1]

The accumulation of GHGs in the atmosphere regulates Earth's temperature. Without the natural heat-trapping effect of GHGs, the Earth's surface would be about 33 degrees Celsius (°C) cooler (USEPA 2020). However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of GHGs in the atmosphere beyond the level of naturally occurring concentrations.

[1] The IPCC's (2014a) *Fifth Assessment Report* determined that methane has a GWP of 28. However, modeling of GHG emissions was completed using the California Emissions Estimator Model version 2016.3.2, which uses a GWP of 25 for methane, consistent with the IPCC's (2007) *Fourth Assessment Report*.

Greenhouse Gas Emissions Inventory

Worldwide anthropogenic emissions of GHGs were approximately 46,000 million metric tons (MMT) of CO_2e in 2010. CO_2 emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010 (IPCC 2014b).

Total U.S. GHG emissions were 6,676.6 MMT of CO_2e in 2018. Emissions increased by 2.9 percent from 2017 to 2018, and since 1990, total U.S. emissions have increased by an average annual rate of 0.13 percent for a total increase of 3.7 percent between 1990 and 2018. In 2018, the transportation and industrial end-use sectors accounted for 36 percent and 26 percent, respectively, of nationwide GHG emissions while the residential and commercial end-use sectors accounted for 20 percent and 17 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (USEPA 2020).

Based on the CARB's California Greenhouse Gas Inventory for 2000-2017, California produced 424.1 MMT of CO_2e in 2017. The major source of GHG emissions in California is the transportation sector, which comprises 41 percent of the State's total GHG emissions. The industrial sector is the second largest source, comprising 24 percent of the State's GHG emissions while electric power accounts for approximately 15 percent (CARB 2019).

According to the Los Angeles County Regional 2010 Greenhouse Gas Emissions Inventory, Los Angeles County generated a combined total of 99.1 MMT CO_2e in 2010, or 10.1 MT CO_2e per capita (La Verne 2018). The bulk of the emissions generated in Los Angeles County are from building energy (39.2 percent), and vehicles and transportation (33.5 percent).

Regulatory Framework

The State of California considers GHG emissions and the impacts of climate change to be a serious threat to the public health, environment, economic well-being, and natural resources of California, and has taken an aggressive stance to mitigate its impact on climate change through the adoption of policies and legislation. CARB is responsible for the coordination and oversight of State and local air pollution control programs in the state. California has numerous regulations aimed at reducing the State's GHG emissions; some of the major initiatives are summarized below.

California Assembly Bill 32 and California Senate Bill 32

The principal State plan and policy is Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, and the follow up, Senate Bill (SB) 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020 and the goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six metric tons (MT) of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the State (CARB 2017).

California Senate Bill 375

SB 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the State's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. SCAG was assigned targets of an eight percent reduction in GHGs from transportation sources by 2020 and a 19 percent reduction in GHGs from transportation sources by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

2020-2045 SCAG RTP/SCS

On May 7, 2020, SCAG's Regional Council adopted the 2020-2045 RTP/SCS (titled Connect SoCal) for federal transportation conformity purposes and considered approval of the full plan and for all other purposes within 120 days of this date. Following initial adoption, SCAG formally adopted the 2020-2045 RTP/SCS on September 3, 2020 to provide a roadmap for sensible ways to expand transportation options, improve air quality and bolster Southern California's long-term economic viability. The 2020-2045 RTP/SCS builds upon the progress made through implementation of the 2016-2040 RTP/SCS and includes ten goals focused on promoting economic prosperity, improving mobility, protecting the environment, and supporting healthy/complete communities. The SCS implementation strategies include focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. The SCS establishes a land use vision of center-focused placemaking, concentrating growth in and near Priority Growth Areas, transferring of development rights, urban greening, creating greenbelts and community separators, and implementing regional advance mitigation (SCAG 2020).

City of La Verne

The City of La Verne does not yet have a Climate Action Plan. However, the City is committed to developing a citywide GHG emissions inventory and policy efforts aligned with existing County-wide GHG reduction and climate change initiatives as part of the City's ongoing General Plan Update efforts (La Verne 2018). The City's General Plan contains the following goals and policies that promote sustainable planning and the use of public transit, which result in GHG reductions:

- **Goal 3.5.** Seek variety, quality, and innovation in land use practice.
  - **Policy E:** Incorporate the tents of New Urbanism into projects within our community:
    - Promote design that incorporates concentrated densities, mixed uses and housing types, mass transit, narrow landscaped streets, greenbelts, downtown revitalization and adaptive reuse, civic centers.
- **Goal 6.2.** Improve our local public transportation service.
  - **Policy F:** Encourage public transportation access from La Verne to the Metrolink Station in Pomona at frequent intervals during commuter hours.

City of La Verne Municipal Code

Chapter 15 of the LVMC requires new development in the City to be constructed in accordance with the 2019 CCR Title 24, CALGreen standards, 2019 Building Energy Efficiency Standards, and mandatory measures for new developments that support overall State and local goals for energy efficiency, which aim to reduce GHG emissions.

Methodology and Significance Threshold

GHG emissions associated with the project were calculated using CalEEMod version 2016.3.2 (output files are included in Appendix C). The construction schedule and construction equipment list were based on project information provided by the applicant. It is assumed that all construction equipment used would be diesel-powered. In accordance with SCAQMD guidance, construction emissions were amortized over a period of 30 years (the assumed life of the project) and amortized construction emissions were added to operational emissions so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies (SCAQMD 2008b). Complete results from CalEEMod and assumptions can be viewed in Appendix C.

A majority of individual projects do not generate sufficient GHG emissions to create significant project-specific environmental effects. However, the environmental effects of a project's GHG emissions can contribute incrementally to cumulative environmental effects that are significant, contributing to climate change, even if an individual project's environmental effects are limited (CEQA Guidelines Section 15064[h][1]). The issue of a project's environmental effects and contribution towards climate change typically involves an analysis of whether a project's contribution towards climate change is cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

In guidance provided by the SCAQMD's GHG CEQA Significance Threshold Working Group in September 2010, SCAQMD considered a tiered approach to determine the significance of residential and commercial projects. The draft tiered approach is outlined in meeting minutes dated September 29, 2010 (SCAQMD 2010).

- **Tier 1** - If the project is exempt from further environmental analysis under existing statutory or categorical exemptions, there is a presumption of less than significant impacts with respect to climate change. If not, then the Tier 2 threshold should be considered.
- **Tier 2** - Consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines Section 15064(h)(3), 15125(d) or 15152(a). Under this Tier, if the project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If there is not an adopted plan, then a Tier 3 approach would be appropriate.
- **Tier 3** - Establishes a screening significance threshold level to determine significance. The Working Group has provided a recommendation of 3,000 MT CO_2e per year for residential projects.
- **Tier 4** - Establishes a service population threshold to determine significance. The Working Group has provided a recommendation of 4.8 MT CO_2e per year for land use projects and 6.6 MT CO_2e

per year for plan level projects. The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for ARB's 2008 Scoping Plan.[2]

The applicable threshold for the project would be a bright line threshold of 3,000 MT CO_2e per year for residential projects under Tier 3.

a. *Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

As stated above, the project was modeled in CalEEMod. Project construction is assumed to begin in July 2021 and completed by February 2023. As shown in Table 11, construction activity for the project would generate an estimated 880 MT CO_2e. When amortized over a 30-year period, construction of the project would generate 29.3 MT CO_2e per year.

Table 11 Estimated Construction GHG Emissions

Construction Year	Annual Emissions (MT CO_2e)
2021	198.0
2022	598.2
2023	83.8
Total	**880.0**
Amortized over 30 years	29.3

Notes: Emissions modeling was completed using CalEEMod.

Source: Appendix C

Table 12 summarizes the project's combined construction and operational GHG emissions. Annual emissions project emissions would be approximately 623.9 MT CO_2e. These emissions would not exceed the 2,719 MT CO_2e per year threshold for residential projects. Therefore, the project would have a less than significant impact, and no further analysis of this issue is necessary.

[2] SCAQMD took the 2020 statewide GHG reduction target for land-use-only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

Table 12 Combined Annual Emissions of Greenhouse Gases

Emission Source	Emissions (MT of CO_2e per year)
Construction	29.3
Operational	
Area	0.7
Energy	0.0[1]
Solid Waste	23.7
Water	17.8
Mobile	
CO_2 and CH_4	547.2
N_2O	5.2
Total Emissions	**623.9**
SCAQMD Threshold	2,719
Exceed Project-Specific Threshold?	**No**

[1] Energy use was entered as zero in CalEEMod due to inclusion of solar PV output, pursuant to 2019 Title 24 standards.
See Appendix C for CalEEMod results and N_2O mobile emissions data sheets.

LESS THAN SIGNIFICANT IMPACT

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

As discussed under *Regulatory Setting*, plans and policies have been adopted to reduce GHG emissions in the Southern California region, including the State's 2017 Scoping Plan and SCAG's 2020-2045 RTP/SCS. The project's consistency with these plans and applicable policies in the City's General Plan is discussed in the following subsections. As discussed herein, the project would not conflict with plans and policies aimed at reducing GHG emissions.

2017 Scoping Plan

The principal State plan and policy is AB 32, the California Global Warming Solutions Act of 2006, and the follow up, SB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020 and the goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. Pursuant to the SB 32 goal, the 2017 Scoping Plan was created to outline goals and measures for the state to achieve the reductions. The 2017 Scoping Plan's goals include reducing fossil fuel use and energy demand and maximizing recycling and diversion from landfills. The project would be consistent with these goals through project design, which includes complying with the latest Title 24 Green Building Code and Building Efficiency Energy Standards and installing energy-efficient light-emitting diode (LED) lighting, water-efficient faucets and toilets, water efficient landscaping and irrigation, and EV charging parking spaces. The project's water consumption would be minimized through the use of low-flow plumbing fixtures, installation of water-conserving appliances, and use of drought-tolerant native and adaptive plants as part of the landscape design. Furthermore, related to energy production and usage, the project would be equipped with PV systems, ENERGY-star appliances, and use of natural light for building interiors. Therefore, the project would be consistent with the 2017 Scoping Plan.

SCAG 2020-2045 RTP/SCS

The SCAG's 2020-2045 RTP/SCS is forecast to help California reach its GHG reduction goals. According to the 2020-2045 RTP/SCS, the updated targets for the SCAG region are eight percent below 2005 per capita emission levels by 2020 (this value is unchanged from the previous 2020 CARB target) and 19 percent below 2005 per capita emissions levels by 2035. The revised 2035 target is higher than the previous CARB target of 13 percent for the SCAG region. The 2020-2045 RTP/SCS includes implementation strategies for focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, supporting implementation of sustainability policies, and promoting a green region. The project's consistency with the 2020-2045 RTP/SCS is discussed in Table 13. As shown therein, the project would be consistent with the GHG emission reduction strategies contained in the 2020-2045 RTP/SCS.

Table 13 Project Consistency with Applicable SCAG 2020-2045 RTP/SCS Strategies

Reduction Strategy	Project Consistency
Focus Growth Near Destinations & Mobility Options ▪ Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations ▪ Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets ▪ Plan for growth near transit investments and support implementation of first/last mile strategies. ▪ Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses ▪ Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods ▪ Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations) ▪ Identify ways to "right size" parking requirements and promote alternative parking strategies (e.g. shared parking or smart parking)	**Consistent.** The project is an infill development that would replace the existing plant nursery with single-family residences. The project would be located in an existing residential neighborhood and would provide a 0.25-acre park accessibly to the public and project residents, which would reduce the number of trips to off-site recreational uses. The project would be within walking and biking distance of existing residential, commercial, and recreational uses. Therefore, the project would focus growth near existing resident-serving destinations.
Promote Diverse Housing Choices ▪ Preserve and rehabilitate affordable housing and prevent displacement ▪ Identify funding opportunities for new workforce and affordable housing development ▪ Create incentives and reduce regulatory barriers for building context-sensitive accessory dwelling units to increase housing supply ▪ Provide support to local jurisdictions to streamline and lessen barriers to housing development that supports reduction of greenhouse gas emissions	**Consistent.** The project is an infill development that would construction 42 single-family residences in an existing neighborhood. Though proposed residences would be available at market-rate, the project would meet the City's need for additional single-family residences. The project site is currently used as a plant nursery; no existing or affordable housing structures would be demolished as a result of the project.

Reduction Strategy	Project Consistency
Leverage Technology Innovations ▪ Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space ▪ Improve access to services through technology—such as telework and telemedicine as well as other incentives such as a "mobility wallet," an app-based system for storing transit and other multi-modal payments ▪ Identify ways to incorporate "micro-power grids" in communities, for example solar energy, hydrogen fuel cell power storage and power generation	**Consistent.** Related to energy production and usage, the project would be equipped with solar PV systems, ENERGY-star appliances, and use of natural light for building interiors.
Support Implementation of Sustainability Policies ▪ Pursue funding opportunities to support local sustainable development implementation projects that reduce GHG emissions ▪ Support statewide legislation that reduces barriers to new construction and that incentivizes development near transit corridors and stations ▪ Support local jurisdictions in the establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), or other tax increment or value capture tools to finance sustainable infrastructure and development projects, including parks and open space ▪ Work with local jurisdictions/communities to identify opportunities and assess barriers to implement sustainability strategies ▪ Enhance partnerships with other planning organizations to promote resources and best practices in the SCAG region ▪ Continue to support long range planning efforts by local jurisdictions ▪ Provide educational opportunities to local decision makers and staff on new tools, best practices and policies related to implementing the Sustainable Communities Strategy	**Consistent.** The measures to support implementation of sustainability policies are primarily to be undertaken by county and city jurisdictions. However, the project would not prohibit the implementation of citywide sustainability strategies or policies. The project would be consistent with Title 24 and the latest CALGreen requirements. The project's water consumption would be minimized through the use of low-flow plumbing fixtures, installation of with water-conserving appliances, and use of drought-tolerant native and adaptive plants as part of the landscape design. Furthermore, related to energy production and usage, the project would be equipped with solar PV systems, ENERGY-star appliances, and use of natural light for building interiors. Therefore, the project would support implementation of sustainability policies.
Promote a Green Region ▪ Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards ▪ Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration ▪ Integrate local food production into the regional landscape ▪ Promote more resource efficient development focused on conservation, recycling and reclamation	**Consistent**. The project is an infill development that would construct 42 single-family residential units within an existing neighborhood, and would therefore not interfere with regional wildlife connectivity or convert agricultural land. The project would comply with Title 24 and CALGreen building standards. In addition, the project would include a 0.25-acre park, available to project residents and the public. Therefore, the project would support development of a green region.

Reduction Strategy	Project Consistency
▪ Preserve, enhance and restore regional wildlife connectivity ▪ Reduce consumption of resource areas, including agricultural land ▪ Identify ways to improve access to public park space	

Source: SCAG 2020

City of La Verne General Plan

The City's General Plan contains the following policies that would reduce citywide levels of GHG emissions. Table 14 shows the project's consistency with relevant goals and policies of the City's General Plan.

Table 14 Project Consistency with Applicable General Plan

Goals, Policies, and Actions	Project Consistency
Goal 3.5: Seek variety, quality, and innovation in land use practice **Policy E:** Incorporate the tenets of New Urbanism into projects within our community. ▪ Promote design that incorporates concentrated densities, mixed uses and housing types, mass transit, narrow landscaped streets, greenbelts, downtown revitalization and adaptive reuse, civic centers.	**Consistent.** The City's current zoning designation for the Amherst Specific Plan area is "Planned Residential Development 3 DU/ AC Detached" (PR3D). The project would be developed approximately 0.4 mile (walking distance) from the nearest bus Stop and approximately 1.8 mile from the Metrolink San Bernardino Line, which would allow for easy access to public transportation for project residents to reduce VMT. Additionally, the project would create new pedestrian sidewalk facilities within the project site area.
Goal 6.2: Improve our local public transportation service **Policy F**. Encourage public transportation access from La Verne to the Metrolink station in Pomona at frequent intervals during commuter hours.	**Consistent.** The project site is located approximately 1.8 miles from the Metrolink San Bernardino Line, which allows for easy access to public transportation for project residents to reduce VMT.

Source: La Verne 1998

As shown above, the project would be consistent with regional and local strategies to reduce GHG emissions, as detailed in Table 13 and Table 14. The project would not substantially contribute to City, regional, or statewide GHG emissions or obstruct achievement of local targets and State mandates. The project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs and would be consistent with applicable General Plan policies. Therefore, the project would have a less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	□	□	■	□
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?	□	□	■	□
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	□	□	□	■
d. Be located on a site that is included on a list of hazardous material 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?	□	□	□	■
e. For a project located in 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?	□	□	■	□
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	□	□	■	□
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	□	□	□	■

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

b. 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?

The project would construct 42 single-family dwelling units along with on-site recreational amenities on a 5.7-acre site. Construction activities would not generate hazardous waste materials (such as asbestos or lead) from demolition since the project site is currently in use as a plant nursery. Greenhouses on the project site, in use as part of the plant nursery, would be demolished as part of the project. Limited quantities of hazardous materials (such as solvents and low VOC paints or finishes) may be used during building construction, and transportation, use, storage, and disposal of construction materials and equipment would be in compliance with applicable federal, State, and local regulations, standards, and guidelines.

The project site was previously used as citrus orchards in the 1920’s. A water reservoir was constructed on the site in 1948 and in the 1950s, a single-family residence was constructed. Based on the review of historic uses and records for the project site, the project site has no evidence of having asbestos-containing construction materials or any facilities used to store, process, or discharge petroleum or other hazardous substances (PIC Environmental Services 2019).

Proposed residential uses would not emit or handle hazardous materials beyond typical household and landscape waste and materials, and the project would not create a hazard to the public through transportation of hazardous materials upon completion and residential occupancy. Therefore, the project would result in a less than significant impact, and no further discussion of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

There are no schools within a 0.25-mile radius of the project site. The Lutheran High School (3960 Fruit Street) is located nearest to the project site, approximately 0.47 mile west from the project site.

Furthermore, as stated above in the discussion provided for criteria ‘a’ and ‘b,’ the project would not emit or handle hazardous materials, substances, or waste during project construction or operation and the project would pose no hazards nor transport hazardous materials past existing or proposed schools. Therefore, the project would have result in no impact, and no further discussion of this issue is necessary.

NO IMPACT

d. Would the project be located on a site that is included on a list of hazardous material 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?

A Phase I Environmental Site Assessment (ESA) prepared for the project site in 2019 is included as Appendix F (PIC Environmental Services 2019). As stated above in criteria ‘a’ and ‘b,’ the project site has no evidence of having asbestos-containing construction materials or any facilities used to store, process, or discharge petroleum or other hazardous substances based on review of historic uses and records for the project site (PIC Environmental Service 2019).

In addition, according to the State Water Resources Control Board Geotracker and State Department of Toxic Substances Control's EnviroStor databases, there are no hazardous material sites present within a 1,000-foot radius of the project site (SWRCB 2020; DTSC 2020). Therefore, and the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

e. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

No public airports or private airstrips are located within two miles of the project site. The project site is located approximately 2.5 miles northeast of Brackett Filed Airport, which is the nearest airport to the project site. According to the Los Angeles County Airport Land Use Compatibility Plan (ALUCP) for the Brackett Field Airport, the project site is located in Zone E of the airport's influence area (Los Angeles County ALUCP 2015). Zone E areas contain low risk levels of airport activity hazards and are located beyond the airport's 55 decibel noise contour. Therefore, the project would have a less than significant impact, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

f. *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The project would increase traffic around the project site and vicinity. However, project construction and operational activities would not result in any street closures that could impede emergency access or evacuation. Final project design would be subject to plan check by the City Planning and Building Agency and the La Verne Fire Department to ensure the proposed driveway along Amherst Street and on-site circulation meet applicable turn-radius standards for emergency vehicles and fire apparatus. The project would not interfere with the implementation of the City's emergency management plans from the City's General Plan Safety Element. Therefore, the project would have a less than significant impact, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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

The project site is in an urbanized area adjacent to existing residential uses. There are no wildland conditions on or adjacent to the project site. The project site is not located in a designated Very High Fire Hazard Severity Zone (VHFHSZ) or a State Responsibility Area (La Verne 2018; California Office of Emergency Services [CalOES] 2015). The nearest VHFHSZ is located approximately 0.25 mile north of the project site, north of SR 210. Wildfire impacts are further discussed in Section 20, *Wildfire*. Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

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10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	■	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	■	☐
(iii) 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	☐	☐	■	☐
(iv) Impede or redirect flood flows?	☐	☐	■	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	■
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐

Hydrologic Setting

The project site is within the South Coast Hydrologic Region, which covers approximately 10,600 square miles of southern California watersheds draining to the Pacific Ocean. The South Coast Hydrological Region includes all of Orange County, most of San Diego and Los Angeles Counties, and parts of Riverside, San Bernardino, and Ventura Counties. The region is bound by the Transverse Ranges (including the San Gabriel and San Bernardino Mountains) to the north, the San Jacinto Mountains and low-lying Peninsular Range to the east, and the international boundary with Mexico to the south (California Department of Water Resources 2003).

The project site is within the 906-square mile San Gabriel Watershed. The nearest National Hydrography Dataset-delineated flowlines to the project site are Live Oak Wash, which runs approximately 0.6 miles to the southwest, and San Dimas Wash, which runs approximately 2.0 miles to the northwest. The project site is approximately 42.0 miles northeast of the Pacific Ocean at the mouth of the Balboa Creek. The project site is under the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB) (Region 4). The Los Angeles RWQCB sets water quality objectives and monitors surface water quality through the implementation of the Water Quality Control Plan for the Los Angeles Region (Basin Plan).

La Verne receives its water from two main sources: underground water and imported water. The City has eight municipal wells that pump water from two ground basins: Pomona and Live Oak. Water from these underground wells is pumped into booster stations where it is blended with imported water. La Verne purchases its water from Three Valley Municipal Water District. The underground water is blended with local groundwater and is then pumped to residents and businesses throughout La Verne (La Verne 2020c).

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction activities associated with the project would have the potential to generate soil erosion and to increase sediment and other pollutant loads in stormwater runoff. Further, operation of the proposed project would increase impervious surface area on the project site, which can result in increased runoff and degraded water quality. Construction-related and operational impacts associated with the project are discussed below.

Construction

Grading, excavation, and other construction activities associated with the project could adversely affect water quality due to erosion resulting from exposed soils and the generation of water pollutants, including trash, construction materials, and equipment fluids. Soil disturbance associated with site preparation and grading activities would result in looser, exposed soils, which are more susceptible to erosion. Erosion factors (K factors) for soils on the project site are estimated at approximately 0.24, indicating moderate potential for sheet and rill erosion by water (SWRCB 2011). Additionally, spills, leakage, or improper handling and storage of substances such as oils, fuels, chemicals, metals, and other substances from vehicles, equipment, and materials used during project construction could contribute to stormwater pollutants or leach to underlying groundwater.

Because the project would result in disturbance of more than one acre, on-site construction activities would be subject to the NPDES Construction General Permit. For all covered projects, the NPDES construction permit requires visual monitoring of stormwater and non-stormwater discharges, sampling, analysis, and monitoring of non-visible pollutants, and compliance with all applicable water quality standards established for receiving waters potentially affected by construction discharges. Additionally, construction site operators would be responsible for preparing and implementing a stormwater pollution prevent plan that outlines project-specific best management practices (BMPs) to control erosion, sediment release, and otherwise reduce the potential for discharge of pollutants in stormwater. Typical BMPs include use of temporary de-silting basins, construction vehicle maintenance in staging areas to avoid leaks or spills of fuels, motor oil, coolant, and other hazardous materials, and installation of silt fences and erosion control blankets.

Furthermore, Title 15 Chapter 40 of the LVMC contains the City's policies intended to reduce pollutants in stormwater. The section requires any construction contractors performing work in the City to provide filter materials at the catch basin of the storm sewer system to retain debris and dirt. The section further requires projects subject to the NPDES Construction General Permit to demonstrate possession of the permit prior to issuance of a grading or building permit. Implementation of construction BMPs would minimize surficial erosion and transport of pollutants and would occur in compliance with applicable NPDES and City requirements, thereby protecting water quality both on- and off-site. Therefore, water quality impacts from construction would be less than significant, and no further analysis of this issue is necessary.

Operation

Existing impervious surfaces on the project site are concentrated around the six greenhouse structures and account for approximately twelve percent (20,000 square feet) of the site's total area. The project would increase impervious surface cover on the project site due to the construction of 42 single-family residences, hardscaped open space, and loop road. Increased impervious area on the project site could result in increased runoff flow and volume, which can carry pollutants to downstream water bodies and adversely affect water quality. Common pollutants associated with single-family residential development that could be discharged during operation of the project include automotive chemicals and metals that accumulate on the driveway and parking lots, fertilizers, pesticides, and herbicides applied to ornamental landscaping, pet waste, trash, debris, and sediments.

The City of La Verne is permittee to the Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (Order R4-2012-0175-A01, NPDES Permit Number CAS004001) issued by the Los Angeles RWQCB. Under the MS4 permit, permittees, including the City of La Verne, must require the use of control measures, such as BMPs, to reduce the discharge of pollutants from their MS4 facilities to receiving water bodies.

Title 13 Chapter 60 of the LVMC contains the City's Low Impact Development (LID) ordinance and implements requirements of the City's MS4 permit for new development. The site is presently developed with plant cultivation. Because the project would result in the creation, addition, or replacement of 10,000 square feet or more of impervious surface area on the site, it would constitute a redevelopment project subject to design and implementation of post-construction stormwater controls. As part of the project's final design review, the project would be required to submit a Standard Urban Stormwater Mitigation Plan (SUSMP) demonstrating that the project would retain all runoff from the 85th percentile, 24-hour rain event. Based on preliminary calculations provided by the applicant, the project would be required to retain a runoff volume of approximately 3,855 cubic feet associated with a 0.95 inch 24-hour rainfall event. Runoff volume would be retained on-site via operational BMPs, such as an infiltration/detention basin, rainfall harvest and use, or subterranean cistern with controlled release. Stormwater plans would be subject to review and approval by the City Engineer. The LID ordinance also requires submission and approval of a BMP maintenance agreement describing long-term maintenance responsibilities of any BMPs implemented on the project site.

On-site storage of stormwater runoff, as required pursuant to the City's LID ordinance, would provide an opportunity for debris, sediment, and sediment-bound pollutants to settle out of the water column prior to discharge downstream. The requirements of the City's LID ordinance and the applicable MS4 permit are intended to protect water quality and support attainment of water quality standards in downstream receiving water bodies. Therefore, operation of the project would not violate any water quality standards or waste discharge requirements, nor would it otherwise substantially degrade water quality. Therefore, water quality impacts from project operation would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

b. 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?

The project site overlies the Spadra sub-basin of the San Gabriel Valley Groundwater Basin. La Verne receives its water from two main sources: underground water and imported water. The City has eight municipal wells that pump water from two ground basins: Pomona and Live Oak. Water from these underground wells is pumped into booster stations where it is blended with imported water. La Verne purchases its water from Three Valley Municipal Water District. The underground water is blended with local groundwater and is then pumped to residents and businesses throughout La Verne (La Verne 2020c).

Development of the project would result in a more intense use of the project site compared to current conditions and would increase impermeable surface on site substantially. Consequently, the project may incrementally reduce groundwater recharge and increase the amount of surface runoff. However, the approximately 5.7-acre site accounts for a marginal amount of total recharge area in the Spadra sub-basin. Landscaped areas and use of infiltration-based BMPs on the project site would help preserve infiltration capacity on the site. As a result, impacts related to groundwater recharge would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

c.(i) 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 or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.(ii) 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 or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) 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 or through the addition of impervious surfaces, in a manner that would 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?

c.(iv) 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 or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

The project site is generally flat and would remain flat under the proposed project conditions. The project would not alter the course of a stream or river on-site because the project site contains no water bodies. However, the project would alter site drainage through the addition of impervious surfaces, which can increase stormwater runoff volume and flow.

Compliance with the City's LID ordinance and the Los Angeles County MS4 permit requires capture and treatment of the 85^{th} percentile, 24-hour storm event. As part of the project's final design review, the project would be required to submit a SUSMP demonstrating adequate stormwater retention using infiltration basins, bioretention areas, capture and controlled release tanks, or another BMP. Such BMPs would slow the velocity of water and allow sediment and debris to settle out of the water column, thereby minimizing the potential for downstream flooding, erosion/siltation, or exceedances of stormwater drainage system capacity.

According to the Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map, the project site is located in Zone X, indicating an area of minimal flood hazard (FEMA 2008). The project site is not located in a floodplain and would not divert or redirect flood flows.

Given that the project site would remain generally flat and be required to implement BMPs to capture and retain stormwater on-site, potential impacts related to the alteration of the site's drainage pattern would be less than significant. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

As discussed above in criteria 'c,' the project site is designated Zone X on the most recent FEMA Flood Insurance Rate Map, indicating an area of minimal flood hazard (FEMA 2008). The project site is approximately 42 miles from the Pacific Ocean and not subject to tsunami, and the nearest inland surface water body that may be subject to seiche is Live Oak Reservoir, approximately 1.2 miles to the north. The project site is not located in the inundation zone for the Live Oak Reservoir (California Department of Water Resources 2015). Furthermore, the project does not involve storage or processing of pollutants that would be released due to inundation should such an event occur. Therefore, the project would result in no impact, and no further analysis of this issue is necessary.

NO IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Los Angeles RWQCB's Basin Plan designates beneficial uses for surface waters in the Los Angeles region and associated water quality objectives to fulfill such uses. Live Oak Wash, a 3.5 mile stream that flows into the Puddingstone Reservoir, and San Dimas Wash, a 9.0 mile long tributary of the Big Daulton Wash, have designated beneficial uses of Municipal and Domestic Supply (potential), Groundwater Recharge (intermittent), Warm Freshwater Habitat (intermittent), and Wildlife Habitat (Los Angeles RWQCB 2019).

As discussed above in criteria 'a,' the project would implement on-site storage of stormwater runoff, as required pursuant to the City's LID ordinance, providing an opportunity for debris, sediment, and sediment-bound pollutants to settle out of the water column prior to discharge downstream. The requirements of the City's LID ordinance and the applicable MS4 permit are intended to protect water quality and support attainment of water quality standards in downstream receiving water bodies. The project would not involve use of septic systems, agricultural land or other land uses commonly associated with high concentrations of nutrients, indicator bacteria, or chemical toxicity and, therefore, would not exacerbate the existing impairments to Live Oak Wash or San Dimas Wash. The project would not impair existing or potential beneficial uses of nearby water bodies and would not conflict with or obstruct implementation of the Basin Plan.

The project site is within the Spadra sub-basin of the San Gabriel Valley Groundwater Basin. The Spadra Basin Groundwater Sustainability Agency, consisting of representatives from both the City of La Verne and the Three Valley Municipal Water District, oversees management of the sub-basin and is in the process of preparing a Groundwater Sustainability Plan (GSP) pursuant to the requirements of the Sustainable Groundwater Management Act. To date, however, no GSP has been published. The project proposes no new wells or additional groundwater extraction. As discussed in Section 19, *Utilities and Service Systems*, the project would be served by the City's existing supplies and would not require acquisition of additional water supplies. Therefore, the project would not conflict with or obstruct implementation of a sustainable groundwater management plan. Impacts would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
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?	☐	☐	☐	■

a. Would the project physically divide an established community?

The project would construct of 42 single-family residences on a lot currently used as a plant nursery. The project site is surrounded by existing single- and multi-family residential development, and adjacent to a groundwater treatment plant/reservoir. The project site would not provide community connection and does not involve construction of freeways, walls, or other features that would divide an established community. Project site plans indicate on-site vehicle and pedestrian circulation pathways that would not interfere with existing off-site traffic patterns or divide the existing neighboring communities. Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

b. 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?

The Amherst Specific Plan is consistent with the applicable goals and policies contained within the adopted City of La Verne General Plan and serves as zoning for the project site. The goals and policies identified within each element of the City's General Plan have been evaluated, and a statement of compliance with the City's General Plan has been included in the Amherst Specific Plan (Appendix A). Government Code stipulates that the Specific Plan must also specify the distribution, location, and extent of the uses of land, including open space, within the area covered by the plan. As such, proposed development would be consistent with the Amherst Specific Plan.

The project requires a General Plan Amendment and a Zone Change to create uniform zoning and land use designation throughout the project site and to conform with the Amherst Specific Plan. The Amherst Specific Plan area is located within Neighborhood 5, Foothill Corridor, and allows for residential and recreational uses that are compatible with existing development. A General Plan Amendment to designate the Amherst Specific Plan area to Medium Density Residential (MDR) and a Zone Change to designate the project site as Amherst Specific Plan zone would establish conformity with adopted City General Plan land use plans, policies, and regulations. Therefore, the project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No further analysis of this issue is necessary.

NO IMPACT

12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	□	□	□	■

a. Would the project 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. Would the project 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?

According to the California Department of Conservation, the project site and vicinity is within Mineral Resource Zone 3, which indicates that mineral deposits may be present but are of unknown significance (Cole 1987). The project site currently consists of a plant nursery, and no portion of the project site would be used for extraction of mineral resources, nor would extraction be consistent with the adjacent residential uses. The City of La Verne General Plan does not identify any mineral resources in the area of the project site. Therefore, the project would have no impact on mineral resources, and no further analysis of this issue is necessary.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	■	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	■	☐

Noise

The unit of measurement used to describe a noise level is the decibel (dB). However, the human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called "A-weighting" is used to adjust actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz (Hz) and less sensitive to frequencies around and below 100 Hz, thus filtering out noise frequencies that are not audible to the human ear. A-weighting approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the "A-weighted" levels of those sounds. Therefore, the A-weighted noise scale is used for measurements and standards involving the human perception of noise. In this analysis, all noise levels are A-weighted, and "dBA" is understood to identify the A-weighted decibel.

Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. A doubling of the energy of a noise source, such as a doubling of traffic volume, would increase the noise level by 3 dB; similarly, dividing the energy in half would result in a decrease of 3 dB (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive an increase (or decrease) of up to 3 dBA in noise levels (i.e., twice [or half] the sound energy); that an increase (or decrease) of 5 dBA (8 times [or one eighth] the sound energy) is readily perceptible; and that an increase (or decrease) of 10 dBA (10.5 times [or approximately one tenth] the sound energy) sounds twice (or half) as loud (Crocker 2007).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs, and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this analysis are the one-hour equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL).

- The L_{eq} is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period. Typically, L_{eq} is equivalent to a one-hour period, even when measured for shorter durations as the noise level of a 10- to 30-minute period would be the same as the hour if the noise source is relatively steady. L_{max} is the highest Root Mean Squared (RMS) sound pressure level within the sampling period, and L_{min} is the lowest RMS sound pressure level within the measuring period (Crocker 2007).
- The CNEL is a 24-hour equivalent sound level with an additional 5 dBA penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and an additional 10 dBA penalty to noise occurring during the night, between 10:00 p.m. and 7:00 a.m., to account for the added sensitivity of humans to noise during these hours (Caltrans 2013). Quiet suburban areas typically have a CNEL in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 70+ CNEL range.

Propagation

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in sound level as the distance from the source increases. The way sound reduces with distance depends on factors such as the type of source (e.g., point or line), the path the sound will travel, site conditions, and obstructions. Sound levels from a point source (e.g., construction, industrial machinery, ventilation units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Sound from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013).

Vibration

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The vibration frequency of an object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body is from a low of less than 1 Hz up to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise may result in adverse effects, such as building damage, when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz). Vibration may also damage infrastructure when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (Federal Transit Administration [FTA] 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Descriptors

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in./sec.). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

Response to Vibration

Vibration associated with construction of the project has the potential to be an annoyance to nearby land uses. Caltrans has developed limits for the assessment of vibrations from transportation and construction sources. The Caltrans vibration limits are reflective of standard practice for analyzing vibration impacts on structures. The Caltrans Transportation and Construction Vibration Guidance Manual (Caltrans 2020) identifies impact criteria for buildings and criteria for human annoyances from transient and continuous/frequent sources: Table 15 presents the impact criteria for buildings, and Table 16 presents the criteria for humans.

Table 15 Vibration Damage Potential

Building Type	Maximum PPV (in./sec.)
Historic sites and other critical locations	0.1
Historic and some old buildings	0.5
Older residential structures	0.5
New residential structures	1.0
Modern industrial/commercial buildings	2.0

PPV = peak particle velocity; in./sec. = inches per second
Source: Caltrans 2020

Table 16 Vibration Annoyance Potential

Human Response	Maximum PPV (in./sec.) Transient Sources	Continuous/Frequent Intermittent Sources
Severe/disturbing	2.00	0.70
Strongly perceptible	0.90	0.10
Distinctly perceptible	0.240	0.035
Barely perceptible	0.035	0.012

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls (i.e., a loose steel ball that is dropped onto structures or rock to reduce them to a manageable size). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity; in./sec. = inches per second

Source: Caltrans 2020

Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Variability in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2020). When a building is exposed to vibration, a ground-to-foundation coupling loss (the loss that occurs when energy is transferred from one medium to another) will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may amplify the vibration level due to structural resonances of the floors and walls.

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Generally, a sensitive receiver is identified as a location where human populations (especially children, the elderly, and sick persons) are present, and where there is a reasonable expectation of continuous human exposure to noise. Noise-sensitive land uses generally include residences, hospitals, schools, churches, libraries, and parks.

Vibration-sensitive receivers, which are similar to noise-sensitive receivers, include residences and institutional uses, such as hospitals, schools, and churches. However, vibration-sensitive receivers also include buildings where vibrations may interfere with vibration-sensitive equipment that is affected by vibration levels that may be well below those associated with human annoyance (e.g., recording studies or medical facilities with sensitive equipment).

The nearest sensitive receivers are the existing single- and multi-family residences adjacent to north, south, east, and west of the project site.

Project Noise Setting

The most common source of noise in the project site vicinity is vehicular traffic on SR 210 and residential roads. The closest source of vehicular traffic to the project site is SR 210. The project site is approximately 1,182 feet south of the centerline of SR 210. According to an existing conditions study conducted for the City of La Verne General Plan Update, receptors 1,000 feet from the centerline of SR 210 experience a 65 dBA (La Verne 2017).

The project site is approximately 1,771 feet north of the centerline of Foothill Boulevard. According to the existing conditions study, receptors more than 316 feet away experience a less than 60 dBA. Therefore, it is reasonable to assume that traffic noise from Foothill Boulevard would not be noticeable. Other streets in the vicinity have lower traffic volumes and are located in neighborhoods with predominantly residential uses.

Regulatory Framework

The City of La Verne General Plan Noise Element defines issues, goals, policies, and implementation measures related to noise conditions in the City. The specific policies of the General Plan Noise Element that are relevant to the project are as follows:

- **Policy 1.1a:** Enforce the Noise Control Ordinance to assure that all new development is consistent with the land use compatibility criteria, exterior and interior noise standards.
- **Policy 1.1d:** Require all new residential construction in areas with an exterior noise level greater than 60 dB to include sound attenuation measures that reduce interior noise levels to the standards shown in Table N-2.
- **Policy 1.1.f:** Consider the noise of a proposed project in both absolute and relative terms. A proposed project will be considered to have a significant adverse impact on the environment if the expected noise increase exceeds 5 dB, even though it may not exceed the standards shown in Table N-2. Sound attenuation measures will be required as a condition of approval.
- **Policy 1.1.j:** Require that new multifamily projects that abut single-family uses provide noise barriers to protect adjacent areas.
- **Policy 2.2.a:** Encourage installation of double glazing, dense landscaping and other noise reduction measures by homeowners along the proposed freeway route. Require such measures in new construction.
- **Policy 4.1.c:** Require construction of landscaped soundwalls with new development adjoining freeways, transit lines and other high noise impact facilities as determined by the Community Development Department through environmental review.

According to Table N-2 in the General Plan Noise Element, a dBA CNEL under 60 is considered "normal," a 60-70 dBA CNEL is considered "conditional," a dBA CNEL over 70-75 is considered "normally not," and a dBA of 80 and above is considered "clearly not." "Conditional" is defined as: "New construction or development should be undertaken only after a detailed analysis of the noise requirements is made and needed noise insulation features included m the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice."

An appropriate exterior noise environment for new residential developments should not exceed 70 dBA. Chapter 8.20 *Noise Control*, Section 8.20.010 of the LVMC states that Los Angeles County Ordinance No. 11,773 is adopted by reference under authority of Government Code Section 50022.9. Section 8.20.020 of the LVMC, Amendment D, Section 501(c) was amended to specify that construction noise shall not occur between 8:00 p.m. and 7:00 a.m. on weekdays or any time on Sunday or a legal holiday.

The LVMC does not contain quantitative standards for vibration. Vibration impacts are analyzed using the thresholds from Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020).

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

The project would construct 42 single-family residences. Noise-sensitive receivers consist of existing single- and multi-family residences adjacent to the north, south, east, and west of the project site. These sensitive receivers, may be subject to both temporary construction noise and long-term operational noise. The following discussions address construction and operational noise associated with the project.

Construction

Construction Equipment

Construction activity would temporarily expose surrounding sensitive receptors (existing residential uses) to increased noise levels. Construction noise would typically be greater during the heavier periods of initial construction (i.e., site preparation and grading work) and would be less during the later construction phases (i.e., building construction, architectural coating). Typical heavy construction equipment during project grading and site preparation would include backhoes, graders, and dozers. It is assumed that diesel engines would power the construction equipment. Construction equipment would not all operate at the same time or in the location on the project site. In addition, construction equipment would not be in constant use during the eight-hour construction day.

Mobile equipment moves around the construction site with power applied in cyclic fashion, such as bulldozers, graders, and loaders (FTA 2018). Therefore, noise impacts from construction equipment are assessed from the center of the equipment activity area (i.e., construction site). Construction noise at nearby sensitive receptors was modeled using the FHWA's Roadway Construction Noise Model (RCNM). The closest sensitive receptors to project construction noise impacts would be existing single-family residences immediately to the west, south, and east of the project site. There are also residences to the north of the project site on the northside of Amherst Street, which would be impacted similarly to the residences south of the project site.

Over the course of a typical construction day, construction equipment would be located as close as 10 feet to the existing adjacent residential properties but would typically be located at an average distance farther away due to the nature of construction and the lot size of the project. For example, during a typical construction day, the equipment may operate across the east-west distance of the site (10 to 409 feet) from the residences to the east or west. Likewise, the equipment may operate across the north-south distance of the project site (10 to 605 feet) from the residences to the south of the project site. Therefore, it is assumed that the construction equipment would operate at an average distance of 204.5 feet from the residences to the east or west, and 302.5 feet from the residences to the south. Table 17 summarizes construction noise associated with each phase of construction based on the equipment list provided by the CalEEMod output.

Table 17 Construction Noise Levels

Phase	Equipment[1]	Noise Level at Sensitive Receptors (dBA L_{eq})	
		Residences to the East and West	Residences to the South
Site Preparation	Dozers (3), Backhoes (4)	72.0	68.6
Grading	Excavator, Grader, Dozer, Backhoes (3)	72.5	69.1
Building Construction	Crane, Forklifts (3), Generator, Backhoes (3), Welder	74.0	70.6
Paving	Pavers (2), Paving Equipment (2), Rollers (2)	74.3	70.9
Architectural Coating	Air compressor	61.5	51.8

[1] Based on construction equipment list provided by CalEEMod output (Appendix C). A Gradall was used as the equivalent equipment for forklift in RCNM.

See Appendix G for RCNM worksheets.

As shown in Table 17, the loudest construction phase would be paving, during which noise levels would be approximately 74.3 dBA Leq on average at the nearest residences. There is an existing concrete wall along the property line adjacent to the adjacent residences, but the extent to which the noise level would be reduced is unknown. As previously discussed, existing ambient noise levels are estimated to be approximately 65 dB. Therefore, building construction and paving phases may potentially exceed the City's 5 dBA L_{eq} increase for nearby residences, as stipulated by General Plan Noise Element Policy 1.1.f. This impact would be potentially significant and mitigation measures would be required.

Construction Traffic

According to the CalEEMod calculations (Appendix C), project construction would generate an estimated 30 trips per day associated with workers accessing the project site (15 roundtrips), and average 2 truckloads per day during the grading phase. Construction traffic would be heaviest along Amherst Street to access the site. According to project traffic impact analysis (Ganddini Group, Inc. 2020), the existing number of average daily trips (ADT) on Amherst Street is approximately 2,000. Project construction would result in a less than two percent increase or less in vehicle traffic along these roadways.[3] Generally, a doubling of traffic would result in a 3 dBA increase, which is perceptible to humans. The less than two percent increase of construction traffic would be much lower than a doubling of traffic, and the subsequent noise increase from construction traffic would be negligible. Furthermore, construction traffic would be temporary in nature and limited to the duration of construction activities on the project site. Therefore, project impacts from construction traffic would be less than significant, and no further analysis of this issue is necessary.

Land Use Compatibility

The most predominant source of noise at the project site is vehicular traffic on SR 210, which is approximately 65 dBA (La Verne 2017). The proposed residential development and use would be compatible with existing residential uses adjacent to the project site. The City requires all new residential construction in areas with an exterior noise level greater than 60 dB to include sound

[3] Data obtained from the La Verne Village Mixed Use Traffic Impact Analysis (LSA, March 2, 2011). The AM and PM peak hour traffic volumes based on these historical counts were adjusted by a growth rate of 1.34 percent per year over a nine-year period to reflect existing year 2020 conditions prior to issuance of statewide stay-at-home orders.

attenuation measures that reduce interior noise levels to the standards as summarized above in *Regulatory Framework* for this section, and pursuant to General Plan Policy 1.1d. The conditionally acceptable exterior land use noise compatibility limit for residential development in the City is 70 dB. Project exterior areas would be exposed to noise levels that do not exceed 70 dB CNEL, and impacts would be less than significant for exterior noise. The project would be constructed to meet modern building construction and materials standards pursuant to CCR Title 24. FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 dBA to 35 dBA with closed windows. The project would develop the site with residential structures, which would be considered sensitive receptors themselves. The incorporation of modern building construction and materials would reduce indoor noise levels to approximately 35 dB to 50 dB levels for the proposed buildings, which would be below the City's acceptable residential noise levels. Therefore, the project would have a less than significant impact, and no further analysis of this issue is necessary.

Operational Noise

Operation of the project would generate noise from rooftop heating, ventilation, and air conditioning (HVAC) equipment, delivery- and trash-hauling trucks, and on-site vehicle circulation and parking.

Heating, Ventilation, and Air Conditioning (HVAC) Equipment

Noise from rooftop-mounted HVAC equipment typically generates noise in the range of 60 to 70 dBA Leq at a reference distance of 15 feet from the source (Illingworth & Rodkin, Inc. 2009). The nearest noise-sensitive receivers consisting of existing single-family residences are located adjacent to the project site, at approximately 20 to 40 feet or more from the nearest rooftop-mounted HVAC equipment based on the approximate 28-foot height of the proposed residential buildings.

Because noise from HVAC equipment would attenuate at a rate of approximately 6 dBA per doubling of distance from the source, rooftop-mounted equipment would generate noise levels in the range of 62 dBA L_{eq} at 40 feet and 68 dBA L_{eq} at 20 feet, which would be within the City's conditional noise compatibility level for single-family residences. Rooftop HVAC units are traditionally shielded from surrounding land uses with parapets and roofs that block line-of-sight to sensitive receivers that typically provide at least a 5-dBA noise reduction. Therefore, rooftop-mounted equipment would generate noise levels in the range of 57 dBA L_{eq} and 63 dBA L_{eq}, which would be below the City's conditionally acceptable noise compatibility level of 70 dBA CNEL for the existing sensitive receptors.

The project includes installation of stucco-covered concrete masonry unit (CMU) walls around the project site boundary that would be eight-feet high along Amherst Street and six-feet high along the western, eastern, and southern boundaries (project site plans included in Appendix B). The CMU walls would provide a privacy and noise barrier between the proposed and existing adjacent residences. According to the FHWA, CMU walls are effective noise barriers for sound reduction and can result in up to a 6 dB reduction in sound (FHWA 2017b). Furthermore, the planting of trees, shrubs, and other vegetation along the CMU walls (in the backyards of proposed residential units) by project residents would also provide a noise reduction level of 3 to 5 dBA per 100 feet of plantings (FHWA 2017b). Based on the nature of sound propagation, the installation of the CMU walls during project construction and anticipated planting of trees, shrubs, and vegetation by project residents may further reduce operational noise levels from stationary sources. Therefore, project impacts would be less than significant, and no further analysis of this issue is necessary.

Delivery- and Trash-hauling Trucks

The project would require periodic delivery and weekly trash hauling services, which generate noise from medium-duty truck operations and idling engines. However, noise associated with delivery and trash-hauling trucks would be an intermittent noise source and are already a common occurrence in the project vicinity due to existing residential uses and urbanized character of the vicinity. Because delivery and trash trucks are already a common occurrence throughout the City, such services would not result in a substantial permanent increase in ambient noise levels from the project. Operational noise impacts associated with delivery- and trash-hauling trucks would be less than significant, and no further analysis of this issue is necessary.

On-site Vehicle Circulation and Parking

The project would generate noise from passenger vehicles circulating and parking on-site. However, similar to noise from delivery- and trash-hauling trucks, noise associated on-site vehicle circulation and parking is already a common occurrence in the project area due to existing residential and commercial uses in the developed urban area. Furthermore, as discussed in Project Noise Setting of this study, the primary noise source in the project area are motor vehicles (e.g., automobiles, buses, and trucks), particularly along Westminster Avenue. Therefore, operational noise from on-site passenger vehicles would not result in a substantial permanent increase in ambient noise levels compared to ambient noise levels without the project. Operational noise impacts associated with on-site vehicle circulation and parking would be less than significant. No further analysis of this issue is necessary.

Traffic Noise Impacts

As discussed in Section 17, *Transportation*, the project would have the highest impact along Amherst Street. In 2022, the opening year for the project, Amherst Street is predicted to have an estimated 2,100 ADT. Based on the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10^{th} Edition land use classifications, the project would generate a net 299 ADT along nearby roadways (406 ADT from the project minus the 107 ADT from the existing plant nursery). The project's net 299 ADT would increase traffic along Amherst Street by approximately 14 percent. As discussed above, a doubling of traffic would result in a 3 dBA increase, which is perceptible to humans. The 14 percent increase of traffic would be much lower than a doubling of traffic, and the subsequent noise increase from project traffic would be negligible. Therefore, impacts from operational traffic would be less than significant, and no further analysis of this issue is necessary.

Mitigation Measure

The following mitigation measure would reduce impacts to a less than significant level.

NOI-1 Construction Noise Reduction

The following shall be implemented during project construction:

- **Mufflers.** All construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.
- **Stationary Equipment.** All stationary construction equipment shall be placed so that emitted noise is directed away from the nearest sensitive receptors.

- **Equipment Staging Areas.** Equipment staging shall be located in areas that will create the greatest distance feasible between construction-related noise sources and noise-sensitive receptors.
- **Noise Barriers.** Noise barriers with a minimum height of 11 feet shall be erected along the perimeter of the construction site for the duration of project construction. The noise barriers shall be constructed of material with a minimum weight of two pounds per square foot with no gaps or perforations. Materials which noise barriers may be constructed of include, but are not limited to, 5/8-inch plywood, 5/8-inch oriented strand board, and hay bales.

Implementation of Mitigation Measure NOI-1 would reduce potential construction noise impacts to less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Operation of the project would not include stationary sources of significant vibration, such as heavy equipment operations. Rather, construction activities have the greatest potential to generate groundborne vibration affecting nearby receptors. Certain types of construction equipment can generate high levels of groundborne vibration. Construction of the project would potentially utilize loaded trucks, graders, and/or dozers during most construction phases. The City has not adopted specific numerical standards for vibration impacts during construction. Therefore, Caltrans *Transportation and Construction Vibration Guidance Manual* (2020) was used to evaluate potential construction vibration impacts related to both potential building damage and human annoyance. Based on the Caltrans criteria, construction vibration impacts would be significant if vibration levels exceed 0.5 in./sec. PPV for residential structures and 2.0 in./sec. PPV for industrial and commercial structures, which is the limit where minor cosmetic, i.e., non-structural, damage may occur to these buildings. In addition, construction vibration impacts would cause human annoyance at nearby receivers if vibration levels exceed 0.24 in./sec. PPV, which is the limit above which temporary vibration activities become distinctly perceptible.

Because groundborne vibration could cause physical damage to structures and is measured in an instantaneous period, vibration impacts were modeled based on the distance from the location of vibration-intensive construction activities, conservatively assumed to be at edge of the project site, to the edge of nearby off-site structures. Therefore, the analysis of groundborne vibrations differs from the analysis of construction noise levels in that modeled distances for vibration impacts are those distances between the project site to nearest off-site structures (regardless of sensitivity) whereas modeled distances for construction noise impacts are based on the property line of the nearest off-site sensitive receptors. Based on the distance between the project site and nearby sensitive receptors, vibration-generating construction equipment (loaded trucks and a small bulldozer, based on default construction equipment from CalEEMod [Appendix C]) was conservatively assumed to be placed 10 feet from roofline of single-family residences adjacent to the western project site boundary, 20 feet from the roofline of single-family residences adjacent to the southern project site boundary, and 35 feet from the nearest roofline of the single-family residences adjacent to the eastern project site boundary. Table 18 provides a summary of estimated groundborne vibration levels from project equipment during construction activities.

Table 18 Vibration Levels at Structures

	in./sec. PPV		
Equipment	Single-Family Residences (West) 10 Feet	Single-Family Residences (South) 20 Feet	Single-Family Residences (East) 35 Feet
Large Bulldozer	0.24	0.11	0.06
Loaded Truck	0.21	0.10	0.05
Small Bulldozer	0.01	<0.01	<0.01
Threshold for Building Damage[1]	**0.50**	**0.50**	**2.0**
Threshold for Human Annoyance[2]	**0.24**	**0.24**	**0.24**
Thresholds Exceeded?	No	No	No

[1,2] Caltrans 2020

See Appendix G for vibration analysis worksheets.

As shown in Table 18, construction activities would generate vibration levels at or below 0.24 in./sec. PPV at the nearest off-site single-family residences to the west. Therefore, according to the Caltrans vibration criteria, groundborne vibration from typical construction equipment would not exceed the exceed the applicable threshold of 0.5 in./sec. PPV for building damage at nearby residences. Furthermore, groundborne vibration would not exceed the threshold of 0.24 in./sec. PPV for human annoyance. Project construction would not result in groundborne vibration that would cause building damage or human annoyance nor would vibration levels endanger the public health, welfare, and safety. Furthermore, construction activities would be limited to the hours between 7:00 a.m. and 8:00 p.m. on weekdays and construction activities would not occur during Sundays and legal holidays, pursuant to Section 8.20.020 of the LVMC. Therefore, vibration impacts from the project would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

As described in Section 10, *Hazards*, the project site is located approximately 2.5 miles northeast of the Brackett Field Airport and is located in Zone E of the airport's influence area (Los Angeles County ALUCP 2015). According to the Brackett Field Airport Land Use Compatibility Plan, the project site is outside the noise and overflight area, and beyond the 55 dB CNEL contour (Los Angeles County Airport Land Use Commission 2015). Therefore, noise impacts from the airport would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	□	□	□	■
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	□	□	□	■

a. Would the project 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)?

The project would construct 42 single-family residences, which would cause a direct increase in the City's population by introducing new residents to the project site. Population density for the current project site zoning designation could range from zero to 27 persons per acre, assuming an average household size of 2.85. The 2020 population of La Verne is 33,300 residents (DOF 2020). Given an average household size of 2.74 persons per household for La Verne, the project would potentially add an estimated 115 residents to the City; based on 2.74 persons per unit (DOF 2020).

SCAG forecasts the population of La Verne will increase to approximately 34,400 residents by the year 2045, which is an increase of approximately 1,200 persons from the current population (SCAG 2020). The level of population growth associated with the project (115 residents) would not exceed SCAG's regional population projections, and the project would not directly or indirectly induce substantial unplanned population growth. Therefore, the project would have no impact, and no further analysis of this issue is necessary.

NO IMPACT

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project site is currently being used as a plant nursery, which would be demolished and redeveloped under the project; there are no residential uses present on the project site. The project would construct 42 single-family residential units. Implementation of the project would not displace any housing. The project would not necessitate the construction of replacement housing elsewhere because the project would have the overall effect of adding to the housing supply in the City. Therefore, the project would have a less than significant impact, and no further analysis of this issue is necessary.

NO IMPACT

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15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:				
1 Fire protection?	☐	☐	■	☐
2 Police protection?	☐	☐	■	☐
3 Schools?	☐	☐	■	☐
4 Parks?	☐	☐	■	☐
5 Other public facilities?	☐	☐	■	☐

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Fire protection services are provided by the La Verne Fire Department (LVFD) which operates three fire stations within the City. The nearest fire station to the project site is Station #3 located approximately 1.4 miles northwest of the Amherst Specific Plan area at 5100 Esperanza Drive, La Verne. Total department staffing at the three fire stations includes 33 full time fire suppression employees consisting of three battalion chiefs, six fire captains, three fire engineer/paramedics, six fire engineers, and 15 firefighter/paramedics working three alternating 48-hour shifts.

LVFD service goals are based on national guidelines of a five-minute response time for the first-arriving unit for fire and Emergency Medical Service (EMS) responses and eight-minute response time for the advanced life support (paramedic) unit in urban areas. The project would incrementally increase the service population of the LVFD by adding 42 new residential units to the project area. However, the project would be located within the existing service area of LVFD. Furthermore, the project would not impede the ability of LVFD to provide fire protection services to La Verne because existing roadways would not be altered, and appropriate fire protection measures would be included in the new development, consistent with the CBC and California Fire Code. Final project design would be subject to plan check by LVFD to verify compliance with applicable fire prevention and protection requirements.

The project would also be required to pay public safety improvement fees to the City's public safety improvement fund prior to issuance of a building permit. Fees paid by the project would be used solely for the construction or reimbursement for construction of public safety improvements identified by the City's five-year capital improvement program. Therefore, while demand for fire protection services would incrementally increase due to the addition of new residences, the ability of LVFD to meet its service goal would not be substantially impacted such that new or physically altered fire protection facilities would be required. The project's incremental contribution to demand for new fire protection services would be offset by payment of required public safety improvement fees. Therefore, impacts to fire protection services would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Law enforcement services for the Amherst Specific Plan area is provided by the La Verne Police Department (LVPD). The nearest station is located approximately 1.5 miles southwest from the project site, at 2061 Third Street, La Verne. Based on the 2019 population of La Verne (persons), the LVPD maintains a staffing ratio of 1.4 officer per 1,000 residents. The addition of the 42 residential units would result in approximately 115 new residents.

Due to the potential increase in population, future residents on the project site may require increased police protection services, including officers, equipment, and facilities. Consequently, the project would contribute incrementally to demand for new or expanded police protection facilities. As discussed above in criteria 'a.2,' the project would be required to pay public safety program fees. Furthermore, any expanded or new police facilities would be required to undergo the appropriate level of environmental review. New or expanded police facilities would be unlikely to result in substantial environmental impacts, as such facilities are anticipated to be placed in converted commercial, retail, or government facilities already developed and served by existing infrastructure. Therefore, impacts to police protection facilities would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The project site is in the Bonita Unified School District (BUSD) area and would be served by Roynon Elementary (K-Grade 5), Ramona Middle School (Grades 6-8), and Bonita High School (Grades 9-12) (BUSD n.d.). As part of the City's permitting process, a school fee will be paid to the Bonita Unified School District prior to City's issuance of building permits.

The project would result in a population increase of approximately 115 residents, some of which may be school-age children. School-age children living in the project's proposed 42 single-family residential units would incrementally increase student enrollment at BUSD schools, which could result in or contribute to the need for new or physically altered schools.

Pursuant to Section 65995 (3)(h) of the Government Code (Senate Bill 50, circa 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." Due to provisions of State law, the City is strictly limited in the mitigation measures it may impose on developers of residential projects to address potential school overcrowding issues. State law assumes the developer's payment of school impact fees to the local school district, in an amount established by the school district, would address school capacity impacts. Based on State law, impacts to school capacity would be less than significant under CEQA because the applicant would be required to pay State-mandated school impact developer fees.

Therefore, although the project would increase enrollment at BUSD schools, payment of the school impact developer fees would be considered full mitigation for the proposed project's impacts under CEQA, and impacts to schools would be less than significant. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, public facilities, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The project would construct 42 single-family residences on the project site. The Quimby Act establishes a park standard of three acres of parkland to be provided for every 1,000 residents. The City currently maintains approximately 110 acres of parkland, which amounts to approximately 3.4 acres of parkland per 1,000 City residents (La Verne 2020b). The project site is not identified as an anticipated addition to the open space network and, therefore, would not preclude future acquisition of such open space additions to increase parkland in the City.

The project would add approximately 115 residents to the City. This population increase would not substantially decrease the existing parkland-to-resident ratio, which would remain at approximately 3.4 acres per 1,000 residents. Approximately 0.25 acre of open space/park area within the Amherst Specific Plan area would be utilized as public park space for residents of the project and be publicly accessible. Future parkland expansion projects would be required to undergo the appropriate level of project-specific environmental review and mitigate potentially significant environmental impacts, as necessary. Therefore, the project would not substantially worsen the City's existing deficiency in meeting its parkland ratio goal, and this impact would be less than significant. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The La Verne Public Library is located approximately 0.7 mile (walking/driving distance) east of the project site. The project would include a net increase of 42 residences on the project site, which would increase the service population of the La Verne Public Library. However, the increased demand for library and other public services would be incremental, and public services funded by the City’s General Fund would be maintained because future residents of the project site would pay proportionate property taxes to the City. Therefore, impacts would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	□	□	■	□
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	□	□	■	□

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

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The City of La Verne currently maintains approximately 110 acres of parkland (La Verne 2020b). The Quimby Act establishes a park standard goal of providing three acres of parkland per 1,000 residents. Based on 2019 population of 33,201 estimated by the DOF, the City currently possesses approximately 3.4 acres of parkland per 1,000 residents. While the project would add approximately 115 residents to the City, this population increase would not substantially affect parkland-to-resident ratios, and acres of parkland per 1,000 residents would remain at approximately 3.4. Furthermore, the anticipated resident population resulting from the project would be within the SCAG population growth forecast for the City (SCAG 2020).

The nearest existing park to the project site is Las Flores Park, located approximately 0.8 mile (walking/driving distance) southwest of the project site. Other parks in the vicinity of the project site include Emerald Park (located one-mile northwest of the project site) and Pelota Park (located 1.25 miles west of the project site). Additionally, approximately 0.25 acre of open space/park area within the Amherst Specific Plan area would be utilized as public park space for residents of the project and be publicly accessible. Open space amenities provided by the project would offset some of the future residents' demand on park and recreational facilities maintained by the City. Because the project would not appreciably decrease parkland-to-resident ratios, would not interfere with the City's planned acquisition of additional parkland, and would be required to pay fees to the City's parks and recreation improvement program, the project would not create substantial demand on or cause substantial deterioration of City parks such that new park facilities would be required. Therefore, the project would have a less than significant impact on recreational facilities, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	■	□	□	□
b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	■	□	□	□
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	□	□	■	□
d. Result in inadequate emergency access?	□	□	■	□

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

Ganddini Group, Inc. (Ganddini) prepared a traffic impact analysis (TIA) for the project to assess project traffic impacts, which is included as Appendix H (Ganddini Group, Inc. 2020). The traffic analysis evaluated potential project-related traffic impacts at seven key intersections in the vicinity of the project site, summarized in Table 19.

The seven study intersections traverse several jurisdictions, which have varying significance threshold levels, as follows:

- City of La Verne: volume-to-capacity (v/c) incremental increase of 0.04 or more for intersections with a Level of Service (LOS) C; 0.02 or more for intersections with LOS D; and 0.01 or more for intersections with LOS E and F.
- City of Pomona
    - Signalized Intersections
        - Any study intersection operating at LOS A through D without project traffic in which the addition of project traffic causes the intersection to degrade to LOS E or F
        - Any study intersection operating at LOS E or F without project traffic
    - Unsignalized Intersections
        - Addition of project traffic causes the intersection to move from LOS D or better to LOS E or worse, or
        - Addition of project traffic to an intersection already projected to operate at an LOS E or F with background traffic, and

- The project adds ten or more trips to any approach, and/or
- The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

- City of Claremont: Project increases traffic demand on a facility by 2 percent (increase in v/c greater than or equal to 0.02), causing the facility to operate at unacceptable LOS or for an intersection that already operates at unacceptable LOS.
- Caltrans: Project traffic is forecast to cause the performance of a State Highway study intersection to change from acceptable LOS D or better to unacceptable LOS E or F.

Table 19 TIA Study Intersections

Study Intersections[1]	Jurisdiction[2]
Fruit Street (NS) at Amherst Street (EW)	City of La Verne
Fruit Street/White Avenue (NS) at Foothill Boulevard (EW)	City of La Verne/Caltrans
Bradford Street (NS) at Amherst Street (EW)	City of La Verne
Falcon Street (NS) at Foothill Boulevard (EW)	City of La Verne/City of Pomona/Caltrans
Project Access (NS) at Amherst Street (EW)	City of La Verne
Williams Avenue (NS) at Amherst Street (EW)	City of La Verne/City of Claremont
Williams Avenue (NS) at Foothill Boulevard (EW)	City of La Verne/City of Pomona/Caltrans

[1] NS = north-south roadway; EW = east-west roadway
[2] Caltrans = California Department of Transportation
Source: Ganddini Group, Inc. 2020 (Appendix H)

The TIA determined that all study intersections currently operate at LOS D or better during the AM and PM peak hours with the exception to the following:

- Fruit Street at Amherst Street: LOS F during AM and PM peak hours
- Williams Venue at Foothill Boulevard: LOS F during PM peak hours

These two intersections would continue to operate below acceptable LOS with the addition of project traffic.

Trip generation for the project was estimated using trip generation rates for Single-Family Detached Residential (Institute of Transportation Engineers [ITE] Land Use Code 210) were used for the project and Wholesale Nursery (ITE Land Use Code 818) were used for the existing land use to be displaced provided in the ITE *Trip Generation Manual*, 10th Edition (Ganddini Group, Inc. 2020). The project would generate an estimated total of 299 new daily trips with 30 trips occurring during the AM peak hour and 41 trips occurring during the PM peak hour. It is anticipated that many project-generated trips would occur outside of peak traffic periods. Table 20 provides a summary of Existing Plus Project traffic volumes and impacts.

Table 20 Existing Plus Project Traffic Volumes

	Existing				Existing Plus Project			
	AM Peak Hr		PM Peak Hr		AM Peak Hr		PM Peak Hr	
Study Intersections[1]	ICU or [Delay][2]	LOS	ICU or [Delay]	LOS	ICU or [Delay]	LOS	ICU or [Delay]	LOS
Fruit Street (NS) at Amherst Street (EW)	562.6	F	379.0	F	609.4	F	459.1	F
Fruit Street/White Avenue (NS) at Foothill Boulevard (EW)	0.614	B	0.805	D	0.615	B	0.807	D
Bradford Street (NS) at Amherst Street (EW)	[7.4]	A	[7.3]	A	[7.5]	A	[7.4]	A
Falcon Street (NS) at Foothill Boulevard (EW)	0.424	A	0.615	B	0.424	A	0.616	B
Project Access (NS) at Amherst Street (EW)	NA	NA	NA	NA	[9.2]	A	[9.2]	A
Williams Avenue (NS) at Amherst Street (EW)	[9.6]	A	[9.5]	A	[9.7]	A	[9.6]	A
Williams Avenue (NS) at Foothill Boulevard (EW)	[23.9]	C	[60.4]	F	[24.5]	AC	[63.8]	F
Signalized Intersection Delay Analysis (Pomona and Caltrans)								
Fruit Street/White Avenue (NS) at Foothill Boulevard (EW)	25.0	C	30.6	C	25.0	C	30.7	C
Falcon Street (NS) at Foothill Boulevard (EW)	22.6	C	19.3	B	22.6	C	19.3	B

[1] NS = north-south roadway; EW = east-west roadway

[2] ICU = Intersection Capacity Utilization. Delay is shown in [seconds/vehicle].

Source: Ganddini Group, Inc. 2020 (Appendix H)

As shown in Table 20, the following intersections would operate at unacceptable LOS with project traffic:

- Fruit Street at Amherst Street: LOS F during AM and PM peak hours
- Williams Venue at Foothill Boulevard: LOS F during PM peak hours

Though two of the study intersections would continue operating at unacceptable LOS with project traffic, the TIA concludes that the project is forecast to result in no operational impacts at the study intersections during AM and PM peak hours based on the requirements for improvements that are established by the respective jurisdictions of each study intersection (Ganddini Group, Inc. 2020).

Based on potential project impacts on existing roadways, a roadway capacity analysis will be completed and incorporated into the EIR for informational purposes. Therefore, project traffic impacts on existing roadway intersections and alternative transportation systems (i.e., transit, bicycle, and pedestrian facilities) will be further analyzed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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

A VMT assessment for the project is currently in progress, and project VMT impacts are potentially significant. Therefore, project VMT impacts will be further analyzed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The project would be accessible via one main driveway located on Amherst Street. Project site plans indicate the provision of on-site streets and drive aisles to accommodate vehicular access to and circulation throughout the entire project site. The internal streets would be connected by three-way stop intersections at the three on-site T-intersections. The project would comply with CBC standards and would not include any design features that would increase circulation hazards. The proposed residential development would not result in roadway uses that would be incompatible with the existing land uses surrounding the project site, which also consist of residential uses. The project would not result in any changes to the lane or street configuration of Amherst Street. Implementation of the project would not affect the overall configuration or accessibility of existing roadways, nor impact the performance or safety of alternative transportation modes. Therefore, the project would have a less than significant impact on roadways and roadway hazards, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in inadequate emergency access?

The project would not involve off-site improvements to travel lanes of public streets or modify any existing emergency access route in a way that would result in inadequate emergency access. Proposed vehicle circulation on the project site would provide adequate width and turn radius for emergency vehicles, and project site plans would be reviewed and approved by LVFD prior to construction. Therefore, the project's potential impacts related to emergency access would be less than significant, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a PRC 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. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or	☐	■	☐	☐
b. 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	■	☐	☐

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, “tribal cultural resources.” AB 52 establishes that “A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” and is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
2. 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 PRC Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under

AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

California Government Code Section 65352.3 (adopted in 2004 pursuant to the requirements of Senate Bill 18 [SB 18]) requires local governments to contact, refer plans to, and consult with tribal organizations prior to making a decision to adopt or amend a general or specific plan. The tribal organizations eligible to consult have traditional lands in a local government's jurisdiction, and are identified, upon request, by the NAHC. As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005), "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

The NAHC was contacted and a review of the Sacred Lands File (SLF) requested on May 11, 2020. On June 8, 2020, the NAHC sent a response indicating that the SLF search request failed to indicate the presence of any known cultural resources on the project site.

The City has not received any requests from California Native American tribes to be notified of proposed projects in the City, pursuant to PRC Section 21080.3.1. Nevertheless, on July 28, 2020, the City sent notice to representatives of Native American Tribes that may have an interest in development of the project site. Responses are provided in Appendix D.

On July 31, 2020, the City received a letter from Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians – Kizh Nation, requesting further consultation regarding the project as the project location is within their Ancestral Tribal Territory.

The City received an email from Ms. Jill McCormick of the Quechan Tribe of the Fort Yuma Reservation on August 5, 2020 stating that the tribe does not wish to comment on the project and defers to more local tribes, supporting their decisions regarding the project.

Mr. Ryan Nordness of the San Manuel Band of Mission Indians responded via email regarding the project on August 6, 2020 requesting consultation as the project site exists within the Serrano ancestral territory and is of interest to the tribe.

No other consultation requests have been received as of the end of August 2020.

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074 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 PRC Section 5020.1(k)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074 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 PRC Section 5024.1?

No tribal cultural resources have been identified within the project site as a result of the SLF search. The Gabrieleño Band of Mission Indians – Kizh Nation and the San Manuel Band of Mission Indians have indicated that the project site lies within ancestral tribal territories and it is possible that previously unknown tribal cultural resources may be encountered during ground disturbance activities. Tribal consultation under AB 52 is still ongoing between the Gabrieleño Band of Mission

Indians – Kizh Nation, the San Manuel Band of Mission Indians, and the City. Concluding remarks and results will be included in a project EIR.

Therefore, the project has the potential to significantly impact tribal cultural resources through ground disturbance of encountered resources. Mitigation would be required to ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level.

Mitigation Measure

The following mitigation measure would reduce impacts to a less than significant level.

TCR-1 Unanticipated Discovery of Tribal Cultural Resources

In the event that cultural resources of Native American origin that may be considered tribal cultural resources are identified during construction, all earth disturbing work within 50 feet of the find must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find and in consultation with the on-site Native American monitor. If the archaeologist and Native American monitor determine that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with State guidelines and in consultation with Native American groups. The plan would include avoidance of the resource or, if avoidance of the resource is infeasible, the plan would outline the appropriate treatment of the resource in coordination with the appropriate Native American tribal representative(s).

Implementation of Mitigation Measure TCR-1 would reduce potential impacts to unanticipated tribal resources to less than significant. However, as stated above, concluding remarks and results of the AB 52 consultation process will be included in an EIR.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	□	□	■	□
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	□	□	■	□
c. 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?	□	□	■	□
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	□	□	■	□
e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	□	□	■	□

NO IMPACT

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

c. 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?

Water

Potable water service for the Specific Plan area is provided by the City of La Verne Water and Utility Division. Other than abutting improvements, there would be no off-site improvements to domestic water lines. Proposed water system improvements within the Specific Plan area include 8-inch water distribution lines that provide potable water service to dwelling units within the project. These new facilities will connect to an existing domestic water line located within the Amherst Street right-of-way. Existing and proposed potable water system improvements are depicted in Exhibit 3.3, *Water and Sewer Plan*, of the Amherst Specific Plan (Appendix A). Such improvements would be installed during project construction and within the project site; therefore, the construction would not increase the project's disturbance area or substantially increase emissions, or otherwise cause significant environmental effects. Major City of La Verne water treatment or distribution facility improvements would not be necessary to serve the project site. Therefore, impacts with respect to new or expanded water facilities would be less than significant, and no further analysis of this issue is necessary.

Wastewater Treatment

Sewer service for the Specific Plan area is provided by the City of La Verne Sewer Division. Proposed 8-inch on-site sewer lines will connect to off-site City main lines. Off-site improvements are proposed to occur at the southeast corner of the Amherst Specific Plan area that connect the project to existing sewer main lines within the right-of-way of Williams Avenue. These new improvements are proposed to traverse an easement area within an adjacent parcel to connect to existing sewer main lines located within the right-of-way of Williams Avenue. Proposed sewer infrastructure improvements are depicted on Exhibit 3.3, *Water and Sewer Plan*, of the Amherst Specific Plan (Appendix A).

Wastewater generated by the project would be treated at the Joint Water Pollution Control Plant located in the City of Carson, which has a capacity of 400 million gallons per day (mgd) and currently produces an average flow of 261.1 mgd. This facility is located at 24501 South Figueroa Street in the City of Carson, located approximately 37.3 miles southwest of the project site. The project would result in an increase in wastewater generation relative to existing site conditions. The expected average wastewater flow from the additional 42 residential units would be up to 12,224 gallons per day, which would be less than one percent of the daily capacity currently treated at the Joint Water Pollution Control Plant (based on project CalEEMod results, included in Appendix C).

The project may require sewer line extensions on-site to serve the proposed residential structures. As with water facilities, sewer line extensions necessary to connect the proposed new buildings to existing facilities along Williams Avenue would be installed in conjunction with the project and would not substantially increase potential environmental impacts analyzed in this document. Wastewater treatment facilities operated by the City of La Verne and Los Angeles County Sanitation District (LACSD) possess sufficient capacity to process additional wastewater generated by the project. The project would be responsible for constructing on-site wastewater treatment conveyance systems and paying standard sewer connection fees to the City of La Verne and LACSD. Furthermore, LACSD provided a Will Serve letter for the project based on preliminary review, confirming the existing sewer infrastructure can meet project demands (Appendix I). Therefore, impacts with respect to wastewater treatment facilities would be less than significant, and no further analysis of this issue is necessary.

Stormwater Drainage

Development within the Amherst Specific Plan area would utilize existing storm drain infrastructure owned and maintained by the adjacent Twin Oaks Park mobile home park. A new storm drain would be constructed from the southwest corner of the project, through the mobile home park, to an existing on-site catch basin which connects via a stormdrain directly to the Los Angeles County Flood Control District's (LACFCD) Live Oak Wash flood control channel. Runoff occurring on-site would be collected by a system of new surface gutters and conveyed to new catch basins within the plan area. These catch basins would collect and funnel water into stormdrains, to the southern portion of the western property boundary, and into a main stormdrain. The main stormdrain would flow westerly, through the adjacent mobile home park, toward the intersection of N. Oak Leaf Drive and Great Oak Lane, where stormwater runoff would discharge into an existing catch basin and stormdrain infrastructure, owned and maintained by the Twin Oaks Park mobile home park. The catch basin connects to the LACFD flood control channel.

The Amherst Specific Plan is required to obtain NPDES permits, which ensure that a State's mandatory standards for clean water and the federal minimums are being met. Projects that disturb one acre or more of land must comply with construction and post-construction requirements detailed in the applicable NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.

The project would increase impervious surfaces over the project site due to construction of the proposed residential structures, hardscaped open space, and on-site pedestrian and vehicle circulation. Consequently, the project would reduce infiltration potential and increase surface runoff on the project site. However, the project site is generally flat and would remain flat under project conditions. Pursuant to the requirements of the City of La Verne Low Impact Development (LID) ordinance and the County of Los Angeles MS4, the project would be required to capture and treat runoff from the 85th percentile, 24-hour storm event. As part of the project's final design review, the project would be required to submit a LID plan demonstrating adequate stormwater retention using infiltration basins, bioretention areas, capture and use, or another BMP to the maximum extent practicable (MEP). Such BMPs would slow the velocity of water, thereby minimizing the potential for exceedances of stormwater drainage system capacity. Given that stormwater conveyance would be constructed to not exceed the flow rate of the existing condition, impacts related to new or expanded stormwater facilities as a result of the project would be less than significant, and no further analysis of this issue is necessary.

Electric Power & Natural Gas

Electric service for the Amherst Specific Plan area is provided by SCE through existing lines in the surrounding streets. SCE, which maintains substations and transmission lines throughout southern California, including the Padua Substation approximately 6.5 miles east of the project site on East 16th Street in Upland, CA. Natural gas service for the Amherst Specific Plan area is provided by SCG through the existing lines on-site and within the right-of-way of Amherst Street. SCG provides natural gas service to approximately six million residential and business customers across 20,000 square miles of southern California, including La Verne and the project site (SCG 2019).

The project site is currently served by existing electricity and natural gas infrastructure. As discussed in Section 6, *Energy*, the project would increase electricity and natural gas demand; however, an increase in residential electricity and natural gas demand would not be considered a wasteful use of energy and is not anticipated to require additional electricity substations or natural gas storage/transmission facilities. Both SCE and SCG have provided Will Serve letters based on preliminary review of the project (Appendix I). Therefore, impacts with respect to new or expanded electric power or natural gas facilities would be less than significant. No further analysis of this issue is necessary.

Telecommunications

Cable, telephone, and internet services within the City of La Verne are currently provided by AT&T, Frontier, and/or Charter Spectrum. The project would not involve any components requiring telecommunications infrastructure and would not involve the relocation of existing telecommunications facilities. Existing telecommunications infrastructure would serve the needs of project residents. Frontier Communications and Charter Spectrum have provided Will Serve letters based on preliminary review of the project (Appendix I). Therefore, no impact related to telecommunications facilities would occur, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The City of La Verne service area comprises approximately 5,330 acres within the incorporated boundary and approximately 861 acres considered to be within the sphere of influence of the City. The City supports a significant residential population which accounts for the bulk of the City's water deliveries. Also significant are institutional and governmental demands of the various institutions which serve the residential population including schools, churches, civic buildings, and most notably the University of La Verne. There are modest industrial and commercial demands related to the various business interests within the City. Local groundwater had been the City's primary source of water since the late 1800's. In 1972, the City began importing water to meet the demands associated with population growth (La Verne 2016).

A comparison of projected demand and supply demonstrate the reliability of La Verne's supply will be adequate to meet normal year, single dry year and multiple dry year demand conditions through the planning horizon of this Urban Water Management Plan (UWMP). This comparison takes into account the reliability of imported water supplies which are predicted to drop by 14 percent under single dry year and multiple dry year conditions, and the reliability of groundwater supplies whose infrastructure and treatment facilities require constant monitoring and upgrading to meet water quality standards and to overcome normal deterioration as a result of age and use (La Verne 2016).

Table 21 provides a summary of the projected normal year supply and demand. The projected supply represents the maximum supply in terms of the City of La Verne's Annual Groundwater Rights according to groundwater judgments and the 2015 Six Basins Watermaster Draft Annual Report.

Table 21 Normal Year Supply (2001) and Demand Comparison

	2020	2025	2030	2040
Supplies (AFY)				
Supply Totals	13,779	13,779	13,779	13,779
Demand Totals	6,979	7,242	7,515	7,797
Difference	6,800	6,537	6,264	5,982

AFY = acre-feet/year (one AF = 325,850 gallons)
Implementation of TVMWD's Water Supply Allocation Plan (WSAP) Shortage Level 3 (5,154 AF)
A 20 percent temporary overdraft of Ganesha and Live Oak Basins (1,721 AF)
Adjudicated rights of the Pomona Basin - 7.601 percent of the OSY in 2015 of 16,000 AF (1,216 AF)
Source: La Verne 2016.

Table 22 provides a summary of the projected single-dry year supply and demand.

Table 22 Single Dry Year (2015) Supply and Demand Comparison

	2020	2025	2030	2040
Supplies (AFY)				
Supply Totals	8,091	8,091	8,091	8,091
Demand Totals	6,979	7,242	7,515	7,797
Difference	1,112	849	576	294

AFY = acre-feet/year (one AF = 325,850 gallons)
Implementation of TVMWD's Water Supply Allocation Plan (WSAP) Shortage Level 3 (5,154 AF)
A 20 percent temporary overdraft of Ganesha and Live Oak Basins (1,721 AF)
Adjudicated rights of the Pomona Basin - 7.601 percent of the OSY in 2015 of 16,000 AF (1,216 AF)
Source: La Verne 2016.

Table 23 provides a summary of the projected multiple-dry year supply and demand.

Table 23 Multiple Dry Years (2013-2015) Supply and Demand Comparison (AFY)

	2020	2025	2030	2040
First Year (2013)				
Supply Totals	7,918	7,918	7,918	7,918
Demand Totals	6,979	7,242	7,515	7,797
Difference	**939**	**676**	**404**	**122**
Second Year (2014)				
Supply Totals	7,842	7,842	7,842	7,842
Demand Totals	6,979	7,242	7,515	7,797
Difference	**863**	**600**	**328**	**46**
Third Year (2015)				
Supply Totals	7,804	7,804	7,804	7,804
Demand Totals	6,979	7,242	7,515	7,797
Difference	**825**	**562**	**290**	**8**

AFY = acre-feet/year (one AF = 325,850 gallons)
Implementation of TVMWD's Water Supply Allocation Plan (WSAP) Shortage Level 3 (5,154 AF)
A 20 percent temporary overdraft of Ganesha and Live Oak Basins (1,721 AF)
Adjudicated rights of the Pomona Basin - 7.601 percent of the OSY in 2015 of 16,000 AF (1,216 AF)
Source: La Verne 2016

The occupancy of the proposed 42 residential units and maintenance of landscaped areas would increase water demand on the site. The project would increase annual water demand by 4.46 million gallons, or 13.7 AFY (based on project CalEEMod results, included in Appendix C). Annual project water demand would equal less than one percent of the projected water supply for normal, single, and multiple dry years through 2040. Therefore, the project would have a less than significant impact, and no further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

d. Would the project 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?

e. Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Construction and operation of the project would generate solid waste. The City of La Verne provides solid waste and recycling collection services for the project site. Solid waste generated in La Verne is processed at the Pomona Valley Transfer Station prior to disposal at various landfills. While landfills in the vicinity of La Verne accept commercial hauling waste, waste in the City was historically disposed of at the Puente Hills Landfill. Following closure of the Puente Hills Landfill in 2013, waste generated in La Verne intended for the facility was diverted to the Mesquite Regional Landfill in Imperial County. The Pomona Valley Transfer Station has a maximum permitted throughput of 1,500 tons per day. The Mesquite Regional Landfill has a permitted throughput of 20,000 tons per day, with an anticipated closure date in the year 2122. The last reported remaining capacity at the landfill was 1.1 billion cubic yards (CalRecycle 2019).

The handling of all debris and waste generated during construction of the project would be subject to 2016 CALGreen requirements and the California Integrated Waste Management Act of 1989 (AB 939) requirements for salvaging, recycling, and reuse of materials from construction activity on the project site. In accordance with 2016 CALGreen requirements, the project would be required to achieve a minimum of 65 percent diversion rate for construction waste.

For operational waste, AB 939 requires all cities and counties to divert a minimum of 50 percent of all solid waste from landfills. According to the CalEEMod outputs for the project (Appendix C), the project would generate approximately 47.2 tons per year of solid waste, or approximately 0.13 tons per day. The project’s anticipated daily solid waste generation would account for less than one percent of the daily permitted throughputs at the Pomona Valley Transfer Station and the Mesquite Regional Landfill. Given the small proportion project-generated solid waste and the existing surplus capacity at area landfills, the solid waste generated by operation of the project would be adequately accommodated by existing landfills.

The project would comply with the City’s Solid Waste Ordinance, codified in Chapter 13, Article 28 of the LVMC, which regulates waste collection, transfer, and disposal in the City. The project would be required to comply with federal, State, and local statutes and regulations related to solid waste. Therefore, the project would have a less than significant impact, and no further discussion of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	□	□	■	□
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?	□	□	■	□
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?	□	□	■	□
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	□	□	■	□

The entire southern California region is prone to large wildfires due to its hot, dry climate and expansive coverage of ignitable vegetation. During the autumn and winter months, strong offshore Santa Ana wind events carry dry, desert air and can fan fast-moving fires that spread rapidly from heavily-vegetated wilderness and mountainous areas into developed communities. The City of La Verne is in a highly urbanized area of Los Angeles County, which limits the spread of large, uncontrolled wildfires. However, the area is prone to regular brush fires, particularly during summer heat waves, which can pose a safety risk.

While a natural ecological process in coastal chaparral and forest systems, wildfire return intervals have decreased throughout southern California, resulting in more frequent ecological disturbance, loss of biodiversity, and colonization by non-native grass species (U.S. Forest Service 2018). Furthermore, post-fire conditions leave exposed mountain slopes and hillsides vulnerable to surface erosion and runoff. Debris flows during post-fire rainy seasons can pose a risk to life and property and occur with little warning. In southern California, as little as 0.3 inch of rain in 30 minutes can produce debris flows on post-fire landscapes (U.S. Geological Survey 2018).

The project site is not located in a designated Very High Fire Hazard Severity Zone (VHFHSZ) or a State Responsibility Area. The nearest VHFHSZ is a local responsibility area north of SR 210 approximately 0.25 mile north of the project site (La Verne 2018). The nearest State Responsibility Area is a High Fire Hazard Severity Zone located approximately 0.5 mile north of the project site (CalOES 2015).

a. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

b. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?*

c. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?*

d. *If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The project site is not located in or near a State Responsibility Area or lands classified as a VHFHSZ. The nearest such zone is a local responsibility area designated as a VHFHSZ located approximately 0.5 mile north of the project site. The VHFHSZ is separated from the site by residential development with minimal vegetation north of Amherst Street and SR 210, a ten-lane divided freeway. The project would construct residences on a lot currently occupied by a plant nursery surrounded, and surrounded residential development. The project would be served by existing water utilities, including fire hydrants along Amherst Street, with the nearest hydrant located approximately 220 feet west of the project site. As described in Section 17, *Transportation*, the project would not result in significant traffic impacts with the potential to impede emergency response or evacuation. The project site is within a relatively flat portion of La Verne and not located near a landslide hazard area or floodplain, minimizing the potential for impacts related to post-fire flooding, landslides, or slope instability. Given the project site's urbanized location and distance from fire hazard severity zones, project impacts related to wildfire would be less than significant. No further analysis of this issue is necessary.

LESS THAN SIGNIFICANT IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. 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?	☐	■	☐	☐
b. 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)?	■	☐	☐	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

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?

As discussed in Section 4, *Biological Resources*, there are no mapped essential habitat connectivity areas in the immediate vicinity of the project site. In addition, regional wildlife movement is restricted given the built-out nature of the project area and vicinity, and no native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, or native wildlife nursery sites exist on or immediately around the project site. Therefore, the project would have no impact on biological resources.

As discussed in Section 5, *Cultural Resources*, Section 7, *Geology and Soils*, and Section 18, *Tribal Cultural Resources*, the project would have a less than significant impact on unanticipated cultural resources, paleontological resources, and tribal cultural resources with implementation of Mitigation Measures CR-1, GEO-1, and TCR-1. Implementation of these mitigation measures, as well as adherence to existing local, State, and federal regulations and specific monitoring procedures related to the discovery of any unanticipated cultural resources, paleontological resources, tribal cultural resources, and human remains during construction activity, would reduce these potential impacts to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. 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)?

The project would include the construction 42 single-family residential units on a site currently in use as a plant nursery. Implementation of the project, in conjunction with other projects in the surrounding area, may result in impacts that are cumulatively considerable. In addition, impacts directly associated with buildout of the project have the potential to be cumulatively considerable. The impacts with potentially significant cumulative adverse effects would pertain to transportation. Cumulative impacts of project would be **potentially significant** and will be further analyzed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in analyses for air quality, hazards and hazardous materials, and noise, the project would not result, either directly or indirectly, in adverse hazards related to air quality, hazardous materials, or noise. Compliance with applicable rules and regulations stated in this analysis ensure potential project impacts on human beings to a less than significant level.

LESS THAN SIGNIFICANT IMPACT

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Rincon Consultants, Inc. prepared this Initial Study under contract to the City of La Verne. Persons involved in data gathering analysis, project management, and quality control are listed below.

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Subject: Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Amherst Residential Development, SCH #2020100017, Los Angeles County

Dear Ms. Bowcock:

The California Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Amherst Residential Development (Project).

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & Game Code, §§ 711.7, subdivision (a) & 1802; Public Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect state fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Public Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & Game Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" (see Fish & Game Code, § 2050) of any species protected under the California Endangered Species Act (CESA; Fish & Game Code, § 2050 et seq.) or the Native Plant Protection Act (NPPA; Fish & Game Code, §1900 et seq.), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

Project Location: The Project site is located at 2820 Amherst Street at the eastern limits of the City of La Verne, Los Angeles County, California. The Project site is composed of two parcels, Assessor Parcel Number 8666-021-902 and 866-021-904. The Project site is approximately 0.25 mile south of State Route 210 (SR 210) and 0.5 mile north of Foothill Boulevard. Regional access to the site is available from the south via Interstate 10 (I-10) Freeway and from the east and west via the SR 210. Local access is available at the Fruit Avenue on- and off-ramps, approximately one mile northwest of the site. Direct access is provided to the Project site via Amherst Street and Williams Avenue. The Project is bound by a mobile home park (multi-family residential) to the south and west, single-family residences to the north and east, and the City of La Verne (City)-owned and operated Amherst Groundwater Treatment Plan/Reservoir to the northeast.

Project Description/Objectives: The Project would develop up to 42 single-family dwelling units and on-site recreational amenities, on a 5.7-acre site, for an overall density of 7.8 units per acre under the Amherst Specific Plan. Park space would be accessible to residents within the development, as well as to the public. Access to the adjacent Amherst Groundwater Treatment facility through the Project site would remain after build-out of the Amherst Specific Plan. The Project would develop a total of 42 two-story residences.

Common open space would be composed of parkways, community entry features, and other landscaped areas within the community. Public open space within the Project would be provided in the form of a 0.25-acre pocket park to be dedicated to the City and located adjacent to the Project entry. Proposed water system improvements within the Amherst Specific Plan area include eight-inch water distribution lines that provide potable water service to dwelling units within the Project site. These new facilities would connect to an existing domestic water line located within the Amherst Street right-of-way.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

Specific Comments

1) <u>Lake and Streambed Alteration Agreement (LSA)</u>. The Initial Study states that "a new storm drain pipe is proposed to be constructed from the southwest corner of the Project; through the mobile home park adjacent to the Project site, to an existing on-site catch basin which connects via a storm drain pipe directly to the Los Angeles County Flood Control District's (LACFCD) Live Oak Wash flood control channel." CDFW is concerned that this new drainpipe may have potential for changes in water quality, quantity, and turbidity in the Live Oak Wash flood control channel. The Project may substantially adversely affect the existing stream pattern of Live Oak Wash flood control channel through discharge activities to a stream, which absent specific mitigation, could result in substantial erosion or siltation on site or off site of the Project.

    a) As a Responsible Agency under CEQA, CDFW has authority over activities in streams and/or lakes that will divert or obstruct the natural flow; or change the bed, channel, or bank (including vegetation associated with the stream or lake) of a river or stream; or use material from a streambed. For any such activities, the Project applicant (or "entity") must provide written notification to CDFW pursuant to section 1600 et seq. of the Fish and Game Code. Based on this notification and other information, CDFW determines whether an LSA Agreement (Agreement) with the applicant is required prior to conducting the proposed activities. CDFW's issuance of an Agreement for a Project that is subject to CEQA will require related environmental compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document prepared by the local jurisdiction (Lead Agency) for the Project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the DEIR should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA (CDFWa, 2020).

b) The Project area is within 300 feet to the Live Oak Wash flood control channel; therefore, CDFW recommends an investigation of the site for possible surface drainages to the surrounding areas that may feed into this channel. A preliminary jurisdictional delineation of the streams and any associated riparian habitats should be included in the DEIR. The delineation should be conducted pursuant to the U. S. Fish and Wildlife Service (USFWS) wetland definition adopted by the CDFW (Cowardin et al. 1970). Some wetland and riparian habitats subject to CDFW's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers' section 404 permit and Regional Water Quality Control Board section 401 Certification.

c) The Initial Study states, "Construction activities associated with the project would have the potential to generate soil erosion and to increase sediment and other pollutant loads in stormwater runoff. Further, operation of the proposed project would increase impervious surface area on the project site, which can result in increased runoff and degraded water quality." CDFW recommends a hydrological study to identify any change in the percentage to the current water budget for the Live Oak Wash channel pre, during, and post construction. The hydrological study should also determine if an increase in impervious surfaces will adversely impact locations currently utilizing water that drains off site or from groundwater recharge on site. Finally, Project-related changes in runoff and sedimentation in upstream and downstream drainage patterns should be included and evaluated in the hydrological study.

d) As part of the LSA Notification process, CDFW requests the 200, 100, 50, 25, 10, 5, and 2-year frequency storm event for existing and proposed conditions. CDFW recommends the DEIR evaluate the results and address avoidance, minimization, and/or mitigation measures that may be necessary to reduce potential significant impacts.

2) Nesting Birds. As stated in the Initial Study, "The Project site currently contains nursery plants and ornamental shade trees, which would be removed as part of the Project." These trees may provide potential nesting habitat and Project activities may impact nesting birds. CDFW recommends that measures be taken to avoid Project impacts to nesting birds. Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (Code of Federal Regulations, Title 50, § 10.13). Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as

listed under the Federal MBTA). Proposed Project activities including (but not limited to) staging and disturbances to vegetation, structures, and substrates should occur outside of the avian breeding season which generally runs from February 15 through August 31 (as early as January 1 for some raptors) to avoid take of birds or their eggs. If avoidance of the avian breeding season is not feasible, CDFW recommends surveys by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 300-feet of the disturbance area (within 500-feet for raptors). Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW should be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.

3) Landscaping. The Initial Study states, "There are three types of open spaces within the Project area: private yard space, common area landscape, and public open space. All Project landscaping will be required to meet the City's Water Efficient Landscape Ordinance (La Verne Municipal Code 18.118)." CDFW recommends using native, locally appropriate plant species for landscaping on the Project site. CDFW recommends invasive/exotic plants, including pepper trees (*Schinus* genus) and fountain grasses (*Pennisetum* genus), be restricted from use in landscape plans for this Project. The California Invasive Plant Council provides a list of invasive/exotic plants (Cal-IPC, 2020) that should be avoided as well as suggestions for better landscape plants.

4) Tree Replacement. The Initial Study states in Mitigation Measure BIO-1, "Removal of the protected tree will be mitigated by the onsite replacement of the caliper 42-inch tree by at least four trees with 60-inch minimum boxes, or as further determined by the City of La Verne's Design Review Committee."

    a) CDFW is concerned that an investigation to identify the potential for tree pests was not indicated in the Initial Study. Project activities have the potential to result in the spread of tree insect pests and disease into areas not currently exposed to these stressors. This could result in expediting the loss of oaks, alders, sycamore, and other trees in California which support a high biological diversity including special status species. To reduce impacts to less than significant the final environmental document should describe an infectious tree disease management plan and how it will be implemented in order to avoid significant impacts under CEQA. All trees identified for removal resulting from the Project should be inspected for contagious tree diseases including but not limited to: thousand canker fungus (*Geosmithia morbida*), Polyphagous Shot Hole Borer (*Euwallacea spp.*), and goldspotted oak borer (*Agrilus auroguttatus*) (TCD 2020; UCANR 2020; UCIPM 2013). To avoid the spread of infectious tree diseases, diseased trees should not be transported from the

Project site without first being treated using best available management practices relevant for each tree disease observed.

b) In addition, to compensate for any loss of trees, CDFW recommends replacing all non-native trees removed as a result of the proposed work activities at least a 1:1 ratio with native trees. CDFW recommends replacing native trees at least a 3:1 ratio with a combination of native trees and/or appropriate understory and lower canopy plantings. CDFW recommends that any loss of oaks should be replanted at a minimum 10:1 ratio. Replacement oaks should come from nursery stock grown from locally sourced acorns, or from acorns gathered locally, preferably from the same watershed in which they were planted.

General Comments

1) Biological Baseline Assessment and Impact Analysis. CDFW recommends providing a complete assessment and impact analysis of the flora and fauna within and adjacent to the Project area, with emphasis upon identifying endangered, threatened, sensitive, regionally and locally unique species, and sensitive habitats. Impact analysis will aid in determining any direct, indirect, and cumulative biological impacts, as well as specific mitigation or avoidance measures necessary to offset those impacts, as referred in General Comment 3 and 4. CDFW recommends avoiding any sensitive natural communities found on or adjacent to the Project. CDFW also considers impacts to Species of Special Concern a significant direct and cumulative adverse effect without implementing appropriate avoid and/or mitigation measures. The DEIR should include the following information:

   a) Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region [CEQA Guidelines, § 15125(c)]. The DEIR should include measures to fully avoid and otherwise protect Sensitive Natural Communities from Project-related impacts. Project implementation may result in impacts to rare or endangered plants or plant communities that have been recorded adjacent to the Project vicinity. CDFW considers these communities as threatened habitats having both regional and local significance. Plant communities, alliances, and associations with a state-wide ranking (CDFWb, 2020) of S1, S2, S3 and S4 should be considered sensitive and declining at the local and regional level.

   b) A thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2018);

   c) Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the Project site and within the neighboring vicinity. *The Manual of California Vegetation*, second edition, should also be used to inform this mapping and assessment (Sawyer, 2008). Adjoining habitat areas should be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions;

   d) A complete, recent, assessment of the biological resources associated with each habitat type on site and within adjacent areas that could also be affected by the

Project. CDFW's California Natural Diversity Data Base (CNDDB) in Sacramento should be contacted to obtain current information on any previously reported sensitive species and habitat. CDFW recommends that CNDDB Field Survey Forms (CDFWc, 2020) be completed and submitted to CNDDB to document survey results.

e) A complete, recent, assessment of rare, threatened, and endangered, and other sensitive species on site and within the area of potential effect, including California Species of Special Concern and California Fully Protected Species (Fish & Game Code, §§ 3511, 4700, 5050 and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of the Project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the USFWS; and,

f) A recent, wildlife and rare plant survey. CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if build out could occur over a protracted time frame, or in phases.

2) Project Description and Alternatives. To enable CDFW to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the DEIR:

a) A complete discussion of the purpose and need for, and description of, the proposed Project, including all staging areas and access routes to the construction and staging areas; and,

b) A range of feasible alternatives to Project component location and design features to ensure that alternatives to the proposed Project are fully considered and evaluated. The alternatives should avoid or otherwise minimize direct and indirect impacts to sensitive biological resources and wildlife movement areas.

3) CESA. CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species, or State-listed rare plant species that results from the Project is prohibited, except as authorized by state law (Fish and Game Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an Incidental Take Permit (ITP) or a consistency determination in certain circumstances, among other options [Fish & Game Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a

mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

4) Biological Direct, Indirect, and Cumulative Impacts. To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the DEIR:

   a) A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage. The latter subject should address Project-related changes on drainage patterns and downstream of the Project site; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and, post-Project fate of runoff from the Project site. The discussion should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary and the potential resulting impacts on the habitat (if any) supported by the groundwater. Mitigation measures proposed to alleviate such Project impacts should be included;

   b) A discussion regarding indirect Project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a Natural Community Conservation Plan (NCCP, Fish & Game Code, § 2800 et. seq.). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR;

   c) An analysis of impacts from land use designations and zoning located nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the DEIR; and,

   d) A cumulative effects analysis, as described under CEQA Guidelines section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

5) Compensatory Mitigation. The DEIR should include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. Areas proposed as mitigation lands should be protected in perpetuity with a conservation easement, financial assurance and dedicated to a qualified entity for long-term management and monitoring. Under Government Code section 65967, the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.

6) Long-term Management of Mitigation Lands. For proposed preservation and/or restoration, the DEIR should include measures to protect the targeted habitat values from direct and indirect negative impacts in perpetuity. The objective should be to offset the Project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include (but are not limited to) restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate non-wasting endowment should be set aside to provide for long-term management of mitigation lands.

7) Translocation/Salvage of Plants and Animal Species. Translocation and transplantation are the processes of moving an individual from the Project site and permanently moving it to a new location. CDFW generally does not support the use of, translocation or transplantation as the primary mitigation strategy for unavoidable impacts to rare, threatened, or endangered plant or animal species. Studies have shown that these efforts are experimental and the outcome unreliable. CDFW has found that permanent preservation and management of habitat capable of supporting these species is often a more effective long-term strategy for conserving sensitive plants and animals and their habitats.

8) Moving out of Harm's Way. To avoid direct mortality to wildlife that may be on site, CDFW recommends that a qualified biological monitor approved by CDFW be on site prior to and during ground activities to move out of harm's way any special status species or other wildlife of low mobility that would be injured or killed by grubbing or Project-related construction activities. It should be noted that the temporary relocation of on-site wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. If the Project requires species to be removed, disturbed, or otherwise handled, we recommend that the DEIR clearly identify that the designated entity shall obtain all appropriate state and federal permits.

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist the City in identifying and mitigating Project impacts on biological resources. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at (562) 430-0098 or by email at Felicia.Silva@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erinn Wilson
B6E58CFE24724F5...

Erinn Wilson
Environmental Program Manager I

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Susan Howell, San Diego – Susan.Howell@wildlife.ca.gov
CEQA Program Coordinator, Sacramento – CEQAcommentletters@wildlife.ca.gov

State Clearinghouse – State.Clearinghouse@opr.ca.gov

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Serious Drought.
Making Conservation
a California Way of Life.

October 28, 2020

Ms. Candice Bowcock
Department of Community Development
City of La Verne
3660 D Street
La Verne, CA 91750

RE: Amherst Residential Development Project
Vic. LA-210 PM 49.1, LA-66 PM 2.39
SCH # 2020100017
GTS # LA-2020-03381AL-NOP

Dear Ms. Bowcock:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The Project would involve the development of up to 42 single-family dwelling units, and on-site recreational amenities on a 5.3-acre site.

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. Senate Bill 743 (2013) has been codified into CEQA law. It mandates that CEQA review of transportation impacts of proposed developments be modified by using Vehicle Miles Traveled (VMT) as the primary metric in identifying transportation impacts. As a reminder, Vehicle Miles Traveled (VMT) is the standard transportation analysis metric in CEQA for land use projects after the July 1, 2020 statewide implementation date. You may reference The Governor's Office of Planning and Research (OPR) website for more information.

http://opr.ca.gov/ceqa/updates/guidelines/

This development should incorporate multi-modal and complete streets transportation elements that will actively promote alternatives to car use and better manage existing parking assets. Prioritizing and allocating space to efficient modes of travel such as bicycling and public transit can allow streets to transport more people in a fixed amount of right-of-way.

Caltrans supports the implementation of complete streets and pedestrian safety measures such as road diets and other traffic calming measures. Please note the Federal Highway Administration (FHWA) recognizes the road diet treatment as a proven safety countermeasure, and the cost of a road diet can be significantly reduced if implemented in tandem with routine street resurfacing.

Also, Caltrans has published the VMT-focused Transportation Impact Study Guide (TISG), dated May 20, 2020 and Caltrans Interim Land Development and Intergovernmental Review (LD-IGR) Safety Review Practitioners Guidance, prepared in July 2020.

https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743

Overall, the environmental report should include a Transportation Impact Study (TIS) to ensure all modes are well served by planning and development activities. This includes reducing single occupancy vehicle trips, ensuring safety, reducing vehicle miles traveled, supporting accessibility, and reducing greenhouse gas emissions.

We encourage the Lead Agency to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications in order to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements.

For additional TDM options, please refer to the Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8). This reference is available online at:

http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf

If you have any questions, please feel free to contact Mr. Alan Lin the project coordinator at (213) 897-8391 and refer to GTS # LA-2020-03381AL-NOP.

Sincerely,

Miya Edmonson

MIYA EDMONSON
IGR/CEQA Branch Chief

email: State Clearinghouse

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

SENT VIA E-MAIL: October 27, 2020
cbowcock@cityoflaverne.org
Candice Bowcock, Planner
City of La Verne Community Development Department
3660 D Street
La Verne, CA 91750

Notice of Preparation of Environmental Impact Report for the Amherst Residential Development Project (Proposed Project)

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. Our comments are recommendations on the analysis of potential air quality impacts from the Proposed Project that should be included in the Environmental Impact Report (EIR). Please send a copy of the EIR upon its completion and public release directly to South Coast AQMD as copies of the EIR submitted to the State Clearinghouse are not forwarded. **In addition, please send all appendices and technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all emission calculation spreadsheets, and air quality modeling and health risk assessment input and output files (not PDF files). Any delays in providing all supporting documentation for our review will require additional review time beyond the end of the comment period.**

CEQA Air Quality Analysis

Staff recommends that the Lead Agency use South Coast AQMD's CEQA Air Quality Handbook and website[1] as guidance when preparing the air quality and greenhouse gas analyses. It is also recommended that the Lead Agency use the CalEEMod[2] land use emissions software, which can estimate pollutant emissions from typical land use development and is the only software model maintained by the California Air Pollution Control Officers Association.

South Coast AQMD has developed both regional and localized significance thresholds. South Coast AQMD staff recommends that the Lead Agency quantify criteria pollutant emissions and compare the emissions to South Coast AQMD's CEQA regional pollutant emissions significance thresholds[3] and localized significance thresholds (LSTs)[4] to determine the Proposed Project's air quality impacts. The localized analysis can be conducted by either using the LST screening tables or performing dispersion modeling.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Proposed Project and all air pollutant sources related to the Proposed Project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road

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[1] South Coast AQMD's CEQA Handbook and other resources for preparing air quality analyses can be found at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.
[2] CalEEMod is available free of charge at: www.caleemod.com.
[3] South Coast AQMD's CEQA regional pollutant emissions significance thresholds can be found at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf.
[4] South Coast AQMD's guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips, and hauling trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers and air pollution control devices), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis. Furthermore, emissions from the overlapping construction and operational activities should be combined and compared to South Coast AQMD's regional air quality CEQA ***operational*** thresholds to determine the level of significance.

If the Proposed Project generates diesel emissions from long-term construction or attracts diesel-fueled vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the Lead Agency perform a mobile source health risk assessment[5].

In the event that implementation of the Proposed Project requires a permit from South Coast AQMD, South Coast AQMD should be identified as a Responsible Agency for the Proposed Project in the EIR. The assumptions in the air quality analysis in the EIR will be the basis for evaluating the permit under CEQA and imposing permit conditions and limits. Questions on permits should be directed to South Coast AQMD's Engineering and Permitting staff at (909) 396-3385.

Mitigation Measures

In the event that the Proposed Project results in significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized to minimize these impacts. Any impacts resulting from mitigation measures must also be analyzed. Several resources to assist the Lead Agency with identifying potential mitigation measures for the Proposed Project include South Coast AQMD's CEQA Air Quality Handbook[1], South Coast AQMD's Mitigation Monitoring and Reporting Plan for the 2016 Air Quality Management Plan[6], and Southern California Association of Government's Mitigation Monitoring and Reporting Plan for the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy[7].

South Coast AQMD staff is available to work with the Lead Agency to ensure that air quality, greenhouse gas, and health risk impacts from the Proposed Project are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at lsun@aqmd.gov.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
LAC201013-01
Control Number

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[5] South Coast AQMD's guidance for performing a mobile source health risk assessment can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis.
[6] South Coast AQMD's 2016 Air Quality Management Plan can be found at: http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf (starting on page 86).
[7] Southern California Association of Governments' 2020-2045 RTP/SCS can be found at: https://www.connectsocal.org/Documents/PEIR/certified/Exhibit-A_ConnectSoCal_PEIR.pdf.

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October 28, 2020

Governor's Office of Planning & Research

Oct 29 2020

STATE CLEARINGHOUSE

Ms. Candice Bowcock
Department of Community Development
City of La Verne
3660 D Street
La Verne, CA 91750

RE: Amherst Residential Development Project
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SCH # 2020100017
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http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf

If you have any questions, please feel free to contact Mr. Alan Lin the project coordinator at (213) 897-8391 and refer to GTS # LA-2020-03381AL-NOP.

Sincerely,

Miya Edmonson

MIYA EDMONSON
IGR/CEQA Branch Chief

email: State Clearinghouse

STATE OF CALIFORNIA **Gavin Newsom, *Governor***

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October 1, 2020

Governor's Office of Planning & Research

Oct 02 2020

STATE CLEARINGHOUSE

Candice Bowcock
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3660 D Street
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Re: 2020100017, Amherst Residential Development Project, Los Angeles County

Dear Ms. Bowcock:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. 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.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

-----Original Message-----
From: Janine Johnston [mailto:janine845@aol.com]
Sent: Tuesday, October 27, 2020 4:03 PM
To: Candice Bowcock
Cc: Janine Johnston
Subject: Amherst Residential Dev.

My husband and I live on the corner of Amherst and Bradford Streets. For years we have been shocked at the amount of commercial vehicles - many semi trailer trucks going up and down our streets from the Nursery.

I feel it is imperative that Bowdoin St. be opened back up to thru traffic before this home project is approved. Currently, all homes north of Amherst that want to go east, must come down to Amherst or Bradford. And all traffic east of Williams is again funneled to Amherst for westbound travel! Bowdoin must be opened to relieve some of this traffic. If these homes are approved, there will be 40-100 more cars a day going down Amherst Street.

We are not opposed to the development, although 42 homes seems way too dense for that area. 20-30 higher end homes would be a welcome addition to this neighborhood. But traffic patterns must be looked at!

Also, the speed limit in this area is 25 mph. I would guess the average speed is 40-45 mph. I have had numerous close calls from drivers who barely stop at the 4 way stop. Then they accelerate very quickly to barrel down Amherst or Bradford. It's a matter of time before there is a serious accident in this area. I have complained to the City and LaVerne PD for years, to no avail…

Thanks

Janine Johnston
Ross Callaway
2702 Amherst St.
760-333-7904

From: cynthia.gabaldon cgrme.com [mailto:cynthia.gabaldon@cgrme.com]
Sent: Monday, October 12, 2020 7:03 PM
To: Candice Bowcock
Cc: danita beauchamp
Subject: Amherst St. Project and neighborhood notification

Candice,

Tonight I stumbled on the community engagement fact sheet. I am curious to why those of us on Amherst didn't receive this.

We had all understood that the parcels were being sold for single family homes. These are more like condos and this is really going to impact the street.
42 units? 3 cars per unit? that is a massive increase on this street.

For YEARS we have been dealing with the traffic on Amherst. It has significantly increased since the mixed-use apartments where built. 3 weeks ago, I was almost rear ended by a man who went through the stop sign and almost hit me as I was turning into my driveway.

We need the traffic study to be made available. We all need to be notified of this timeline for comments and I ask that it is extended as no one in our neighborhood was notified. All residents on Amherst need to be notified.

Also, Bowdoin needs to be opened. We have put up with all this for too long. I know the City needs the money from this sale, but the City has sacrificed our safety on Amherst St. For so many years we have been dealing with the traffic, speed and running the stop sign - especially at Guava.

The bait and switch that the City is using to get these high-density projects is terrible treatment of the residents.

The City needs to provide information to everyone in the City that there are plans for this type of housing. Where it will be. Also explain how California is pushing to ruin our neighborhoods.

Cynthia Gabaldon PE, CPSWQ, CPESC, QSD/P, QISP, CGP/IGP ToR

CG Resource Management and Engineering, Inc.
2105 Foothill Blvd Ste B- 135
La Verne, California 91750
909-455-8520
www.cgrme.com

From: lemo13@verizon.net [mailto:lemo13@verizon.net]
Sent: Friday, October 09, 2020 12:45 PM
To: Candice Bowcock
Subject: Project No PLN 20-09155

Our residence is at the corner of Amherst and Bradford This project would increase traffic dramatically I'm all for progress but you should consider opening Bowdoin at the end of Williams it's not fair to everybody on the surrounding blocks to absorb the added increase in cars,trucks, and motorcycles etc. etc. etc.REELECT PRESIDENT TRUMP

From: Candice Bowcock <cbowcock@cityoflaverne.org>
Sent: Wednesday, October 28, 2020 5:00 PM
To: Christine Donoghue <cdonoghue@rinconconsultants.com>
Subject: [EXT] FW: The Commons at Amherst

CAUTION: This email originated from outside of Rincon Consultants. Be cautious before clicking on any links, or opening any attachments, until you are confident that the content is safe .

From: Tom Geddes [mailto:ts.geddes1@gmail.com]
Sent: Tuesday, October 27, 2020 3:51 PM
To: Planning
Subject: The Commons at Amherst

As a 57 year resident of La Verne, beginning as a student at La Verne College, and as a homeowner in La Verne for 37 years, I have high concerns regarding this project. I am also a descendant of the Hanawalt family and feel a deep family tie to my community. I am ashamed of our city officials for selling off land for revenue. You cannot continue building infinite housing on a finite earth with finite resources. Some of these aforementioned concerns are:
1) Traffic on Amherst - already congested due to use as a short-cut to the 210 Freeway made more intense by the closure of Bowdoin.
2) Egress in Case of Wildfire - compressed traffic with impacted flow.
3) Resources and Services - more water use, electricity, cellular stations, etc. (Residents are already told to limit their water use in times of draught and now we add to the number of water consumers).
4) Aesthetic View - La Verne residents take pride in the fact that we have a beautiful view of the foothills. This view looking southward will now be blocked with concrete.
5) Density - in a time of pandemic, it seems incongruous to be planning for packing more people into a confined area.
6) Loss of Old Town Feel - we do not need to mimic every other city and new housing project. Individuality and uniqueness as a community is important.

These are a few concerns thus far. I appreciate you taking the time to review and internalize these concerns.

Respectfully,

Sue Geddes
4250 Pepperdine Court, La Verne
email: ts.geddes1@gmail.com

From: tigerbutter2001@yahoo.com <tigerbutter2001@yahoo.com>
Sent: Friday, October 30, 2020 10:11:50 AM
To: cbowcock@cityoflaverne.org <cbowcock@cityoflaverne.org>
Subject: Commons at Amherst

Dear Ms. Bowcock,

I'm writing this to voice my concern over the proposed housing project on Amherst Street. I've looked at the proposal and plans for 'The Commons at Amherst; the homes are very attractive and there doesn't seem to be an exorbitant amount of them.
My concern is for the elevated levels of traffic this will entail with the addition of these housing units. Ever since the east end of Bowdoin Street, where it meets Williams Street was closed off, Amherst Street has taken the brunt of traffic to and from the 210 Freeway, and to and from Baseline via College Way. An unjust burden of traffic is, therefore, funneled onto Amherst Street. The new housing unit will make traffic on my street much worse.
I believe the time has come to open Bowdoin Street so that Amherst and Bowdoin can evenly share the burden of traffic.

Thank You,
Pam Garman

2720 Amherst Street
909 263-2702
tigerbutter2001@yahoo.com

Sent from my iPhone

From: Natalie Curley <ncurley@pertronix.com>
Sent: Friday, October 30, 2020 10:46:07 AM
To: TJH@gehled.com <TJH@gehled.com>; wmlau76@gmail.com <wmlau76@gmail.com>; muir.davis@gmail.com <muir.davis@gmail.com>; planning@cityoflaverne.org <planning@cityoflaverne.org>
Cc: robincarder3@gmail.com <robincarder3@gmail.com>; rickcrosbylaverne@gmail.com <rickcrosbylaverne@gmail.com>; wmlau76@gmail.com <wmlau76@gmail.com>; brussi@cityoflaverne.org <brussi@cityoflaverne.org>
Subject: DENY, REFUSE AMHERST RESIDENTIAL DEVELOPMENT PROJECT

10/30/20

I am a resident of La Verne and live very close to this proposed project.
This is very disturbing and disheartening to be built in La Verne.
My address is 2661 Polaris Way, La Verne, CA 91750.
Please contact me if you have any questions to my personal email:
curley7701@hotmail.com

Thank you.

Natalie Curley | Customer Service
ncurley@pertronix.com
Phone: 909-599-5955   Ext:1023
PerTronix, LLC
440 East Arrow Hwy. San Dimas, CA 91773
Fax#909-599-6424

The linked image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

From: Lewis Rowe <lewisdavidrowe@gmail.com>
Sent: Saturday, October 31, 2020 3:37 PM
To: planning@cityoflaverne.org
Cc: TJH@gehled.com; robincarder3@gmail.com; wmlau76@gmail.com; rickcrosbylaverne@gmail.com; muir.davis@gmail.com; thepburn@cityoflaverne.org; Bob Russi; Dan Keesey; Deanna Hansen; Christine Donoghue; matt@mwinvestmentgroup.com; ascales@ktgy.com
Subject: [EXT] Concerns & Negligence: New Housing Development 'The Commons at Amherst' La Verne
Attachments: Police-Traffic-Letter.pdf; City-Traffic-Letter.pdf; Proof-of-Petition-Delivery.pdf; Petition.pdf

Categories: Project

To:

City of La Verne:
--Mayor Tim Hepburn
--Councilmember Robin Carder
--Councilmember Wendy Lau
--Councilmember Ricky Crosby
--Councilmember Muir Davis

City Manager: Bob Russi
--Director of Public Works: Dan Keesey
--Planning Commission Members:
--Thomas Allisojn
--Jeffrey Allred
--Jason Lorge
--Philip May
--Jason Simison

Rincon Consultants:
--Deanna Hansen, Principal
--Christine Donoghue, Project Manager

SUBJECT:
Concerns & Negligence surrounding new 'Amherst Commons' Residential Project

From:
Lewis Rowe
2520 Bowdoin St, La Verne, CA 91750
Phone: 626-773-1531
Email: lewisdavidrowe@gmail.com

Problem:
Bowdoin St, specifically between Fruit St and Bradford St, already has an on-going issue with high volume and very high speed of traffic. This is a residential street, with a 25mph speed limit. We experience daily poor quality of life here, with most cars exceeding 40mph, and many traveling at 60mph+. This is very dangerous for the families and children living in this neighborhood.

Existing Traffic Studies:
Many traffic studies have been done to confirm this issue, one letter from the City is attached for your reference which validates the problem. I have seen the data from the City on previous traffic studies confirming the 60mph speeds travelled by cars here. Another letter is attached from the La Verne police, demonstrating the speeding issue.

Lack of Notification about new housing development:
The City did not notify Bowdoin St residents about the new upcoming housing development.
This may not be lawfully required, but it is systemic of the opaque nature in which the City operates. We expect better ethics from the City Council and the planning department.

Negligence in RinCon Impact Report:
The impact report prepared for the City is highly negligent, and excludes obvious traffic impact. The report shows a lack of understanding for the existing neighborhood by Rincon. Page 94 identified the traffic intersections studied for impact during construction, but excludes Bowdoin St, which is where most of the traffic issues will be observed. Anyone with local knowledge is already aware of this. Bowdoin St is the main connector to the 210 freeway, used by most residents in the neighborhood for access. We expect heavy construction traffic to/from the freeway using Bowdoin St to access the construction site.

And, more negligence is shown by not addressing traffic impact after construction from the new residents in your report. All the new residents will use Bowdoin St to access the freeway. By excluding Bowdoin St and post-construction traffic from your impact report, you have shown either extreme negligence or have chosen to intentionally leave-out what is a clear problem.

Previous Traffic Petition on Bowdoin St:
I have attached a petition signed by all Bowdoin St residents in 2015, as well as the delivery receipts of when this was delivered to the City. The residents requested permanent road alterations (dips/bumps/stop signs) to force calming of traffic speed. These requests were refused by the City, but the City did reduce the speed limit and install electronic signs. The high-speed issue still remains 5-years later, has got worse, and will continue to get worse until permanent road alterations are made to forcibly reduce the traffic speed. It shall also get worse with new residential development in the area. Please review.

Roadblock at Bowdoin/Williams:
We want some assurance that the intersection of Bowdoin & Williams will remain in-situ, to help reduce traffic volume traveling on Bowdoin St. We do NOT want to see this roadblock removed as part of your 'infrastructure improvements' noted in the construction plans. Removing this roadblock will increase traffic volume on Bowdoin St, increase traffic speed, and shall make the long-standing traffic speed issue in our neighborhood on Bowdoin St much worse.

Traffic Calming Alterations on Bowdoin:
I would personally like to see new permanent road alterations made on Bowdoin St prior to any construction beginning on the new Amherst housing development - such as the addition of road dips/bumps and/or stop signs. We expect to see a heavy increase in traffic coming to/from the freeway from construction crews and future residents - which adds to the existing issue which the CIty have refused to address. I want to see these traffic calming measures - that were first requested by every resident back in 2015 - to be actioned now as part of this escalation in new local traffic.

Please add me to all future City communications regarding updates about this new housing development, and notify me on what traffic calming measures you will install on Bowdoin St.

We also expect you to take action about the negligent Rincon impact report, and ensure Bowdoin St is fully assessed for impact, with honesty, proactively to protect the existing residents from more quality of life loss.

We hope the new City leaders, council members, and mayor Hepburn will intervene, and show some responsibility to protect the existing residents of La Verne that elected them.

Thank you for your consideration.
Lewis Rowe

December 14, 2015

Mr. Lewis Rowe
1407 Foothill Blvd., Ste. 635
La Verne, CA 91750

Re: Traffic Complaint

Dear Mr. Rowe:

I am following up on our previous conversations regarding your complaints of speed on Bowdoin. As I had last indicated, I wanted to collect actual traffic data to determine the extent of any traffic issues along your street. We initially collected data during mid-September for more than one week. The September data provided the following:

- Average Daily Volume — 1,399 vehicles/day (inc. west & east directions)
- Average Speed — 33 mph west; 36 mph east
- 85^{th} Percentile Speed — 39.63 mph west; 43.63 mph east
- % of Vehicles w/Speeds >40 — 15.5%

The above data displays what I would expect to see for a 30 mph speed limit. The 43 mph east bound figure is, however, slightly higher than anticipated.

We also collected traffic information in mid-October as part of overall speed survey for the community. Information collected during this period confirms the September information. Our evaluation during this review did find that Bowdoin may be classified as a residential district under California Vehicle Code Sections 240 and 515. Given this, I intend to recommend that the speed on this section of Bowdoin be reduced to 25 mph. This will occur as part of my report to the City Council on overall speed limits in early February. This simple, yet enforceable change should provide you some relief from the excessive speeds you experience on your street.

I appreciate your patience involved in this process. If you should have any questions or other concerns, please feel free to call or email me at 909-596-8741 or dkeesey@ci.la-verne.ca.us.

Sincerely,

Daniel W. Keesey
Director of Public Works

C:\Users\dkeesey\Documents\DWK\Letters\LTRDK re Bowdoin Traffic.docx

Cc: Mayor Kendrick
City Manager
Police Chief
Maintenance Manager

PETITION TO:
CITY OF LA VERNE, CALIFORNIA, USA.

ATTENTION OF:
Mayor Don Kendrick, City of La Verne (The City)
2380 3rd Street, La Verne, CA 91750
3660 "D" Street, La Verne, CA 91750

cc: Scott Pickwith, Chief of Police - 2061 3rd St, La Verne, CA 91750
cc: Dan Keesey, Director of Public Works - 3660 "D" Street, La Verne, CA 91750

FROM:
The Residents of Bowdoin Street in La Verne, California.
Specifically the residents living between Fruit St. and Bradford St. intersections.

Bowdoin Street, in La Verne, specifically the part located between the intersections of Fruit St. (west) and Bradford St. (east), is a residential street, with a number of children and families living in the area.

There are twenty-four (24) residential houses located on Bowdoin Street, between the Fruit St. and Bradford St. intersections, that this problem affects. **This petition has been signed by 20 of the 21 occupied houses located on Bowdoin Street between the Fruit St. and Bradford St. intersections. 95% of The Residents that this problem affects, have signed this petition.** Two of the 24 were vacant, and one was unavailable for signature at the time of this petition.

The Residents of Bowdoin Street would appreciate a response in writing to this petition by The City.
Mailing Address: 1407 Foothill Blvd, Ste 635, La Verne, CA 91750.

PROBLEM:

Bowdoin Street - specifically the area located between the Fruit St. and Bradford St. intersections - has become a dangerous residential street, with a significant increase of constant high-speed traffic. This specific area of Bowdoin Street is currently classified as a 30mph residential street. However, the majority of motorists are ignoring the 30 mph speed limit, and are driving at very excessive speeds on our street - many speeds have been recorded over 50 mph, and even over 60 mph. Many of the speeding offenders are also driving whilst distracted, using mobile phones.

Despite repeated requests from The Residents to The La Verne Police Department to enforce speed on our street, due to lack of resources, there has been only infrequent police presence in our area to help control the traffic speed. Also, despite repeated requests to the La Verne's Public Works Department, there has been no action taken yet to provide any permanent solutions to control traffic speed.

In fact, despite The Resident's requests for improved safety measures on the street, The City has recently chosen to ignore those requests during the recent street resurfacing project - no new safety considerations to help reduce the traffic speed were implemented during this expensive vanity work - **this recent street repaving has actually led to the traffic driving even faster on the new slick road.**

The high-speed traffic has resulted in many families being afraid to let their children walk along the sidewalk or stand in their driveways. The City is failing to implement any measures to control the speed of traffic on our street, and has offered no permanent solution for reducing traffic speed.

During the last few years, The City has approved new residential and commercial developments in the area - such as the La Verne Village high-density housing and retail - however The City has failed to address how these new developments are impacting The Resident's safety and quality-of-life.

The Residents are unhappy that the City of La Verne's Public Works Department and Police Department - despite both parties being aware of the problem for a period of time - have neglected to implement any permanent solutions to slow the traffic on our street - and instead The City has chosen to resurface the street (a high cost to the taxpayer) without adding any new traffic-calming measures.

During a recent independent study by The Residents - which was conducted over the period of one week - it has been demonstrated and recorded that, of the traffic traveling on the street:

1) **4% travels at 30 mph or slower**
2) **26% travels at speeds between 30 to 34 mph**
3) **32% travels at speeds between 35 to 39 mph**
4) **38% travels at speeds between 40 mph or higher**

Given that this section of the street is a residential area with many families and children living on the street, the street should already be classified as a 25mph zone. The majority of speeds are in excess of 35 mph or 40 mph - sometimes with cars travelling in excess of 50-60 mph - these speeds are too fast for a residential street where families and children live. The street has become lawless and unsafe.

It is simply a matter of time before there is a serious accident on our street. We hope that one of our children, a cyclist or a pedestrian, is not injured or killed as a result of the continuing negligence shown by The City of La Verne. The Resident's quality-of-life has been severely affected by this problem.

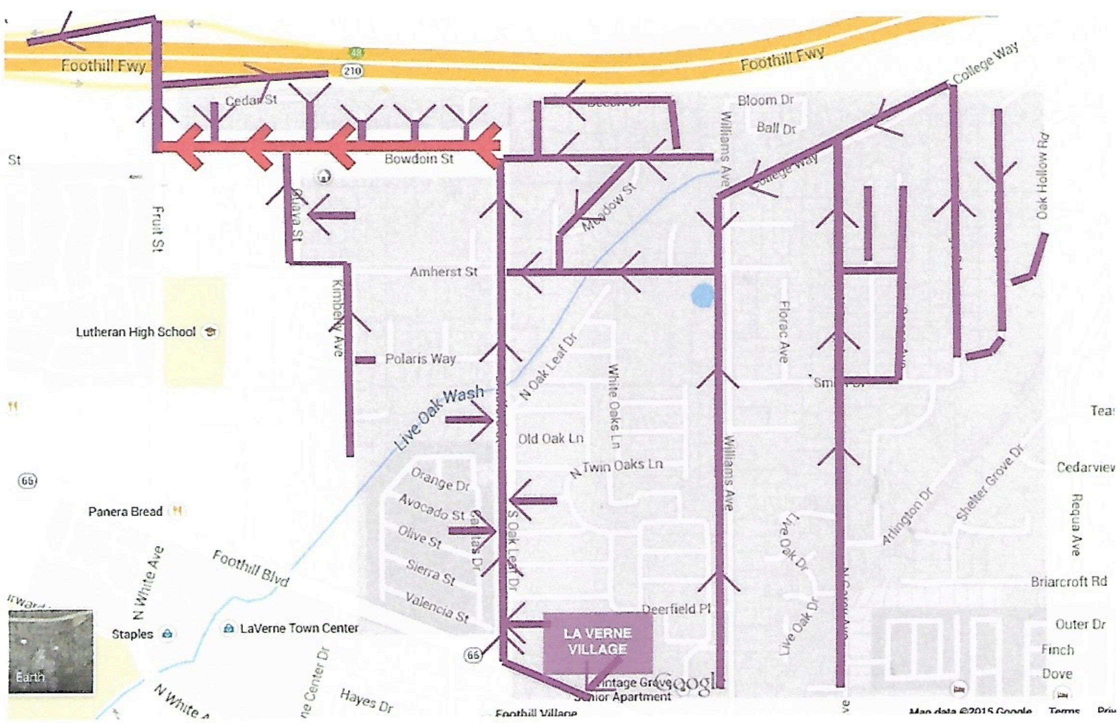
SOURCE OF TRAFFIC:

Speeding motorists are traveling from Fruit St. east along Bowdoin St. to get to their homes in the extended area, or are travelling north on Bradford St. then west along Bowdoin St. to the 210 freeway.

The speeding motorists consist of:

1) other residents of Bowdoin Street who live east of the Bradford St. intersection, who speed along our stretch of the street to reach their residences which are located east of Bradford St.
2) local residents from the surrounding residential roads such as Fig Circle, Beech St., Meadow St., Amherst St., Williams Ave., Bradford St. and College Way, who speed along Bowdoin St.
3) new residents from the new high-density housing located at La Verne Village, who are exiting their residences on Bradford St. or on Foothill Blvd, then travelling north on Bradford and then speed west on Bowdoin St. to reach the freeway, at very high speeds
4) residents from the Casitas and Twin Oaks mobile home parks located on Bradford St. frequently travel on Bowdoin St. at high speeds to reach the 210 freeway
5) commercial vehicles and public traffic use Bowdoin Street as a shortcut method to avoid travelling via the busy Fruit St / Foothill Blvd intersection

The map below shows the vast area of residential streets that funnel their traffic to/from the 210 freeway via Bowdoin Street. The section of Bowdoin Street between Bradford St. and Fruit St. has become very unsafe, and the speed of vehicles is not acceptable for a residential area.



PETITION:

This petition has been signed by 20 of the 21 affected residential houses that are occupied on Bowdoin Street between the Fruit St. and Bradford St. intersections. Two houses are unoccupied and one house was unavailable for signature at the time of this petition.

REQUESTS:

The Residents request all, or a combination, of the following measures be implemented by The City to force the traffic on our street to slow down, and to drive at or below the speed limit.

OPTION A	OPTION B	OPTION C
Install two new Stop Signs, located at Bowdoin St./Guava and Bowdoin St./Fig Circle intersections Also: A2) Install a 25mph speed limit on Bowdoin Street, between Fruit and Bradford intersections A3) Install prominent road-markings and signage that give the illusion of a 'residential slow-zone' A4) Police Department to execute a high-visibility campaign and actively enforce speed with zero tolerance, on a regular basis	**Install a combination of road Dips and/or Speed Bumps to force speed reduction with appropriate signage** Also: B2) Install a 25mph speed limit on Bowdoin Street, between Fruit and Bradford intersections B3) Install prominent road-markings and signage that give the illusion of a 'residential slow-zone' B4) Police Department to execute a high-visibility campaign and actively enforce speed with zero tolerance, on a regular basis	**Install traffic calming measures including Chicanes and/or mid-block Bulb-Outs to force speed reduction** Also: C2) Install a 25mph speed limit on Bowdoin Street, between Fruit and Bradford intersections C3) Install prominent road-markings and signage that give the illusion of a 'residential slow-zone' C4) Police Department to execute a high-visibility campaign and actively enforce speed with zero tolerance, on a regular basis

Residents living between Bowdoin/Guava & Bowdoin/Bradford intersection:

ADDRESS	RESIDENT NAME	SIGNATURE	
2512 Bowdoin Street	JVE Joe Tiffany Esqueda	Tiffany Esqueda	
2520 Bowdoin Street	LEWIS ROWE	[illegible]	
2536 Bowdoin Street	TONY + PATRICIA SANTIAGO	Tony Santiago	
2548 Bowdoin Street	ALEXIA ZAGORSKY	Alexia Zagorsky	
2560 Bowdoin Street	Phillip + PATRICIA CONTRERAS	[illegible]	
2574 Bowdoin Street	Mitra R. Mirage	M. R. Mirage	
2612 Bowdoin Street	Christy Buehler Brooke Haslett	[illegible] Brooke Haslett	
2622 Bowdoin Street	Elaine Guerra	Elaine Guerra	Guerra@g.hmc.edu
2638 Bowdoin Street	Charlotte Moon	Charlotte Moon	
2670 Bowdoin Street	UNOCCUPIED	UNOCCUPIED.	
2680 Bowdoin Street	Jessica Williams	[illegible]	

Residents living between Bowdoin/Fruit & Bowdoin/Guava intersections:

2403 Bowdoin Street	Diana Aguayo	Diana Aguayo
2417 Bowdoin Street	Ed Linberg Mariette Linberg	Ed Linberg Mariette Linberg
2429 Bowdoin Street	NIKita Flournoy	Nikita [illegible]
2441 Bowdoin Street		
2455 Bowdoin Street	UNOCCUPIED.	UNOCCUPIED.
2340 Bowdoin Street	PATRICIA LARRIGAN	[illegible]
2352 Bowdoin Street	John Schimansky	[illegible]
2368 Bowdoin Street	RODERIC SORIANO	[illegible]
2376 Bowdoin Street	Edward Navarro	Edward Navarro
2388 Bowdoin Street	Katrina White	Katrina White
2412 Bowdoin Street	UNAVAILABLE	
2428 Bowdoin Street	Joseph Kassounian	[illegible]
2436 Bowdoin Street	mike Jans	[illegible]

CITY OF LA VERNE
POLICE DEPARTMENT
2061 Third Street, La Verne, California 91750
www.lvpd.org

April 5, 2017

Dear Resident:

Re: Notice of Special Enforcement in your area

In response to concerns received from neighborhood residents, you may have noticed the La Verne Police Department has been enforcing speed limit violations in your area with over 60 citations issued within a period of one month.

From our review of citations issued we found that a large portion of the drivers cited were found to be residents within the immediate neighborhoods. While the city is working to improve signage and notification reminding motorists of the area speed limits, officers will continue enforcement with zero tolerance towards speeding.

We are sending this letter to remind residents of the speed limit in this area and seek your help in reducing the number of speeding violations in this residential neighborhood. We would also encourage you to share this information with any drivers in your household, so they may avoid being issued a speeding citation.

We sincerely appreciate your cooperation in this matter.

Respectfully,

Nick Paz
Chief of Police

Police Department 909/596-1913 • Fax 909/596-7158 • City Hall 909/596-8726

Customer:

THE RESIDENT OF BOWDOIN ST

Ship To:

MAYOR DON KENDRICK, CITY OF LA VERNE (THE CITY)
2380 3RD ST

LA VERNE, CA 91750 – 4919

Details:

FedEx Priority Overnight Envelope

Date/Time:	9/15/2015 3:33:17 PM
[User Defined]	
Package ID:	6179
Shipment ID:	6122
Tracking Number:	781338229683
Weight(MAN WT):	0 LB 5.0 OZ
Rating Weight:	0 LB 5.0 OZ
Dimensions:	0.00 x 0.00 x 0.00
Declared Value:	$0.00

Contents

Charges:

Shipping:	30.70
Propack:	0.00
Packing Materials:	0.00
Sales Tax:	$0.00
Total:	$30.70

9.10.2.19 Zebra ZP 450 – 20

Part # 156297-435 RIT 12/14

Customer:

THE RESIDENT OF BOWDOIN ST

Ship To:

MAYOR DON KENDRICK, CITY OF LA VERNE
3660 D ST

LA VERNE, CA 91750 – 3512

Details:

FedEx Priority Overnight Envelope

Date/Time:	9/15/2015 3:35:47 PM
[User Defined]	
Package ID:	6180
Shipment ID:	6123
Tracking Number:	781338247123
Weight(MAN WT):	0 LB 5.0 OZ
Rating Weight:	0 LB 5.0 OZ
Dimensions:	0.00 x 0.00 x 0.00
Declared Value:	$0.00

Contents

Charges:

Shipping:	30.70
Propack:	0.00
Packing Materials:	0.00
Sales Tax:	$0.00
Total:	$30.70

9.10.2.19 Zebra ZP 450 – 20

Part # 156297-435 RIT 12/14

Customer:
THE RESIDENT OF BOWDOIN ST

Ship To:
DAN KESSEY, DIRECTOR OF PUBLIC WORKS
3660 D ST

LA VERNE, CA 91750 – 3512

Details:
FedEx Priority Overnight Envelope

Date/Time:	9/15/2015 3:40:30 PM
[User Defined]	
Package ID:	6182
Shipment ID:	6125
Tracking Number:	781338284264
Weight(MAN WT):	0 LB 5.0 OZ
Rating Weight:	0 LB 5.0 OZ
Dimensions:	0.00 x 0.00 x 0.00
Declared Value:	$0.00

Contents

Charges:

Shipping:	30.70
Propack:	0.00
Packing Materials:	0.00
Sales Tax:	$0.00
Total:	$30.70

9.10.2.19 Zebra ZP 450 – 20

Part # 156297-435 RIT 12/14

Customer:
THE RESIDENT OF BOWDOIN ST

Ship To:
SCOTT PICKWITH, CHIEF OF POLICE
2061 3RD ST

LA VERNE, CA 91750 – 4404

Details:
FedEx Priority Overnight Envelope

Date/Time:	9/15/2015 3:37:55 PM
[User Defined]	
Package ID:	6181
Shipment ID:	6124
Tracking Number:	781338262899
Weight(MAN WT):	0 LB 5.0 OZ
Rating Weight:	0 LB 5.0 OZ
Dimensions:	0.00 x 0.00 x 0.00
Declared Value:	$0.00

Contents

Charges:

Shipping:	30.70
Propack:	0.00
Packing Materials:	0.00
Sales Tax:	$0.00
Total:	$30.70

9.10.2.19 Zebra ZP 450 – 20

Part # 156297-435 RIT 12/14

From: SALLY KHARDIN [mailto:SHAUNK1@msn.com]
Sent: Monday, November 02, 2020 12:26 PM
To: Candice Bowcock
Cc: SALLY KHARDIN
Subject: Re: Proposed development at 2820 Amherst Street. La Verne

Dear Ms Bowcock;

After several attempts to contact via telephone, I am now expressing my opposition to the development via email; I left a voicemail for you this morning as well.

My husband, Abbey Khardin, is also opposed to the planned development of the city property which has been rented out, and used as a nursery for many years. We bought our home in 1972 which was a county area at that time. We used the Sheriff's Dept. for police protection, the La Verne Post Office for our mail, and the Claremont USD for school age children. We live at 3922 Williams Ave, Claremont, CA. During the past forty-eight years we have watched the area develop from the orange groves to houses built by Hughes Builders, and Lewis Homes in other areas. The homes brought families into the area that also brought cars, and traffic. The houses built in the late 1970's have lot sizes that are in keeping with most of the existing houses in are area. The new families, and traffic have had a dramatic impact on the neighborhood streets. The proposed development will have an even greater negative impact on our local streets.

The density of the proposed project is extremely unreasonable. Forty-two (42) homes built on 5.3 acres is ridiculous. Yes, I am aware this is the last vacant parcel of land on the east side of Fruit Street between Foothill Blvd. and Baseline Road. Having said that, the lot sizes of the existing homes should be a determining factor in the proposed lot size of the planned homes. The last parcel built in this area is a wrap around piece of property that faces 2660 Bowdoin and 4245 Bradford. That parcel was approximately one acre in size. The original developer wanted to build five (5) homes. The property was finally developed by a second contractor with three (3) homes instead of the five the first builder was pushing for. The density of the those lots is in keeping with the surround lots in the area.

In relationship to traffic, I am not sure what the current traffic equation is anymore. Years ago, it was eight trips per car, per household, per day based upon each home having two cars. Using that as a guide for added traffic that would be an additional 672 additional car trips on the neighboring streets each day. We put up with the absolute nightmare of traffic congestion on our local streets for years before the freeway was extended. It was horrible! The City of La Verne needs to consider all of the factors pertaining to this development before they rubber stamp it!

While I am at it…when is the City of La Verne going to remove the barricade at the end of Bowdoin at Williams Ave.? If opened, that would lessen the amount of traffic on Amherst Street. Robt. Rodriguez has not lived on Bowdoin for many years now, the traffic has been lessened by the extension of the freeway, and would take cars off of Williams Ave. that are cutting through to the neighborhoods west of Williams or those cutting across to Fruit Street.

We, Abdullah (Abbey) Khardin, and Sally Khardin are opposed to the proposed development of 2820 Amherst Street, La Verne, CA 91750.

Thank you.

Sally A. Khardin
3922 Williams Avenue
Claremont, CA 91711
909-593-6076
shaunk1@msn.com

Sent from Mail for Windows 10

From: YI SUI [mailto:yistanleysui@gmail.com]
Sent: Monday, November 02, 2020 11:53 AM
To: Bob Russi; Muir Davis - Agenda; Planning; Rick Crosby; Robin Carder - Agenda; Tim Hepburn - Agenda; Wendy Lau
Subject: About Amherst Residential development project

Hello all
I am a 3939 Williams ave resident. I think this project will increase roadside parking and increase the risk of traffic accidents. I hope the government can maintain the original plan to build 26 units .

Thank you
--

RE/MAX 888
YI SUI Stanley
REALTOR®
DRE#: 02100440
626 899 6622
yistanleysui@gmail.com

-----Original Message-----
From: Nirali Patel [mailto:niraliohm@gmail.com]
Sent: Monday, November 02, 2020 9:45 AM
To: Planning
Subject: Amherst Development

Good morning,

I live off Amherst and Oak Leaf Lane. I am very concerned about the proposed development of 42 homes on such as small piece of land. I understand that developers want to maximize their profits and fit in as many houses as they can. However 42 homes is way too many. I noticed that there is no street parking and no guest parking in the housing plan. Yes each house has a driveway however there is no additional parking for guests or if the residents have more than 2 cars. This is taking into consideration that most people do not park 2 cars in their garage.
In addition the new construction plan does not take into account that the tiny lot sizes (3,000 sq ft) do not blend in with the surrounding community which have average lot sizes of 10,000 sq ft +) I think a better compromise would be to construct 26 or less homes so the average lot size could be at least 6,000 sq ft and will be able to have enough space for street parking for residents and their guests.

I would like to be added to receive email updates.

Thank you,
Nirali Patel
4202 Oak Leaf Lane/Amherst La Verne
626)232-8235

From: Lewis Rowe [mailto:lewisdavidrowe@gmail.com]
Sent: Friday, November 06, 2020 8:52 AM
To: Candice Bowcock
Cc: Bob Russi; Tim Hepburn - Agenda; Tim Hepburn
Subject: Re: Amherst Development

Ms Bowcock,

cc Mayor Hepburn
cc Bob Russi

I just checked the City website regarding the new housing development on Amherst.
And as expected, it is obvious the City is planning to re-open the roadblock at Bowdoin/Williams.
This will clearly push much more traffic onto our residential street (Bowdoin St).
This is very unfortunate given the existing high speed traffic problem on our street.

In the Q&A you posted on the website you say:

What are the traffic impacts of the project?
City Response: At this point in the project's review, staff has solicited input from the neighborhood regarding potential environmental impacts to ensure the Environmental Impact Report (EIR) will address any potential traffic impacts of the proposed project.

Did you solicit input from any Bowdoin St residents?
Or has your consultation been biased towards the wishes of the residents living on Williams, who have been pushing for years to get the Bowdoin/Williams roadblock opened.
Which residents were consulted for input?

Mr Mayor and Mr. Russi - I really hope you will not allow for this type of biased action to happen in the City, and that you will protect the Bowdoin St residents from further traffic volume & speed issues.

Best regards,
Lewis Rowe
2520 Bowdoin St
626-773-1531

From: Tom Geddes [mailto:ts.geddes1@gmail.com]
Sent: Sunday, November 01, 2020 6:56 PM
To: Candice Bowcock
Subject: Amherst Housing Project

Hello! As a 50 year resident of La Verne and homeowner of 37 years, I have concerns regarding the proposed Housing Plan on Amherst:
1) The proposed plan of 42 dwellings is unrealistic. Parking for guests needs to be provided, thus reducing the number of dwellings, and precluding parking along adjacent residential streets such as Pepperdine Court, Stone Circle, and Amherst. The model should follow the newest design plan on Emerald and Baseline which provides adequate parking per unit for guests and visitors. It is highly unfair and poor planning to have those cars parked in front of long time residences who did not ask for nor condone this project.

2) Bowdoin needs to be opened at the intersection of Williams to provide less compacted traffic flow along Amherst. There is absolutely no reason to keep Bowdoin shut at that juncture. Amherst has suffered the repercussions of that for 20 years. It now makes no sense.

3) The overhead power lines in front of the development should be underground at the expense of the developer. There should be no option; do not line his pockets further, but add aesthetic value to the property for affected residents as well as the new families. This should not be negotiable.

In summation, the proposal needs to be reviewed and amended to incorporate the aforementioned concerns and needs. If it is going to be built, it should be built with integrity and regard for long-time La Verne residents. Thank you for your time.

Sue Geddes
4250 Pepperdine Court, La Verne
email: ts.geddes1@gmail.com

From: Kim Mortensen [mailto:kim@waterford-construction.com]
Sent: Monday, November 02, 2020 9:35 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Project

Dear city officials,

We are a young family around the corner from the proposed Amherst project. We are NOT happy with with what the project has turned into. The original plan for single family homes seemed more applicable for the area but the project appears to have changed which is misleading to the community. Crime has been on the rise and the additional low income housing won't help that. It will exacerbate the problem further and drive down the value of our homes.

Single family detached homes to fit in the neighborhood on good size lots 8-12,000 sq ft would be a better fit for the neighborhood. Bring in young growing families with yards, not 2-4 story units...

We strongly disagree with type of development. And we would consider moving if something like this goes in. It's terrible. The crime just south of this location is terrible on Foothill Blvd between Bowdoin and Williams. We don't want to bring that type of crime north. We need to clean up the neighborhood and not go the other direction.

Thank you,

Rich and Kim Mortensen
4235 Bradford St
La Verne CA 91750

From: Rich Mortensen [mailto:rich@waterford-construction.com]
Sent: Monday, November 02, 2020 9:37 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Project

Dear city officials,

We are a young family around the corner from the proposed Amherst project. We are NOT happy with with what the project has turned into. The original plan for single family homes seemed more applicable for the area but the project appears to have changed which is misleading to the community. Crime has been on the rise and the additional low income housing won't help that. It will exacerbate the problem further and drive down the value of our homes.

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Rich and Kim Mortensen
4235 Bradford St
La Verne CA 91750

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Sent: Monday, November 02, 2020 9:37 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
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Thank you,

Rich and Kim Mortensen
4235 Bradford St
La Verne CA 91750

From: Brit Bommarito [mailto:britbommarito@gmail.com]
Sent: Monday, November 02, 2020 10:30 AM
To: Tim Hepburn - Agenda
Cc: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Project

Dear city officials,

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Single family detached homes on good size lots, 8-12,000 sq ft, would be a better fit for the neighborhood. Bring in young growing families with yards, not 2-4 story units...

We *strongly disagree* with this type of development. And we would consider moving if something like this goes in. It's terrible. The crime just south of this location is terrible on Foothill Blvd between Bowdoin and Williams. We don't want to bring that type of crime north. We need to clean up the neighborhood and not go the other direction.

Thank you,

Marc and Britain Bommarito
4245 Bradford St
La Verne CA 91750

From: Brit Bommarito [mailto:britbommarito@gmail.com]
Sent: Monday, November 02, 2020 10:50 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Fwd: Amherst Project

I would also like add...

That the original developer of our property wanted to build 5 houses on almost 2 acres. The city said that didn't fit with our neighborhood. So the next developer put up the 3 house. That was 3 houses on about 2 acres. It doesn't make sense that it is now feasible or acceptable to put 42 residences on 5.5 acres.

Thank you for your time.

Brit and Marc Bommarito
4245 Bradford Street

From: Brit Bommarito <britbommarito@gmail.com>
Date: November 2, 2020 at 10:30:03 AM PST
To: TJH@gehled.com
Cc: "TJH@gehled.com" <TJH@gehled.com>, "robincarder3@gmail.com" <robincarder3@gmail.com>, "wmlau76@gmail.com" <wmlau76@gmail.com>, "rickcrosbylaverne@gmail.com" <rickcrosbylaverne@gmail.com>, "muir.davis@gmail.com" <muir.davis@gmail.com>, "planning@cityoflaverne.org" <planning@cityoflaverne.org>, "brussi@cityoflaverne.org" <brussi@cityoflaverne.org>
Subject: Amherst Project

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Thank you,

Marc and Britain Bommarito
4245 Bradford St
La Verne CA 91750

From: cynthia.gabaldon cgrme.com [mailto:cynthia.gabaldon@cgrme.com]
Sent: Monday, November 02, 2020 12:34 PM
To: Candice Bowcock
Cc: Planning
Subject: Amherst Project

Candice,

I didn't have enough notice to pull together more details however as a resident of Amherst St. I am very concerned about the impacts of the proposed development.

Understanding that this is an Initial Study, I am hoping that the City will be transparent in the EIR on the following issues:

1) Traffic. With 46 units, the number of total houses on Amherst will double. Must address LONG term traffic issues. Bowdoin must be opened. Must acknowledge that the traffic on Amherst already has issues.

There has not been an accurate traffic study on our local traffic patterns in many years.

2) Water usage. Does the City have the water in this area for this number of homes?

3) Present to the residents the reasons why this type of zoning is allowed. Need to explain to the residents about the high-density requirements with the State.
How do AB 2345 and AB 725 affect this project? Are there any FUTURE legislation that we the residents need to know about?

4) Will these be low-income residential? Which requirements will this project meet?

6) How are you going to continue the outreach to the local residents?

Thank you for your time on this.

Cynthia Gabaldon PE, CPSWQ, CPESC, QSD/P, QISP, CGP/IGP ToR
CG Resource Management and Engineering, Inc.
2105 Foothill Blvd Ste B- 135
La Verne, California 91750
909-455-8520
www.cgrme.com

From: Vincent Provencio [mailto:vinccie_eng@yahoo.com]
Sent: Monday, November 02, 2020 4:42 PM
To: Planning
Subject: Amherst Project

To whom it may concern,

This is not a very well thought out plan!

This is obviously a plan to get as much money per square feet for the developer and tax revenue for the city as possible. It will not offer any good quality of life to anyone buying these and the surrounding community. It will add traffic and noise to this one single entrance of a residential neighborhood.

As a home owner and a resident of La Verne, I object to the current plan of 42 "condos" and you should redesign them have more yard and space between. You are going to devalue my property.

-Vincent Provencio

From: Eric Scherer
Sent: Thursday, November 12, 2020 1:07 PM
To: Candice Bowcock
Subject: Fwd: AMHERST RESIDENTIAL DEV.

Sent from my phone

From: Tim Hepburn <tjh@gehled.com>
Sent: Thursday, November 12, 2020 1:04:44 PM
To: mobilemoon <mobilemoon@aol.com>
Cc: Tim Hepburn <tjh@gehled.com>; Eric Scherer <escherer@cityoflaverne.org>
Subject: RE: AMHERST RESIDENTIAL DEV.

Thanks Ray, I will send this to the Development department for review, Tim

---

From: mobilemoon [mailto:mobilemoon@aol.com]
Sent: Thursday, November 12, 2020 10:40 AM
To: Tim Hepburn <tjh@gehled.com>
Subject: Re: AMHERST RESIDENTIAL DEV.

Another thing I noticed when reviewing the plans was there is no guest or overflow parking. This is a must so as not to to take parking away from residents.

Sent via the Samsung Galaxy S®6 active, an AT&T 4G LTE smartphone

-------- Original message --------
From: Tim Hepburn <tjh@gehled.com>
Date: 11/1/20 12:16 PM (GMT-08:00)
To: mobilemoon <mobilemoon@aol.com>
Cc: Tim Hepburn <tjh@gehled.com>

Subject: Re: AMHERST RESIDENTIAL DEV.

Thanks for your concerns on this and I am looping our Community Development Director on this to respond on this new proposed track, Thanks, Tim

Sent from my iPhone

> On Nov 1, 2020, at 11:49 AM, mobilemoon <mobilemoon@aol.com> wrote:
>
> 42 units is not acceptible for our neighborhood..
> Traffic is already to heavy with vehicles using our streets to bypass the signal at foothill and fruit to access to and from the 210 freeway.
> PLEASE VOTE AGAINST THIS PROJECT TO PROTECT OUR BEAUTIFUL NEIGHBORHOOD.
>
> RAY MOON
> 2638 BOWDOIN ST
> LA VERNE
> 909 593 2875
>
>

From: Roberta DeLeon [mailto:deleon.roberta@gmail.com]
Sent: Monday, November 02, 2020 1:52 PM
To: Candice Bowcock
Subject: Re: AMHERST RESIDENTIAL DEVELOPMENT PROJECT

Thank you for your response. I took a walk this morning by that area as I often do and it is so refreshing to walk by an undeveloped area in our city. There are not too many left. It would be a great loss
To fill it with more homes more people more traffic and more noise.

On Mon, Nov 2, 2020 at 1:27 PM Candice Bowcock <cbowcock@cityoflaverne.org> wrote:

> Mr. and Mrs. DeLeon,
>
> Thank you for your e-mail regarding the Amherst housing development project. All of the comments received will be compiled, and general responses to those comments will be added to the City's website by the end of the week.
>
> Please visit https://www.cityoflaverne.org/amherst after November 5, 2020 to see the responses to the questions/concerns raised. We urge you to review the project's website as it appears there is some information being shared that is inaccurate.
>
> Please feel free to e-mail me with any additional comments or question you might have after reviewing the responses from the Developer, the Environmental Consultant, and City staff. These comments will help the Environmental Consultant draft the Environmental Impact Report, which will also be available to you on the project's website once it is completed.

As a reminder, the City still welcomes additional comments throughout the review of the project up until the scheduled public hearings before the Planning Commission and City Council (expected in Spring of 2021).

Sincerely,

Candice Bowcock

Principal Planner

City of La Verne

3660 D Street

La Verne, CA

Office: (909) 596-8706

From: Roberta DeLeon [mailto:deleon.roberta@gmail.com]
Sent: Sunday, November 01, 2020 1:36 PM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: AMHERST RESIDENTIAL DEVELOPMENT PROJECT

TO EACH OF YOU THAT WE HAVE ADDRESSED:

We are hoping that this letter will find its way to listening and caring ears.

We have been residents in La Verne for 32 years. We live on Guava Street and have loved being here to raise our kids and live our lives. For the most part, it has been a great experience. We have experienced many changes in this city including the 210 Freeway being built and many, many homes being built in this area.

Right in our backyard 28 homes were built and it had a huge impact on our own living experience because those homes were so close to us. Noise and traffic have definitely increased over the years.

This new housing project would increase the demand for water, electricity and gas usage. We already experience shortages and AC power has had to be reduced at times because the demand is too high, water usage has been restricted during dry times. Traffic has increased exponentially. Too many cars! This new project would increase by at least 80 new cars adding to already crowded streets. We are concerned about our city and our neighborhood which would be directly and negatively affected.

Please consider NOT allowing this project to move forward. There is a limit to the growth that can take place in one area. We believe we have reached that capacity and that this new project would not make our neighborhood a better place to live.

Thank you for your consideration of our experience and opinion.

Mr. Edward DeLeon

Mrs. Roberta DeLeon

4249 Guava Street

La Verne

-----Original Message-----
From: Kathie Moran [mailto:kathiemoran1@gmail.com]
Sent: Saturday, October 31, 2020 2:03 PM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst residential development project

I as well as many of our neighbors on Williams and Amherst are very disturbed about what is being planned for this development. Adding low income tenement project looking residences is NOT COMPATIBLE with the neighborhood. Our neighborhood as well as the mobile home park in the back of the lot is mostly comprised of older people which are more vulnerable to the type of people this project will attract. Why not develop fewer single story million dollar homes. That would be much more suitable for our area.

The city has done nothing to slow the traffic on Williams Ave after MANY complaints have been filed by residents of both La Verne and Claremont and this will only exasperate the problem of speeding traffic. If you have to build these cracker box buildings why not put them closer to the down town area by the Railroad Tracks. That's where that type of property fits in. Not north of Foothill Blvd.
I look forward to a response to this email.

Thank you for your time and consideration.

Sent from my iPad

From: lemo13@verizon.net [mailto:lemo13@verizon.net]
Sent: Sunday, November 01, 2020 1:04 PM
To: Tim Hepburn - Agenda; robin3@gmail.com; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Residential Development Project

My husband and I live on the corner of Bradford and Amherst and we have far too much traffic as it is. Unless Bowdoin and Williams is opened completely for through traffic then we are against the project as it will result in even more traffic at our corner and possibly accidents as people run the stop signs all the time.

Please take this into consideration when making plans.

Thank you.

From: Roberta DeLeon [mailto:deleon.roberta@gmail.com]
Sent: Sunday, November 01, 2020 1:36 PM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: AMHERST RESIDENTIAL DEVELOPMENT PROJECT

TO EACH OF YOU THAT WE HAVE ADDRESSED:

We are hoping that this letter will find its way to listening and caring ears.

We have been residents in La Verne for 32 years. We live on Guava Street and have loved being here to raise our kids and live our lives. For the most part, it has been a great experience. We have experienced many changes in this city including the 210 Freeway being built and many, many homes being built in this area. Right in our backyard 28 homes were built and it had a huge impact on our own living experience because those homes were so close to us. Noise and traffic have definitely increased over the years.
This new housing project would increase the demand for water, electricity and gas usage. We already experience shortages and AC power has had to be reduced at times because the demand is too high, water usage has been restricted during dry times. Traffic has increased exponentially. Too many cars! This new project would increase by at least 80 new cars adding to already crowded streets. We are concerned about our city and our neighborhood which would be directly and negatively affected.
Please consider NOT allowing this project to move forward. There is a limit to the growth that can take place in one area. We believe we have reached that capacity and that this new project would not make our neighborhood a better place to live.
Thank you for your consideration of our experience and opinion.
Mr. Edward DeLeon
Mrs. Roberta DeLeon
4249 Guava Street
La Verne

From: V Chavez [mailto:vanec1999@yahoo.com]
Sent: Monday, November 02, 2020 7:40 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Residential Development Project

Good Morning,

I hope this email finds all of you with healthy bodies and healthy minds. The purpose of this email is to address the Amherst Residential Development Project. I am strongly opposed to this project. This City of La Verne and the state have already attacked this area enough with projects. First it was the 210 Fwy project. Many people had to leave this desired area of La Verne and had their homes demolished. Then the city allows the apartment/retail center in place of the old Person Ford. It is very apparent the retail part of the project is extremely unsuccessful. We have many residence from that apartment complex drive north on Bradford as a shortcut to the freeway. This is causing traffic issues as most people who take the freeway are usually in a hurry, they run stop signs and speed trough our community. We have children in the area and this should be a concern for the city. Now you want to add 42 units, low income housing, in the same area? Unbelievable how we sell our souls for money. You will be creating a traffic nightmare in this area, and a rise in crime. I am not sure who is doing the survey for this project but they are completely out of line and this will not work. All I heard from this last election was how our Fire Department is in such disarray. From what I understand, this problem still exists. We are not hiring more firefighters or buying new fire engines to accommodate the growth. Now you want to add more calls to their plate? The police department is barely treading water when it comes to handling the calls for service and other duties. Again, you are not going to hire more police officers and pay for more police cars to accommodate this growth. But again you will demand great service while stretching them to their limits. This is a poor decision. We can do better. Lets not turn this city into a Taco Bell town! We should have a Flemings mentality. If you have any concern for our area and for the well being of the city of La Verne, you will stop this project from going forward. We want our children to have a safe place to live. Us tax payers want a safe place to live. Again, be better.

Best,

Steve Prentice
4236 Stone Cir
La Verne, CA 91750

From: alfonso ramos [mailto:alfonsoramos74@gmail.com]
Sent: Monday, November 02, 2020 1:04 PM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Residential Development Project

Hello,
I have heard of the city's plans to almost double the expansion project on the northeast corner of Amherst Street and Williams Avenue. My comments are as follows:

1. The number of dwelling units must be reduced to accommodate sufficient guest parking spaces to prevent parking spill-over onto nearby residential streets including Amherst St., Pepperdine Ct., Williams Ave. And Stone Circle. The ratio of guest parking spaces to dwelling units should be commensurate with the existing ratio at the private development on the S/E corner of Baseline Rd. and Emerald Avenue. That existing development consists of 19 dwelling units and 9 parking spaces for cars plus one motorcycle parking space.

2. The barricade at the east end of Bowdoin St. should be removed as a mitigation measure for the additional traffic that the proposed Amherst development project will generate on Amherst St. (The Bowdoin St. barricade was erected more than 20 years ago to eliminate excessive cut-through traffic. During these many years residents of Amherst St. and adjacent streets have endured the full burden of the traffic which should have been shared by Bowdoin St. The construction of the 210 Freeway eliminated the need for the Bowdoin St. barricade.)

3. The overhead electrical power/utility lines along Amherst St. in front of the project should be undergrounded at the expense of the developer. The developer should not be permitted to reduce his costs by paying an in-lieu fee.

Should you have questions or require clarification, please contact me via email or telephone at 805-320-1393

Alfonso Ramos
4216 Pepperdine Ct.
La Verne, CA 91750

From: Jia Mao [mailto:anilmiih@gmail.com]
Sent: Monday, November 02, 2020 4:28 PM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Residential Development Project

Good Day,

My name is Jia Mao and I am the owner and resident of 3740 Williams Ave in Claremont. I recently received a flyer on my front door with the notice that the 5.7 acre lot of land off Amherst and Williams will turn into a 42 unit low income housing.

Although I live on Williams Ave that is part of Claremont and the other side is La Verne, this project is very close to home (0.25 mile). There have been numerous incidents on this street with minor crimes over the past 3.5 years I have lived here. It will be a catastrophe to the residents on this street and the neighborhood in general should this low income housing project be completed without hearing the outcrys of myself and my neighbors.

I share the frustration and anger that should low income individuals and families move in, the existing community will feel more unsafe, crimes will increase, more police calls will be made, and the property values will drastically decline.

I hope someone will hear this plea to reconsider this development.

Sincerely,

Jia Mao

From: Danita Beauchamp [mailto:danitaab2016@gmail.com]
Sent: Monday, November 02, 2020 12:48 PM
To: Tim Hepburn - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Robin Carder - Agenda; Bob Russi; Planning
Subject: Amherst Residential Housing Project

Mayor Hepburn:
Councilmember Wendy Lau:
Councilmember Rick Crosby:
Councilmember Robin Carder:
Councilmember Muir Davis:
City Manager Bob Russi:
Planning Commission Members:
Jeff Alred, Jason Simison, Phil May, Jason Lorge, Thomas Allison

I have numerous concerns about the Amherst Residential Housing Project and have attached a letter addressed to each of you.

Thank you very much.

Sincerely,
Danita Beauchamp
2516 Amherst Street

Mayor Tim Hepburn

Councilmember Robin Carder

Councilmember Rick Crosby

Councilmember Muir Davis

Councilmember Wendy Lau

City Manager Robert Russi

Principal Planner Ms. Candace Bowcock

Planning Commission Members: Thomas Allison, Jeff Allred, Jason Lorge, Phil May & Jason Simison

November 2, 2020

RE: Amherst Residential Development

Dear Ms. Bowers:

I would like to request to be notified whenever the city council or planning commission has this item on their agendas.

I remember reading an agenda for the city council sometime back and learning the city planned to sell the land where the ground water treatment reservoir is located on Amherst Street. I have read the initial study and have major concerns about the city moving forward with this project.

The fact that residents only within 300 feet of the proposed project were notified. The noise from the construction and traffic from both the construction and the new homeowners will unquestionably affect the residents on our street and adjacent streets much further than 300 feet; such as Williams Avenue, Bradford Street, and Guava Street. I am formally requesting any and all notifications pertaining to this project as well as any and all indirect activities pertaining to this project be sent to my home address. I am also formally requesting that the traffic study that will inevitably have to be conducted include the entire length of Amherst Street, as well as the streets that intersect Amherst Street at Bradford Street and Guava Street, both intersections are trafficked by stop signs.

Why weren't ANY of the residents notified about the city council meeting that was scheduled when the decision was made to change the zoning for this parcel of land from agriculture to single family homes? I'm sure many of the residents would have been vocal at that time. It is because of me and another Amherst resident going door to door to inform all the residents we believe to be affected by the city's decision to sell the land and build homes.

Back when the mix-use units were scheduled to be built at 2855 Foothill Boulevard, we were told that Bowdoin Avenue would be re-opened to through traffic at Williams Avenue. This was never implemented as promised. Many of the vehicles drive north bound on Bradford Avenue then west on Amherst Street or west on Bowdoin Street. Drivers do want they can to avoid Foothill Boulevard traffic as much as possible, especially with the additional signals. Our residential street has had numerous near accident incidents due to the high rate of speed by many of the drivers. We have numerous drivers who do not stop at the three-way intersection of Amherst Street and Guava Street. I have provided video footage in the past proving the severity of this problem and can again provide current traffic footage of the Amherst Street/Guava Street intersection.

According to 2018 traffic study data, each house averages 2 vehicles and each vehicle makes 8 trips per day, that's 16 trips per household per day x 42 houses, equals 672 trips per day, which then equals to 245,280 trips per year. The roads in our neighborhood and adjoining thoroughfares are not equipped to handle this influx of traffic. I want to know what the city intends on allocating for funds for maintaining the roads and traffic, such as repaving, stop signs, speed bumps or signals.

Back in 2007 or there abouts, when the owner of the property adjacent to the Mormon church located on the north west corner Amherst Street/Bradford Street wanted to build homes. It was approximately 2 acres of land and the original developer wanted to build 5 homes and the city stepped in and said only 3. Why has the city now, decided to reverse their decision on limiting the number of homes being built and allowing high density housing? The city only allowed 3 homes on 2 acres, yet now the city has approved 42 houses on less than 6 acres? The mathematical formula previously used is obviously not being used for this housing project. This neighborhood has properties that were a minimum of a quarter acre but most are half acre lots as they were once horse properties to facilitate the orchards in the city. Building high density housing would change the landscape and feel of the neighborhood, something most residents are against. I say that with first hand knowledge, as I walked the neighborhood informing residents, they have signed a petition. Unfortunately, I was unable to meet with all neighbors and still have several streets to continue passing out flyers with information pertaining to the project.

Specifically, in Table 2, it discusses the health effects associated with non-attainment criteria pollutants but it does not include the problem of having insects, squirrels, vermin and other animals displaced. Although none of these are considered to be endangered or protected species, building new homes will displace these animals and insects, which then not only pose a threat to the adjacent neighbors, but can affect them financially to have them eradicated.

We experienced this exact situation when the homes were built on the old citrus orchard land that was on Amherst Street/Fruit Street/Bowdin Street, which are now the homes built on Oak Leaf and Hartshorn. When they began excavating for the new construction, we had an increase with insects, squirrels, vermin and those who prey on those animals such as coyotes. We have since incurred increased coyote population in our area since that time. These wild animals have grown bold as they are no longer afraid of humans and hunt in broad daylight. At that time, we had lived in La Verne for over 15 years and never experienced insect issues until this construction took place. We then had an influx of indoor moths and cockroaches and subsequently had to have our home chemically treated to keep these insects from returning. An expense that was not covered by the city. With CoVID-19, many people are working less hours or have even lost their jobs completely and would not have the means to cover these expenses.

In Table 7, it discusses energy usage, specifically electricity, natural gas and petroleum. It sites the consumption would decline due to the renewable power sources, such as large hydroelectric, natural gas, nuclear, and unspecified courses of power. Alternative power sources such as natural gas is known to be much more harmful than standard electricity sources according to an article written by the Union of Concerned Scientists dated 06/19/2014. Here is a direct quote from the article…. Although natural gas burning emits less fatal pollutants and GHGs than coal burning, it is far deadlier than nuclear power, causing about 40 times more deaths per unit electric energy produced (ref. 2). Also, such fuel switching is practically guaranteed to worsen the climate problem for several reasons… This is definitely not something we want the residents of our neighborhood to experience; living in fear of the danger. This the link to which the reference I made was derived https://ucsusa.org/resources/environmental-impacts-natural-gas

In Table 8, it states there would be an estimated declination between 20 to 22 percent in petroleum usage by 2030. This information is partly based on the executive order signed into law by Governor Newsom, stating all new petroleum-based vehicles would be banned after 2035. This does not account for his replacement or the voters to repeal such said law. This is information based on an estimate and cannot be proven or disproved at this point in time.

I have to say that in the mayoral and city council elections that took place this past spring, many of the candidates that have now been put into office, ran on the idea of “transparency”. I have yet to see this implemented and the lack of notification to the residents only supports my claim. I know from a legality standpoint, the adjoining cities of Claremont and Pomona must also be notified, so those cities can send a letter to their residents which reside adjacent to this project. Of those we spoke with directly, only 1 resident was notified by the city. And to my extreme dismay, I found out that a planning commission member lives directly across the street from where the project is to be built, which only supports my claim of lack of transparency.

If the city cared enough about the residents of this neighborhood, the city council and/or planning commission or both would have a meeting specifically about this housing project. Allowing residents to ask questions or voice their concerns or opposition or even their opinion of being in favor of the project. Under California legislative law, all new housing construction must include a 24% allocation of that housing made available to low-income residents. What contentions has the city made for that? Allocating additional funds for the police department, fire department, etc. Due to AB47 our neighborhood has already had a radical increase in crime of which our police department cannot keep up with, how with the low-income housing affect that? I also understand that under certain circumstances with receiving Federal and State subsidies for the low-income housing, data, such as a mini census, must be maintained and if the demographics are not diverse enough it can recall those funds or must be paid back with interest and penalties. What will the additional data collection cost the city and if we do not meet the requirements of the demographics, what will it then cost the city? A bond measure or increased taxes will certainly be placed upon the residents to make up for that shortfall.

We live in La Verne and specifically in this neighborhood for the small-town, quaint feel, yet have enough space between properties for privacy. This new housing project will most certainly interrupt the landscape and look of our properties, and our space between us, not too mention the property values.

How will the elderly residents of Twin Oaks Mobile Home Park feel as the 2 story residences tower over their units and have a direct line of sight into their homes. Just as the houses on Oak Leaf have direct views of the houses and yards of the houses on Guava. It's a major invasion of privacy and lack of security; especially if the housing project will share the concrete wall between them and the mobile home park.

I look forward to your response and all future correspondence pertaining to this project.

Thank you kindly.

Respectfully,

Danita Beauchamp

Danita Beauchamp

2516 Amherst Street

From: Jen Jimenez [mailto:laujimenez525@yahoo.com]
Sent: Thursday, November 05, 2020 10:09 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Amherst Residential Housing Project

To the Honorable Mayor Hepburn, City Council Members, City Manager, Planning Commission:

We are writing to you to express our concerns over the 42 proposed units on Amherst. I have been living in La Verne for almost 10 years. My husband and I bought our first home on Second Street. Due to the traffic going through that street at high speeds, the noise and air quality due to being close to the train track, we felt that we had to move when our daughter was born. We did not want to leave La Verne as we are both in love with the city and felt that it was best to raise our child(ren) in. I have really terrible asthma and it looks as if our daughter has inherited that from me. We bought our current home on Pepperdine Court for the very reason that the nursery is right across the street and all those trees and plants has provided much better air quality for us. We also bought this home because of the quiet neighborhood and that with less traffic, we feel like it is safer for our daughter to be able to play outside. We are concerned that the land where the nursery is at has been sold and that it is 42 units are proposed to be built there. We are concerned of the traffic, noise, and air pollution that this would cause. Please reconsider.

Regards,

Jennifer Lau-Jimenez

From: tigerbutter2001@yahoo.com [mailto:tigerbutter2001@yahoo.com]
Sent: Friday, October 30, 2020 10:12 AM
To: Candice Bowcock
Subject: Commons at Amherst

Dear Ms. Bowcock,

I'm writing this to voice my concern over the proposed housing project on Amherst Street. I've looked at the proposal and plans for 'The Commons at Amherst; the homes are very attractive and there doesn't seem to be an exorbitant amount of them.
My concern is for the elevated levels of traffic this will entail with the addition of these housing units. Ever since the east end of Bowdoin Street, where it meets Williams Street was closed off, Amherst Street has taken the brunt of traffic to and from the 210 Freeway, and to and from Baseline via College Way. An unjust burden of traffic is, therefore, funneled onto Amherst Street. The new housing unit will make traffic on my street much worse.
I believe the time has come to open Bowdoin Street so that Amherst and Bowdoin can evenly share the burden of traffic.

Thank You,
Pam Garman

2720 Amherst Street
909 263-2702
tigerbutter2001@yahoo.com

Sent from my iPhone

From: Dan Keesey
Sent: Saturday, October 31, 2020 3:48 PM
To: Eric Scherer; Candice Bowcock
Subject: Fwd: Concerns & Negligence: New Housing Development 'The Commons at Amherst' La Verne

Dan Keesey
City of La Verne

From: Lewis Rowe <lewisdavidrowe@gmail.com>
Sent: Saturday, October 31, 2020 3:37:14 PM
To: planning@cityoflaverne.org <planning@cityoflaverne.org>
Cc: TJH@gehled.com <TJH@gehled.com>; robincarder3@gmail.com <robincarder3@gmail.com>; wmlau76@gmail.com <wmlau76@gmail.com>; rickcrosbylaverne@gmail.com <rickcrosbylaverne@gmail.com>; muir.davis@gmail.com <muir.davis@gmail.com>; thepburn@cityoflaverne.org <thepburn@cityoflaverne.org>; Bob Russi <brussi@cityoflaverne.org>; Dan Keesey <dkeesey@cityoflaverne.org>; dhansen@rinconconsultants.com <dhansen@rinconconsultants.com>; cdonoghue@rinconconsultants.com <cdonoghue@rinconconsultants.com>; matt@mwinvestmentgroup.com <matt@mwinvestmentgroup.com>; ascales@ktgy.com <ascales@ktgy.com>
Subject: Concerns & Negligence: New Housing Development 'The Commons at Amherst' La Verne

To:

City of La Verne:
--Mayor Tim Hepburn
--Councilmember Robin Carder
--Councilmember Wendy Lau
--Councilmember Ricky Crosby
--Councilmember Muir Davis

City Manager: Bob Russi

--Director of Public Works: Dan Keesey
--Planning Commission Members:
--Thomas Allisojn
--Jeffrey Allred
--Jason Lorge
--Philip May
--Jason Simison

Rincon Consultants:
--Deanna Hansen, Principal
--Christine Donoghue, Project Manager

SUBJECT:
Concerns & Negligence surrounding new 'Amherst Commons' Residential Project

From:
Lewis Rowe
2520 Bowdoin St, La Verne, CA 91750
Phone: 626-773-1531
Email: lewisdavidrowe@gmail.com

Problem:
Bowdoin St, specifically between Fruit St and Bradford St, already has an on-going issue with high volume and very high speed of traffic. This is a residential street, with a 25mph speed limit. We experience daily poor quality of life here, with most cars exceeding 40mph, and many traveling at 60mph+. This is very dangerous for the families and children living in this neighborhood.

Existing Traffic Studies:
Many traffic studies have been done to confirm this issue, one letter from the City is attached for your reference which validates the problem. I have seen the data from the City on previous traffic studies confirming the 60mph speeds travelled by cars here. Another letter is attached from the La Verne police, demonstrating the speeding issue.

Lack of Notification about new housing development:
The City did not notify Bowdoin St residents about the new upcoming housing development.
This may not be lawfully required, but it is systemic of the opaque nature in which the City operates. We expect better ethics from the City Council and the planning department.

Negligence in RinCon Impact Report:
The impact report prepared for the City is highly negligent, and excludes obvious traffic impact. The report shows a lack of understanding for the existing neighborhood by Rincon. Page 94 identified the traffic intersections studied for impact during construction, but excludes Bowdoin St, which is where most of the traffic issues will be observed. Anyone with local knowledge is already aware of this. Bowdoin St is the main connector to the 210 freeway, used by most residents in the neighborhood for access. We expect heavy construction traffic to/from the freeway using Bowdoin St to access the construction site.

And, more negligence is shown by not addressing traffic impact after construction from the new residents in your report. All the new residents will use Bowdoin St to access the freeway. By excluding Bowdoin St and post-construction traffic from your impact report, you have shown either extreme negligence or have chosen to intentionally leave-out what is a clear problem.

Previous Traffic Petition on Bowdoin St:
I have attached a petition signed by all Bowdoin St residents in 2015, as well as the delivery receipts of when this was delivered to the City. The residents requested permanent road alterations (dips/bumps/stop signs) to force calming of traffic speed. These requests were refused by the City, but the City did reduce the speed limit and install electronic signs. The high-speed issue still remains 5-years later, has got worse, and will continue to get worse until permanent road alterations are made to forcibly reduce the traffic speed. It shall also get worse with new residential development in the area. Please review.

Roadblock at Bowdoin/Williams:
We want some assurance that the intersection of Bowdoin & Williams will remain in-situ, to help reduce traffic volume traveling on Bowdoin St. We do NOT want to see this roadblock removed as part of your 'infrastructure improvements' noted in the construction plans. Removing this roadblock will increase traffic volume on Bowdoin St, increase traffic speed, and shall make the long-standing traffic speed issue in our neighborhood on Bowdoin St much worse.

Traffic Calming Alterations on Bowdoin:
I would personally like to see new permanent road alterations made on Bowdoin St prior to any construction beginning on the new Amherst housing development - such as the addition of road dips/bumps and/or stop signs. We expect to see a heavy increase in traffic coming to/from the freeway from construction crews and future residents - which adds to the existing issue which the CIty have refused to address. I want to see these traffic calming measures - that were first requested by every resident back in 2015 - to be actioned now as part of this escalation in new local traffic.

Please add me to all future City communications regarding updates about this new housing development, and notify me on what traffic calming measures you will install on Bowdoin St.

We also expect you to take action about the negligent Rincon impact report, and ensure Bowdoin St is fully assessed for impact, with honesty, proactively to protect the existing residents from more quality of life loss.

We hope the new City leaders, council members, and mayor Hepburn will intervene, and show some responsibility to protect the existing residents of La Verne that elected them.

Thank you for your consideration.
Lewis Rowe

From: Tom Geddes [mailto:ts.geddes1@gmail.com]
Sent: Saturday, October 31, 2020 2:50 PM
To: Planning
Subject: Email 2 on Commons at Amherst

Hello! I wrote a few days ago with some concerns, and thought of a couple more I would like to share. Also, correcting the first email, I am a resident of La Verne for 50 years, not 57. Thirty-seven years in our home just adjacent to the proposed project. That leads me to the first concern: I cannot even imagine the traffic and trying to get out of our cul-de-sac onto Amherst. It is our only exit off of our street, and it is the only entrance and exit for the housing project. That makes for a design flaw and a logistical nightmare. Secondly, La Verne crime has gone up exponentially since the mandate of a good percentage of low income housing for new building projects. We have enough of that as is. Thirdly, this project directly affects us and our life-style and we never had a chance to voice our concerns. I know that Covid-19 thwarted the initial meeting, but it has been very hush-hush since then. Only a few residents were notified of the project; this should be a discussion for all residents of La Verne. In addition, the original proposal was for 26 dwellings, now it suddenly changed to 42, unbeknownst to anyone, including those on the committee. It all seems unfair and clandestine. Residents who have paid property taxes for years and love this city are enraged. You are doing a disservice to this community. Blue sky and the view of Chino hills should not be a thing of the past. Rethink this greedy and self-profiting decision....and be up front on what it is and is not. Forty-two houses is unheard of and unrealistic. If there were to be a fire or natural disaster, we would be trapped on our street as residents of adjacent cul-de-sac. La Verne officials should know better, and better yet, speak with the people you supposedly serve.

Respectfully,

Sue Geddes
4250 Pepperdine Court, La Verne
email: ts.geddes1@gmail.com

From: Bob Russi
Sent: Monday, November 02, 2020 8:37 AM
To: Candice Bowcock
Subject: FW: Housing project at Amherst Street and Williams Avenue

FYI – Please add him to any mailings we do in the future.

Thanks

From: anan1939 [mailto:nikolai.pulchritudoff@gmail.com]
Sent: Saturday, October 31, 2020 10:58 AM
To: Bob Russi
Subject: Housing project at Amherst Street and Williams Avenue

Esteemed City Manager:

A number of us residents of La Verne are concerned with the expansion of the housing project at Amherst Street and Williams Avenue, from 26 to 42 units. The increase in traffic, pollution, and congestion in the neighbourhood will be bothersome. We ***already*** have experienced an increase in crime and more cars go through stop signs on Amherst! I suggest that ***numerous*** additional street bumps be set up, both on Amherst and on Williams to deal with the situation.

I request to be added to the mailing list for future notifications, regarding this housing project.

Sincerely,

Nikolai Pulchritudoff

From: Ruth Spathias [mailto:ruthspathias@hotmail.com]
Sent: Saturday, October 31, 2020 11:03 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Housing Project on Amherst & Williams

Good Morning,
This is email is in regards to the proposed housing project on the nursery/ground water treatment site. If this property has been sold and is now under consideration to be used as housing site, please consider the effect it would have on those that live around this area. This would bring a lot more traffic and people to this small area.
For a 5 acre lot, I cannot fathom how you can ok for the builder to place 42 units on this site. There are already an multi-housing complex that was built on the former Ford lot.
Please reconsider how many houses you will allow on this site. The original plan was for 26 units. You need to reconsider this original plan as those of us that live in the area do not want more housing units in this small area.

Thank you for you consideration,
Ruth and Hector Spathias
4226 Meadow St
La Verne CA
909-929-0336

From: Jeff Allred [mailto:allredjeff@yahoo.com]
Sent: Sunday, November 01, 2020 2:37 PM
To: Candice Bowcock; Eric Scherer; denise.fisher13@verizon.net; mattuyboco@yahoo.com
Subject: Proposed Amherst Project

Thanks for the meeting last Wednesday regarding this project. My comments are as follows.

1. The number of dwelling units must be reduced to accommodate sufficient guest parking spaces to prevent parking spill-over onto nearby residential streets including Amherst St., Pepperdine Ct., Williams Ave. And Stone Circle. The ratio of guest parking spaces to dwelling units should be commensurate with the existing ratio at the private development on the S/E corner of Baseline Rd. and Emerald Avenue. That existing development consists of 19 dwelling units and 9 parking spaces for cars plus one motorcycle parking space.

2. The barricade at the east end of Bowdoin St. should be removed as a mitigation measure for the additional traffic that the proposed Amherst development project will generate on Amherst St. (The Bowdoin St. barricade was erected more than 20 years ago to eliminate excessive cut-through traffic. During these many years residents of Amherst St. and adjacent streets have endured the full burden a the traffic which should have been shared by Bowdoin St. The construction of the 210 Freeway eliminated the need for the Bowdoin St. barricade.)

3. The overhead electrical power/utility lines along Amherst St. in front of the project should be undergrounded at the expense of the developer. The developer should not be permitted to reduce his costs by paying an in-lieu fee.

Should you have questions or require clarification, please contact me via email or telephone at 626-222-2024.

Jeff Allred
4204 Pepperdine Ct.
La Verne, CA 91750

[Sent from Yahoo Mail for iPhone]

From: Carol Hundshamer [mailto:carol@jameshundshamercpa.com]
Sent: Friday, October 30, 2020 11:28 AM
To: Tim Hepburn - Agenda; Robin Carder - Agenda; Wendy Lau; Rick Crosby; Muir Davis - Agenda; Planning; Bob Russi
Subject: Proposed housing project at Amherst and Williams

As 28 year residents of La Verne (and actually longer since our grandparents were original residents of Casitas La Verne Mobile Home Park on Bradford in the 70's), we would like to voice our opinions and concerns as to the proposed (but we are unfortunately sure it will be most likely) development project down the street from our home.
We are not going to say anything new to you, as we are aware you have received many negative responses to this project. We just want to add our names to the list in terms of the negative impact this will have on our residency. Obviously the city officials and developers are in this for the profit and tax dollars. Although these reasons always win out in the end, there are other factors that are involved in the existing residents' perspective. Our concerns (in brief) are, but not limited to:

1. Because we reside more than "300 feet" from this plot of land, we were not officially notified/warned about this project. <u>We are asking that any future plans be told to us neighbors **AND** all residents in La Verne</u> (a huge project like this affects ALL residents of this small town).
2. <u>42 units is an incredible amount of housing in this size plot</u>. We do not understand how originally 26 units were planned and now it has almost doubled?!?!? A little ridiculous-especially if some sort of "approval" was made

on 26 and now 42 as if no one was going to notice?!?!? Additionally, if it's going to be a "high-rise"--FORGET IT-NO WAY! What kind of look would that be in that little residential area!?!?!

3. Traffic, especially speeding, is already a huge concern in our neighborhood. The increase in cars will certainly impact this area within miles. If signals are a prospective "solution" then we want no part of that either.

4. As we all know, crime is already an issue. Between the new railway and this increase in housing (especially if it is to be low income housing) crime will certainly increase. And as we all know already, although our Police do a great job, LV Police is over worked and under staffed to handle any increases in crime. And, if our police force were to be increased, at what cost to us taxpayers?!?!?

5. These two items may be the most scary: We can't even begin to imagine how this will affect our schools and utilities. What will be the cost (and not just financially) of increasing or adding to these?!?!?!? Unbelievable!!!!

The bottom line, in our opinion, is that we do not want to see our town **continue** to grow out of control. It already has! Over the years, we have seen so many changes-some positive, but so many negative, and we do not want to see any more poor decision making based on dollars. Once again, we understand that increased housing equates to increased property and sales tax. But to what other costs, to existing residents, in terms of paying for additional services across the board--not to mention all the points mentioned above (and more)?!

We ask that all city officials please SERIOUSLY think about this monumentous decision and how it affects ALL La Verne's existing residents. We vote NO!!!

Thank you,

Jim and Carol Hundshamer
4093 Kimberly Ave.
LV
909-499-2783

Regarding the Low Income houseing
ON
Amhurst street and Williams Ave

This is another dum idea this will Lower the cost on housing around the area; People who have payed into being in a good area there house will loose there value, and people who are trying to stay out of LOW INCOME people, You the City are bringing it into there front door... Very bad Idea, Every one in the area will also suffer higher crime, it's part of low income.. also every one in the area, will suffer a higher cost in Inshurance, it has already happend in low income areas, There are already signs, that the community is changing, and not for the good...... A slum is comming in a short time, were already seeing homeless, more theft in the area and YOU the City of Laverne

are the cause of this up set... We have all seen the Christmas carol It's A Wonderfull Life, You are turning it into POTTERS VILL, and that's not good at all.... If your wanting to place these people, then send then to Watts, there are many places still burnt down from years ago, or send them to Pomona there are places farther away, would be ideal for them, but NOT Laverne. not here, We the people don't want to go to the grocery story and see, people touching the food, and putting it back Lower end people lording around, pissing and craping all over the neighborhood,and the drugs, not good for our children and every one concern, like what is going on in down Town LA this is what you are bringing to Laverne and our neighborhood is starting to show, bad quality of life, not good for the people who spent 5,6,700,000 and 1.5 mil. in this City for there housing ... Tim Hepburn your not a good Mayor at all, your the cause of this destruction of a good City, You need to start cleaning up the destruction and start shipping, out the bad... Should you vote Yes on a bad idea and should you not start Cleaning up the problem:

We the people will VOTE You out of office and others responsible for this stupid out come, were already talking it looks like we made a mistake in voteing you in, Now we need to voite you out, and take court action, and have you pay for damages caused for damageing the City, it's people, and hold you for the crime increase, Due to bad Ideas

So make a change to up hold the quality, for the good it's people who live here and don't want to see this City of Laverne fall in the hands of slum..

We the people WILL take action, we will then want you OUT, you don't belong here with bad Ideas, also your planning department needs to be fired...

By the people of Laverne

Appendix B

Site Plans and Elevations

DRAFT SPECIFIC PLAN

AMHERST SPECIFIC PLAN

DECEMBER 10, 2020

AMHERST

DRAFT SPECIFIC PLAN

DECEMBER 10, 2020

Acknowledgements

Lead Agency:

City of La Verne

3660 D Street, City of La Verne, CA 91750

Tel. 909-596-8706

Contact: Candice Bowcock, Senior Planner

Prepared for (Initiator):

MW Investment Group, LLC

27702 Crown Valley Parkway, Ste. D-4-197, Ladera Ranch, CA 92694

Prepared by:

KTGY Architecture + Planning

17911 Von Karman Avenue, Suite 200, Irvine, California 92614

Tel. 949-851-2133

Contact: John Moreland, Director, Planning

With

KHR Associates *(Civil Engineering)*

Studio PAD *(Landscape Architecture)*

AMHERST SPECIFIC PLAN
TABLE OF CONTENTS

5. Implementation

EXHIBITS

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1

INTRODUCTION

1.1 Purpose and Objective of the Specific Plan

The Amherst Specific Plan provides a detailed description of the proposed land uses, infrastructure, and implementation requirements for the Amherst project located near the intersection of Williams Avenue and Amherst Street in the City of La Verne, California. The Specific Plan will be processed through the City of La Verne. The Design Guidelines contained in this Specific Plan will assist in creating a sense of place and high-quality development on the project site. The Development Regulations will establish permitted uses, building setbacks, and general development criteria.

The Amherst Specific Plan is consistent with the applicable goals and policies of the City of La Verne General Plan. The provisions and regulations contained in the Specific Plan shall apply to the Amherst project area, and shall prevail in instances of conflict with the provisions and regulations of the La Verne Municipal Code (LVMC) that regulate the same subject matter. Where the Specific Plan is silent on an issue, the regulations and standards contained in the LVMC or other applicable city, state or federal code that regulate the same issue shall apply.

This Specific Plan is an implementation tool that:

- Ensures consistency between the goals and policies of the City of La Verne General Plan and this Specific Plan.
- Provides development standards and design guidance for on-site residential development.
- Develops a plan that can be implemented based on existing and anticipated future economic conditions.
- Provides for an environmentally conscious community implementing energy efficiency, water efficiency, construction waste diversion, and other sustainability measures.
- Assures appropriate financing for community facilities, including circulation improvements, domestic water, urban runoff and drainage facilities, and sewage disposal.

1.2 Authority and Format of the Specific Plan

The State of California Legislature has established the authority and scope to prepare and implement specific plans. The State requires that all cities and counties in California prepare and adopt a comprehensive General Plan for the physical development of their areas of jurisdiction. To implement the policies described in the General Plan, regulating programs are adopted (e.g., zoning ordinances, subdivision ordinances, building and housing codes, etc.). California State law authorizes cities with complete General Plans to prepare and adopt specific plans (*Government Code Section 65450 – 65457*). Local planning agencies or their legislative bodies may designate areas within their jurisdiction as areas for which a specific plan is "necessary or convenient" (*Government Code Section 65451*).

Specific plans are intended to serve as bridges between the local General Plan and the individual development proposal for a specific area. Specific plans combine planning policies, zoning regulations, implementation programs, and other regulatory requirements into one document.

The Amherst Specific Plan has been created through the authority granted to the City of La Verne by the *California Government Code, Sections 65450* through *65453*. This Specific Plan has been prepared in accordance with the provisions of the California Government Code, which stipulate that a specific plan contain text and diagrams specifying the following:

- **Land Use:** The specific plan must specify the distribution, location, and extent of the uses of land, including open space, within the area covered by the plan. This discussion is included in *Section 3.2, Land Use Plan*, of this Specific Plan.

- **Public Facilities:** The specific plan must show the proposed distribution, location, extent, and intensity of major components of public and private transportation, wastewater, water, drainage, solid waste disposal, energy, and other essential facilities located within the area covered by the plan, and needed to support the land uses described in the plan. This discussion is included in *Section 3.3, Circulation Plan,* and *Section 3.4, Infrastructure Plan*, of this Specific Plan.

- **Development Standards:** The specific plan must include standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable. This discussion is contained in *Chapter 4, Development Standards*, of this Specific Plan.

- **Implementation Measures:** The specific plan must include a program of implementation measures, including regulations, programs, and financing measures. A discussion of these topics is included throughout *Chapter 5, Implementation*, of this Specific Plan.

- **General Plan Consistency:** The specific plan must include a statement of the relationship of the specific plan to the General Plan. An analysis of The Amherst Specific Plan's consistency with the City's General Plan is contained in *Appendix A, Consistency with City of La Verne General Plan*, of this Specific Plan.

- **Optional Contents:** The specific plan may address any other subject that, in the judgment of the planning agency, is necessary or desirable for implementation of the General Plan. Community building, landscape, architectural, and sustainable design guidelines in *Chapter 3, Plan Elements*, of this Specific Plan.

1.3 Specific Plan Area Location

The 5.6-acre project site is located in eastern Los Angeles County, situated at the eastern city limit within the City of La Verne, California. The Amherst Specific Plan area is located approximately one-quarter mile south of State Route 210 (SR-210), and approximately one-half mile north of the historic State Route 66 (SR-66). Regional access to the site, as depicted on *Exhibit 1.1, Regional Context,* is available from the south via I-10 Freeway and from the east and west via the SR-210. Local access is depicted on *Exhibit 1.2, Local Context* and is available at the Fruit Avenue on- and off-ramps, approximately one mile northwest of the site. Direct access is provided to the project site via Amherst Street, which intersects Fruit Street and provides access to the greater regional vehicular circulation network. The Groundwater Treatment Plan is adjacent to but is not a part of the Project Site. Existing site photos are included in *Exhibit 1.3*.

1.4 Specific Plan Summary

The Amherst Specific Plan is the result of intensive planning and careful design to create a high-quality single family residential project in the City of La Verne. The project site was previously owned by the City, which operates the 1.5-acre Amherst Groundwater Treatment Plant and storage on-site. The City will retain the water treatment facility via lot line adjustment of the project site. The approximately 5.6 remaining acres was leased to West Covina Wholesale, a local business that operated a plant nursery on-site. These remaining 5.6 acres are proposed for development pursuant to the provisions of this Specific Plan, with access from the Specific Plan area to the treatment facility to remain.

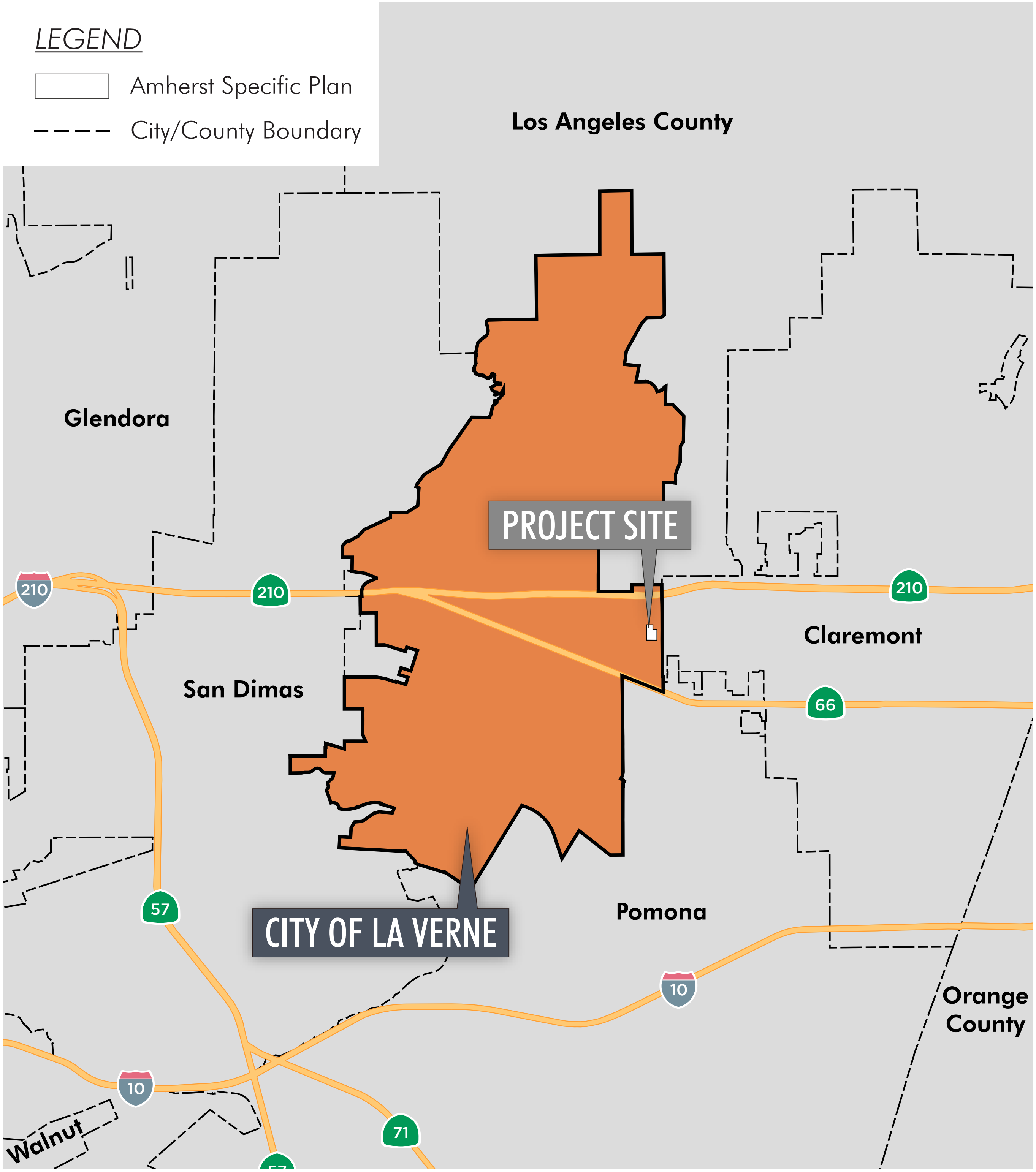
The Amherst Specific Plan is an infill redevelopment project that includes up to 42 single-family dwellings and outdoor recreation opportunities on the approximately 5.6-acre project site. The amenitized park space will be provided within the project and be accessible to residents within the development as well as the public. Access to the existing adjacent Amherst Groundwater Treatment facility through the project site will be maintained after build-out of the Specific Plan. The Amherst Specific Plan incorporates place-making principles and is designed to contribute to the urban fabric of La Verne. Building architecture will implement Mediterranean and traditional architectural themes that are compatible with residential development within the City. The Specific Plan will have public parks and streetscaping guidelines that are built upon a unifying landscape theme, which will contribute to the overall project identity and create visual interest within the development.

1.5 Project Objectives

The Specific Plan is designed to support the applicable goals and policies of the City of La Verne General Plan and the intent and purpose of the LVMC to ensure the project develops as a high-quality addition to the community. The objectives for the Specific Plan are identified below:

- Increase the supply of housing in the City of La Verne, consistent with the goals and policies of the General Plan Housing Element.

- Implement infill development on underutilized parcels, consistent with the General Plan Housing Element.



Source: KTGY, County of Los Angeles

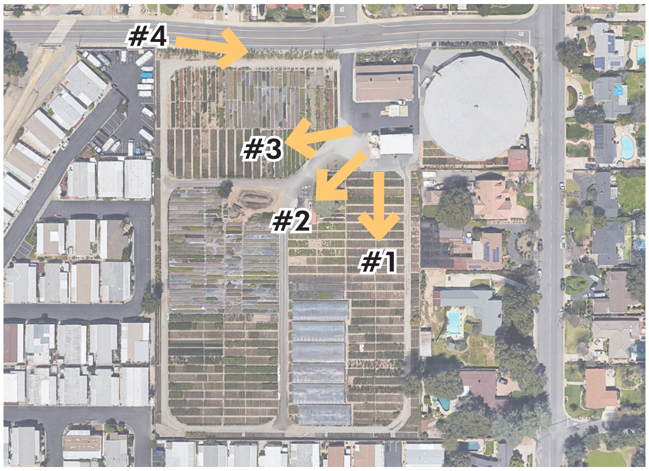
N. T. S.

Exhibit 1.1, Regional Context

Source: KTGY, County of Los Angeles

N. T. S.

Exhibit 1.2, Local Context



Existing conditions key map


View #1, Existing view on-site looking south


View #2, Existing view on-site looking west


View #3, Existing view on-site looking southwest


View #4, Existing Project View from Amherst Street

Exhibit 1.3, Existing Site Photos

- Dedicate new amenitized outdoor park spaces that complement proposed development within the Specific Plan area and are available for public use.

- Reinforce a sense of place through project-specific identity signage.

1.6 Discretionary Actions and Approvals

The City of La Verne is the Lead Agency for purposes of California Environmental Quality Act (CEQA) compliance and has prepared an Environmental Impact Report (EIR) to consider the following discretionary actions. These actions are required to implement this Specific Plan:

- General Plan Amendment: An approval of a General Plan Amendment will be necessary to change the land use designation of the property from "Low Density Residential" to "Medium Density Residential."

- Zone Change: An approval of a Zone Change will be necessary to change the zoning of the entire property from the current "Planned Residential Development" (PR3D) to "Amherst Specific Plan" (ASP) on the City's Zoning Map.

- Specific Plan: The Amherst Specific Plan has been prepared to realize the objectives of the proposed project as defined herein. The Specific Plan will be adopted by ordinance by the City of La Verne City Council.

- Certification of the Environmental Impact Report (EIR): The City La Verne has determined that an EIR is required to analyze the potential environmental impacts of the project and include mitigation measures, as appropriate, to reduce potential environmental impacts. The EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) and the State of California CEQA Guidelines. The City La Verne will consider certification of the EIR prior to taking action on the requested approvals.

- Tentative Tract Map (TTM): A TTM will be prepared for the Specific Plan area and processed through the City in accordance with Chapter 16 of the LVMC and in accordance with the Subdivision Map Act of the California Government Code.

- Precise Plan: Development Review Committee approval of a precise plan for development within the Specific Plan area is required before building permits may be issued.

- Tree Removal: Development Review Committee approval of a tree removal permit within the Specific Plan area is required before removing trees in accordance with Chapter 18.16 of the LVMC.

- Lot Line Adjustment: Development Review Committee approval of a lot line adjustment is required to move the southerly property line approximately three (3) feet in accordance with Chapter 16.18 of the LVMC.

The General Plan Amendment, Zone Change, adoption of the Specific Plan, Precise Plan, and certification of the EIR require approval by the La Verne City Council. The project TTM will require approval of the Planning Commission and/or City Council. Final Maps will require approval by the City Council.

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2

PLANNING CONTEXT

2.1 Relationship to the General Plan and Zoning Code of the city of La Verne

As required by State Law, this Specific Plan is consistent with the applicable goals and policies contained within the adopted City of La Verne General Plan. The goals and policies identified within each element of the General Plan have been evaluated, and a statement of compliance with the General Plan has been included in *Appendix B, General Plan Consistency Analysis*. This Specific Plan serves as zoning for the Specific Plan area.

2.1.1 General Plan Land Use

According to the General Plan, the Specific Plan area is located within Neighborhood 5, Foothill Corridor. The General Plan land use plan designates the Specific Plan area as "Low Density Residential" (LDR). A General Plan Amendment is requested to establish "Medium-Density Residential" (MDR) as the land use designation for the Specific Plan area (See *Exhibit 2.1, Existing General Plan Land Use Designation* and *Exhibit 2.2, Proposed General Plan Land Use Designation*).

2.1.2 Zoning

The City's current zoning designations for the Specific Plan area is "Planned Residential Development 3 DU/AC Detached" (PR3D). A Zone Change is requested to change the zoning designation of the project site from PR3D to "Amherst Specific Plan" (ASP). (See *Exhibit 2.3, Existing Zoning Map* and *Exhibit 2.4, Proposed Zoning Map*).

2.2 Project Context and Surrounding Land Uses

The site is surrounded by a number of external influences that impact the design of the project. These influences are shown on *Exhibit 2.5, Surrounding Uses*, and described below:

- The Amherst Groundwater Treatment Plant and storage facility located adjacent to the Specific Plan area. This 1.5 acre facility requires vehicular access through the project site.

- The adjacent Twin Oaks Mobile Home Park located south and west of the project site.

- The adjacent one- and two-story single family homes to the north and east of the project site.

- Proximity to SR-210, SR-66 (Foothill Boulevard), and I-10 transportation corridors.

- Proximity to Foothill Transit Routes 291, 690, and 188, with the nearest bus stop being approximately 2,200 feet away.

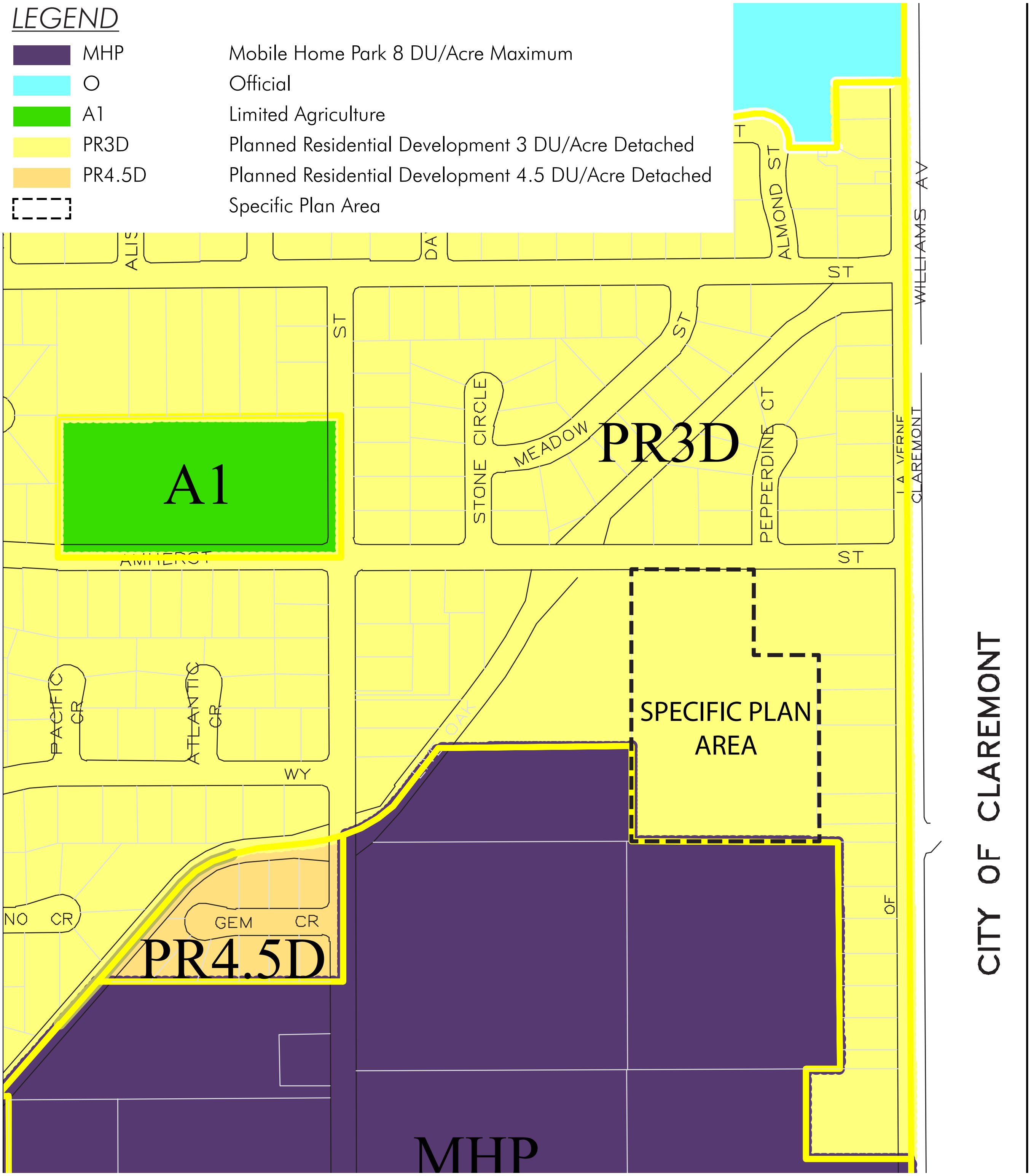
- Proximity to the Metrolink San Bernardino Line, which includes a stop at the Pomona North Metrolink Station located approximately 1.8 miles to the south of the project site.

Source: KTGY, County of Los Angeles, City of La Verne

Exhibit 2.1, Existing General Plan Land Use Designation

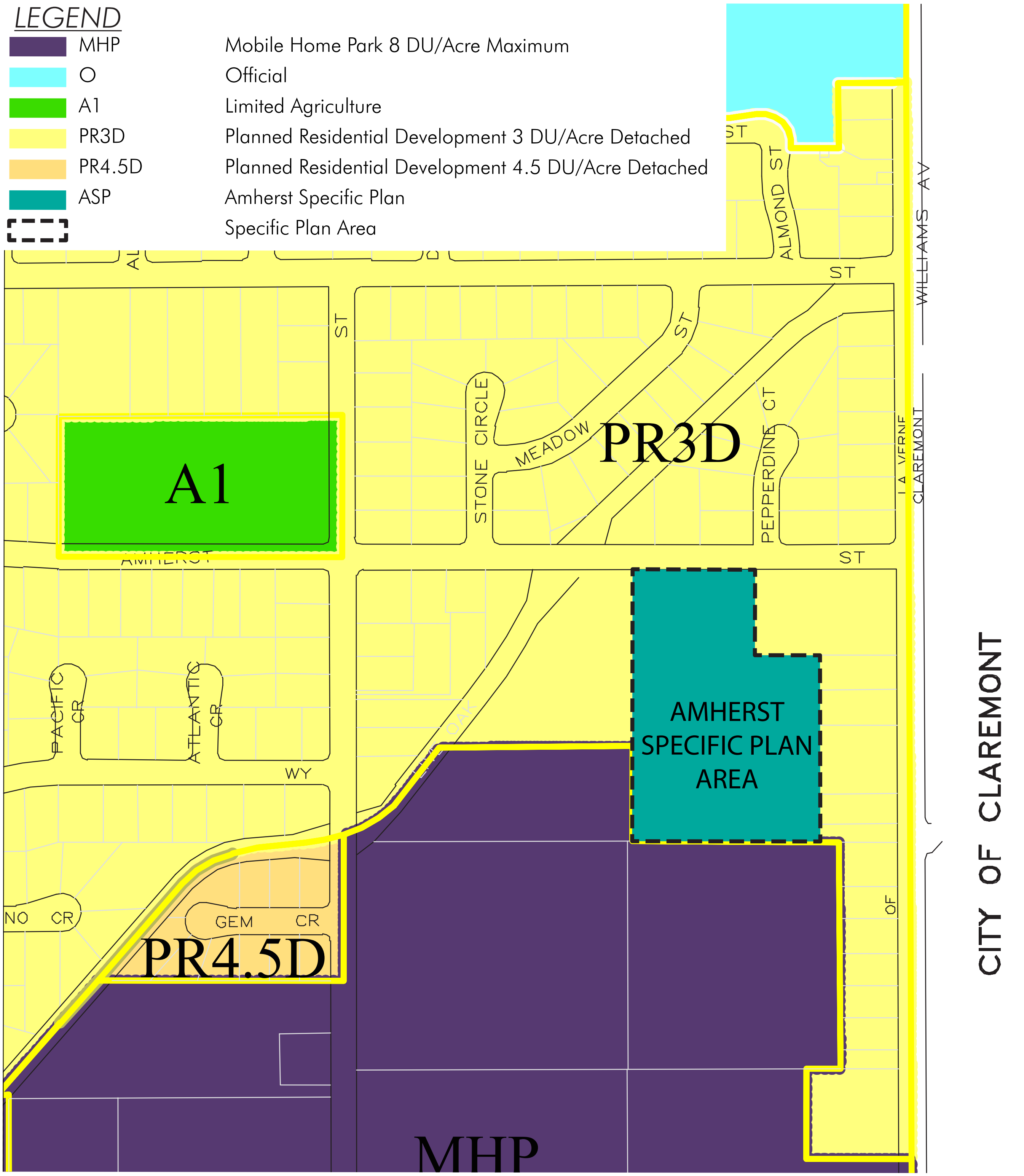
Source: KTGY, County of Los Angeles, City of La Verne

Exhibit 2.2, Proposed General Plan Land Use Designation



Source: KTGY, County of Los Angeles, City of La Verne

Exhibit 2.3, Existing Zoning Map



Source: KTGY, County of Los Angeles, City of La Verne

Exhibit 2.4, Proposed Zoning Map

2.3 Existing Site Conditions

Prior to a lot line adjustment initiated by the City of La Verne, the net Specific Plan area was most recently utilized for the existing Amherst Groundwater Treatment facility with the remainder of the site area being leased to West Covina Wholesale, which used the site as a plant nursery. Subsequent a lot line adjustment, the groundwater treatment facility will be within a parcel separate from the Specific Plan and will require access from the project site. The remaining approximately 5.6-acre site comprises the entire Specific Plan area, and is previously disturbed vacant land with minimal natural vegetation.

2.3.1 Site Topography

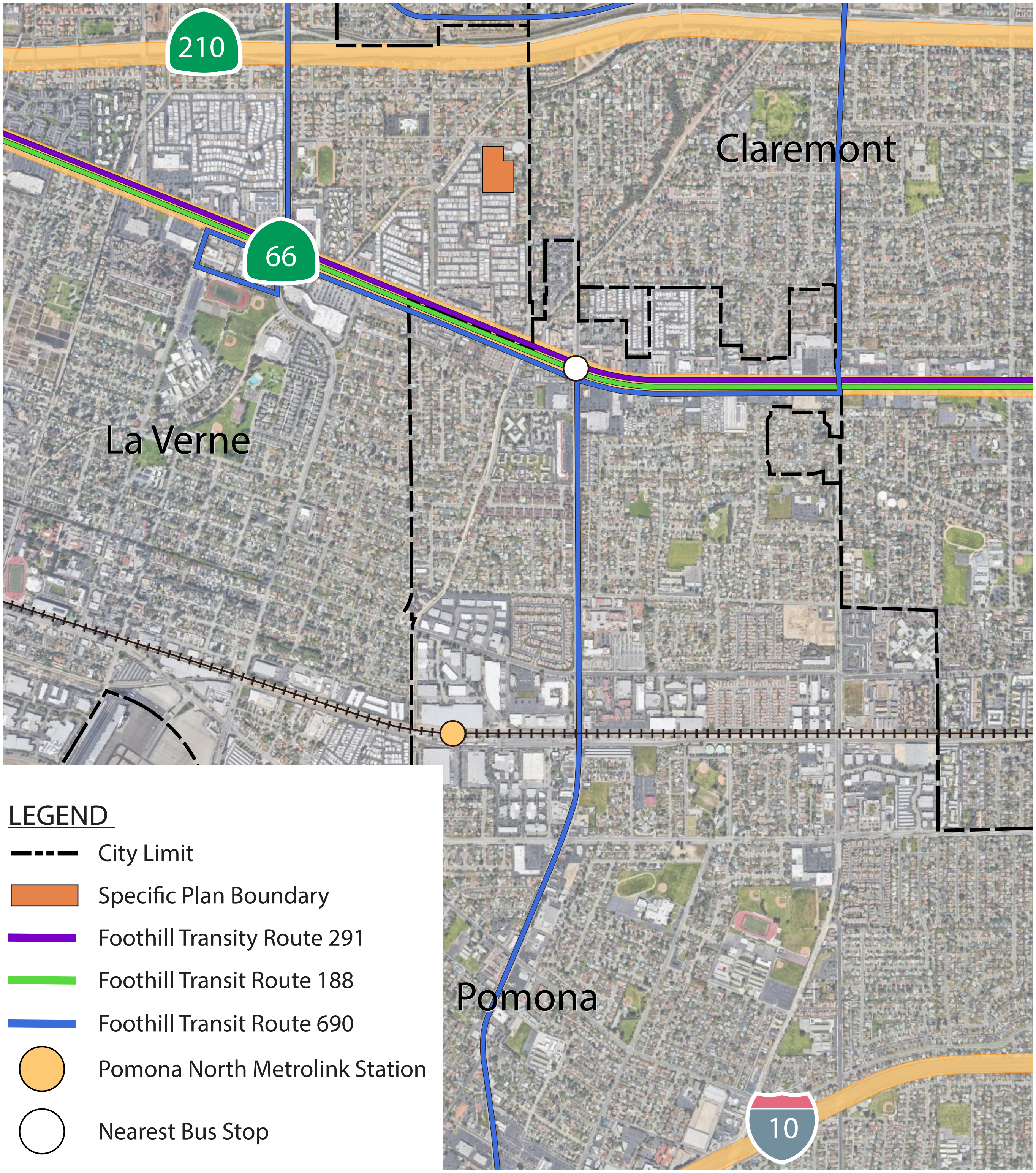
The site is predominately flat, with a gentle slope from 1,219 above mean sea level (amsl) in the southwest corner of the project to 1,240 asml in the northeast corner. The site drains to the southwest.

2.3.2 Existing Circulation

Access to the Specific Plan area is provided from Amherst Street, which is identified as a local street by the General Plan. Amherst Street is comprised of two lanes of travel with parallel parking on both sides. Two existing driveways connect the project site Amherst Street.

The nearest bus stop is located approximately one-half mile the southwest, at the intersection of SR-66 and Falcon Street. This bus stop is serviced by Foothill Transit Routes 188 and 291. Route 188 provides service to La Verne between the cities of Azusa and Montclair. Route 291 provides service between the cities of La Verne and Chino.


LEGEND
City Limit
Specific Plan Boundary
Proposed Project Driveway
Existing Driveway
Bowdoin Street
Residential
Amherst Groundwater Treatment Plant
Amherst Street
Residential
Residential
Specific Plan Area
Williams Avenue
Live Oak Wash
Bradford Street
Twin Oaks Mobile Home



Source: KTGY, Foothill Transit

Exhibit 2.6, Regional Transit Access

3

PLAN ELEMENTS

3.1 PURPOSE AND INTENT

This Chapter contains a discussion of the various plan elements for the Amherst Specific Plan, including the following:

- Land Use Plan and Circulation Plan
- Infrastructure Plan
- Public Services and Utilities
- Grading Plan

Each plan works in tandem with the other plans to establish a framework for the Specific Plan area, ensuring that the Project will develop as a quality and cohesive community within of the overall urban fabric of La Verne.

3.2 LAND USE PLAN

The Amherst Specific Plan is an infill development that includes up to 42 dwelling units on the approximately 5.6 acre project site. Architecture within the development will utilize Mediterranean and traditional architectural themes, and homes will be plotted in a loop-road design. The project allows for residential and recreational uses that are compatible with existing development. Proposed dwelling units that abut recreational uses will be designed to have front doors face those areas.

3.2.1 SINGLE-FAMILY RESIDENTIAL

The Single-family Residential designation is applied to the entirety of the approximate 5.6-acre Specific Plan area (see Exhibit 3, Land Use Plan and Circulation Plan). The Single-family Residential designation allows for the development of single-family homes at a density of up to eight dwelling units per acre, as well as parks and open space.

Below is a list of general development standards:

A. Development density within the Specific Plan area shall not exceed 42 dwelling units at up to 8 dwelling units per gross acre.

B. Unit types within the Specific Plan shall be limited to detached single-family dwelling units.

C. Parks and open space uses shall be oriented towards Amherst Street.

D. Development plan concepts for the Specific Plan area are included in this chapter, *Chapter 3, Plan Elements*, of this Specific Plan. Development standards are included in *Chapter 4, Development Standards* of this Specific Plan.

3.3 Circulation Plan

Regional access to the site is provided by Foothill Boulevard (SR-66) and SR-210, and I-10. Foothill Boulevard is located approximately 2,500 feet south of the project site. On-ramps for SR-210 are located 3,500 feet west and 4,000 feet east, at Fruit Street and North Towne Avenue, respectively. The nearest I-10 on-ramp is located on North Garey Street approximately three miles south of the project site.

Local access to the project is provided by Amherst Street and Williams Avenue. Amherst Street parallels the northern boundary of the Specific Plan area and intersects Williams Avenue approximately 400 feet east of the project site.

3.3.1 Vehicular Circulation

Amherst Street is an existing east-west street that parallels the northern boundary of the Specific Plan area. The Circulation Element of the General Plan designates Amherst Street as a Local Street; parallel parking exists on both sides of the street. The typical existing Amherst Street section is shown in *Exhibit 3.2, Typical Street Cross Sections*. No off-site street improvements are proposed to occur.

Two existing driveways from Amherst Street currently provide access into the project site. These two driveways will be removed and be replaced by one primary project entry, as depicted on *Exhibit 3.1, Land Use Plan and Circulation Plan*. This driveway continues into the development and implements a loop road configuration. The typical design of streets within the project are depicted in *Exhibit 3.2, Typical Street Cross Sections*. In addition to providing residential access the loop road will also provide gated vehicular access to the Amherst Groundwater Treatment facility located adjacent to the Specific Plan area.

One of the access gates to the groundwater treatment plant will serve as a secondary emergency egress for the Project residents.

3.3.2 Pedestrian Circulation

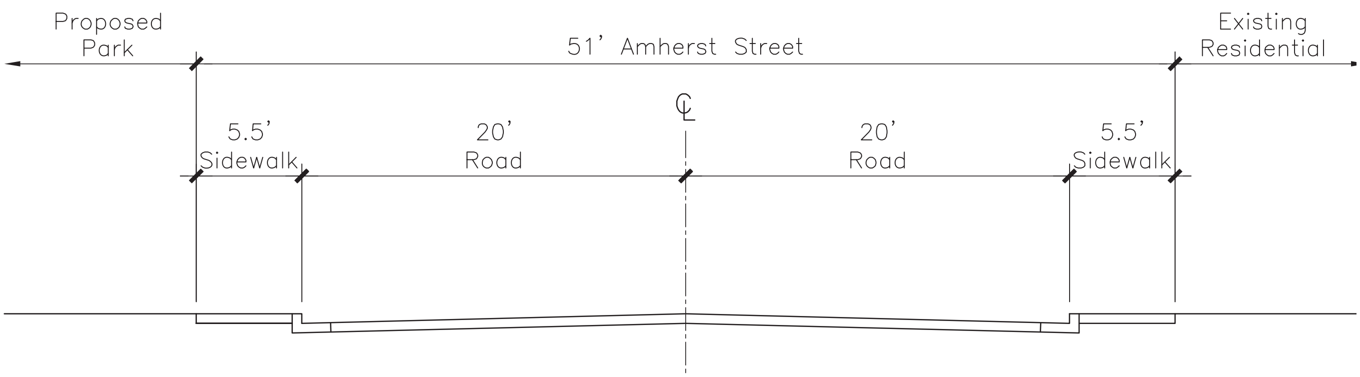
Pedestrian circulation is provided throughout the development by a system of interior sidewalks. These pathways will connect the interior of the development to the network of existing City sidewalks.

3.3.3 Transit

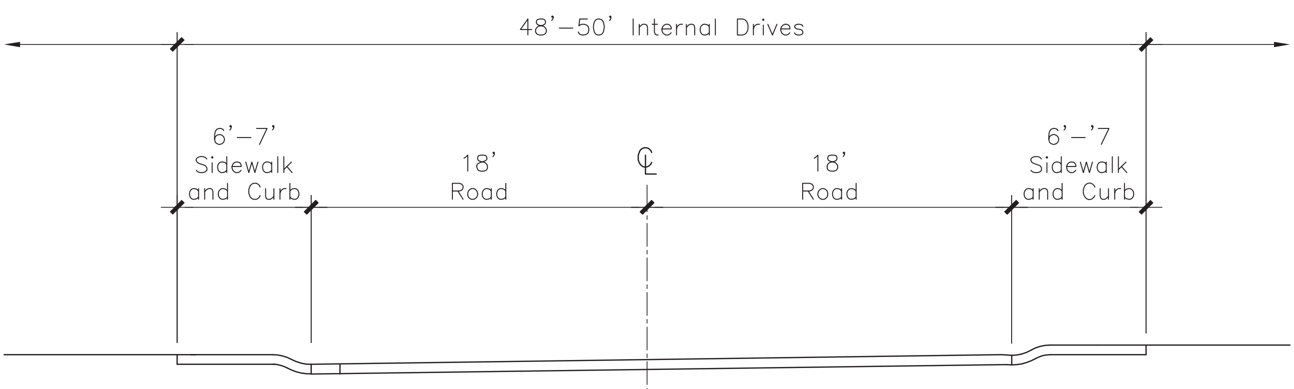
Transit access to the Specific Plan area is available via bus lines operated by Foothill Transit Routes 188 and 291. Route 188 provides service to La Verne between the cities of Azusa and Montclair. Route 291 provides service between the cities of La Verne and Chino. Route 690 provides service to La Verne between the cities of Claremont and Azusa. Commuter rail service is available approximately 1.8 miles away at the Pomona North Metrolink Station, which is serviced by the Metrolink San Bernardino Line.

Source: KTGY, Google

Exhibit 3.1, Land Use Plan and Circulation Plan



Cross Section A-A,
Amherst Street



Cross Section B-B,
Project Primary Access and Internal Circulation

Source: KHR Associates

N. T. S.

Exhibit 3.2, Typical Street Cross Sections

3.4 Infrastructure Plan

Infrastructure facilities, including but not limited to, water, sewer, and storm drains, shall comply with the requirements of the City of La Verne and/or relevant service agencies.

3.4.1 Water System

Potable water service for the Specific Plan area is provided by the City of La Verne Water and Utility Division. Other than abutting improvements, there are no off-site improvements to domestic water lines. Proposed water system improvements within the Specific Plan area include eight (8) inch water distribution lines that provide potable water service to dwelling units within the project. These new facilities will connect to an existing domestic water line located within the Amherst Street right-of-way. Existing and proposed potable water system improvements are depicted in *Exhibit 3.3, Water and Sewer Plan*.

3.4.2 Sewer System

Sewer service for the Specific Plan area is provided by the City of La Verne Sewer Division. Proposed 8-inch on-site sewer lines will connect to off-site city main lines. Off-site improvements are proposed to occur at the southeast corner of the Specific Plan area that connect the project to existing sewer main lines within the right-of-way of Williams Avenue. These new improvements are proposed to traverse an easement area within an adjacent parcel to connect to existing sewer main lines located within the right-of-way of Williams Avenue. Proposed sewer infrastructure improvements are depicted on *Exhibit 3.3, Water and Sewer Plan*.

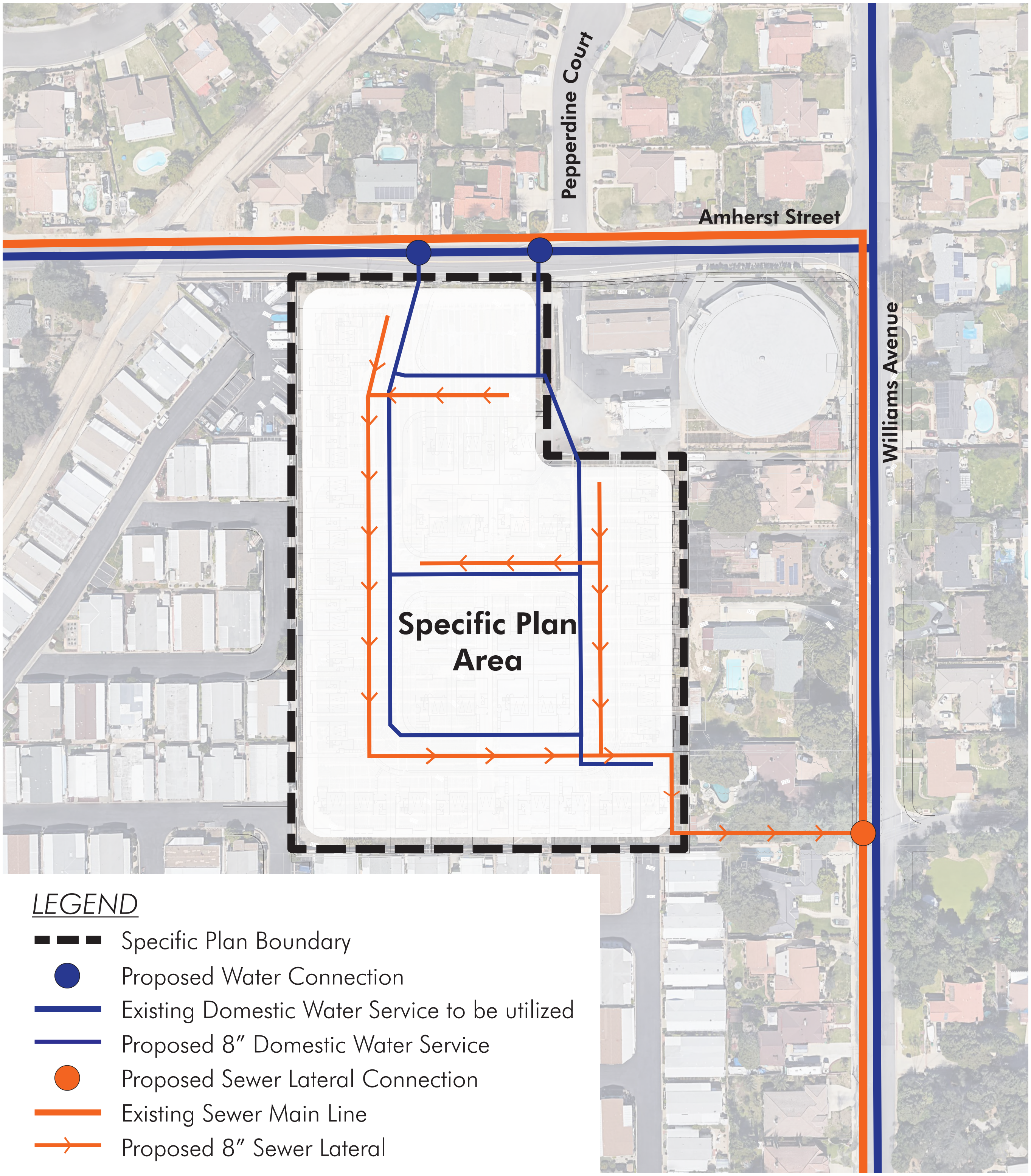
3.4.3 Drainage Plan

Development within the Specific Plan area will utilize existing storm drain line infrastructure owned and maintained by the City of La Verne. New storm drains are proposed to drain runoff from the interior of the Specific Plan area towards the northwest corner of the project.

Runoff occurring on-site will be collected by a system of surface gutters and conveyed to street intakes located within the Specific Plan area. These intakes channel the water into underground pipes and will drain to a central tank located underneath the proposed loop road on the southern side of the project. This tank will ultimately drain to the northwestern corner of the Specific Plan area, where storm water runoff will discharge into existing storm drain gutter infrastructure owned and operated by the City. Proposed storm drainage improvements are depicted on *Exhibit 3.4, Storm Drainage Plan*.

3.4.4 Water Quality

The National Pollutant Discharge Elimination System (NPDES) is a permit program authorized by the United States Environmental Protection Agency to monitor and regulate pollution sources that discharge to waters within the USA. NPDES permits ensure that a state's mandatory standards for clean water and the Federal minimums are being met. Projects that disturb one acre or more of land must comply with construction and post-construction requirements detailed in the applicable NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.



Source: KHR Associates, KTGY

N. T. S.

Exhibit 3.3, Water and Sewer Plan

LEGEND

- Specific Plan Boundary
- Proposed Treatment Facility
- Existing Catch Basin
- Proposed Project Storm Drain
- Off-Site Storm Drain

Source: KHR Associates, KTGY

N. T. S.

Exhibit 3.4, Storm Drainage Plan

3.5 Dry Utilities and Public Services

3.5.1 Dry Utilities

Natural Gas

Natural gas service for the Specific Plan area is provided by Southern California Gas Company (SCG) through the existing lines on-site and within the right-of-way of Amherst Street.

Electricity

Electric service for the Specific Plan area is provided by Southern California Edison (SCE) through existing lines in the surrounding streets.

Cable, Telephone, and Internet

Cable, telephone, and internet services within the City of La Verne are currently provided by AT&T and/or Spectrum.

3.5.2 Public Services

Fire Services

Fire services are provided by La Verne Fire Department (LVFD). LVFD operates three fire stations within the City. The nearest is Fire Station #3, located approximately 1.4 miles northwest of the Specific Plan area at 5100 Esperanza Drive, La Verne.

Law Enforcement Services

Law enforcement services for the Specific Plan area is provided by the La Verne Police Department (LVPD). The nearest station is located approximately 1.5 miles southwest from the project, at 2061 Third Street, La Verne.

Solid Waste Disposal

Solid waste disposal, yard waste, and recycling material collection service for the Specific Plan area is provided by Waste Management / G.I. Industries.

Schools

The site is located in the Bonita Unified School District. As part of the City's permitting process, a school fee will be paid to the Bonita Unified School District prior to City's issuance of building permits.

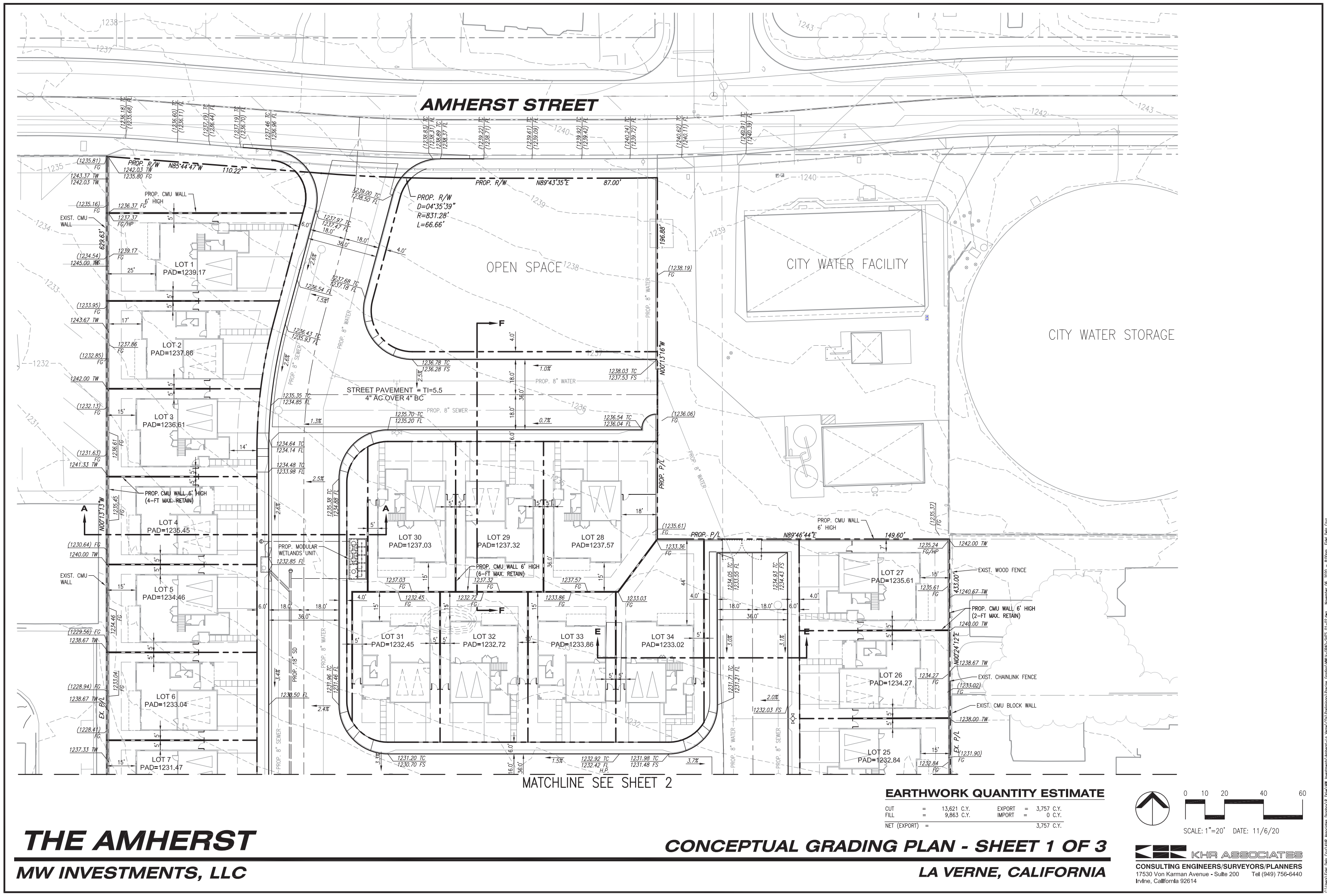
3.6 Grading Plan

The conceptual grading plan is designed to maintain the relative drainage pattern of the existing site. The existing nursery use will cease, and remaining site debris and material will be removed in order for the site to be graded and prepared for development.

The proposed grading concept, as depicted in *Exhibit 3.5a-b, Conceptual Grading Plan*, is designed to balance cut and fill within the project area to the extent feasible. Final engineering may result in modifications to the overall grading concept, but the modifications should conform to the general intent of the Conceptual Grading Plan.

Exhibit 3.5a, Conceptual Grading Plan

Source: KHR Associates



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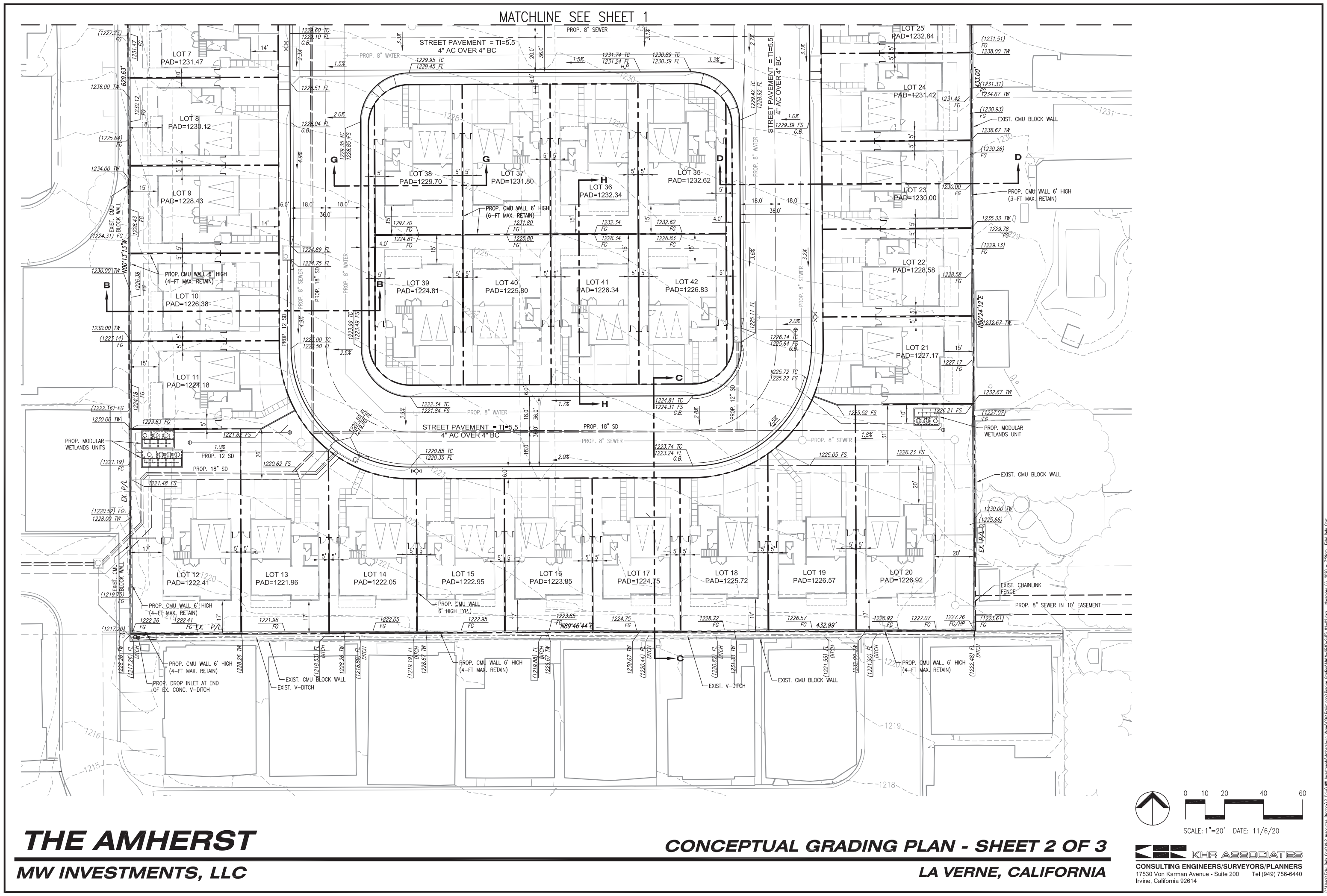

Source: KHR Associates

N. T. S.

Exhibit 3.5b, Conceptual Grading Plan

3.7 Architectural Design Guidelines

Architectural Style

Architecture within the Specific Plan area will reflect the design philosophies of Craftsman and Santa Barbara architectural styles. The Santa Barbara architectural style is a derivative of Spanish-themed architecture and should incorporate aspects of Mediterranean-style, such as arched openings, red-tile roofs, white and beige stucco walls, and dark wood trims. The Craftsman style is an American domestic style of architecture that features low pitched roofs, tapered columns and supports, and exposed wooden structural and decorative elements.

Building Orientation and Massing

The front elevation of the house is an important element in creating a quality neighborhood. Special attention will be placed on this elevation and how it interacts with the public realm.

Roof Variation

Roofs should be designed for functionality and to enhance or complement the overall architectural design of the building. Roofs should avoid repetition along the street, especially between elevations of the same floor plan.

Facade Articulation

All publicly visible facades of the resident community shall be treated with an equal level of detail and articulation. Components of a well-articulated facade may include massing variations such as projections, overhangs, recesses, or architectural detailing, and color and material changes that are consistent with the architectural style. All primary entryways should face the street/drive and shall provide the address or unit identification, and a landing or alcove.

Example, Streetscene Perspective of Architecture in Specific Plan Area

3.8 Landscape Design Guidelines

The intent of the landscape design concept, as depicted on *Exhibit 3.6, Conceptual Landscape Plan*, is to reinforce sustainable, pedestrian-friendly community. All landscape should be climate appropriate and use efficient irrigation systems. The use of turf in front yards is discouraged, and should be minimized throughout the Specific Plan area. There are three types of open spaces within the project area: private yard space, common area landscape, and public open space. Guidelines for these types of open spaces are found below.

Private Yard Space

Private yard space is composed of front, rear, and side yards. These landscape areas will be maintained by the homeowner of the property upon which the yard is situated. Water-wise landscape principles are encouraged to be implemented in these privately maintained spaces.

Common Area Landscape

Common open space is composed of parkways, community entry features, and other landscape areas within the community that will be maintained by a community homeowners association (HOA). Landscaping in these areas will be designed with water-wise principles, with a consistent landscaping palette that contributes to overall project sense-of-place.

Public Open Space

Public open space within the project is provided in the form of a 0.26-acre pocket park to be dedicated to the City and located adjacent to the project entry. This area serves as a landscape gateway to the project and provides outdoor recreation opportunities to project residents and the public. The conceptual design for the pocket park is depicted in *Exhibit 3.7, Conceptual Pocket Park Design*. Park amenities may include, but are not limited to:

- Event lawn/turf
- Picnic Tables
- Built in BBQ and buffet counter area
- Wood structure with string-lighting
- Fire-pit with group lounge seating
- Enhanced paving
- Dog-bag station
- Bike Racks
- Benches

Exhibit 3.6, Conceptual Landscape Plan

Legend

1. *Fire-pit with lounge seating*
2. *Wood structure with string-lighting*
3. *Built-in BBQ counters (2 Grills)*
4. *Picnic tables*
5. *Event turf/lawn*
6. *Benches*

Conceptual landscape plan may be subject to change based on final design and engineering.

Source: Studio PAD

N. T. S.

Exhibit 3.7, Conceptual Pocket Park Design

3.9 Walls and Fences

Walls and fences within the Specific Plan area are intended to contribute to the sense-of-place of the project, provide privacy and access control to privately owned areas, and facilitate safe recreation activity in the pocket park. The conceptual wall and fence plan is depicted in *Exhibit 3.8, Conceptual Wall and Fence Plan*. Any wall or fence erected within the Specific Plan area must complement the overall architectural theme of the community.

3.10 Sustainability Guidelines

This Specific Plan requires "Green" building practices that meet the California Building Energy Efficiency Standards and CALGreen Building Standards (California Code of Regulations Title 24, Parts 6 and 11) to reduce the impact on the environment, decrease energy costs, and create healthier living through improved indoor air quality and safer building materials. Title 24 sets forth building standard requirements including, but not limited to, planning and site design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, waste reduction, indoor air quality and pollutant control, thermal comfort, and provisions for bicycle parking.

All new development within the Specific Plan area is required to meet the rigorous standards of Title 24. The development will be inspected for compliance and will include an operation manual to help end-users maintain and effectively use the sustainable building features provided. Since the concept of sustainability is evolving, it is anticipated that new sustainable strategies may be continually developed during the build-out period of the Specific Plan. All development within the Specific Plan area shall comply with the California Title 24 standards, the City of La Verne's General Plan, whichever is most stringent. Title 24 does not require every efficiency item to be implemented. A certain threshold needs to be met and the developer or builder has the option to choose which items to implement that meet the specified threshold. As part of the project, solar photovoltaic panels will be installed on each home. In addition, each home will be pre-wired to accommodate charging electric vehicles.

Source: Studio PAD, KHR Associates, KTGY

N. T. S.

Exhibit 3.8, Conceptual Wall and Fence Plan

4

DEVELOPMENT STANDARDS

4.1 General Provisions

This Chapter establishes the permitted uses, development standards and regulations for the planned development within The Amherst Specific Plan area. The standards contained in this Chapter of the Specific Plan shall supersede those of the La Verne Municipal Code (LVMC), unless otherwise stated herein.

In instances of conflicting regulations and standards, the standards and regulations contained in this Specific Plan shall take precedence over the LVMC. If this Specific Plan is silent on an issue, then the standards in the LVMC or other applicable City, state or federal code shall apply, as appropriate. The provisions in this Chapter are not intended to interfere with, abrogate, or annul any easement, covenant, or other agreement between parties.

Where the language in this Specific Plan is undefined, unclear, or vague, the final interpretation and determination shall be made by the Community Development Director, or his/her designee. The Community Development Director may forward an item requiring interpretation to the City of La Verne Development Review Committee for determination. Any determination by the Planning Commission may be appealed to the Planning Commission. All decisions by the City Council shall be deemed final.

4.2 Allowable Development

The Specific Plan permits a maximum of 42 single-family residential dwelling units developed at up to 8 dwelling units per acre within the Specific Plan area.

Approximately 0.26 acres of open space/ park area within the Specific Plan area shall be dedicated to the City of La Verne to be utilized as public park space for residents project and the surrounding area.

4.3 Permitted Uses within the Specific Plan Area

Permitted uses are identified on *Table 4.1, Amherst Specific Plan Permitted Uses*. Any other use or activity not listed in Table 4.1 may be permitted within the Specific Plan if it is compatible with the intent of the Specific Plan and is similar to a permitted use, subject to approval by the Director of Community Development. The Director of Community Development may determine to allow the use or may require approval of a Conditional Use Permit, subject to the provisions of Section 18.108 of the LVMC.

Table 4.1
Amherst Specific Plan Permitted Uses

USES	
ACCESSORY DWELLING UNITS AND JUNIOR ACCESSORY DWELLING UNITS	Per Chapter 18.120 of the LVMC
ACCESSORY LIVING QUARTERS	Per Chapter 18.36.032.C of the LVMC
ACCESSORY STRUCTURES, NON-HABITABLE	P
COMMERCIAL ANTENNA	Per Chapter 18.104 of the LVMC
COMMUNITY CARE FACILITY	–
CONGREGATE CARE FACILITY	–
CONVALESCENT FACILITY	–
DWELLING UNIT, SINGLE-FAMILY DETACHED	P
FAMILY DAYCARE HOME, SMALL (UP TO 6 CHILDREN)	P
FAMILY DAYCARE HOME, LARGE (BETWEEN 7 AND 14 CHILDREN	CUP
HOME OCCUPATIONS	Per Chapter 18.96 of the LVMC
PARKS	P
RELIGIOUS USES	CUP
RESIDENTIAL CARE FACILITY FOR THE ELDERLY (6 OR FEWER PEOPLE)	P
RESIDENTIAL CARE FACILITY FOR THE ELDERLY (7 OR MORE PEOPLE)	CUP
SUPPORTIVE AND TRANSITIONAL HOUSING (6 OR FEWER PEOPLE)	P
SUPPORTIVE AND TRANSITIONAL HOUSING (7 OR MORE PEOPLE)	CUP

P = PERMITTED BY RIGHT
CUP = CONDITIONAL USE PERMIT REQUIRED (PER CHAPTER 18.108 OF THE LVMC)
– = PROHIBITED

4.4 Development Standards

The property development standards set forth in this Chapter shall apply to all land and buildings located within the confines of the Amherst Specific Plan. For detailed development standards and setbacks, please see *Table 4.2, Amherst Specific Plan Development Standards*. In instances where any section, subsection, sentence, clause, phrase, portion or word contained within this Specific Plan is undefined, unclear or vague, the City's Director of Community Development shall make a determination as to its meaning and intent. The Director of Community Development may elect to forward any item to the Development Review Committee for final determination.

Table 4.2
Amherst Specific Plan Development Standards

DEVELOPMENT STANDARD	REQUIREMENT
DENSITY	8 Dwelling Units Per Acre
MAXIMUM NUMBER OF UNITS	42 Dwelling Units
MINIMUM LOT DIMENSIONS	45 Wide by 75 Deep
MINIMUM LOT AREA	3,350 Square Feet
HEIGHT	
MAXIMUM BUILDING HEIGHT	30 Feet and Two Stories
SETBACKS AND SEPARATIONS	
MINIMUM BUILDING SETBACK FROM AMHERST STREET RIGHT-OF-WAY[1]	25 Feet
MINIMUM DISTANCE FROM GARAGE DOOR TO INTERNAL LOOP ROADS[1]	20 Feet to sidewalk
MINIMUM FRONT SETBACK[1]	12 Feet
INTERIOR SIDE SETBACK[1]	5 Feet
INTERIOR REAR SETBACK[1]	15 Feet
MINIMUM BUILDING SEPARATION	10 Feet
PARKING	
MINIMUM PARKING REQUIRED PER DWELLING UNIT	Two (2) Spaces within Garage and Two (2) Spaces on Driveway (20ft)
LOT COVERAGE	
MAXIMUM LOT COVERAGE	50%

1. Projections and encroachments subject to Section 4.5, Allowable and Encroachments and Projections

4.5 Allowable Encroachments and Projections

4.5.1 Encroachments

An encroachment is a permitted projection into a setback. In all cases, all encroachments and projections shall comply with the California Building Code (CBC), as well as other applicable codes and regulations such as the American Disability Act and the LVMC. The permitted encroachments are discussed below.

1. Architectural elements such as cornices, eaves, belt courses, bay windows, planter boxes, lighting fixtures, canopies, and the like that do not increase the interior floor area may encroach into any setback, provided they are at least three (3) feet from the property line.

2. Awnings may encroach into any required setback up to five (5) feet, provided there are no vertical supports located within the setback area, but may not reduce the setback distance to less than three (3) feet.

3. Landscape elements such as benches, fountains, and other decorative features may encroach into any setback, provided they do not obstruct any path of travel or intersection visibility requirements per Chapter 10.68 of the LVMC and the setback is not reduced to less than three (3) feet.

4. Mechanical equipment may encroach into any required setback area up to the property line, provided the equipment is screened by landscape or material (e.g. wall) to the maximum extent feasible and allowed by any applicable utility provider.

5. Patio covers and porches may be permitted to encroach up to five (5) feet into any rear setback (measured from post or structural supports).

6. Balconies and exterior stairways may encroach up to five (5) feet into any setback, but shall be at least five (5) feet from any property line (including any posts or structural supports).

7. Accessory buildings are permitted to encroach into a required setback, subject to the provisions of Section 18.36.032.C of the LVMC.

4.6 Off-Street Parking Standards

The parking requirements for the Specific Plan area are identified below. Other off-street parking provisions shall comply with the provisions of Chapter 18.76 of the LVMC.

A. Parallel parking spaces along the internal loop road and main project entry shall be provided for use by residents of the community and their visitors.

B. Each single-family home shall have a driveway capable of parking two cars, with a minimum length of 20 feet measured to the back pf the sidewalk.

4.7 Fences and Walls

Walls and fences for the Specific Plan area shall not exceed 6 feet 6 inches in height. A combination garden and retaining wall may increase the minimum wall height to 8 feet in height. Specific Plan area allows plasters and other wall decorative elements. All other provisions shall comply with Chapter 15.28 of the LVMC.

4.8 Signage

Signage within the Specific Plan area shall comply with the design requirements and procedures found within Title 17 of the LVMC.

4.9 Noise

Pursuant to the City's General Plan, an appropriate exterior noise environment for new residential developments should not exceed 65 decibels community noise equivalent (dBA CNEL) for outdoor usable areas and an interior level of 45 dBA CNEL for living areas.

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5
ADMINISTRATION & IMPLEMENTATION

This chapter outlines the procedures necessary to administer and implement the provisions of the Amherst Specific Plan, and provides an overview of the mechanisms or actions that may be required throughout the process.

5.1 Development Phasing

It is anticipated that the Specific Plan will be built out in one complete phase over a period of one to two years with construction estimated to be completed sometime in 2022-2023. Actual build-out will be subject to market and economic conditions, jurisdictional processing of approvals, and infrastructure timing, and may vary from the phasing currently anticipated.

Project development will include all on-site infrastructure improvements necessary to service the project including, but not limited to:

- Grading of the Specific Plan area;
- Water distribution lines and related infrastructure;
- Sewer distribution lines and related infrastructure;
- Storm water lines and related infrastructure;
- Other utility services (e.g., electricity, cable television, telephone, etc.); and
- Improvements associated with the on-site private streets and drives.

5.2 Financing

5.2.1 Financing Mechanisms

Several types of financing strategies and tools are available for the Amherst Specific Plan. It is anticipated that the Specific Plan will build-out using a variety of these strategies and tools, which could include, but are not limited to, the following:

A. Special Assessment Districts

Special assessment districts, such as those permitted by the Municipal Improvement Act of 1913, the Improvement Bond act of 1915, and the Lighting and Landscape Maintenance Act of 1972, provide methods of leveraged financing whereby a public entity determines an area in which the provision of facilities will benefit real property. A special assessment district may be created for the Specific Plan area to cover improvements such as landscaping and lighting. This financing tool can be used for public improvements that directly benefit specific properties that are assessed to pay for the improvements at no risk to public agency general funds.

B. Mello-Roos Community Facilities Act of 1982

The Mello-Roos Act enables cities, counties, special districts and school districts to establish community facilities districts and to levy special taxes to fund a variety of facilities and services required by a specific plan. A Mello-Roos tax can be applied to the planning and design work directly related to the improvements being financed and may also fund services on a pay-as-you-go basis including police and fire protection, ambulances, flood protection, recreational programs, parks and schools.

C. Impact Fees and Exactions

Impact fees and exactions are another tool for paying for new development resulting from increased population or demand for services. The master developer for the Specific Plan will work with the City of La Verne to determine appropriate fees and exactions, which may be identified in a formal written agreement that is acceptable to both the City and the master developer.

D. Developer Funding

In certain instances, funding for on-site facilities may be tied directly to the Amherst Specific Plan. The developer may pay a fair share portion of the facility in exchange for development rights. On-site streets, utility connections from the main trunk lines and drainage facilities are typical examples of facilities that may be funded by the developer. Such improvements will usually be required concurrently with the development.

5.2.2 Infrastructure Financing

A. The on-site storm drain system shall be funded and constructed by the developer. The cost of the local system shall be borne by the developer without fee credits.

B. The water facilities and infrastructure shall be owned, operated, and serviced by the Water and Utility Division of the City of La Verne.

C. The sewer facilities and infrastructure shall be owned and operated by the Water and Utility Division of the City of La Verne. The fair share cost associated with designing and constructing the sewer system shall be borne by the developer.

D. Telephone, electricity, gas lines, and cable television lines shall be installed and maintained by the appropriate utility companies.

E. The property owner or property management entity shall be responsible for installation, maintenance, and upkeep of all common landscape areas, hardscape/parking areas, private drives, and irrigation systems within the Specific Plan area, with the exception of those located within the proposed public pocket park.

F. All necessary infrastructure (e.g., private drives, sewers, water lines, storm drains, drainage improvements, etc.) shall be phased and installed concurrently with development.

5.3 Specific Plan Administration

The City of La Verne shall administer the provisions of the Amherst Specific Plan in accordance with the State of California Government Code, the La Verne General Plan, the La Verne Municipal Code, the Subdivision Map Act, and other applicable State and City regulations. The development procedures, regulations, standards and specifications contained in this adopted Specific Plan shall supersede the relevant provisions of the City's Municipal Code, as they currently exist or may be amended in the future.

5.3.1 Compliance with the Adopted Specific Plan

The City of La Verne shall monitor compliance with the adopted Specific Plan and mitigation measures at these stages, as appropriate:

- During the review and approval of subsequent conditional use permits and other permits, as appropriate.
- During the review of construction documents, and prior to the issuance of grading or building permits.
- Prior to the issuance of a certificate of occupancy for any building within the Specific Plan area.
- Prior to the recordation of any tract map or final map within the Specific Plan boundaries.

5.3.2 Development Process Approvals

Table 5-1, Development Process Approvals, is designed to clarify the process of entitlement through the City of La Verne for various applications and actions associated with projects being implemented within the confines of the Amherst Specific Plan area.

The following administrative standards apply to the implementation of future development applications (including tract maps, conditional use permits, variances, and other applicable applications for projects within the Specific Plan area.

A. No development shall occur or building permits issued within the Specific Plan area until the proposed development is reviewed by the City's Community Development Department and found to be consistent with the adopted Specific Plan. Criteria for review and approval of proposed development shall include, but not be limited to the following:

   1. Conformance with the land use designation, maximum density, and maximum number of dwelling units for the Specific Plan area; and

   2. Conformance with the intent and development standards, goals, and policies of the Specific Plan.

B. All tentative maps shall be consistent with the adopted Specific Plan.

C. Building permits for dwelling units shall be issued after a final subdivision map has been recorded.

D. It may be necessary for conditional use permits, and/or variances to implement modifications of

Table 5-1
Development Process Approvals

DEVELOPMENT PROCESS APPROVALS	ACTION REQUIRED BY:			
	DIRECTOR OF COMMUNITY DEVELOPMENT	DEVELOPMENT REVIEW COMMITTEE	CITY COUNCIL	PLANNING COMMISSION
Specific Plan – Interpretations	•			
Specific Plan – Minor Modifications		•		
Specific Plan Amendment			•	•
Tentative Tract Map				•

uses or structures within the Specific Plan area. Conditional use permits and variances shall be processed through applicable City procedures and meet the provisions identified in Chapter 18.108 of the LVMC, as amended.

5.3.3 Specific Plan Interpretations

In instances where any section, subsection, sentence, clause, phrase, portion or word contained within this Specific Plan is undefined, unclear or vague, the City's Director of Community Development shall make a determination as to its meaning and intent. The Director of Community Development may elect to forward any item to the Development Review Committee for determination.

5.3.4 Severability

If any section, subsection, sentence, clause, phrase, or portion of this Specific Plan, or any future amendments or additions hereto, is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Specific Plan, or any future amendments or additions hereto. The City hereby declares that it would have adopted these requirements and each sentence, subsection, clause, phrase, or portion or any future amendments or additions thereto, irrespective of the fact that any one or more sections, subsections, clauses, phrases, portions or any future amendments or additions thereto may be declared invalid or unconstitutional.

5.4 Specific Plan Modifications and Amendments

5.4.1 Minor Modifications to the Specific Plan

Minor revisions to the plans, guidelines, regulations, and standards contained in this Specific Plan may be approved at the discretion of the Development Review Committee; provided, however, that such deviations are deemed to be in substantial conformance with this Specific Plan and are not detrimental to the public health, safety and welfare. Modifications to the adopted Specific Plan must be consistent with the purpose and intent of the originally approved Specific Plan. Any decisions made by the Development Review Committee may be appealed to the Planning Commission. Decisions of the Planning Commission may be appealed to the City Council.

Decisions by the City Council shall be deemed to be final.

All minor modifications must comply with the following requirements:

A. The total number of dwelling units within the Amherst Specific Plan area may not exceed 42 dwelling units.

B. The circulation plan network is essentially the same with only minor variations.

C. No environmental impacts would occur above those addressed in the certified CEQA documentation for the adopted Specific Plan as a result of the proposed modifications.

D. The public health, safety, and welfare shall not be jeopardized by the proposed modifications.

The following modifications constitute minor modifications to the approved Amherst Specific Plan and may be approved without amending the Specific Plan.

A. Slight modifications to the Specific Plan area boundaries that respond to more accurate or recent data or actual on-site conditions.

B. Minor exceptions to the development standards are permitted, pursuant to LVMC Chapter 18.108, Conditional Use Permits, Variances, and Minor Deviations.

C. Minor changes to the circulation plan to accommodate actual conditions on-site or modify ingress and egress locations, or to respond to new information that was not available at the time the Specific Plan was originally prepared.

D. Minor changes to the design of the loop road cross-sections, provided that the drives have adequate capacity to handle the anticipated volumes of traffic and the design changes are deemed acceptable by the City's Traffic Engineer.

E. Minor modifications to the architectural or landscape design guidelines.

F. The architectural styles of the dwelling units may change; provided, however, that all of the development within the Specific Plan shall be constructed of the same architectural style to encourage continuity within the Project.

G. Minor modifications to the grading plan.

H. Minor modifications to the water, sewer, and/or drainage plan(s).

I. Any modifications to the project phasing.

5.4.2 Specific Plan Amendments

A. The project developer, project merchant builder, or property owner shall have the authority to initiate an amendment to the adopted Specific Plan at any time. No authorization by City staff, the Planning Commission or the City Council shall be necessary to initiate a Specific Plan Amendment for the Amherst Specific Plan area.

B. Said amendment shall not require a concurrent General Plan Amendment unless it is determined by the City of La Verne that the proposed amendment would substantively affect the General Plan goals, objectives, policies, or programs.

C. All Specific Plan Amendments shall be subject to the requirements of the CEQA of 1970 and any applicable City of La Verne CEQA Guidelines.

D. The Planning Commission and City Council shall each hold a public hearing on the proposed amendment of the Specific Plan. Any hearing may be continued from time to time as deemed appropriate and necessary by the Planning Commission and City Council.

E. The Planning Commission shall review all proposed amendments to the adopted Specific Plan. Upon the close of the required public hearing, the Planning Commission shall act by resolution to adopt, reject, or modify the proposed Specific Plan Amendment and forward its recommendation and findings to the City Council for action.

F. The City Council shall review the Planning Commission's findings and recommendations. Upon the close of the required public hearing, the City Council shall act by resolution to adopt, reject, or modify the proposed Specific Plan Amendment.

G. Prior to approving or conditionally approving any Specific Plan Amendment, the Planning Commission and City Council must make that the following findings regarding the Amendment:

    1. The proposed amendment is consistent with the La Verne General Plan;

    2. The proposed amendment is consistent with the objectives and intent of the Amherst Specific Plan;

    3. The proposed amendment results in development of desirable character that will be compatible with existing and proposed development in the surrounding neighborhoods; and

    4. Respects the aesthetic assets of the community consistent with economic realities.

5.5 Tentative Tract Map

An implementing Tentative Tract Map is being processed through the City concurrently with this Specific Plan. The Tentative Tract Map will be processed according to the City's standard Tentative Map Review process (LVMC Chapter 16.16, Tentative Maps) and California's Subdivision Map Act.

5.6 Precise Plan

A Precise Plan is required for single-family residential development within the Specific Plan area. The precise plan will be processed according to the process described in LVMC Chapter 18.16, Development Review.

5.7 Maintenance Responsibilities

Successful operation of maintenance districts and associations are important in ensuring that the Project area is well-maintained. Maintenance responsibilities for the open spaces, landscape areas, lighting, and common project facilities will be maintained either by a management agency or a Homeowner's Association (HOA), or similar entity. The project developer will be responsible for the maintenance of all areas and facilities listed in *Table 5.2, Maintenance Responsibility Matrix* until such time accepted by the appropriate entity.

Table 5-2
Maintenance Responsibility Matrix

MAINTENANCE AREA	CITY	HOA	UTILITY
Amherst Street	•		
Loop Road Lights			•
Loop Road Sidewalks		•	
Public Pocket Park	•		
Project Entries		•	
On-site Stormwater Drainage		•	
Electricity			•
Water/Sewer			•
Gas			•
Telephone			•
Cable			•

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APPENDIX A

GENERAL PLAN CONSISTENCY ANALYSIS

This Appendix contains a consistency analysis between The Amherst Specific Plan and the goals and policies contained in the City of La Verne General Plan as required by Section 65454 of the California Government Code. As shown by this consistency analysis, The Amherst Specific Plan is consistent with the City of La Verne General Plan.

LAND USE ELEMENT		
GOAL LU-1: MANAGE OUR GROWTH THROUGH PLANNED DEVELOPMENT.		
Policy		**Consistency Analysis**
Policy LU-1.1	Balance quality development with adequate service throughout our city.	The Project proposes a high-quality development within La Verne. Where a nexus occurs, the Project shall upgrade facilities and infrastructure according to the approved Capital Improvement Program and as required.
GOAL LU-3: PROVIDE COMPREHENSIVE DEVELOPMENT STANDARDS AND GUIDELINES CITYWIDE.		
Policy LU-3.1	Preserve the distinctive character of our neighborhoods.	The Project evaluates impacts upon the adjacent neighborhood and proposes development that is compatible with existing adjacent residences and preserves the character of the neighborhood.
Policy LU-3.2	Protect our neighborhoods from incompatible development.	The Specific Plan incorporates existing conditions analysis, design guidelines and development standards that ensure existing neighborhoods aren't infringed upon by incompatible development.

Policy		Consistency Analysis
Policy LU-3.4	Design our neighborhoods to be safe, rather than separate.	To the greatest extent feasible, the Project integrates with existing development, and proposes public open space along Amherst Avenue. This design ensures the development is safe, but not separated, from the adjacent neighborhoods.
Policy LU-3.5	Seek variety, and innovation in land use practice.	The Specific Plan proposes modern and innovative design solutions for development upon a constrained site. The implementation of architectural and landscape design guidelines ensures the overall design promotes architecture character, public open space, and maintain connections to existing water district facility.
GOAL LU-8: FOSTER A HEALTHY BALANCE OF USES WITHIN OUR FOOTHILL CORRIDOR.		
Policy LU-8.2	Buffer our neighborhoods from more intense land uses.	The Project does not propose any commercial uses; however, the Specific Plan evaluates noise, circulation, lighting, and safety impacts to adjacent uses and implements appropriate standards to manage proposed development.
Policy LU-8.4	Provide for a smooth transition between land uses.	The project abuts residential uses and a water district facility. Being a proposed residential use, the project is compatible and fits seamlessly into the context of the neighborhood.
Policy LU-8.5	Preserve and enhance the quality of this residential neighborhood.	The Specific Plan implements a high-quality development within this portion of Neighborhood Five. Proposed Design Guidelines and Development Standards ensure the residential character of the existing neighborhood will not be infringed upon by the Project.

TRANSPORTATION ELEMENT		
GOAL T-2: IMPROVE OUR TRAFFIC FLOW.		
Policy		**Consistency Analysis**
Policy T-2.2	Decrease our transportation demand.	The Environmental analysis will evaluate transportation related impacts and mitigate impacts when feasible.
Policy T-2.5	Relieve congestion and improve air quality throughout our valley.	The Environmental analysis will evaluate congestion and air quality related impacts and mitigate impacts when feasible.
GOAL T-3: PROTECT OUR NEIGHBORHOODS FROM TRAFFIC DANGERS.		
Policy T-3.1	Increase traffic safety.	The standards for circulation are established by the Specific Plan and ensure safe pedestrian, and vehicular circulation within the Project and it's connection to Amherst Street.
Policy T-3.2	Decrease traffic noise, volumes, speed, and congestion.	The Environmental analysis will evaluate transportation related impacts and mitigate impacts when feasible.
GOAL T-4: IMPROVE OUR OFF-STREET PARKING AREAS.		
Policy T-4.2	Relieve parking-impacted neighborhoods.	Development standards established by the Specific Plan ensure that adequate off-street parking is provided within the Project area by providing two garage and driveway spaces per unit as well as on-street parking throughout the Project's private streets.
GOAL T-5: DEVELOP A SAFE TRANSPORTATION AND CIRCULATION SYSTEM.		
Policy T-5.1	Provide optimal street use and access.	The Project will implement driveways and site access according to applicable City standards and standards specified by the Specific Plan.

RESOURCE MANAGEMENT ELEMENT		
GOAL RM-1: AN ATTRACTIVE, SAFE AND ACCESSIBLE PARKS AND RECREATION SYSTEM.		
Policy		**Consistency Analysis**
Policy RM-1.1	Provide ample and accessible parks throughout our community.	A public park is proposed within the Specific Plan area providing an amenity for the surrounding community along Amherst Avenue.
Policy RM-1.3	Provide a variety of recreational facilities and activities for all age groups.	The proposed park will include recreational spaces and passive facilities for various age groups.
Policy RM-1.4	Design safe parks.	The public park is proposed for development along Amherst Avenue, ensuring clear site lines into the facility as well as easy public access.
GOAL RM-5: IMPROVE OUR AIR QUALITY.		
Policy RM-5.1	Reduce vehicular air pollution.	Environmental review ensures that construction and operation of the Project is consistent with the South Coast Air Quality Management Plan.
Policy RM-5.2	Reduce energy consumption.	The Specific Plan includes sustainability guidelines that encourage development to implement standards that reduce energy consumption, consistent with state energy conservation guidelines.
GOAL RM-6: CONSERVE OUR WATER.		
Policy RM-6.1	Reduce wasteful use of water.	The proposed landscape plant palette will comply with Chapter 18.118 Water Efficient Landscape of the Municipal Code.
GOAL RM-7: EXTEND THE USEFUL LIFE OF LANDFILLS USED BY LA VERNE.		
Policy RM-7.1	Recycle solid waste.	The proposed sustainability guidelines include standards for construction waste intended to reduce impacts on local landfills.

Policy		Consistency Analysis
GOAL RM-8: FOSTER A HEALTHY COMMUNITY.		
Policy RM-8.1	Strive for economic stability, environmental responsibility and a high quality of life.	The Project implements development that includes pedestrian circulation, access to open space, high-quality design, an emphasis on residential livability, and environmentally responsible forms of development. These factors will contribute towards the quality of life for existing and new residents within La Verne.
NOISE ELEMENT		
GOAL N-1: PROTECT OUR COMMUNITY FROM EXCESSIVE NOISE.		
Policy N-1.1	Maintain or reduce noise levels citywide.	New residential dwellings within the Specific Plan area shall be consistent with the Noise Control Ordinance and the relevant land use compatibility criteria, exterior and interior noise standards.
GOAL N-3: PROTECT OUR NEIGHBORHOODS FROM INCREASED TRAFFIC NOISE.		
Policy N.3.1	Prevent increases in traffic-related noise.	Increased traffic volumes resulting from Project development are anticipated to be minimal. However, noise related impacts are identified in the project's environmental document.
CULTURAL RESOURCES ELEMENT		
GOAL CR-2: ACT NOW TO PRESERVE AND PROTECT CULTURAL RESOURCES.		
Policy CR-2.6	Protect cultural resources through strategic use of California Environmental Quality Act provisions.	Impacts to architelogical, paleontological, and tribal resources are documented in the Project's environmental document. Impacts are mitigated as applicable.

COMMUNITY FACILITIES ELEMENT		
GOAL CF-2: HAVE A CLEAN AND AMPLE WATER SUPPLY.		
Policy		**Consistency Analysis**
Policy CF-2.1	Contain our demand for water.	The Project will ensure that adequate water supplies exist to service the development, and encourages conservation by implementing sustainability guidelines related to the use of water.
Policy CR-2.2	Protect our groundwater supply.	The Project will connect to the existing City sewer infrastructure in order to protect the quality and supply of groundwater. Additionally, the Project will comply with the National Pollutant Discharge Elimination System (NPDES) regulations.
GOAL CF-3: PREVENT FLOODING AND WATER CONTAMINATION.		
Policy CF-3.1	Provide an efficient, attractive, environmentally sound storm drain system.	The Project will implement aesthetically pleasing storm drainage solutions that are consistent with the City capital improvement plan, and meet NPDES requirements.
GOAL CF-4: ENSURE QUALITY EDUCATION FOR ALL OUR CHILDREN.		
Policy CF-4.1	Provide adequate school facilities and curriculum.	The Project will pay school fees towards the Bonita Unified School District, as required.
GOAL CF-10: KEEP A COHESIVE COMMUNITY IDENTITY AND PROTECT NEIGHBORHOOD CHARACTER ALONG THE 210 FREEWAY.		
Policy CR-10.1	Preserve our small town character and sense of community.	The proposed project consists of a public park and single-family dwellings, which will preserve the existing small-town character.

HOUSING ELEMENT

GOAL H-4: IDENTIFY ADEQUATE SITES TO ACHIEVE HOUSING VARIETY.		
Policy		**Consistency Analysis**
Policy H-4.1	Provide a range of residential development types in La Verne, including low density single-family homes, moderate density townhouses, higher density multi-family units, and mixed-use developments with residential components to address the City's share of regional housing needs.	The Project provides low-density single-family housing, and will help address the City's share of regional housing needs.
GOAL H-5: PROMOTE EQUAL HOUSING OPPORTUNITY FOR ALL RESIDENTS.		
Policy H-5.4	Encourage housing construction or alteration to meet the needs of residents with special needs such as the elderly and persons with disabilities.	The Project will be consistent with the Americans with Disabilities Act (ADA), and meet all access requirements.

PUBLIC SAFETY ELEMENT

GOAL PS-1: PROTECT OUR COMMUNITY FROM WILDFIRES.		
Policy PS-1.1	Provide adequate fire protection.	Development within the Specific Plan area will be constructed to meet the requirements applicable fire regulations.
GOAL PS-2: PROTECT OUR RESIDENTS FROM GEOLOGIC HAZARDS.		
Policy PS-2.1	Reduce the risk of geologic and groundwater hazards.	The Project will comply with all requirements of the Uniform Building Code. Hazards to development identified during the environmental review process will be appropriately mitigated.
Policy PS-2.2	Minimize personal and property damage from earthquakes.	Hazards to life and property identified during the environmental review process will be appropriately mitigated to minimize potential damage.

Policy		Consistency Analysis
GOAL PS-5: PROTECT OUR COMMUNITY FROM CRIME, FIRE, AND INADEQUATE MEDICAL EMERGENCY CARE.		
Policy PS-5.2	Minimize crime threat through safe development.	All proposed development plans will be circulated to the police department for evaluation on public safety impacts.
Policy PS-5.5	Minimize fire threat through safe development.	All proposed development plans will be circulated to the fire department for evaluation on fire safety impacts.
ECONOMIC DEVELOPMENT ELEMENT		
GOAL ED-4: BALANCE THE BENEFITS AND COSTS OF DEVELOPMENT.		
Policy ED-4.1	Require fiscally responsible development.	The Project will pay its fair share of development fees and will also construct infrastructure and landscaping for the development, ensuring the Project is not a fiscal burden upon the City.
COMMUNITY DESIGN ELEMENT		
GOAL CD-1: PROTECT OUR SMALL TOWN CHARACTER.		
Policy PS-1.2	Ensure that new development and renovations respect the neighborhood character.	The architectural and landscape design guidelines ensure compatibility between proposed development and the adjacent existing homes. New construction will be appropriately set back and buffered with landscaping, and existing neighborhood character will be respected.
Policy PS-1.3	Protect and plan complementary mixed uses in our older neighborhoods.	The proposed moderate-density detached dwellings are consistent with existing residential single family home and mobile home development adjacent to the Specific Plan area.

Policy		Consistency Analysis
GOAL CD-2: PROMOTE THE GREENING OF LA VERNE.		
Policy PS-2.1	Enhance our treescape.	The Specific Plan includes landscape design guidelines that includes trees throughout the Specific Plan area, thereby enhancing the City's treescape.
Policy PS-2.2	Provide adequate landscaping.	Adequate landscaping will be provided within the development, as implemented by the Specific Plan.
GOAL CD-5: IMPROVE ARCHITECTURAL QUALITY OF LA VERNE DEVELOPMENT.		
Policy CD-5.1	Encourage architecture that is innovative in form and function.	The architectural design guidelines establish a community-wide architectural theme that will ensure development within the Project is high-quality and reflects innovative architectural styles. Dwellings will be innovatively designed to meet the needs of future La Verne residents.
Policy		**Consistency Analysis**
GOAL CD-6: ENCOURAGE PEOPLE ORIENTED AND SENSITIVE PROJECT DESIGNS.		
Policy CD-6.1	Design people oriented project sites.	The Project is designed to be pedestrian-oriented. Single-story elements are present on front elevations, and landscaping elements along walkways add interest to the streetscene. The proposed park is connected to the rest of the development by a series of walkways and includes benches and tables to support passive recreational uses.
Policy CD-6.2	Emphasize people places.	The proposed public park includes amenities that allow for passive recreational activities.

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AMHERST & WILLIAMS, LA VERNE, CALIFORNIA

OWNER

MJW INVESTMENTS, LLC

27702 CROWN VALLEY PARKWAY, SUITE D-4-197
LADERA RANCH, CA. 92694
TEL: 626-710-6377
CONTACT: MATTHEW WAKEN
matt@walbern.com

ARCHITECT

KTGY ARCHITECTURE+PLANNING

17900 VON KARMAN AVENUE, SUITE 200
IRVINE, CA. 92614
TEL: 949-851-2133
CONTACT: ALAN SCALES
ascales@ktgy.com

PROJECT SUMMARY

Gross Acres:	5.3 AC
Units:	42 DU
Density:	8.0 DU/AC

Dwelling Units

PLAN 1	19 Du (45%)
PLAN 2	23 Du (55%)
TOTAL	42 Du

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MJW INVESTMENTS

AMHERST
LA VERNE, CA # 2019-0578

Plot Date: March 9, 2020

0 20 40 80

CONCEPTUAL SITE PLAN

A1.0

CRAFTSMAN
PLAN 2

SANTA BARBARA
PLAN 1

SANTA BARBARA
PLAN 2

CRAFTSMAN
PLAN 1

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MJW INVESTMENTS

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LA VERNE, CA # 2019-0578

Plot Date: March 9, 2020

SCALE: 1/8"=1'-0"
0 4 8 16

STREET SCENE

A1.1

PRIVATE ROAD DUSK TIME

PRIVATE ROAD DAYLIGHT

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Plot Date: March 9, 2020

SCALE: 1/8"=1'-0"
0 4 8 16

PERSPECTIVE 2

A1.3

LEFT

FRONT

LEGEND A - SANTA BARBARA

1 Stucco, Light Sand Finish
2 Concrete 'S' Tile Roofing
3 Gable End Faux Vent Recess
4 Vinyl Windows
5 Stucco o/ Foam Sill Trim
6 Stucco Arch w/ Corbels
7 Stucco o/ Shaped Foam Eave
8 Recessed Wood Beam (At Openings)
9 Decorative Shutters
10 Fiberglass Entry Door
11 Decorative Exterior Lights & Raised Address Sign
12 Pot Shelf
13 Metal Sectional Garage Door
14 Faux Wood Corbels
15 Stucco Battered/ Sloped Wing Wall

RIGHT

REAR

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MJW INVESTMENTS

AMHERST
LA VERNE, CA # 2019-0578

Plot Date: March 9, 2020

PLAN 1A ELEVATIONS
SANTA BARBARA

A2.0

LEFT

FRONT

LEGEND B - CRAFTSMAN

1. Stucco, Light Sand Finish (20/30)
2. Flat Concrete Shingle Roof
3. Cementitious Vert. Board & Batt w/ 1 1/2 " Reveal @ Gable Ends
4. Vinyl Windows w/ Decorative Muntins
5. 6x8 Decorative Outlooker
6. 2x Stucco over Foam Trim
7. 2x3 Eave Board At Exposed Truss Tails
8. 2x6 Wood Decorative Barge Board
9. Decorative Shutter
10. Fiberglass Entry Doors
11. Decorative Exterior Lights & Raised Address Sign
12. Pot Shelf
13. Metal Sectional Garage Door
14. Composite Horizontal Siding
15. Tapered Cementitious Column 16" at Base/ 14" at Capital
16. Masonry Base and Capital at Column
17. Gable End Double Trim

RIGHT

REAR

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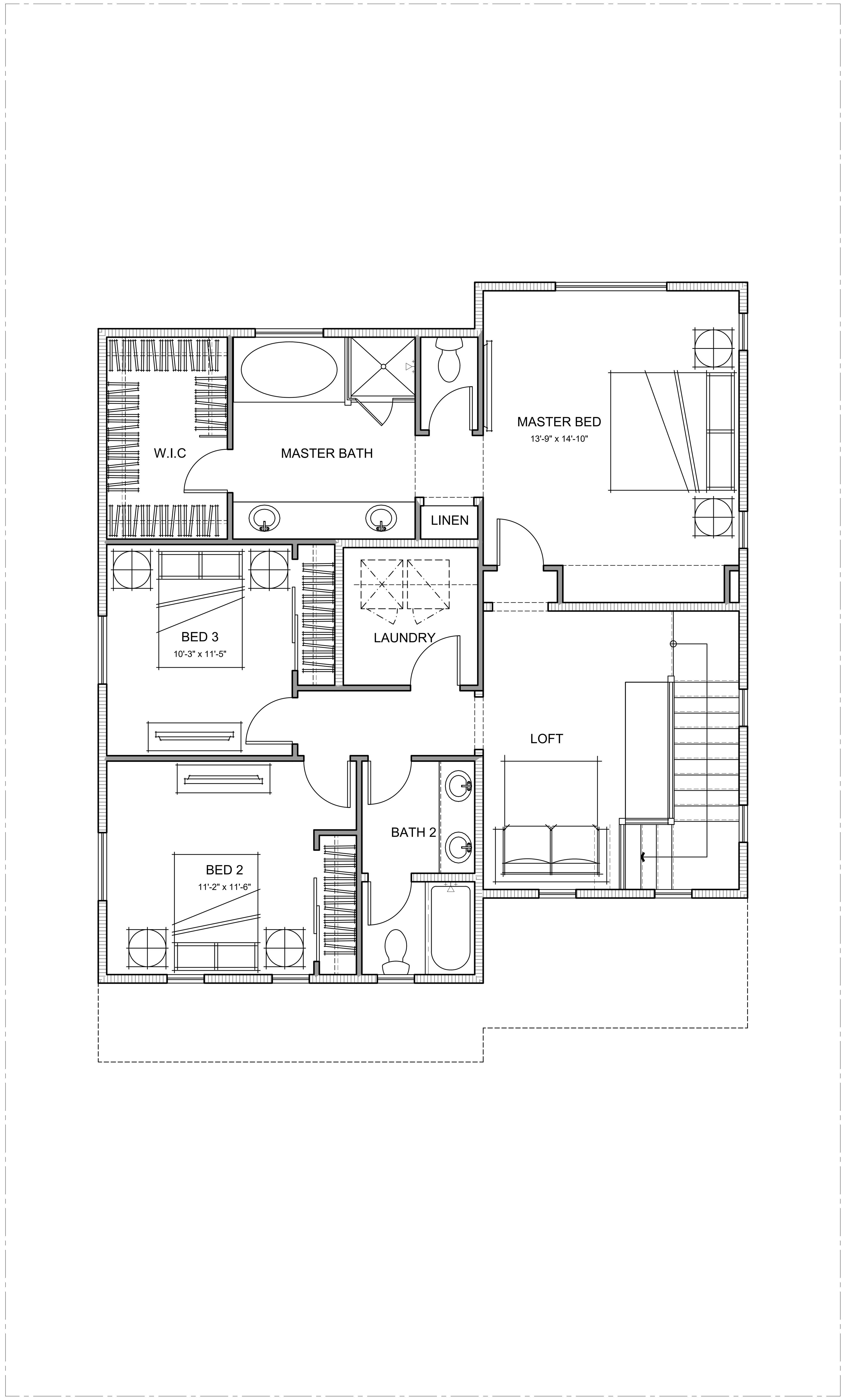
MJW INVESTMENTS

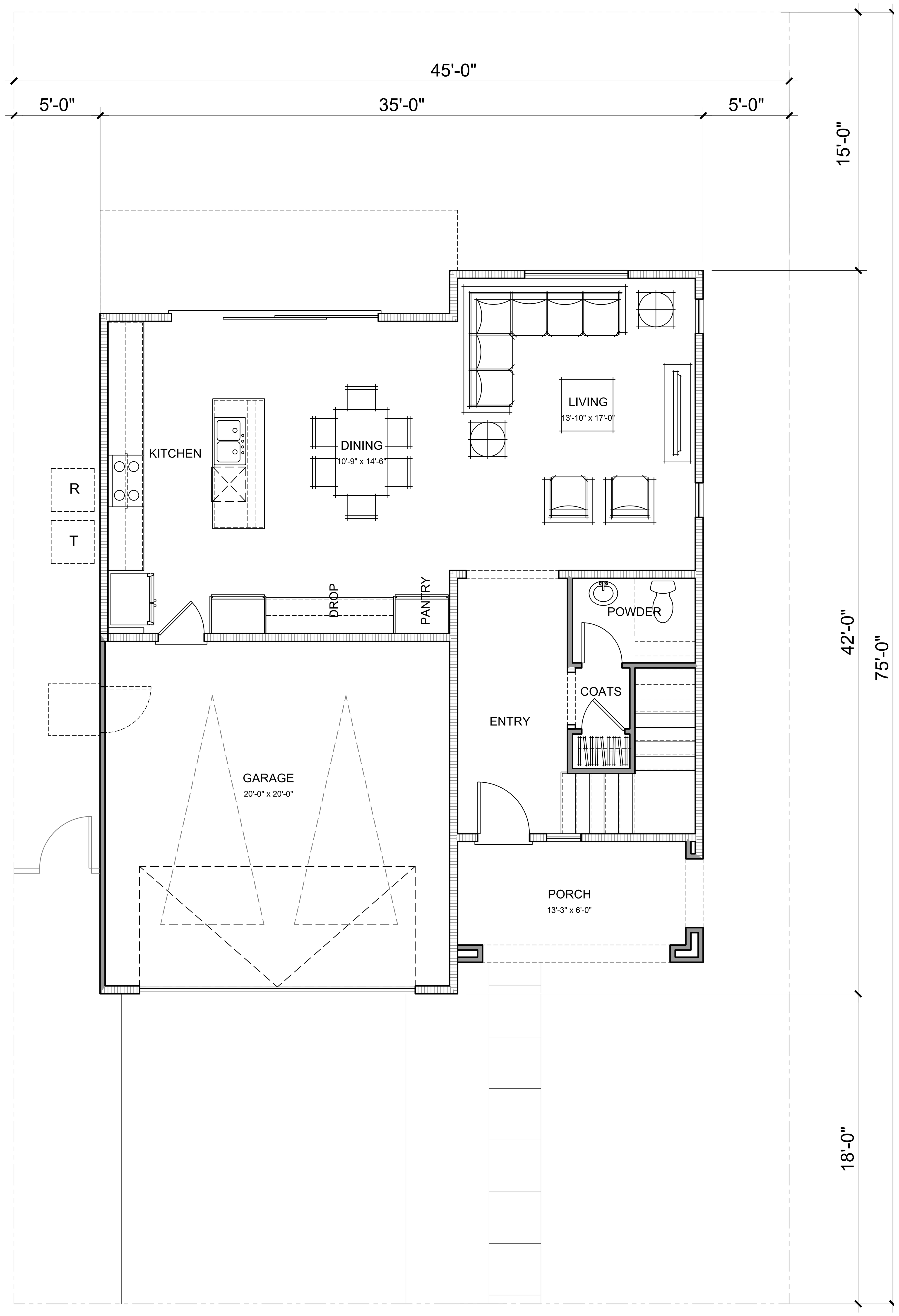
AMHERST
LA VERNE, CA # 2019-0578

Plot Date: March 9, 2020

PLAN 1B ELEVATIONS
CRAFTSMAN

A2.1





P1 GROSS SF	
1ST FLOOR	874 SQ. FT.
2ND FLOOR	1128 SQ. FT.
TOTAL LIVING	2002 SQ. FT.
GARAGE	415 SQ. FT.

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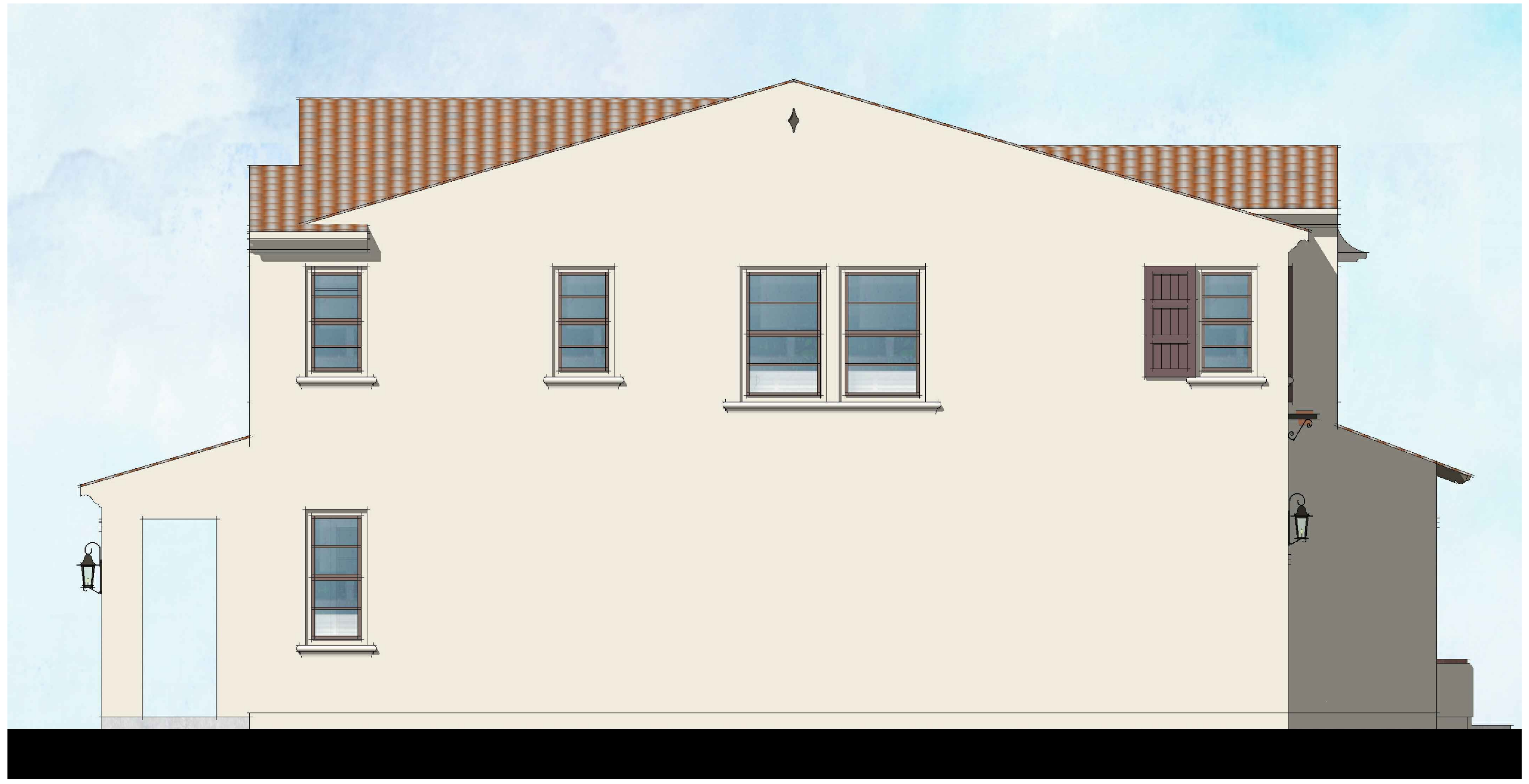
Plot Date: March 9, 2020

A2.2



LEFT

FRONT

LEGEND A - SANTA BARBARA

1 Stucco, Light Sand Finish
2 Concrete 'S' Tile Roofing
3 Gable End Faux Vent Recess
4 Vinyl Windows
5 Stucco o/ Foam Sill Trim
6 Stucco Arch w/ Corbels
7 Stucco o/ Shaped Foam Eave
8 Recessed Wood Beam (At Openings)
9 Decorative Shutters
10 Fiberglass Entry Door
11 Decorative Exterior Lights & Raised Address Sign
12 Pot Shelf
13 Metal Sectional Garage Door
14 Faux Wood Corbels
15 Stucco Battered/ Sloped Wing Wall

RIGHT

REAR

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MJW INVESTMENTS

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LA VERNE, CA # 2019-0578

Plot Date: March 9, 2020

PLAN 2A ELEVATIONS
SANTA BARBARA

A3.0

LEFT

FRONT

<u>LEGEND B - CRAFTSMAN</u>

1. Stucco, Light Sand Finish (20/30)
2. Flat Concrete Shingle Roof
3. Cementitious Vert. Board & Batt w/ 1 1/2" Reveal @ Gable Ends
4. Vinyl Windows w/ Decorative Muntins
5. 6x8 Decorative Outlooker
6. 2x Stucco over Foam Trim
7. 2x3 Eave Board At Exposed Truss Tails
8. 2x6 Wood Decorative Barge Board
9. Decorative Shutter
10. Fiberglass Entry Doors
11. Decorative Exterior Lights & Raised Address Sign
12. Pot Shelf
13. Metal Sectional Garage Door
14. Composite Horizontal Siding
15. Tapered Cementitious Column 16" at Base/ 14" at Capital
16. Masonry Base and Capital at Column
17. Gable End Double Trim

RIGHT

REAR

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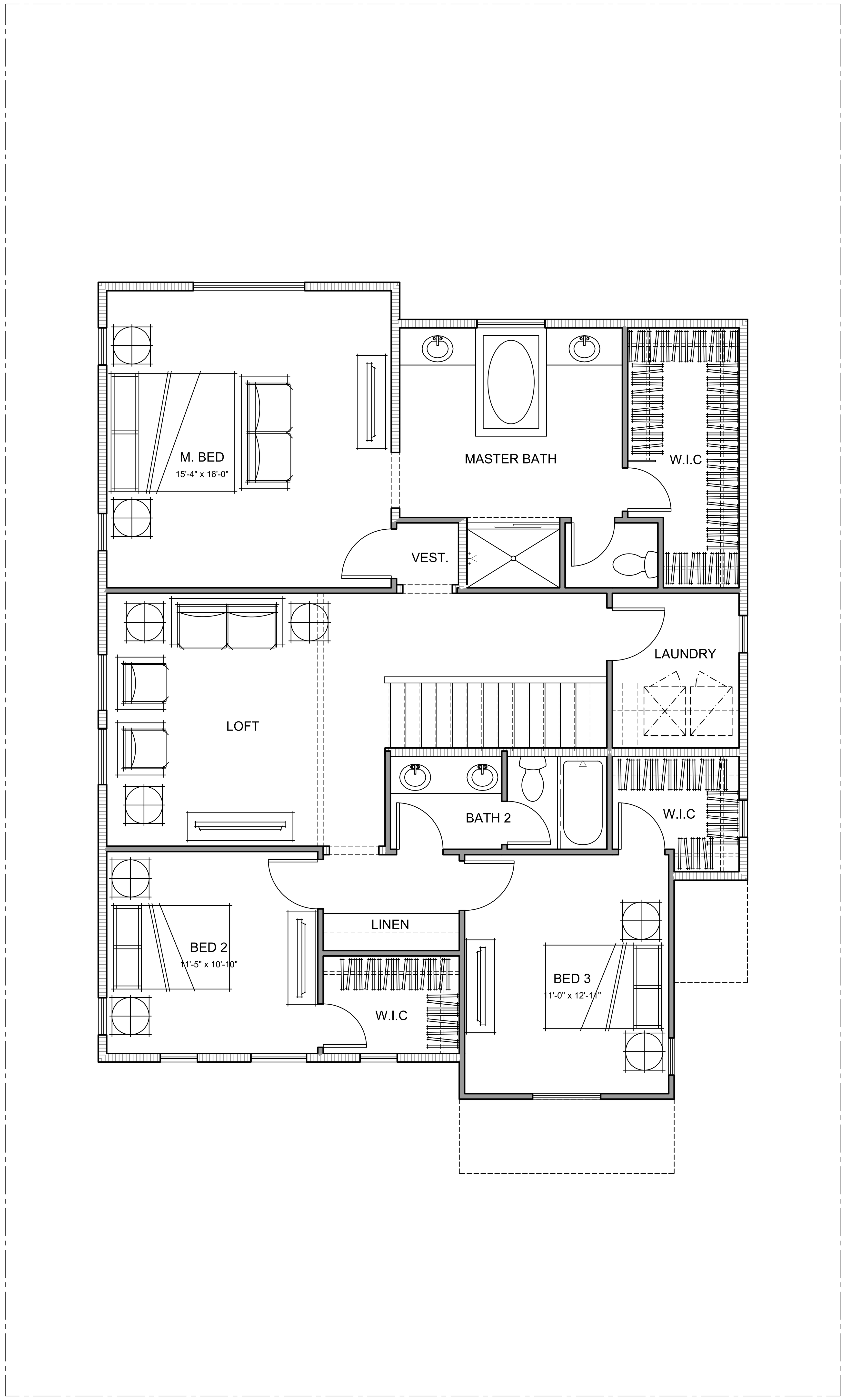
MJW INVESTMENTS

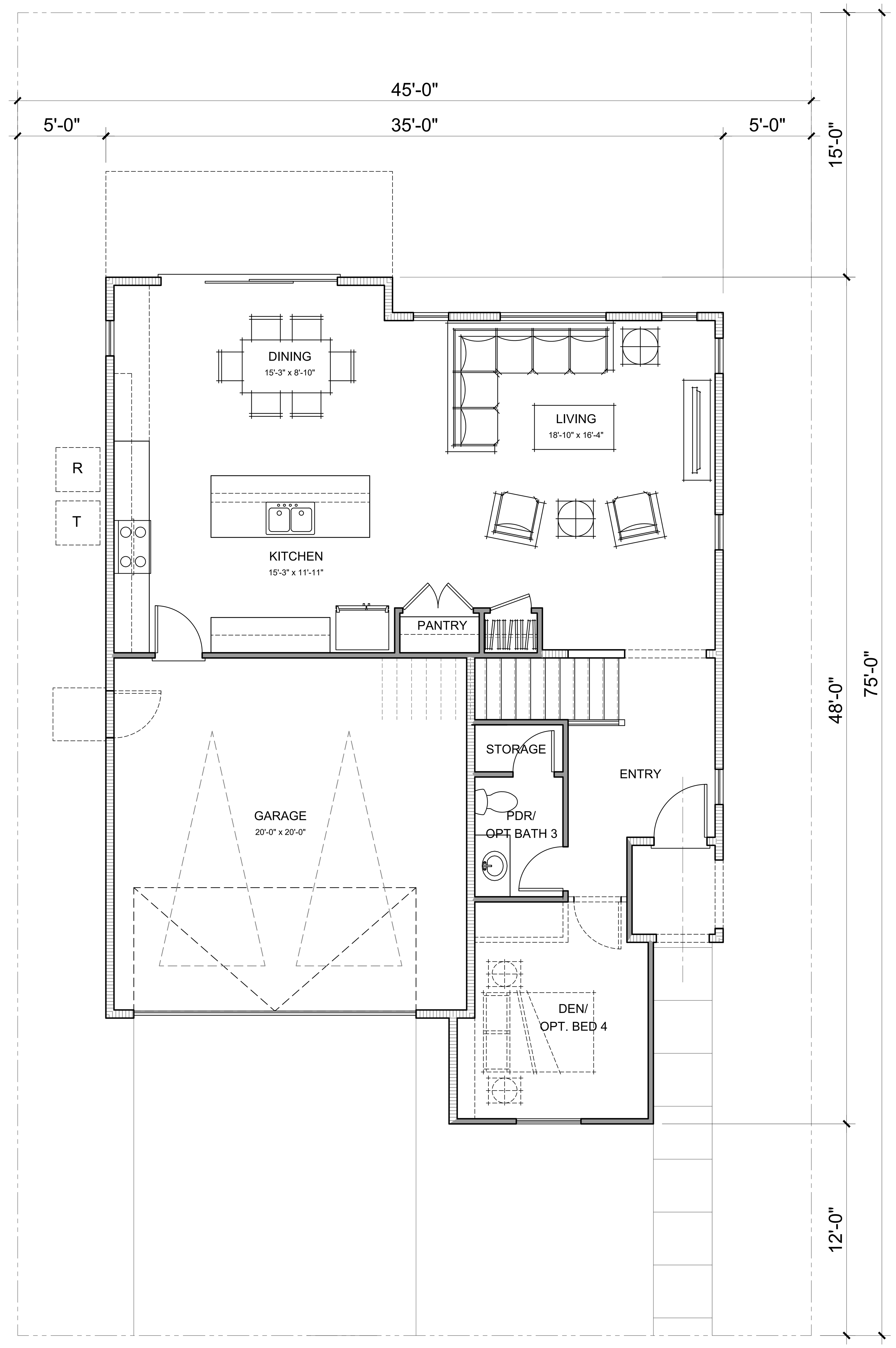
AMHERST
LA VERNE, CA # 2019-0578

Plot Date: March 9, 2020

PLAN 2B ELEVATIONS
CRAFTSMAN

A3.1





P2 GROSS SF	
1ST FLOOR	1033 SQ. FT.
2ND FLOOR	1378 SQ. FT.
TOTAL LIVING	2411 SQ. FT.
GARAGE	418 SQ. FT.

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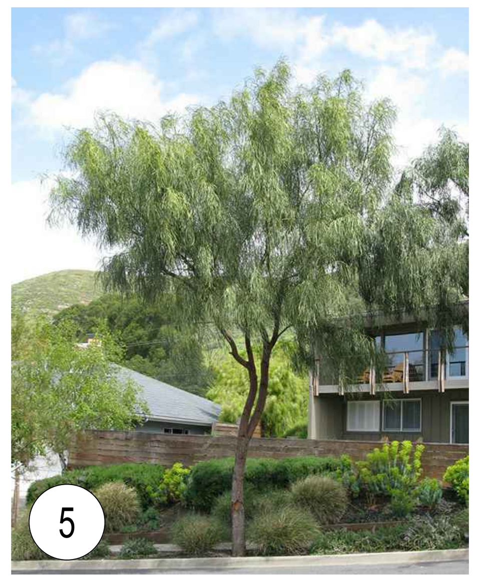
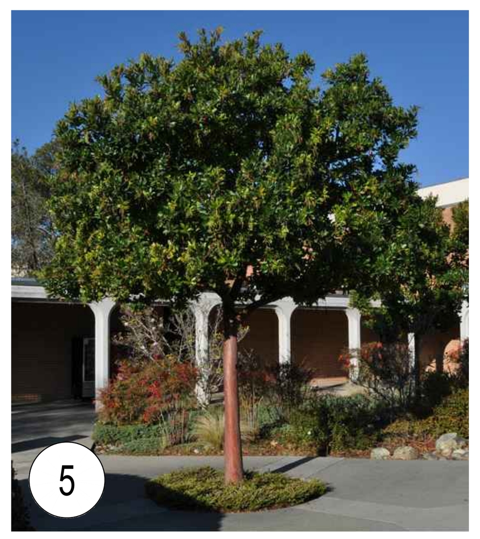
MJW INVESTMENTS

AMHERST
LA VERNE, CA # 2019-0578

Plot Date: March 9, 2020

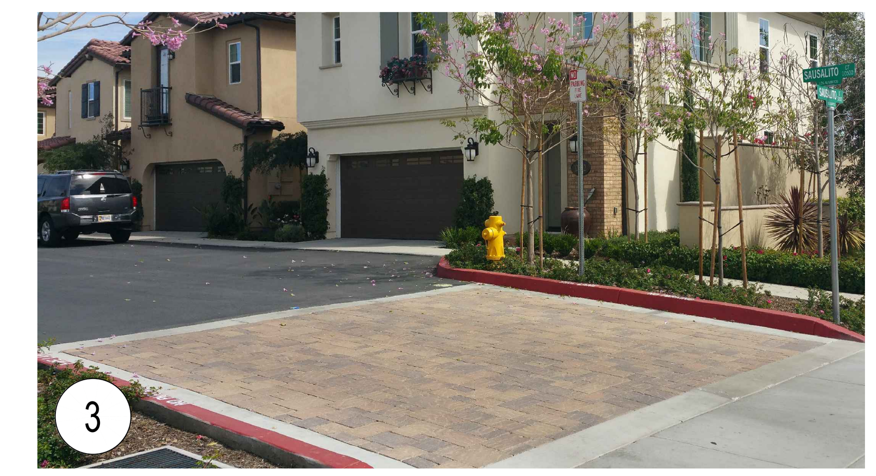
A3.2

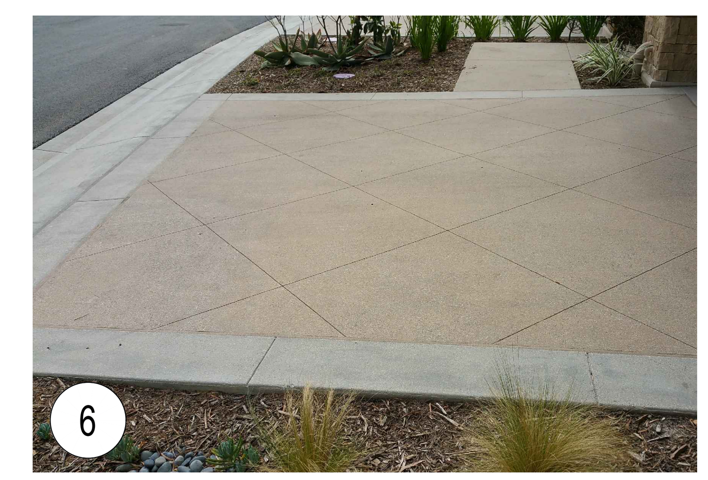


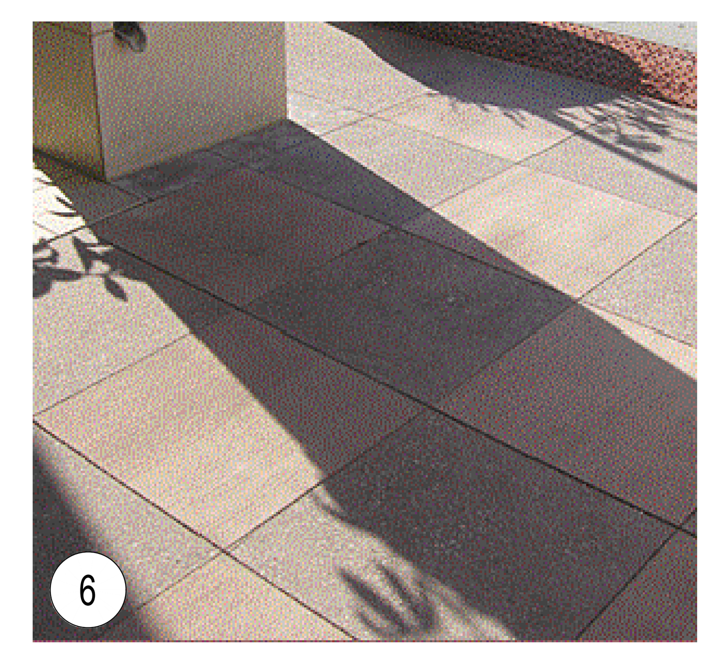


LEGEND

1. Central community pocket park with shade structure, seating and event lawn, see Enlargement L-2 Sheet.
2. Four community cluster mailboxes, per USPS review and approval.
3. Enhanced paving at main project entry.
4. Proposed wall, pilaster, gate or fence, per Wall & Fence Plan.
5. Proposed tree, per Planting Plan.
6. Common area enhanced paving, integral colored concrete, with light top-cast finish and saw-cut joints.
7. 4' wide community natural colored concrete sidewalk, with light top-cast finish and saw-cut joints.
8. 3' wide unit entry natural colored concrete walk, with light top-cast finish and saw-cut joints.
9. Natural colored concrete driveway, with light broom finish and tooled joints.
10. Existing poles to remain, per Civil plans.
11. Private yard area, homeowner installed and maintained.
12. Common area landscape, builder installed and HOA maintained.
13. Community dog bag station (black in color), for pet owners.
14. Property line.
15. Public street R.O.W.
16. Proposed public street sidewalk, per Civil plans.
17. Transformer to be screened with landscape, quantity and final locations to be determined.
18. Short term bike parking (2 bike racks to accommodate 4 bike stalls).
19. Water quality device / system (per Civil plans).
20. Maintenance controlled metal access gate, by others.







*Conceptual images (provided herein are conceptual only)

0 20' 40' 80'

Scale: 1" = 40'

Conceptual Landscape Plan

MJW Investments, LLC

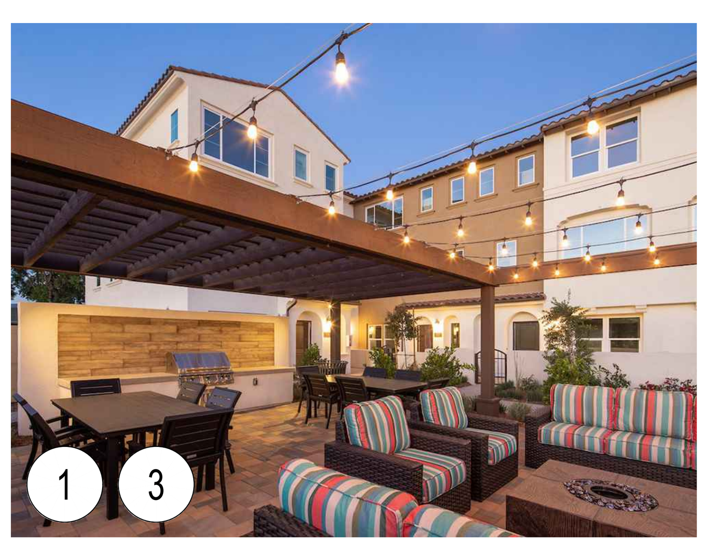
1st City Submittal | Project No.: MJW01-D | Date: March 11, 2020

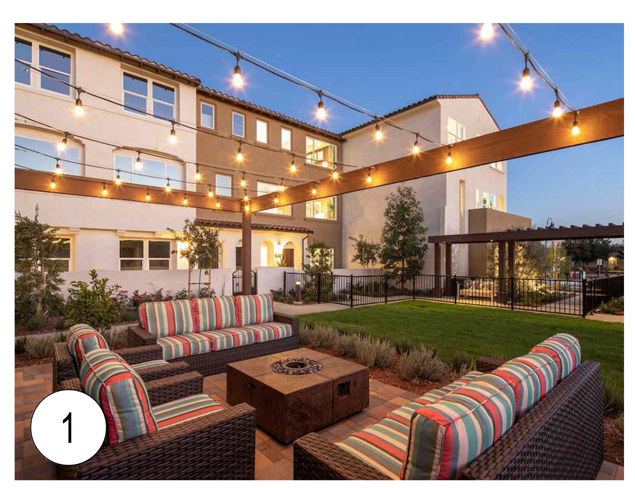
L-1

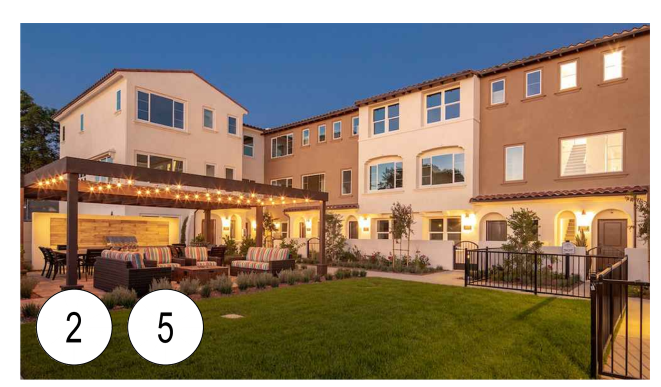
MW INVESTMENT GROUP

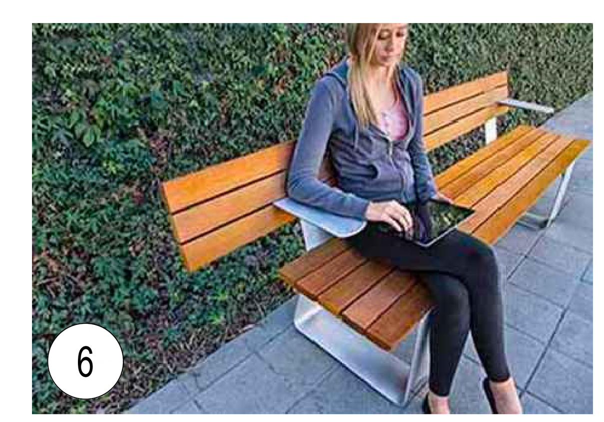
The Amherst - La Verne, CA

studio PAD Landscape Architecture









*Conceptual images (provided herein are conceptual only)

Conceptual Pocket Park Enlargement

0 5' 10' 20'
Scale: 1" = 10'

MJW Investments, LLC

1st City Submittal | Project No.: MJW01-D
Date: March 11, 2020

L-2

MW INVESTMENT GROUP

The Amherst - La Verne, CA

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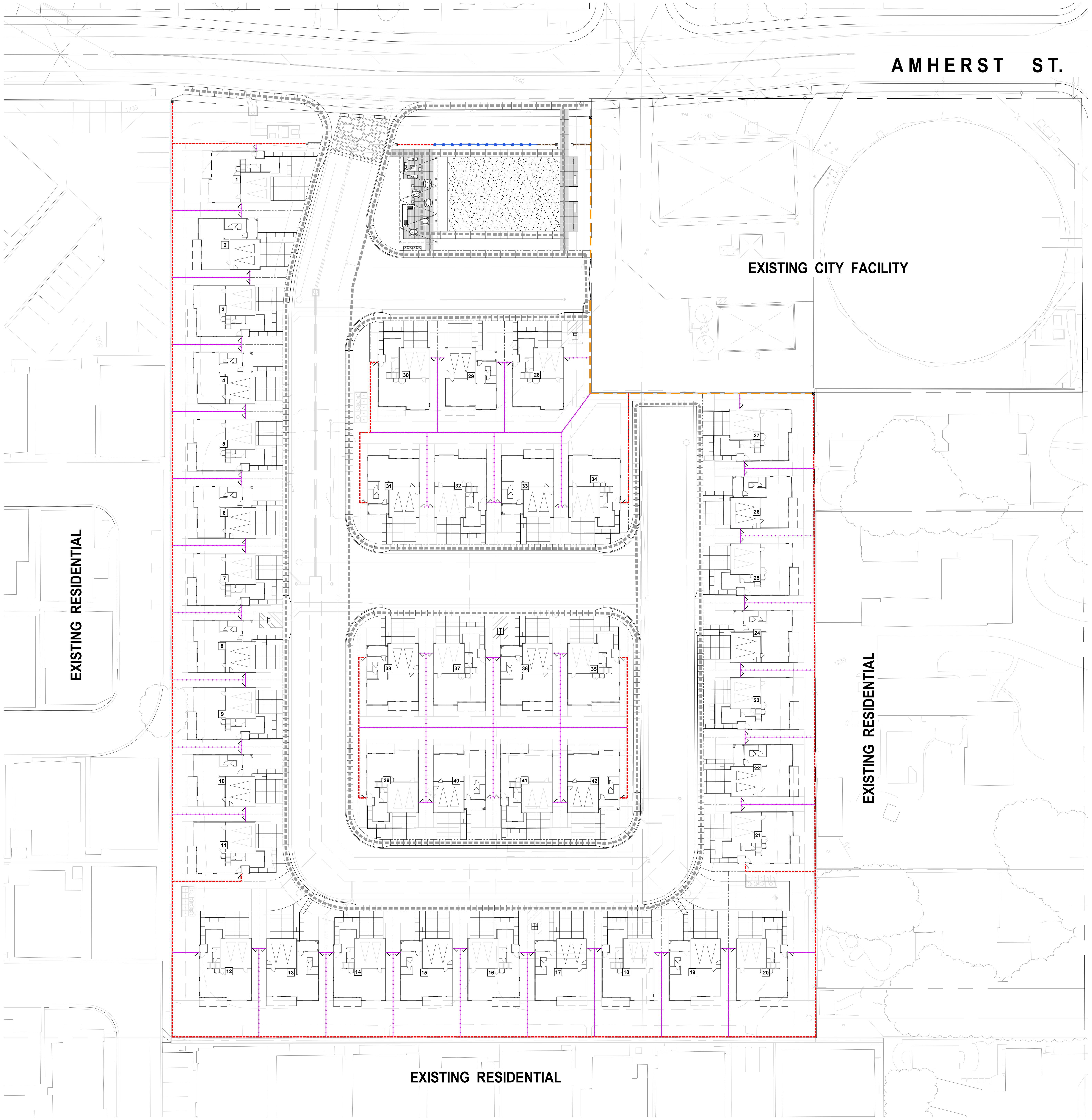
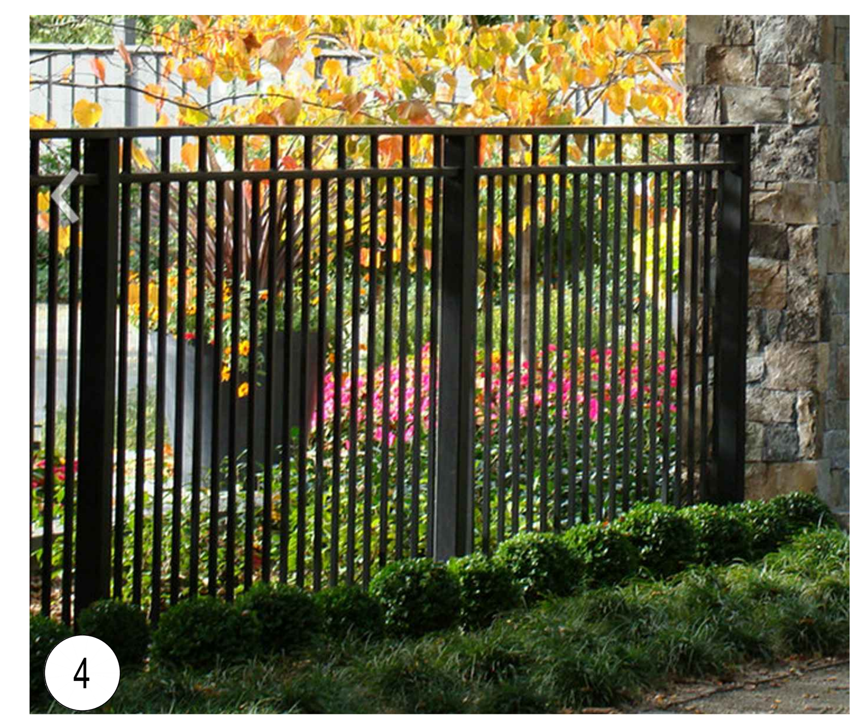
Landscape Architecture

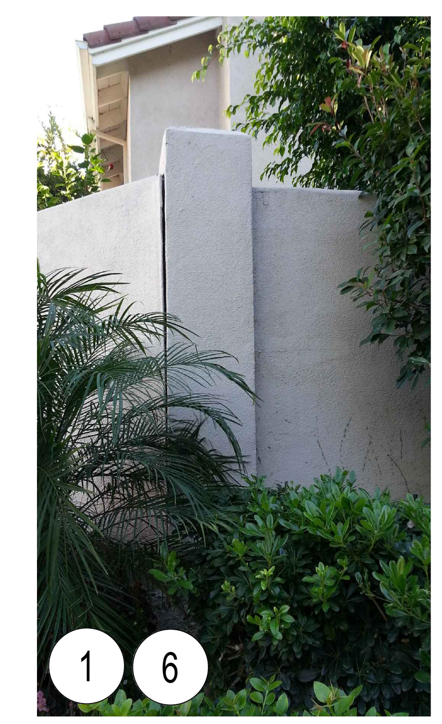


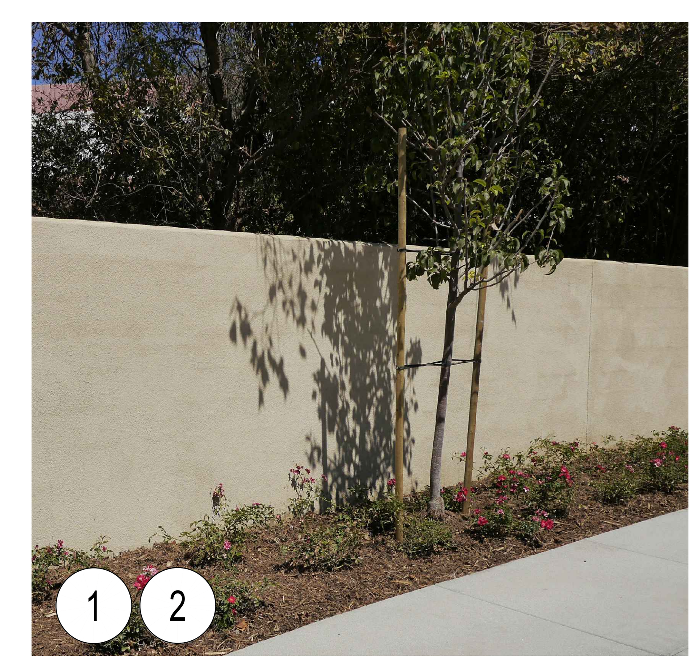
WALL LEGEND

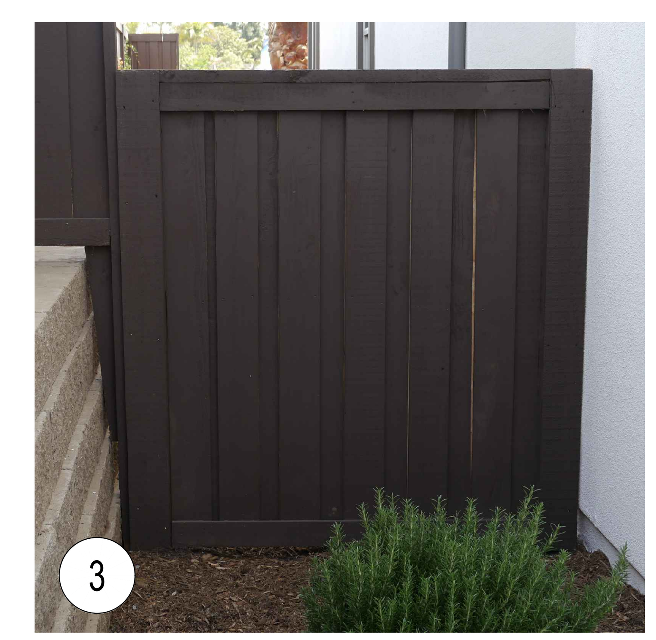
1. 8'-0" High stucco over CMU wall, with flat stucco cap.
2. 6'-0" High stucco over CMU wall, with flat stucco cap.
3. 5'-6" High wood fence (dark brown stain).
4. 4'-0" High tube steel fence (black paint color).
5. 4'-0" High stucco over CMU patio wall, with flat stucco cap.
6. 8'-6" High (18" sq.) stucco over CMU pilaster, with stucco cap.
   6'-6" High (18" sq.) stucco over CMU pilaster, with stucco cap.
7. 5'-6" High wood yard gates.

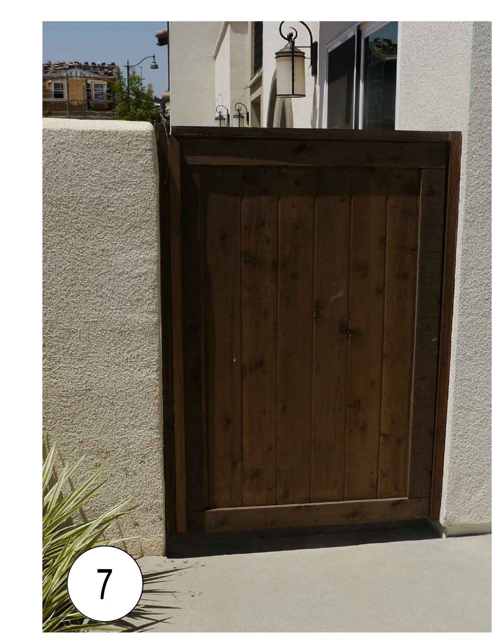
Pedestrian Circulation Path of Travel











*Conceptual images (provided herein are conceptual only)

0 20' 40' 80'
Scale: 1" = 40'

Conceptual Wall & Fence Plan

MJW Investments, LLC

1st City Submittal | Project No.: MJW01-D | Date: March 11, 2020 | **L-3**

MW INVESTMENT GROUP

The Amherst - La Verne, CA

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PLANTING LEGEND

Symbol	Type/Form	Suggestions Botanical Name (Common Name)	Trunk	Size	Wucols (R3)	Qty.
	TREES					
	Focal	Acacia stephenophila (Shoestring Acacia)	Single	36" Box	Low	8
	Canopy Deciduous	Platanus racemosa (California Sycamore)	Single	24" Box	Medium	8
	Evergreen Flowering	Arbutus unedo (Strawberry Tree)	Multi	24" Box	Low	38
	Street	Tristania conferta (Brisbane Box)	Single	24" Box	Moderate	53
	Medium	Rhus lancea (African Sumac)	Single	24" Box	Low	10
	Medium Screen	Geijera parviflora (Australian Willow)	Single	15 gal	Moderate	7
	Columnar	Cupressus sempervirens (Italian Cypress)	Single	15 gal	Low	28
						Total: 152

SHRUBS and GROUND COVER		WUCOLS (R3)
Anigozanthos	Kangaroo Paw	Low
Agave sp.	Agave	Low
Aloe sp.	Aloe	Low
Bougainvillea sp.	Bougainvillea	Low
Callistemon citrinus 'Little John'	Dwarf Bottlebrush	Low
Carex divulsa	Berkeley Sedges	Low
Carissa m. 'Green Carpet'	Dwarf Natal Plum	Low
Chamaerops humilis	Mediterranean Fan Palm	Low
Cordyline 'Pink Passion'	Pink Passion Dracaena Palm	Low
Dasylirion longissimum	Mexican Grass Tree	Low
Delosperma cooperi	Trailing Ice Plant	Low
Dianella revoluta 'Little Rev'	Little Rev™ Flax Lily	Low
Iris sp.	Iris	Low
Kalanchoe thyrsiflora	Flapjack Paddle Plant	Low
Lavandula stoechas 'Larkman Hazel'	Hazel™ Spanish Lavender	Low
Ligustrum japonicum "Texanum"	Japanese Privet	Low
Nassella pulchra	Purple Needlegrass	Low
Muhlenbergia rigens	Deer Grass	Low
Rhaphiolepis indica 'Clara"	India Hawthorn	Low
Rosmarinus p. 'Huntington Carpet'	Groundcover Rosemary	Low
Strelitzia reginae	Bird of Paradise	Low
Trachelospermum jasminoides	Star Jasmine	Low
Westringia sp.	Westringia	Low
Xylosma congestum 'Compact'	Compact Xylosma	Low
Yucca gloriosa	Spanish Dagger	Low

VINES & ESPALIERS	
Antigonon leptopus	Coral Vine
Bougainvillea 'Monka' (Oo-La-La® Bougainvillea)	Bougainvillea
Macfadyena unguis-cati	Cat's Claw Vine
Pandorea jasminoides 'Lady Di'	White Bower Vine
Trachelospermum jasminoides	Star Jasmine

NOTES:

1. Irrigation (including spray and/or drip) will be provided, in the Construction Document phase, and to be installed per local California water regulations (AB1881) .
2. Transformers, back-flow preventers & other above-ground utilities to be screened with landscape as permitted per local codes & regulations.
3. Landscape lighting (landscape up-lights, path lights/bollards, etc.) to be coordinated with Electrical Engineer in future phase.
4. The plant palette listed provides a list of plant material to select from when preparing final landscape construction documents for this project. However, substitutions may be required due to availability, soils tests, or other conditions.
5. All trees within 5' of hardscape to be installed with deep root barriers.

0 20' 40' 80'
Scale: 1" = 40'

Conceptual Planting Plan

MJW Investments, LLC

1st City Submittal | Project No.: MJW01-D | Date: March 11, 2020 | L-4

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Appendix C

VMT Analysis and Traffic Impact Analysis

750 THE CITY DRIVE, SUITE 410
ORANGE, CA 92868
P 714.468.1997

MEMORANDUM

Date:	October 5, 2020	Project #25639
To:	Christine Donoghue, Rincon Consultants, Inc.	
From:	Miao Gao, and Tim Erney, Kittelson & Associates, Inc.	
Project:	2828 Amherst Street Single Family Housing Development	
Subject:	Trip Generation Estimate and Vehicle Miles Traveled Analysis Memorandum	

This memorandum summarizes the California Environmental Quality Act (CEQA) vehicle miles traveled (VMT) analysis and trip generation estimate for proposed 43 single-family residential units at 2828 Amherst Street ("project"), in the City of La Verne, California.

The analysis presented in this memorandum is separated into two parts: the trip generation portion discusses trips generated by the project; the VMT portion summarizes the VMT impact analysis and VMT mitigation measures. The following sections are included in this memorandum:

- Project Description
- Trip Generation Estimates
- VMT Analysis for existing (2020) and cumulative (2040) conditions
  - VMT Impact Analysis
  - VMT Mitigation
- Summary and Conclusions

The contents of this trip generation and VMT analysis are based on the latest City of La Verne ("City") adopted Resolution of VMT metrices and thresholds (Resolution No. 20 - 40) and the San Gabriel Valley Council of Government (SGVCOG) VMT evaluation tool[1].

PROJECT DESCRIPTION

The project site is located within the eastern portion of the City, at the southwest corner of Amherst Street and Williams Avenue. The project site is current occupied by a 5.5-acre wholesale nursery (West Covina Wholesale), which has access on Amherst Street across from Pepperdine Court. With the project, the nursery will be eliminated, and 43 single-family detached homes will be constructed. A community park will be constructed along the Amherst Street frontage. Access to the site will be via a driveway off

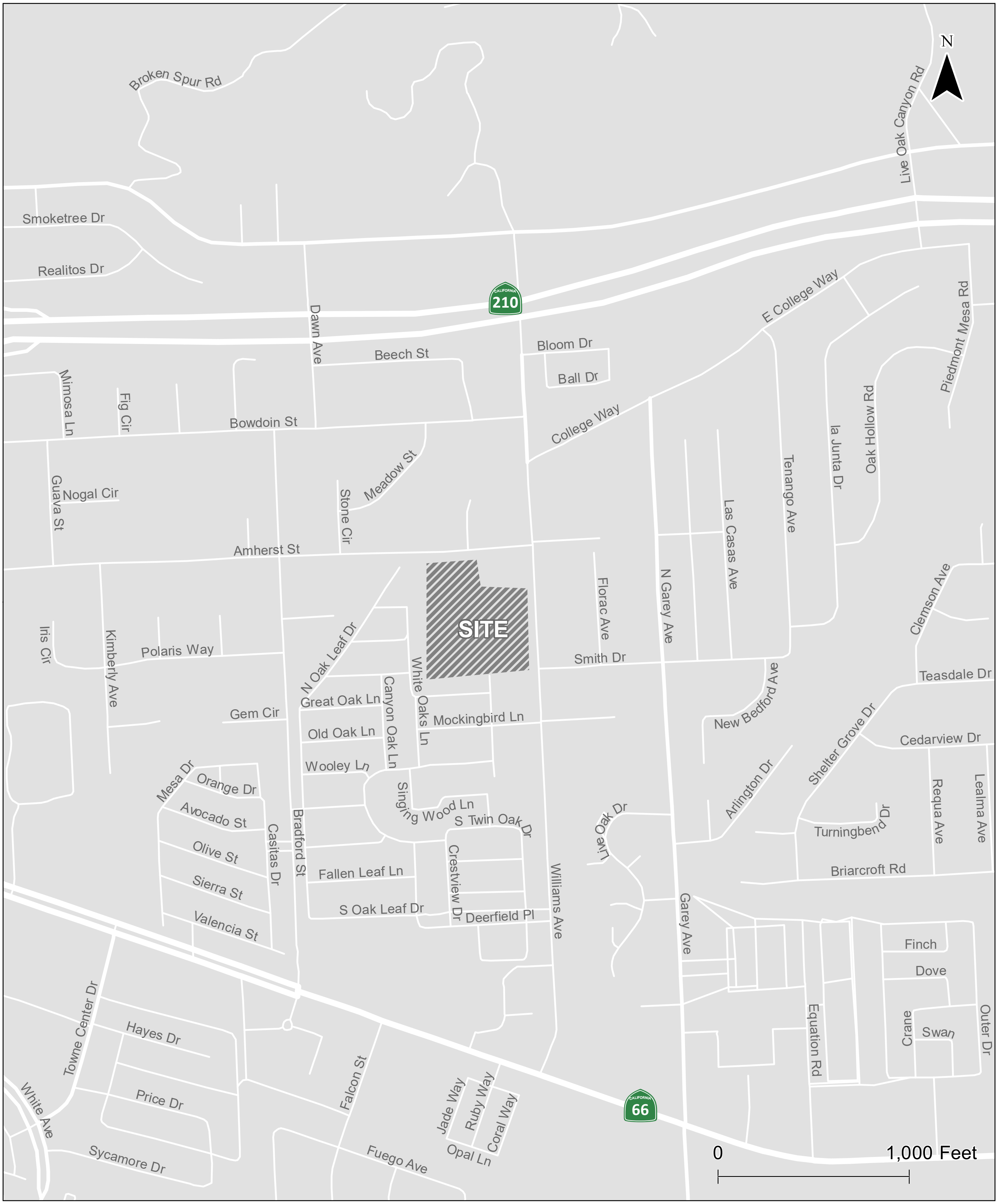
[1] https://apps.fehrandpeers.com/SGVCOGVMT/

Amherst Street. Off-street parking stalls will be constructed, but the number of off-street parking stalls was not provided.

The project is expected to be constructed and fully operational by year 2022.

The project site is currently zoned PR3D (which allows up to 3 residential units per acre). The City Council indicated a willingness to consider a slight increase in density for a well-designed project with community amenities.

The project location is shown in Figure 1 and project site plan is shown in Figure 2.



The Project Location
City of La Verne, California

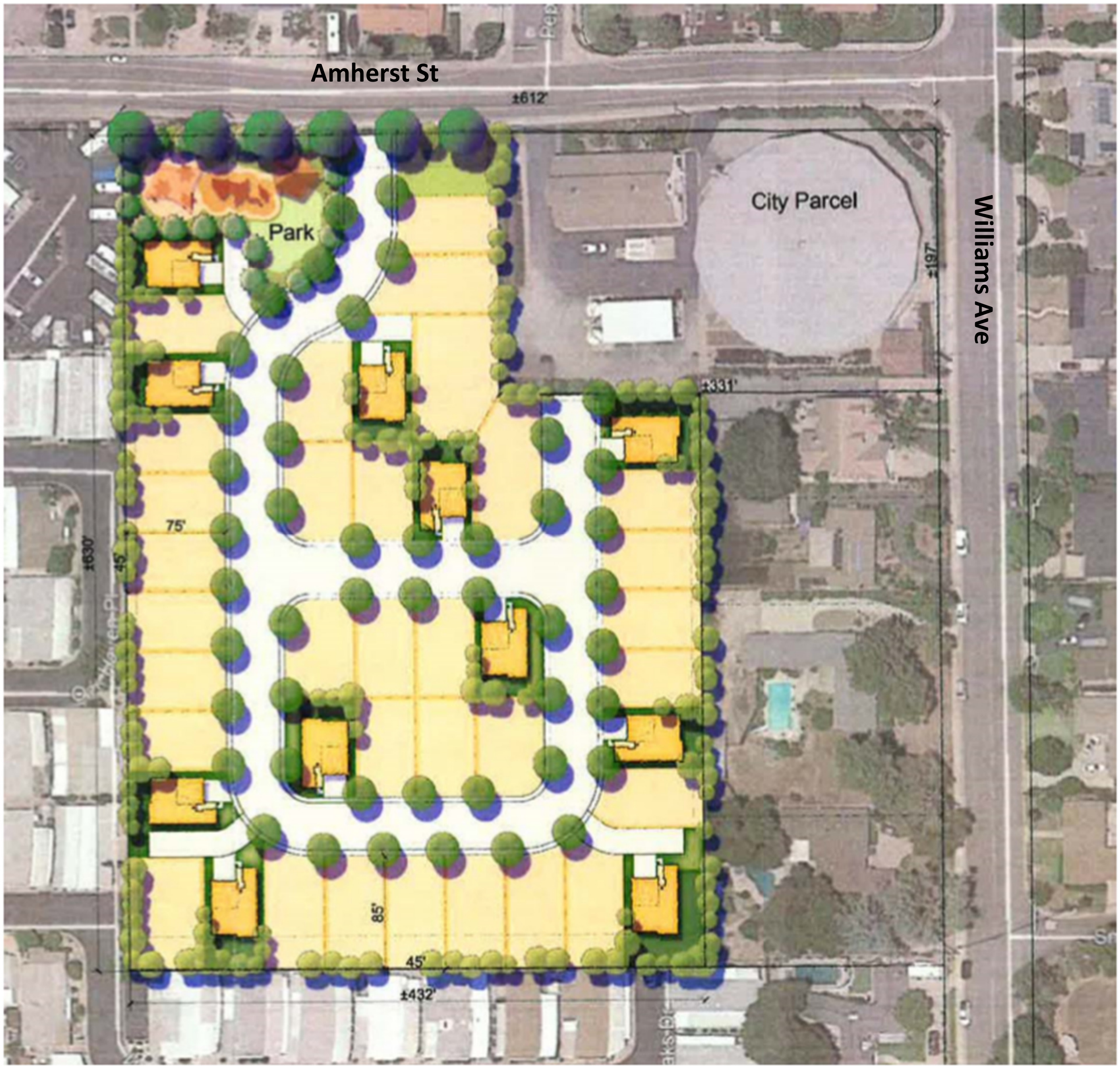
Figure
1

H:\25\25639 - 2828 Amherst Site VMT Assessment\GIS\projectlocation.mxd - mgao - 11:52 AM 10/1/2020

KITTELSON & ASSOCIATES

Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
Data Source: Delete if there isn't one.

Figure 2: Project Site



TRIP GENERATION ESTIMATES

This section summarizes the trip generation for the project, for both the existing nursery uses and the proposed residential project.

Trip generation was estimated for the following three time periods:

- Weekday daily
- Weekday AM peak hour
- Weekday PM peak hour

Trips were estimated using trip generation data provided by the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* and shown in Table 1. Trip generation was estimated using Single-Family Detached Residential land use code (ITE Land Use Code 210) for the project. The trips generated by the existing nursery (ITE Land Use Code 818) were deducted from the project trips. Therefore, the number of net new trips was calculated as the project trips minus trips generated by the existing nursery.

Table 1: Project Trip Generation Estimate

Trip Generation Rates								
Land Use	**Rate**	**Daily**	**AM Peak Hour**			**PM Peak Hour**		
			In	**Out**	**Total**	**In**	**Out**	**Total**
Single-Family Detached Housing (210)	Unit	9.44	25%	75%	0.74	63%	37%	0.99
Nursery (Wholesale) (818)	Arce	19.5	50%*	50%*	0.26	50%*	50%*	0.45
Trip Generation Estimates								
Land Use	**Size**	**Daily**	**AM Peak Hour**			**PM Peak Hour**		
			In	**Out**	**Total**	**In**	**Out**	**Total**
Single-Family Detached Housing (210)	43 Units	406	8	24	32	27	16	43
Nursery (Wholesale) (818)	5.5 Acres	-107	-1	-1	-2	-1	-1	-2
NET NEW TRIPS		**299**	**7**	**23**	**30**	**26**	**15**	**41**

Source: Kittelson & Associates, Inc., 2020; Institute of Transportation Engineers, 2017.
Note: Directional distributions of Nursery (Wholesale) during AM and PM peak hours are not available, the weekday daily directional distributions were used.

As shown in Table 1, the project is expected to generate 406 weekday daily vehicle trips, including 32 trips during AM peak hour and 43 trips during PM peak hour. After subtracting the trips of the existing nursery, the project is expected to generate 299 net new weekday daily vehicle trips, including 30 net new trips during AM peak hour and 41 net new trips during PM peak hour.

VMT ANALYSIS

This section details the VMT analysis conducted for CEQA purposes in accordance with the City's adopted VMT metrics and thresholds.

VMT Impact Analysis

The City has not adopted transportation analysis guidelines yet, but the City has adopted VMT thresholds for land use project screening, which can be used to screen out projects that are expected to generate low VMT out from a further transportation analysis. The City's VMT thresholds that are relevant to this project are:

- **Trip Generation**: Projects generating less than 110 daily trips can be screened out.
- **Project Impact:** A significant impact would occur if the VMT rate for the project would exceed 15% below the applicable existing VMT rate, also referred to as the existing VMT threshold.
- **Cumulative Project Effect:** A significant impact would occur if the project would exceed 15% below the VMT rate in cumulative no project conditions, also referred to as the cumulative VMT threshold.

The VMT rate is defined as the SGVCOG Northeast Subarea[2] VMT per applicable service population.

To be screened out of a further transportation analysis, a project would need to satisfy one of the above VMT screening criteria.

Based on the City's Resolution, projects generating less than 110 daily trips can be screened out. Therefore, this project cannot be screened out from a further transportation analysis under this criterion since it will generate 299 net new weekday daily vehicle trips.

The SGVCOG VMT evaluation tool provides VMT per applicable service population estimates for parcels from the base year (2012) to the cumulative year (2040). By using this tool, the project is in a TAZ ("project TAZ") that has the VMT rate of 40.82 in existing conditions which is higher than the existing VMT threshold (31.02). The VMT rate of the project TAZ in cumulative conditions is 36.71 which is higher than the cumulative VMT threshold (28.32). Overall, the project's VMT will be greater than the significance VMT threshold and thus will result in **a significant VMT impact** in existing and cumulative conditions. Please see Attachment A for VMT impact analysis details.

VMT Mitigation

Given that the project's VMT rate is higher than 15% below the regional VMT rate in existing and cumulative conditions, the project will result in a significant project impact and a significant cumulative

[2] Northeast Subarea includes city of Azusa, Claremont, Glendora, La Verne, and San Dimas.

impact. Project VMT rates will need to be reduced to 31.02 with mitigation in existing conditions and to 28.32 with mitigation in cumulative conditions to reduce the impact to less-than-significant levels.

VMT mitigation measures have been recommended by the SGVCOG VMT evaluation tool that are relevant to this project include:

- Increase affordable housing units
- Add traffic calming beyond development frontage
- Improve pedestrian networks beyond development frontage
- Provide bicycle parking
- Provide end-of-trip bike facilities
- Offer school pool programs
- Provide bicycle share programs
- Provide car share programs
- Provide subsidized transit program
- Increase transit frequency
- Upgrade routes serving the project

The SGVCOG VMT evaluation tool also provides the maximum mitigated VMT rate which reflect the lowest VMT rate of a TAZ could reach after implementing the maximum level of mitigation measures. Therefore, in a situation that the maximum mitigated VMT rate is higher than the VMT threshold, a significant VMT impact cannot be mitigated.

According to the SGVCOG VMT evaluation tool, the maximum reduction in VMT with the application of VMT mitigation measures is 20 percent which means the maximum mitigated VMT rate is 20% below VMT rates without mitigation. Applying this percentage, the maximum mitigated VMT for the project TAZ would be 32.66 in existing conditions, which is still higher than the existing VMT threshold (31.02). Similarly, the maximum mitigated VMT for the project TAZ would be 29.37 in cumulative conditions, which is still higher than the cumulative VMT threshold (28.32). Thus, the relevant VMT mitigation measures would not provide enough benefits to mitigate the VMT impact, and the significant VMT impact **cannot be mitigated** in existing and cumulative conditions. Please see Attachment B for details.

SUMMARY AND CONCLUSIONS

The following summarizes the findings of the trip generation estimate and VMT analysis:

- The project is expected to generate 299 net new weekday daily vehicle trips, including 30 net new trips during AM peak hour and 41 net new trips during PM peak hour. Based on the City's Resolution, projects generating less than 110 daily trips can be screened out. Given the project would generate more than 110 daily trips, it cannot be screened out from a further transportation analysis under this criterion.
- By using the SGVCOG VMT evaluation tool, the VMT rate of the project TAZ during existing conditions is 40.82 which is higher than the existing VMT threshold (31.02). The VMT rate

of the project TAZ in cumulative conditions is 36.71 which is higher than the cumulative VMT threshold (28.32). Therefore, this project will result in **a significant VMT impact** under existing and cumulative conditions.

- According to the SGVCOG VMT evaluation tool, the maximum mitigated VMT for the project TAZ would be 32.66 in existing conditions, which is still higher than the existing VMT threshold (31.02). Similarly, the maximum mitigated VMT for the project TAZ would be 29.37 in cumulative conditions, which is still higher than the cumulative VMT threshold (28.32). Thus, the relevant mitigation measures could not provide enough benefits to mitigate the VMT impact, and the significant VMT impact **cannot be mitigated** in existing and cumulative conditions.

Attachment A: Existing and Cumulative Conditions VMT Analysis

Project Details

Timestamp of Analysis: October 01, 2020, 10:02:03 AM

Project Name: Amherst Street & Williams Residential Development

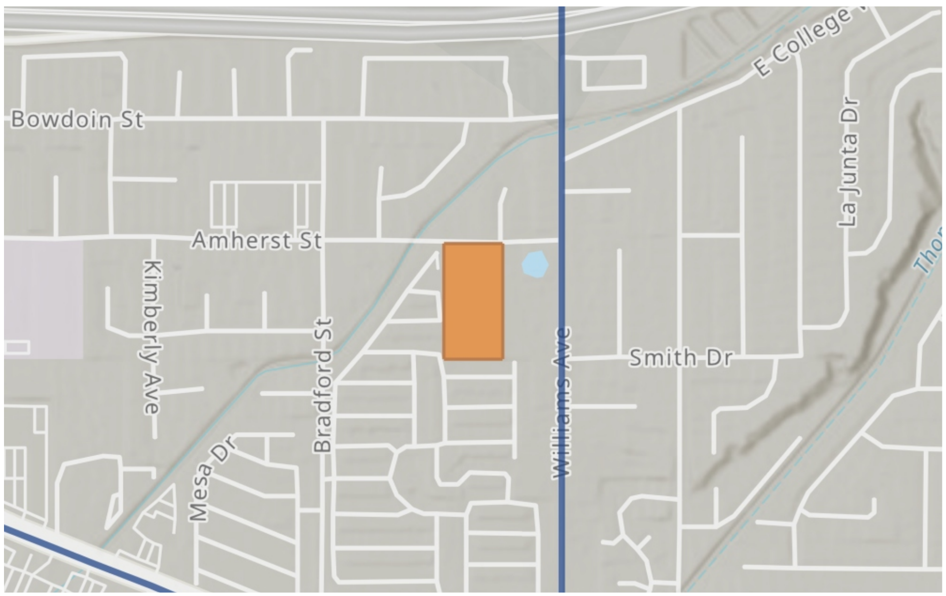
Project Description: 43 unit single family

Project Location

Jurisdiction:
La Verne

APN	TAZ
8666-021-902	22424100

Inside a TPA?
No (Fail)



Analysis Details

Data Version: SCAG Regional Travel Demand Model 2016 RTP Base Year 2012

Analysis Methodology: TAZ

Baseline Year: 2020

Project Land Use

Residential:

Single Family DU:

Multifamily DU:

Total DUs: 0

Non-Residential:

Office KSF:

Local Serving Retail KSF:

Industrial KSF:

Residential Affordability (percent of all units):

Extremely Low Income: 0 %

Very Low Income: 0 %

Low Income: 0 %

Parking:

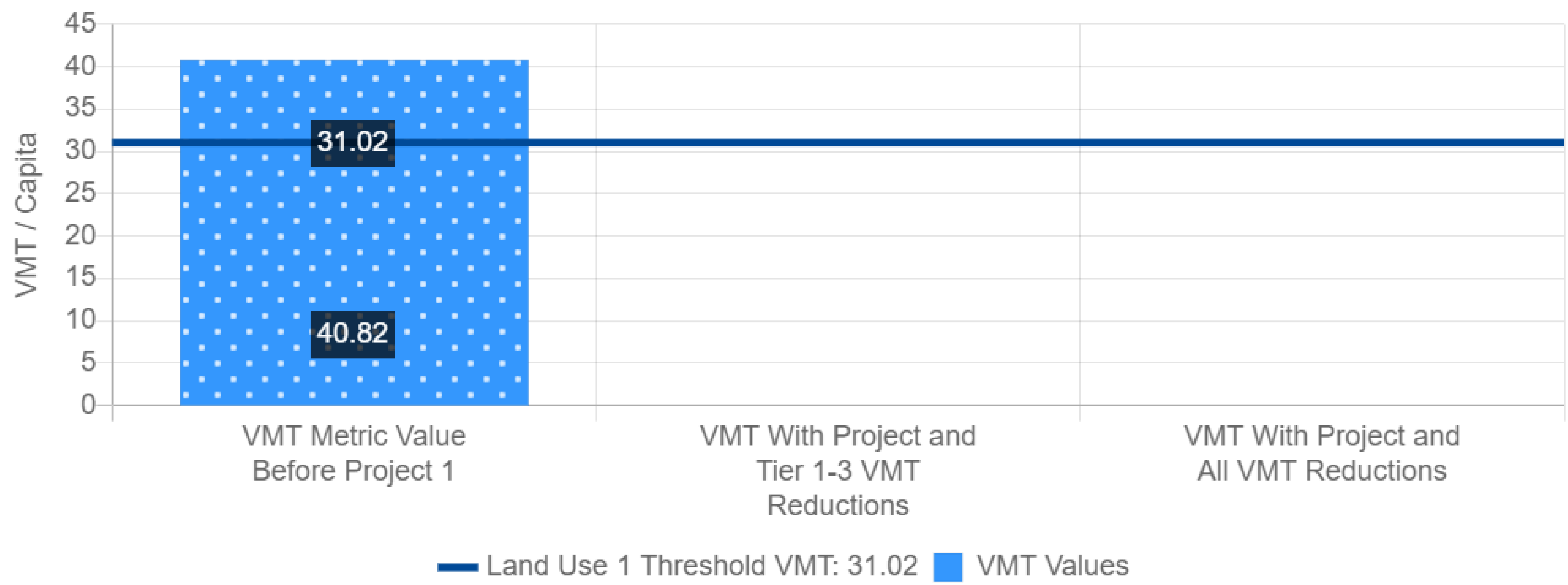
Motor Vehicle Parking:

Bicycle Parking:

Residential Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Residential
VMT Without Project 1:	Total VMT per Service Population
VMT Baseline Description 1:	Subarea Average
VMT Baseline Value 1:	36.49
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	40.82	null	null
Low VMT Screening Analysis	No (Fail)	null	null



SGVCOG VMT Evaluation Tool Report

Project Details

Timestamp of Analysis: October 01, 2020, 10:33:20 AM

Project Name: Amherst Street & Williams Residential Development

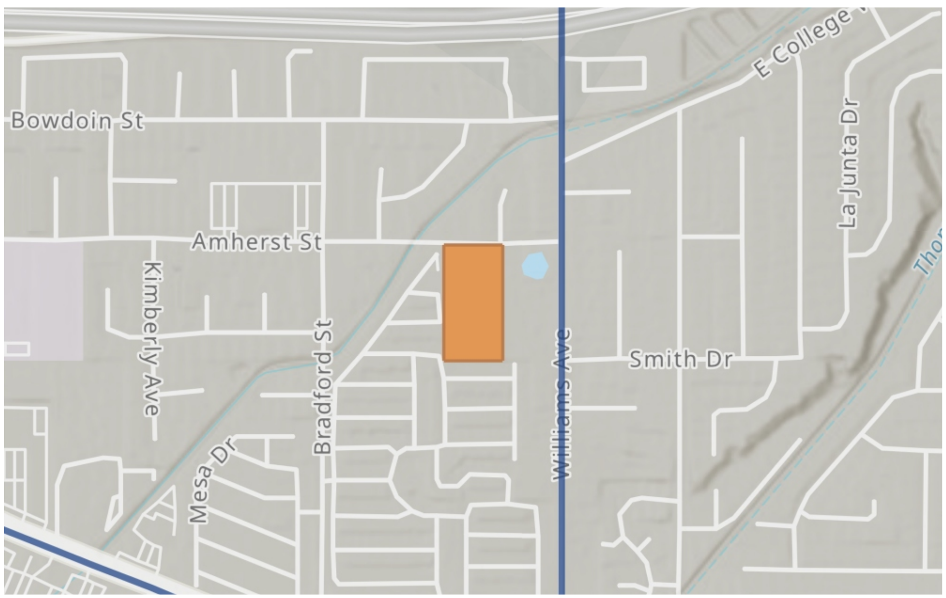
Project Description: 43 unit single family

Project Location

Jurisdiction:
La Verne

APN	TAZ
8666-021-902	22424100

Inside a TPA?
No (Fail)



Analysis Details

Data Version: SCAG Regional Travel Demand Model 2016 RTP Base Year 2012

Analysis Methodology: TAZ

Baseline Year: 2040

Project Land Use

Residential:

Single Family DU:

Multifamily DU:

Total DUs: 0

Non-Residential:

Office KSF:

Local Serving Retail KSF:

Industrial KSF:

Residential Affordability (percent of all units):

Extremely Low Income: 0 %

Very Low Income: 0 %

Low Income: 0 %

Parking:

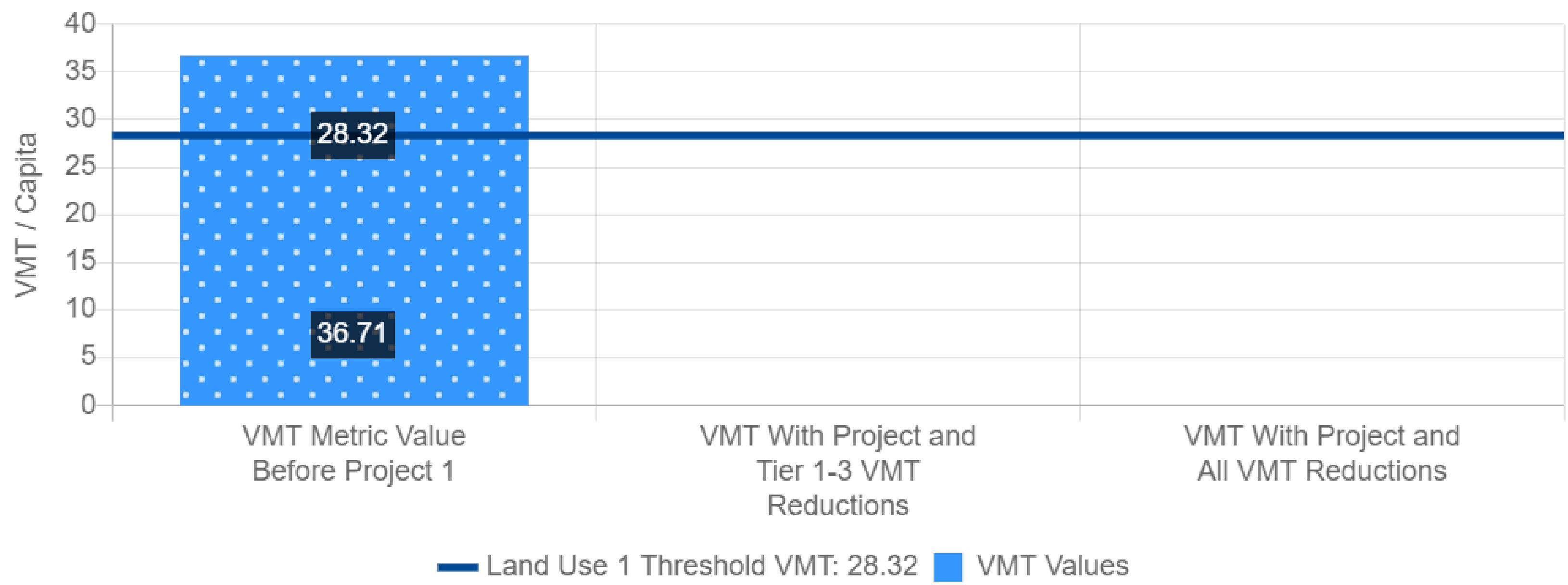
Motor Vehicle Parking:

Bicycle Parking:

Residential Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Residential
VMT Without Project 1:	Total VMT per Service Population
VMT Baseline Description 1:	Subarea Average
VMT Baseline Value 1:	33.32
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	36.71	null	null
Low VMT Screening Analysis	No (Fail)	null	null



Attachment B: Existing and Cumulative Conditions VMT Mitigation Analysis

SGVCOG VMT Evaluation Tool Report

Project Details

Timestamp of Analysis: October 01, 2020, 10:41:08 AM

Project Name: Amherst Street & Williams Residential Development

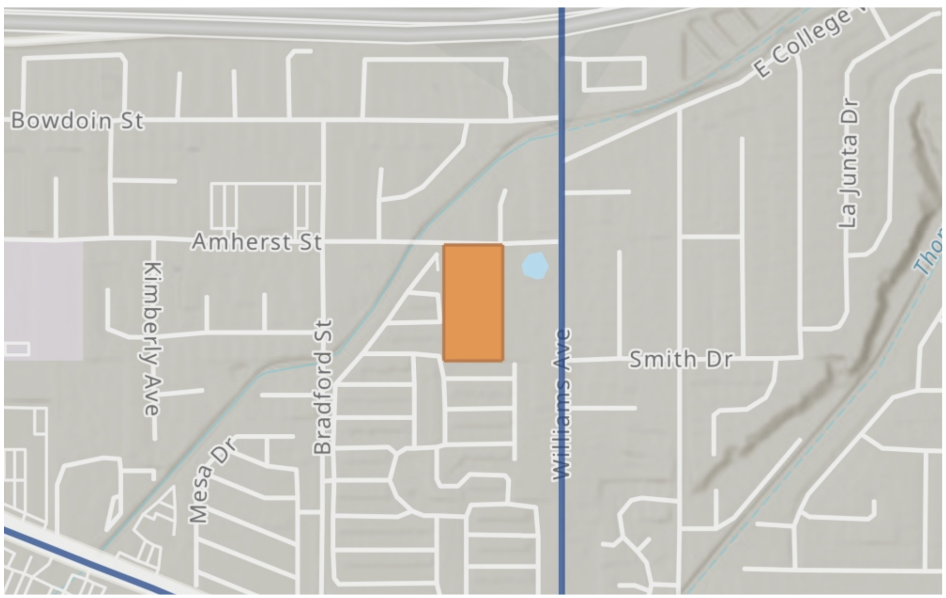
Project Description: 43 unit single family

Project Location

Jurisdiction:
La Verne

APN	TAZ
8666-021-902	22424100

Inside a TPA?
No (Fail)



Analysis Details

Data Version: SCAG Regional Travel Demand Model 2016 RTP Base Year 2012

Analysis Methodology: TAZ

Baseline Year: 2020

Project Land Use

Residential:

Single Family DU:	43
Multifamily DU:	
Total DUs:	43

Non-Residential:

Office KSF:

Local Serving Retail KSF:

Industrial KSF:

Residential Affordability (percent of all units):

Extremely Low Income:	5 %
Very Low Income:	5 %
Low Income:	5 %

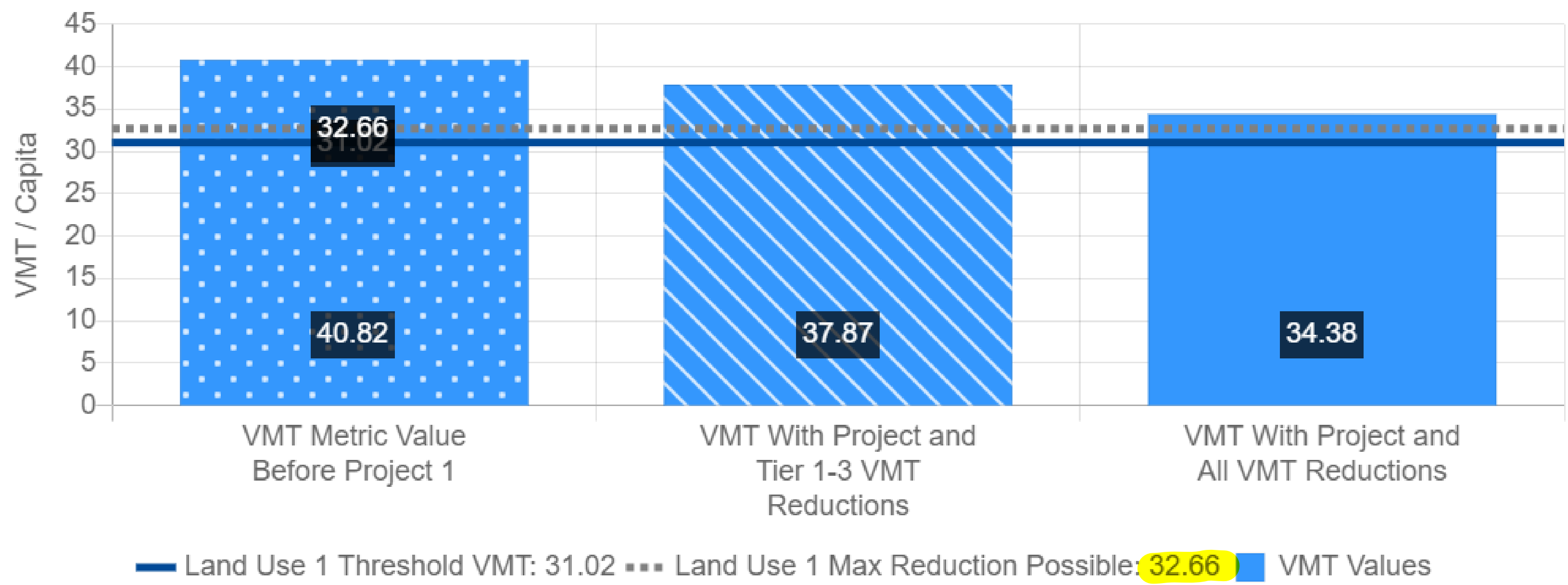
Parking:

Motor Vehicle Parking:	86
Bicycle Parking:	5

Residential Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Residential
VMT Without Project 1:	Total VMT per Service Population
VMT Baseline Description 1:	Subarea Average
VMT Baseline Value 1:	36.49
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	40.82	37.87	34.38
Low VMT Screening Analysis	No (Fail)	No (Fail)	No (Fail)



Tier 1 Project Characteristics

PC03 Affordable Housing

Extremely Low Income:	5 %
Very Low Income:	5 %
Low Income:	5 %

Tier 2 Multimodal Infrastructure

MI04 Traffic Calming

Traffic Calming Added Beyond Development Frontage:	Yes

MI05 Pedestrian Networks

Pedestrian Improvements Beyond Development Frontage:	Yes

Tier 3 Parking

PK02 Provide Bike Facilities

Bicycle Parking:	5
Project End-of-trip Bike Facilities:	Yes

Tier 4 TDM Programs

TP01 School Pool Programs

School Pool Program Percent of Expected Participant Households:	75 %

TP02 Bike Share Programs

Percent Change in Bike Trips:	6%

TP03 Car Share Programs

Car Share Program Percent of Eligible Residents/Employees:	100 %

TP07 Subsidized Transit Program

Percent of Transit Subsidy:	100 %

TP14 Transit Service Expansion

Percent Increase in Transit Frequency:	25 %
Percent of Routes Serving the Project with Upgrades:	33 %

SGVCOG VMT Evaluation Tool Report

Project Details

Timestamp of Analysis: October 01, 2020, 10:35:31 AM

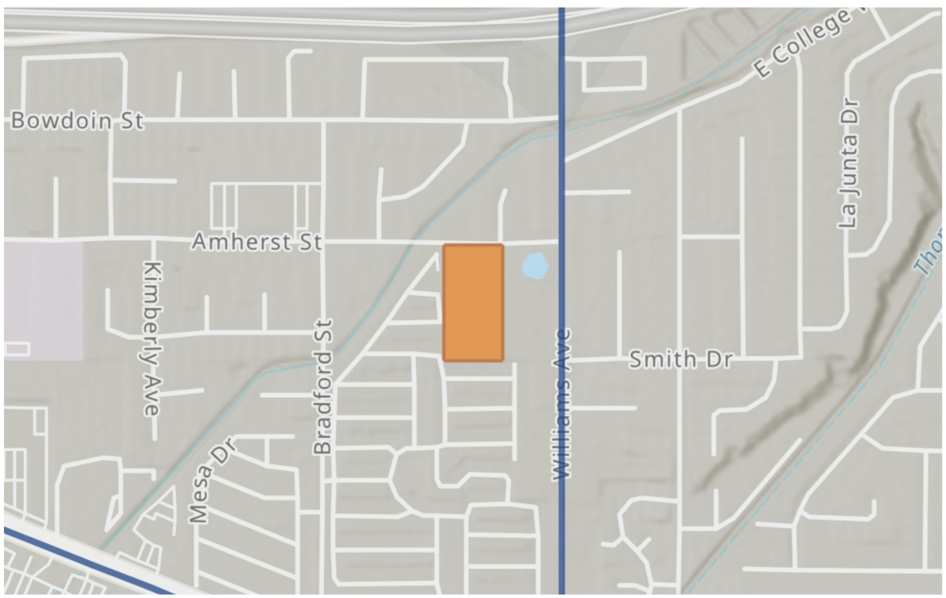
Project Name:	Amherst Street & Williams Residential Development
Project Description:	43 unit single family

Project Location

Jurisdiction:
La Verne

APN	TAZ
8666-021-902	22424100

Inside a TPA?
No (Fail)



Analysis Details

Data Version:	SCAG Regional Travel Demand Model 2016 RTP Base Year 2012
Analysis Methodology:	TAZ
Baseline Year:	2040

Project Land Use

Residential:

Single Family DU:	43
Multifamily DU:	
Total DUs:	43

Non-Residential:

Office KSF:	
Local Serving Retail KSF:	
Industrial KSF:	

Residential Affordability (percent of all units):

Extremely Low Income:	5 %
Very Low Income:	5 %
Low Income:	5 %

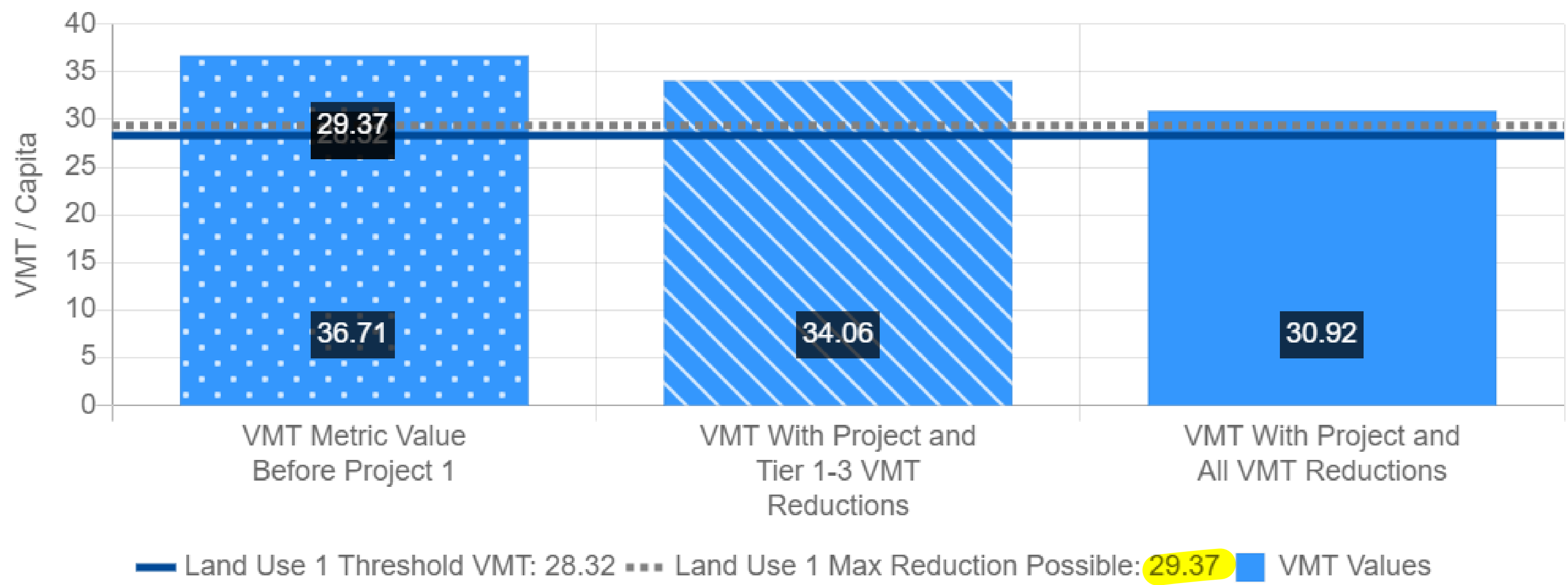
Parking:

Motor Vehicle Parking:	86
Bicycle Parking:	5

Residential Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Residential
VMT Without Project 1:	Total VMT per Service Population
VMT Baseline Description 1:	Subarea Average
VMT Baseline Value 1:	33.32
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	36.71	34.06	30.92
Low VMT Screening Analysis	No (Fail)	No (Fail)	No (Fail)



Tier 1 Project Characteristics

PC03 Affordable Housing

Extremely Low Income:	5 %
Very Low Income:	5 %
Low Income:	5 %

Tier 2 Multimodal Infrastructure

MI04 Traffic Calming

Traffic Calming Added Beyond Development Frontage:	Yes

MI05 Pedestrian Networks

Pedestrian Improvements Beyond Development Frontage:	Yes

Tier 3 Parking

PK02 Provide Bike Facilities

Bicycle Parking:	5
Project End-of-trip Bike Facilities:	Yes

Tier 4 TDM Programs

TP01 School Pool Programs

School Pool Program Percent of Expected Participant Households:	75 %

TP02 Bike Share Programs

Percent Change in Bike Trips:	6%

TP03 Car Share Programs

Car Share Program Percent of Eligible Residents/Employees:	100 %

TP07 Subsidized Transit Program

Percent of Transit Subsidy:	100 %

TP14 Transit Service Expansion

Percent Increase in Transit Frequency:	25 %
Percent of Routes Serving the Project with Upgrades:	33 %

AMHERST RESIDENTIAL
TRAFFIC IMPACT ANALYSIS

City of La Verne

August 28, 2020

prepared by
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TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

The purpose of this Traffic Impact Analysis is to provide an assessment of traffic operations resulting from development of the proposed Amherst Residential and to identify measures necessary to maintain acceptable operations in accordance with City of La Verne standards. This report analyzes traffic impacts for the anticipated project opening year in Year 2022. Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with terms related to transportation engineering.

Project Description

The 5.5-acre project site is located on the south side of Amherst Street between Stone Circle and Pepperdine Court in the City of La Verne, California.

The proposed project involves eliminating the existing nursery (wholesale) and constructing 43 single-family detached homes. The proposed project is anticipated to be constructed and fully operational by year 2022.

One full access driveway is proposed at Amherst Street.

Existing Conditions

The study intersections currently operate at Levels of Service D or better during the peak hours for Existing conditions, except for the following study intersections that currently operate at Level of Service F during the peak hours (see Table 1):

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

Project Trips

The proposed project is forecast to generate a total of approximately 299 net daily trips, including 30 net trips during the AM peak hour and 41 net trips during the PM peak hour (see Table 2).

Forecast Levels of Service

The study intersections are forecast to operate at Levels of Service D or better during the peak hours for Existing Plus Project conditions, except for the following study intersections that are projected to operate at Level of Service F during the peak hours (see Table 3):

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

The proposed project is forecast to result in no operational impacts at the study intersections for Existing Plus Project conditions during the AM and PM peak hours (see Table 4).

The study intersections are forecast to operate at Levels of Service D or better during the peak hours for Opening Year (2022) Without Project conditions, except for the following study intersections that are projected to operate at Level of Service F during the peak hours (see Table 5):

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

The study intersections are forecast to operate at Levels of Service D or better during the peak hours for Opening Year (2022) With Project conditions, except for the following study intersections that are projected to operate at Level of Service F during the peak hours (see Table 6):

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

The proposed project is forecast to result in no operational impacts at the study intersections for Opening Year (2022) With Project conditions during the AM and PM peak hours (see Table 7).

The study intersections are forecast to operate at Levels of Service D or better during the peak hours for Year 2040 Without Project conditions, except for the following study intersections that are projected to operate at Level of Service E/F during the peak hours (see Table 8):

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Fruit Street/White Avenue at Foothill Boulevard - #2 (PM Peak Hour – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (AM Peak Hour – LOS E; PM Peak Hour – LOS F)

The study intersections are forecast to operate at Levels of Service D or better during the peak hours for Year 2040 With Project conditions, except for the following study intersections that are projected to operate at Level of Service E/F during the peak hours (see Table 9):

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Fruit Street/White Avenue at Foothill Boulevard - #2 (PM Peak Hour – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (AM Peak Hour – LOS E; PM Peak Hour – LOS F)

The proposed project is forecast to result in no operational impacts at the study intersections for Year 2040 With Project conditions during the AM and PM peak hours (see Table 10).

Congestion Management Program

The proposed project would result in no operational CMP impact as it does not meet the thresholds requiring a traffic impact analysis for CMP purposes and no further CMP analysis is warranted. A transit impact review was conducted for compliance with the CMP requirements and found that the proposed project is forecast to have a nominal impact on transit service.

Site Access and Circulation

The proposed project shall construct the following improvements as project design features to provide project site access:

- Construct the Project Access (NS) at Amherst Street (EW) (located on the northern portion of the project site) to provide one inbound lane and one outbound lane with northbound stop-control and the following lane configurations:
  - Northbound: one shared left/right turn lane
  - Southbound: not applicable
  - Eastbound: one shared through/right turn lane
  - Westbound: one shared left/through lane.

Operational Improvements

No off-site operational improvements were identified since the proposed project is forecast to result in no operational impacts at the study intersection for all scenarios analyzed.

1. INTRODUCTION

This section describes the purpose of this traffic impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map. Figure 2 illustrates the project site plan.

PROJECT DESCRIPTION

The 5.5-acre project site is located on the south side of Amherst Street between Stone Circle and Pepperdine Court in the City of La Verne, California.

The proposed project involves eliminating the existing nursery (wholesale) and constructing 43 single-family detached homes. One full access driveway is proposed at Amherst Street. For purposes of this analysis, the proposed project is anticipated to be constructed and fully operational by year 2022.

STUDY AREA

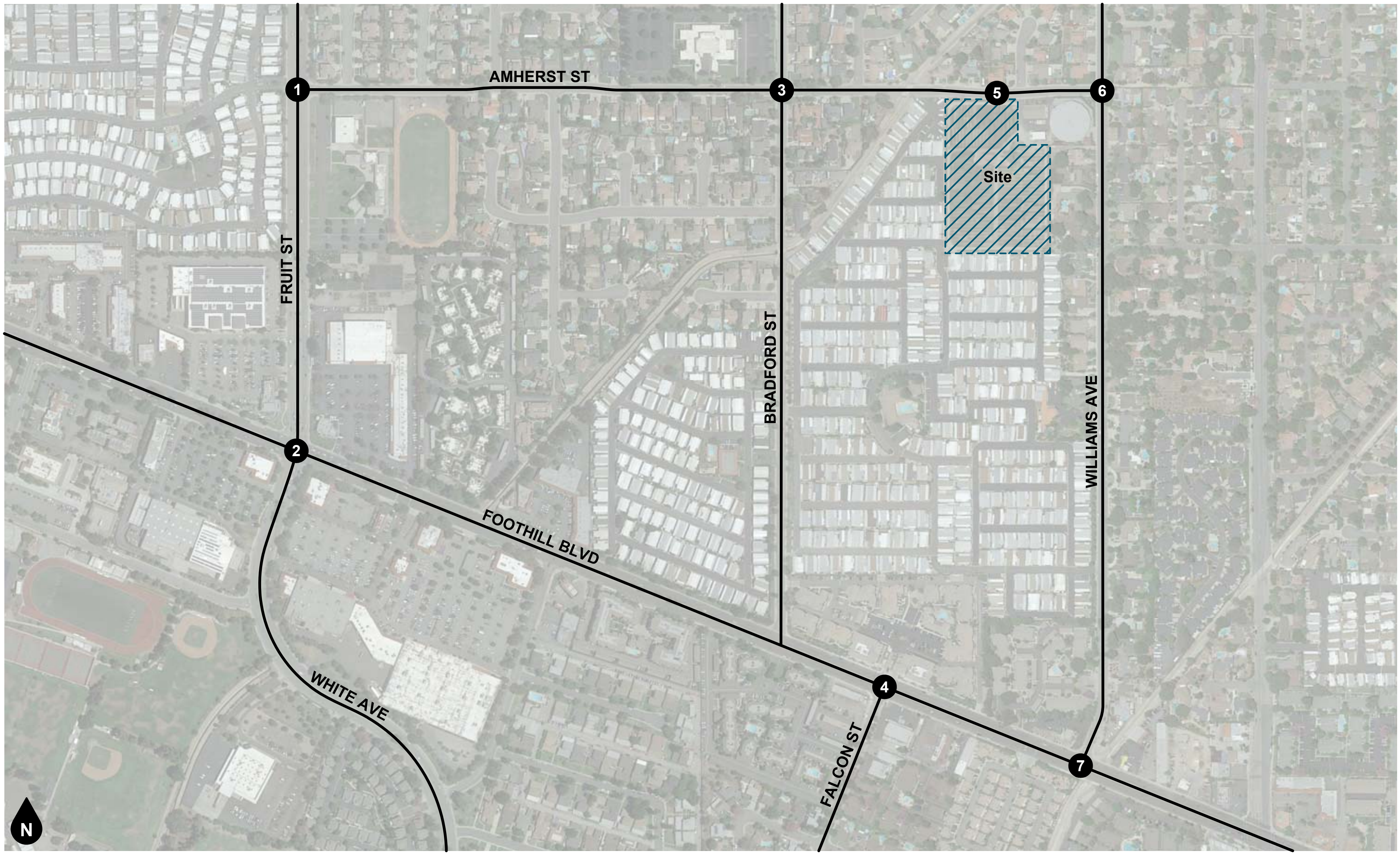
Based on the City-approved scoping agreement (see Appendix B), the study area consists of the following study intersection within the City of La Verne:

Study Intersections[1]	Jurisdiction[2]
1. Fruit Street (NS) at Amherst Street (EW)	City of La Verne
2. Fruit Street/White Avenue (NS) at Foothill Boulevard (EW)	City of La Verne/Caltrans
3. Bradford Street (NS) at Amherst Street (EW)	City of La Verne
4. Falcon Street (NS) at Foothill Boulevard (EW)	City of La Verne/City of Pomona/Caltrans
5. Project Access (NS) at Amherst Street (EW)	City of La Verne
6. Williams Avenue (NS) at Amherst Street (EW)	City of La Verne/City of Claremont
7. Williams Avenue (NS) at Foothill Boulevard (EW)	City of La Verne/City of Pomona/Caltrans

In accordance with scoping discussions with City of West Covina engineering staff, this study includes the following analysis scenarios:

a) Existing conditions;
b) Existing Plus Project;
c) Opening Year (2022) Without Project;
d) Opening Year (2022) With Project;
e) Year 2040 Without Project; and
f) Year 2040 With Project

[1] (NS) = north-south roadway; (EW) = east-west roadway
[2] Caltrans = California Department of Transportation



Legend
Study Intersection

Figure 1
Project Location Map

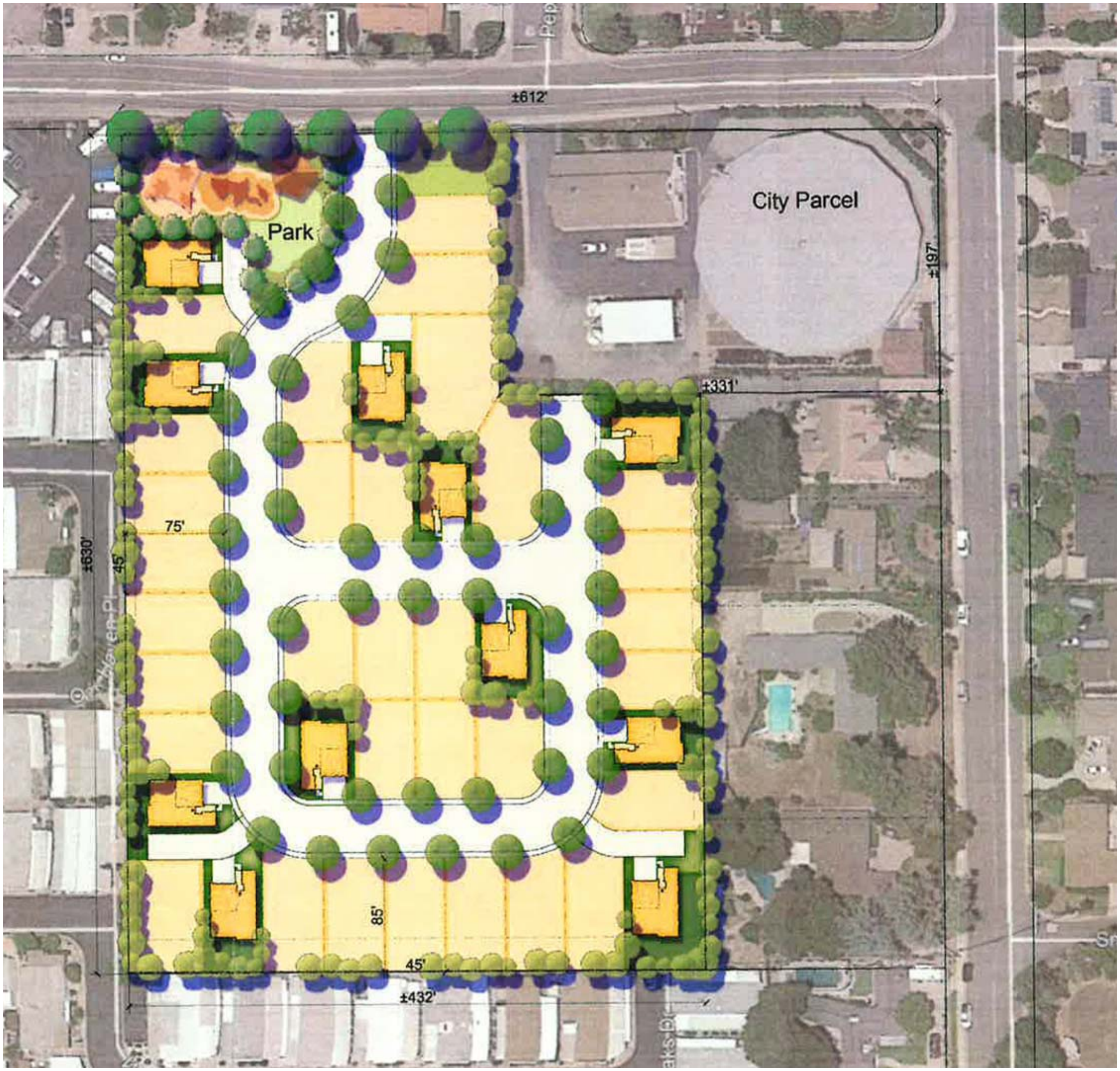


Figure 2
Site Plan

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies.

INTERSECTION CAPACITY UTILIZATION

Analysis of signalized intersections within the Cities of La Verne and Claremont is based on the Intersection Capacity Utilization (ICU) methodology. The ICU methodology compares the volume of traffic using the intersection to the capacity of the intersection. The resulting volume-to-capacity (V/C) ratio represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. The volume-to-capacity ratio is then correlated to a performance measure known as Level of Service based on the following thresholds:

Level of Service	Volume/Capacity Ratio
A	≤ 0.600
B	0.601 to 0.700
C	0.701 to 0.800
D	0.801 to 0.900
E	0.901 to 1.000
F	> 1.000

Source: Transportation Research Board, Interim Materials on Highway Capacity, Transportation Research Circular No. 212, January 1980.

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). ICU analysis was performed using the Vistro software. Consistent with County of Los Angeles guidelines, this analysis uses the following input parameters for the ICU analysis: 1,600 vehicles per hour per lane for through and turn lanes, 2,880 vehicles per hour for dual left-turn lanes, and a total clearance time of 10 percent.

Additionally, per the County of Los Angeles Department of Public Works, shared left turn volumes were converted using Left Turn Equivalency Factors to compensate for the capacity reducing effects of left-turn traffic in a shared lane. Based on the amount of opposing through and right turn traffic, the equivalency factor increases the left turn volume used in the analysis as the opposition increases.

Opposing Through and Right Turn Volume	Left-Turn to Through Volume Equivalency Factor
<200	1.1
200-600	2.0
600-800	3.0
800-1000	4.0
>1000	5.0

If the paved lane width of a shared through/right turn lane is wide enough to permit a separate right turn, it is common practice for a right turn lane to be considered “de facto.” To function as a de facto right turn lane there must be sufficient width for right turning vehicles to travel outside the through lane. This analysis uses a minimum lane width of 19 feet from curb to lane stripe. Additionally, a de facto right turn lane was only considered where on-street parking is prohibited near the intersection approach.

INTERSECTION DELAY METHODOLOGY

To assess the performance of an unsignalized intersection and intersections within Caltrans jurisdiction, the intersection delay method based on procedures contained in the Highway Capacity Manual (Transportation Research Board, 6th Edition) is utilized. The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, Highway Capacity Manual (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst individual movement (or movements sharing a single lane).

Intersection delay analysis was performed using the Vistro software.

PERFORMANCE STANDARDS

City of La Verne. The City of La Verne has established Level of Service D as the minimum acceptable Level of Service during peak hour conditions. Intersections operating at Level of Service E/F shall be identified as deficient.

City of Pomona. Level of Service D is considered the minimum acceptable Level of Service for intersections within the City of Pomona.

City of Claremont. The City of Claremont considers LOS E the minimum acceptable Level of Service for Major Arterials, LOS D the minimum acceptable Level of Service for Secondary Arterials and Rural Secondary Arterials, LOS C the minimum acceptable Level of Service for Collectors, and LOS B the minimum acceptable Level of Service for intersections within the City of Claremont.

California Department of Transportation. As stated in the Guide for the Preparation of Traffic Impact Studies (State of California, 2002), “California Department of Transportation endeavors to maintain a target LOS [Level of Service] at the transition between LOS “C” and LOS “D” on State highway facilities”. The California

Department of Transportation acknowledges this may not always be feasible and recommends consultation with the California Department of Transportation to determine the appropriate target Level of Service. For consistency with local requirements, this analysis defines Level of Service D as the minimum acceptable Level of Service for State Highway facilities.

REQUIREMENTS FOR IMPROVEMENTS

Intersections located on the boundary line between two jurisdictions shall be evaluated against the operational thresholds for both jurisdictions. Intersections within Caltrans jurisdiction shall be evaluated against the Caltrans operational thresholds.

City of La Verne

In accordance with the County of Los Angeles guidelines, a project operational traffic impact occurs if the project related increase in the volume-to-capacity ratio equals or exceeds the thresholds shown below:

Significant Impact Threshold for Intersections		
Level of Service	Volume/Capacity	Incremental Increase
C	0.71-0.80	0.04 or more
D	0.81-0.90	0.02 or more
E/F	0.91 - more	0.01 or more

City of Pomona

To address operational impacts associated with a project at signalized study intersections within the City of Pomona, a project is required to provide improvements if:

- The addition of project generated trips is forecast to cause an increase in volume-to-capacity of 0.02 or greater when the intersection is operating at Level of Service D, E or F in the baseline condition.

Based on the performance standards established by the City of Pomona, a potentially operational impact is defined to occur if:

Signalized Intersections:

- Any study intersection that is operating at a LOS 'A', 'B', 'C' or 'D' for any study scenario without project traffic in which the addition of project traffic causes the intersection to degrade to a LOS 'E' or 'F' shall mitigate that impact so as to bring the intersection back to at least LOS 'D'.

- Any study intersection that is operating at a LOS 'E' or 'F' for any study scenario without project traffic shall mitigate any impacts so as to bring the intersection back to the overall level of delay established prior to project traffic being added.

Unsignalized Intersections:

An operational impact occurs if the study determines that either section a) or both sections b) and c) occur:

a) The addition of project related traffic causes the intersection to move from a LOS 'D' or better to a LOS 'E' or worse; or

b) The project contributes additional traffic to an intersection that is already projected to operate at an LOS 'E' or 'F' with background traffic (per Section 3.2 b)); and

c) One or both of the following conditions are met:
1) The project adds ten (10) or more trips to any approach
2) The intersection meets the peak hour traffic signal warrant after the addition of project traffic (per Section 3.2 c)).

City of Claremont

The City of Claremont has not adopted thresholds of significance to evaluate traffic impacts from land use development projects. For this traffic impact analysis, the thresholds of significance are derived from the Los Angeles County CMP Transportation Impact Analysis Guidelines. A significant traffic impact would occur if:

- The proposed project increases traffic demand on a facility by 2% (increase in v/c greater than or equal to 0.02), causing the facility to operate at unacceptable LOS.

- The proposed project increases traffic demand on a facility by 2% (increase in v/c greater than or equal to 0.02) that already operates at unacceptable LOS.

California Department of Transportation

Based on the California Department of Transportation established performance standards, a potentially operational traffic impact is defined to occur if the addition of project generated trips is forecast to cause the performance of a State Highway study intersection to change from acceptable Level of Service (D or better) to unacceptable Level of Service (E or F).

3. EXISTING CONDITIONS

EXISTING ROADWAY SYSTEM

Figure 3 identifies the lane geometry and intersection traffic controls for Existing conditions based on a field survey of the study area. Regional access to the project area is provided by the SR-210 Freeway north of the project site, The key north-south roadways providing local circulation are Fruit Street, White Avenue, Bradford Street, Falcon Street, and Williams Avenue. The key east-west roadways providing local circulation are Amherst Street and Foothill Boulevard.

Fruit Street is a 4-lane divided roadway in the study area. Fruit Street is classified as a Secondary Arterial in the City of La Verne Circulation Element. On-street parking is intermittently permitted in the project area. No bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway.

White Avenue is a 4-lane divided roadway in the study area. White Avenue is classified as a Major Arterial in the City of La Verne Circulation Element. On-street parking is prohibited in the project area. Bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway.

Falcon Street is a 2-lane undivided roadway in the study area. Falcon Street is classified as a Local Street in the City of Pomona Circulation Element. On-street parking is generally permitted in the project area. No bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway.

Williams Avenue is a 2-lane undivided roadway in the study area. Williams Avenue is classified as a Collector Street in the City of La Verne Circulation Element and as a Collector Roadway in the City of Claremont Circulation Element. On-street parking is permitted in the project area. No bicycle facilities are provided in the study area. Sidewalks are provided on the west side of the roadway and intermittently provided on the east side of the roadway.

Amherst Street is a 2-lane undivided roadway in the study area. Amherst Street is not classified in the City of La Verne Circulation Element. On-street parking is permitted in the project area. No bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway.

Foothill Boulevard is a 4-lane to 5-lane divided roadway in the study area. Foothill Boulevard is classified as a Major Arterial in the City of La Verne Circulation Element and as a Major Arterial in the City of Pomona Circulation Element. On-street parking is prohibited in the project area. No bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 4.

BICYCLE ROUTES

The City of La Verne Existing Bicycle Facilities Map is depicted on Figure 5.

TRANSIT FACILITIES

Figure 6 shows the existing transit routes available in the project vicinity provided by Foothill Transit. As shown on Figure 6, Routes 187, 291, and 187 service Foothill Boulevard.

GENERAL PLAN CONTEXT

Figure 7 shows the City of La Verne General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of La Verne standard roadway cross-sections are illustrated on Figure 8.

Figure 9 shows the City of Pomona General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan.

Figure 10 shows the City of Claremont General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of Claremont standard roadway cross-sections are illustrated on Figure 11 and Figure 12.

EXISTING TRAFFIC VOLUMES

Figure 13 shows the Existing average daily traffic volumes. Existing average daily traffic volumes have been obtained from the California Department of Transportation (Caltrans) Traffic Volumes on California State Highways (2017) and factored from peak hour intersection turning movement volumes using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 10 = Leg Volume.

Existing peak hour volumes are based upon AM peak period and PM peak period intersection turning movement counts obtained in August 2020. The AM peak period was counted between 7:00 AM and 9:00 AM and the PM peak period was counted between 4:00 PM and 6:00 PM. The actual peak hour within the peak period is the four consecutive 15-minute periods with the highest total volume. Thus, the weekday PM peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15-minute periods have the highest combined volume. Intersection turning movement count worksheets are provided in Appendix C.

The current COVID-19 pandemic and related stay-at-home orders imposed by state and local municipalities have resulted in a substantial decrease in traffic volumes. In addition to the current public health restrictions, it is anticipated that the pandemic may have a lasting effect on travel behaviors, such as an increase telecommuting. To provide a conservative analysis, the Existing conditions traffic volumes used in this analysis are based on historic counts with adjustments applied with the intent to represent pre-pandemic conditions for the current year. This approach is likely to overestimate actual volumes for the near future since many commuters are expected to continue working from home even as stay-at-home orders are eased.

Historical intersection turning movement counts conducted in 2011 were obtained from City staff for four of the study area intersections. They were obtained from the La Verne Village Mixed Use Traffic Impact Analysis (LSA, March 2, 2011). The AM and PM peak hour traffic volumes based on these historical counts were adjusted by a growth rate of 1.34 percent per year over a nine-year period to reflect existing year 2020 conditions prior to issuance of statewide stay-at-home orders.

The combined AM and PM peak hour turning movement volumes from these modified traffic counts were then compared to the combined AM and PM peak hour turning movement volumes for the current traffic counts conducted in August 2020. An AM Peak hour growth rate of 79.5% is necessary to bring the current traffic counts (August 2020) to an identical level as calculated using the historic 2011 traffic counts with annual ambient growth rate (1.34%) applied. A PM Peak hour growth rate of 42.14% is necessary to bring the current traffic counts (August 2020) to an identical level as calculated using the historic 2011 traffic counts with annual ambient growth rate (1.34%) applied.

Therefore, all of the current August 2020 turning movement counts were increased by 79.5% during the AM Peak Hour and 42.14% during the PM peak hour to reflect pre-pandemic conditions. These spreadsheets, and the growth rate increased intersection turning movement counts, are included in Appendix C.

Figure 14 and Figure 15 show the Existing AM peak hour and PM peak hour intersection turning movement volumes. Peak hour volumes shown in the figures and Level of Service calculations throughout this report are based on the measured count data with adjustments described above.

EXISTING INTERSECTION LEVEL OF SERVICE

The intersection Levels of Service for Existing conditions have been calculated and are shown in Table 1. Existing intersection Level of Service worksheets are provided in Appendix D.

As shown in Table 1, the study intersections currently operate at Levels of Service D or better during the peak hours for Existing conditions, except for the following study intersections that currently operate at Level of Service F during the peak hours (see Table 1):

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

EXISTING TRAFFIC SIGNAL WARRANT ANALYSIS

The need for a traffic control signal at the currently unsignalized study intersections of Fruit Street at Amherst Street (#1) and Williams Avenue at Foothill Boulevard (#7) have been evaluated using the California Department of Transportation peak hour traffic signal warrant criteria (Warrant 3) in accordance with the California Manual on Uniform Traffic Control Devices (2014 Update) ["CA MUTCD"]. Traffic signal warrant analysis worksheets are provided in Appendix E.

The peak hour traffic signal warrant (Warrant 3) is not currently satisfied at the unsignalized study intersections of Fruit Street at Amherst Street (#1) and Williams Avenue at Foothill Boulevard (#7) for Existing conditions.

Table 1
Existing Intersection Level of Service

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		ICU or [Delay][2]	LOS[3]	ICU or [Delay][2]	LOS[3]
1. Fruit St at Amherst St	CSS	562.6	F	379.0	F
2. Fruit St/White Ave at Foothill Blvd	TS	0.614	B	0.805	D
3. Bradford St at Amherst St	AWS	[7.4]	A	[7.3]	A
4. Falcon St at Foothill Blvd	TS	0.424	A	0.615	B
6. Williams Ave at Amherst St	CSS	[9.6]	A	[9.5]	A
7. Williams Ave at Foothill Blvd	CSS	[23.9]	C	[60.4]	F

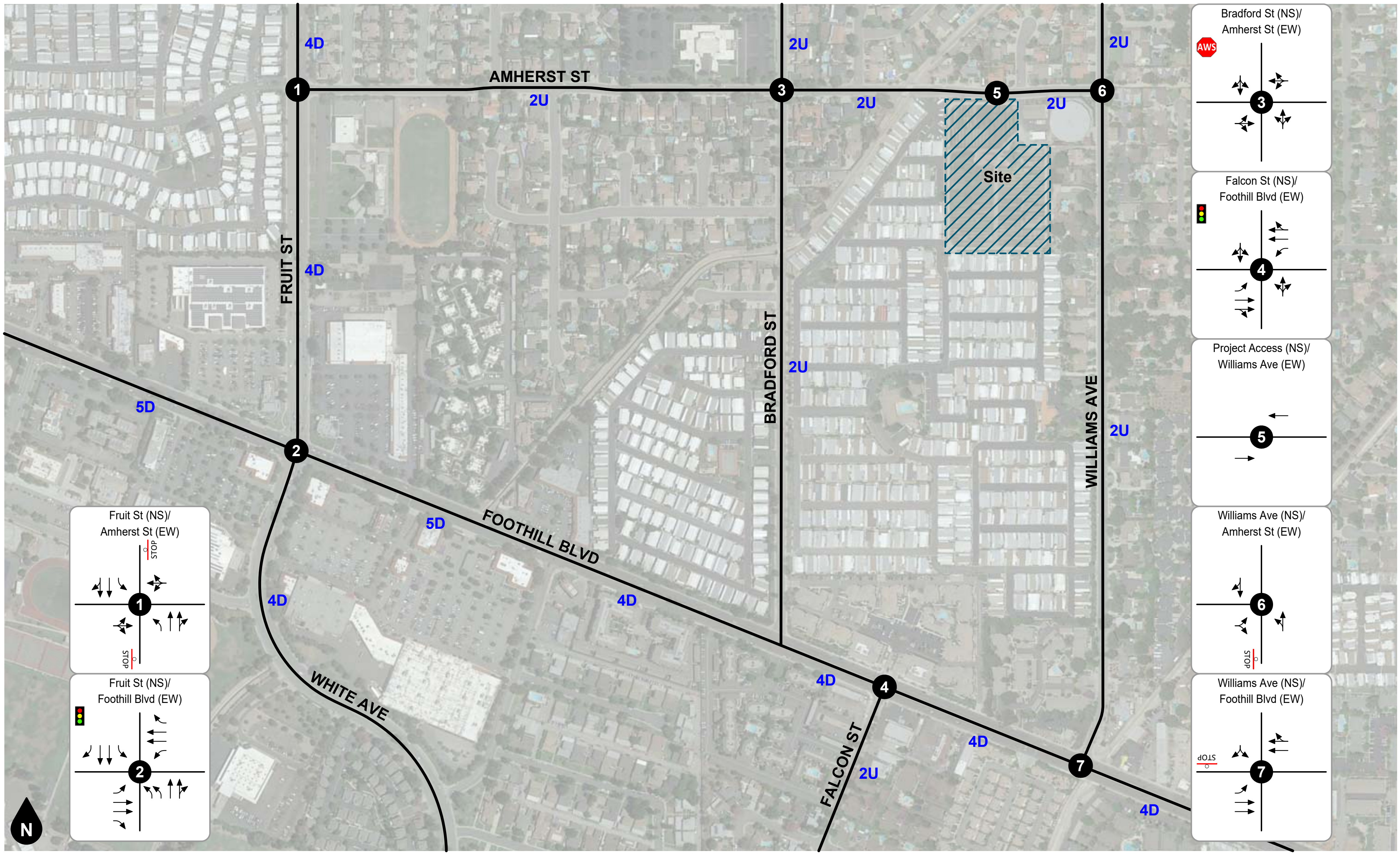
Signalized Intersection Delay Analysis (Pomona & Caltrans)					
ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS[3]	Delay[2]	LOS[3]
2. Fruit St/White Ave at Foothill Blvd	TS	25.0	C	30.6	C
4. Falcon St at Foothill Blvd	TS	22.6	C	19.3	B

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Delay is shown in [seconds/vehicle]. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).

(3) LOS = Level of Service

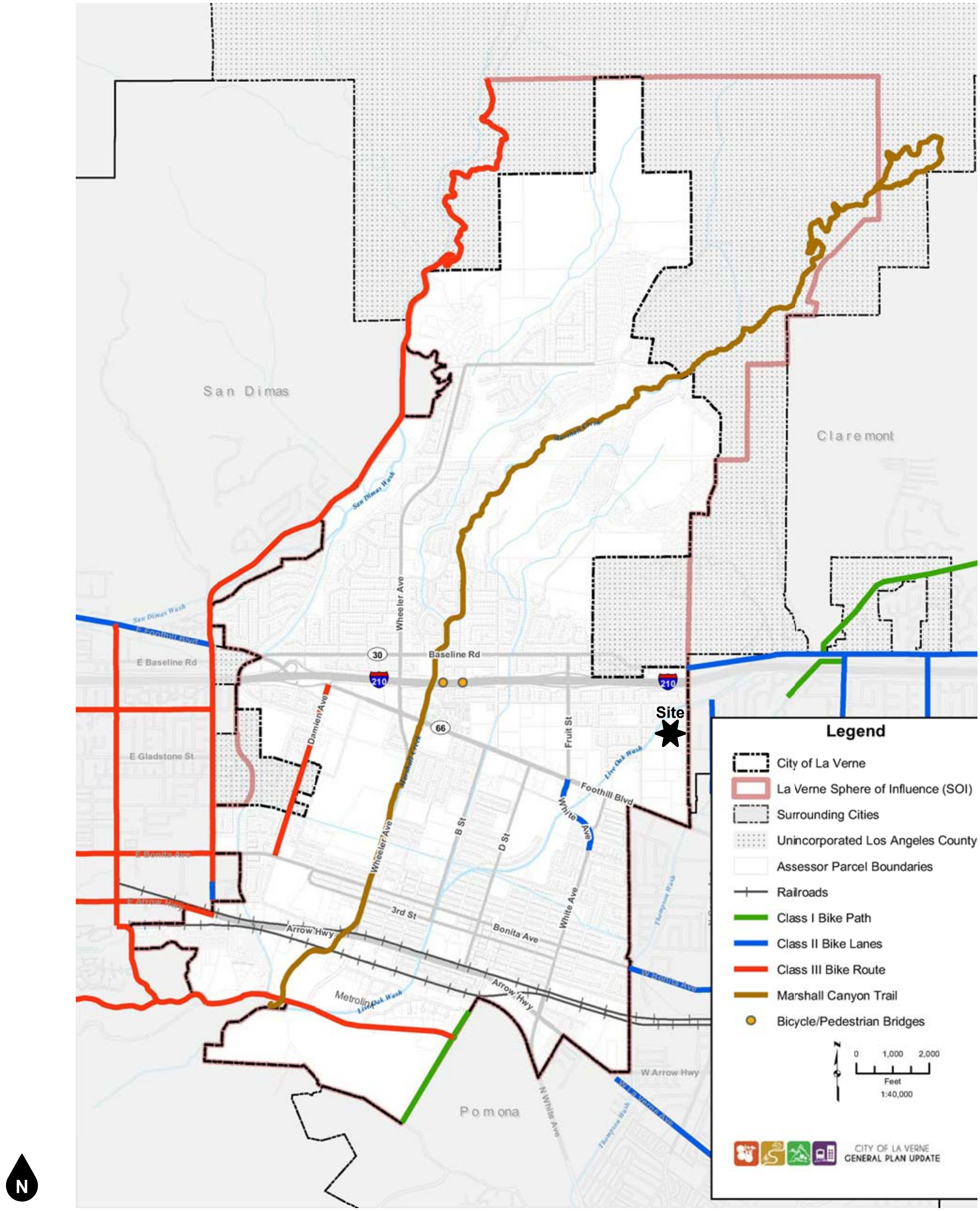


Legend

- Traffic Signal
- AWS All Way Stop
- STOP Stop Sign
- #D #-Lane Divided Roadway
- #U #-Lane Undivided Roadway
- Existing Lane

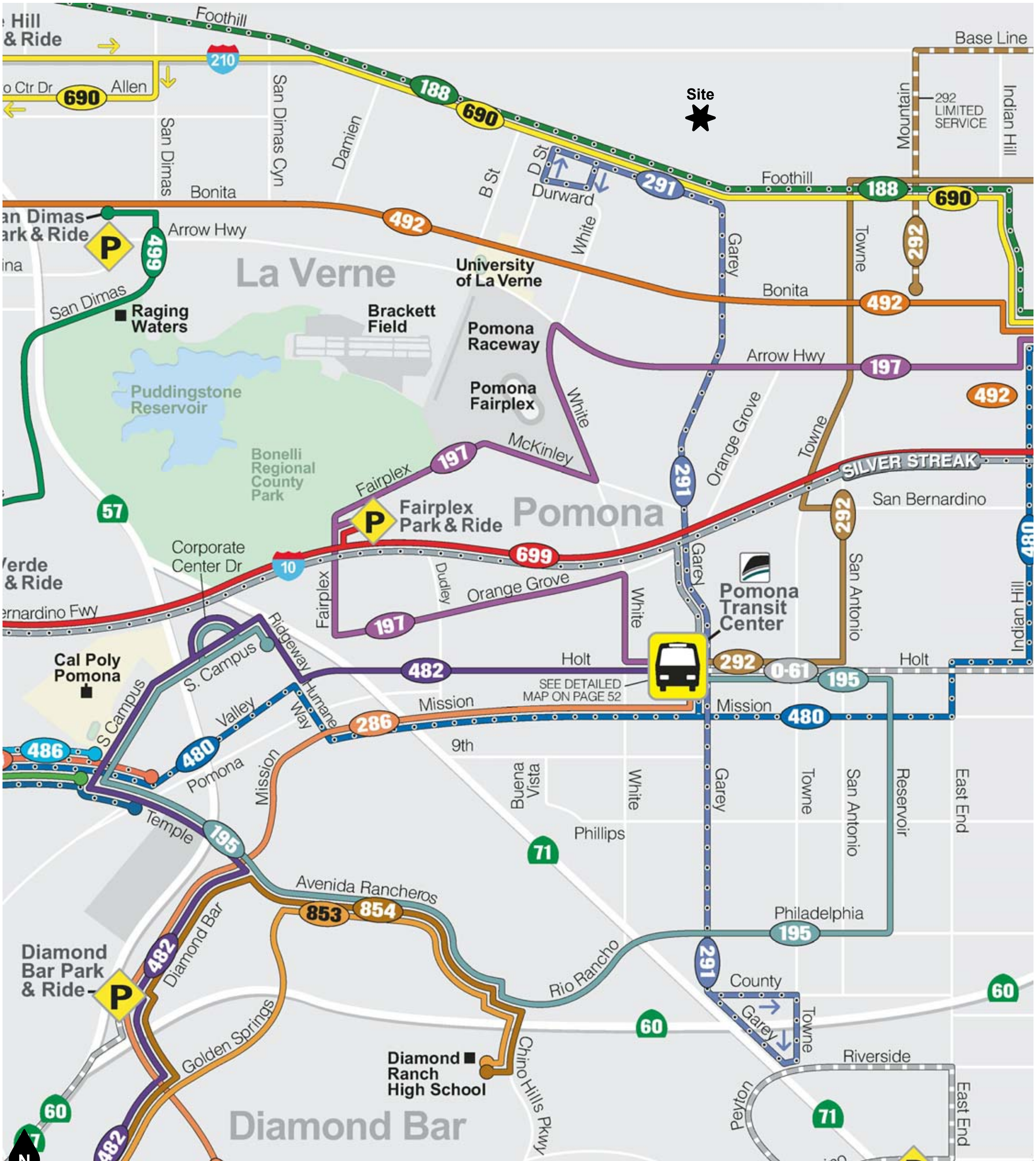
Figure 3
Existing Lane Geometry and Intersection Traffic Controls

Figure 4
Existing Pedestrian Facilities



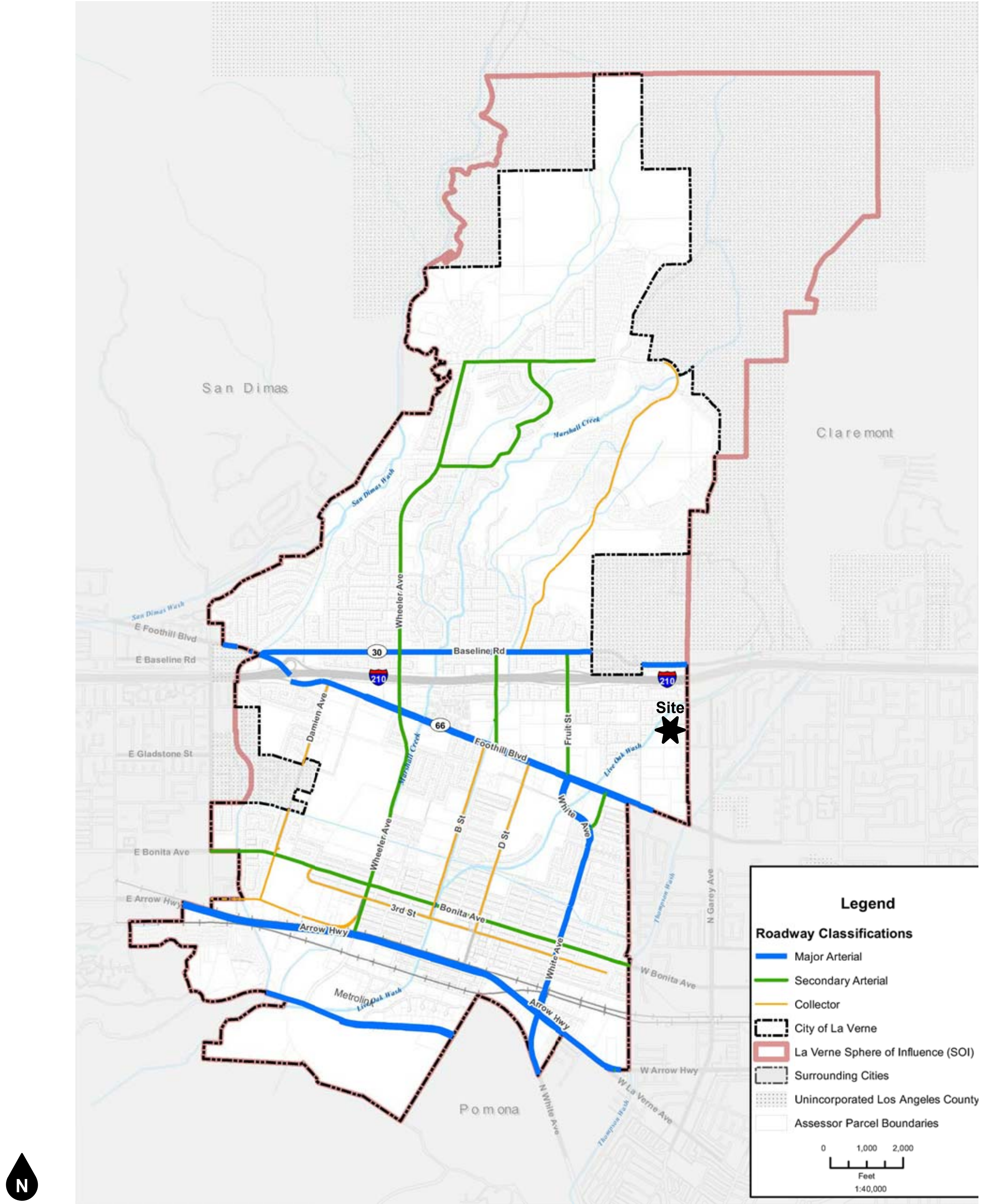
Source: City of La Verne

Figure 5
City of La Verne General Plan Existing Bicycle Facilities



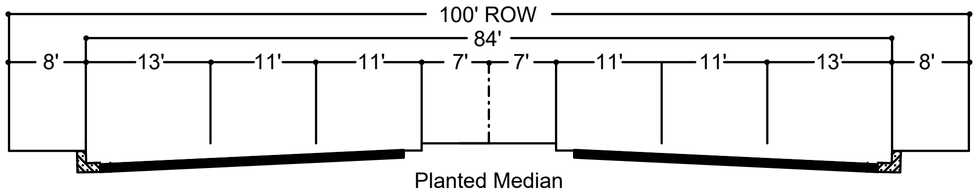
Source: Foothill Transit

Figure 6
Foothill Transit System Map

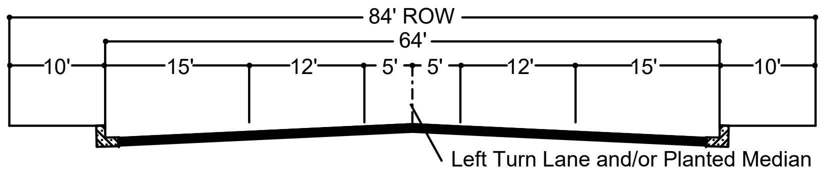


Source: City of La Verne

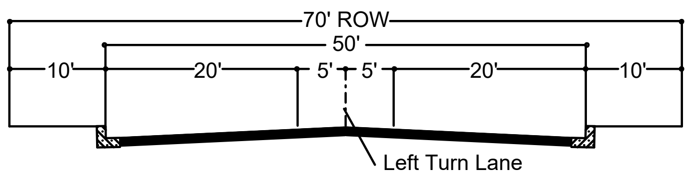
Figure 7
City of La Verne General Plan Circulation Element



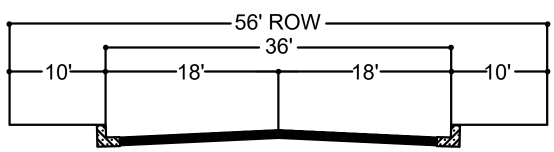
MAJOR ARTERIAL STREET



SECONDARY ARTERIAL STREET



COLLECTOR STREET



LOCAL STREET

Figure 8
City of La Verne General Plan Roadway Cross-Sections

Source: City of La Verne

Source: City of Pomona

Figure 9
City of Pomona General Plan Circulation Element

gandini

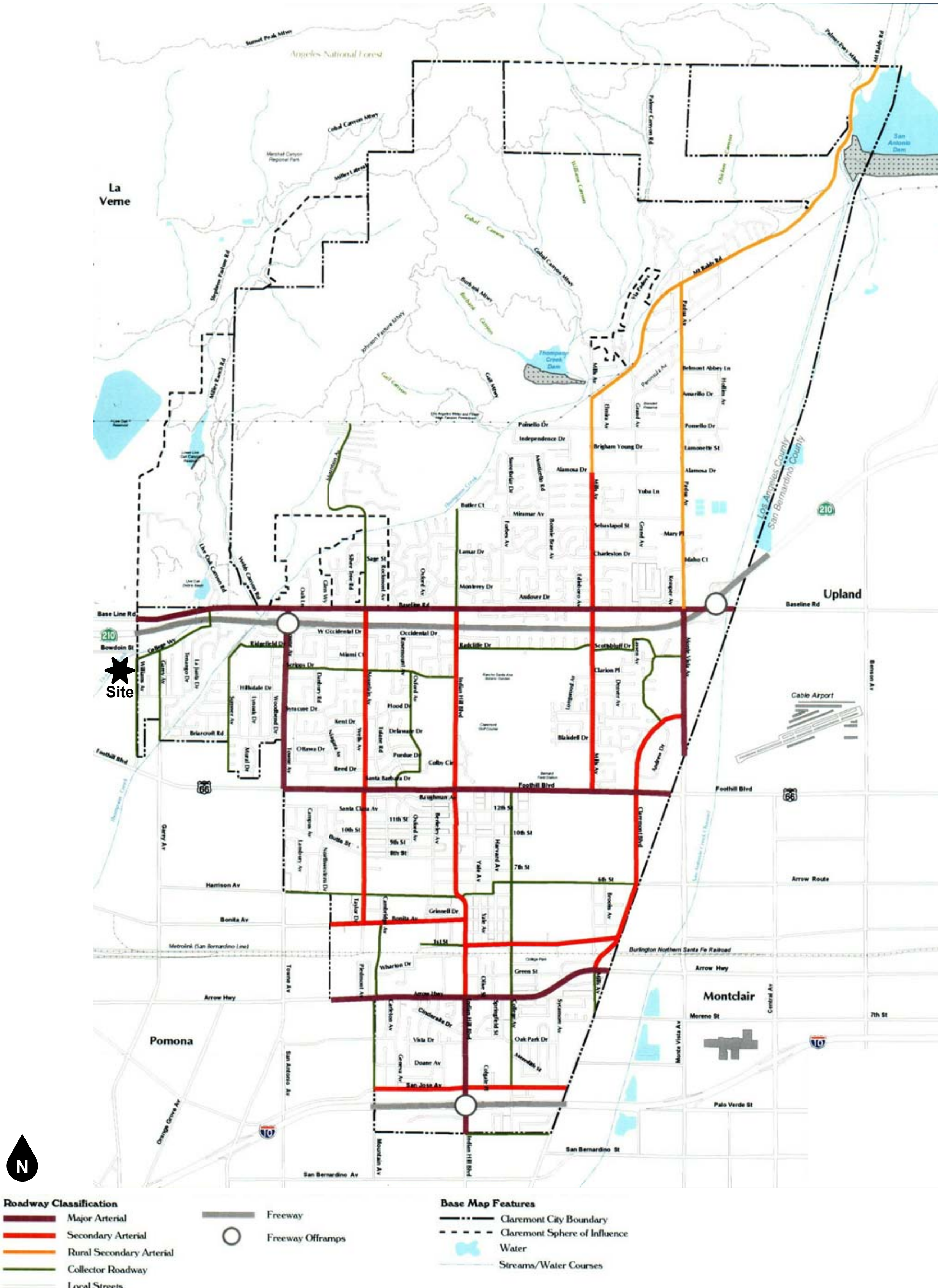
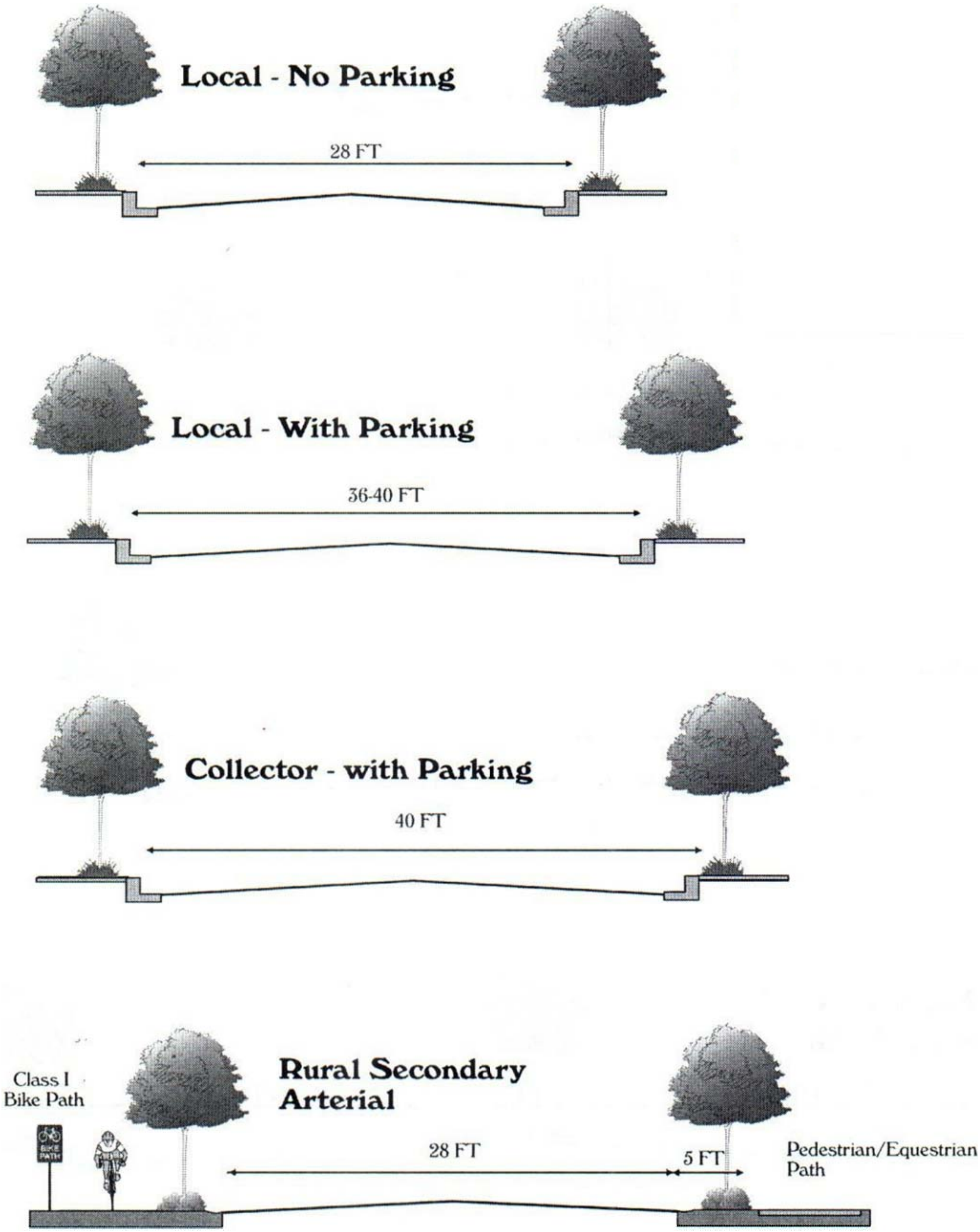


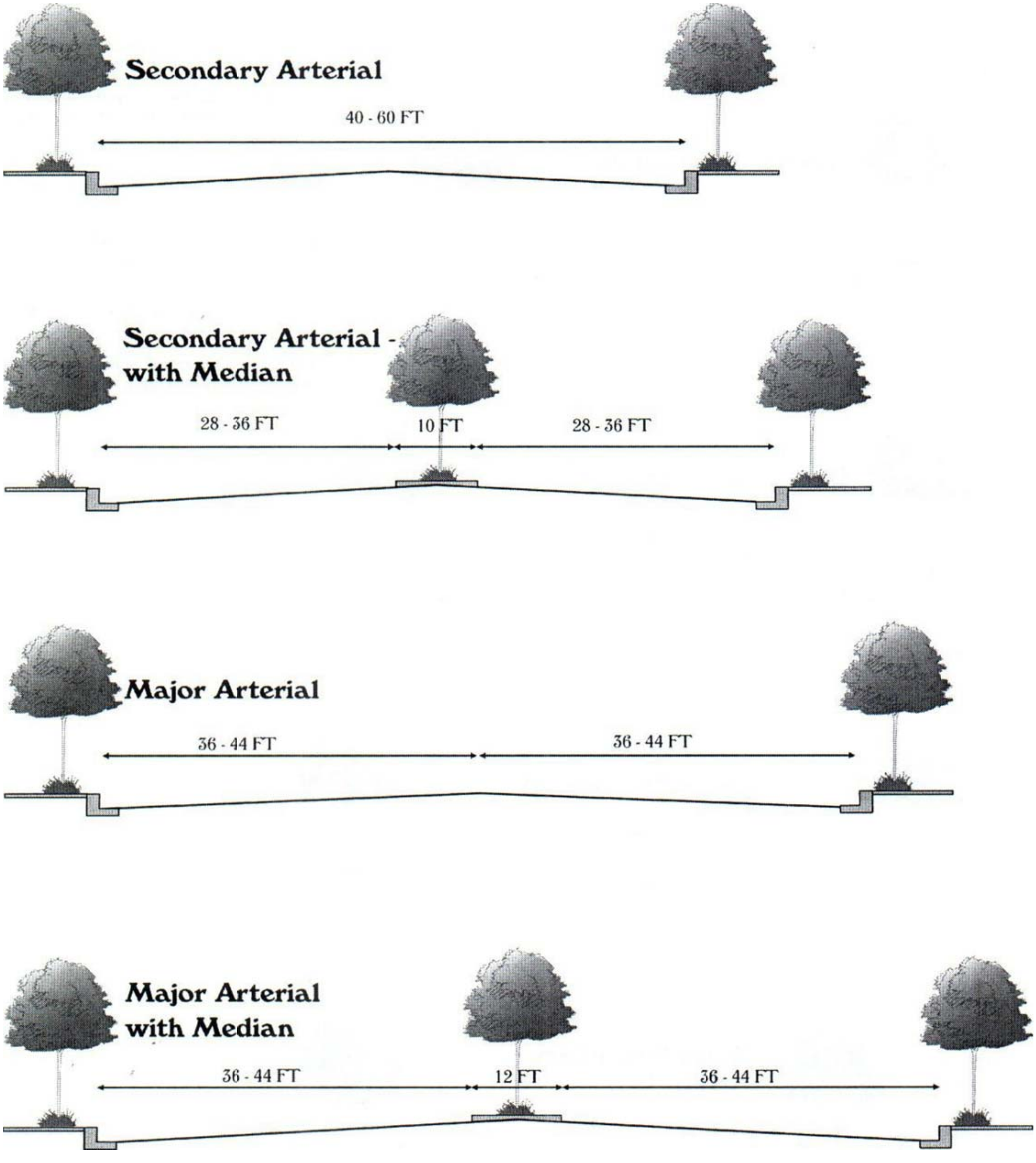
Figure 10
City of Claremont General Plan Circulation Element

Source: City of Claremont



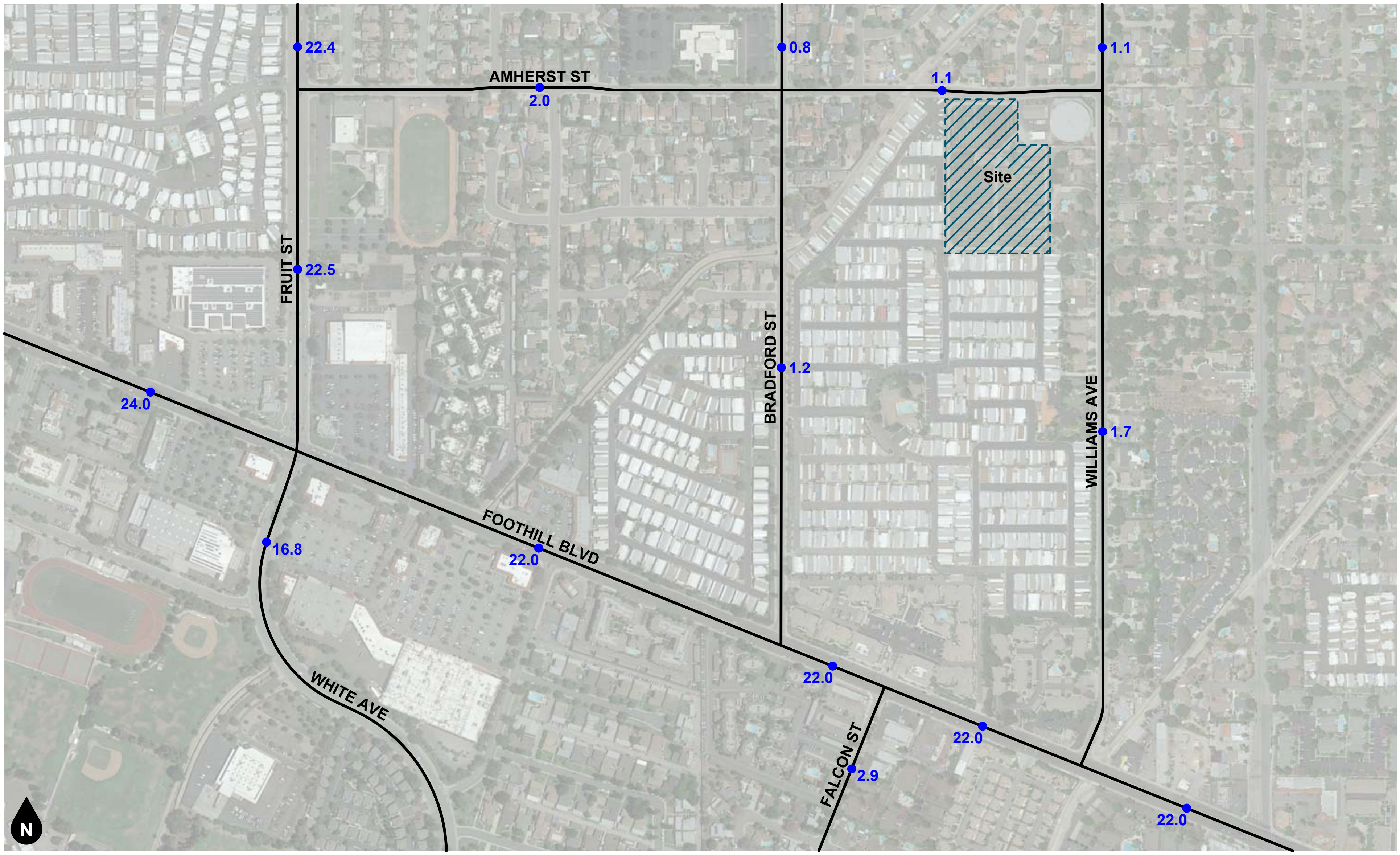
Source: City of Claremont

Figure 11
City of Claremont General Plan Roadway Cross-Sections (1 of 2)



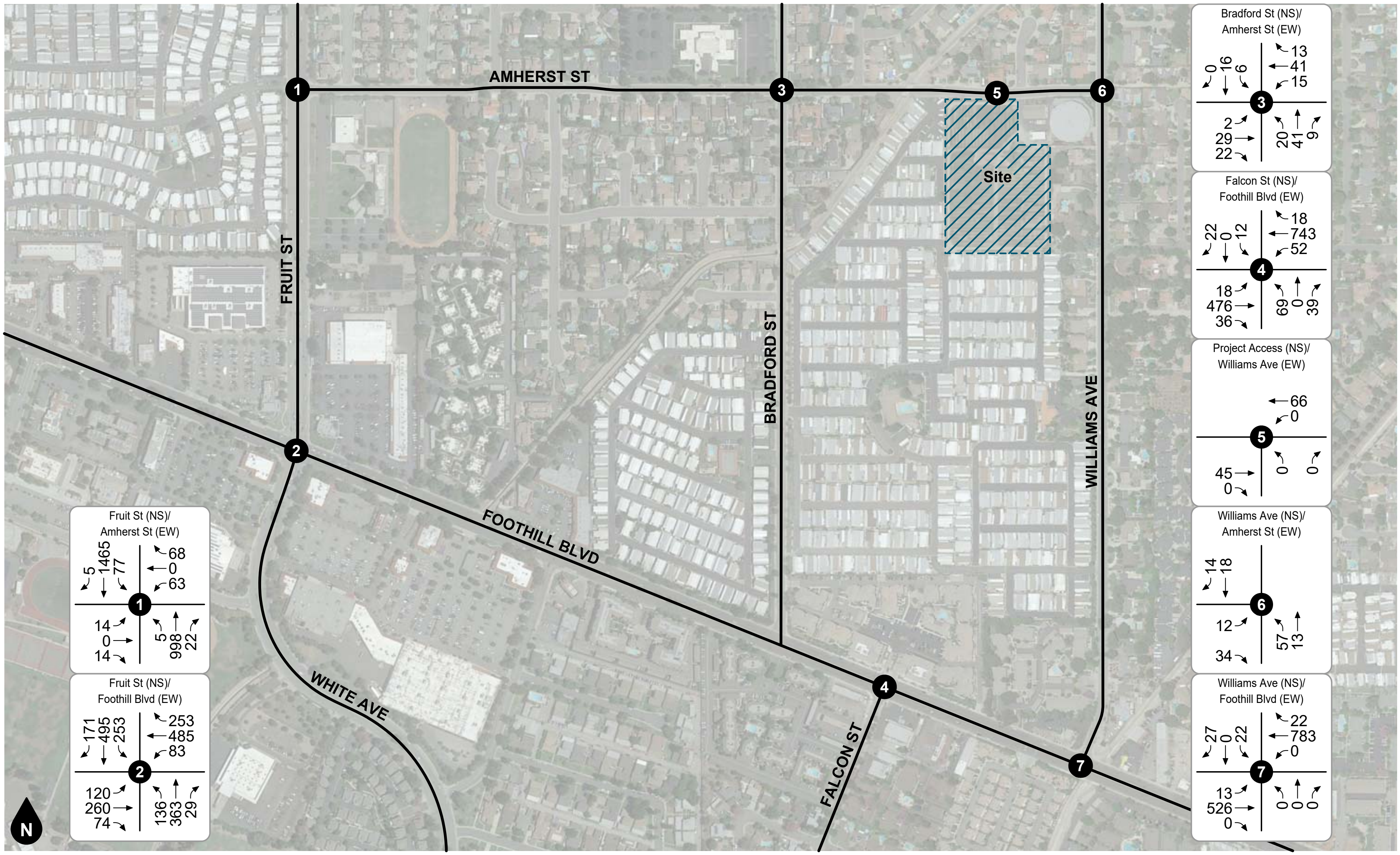
Source: City of Claremont

Figure 12
City of Claremont General Plan Roadway Cross-Sections (2 of 2)



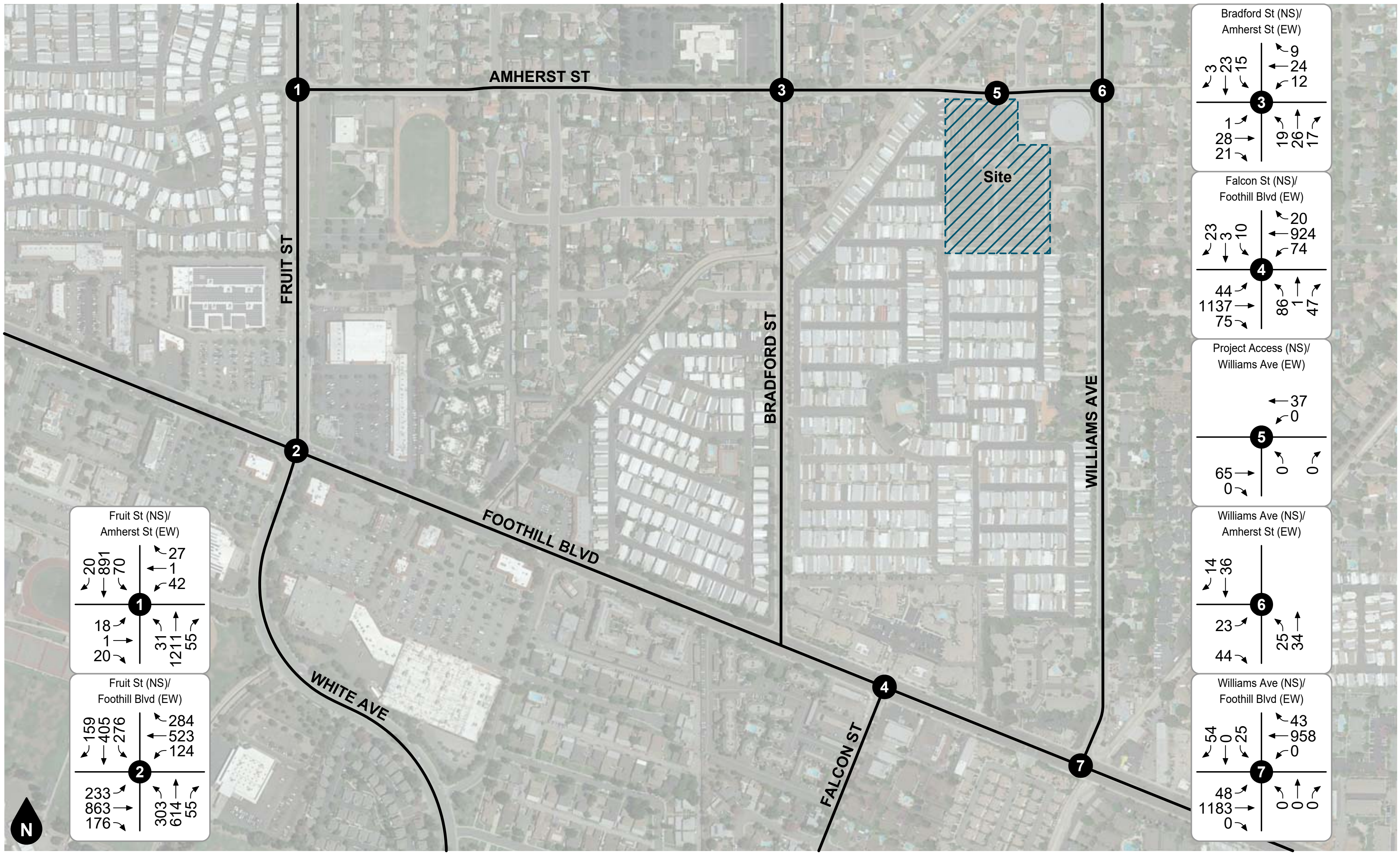
Legend
●## Vehicles Per Day (1,000's)

Figure 13
Existing Average Daily Traffic Volumes



Legend
Study Intersection

Figure 14
Existing AM Peak Hour Intersection Turning Movement Volumes



Legend
Study Intersection

Figure 15
Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT TRIP GENERATION

Table 2 shows the project trip generation based upon trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017). The project trip generation forecast is determined by multiplying the trip generation rates by the land use quantity. Trip generation rates for Single-Family Detached Residential (ITE Land Use Code 210) were used for the proposed project and Wholesale Nursery (ITE Land Use Code 818) rates were used for the existing use to be displaced.

As shown in Table 2, the proposed project is forecast to generate approximately 299 net new daily trips, including 30 net new trips during the AM peak hour and 41 net new trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Figure 16 shows the forecast directional distribution patterns for the project generated trips. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project average daily traffic volumes have been calculated and are shown on Figure 17. The project-generated AM and PM peak hour intersection turning movement volumes are shown on Figure 18 and Figure 19.

Table 2
Project Trip Generation

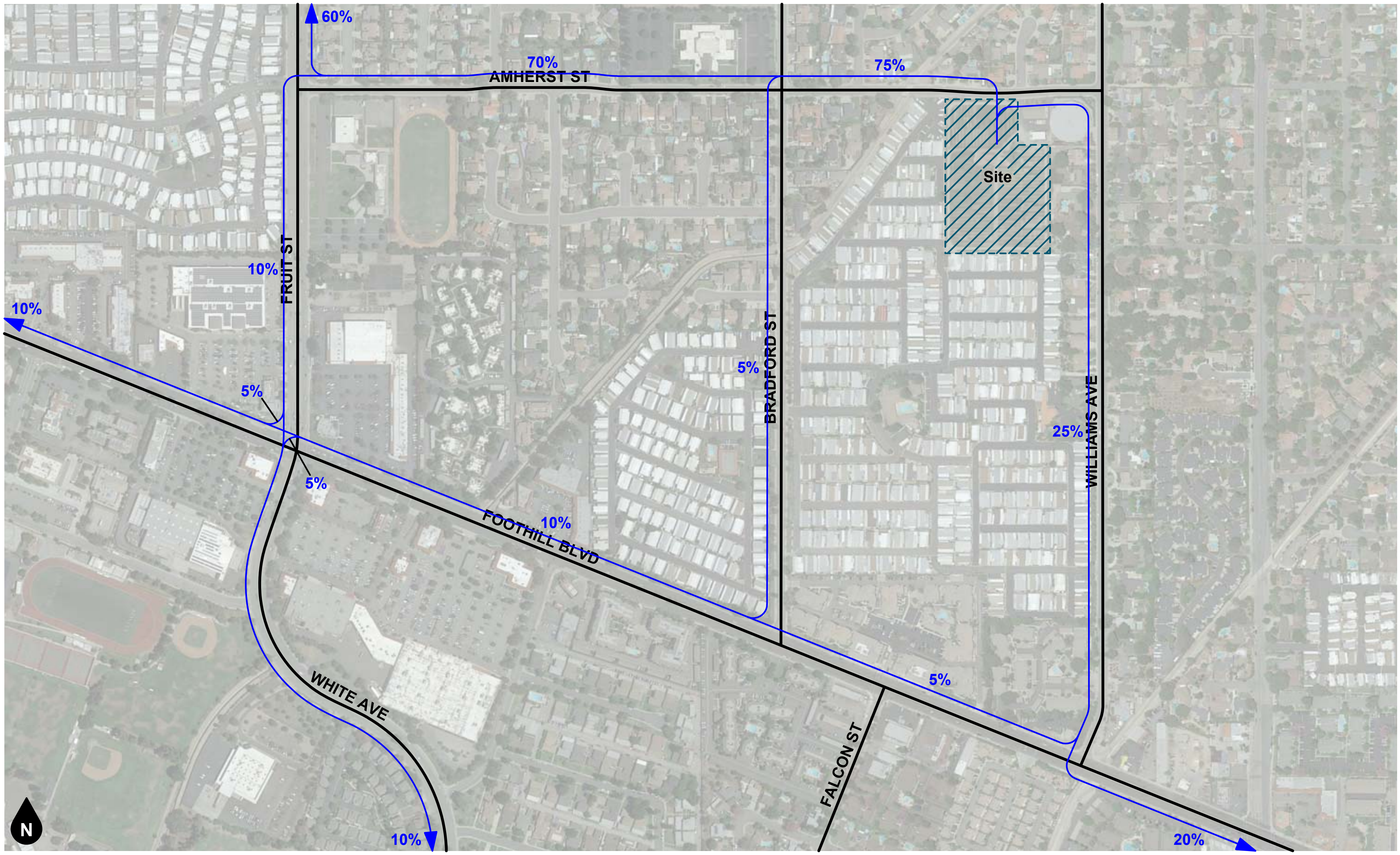
Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			
Land Use	Source[1]	Unit[2]	% In	% Out	Rate	% In	% Out	Rate	Daily
Single-Family Detached Housing	ITE 210	DU	25%	75%	0.74	63%	37%	0.99	9.44
Nursery (Wholesale)	ITE 818	AC	50%	50%	0.26	48%	52%	0.45	19.50

Trips Generated									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Unit[2]	In	Out	Total	In	Out	Total	Daily
Proposed Single-Family Detached Housing	43	DU	8	24	32	27	16	43	406
Existing Nursery (Wholesale)	5.5	AC	-1	-1	-2	-1	-1	-2	-107
Net Trip Generation			**+7**	**+23**	**+30**	**+26**	**+15**	**+41**	**+299**

Notes:

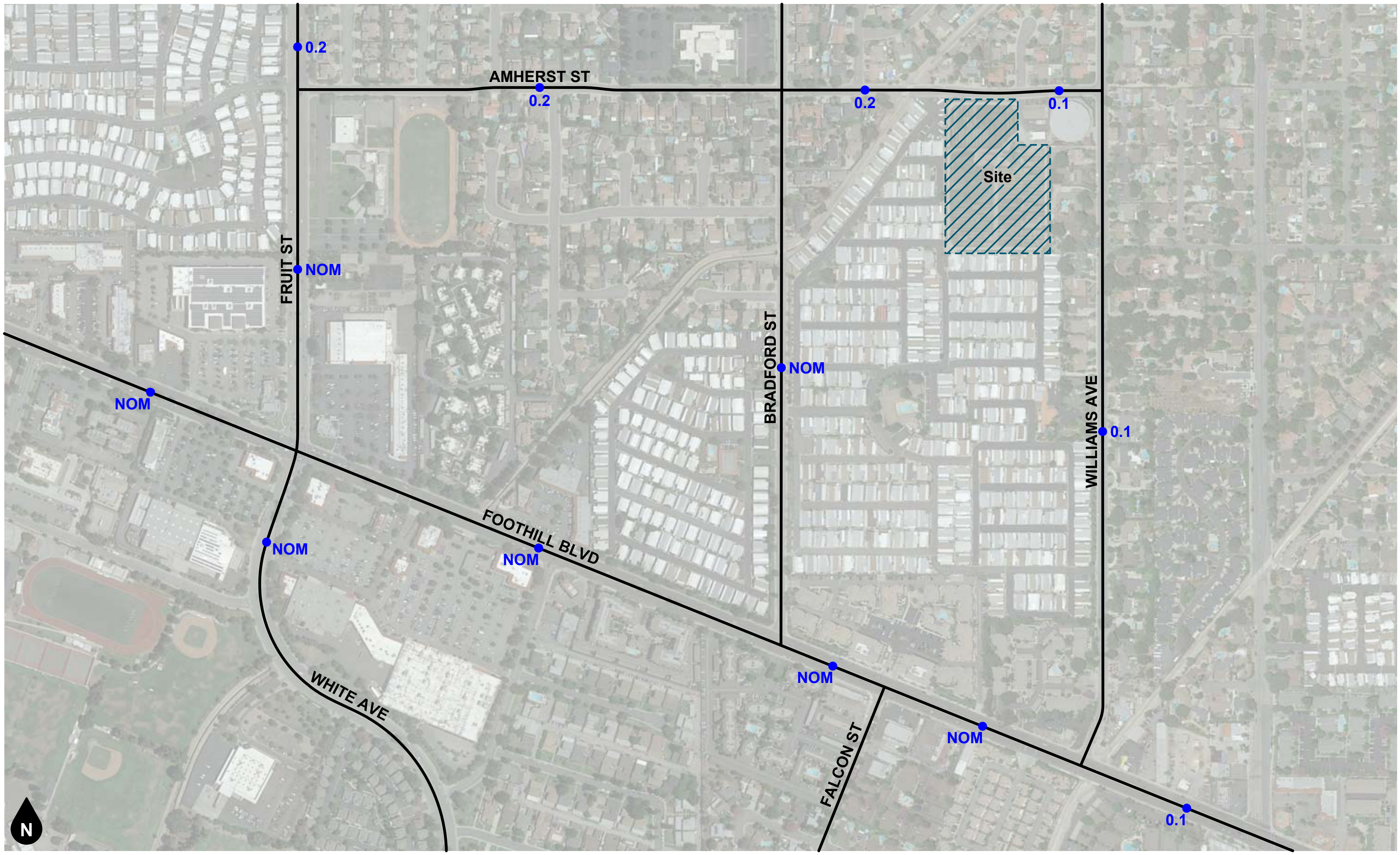
(1) ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; ### = Land Use Code

(2) DU = Dwelling Units; AC = Acres



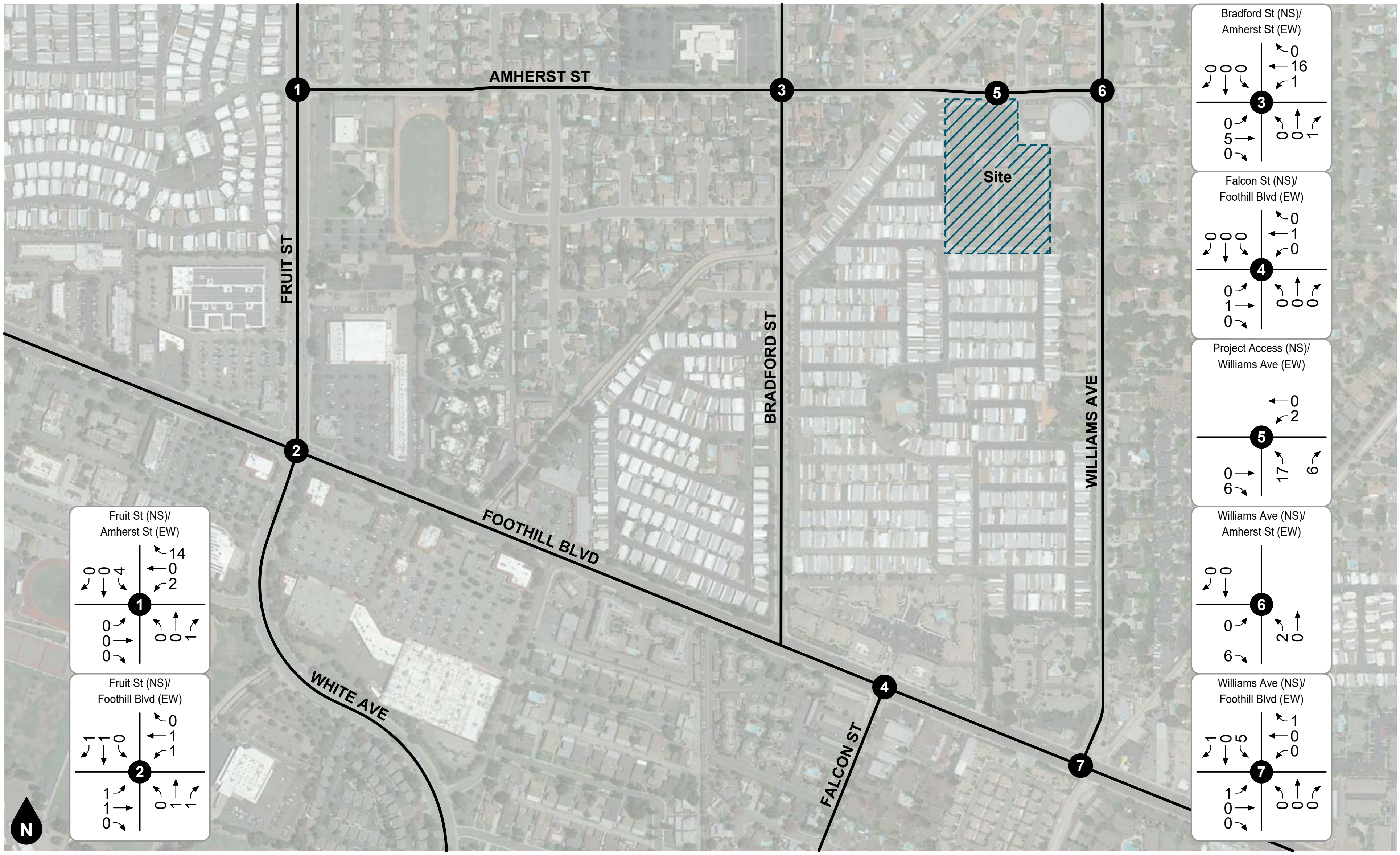
Legend
10% Percent To/From Project

Figure 16
Project Trip Distribution



Legend
● ## Vehicles Per Day (1,000's)
NOM Nominal; Less Than 50 Vehicles Per Day

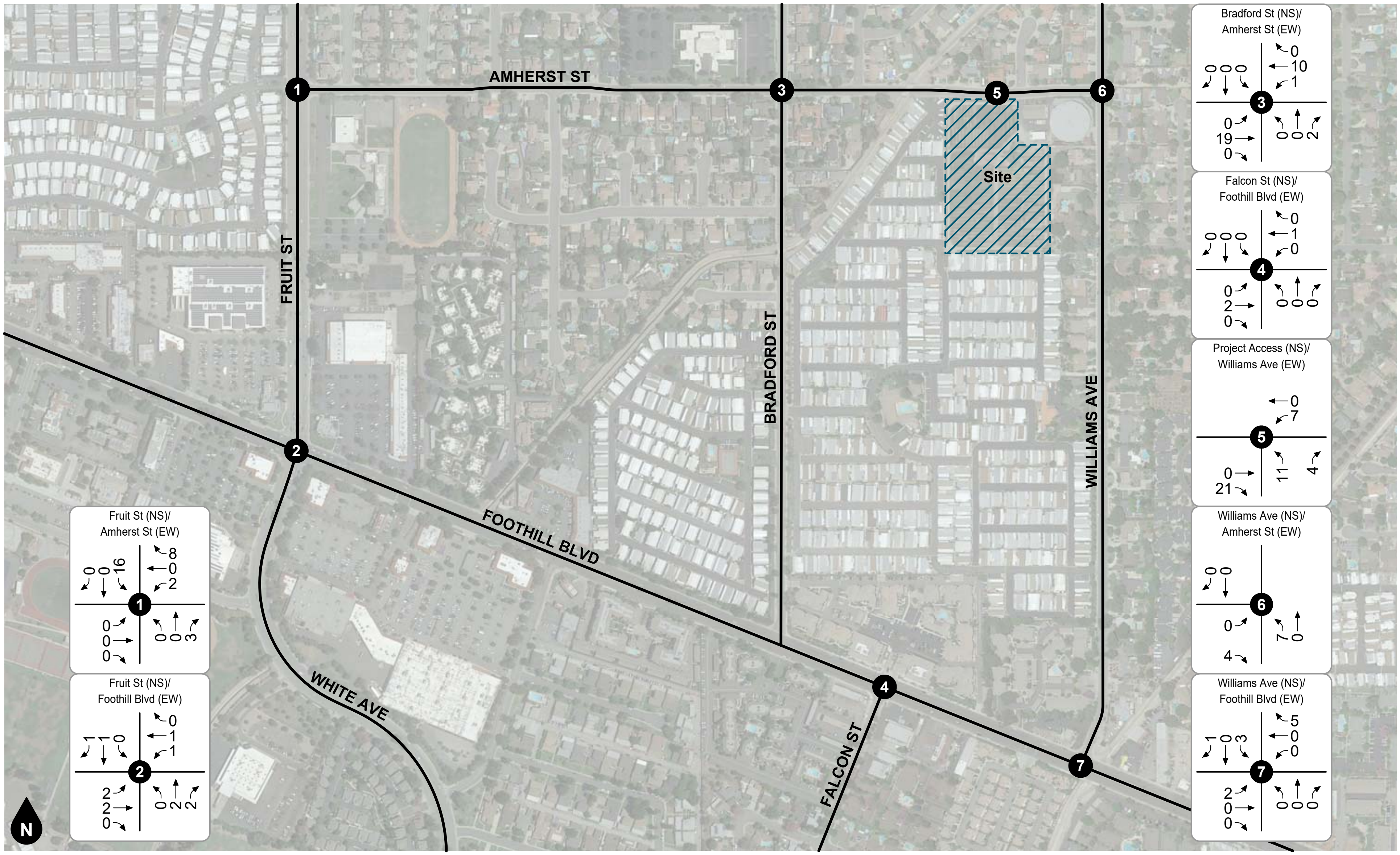
Figure 17
Project Average Daily Traffic Volumes



Legend

\# Study Intersection

Figure 18
Project AM Peak Hour Intersection Turning Movement Volumes



Legend

\# Study Intersection

Figure 19
Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated on figures contained in this section.

CUMULATIVE TRIPS

Ambient Growth

To account for ambient growth on roadways, existing roadway volumes were increased by a growth rate of 1.34 percent per year over a two-year period for Opening Year (2022) conditions and a 20-year period for Year 2040 conditions. This equates to a total growth factor of approximately 1.03 and 1.31, respectively. The ambient growth rate was conservatively applied to all movements at the study intersections.

Other Development

No known planned or approved other developments were identified within the vicinity of the project site. The ambient growth described above accounts for growth associated with other development that is not in the immediate study area.

ANALYSIS SCENARIO VOLUME FORECASTS

Existing Plus Project

Existing Plus Project volume forecasts were developed by adding the project-generated trips to Existing volumes. Existing Plus Project average daily traffic volumes are shown on Figure 20. Existing Plus Project AM and PM peak hour intersection turning movement volumes are shown on Figure 21 and Figure 22.

Opening Year (2022) Without Project

To develop Opening Year (2022) Without Project volume forecasts, Existing volumes were increased by applying the ambient growth factor for year 2022 as described above. Opening Year (2022) Without Project average daily traffic volumes are shown on Figure 23. Opening Year (2022) Without Project AM and PM peak hour intersection turning movement volumes are shown Figure 24 and Figure 25.

Opening Year (2022) With Project

Opening Year (2022) With Project volume forecasts were developed by adding project-generated trips to the Opening Year (2022) Without Project forecast. Opening Year (2022) With Project average daily traffic volumes are shown on Figure 26. Opening Year (2022) With Project AM and PM peak hour intersection turning movement volumes are shown on Figure 27 and Figure 28.

Year 2040 Without Project

To develop Year 2040 Without Project volume forecasts, Existing volumes were increased by applying the ambient growth factor for year 2040 as described above. Year 2040 Without Project average daily traffic volumes are shown on Figure 29. Year 2040 Without Project AM and PM peak hour intersection turning movement volumes are shown Figure 30 and Figure 31.

Year 2040 With Project

Year 2040 With Project volume forecasts were developed by adding project-generated trips to the Year 2040 Without Project forecast. Year 2040 With Project average daily traffic volumes are shown on Figure 32. Year 2040 With Project AM and PM peak hour intersection turning movement volumes are shown on Figure 33 and Figure 34.

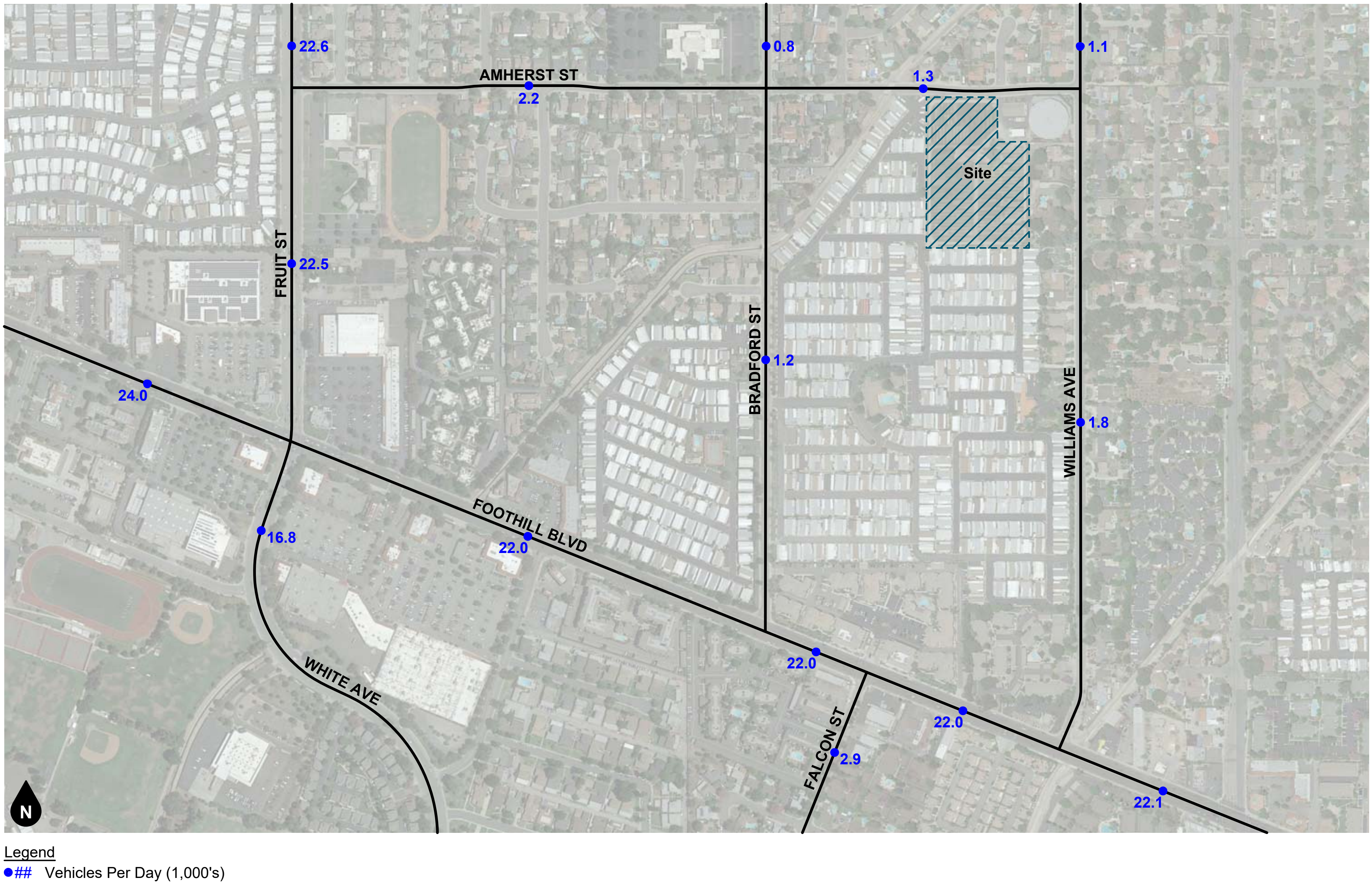
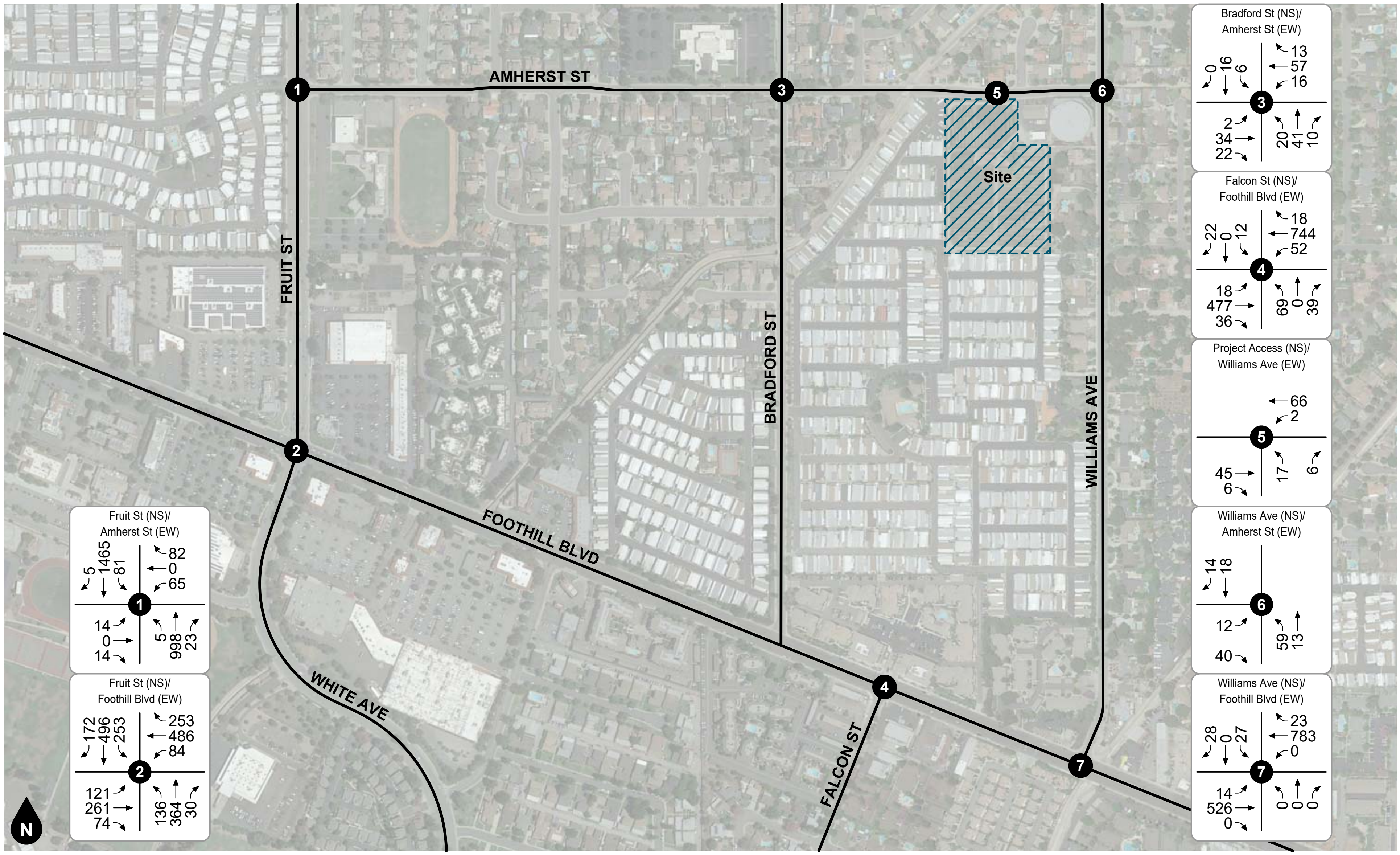
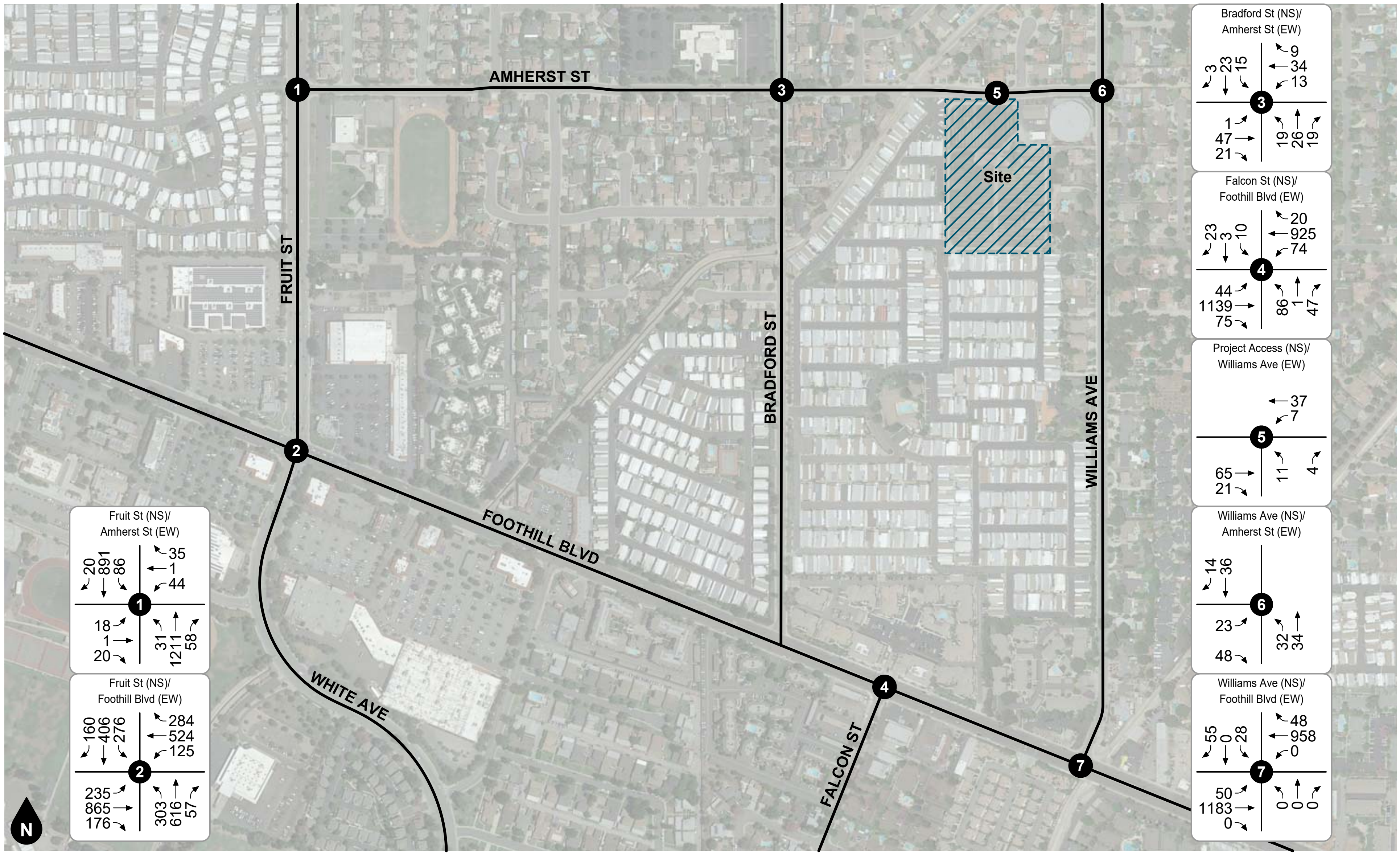


Figure 20
Existing Plus Project Average Daily Traffic Volumes



Legend
Study Intersection

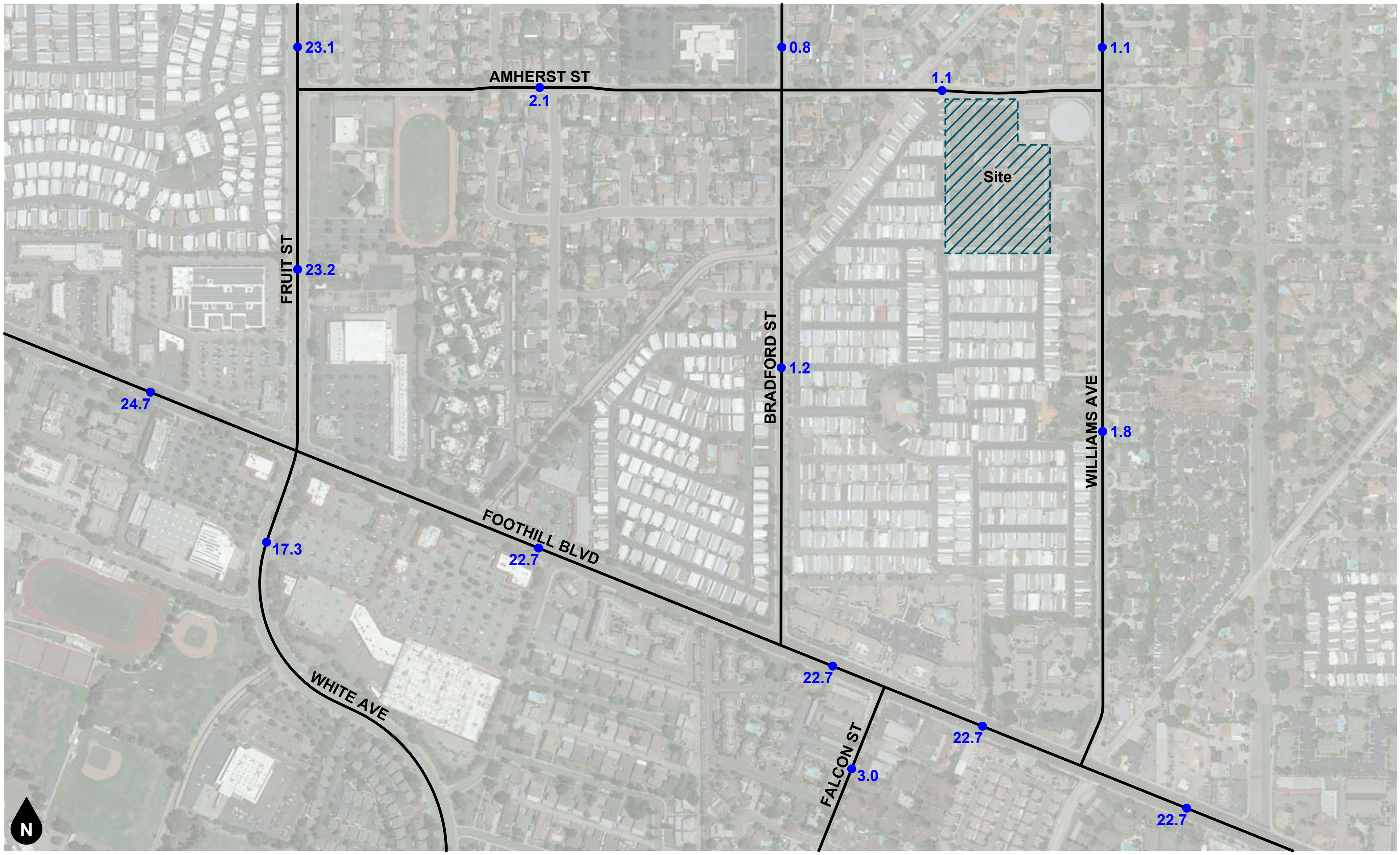
Figure 21
Existing Plus Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

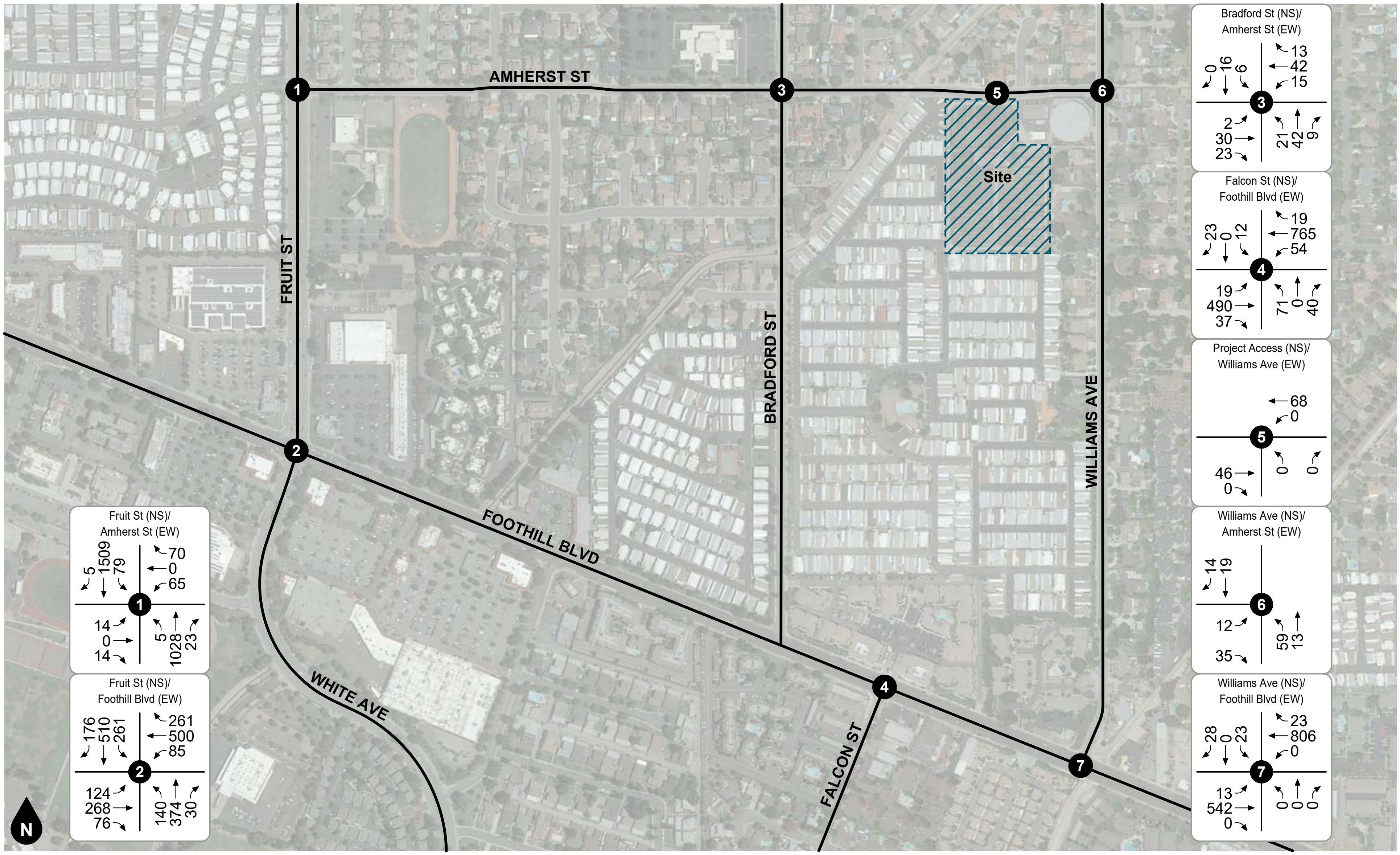
\# Study Intersection

Figure 22
Existing Plus Project
PM Peak Hour Intersection Turning Movement Volumes



Legend
●## Vehicles Per Day (1,000's)

Figure 23
Opening Year (2022) Without Project Average Daily Traffic Volumes



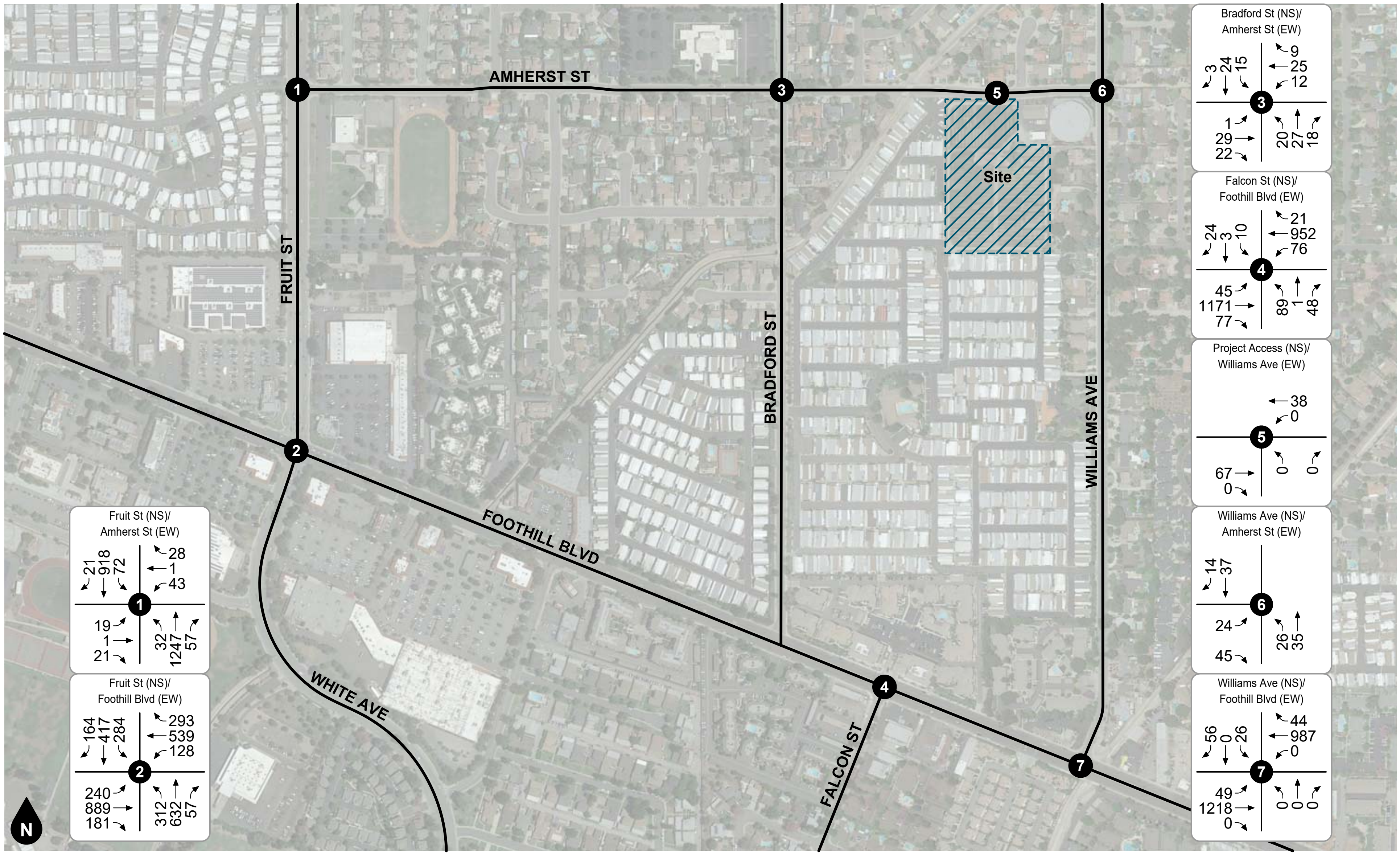
Legend

Study Intersection

Figure 24

Opening Year (2022) Without Project

AM Peak Hour Intersection Turning Movement Volumes



Legend

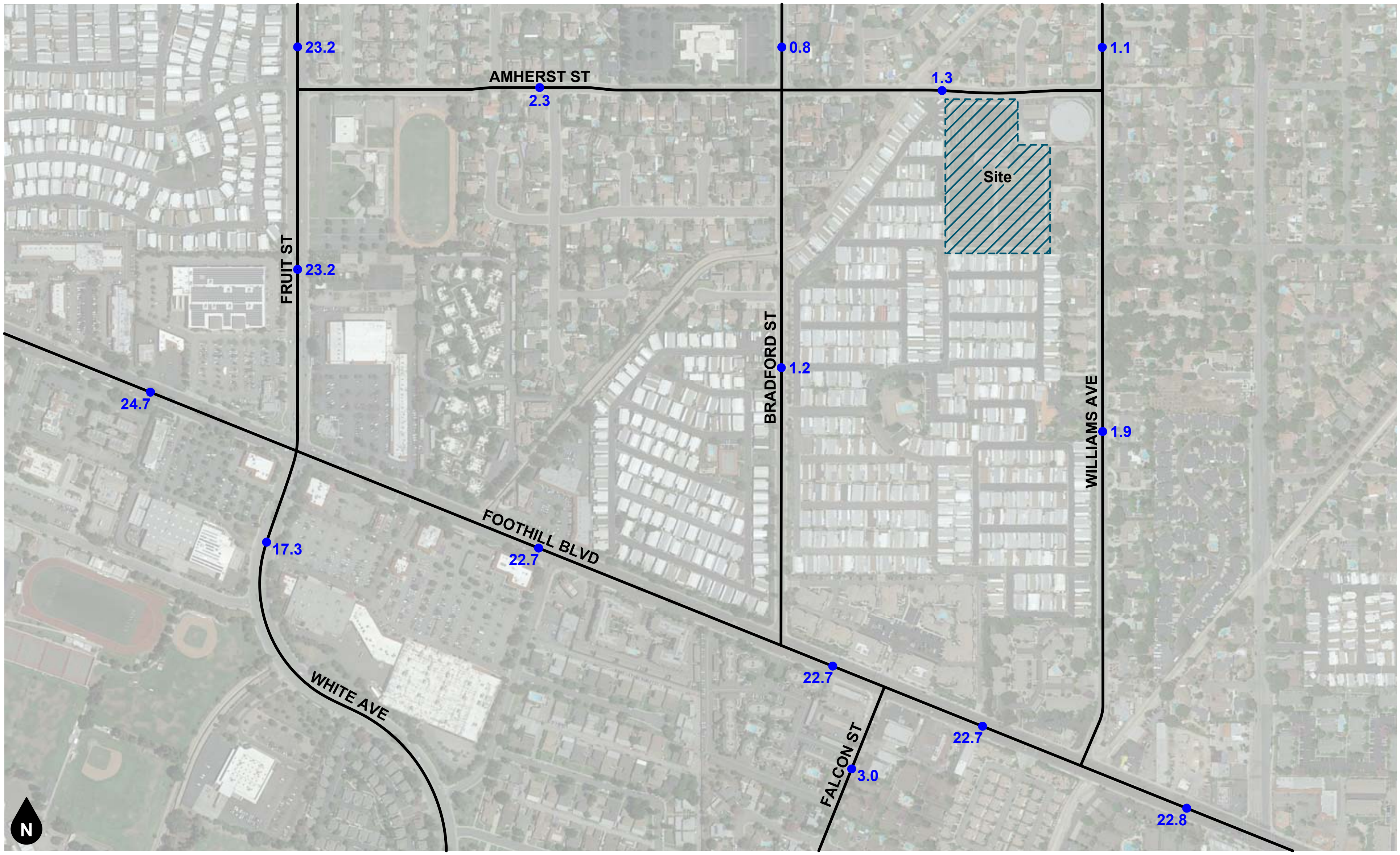
Study Intersection

Figure 25

Opening Year (2022) Without Project

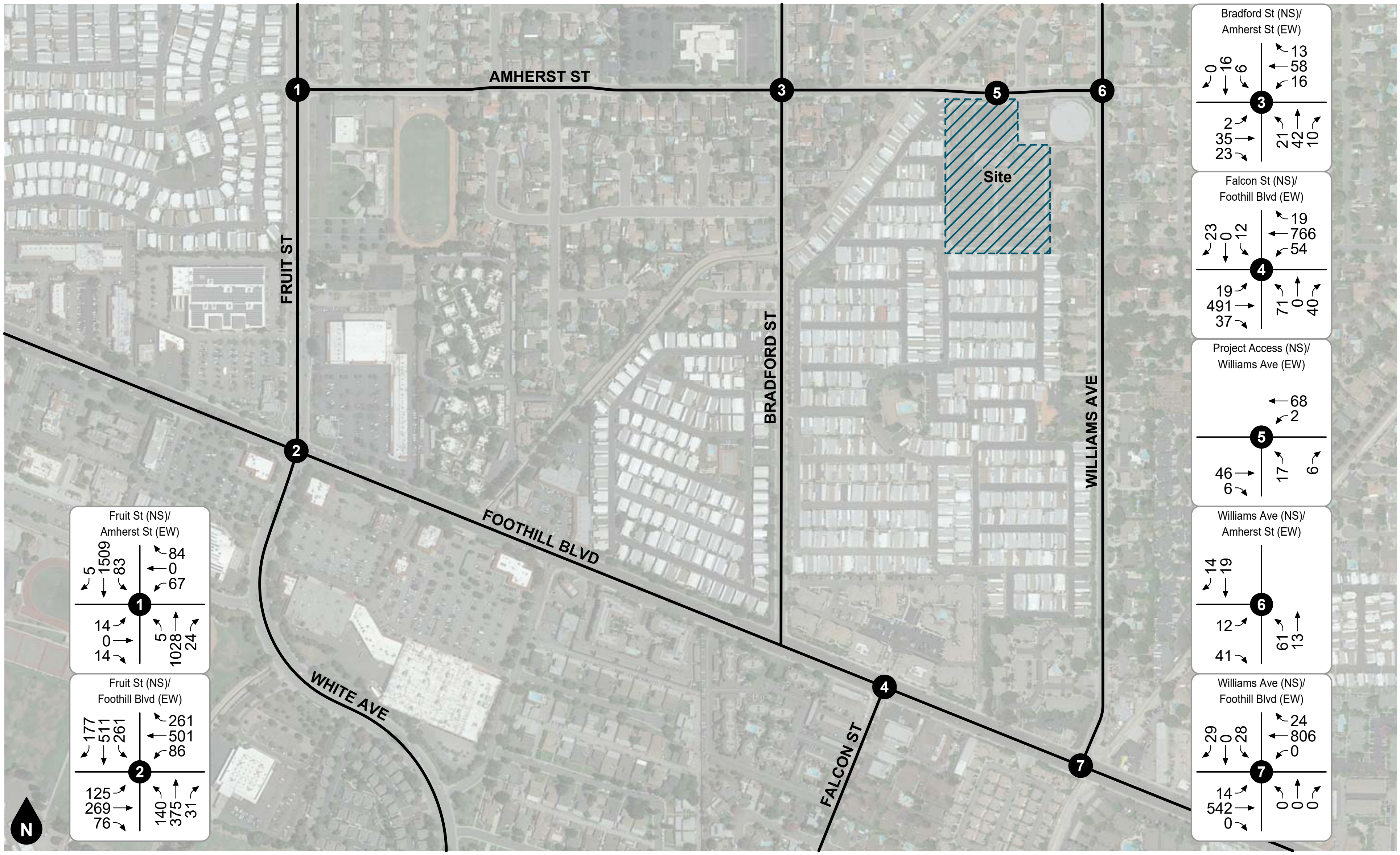
PM Peak Hour Intersection Turning Movement Volumes

ganddini



Legend
●## Vehicles Per Day (1,000's)

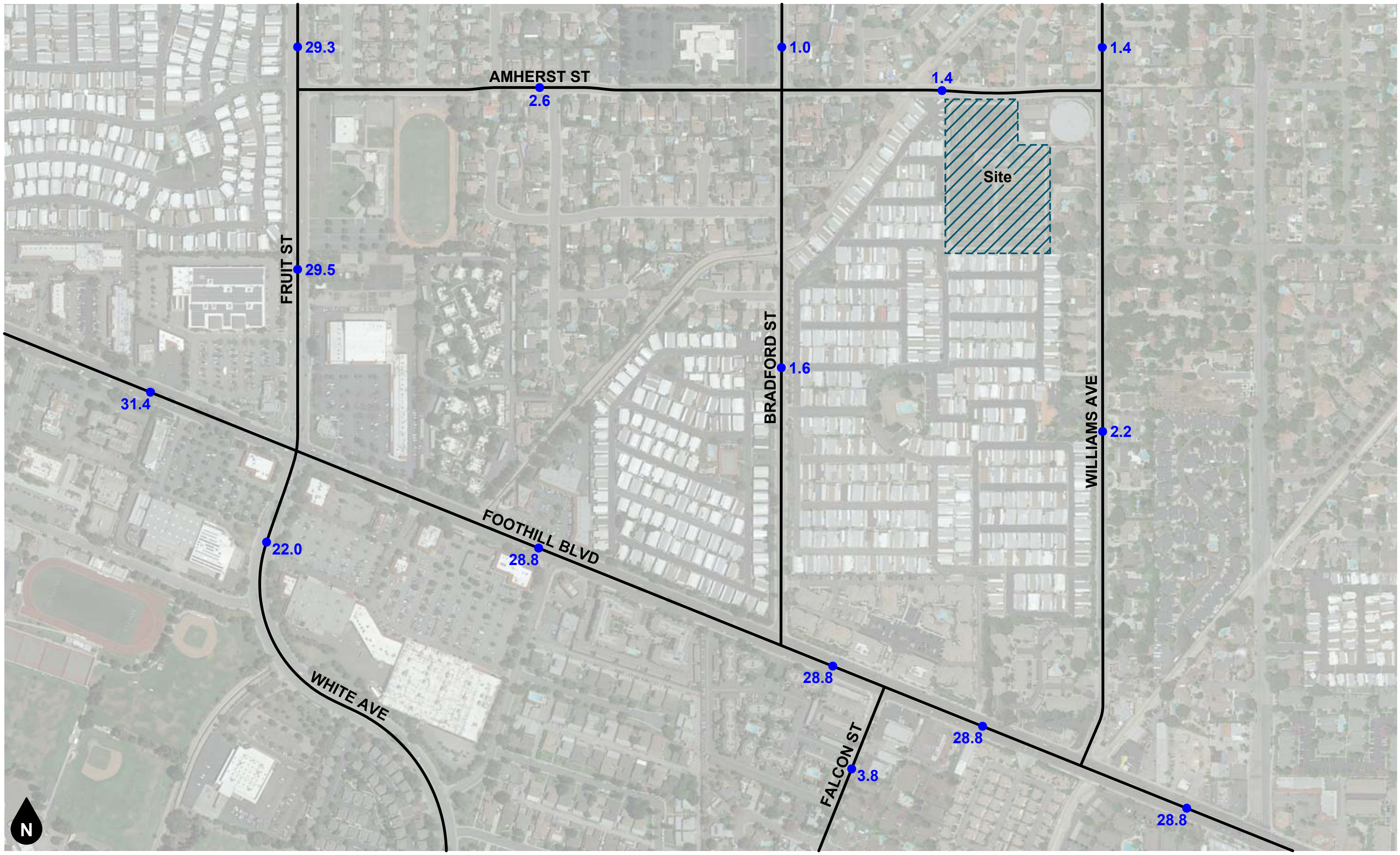
Figure 26
Opening Year (2022) With Project Average Daily Traffic Volumes



Legend
Study Intersection

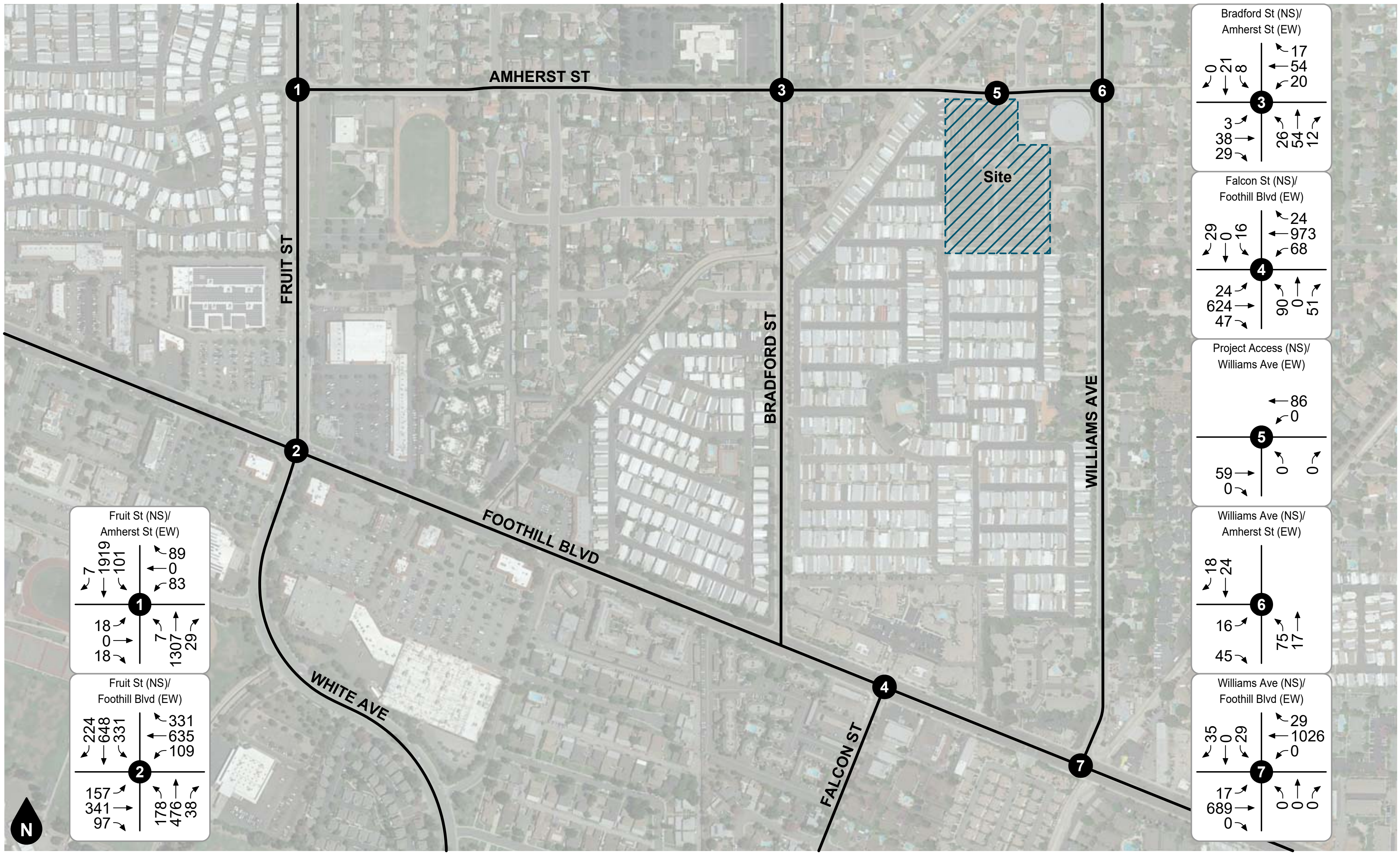
Figure 27
Opening Year (2022) With Project
AM Peak Hour Intersection Turning Movement Volumes

Figure 28
Opening Year (2022) With Project
PM Peak Hour Intersection Turning Movement Volumes



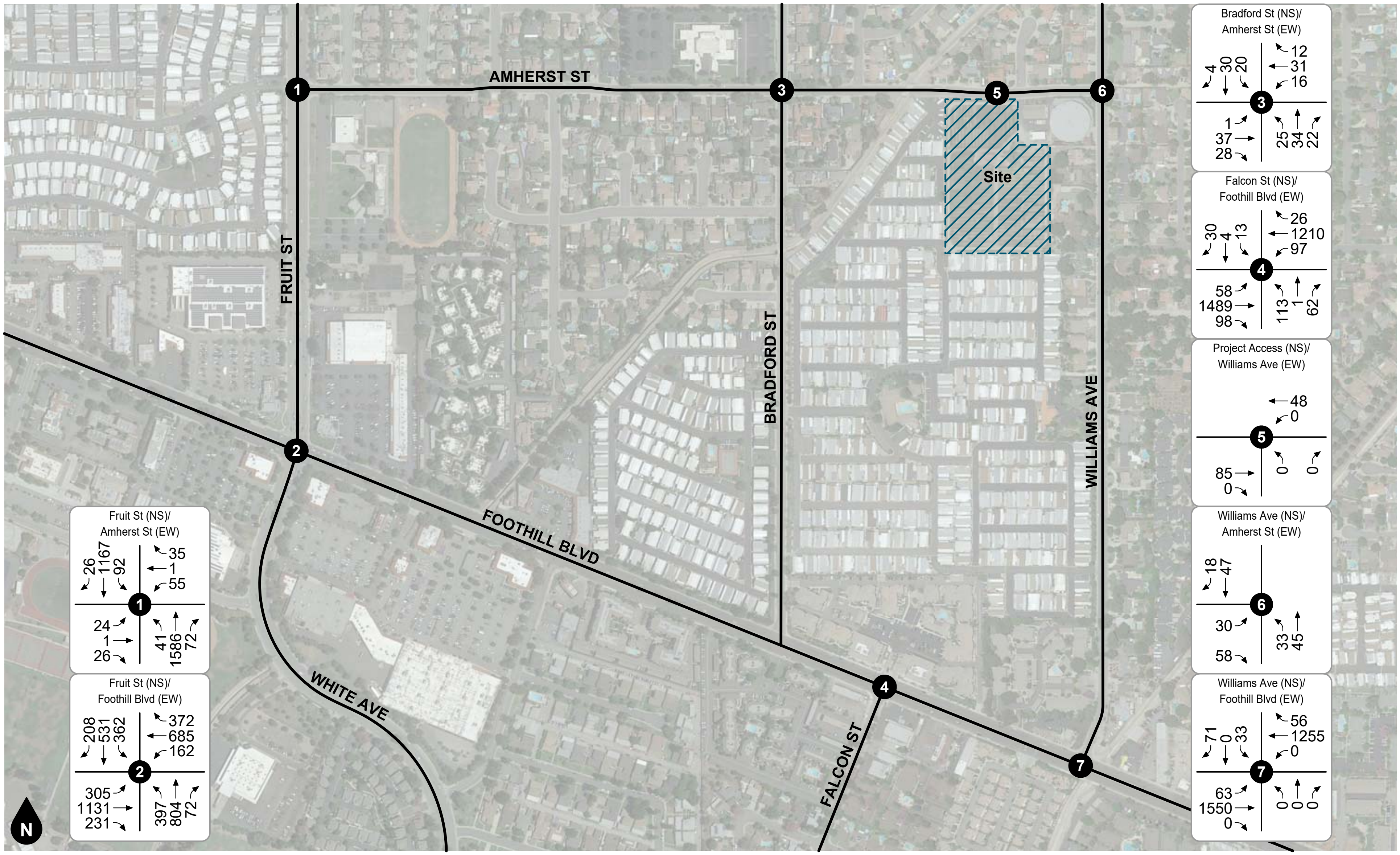
Legend
●## Vehicles Per Day (1,000's)

Figure 29
Year 2040 Without Project Average Daily Traffic Volumes



Legend
Study Intersection

Figure 30
Year 2040 Without Project
AM Peak Hour Intersection Turning Movement Volumes



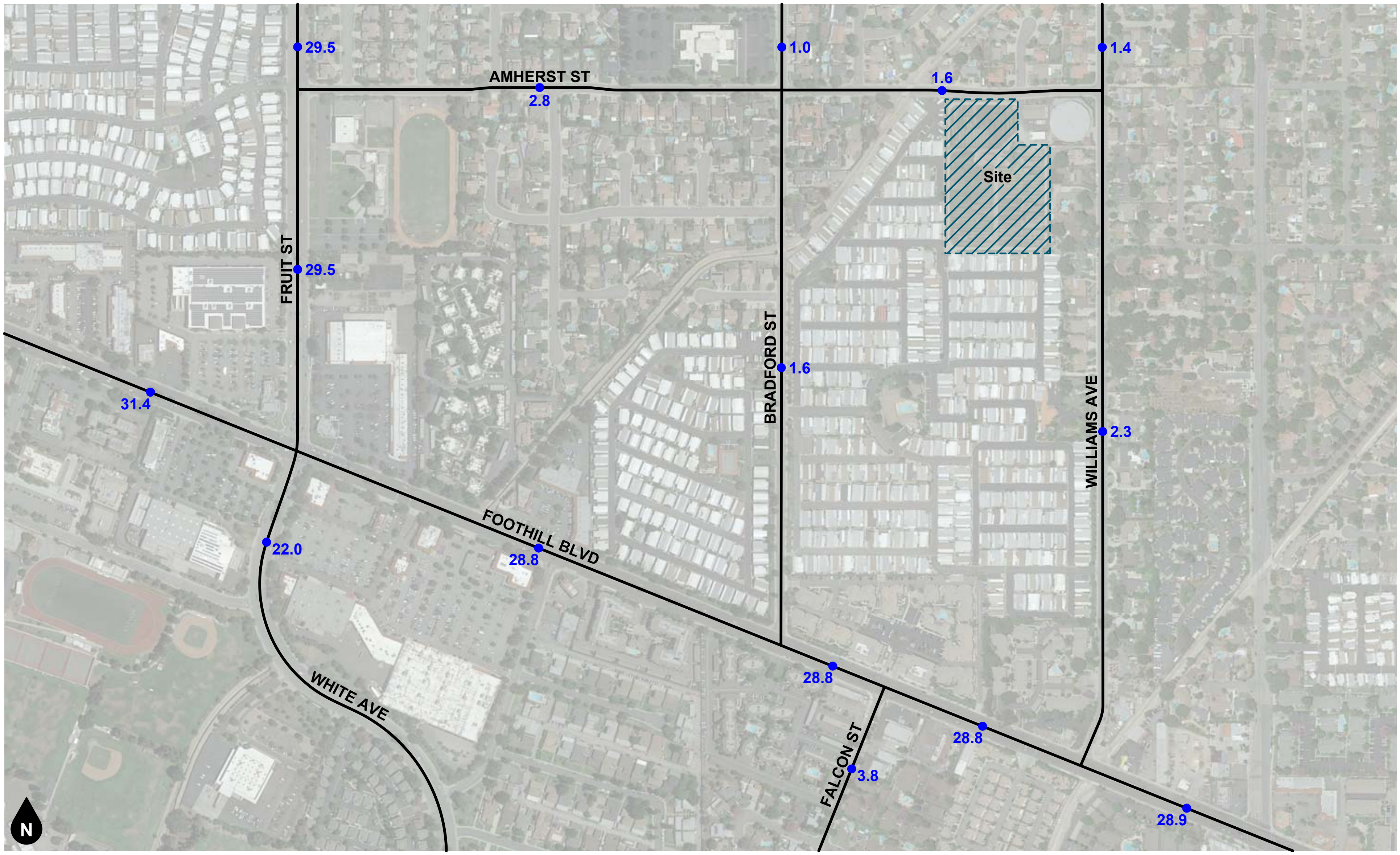
Legend

Study Intersection

Figure 31
Year 2040 Without Project
PM Peak Hour Intersection Turning Movement Volumes

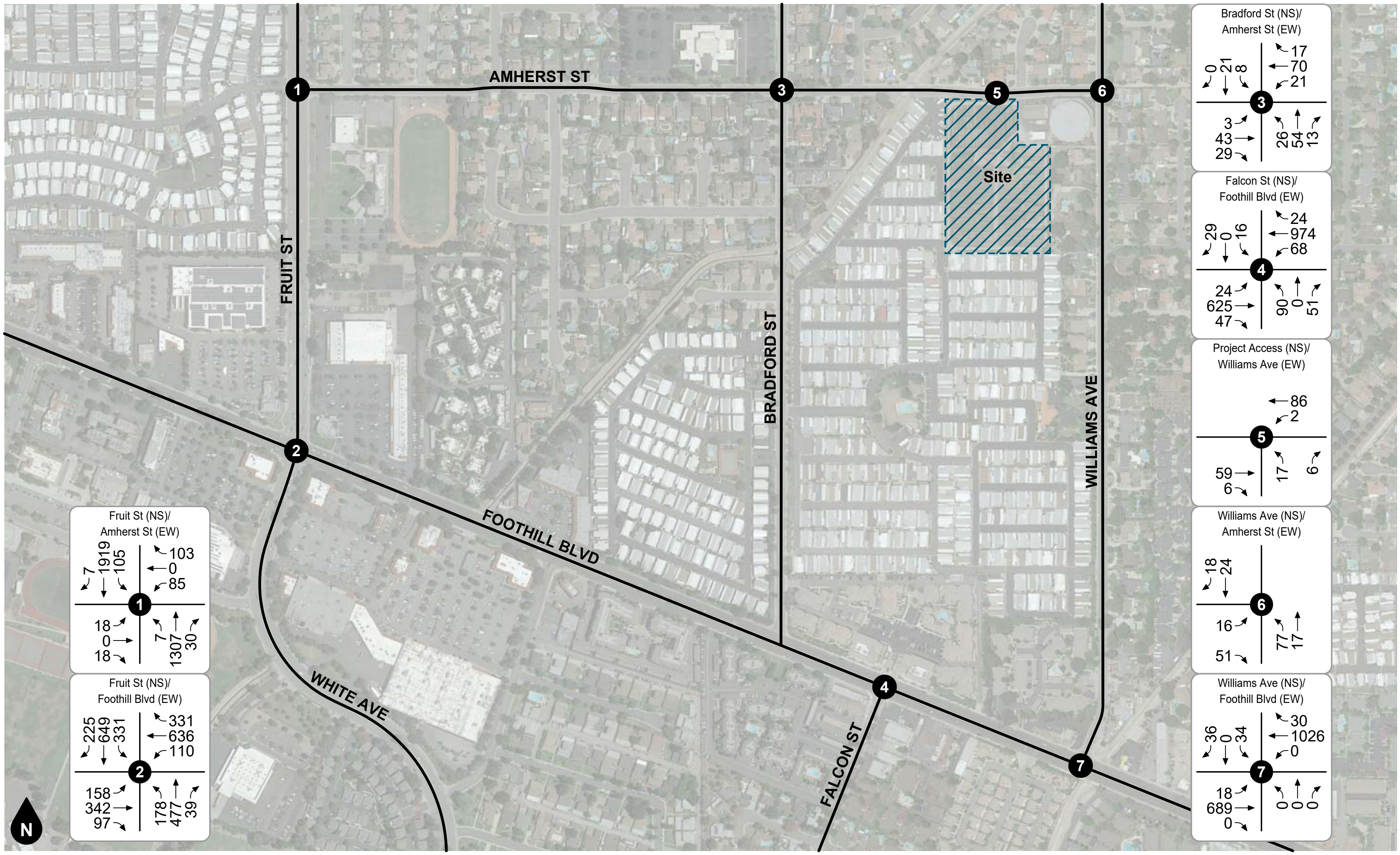
gandini

Amherst Residential
Traffic Impact Analysis
19254



Legend
●## Vehicles Per Day (1,000's)

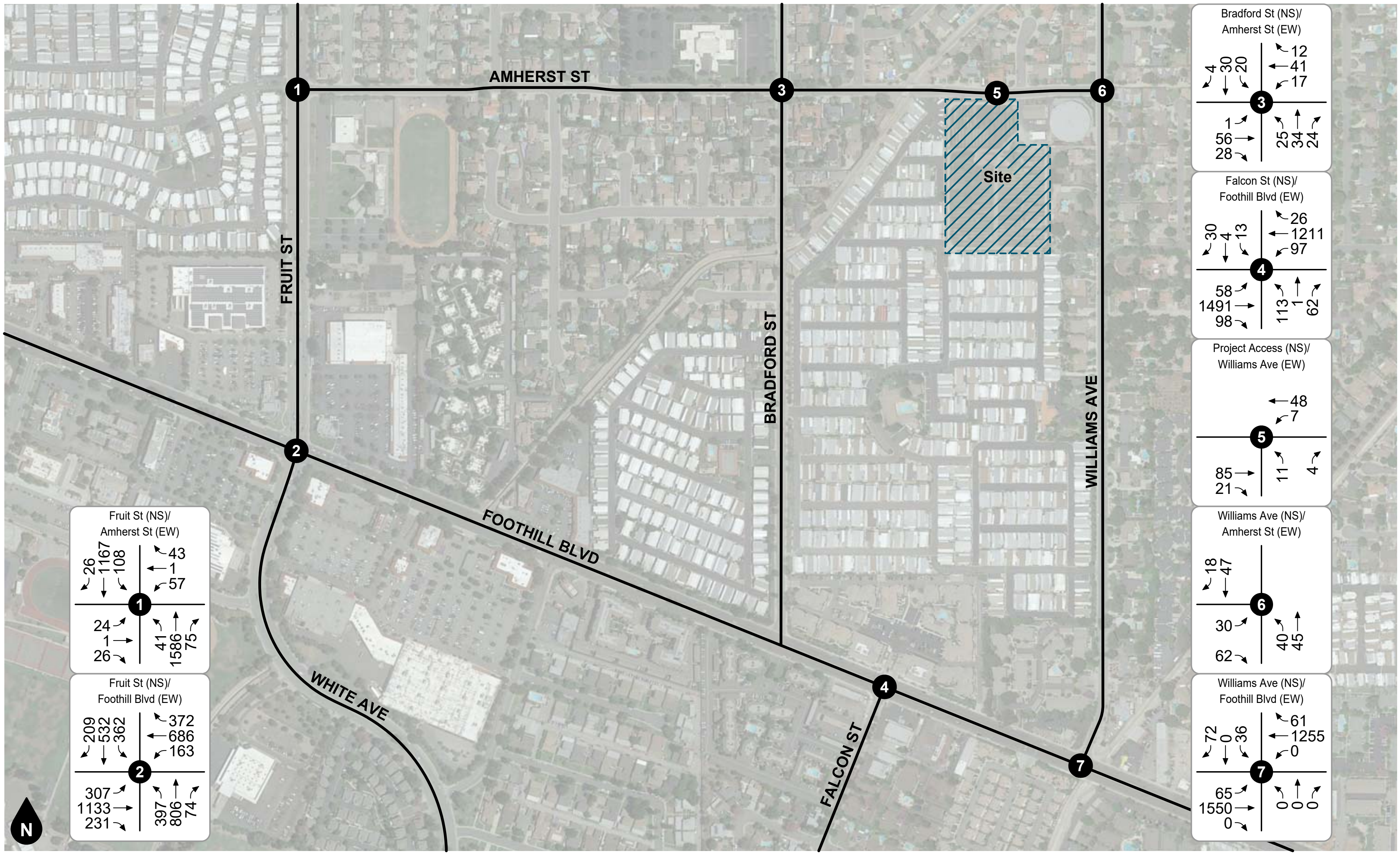
Figure 32
Year 2040 With Project Average Daily Traffic Volumes



Legend

\# Study Intersection

Figure 33
Year 2040 With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

Study Intersection

Figure 34
Year 2040 With Project
PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE LEVEL OF SERVICE ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix D.

EXISTING PLUS PROJECT

The study intersection Levels of Service for Existing Plus Project conditions are shown in Table 3. As shown in Table 3, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Existing Plus Project conditions, except for the following study intersections that are projected to operate at Level of Service F during the peak hours:

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

Table 4 evaluates the project impact at the study intersections for Existing Plus Project conditions. As shown in Table 4, the proposed project is forecast to result in no operational impacts at the study intersections for Existing Plus Project conditions during the AM and PM peak hours.

OPENING YEAR (2022) WITHOUT PROJECT

The study intersection Levels of Service for Opening Year (2022) Without Project conditions are shown in Table 5. As shown in Table 5, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Opening Year (2022) Without Project conditions, except for the following study intersections that are projected to operate at Level of Service F during the peak hours:

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

OPENING YEAR (2022) WITH PROJECT

The study intersection Levels of Service for Opening Year (2022) With Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Opening Year (2022) With Project conditions, except for the following study intersections that are projected to operate at Level of Service F during the peak hours:

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

Table 7 evaluates the project impact at the study intersections for Opening Year (2022) With Project conditions. As shown in Table 7, the proposed project is forecast to result in no operational impacts at the study intersections for Opening Year (2022) With Project conditions during the AM and PM peak hours.

YEAR 2040 WITHOUT PROJECT

The study intersection Levels of Service for Year 2040 Without Project conditions are shown in Table 8. As shown in Table 8, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Year 2040 Without Project conditions, except for the following study intersections that are projected to operate at Level of Service E/F during the peak hours:

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Fruit Street/White Avenue at Foothill Boulevard - #2 (PM Peak Hour – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (AM Peak Hour – LOS E; PM Peak Hour – LOS F)

YEAR 2040 WITH PROJECT

The study intersection Levels of Service for Year 2040 With Project conditions are shown in Table 9. As shown in Table 9, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Year 2040 With Project conditions, except for the following study intersections that are projected to operate at Level of Service E/F during the peak hours:

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Fruit Street/White Avenue at Foothill Boulevard - #2 (PM Peak Hour – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (AM Peak Hour – LOS E; PM Peak Hour – LOS F)

Table 10 evaluates the project impact at the study intersections for Year 2040 With Project conditions. As shown in Table 10, the proposed project is forecast to result in no operational impacts at the study intersections for Year 2040 With Project conditions during the AM and PM peak hours.

FUTURE TRAFFIC SIGNAL WARRANT ANALYSIS

The need for a traffic control signal at the unsignalized study intersections of Fruit Street at Amherst Street (#1) and Williams Avenue at Foothill Boulevard (#7) have been evaluated using the California Department of Transportation peak hour traffic signal warrant criteria (Warrant 3) in accordance with the California Manual on Uniform Traffic Control Devices (2014 Update) ["CA MUTCD"]. Traffic signal warrant analysis worksheets are provided in Appendix E.

The peak hour traffic signal warrant (Warrant 3) is not forecast to be satisfied at the currently unsignalized study intersection of Williams Avenue at Foothill Boulevard (#7) for any of the analysis scenarios.

The peak hour traffic signal warrant (Warrant 3) is not forecast to be satisfied at the currently unsignalized study intersection of Fruit Street at Amherst Street (#1) for any of the analysis scenarios, with exception of Year 2040 With Project conditions during the AM peak hour only.

Although the peak hour traffic signal warrant is satisfied during the AM peak hour for Year 2040 With Project conditions, a traffic signal is not recommended as an operational improvement. The CA MUTCD states that the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of traffic control signal. According to Section 4C.01 of the CA MUTCD, "a traffic control signal should not be installed if it will seriously disrupt progressive traffic flow."

Furthermore, the deficient Level of Service at the Fruit Street/Amherst Street (#1) intersection relates primarily to left turning vehicles on Amherst Street at the stop-controlled east-west approaches. Northbound and southbound movements along Fruit Street, which equate to approximately 94% of the AM peak hour flow through the intersection (2,562 / 2,731), are uncontrolled and would operate at Levels of Service A. Therefore, installation of a traffic signal would thus seriously disrupt progressive traffic flow.

It is also noted that the ambient growth rate ambient growth rate of 1.34% over a 20-year period for Year 2040 With Project conditions was conservatively applied to all movements at the intersection, including the minor street of Amherst Street. Since the surrounding neighborhood appears to be fully built out, with exception of the proposed project, the application of ambient growth on the minor street movements of Amherst Street likely overestimates future east-west turning movements at this intersection. If unacceptable delay does occur, project trips will likely divert to Bradford Street. Since the proposed project is forecast to contribute only two (2) westbound left turn trips at the intersection of Fruit Street at Amherst Street during the AM peak hour, such diverted project trips would have a nominal impact on Bradford Street.

The California Manual on Uniform Traffic Control Devices (2014 Update) contains eight traffic signal warrants. It is noted that this peak hour warrant "shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time." The AM (7:00 – 9:00 AM) and PM (4:00 – 6:00 PM) peak hours are generally the highest traffic generating hours during a typical weekday. Considering this peak hour warrant marginally exceeds the minor street threshold, and only does so during the AM peak hour, it is doubtful that the other traffic signal warrants based on traffic volumes such as Warrant 1, Eight-Hour Vehicular Volume and Warrant 2, Four-Hour Vehicular Volume, would be satisfied.

For the aforementioned reasons, a traffic signal is not recommended for this intersection as an operational improvement. If there are safety concerns relating to the poor Level of Service, the minor street movements may be restricted to right turns only through installation of signage or a raised median.

Table 3
Existing Plus Project Intersection Level of Service

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		ICU or [Delay][2]	LOS[3]	ICU or [Delay][2]	LOS[3]
1. Fruit St at Amherst St	CSS	609.4	F	459.1	F
2. Fruit St/White Ave at Foothill Blvd	TS	0.615	B	0.807	D
3. Bradford St at Amherst St	AWS	[7.5]	A	[7.4]	A
4. Falcon St at Foothill Blvd	TS	0.424	A	0.616	B
5. Project Access at Amherst St	CSS	[9.2]	A	[9.2]	A
6. Williams Ave at Amherst St	CSS	[9.7]	A	[9.6]	A
7. Williams Ave at Foothill Blvd	CSS	[24.5]	C	[63.8]	F

Signalized Intersection Delay Analysis (Pomona & Caltrans)

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS[3]	Delay[2]	LOS[3]
2. Fruit St/White Ave at Foothill Blvd	TS	25.0	C	30.7	C
4. Falcon St at Foothill Blvd	TS	22.6	C	19.3	B

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Delay is shown in [seconds/vehicle]. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).

(3) LOS = Level of Service

Table 4
Existing Plus Project Operational Impact Assessment

ID Study Intersection	AM Peak Hour						PM Peak Hour					
	Without Project		With Project		Project Impact	Operational Impact?[3]	Without Project		With Project		Project Impact	Operational Impact?[3]
	ICU[1]	LOS[2]	ICU[1]	LOS[2]			ICU[1]	LOS[2]	ICU[1]	LOS[2]		
1. Fruit St at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
2. Fruit St/White Ave at Foothill Blvd	0.614	B	0.615	B	+0.001	No	0.805	D	0.807	D	+0.002	No
3. Bradford St at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
4. Falcon St at Foothill Blvd	0.424	A	0.424	A	0.000	No	0.615	B	0.616	B	+0.001	No
5. Project Access at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
6. Williams Ave at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
7. Williams Ave at Foothill Blvd	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No

Notes:

(1) ICU = Intersection Capacity Utilization; n/a = Not Applicable

(2) LOS = Level of Service

(3) In Los Angeles County and the City of La Verne, an operational impact occurs if the project related increase in the volume to capacity ratio equals or exceeds the thresholds shown below:

Significant Impact Thresholds for Intersections		
Level of Service	Volume/Capacity	Incremental Increase
C	0.71 - 0.80	0.04 or more
D	0.81 - 0.90	0.02 or more
E/F	0.91 - more	0.01 or more

Table 5
Opening Year (2022) Without Project Intersection Level of Service

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		ICU or [Delay][2]	LOS[3]	ICU or [Delay][2]	LOS[3]
1. Fruit St at Amherst St	CSS	688.6	F	469.8	F
2. Fruit St/White Ave at Foothill Blvd	TS	0.630	B	0.826	D
3. Bradford St at Amherst St	AWS	[7.4]	A	[7.3]	A
4. Falcon St at Foothill Blvd	TS	0.434	A	0.630	B
6. Williams Ave at Amherst St	CSS	[9.6]	A	[9.5]	A
7. Williams Ave at Foothill Blvd	CSS	[25.0]	D	[67.0]	F

Signalized Intersection Delay Analysis (Pomona & Caltrans)

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS[3]	Delay[2]	LOS[3]
2. Fruit St/White Ave at Foothill Blvd	TS	25.2	C	31.3	C
4. Falcon St at Foothill Blvd	TS	22.4	C	19.3	B

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Delay is shown in [seconds/vehicle]. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).

(3) LOS = Level of Service

Table 6
Opening Year (2022) With Project Intersection Level of Service

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		ICU or [Delay][2]	LOS[3]	ICU or [Delay][2]	LOS[3]
1. Fruit St at Amherst St	CSS	741.7	F	565.6	F
2. Fruit St/White Ave at Foothill Blvd	TS	0.631	B	0.828	D
3. Bradford St at Amherst St	AWS	7.5	A	7.4	A
4. Falcon St at Foothill Blvd	TS	0.434	A	0.631	B
5. Project Access at Amherst St	CSS	9.2	A	9.2	A
6. Williams Ave at Amherst St	CSS	9.7	A	9.6	A
7. Williams Ave at Foothill Blvd	CSS	25.7	D	71.3	F

Signalized Intersection Delay Analysis (Pomona & Caltrans)

ID Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS[3]	Delay[2]	LOS[3]
2. Fruit St/White Ave at Foothill Blvd	TS	25.2	C	31.4	C
4. Falcon St at Foothill Blvd	TS	22.4	C	19.2	B

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Delay is shown in [seconds/vehicle]. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).

(3) LOS = Level of Service

Table 7
Opening Year (2022) With Project Operational Impact Assessment

ID Study Intersection	AM Peak Hour						PM Peak Hour					
	Without Project		With Project		Project Impact	Operational Impact?[3]	Without Project		With Project		Project Impact	Operational Impact?[3]
	ICU[1]	LOS[2]	ICU[1]	LOS[2]			ICU[1]	LOS[2]	ICU[1]	LOS[2]		
1. Fruit St at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
2. Fruit St/White Ave at Foothill Blvd	0.630	B	0.631	B	+0.001	No	0.826	D	0.828	D	+0.002	No
3. Bradford St at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
4. Falcon St at Foothill Blvd	0.434	A	0.434	A	0.000	No	0.630	B	0.631	B	+0.001	No
5. Project Access at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
6. Williams Ave at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
7. Williams Ave at Foothill Blvd	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No

Notes:

(1) ICU = Intersection Capacity Utilization; n/a = Not Applicable

(2) LOS = Level of Service

(3) In Los Angeles County and the City of La Verne, an operational impact occurs if the project related increase in the volume to capacity ratio equals or exceeds the thresholds shown below:

Significant Impact Thresholds for Intersections		
Level of Service	Volume/Capacity	Incremental Increase
C	0.71 - 0.80	0.04 or more
D	0.81 - 0.90	0.02 or more
E/F	0.91 - more	0.01 or more

Table 8
Year 2040 Without Project Intersection Level of Service

ID Study Intersection	Traffic Control[1]	AM Peak Hour ICU or [Delay][2]	AM Peak Hour LOS[3]	PM Peak Hour ICU or [Delay][2]	PM Peak Hour LOS[3]
1. Fruit St at Amherst St	CSS	3,310.8	F	2,648.4	F
2. Fruit St/White Ave at Foothill Blvd	TS	0.773	C	1.023	F
3. Bradford St at Amherst St	AWS	7.6	A	7.5	A
4. Falcon St at Foothill Blvd	TS	0.525	A	0.775	C
6. Williams Ave at Amherst St	CSS	10.0	B	9.8	A
7. Williams Ave at Foothill Blvd	CSS	40.4	E	270.4	F

Signalized Intersection Delay Analysis (Pomona & Caltrans)

ID Study Intersection	Traffic Control[1]	AM Peak Hour Delay[2]	AM Peak Hour LOS[3]	PM Peak Hour Delay[2]	PM Peak Hour LOS[3]
2. Fruit St/White Ave at Foothill Blvd	TS	28.4	C	47.8	D
4. Falcon St at Foothill Blvd	TS	20.9	C	19.9	B

Notes:
(1) TS = Traffic Signal; CSS = Cross Street Stop
(2) ICU = Intersection Capacity Utilization. Delay is shown in [seconds/vehicle]. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
(3) LOS = Level of Service

Table 9
Year 2040 With Project Intersection Level of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour ICU or [Delay][2]	AM Peak Hour LOS[3]	PM Peak Hour ICU or [Delay][2]	PM Peak Hour LOS[3]
1.	Fruit St at Amherst St	CSS	3,476.7	F	3,084.6	F
2.	Fruit St/White Ave at Foothill Blvd	TS	0.774	C	1.026	F
3.	Bradford St at Amherst St	AWS	7.7	A	7.6	A
4.	Falcon St at Foothill Blvd	TS	0.525	A	0.775	C
5.	Project Access at Amherst St	CSS	9.4	A	9.4	A
6.	Williams Ave at Amherst St	CSS	10.1	B	10.0	A
7.	Williams Ave at Foothill Blvd	CSS	42.4	E	310.5	F

Signalized Intersection Delay Analysis (Pomona & Caltrans)

ID	Study Intersection	Traffic Control[1]	AM Peak Hour Delay[2]	AM Peak Hour LOS[3]	PM Peak Hour Delay[2]	PM Peak Hour LOS[3]
2.	Fruit St/White Ave at Foothill Blvd	TS	28.5	C	47.8	D
4.	Falcon St at Foothill Blvd	TS	20.9	C	19.9	B

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Delay is shown in [seconds/vehicle]. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).

(3) LOS = Level of Service

Table 10
Year 2040 With Project Operational Impact Assessment

ID Study Intersection	AM Peak Hour						PM Peak Hour					
	Without Project		With Project		Project Impact	Operational Impact?[3]	Without Project		With Project		Project Impact	Operational Impact?[3]
	ICU[1]	LOS[2]	ICU[1]	LOS[2]			ICU[1]	LOS[2]	ICU[1]	LOS[2]		
1. Fruit St at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
2. Fruit St/White Ave at Foothill Blvd	0.773	C	0.774	C	+0.001	No	1.023	F	1.026	F	+0.003	No
3. Bradford St at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
4. Falcon St at Foothill Blvd	0.525	A	0.525	A	0.000	No	0.775	C	0.775	C	0.0	No
5. Project Access at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
6. Williams Ave at Amherst St	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No
7. Williams Ave at Foothill Blvd	n/a	n/a	n/a	n/a	n/a	No	n/a	n/a	n/a	n/a	n/a	No

Notes:

(1) ICU = Intersection Capacity Utilization; n/a = Not Applicable

(2) LOS = Level of Service

(3) In Los Angeles County and the City of La Verne, an operational impact occurs if the project related increase in the volume to capacity ratio equals or exceeds the thresholds shown below:

Significant Impact Thresholds for Intersections		
Level of Service	Volume/Capacity	Incremental Increase
C	0.71 - 0.80	0.04 or more
D	0.81 - 0.90	0.02 or more
E/F	0.91 - more	0.01 or more

7. SITE ACCESS AND CIRCULATION

This section includes a description of project improvements necessary to provide site access and an evaluation of site access and circulation.

PROJECT DESIGN FEATURES

The proposed project shall construct the following improvements as project design features to provide project site access:

- Project Access (NS) at Amherst Street (EW)
    - Construct the project access to provide one inbound lane and one outbound lane with northbound stop-control and the following lane configurations:
        - Northbound: one shared left/right turn lane
        - Eastbound: one shared through/right turn lane
        - Westbound: one shared left/through lane.

This analysis also assumes the project shall comply with the following conditions as part of the City of La Verne standard development review process:

- A construction work site traffic control plan shall comply with State standards set forth in the California Manual of Uniform Traffic Control Devices and shall be submitted to the City for review and approval prior to the issuance of a grading permit or start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closures and detours as well as haul routes and hours of operation. All construction related trips shall be restricted to off-peak hours to the extent possible.

- All on-site and off-site roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project shall be constructed in accordance with applicable State/Federal engineering standards and to the satisfaction of the City of La Verne.

- Site-adjacent roadways shall be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of La Verne.

- Adequate off-street parking shall be provided to the satisfaction of City of La Verne.

- Adequate emergency vehicle access shall be provided to the satisfaction of the La Verne Fire Department.

- The final grading, landscaping, and street improvement plans shall demonstrate that sight distance requirements are met in accordance with applicable City of La Verne/California Department of Transportation sight distance standards.

EVALUATION OF WILLIAMS AVENUE AT BOWDOIN STREET POTENTIAL REOPENING

The west leg of the intersection of Williams Avenue at Bowdoin Street is currently blocked to not allow east-west traffic. In response to the proposed project, the City has received extensive comments concerning an increase in project traffic in the community, and comments in support of the reopening of the Williams Avenue at Bowdoin Street intersection to absorb its fair share of east-west traffic.

With reopening of the west leg, project trips are anticipated to be nominal since trips from the project would not be anticipated to utilize the Williams Avenue at Bowdoin Street intersection. For project trips to traverse this intersection, they would have to travel in a circuitous route to head westbound towards Fruit Street, instead of taking a direct route. Thus, reopening of this intersection to allow for east-west travel would not affect project trip patterns.

Current single-family residential dwelling units located along Bowdoin Street (east of Bradford Street) could see redistribution of travel patterns with this reopening. Trips from these residences intending to head southbound to Foothill Boulevard, and specifically eastbound on Foothill Boulevard, may travel eastbound on Bowdoin Street to Williams Avenue, and then southbound to Foothill Boulevard, since this route would be more direct. This would be in lieu of current travel patterns in which these vehicles head westbound on Bowdoin Street to Bradford Street, and southbound on Bradford Street to Foothill Boulevard, or southbound on Bradford Street turning eastbound on Amherst Street to Williams Avenue, before heading southbound to Foothill Boulevard. Thus, this reopening may remove trips off Bradford Street, Amherst Street, and a portion of Foothill Boulevard redistributing them to Williams Avenue. The current lack of a traffic signal at Williams Avenue at Foothill Boulevard can make it difficult to turn left onto Foothill Boulevard, and may limit this this trip transfer.

This would also reduce VMT for these homes since the reopening of the west leg of the Williams Avenue and Bowdoin Street intersection would provide for a more direct route of travel southbound to Foothill Boulevard. This redirected travel pattern would result from less than 50 homes and resulting LOS at the affected intersections would be nominal.

Traffic coming from the east of Williams Avenue heading westbound to Fruit Street may also have a redistribution of travel patterns. The majority of traffic heading westbound from College Way and Smith Drive towards Fruit Street would better be served using Bowdoin Street, instead of Amherst Street, to travel to Fruit Street, since Bowdoin Street would be a more direct route. This would reduce VMT for these motorists. Fruit Street at Bowdoin Street is a signalized intersection whereas Fruit Street at Amherst Street is unsignalized. Redirecting volumes from the unsignalized intersection of Fruit Street at Amherst Street, to the signalized intersection of Fruit Street at Bowdoin Street, would improve operations along Fruit Street, reducing delay at Amherst Street, while providing signalized traffic control at Bowdoin Street.

Westbound traveling vehicles on Foothill Boulevard intending to access the SR-210 Freeway via the Fruit Street interchange head westbound on Foothill Boulevard, and turn right at Fruit Street heading northbound to the interchange. It is not expected that these motorists would instead make a right onto Williams Avenue heading north to Bowdoin Street, and then making a left turn on Bowdoin Street to Fruit Street. Motorists tend not to turn off of free flowing arterial roadways with higher speed limits and less confliction points (signalized intersections), to traverse on local residential roadways with lower speed limits and more confliction points (stop sign controlled intersections and other motorists turning into or backing out of driveways). Doing so typically extends destination travel times. It is important to note that if motorists were intending to circulate through the residential neighborhoods to avoid the signalized intersection of Fruit Street at Foothill Boulevard, they can currently do this using Bradford Street. Thus, the Bowdoin Street reopening does not have an impact on motorists using residential roadways to bypass arterial roadways.

It is anticipated that the cumulative result of the reopening of the west leg of the Williams Avenue at Bowdoin Street intersection would benefit roadway operations by reducing traffic volumes on Amherst Street, reducing overall VMT, creating more direct pathway of travel for residences, and redirecting traffic from the unsignalized intersection of Fruit Street at Amherst Street to the signalized intersection of Fruit Street at Bowdoin Street. However, the proposed project does not warrant the opening of Bowdoin Street and that further analysis should be completed if the City were to consider reopening the street.

8. CONGESTION MANAGEMENT PROGRAM

This section provides analysis of the project impacts at County facilities in accordance with typical Orange County Congestion Management Program (CMP) requirements.

CRITERIA FOR REQUIRING A TRAFFIC IMPACT ANALYSIS FOR CMP

The Los Angeles County 2010 CMP provides the following thresholds for requiring a CMP-compliant traffic impact analysis:

- All CMP arterial monitoring intersections, including monitored freeway on or off-ramp intersections, where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic)

- If CMP arterial segments are being analyzed rather than intersections, the study area must include all segments where the proposed project will add 50 or more peak hour trips (total of both directions).

- Mainline freeway monitoring locations were the project will add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.

As previously shown in Table 2, the proposed project is forecast to generate approximately 30 net AM peak hour trips and 41 net PM peak hour trips, which are distributed from the project site. Therefore, the proposed project would not result in a CMP impact as it does not meet the thresholds requiring a traffic impact analysis for CMP purposes and no further CMP traffic analysis is warranted.

CMP TRANSIT IMPACT REVIEW

The Los Angeles County Metropolitan Transportation Authority 2010 Congestion Management Program Appendix D - Guidelines for CMP Transportation Impact Analysis 8.4 utilizes a conversion factor based on the daily and AM and PM peak hour trip generation to provide for a transit analysis. The conversion is as follows:

- Multiply the total trips generated by 1.4 to convert vehicle trips to person trips;
- For each time period, multiply the result by one of the following factors:
  3.5% of Total Person Trips Generated for most cases, except:
  10% primarily Residential within 1/4 mile of a CMP transit center
  15% primarily Commercial within 1/4 mile of a CMP transit center
  7% primarily Residential within 1/4 mile of a CMP multi-modal transportation center
  9% primarily Commercial within 1/4 mile of a CMP multi-modal transportation center
  5% primarily Residential within 1/4 mile of a CMP transit corridor
  7% primarily Commercial within 1/4 mile of a CMP transit corridor
  0% if no fixed route transit services operate within one mile of the project

Accordingly, the proposed project-generated transit trips are calculated as follows:

- Daily: ((299 trips x 1.4) x 0.035) ≈ 15
- Morning Peak Hour: ((30 trips x 1.4) x 0.035) ≈ 1
- Evening Peak Hour: ((41 trips x 1.4) x 0.035) ≈ 2

The proposed project is forecast to generate approximately one (1) transit trip during the AM peak hour and two (2) transit trips during the PM peak hour. Based on the existing transit services available in the project vicinity and the relatively low transit trip generation, the proposed project is forecast to have a nominal impact on transit service.

9. CONCLUSIONS

This section summarizes the findings and mitigation measures (if any) identified in previous sections of this study.

PROJECT TRIP GENERATION

The proposed project is forecast to generate approximately 299 net new daily trips, including 30 net new trips during the AM peak hour and 41 net new trips during the PM peak hour.

FORECAST LEVELS OF SERVICE

The study intersections currently operate at Levels of Service D or better during the peak hours for Existing, Existing Plus Project, Opening Year (2022) Without Project, and Opening Year (2022) With Project conditions, except for the following study intersections that are currently operating at deficient Levels of Service:

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (PM Peak Hour – LOS F)

The study intersections are forecast to operate at Levels of Service D or better during the peak hours for Year 2040 With Project conditions, except for the following study intersections that are projected to operate at Level of Service E/F for without and with project conditions:

- Fruit Street at Amherst Street – #1 (AM & PM Peak Hours – LOS F)
- Fruit Street/White Avenue at Foothill Boulevard - #2 (PM Peak Hour – LOS F)
- Williams Avenue at Foothill Boulevard – #7 (AM Peak Hour – LOS E; PM Peak Hour – LOS F)

The proposed project is forecast to result in no operational impacts at the study intersections during the AM and PM peak hours for analysis scenarios evaluated based on the requirements for improvements as established by the respective jurisdictions.

CONGESTION MANAGEMENT PROGRAM

The proposed project would result in no operational CMP impact as it does not meet the thresholds requiring a traffic impact analysis for CMP purposes and no further CMP analysis is warranted. A transit impact review was conducted for compliance with the CMP requirements and found that the proposed project is forecast to have a nominal impact on transit service.

SITE ACCESS AND CIRCULATION

The proposed project shall construct the following improvements as project design features to provide project site access:

- Project Access (NS) at Amherst Street (EW)
  - Construct the project access to provide one inbound lane and one outbound lane with northbound stop-control and the following lane configurations:
    - Northbound: one shared left/right turn lane
    - Eastbound: one shared through/right turn lane
    - Westbound: one shared left/through lane.

APPENDICES

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

CUL-DE-SAC: A local street open at one end only and with special provisions for turning around.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queueing to occur.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

SCOPING AGREEMENT

MEMORANDUM OF UNDERSTANDING

TO: Dominic Milano | CITY OF LA VERNE

FROM: Bryan Crawford | GANDDINI GROUP, INC.

DATE: August 6, 2020

SUBJECT: Amherst Residential Traffic Study Scope
19254

INTRODUCTION

The purpose of this scoping document is to outline the proposed traffic analysis parameters and assumptions for review/concurrence by City of La Verne staff.

PROJECT DESCRIPTION

Figure 1 shows the project location map. The project site is located on the south side of Amherst Street between Stone Circle and Pepperdine Court in the City of La Verne.

The proposed project involves eliminating the existing 5.5 acre nursery (wholesale) and constructing 43 single-family detached homes. One full access driveway is proposed at Amherst Street. The site plan is illustrated on Figure 2.

PROJECT TRIP GENERATION & DISTRIBUTION

Table 1 shows the project trip generation based upon rates obtained from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017.

As shown in Table 1, the proposed project is forecast to generate approximately 299 net daily trips, including 30 net trips during the morning peak hour and 41 net trips during the evening peak hour.

Figure 3 illustrates the forecast directional distribution patterns of project-generated trips.

STUDY AREA

The study area is proposed to consist of the following six (6) study intersections:

Study Intersections

1. Fruit Street (NS) at Amherst Street (EW)
2. Fruit Street/White Avenue (NS) at Foothill Boulevard (EW)
3. Bradford Street (NS) at Amherst Street (EW)
4. Falcon Street (NS) at Foothill Boulevard (EW)
5. Project Driveway (NS) at Amherst Street (EW)

6. Williams Avenue (NS) at Amherst Street (EW)
7. Williams Avenue (NS) at Foothill Boulevard (EW)

TRAFFIC COUNTS

New intersection turning movement counts will be collected at the study intersections during the morning peak period (7:00 AM – 9:00 AM) and evening peak period (4:00 PM – 6:00 PM) on a typical weekday (Tuesday, Wednesday, or Thursday) during the week of August 3, 2020..

Due to traffic patterns being affected by the COVID-19 lockdown, current count volumes may not reflect typical conditions. As such, City staff will provide historic traffic counts for four of the study intersections from the traffic study for the La Verne Mixed-Use Center. These intersection traffic counts are from 2011. An ambient growth rate of 1.34 percent per year for nine years (factor of 1.127) will be applied to the 2011 volumes to reflect 2020 conditions volumes. The resulting volumes will then be compared to the new 2020 counts to determine factors that will be applied to the new 2020 traffic counts at all intersections to reflect typical pre-COVID conditions.

ANALYSIS SCENARIOS

The traffic study shall evaluate the following analysis scenarios for typical weekday AM and PM peak hour conditions:

- Existing
- Existing Plus Project
- Opening Year (2022) Without Project
- Opening Year (2022) With Project
- Year 2040 Without Project
- Year 2040 With Project

ANALYSIS METHODOLOGY

The signalized study intersections shall by analyzed using the Intersection Capacity Utilization methodology in accordance with the parameters and impact thresholds prescribed in the Los Angeles County Traffic Impact Analysis Report Guidelines (Public Works Department, January 1997).

The unsignalized study intersections [and intersections within California Department of Transportation (Caltrans) jurisdiction] shall be analyzed using the intersection delay methodology and recommended default factors prescribed in the Transportation Research Board Highway Capacity Manual (6th Edition).

Intersection analysis shall be performed using the Vistro software.

PERFORMANCE STANDARDS

The City of La Verne has established Level of Service D as the minimum acceptable Level of Service during peak hour conditions. Intersections operating at Level of Service E/F shall be identified as deficient.

REQUIREMENTS FOR IMPROVEMENTS

Intersections located on the boundary line between two jurisdictions shall be evaluated against the operational thresholds for both jurisdictions. Intersections within Caltrans jurisdiction shall be evaluated against the Caltrans operational thresholds.

City of La Verne/County of Los Angeles

In accordance with the County of Los Angeles guidelines, a project operational traffic impact occurs if the project related increase in the volume-to-capacity ratio equals or exceeds the thresholds shown below:

Significant Impact Threshold for Intersections		
Level of Service	Volume/Capacity	Incremental Increase
C	0.71-0.80	0.04 or more
D	0.81-0.90	0.02 or more
E/F	0.91 - more	0.01 or more

Caltrans

Based on the California Department of Transportation established performance standards, a potentially operational traffic impact is defined to occur if the addition of project generated trips is forecast to cause the performance of a State Highway study intersection to change from acceptable Level of Service (D or better) to unacceptable Level of Service (E or F).

Unsignalized Intersections

Many jurisdictions, including the City of La Verne/County of Los Angeles and Caltrans, have not established operational thresholds for unsignalized intersections. For this traffic impact analysis, a project impact at an unsignalized intersection occurs if the addition of project-generated trips is forecast to cause or worsen Level of Service E or F and a traffic signal is warranted based on the peak hour volume criteria established in the California Manual on Uniform Traffic Control Devices (2014 Edition).

FORECASTING METHODOLOGY

To account for ambient growth, existing roadway volumes shall be increased by a growth rate of 1.34 percent per year over a two-year period for Opening Year (2022) conditions and over a 20-year period for General Plan Buildout conditions.

In addition, a list of pending and approved other development projects shall be requested from the Cities of La Verne, Pomona and Claremont. Trip forecasts for other development projects within the project study area shall be determined based on the Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017 and will be added to existing roadway volumes for the applicable analysis scenarios.

VEHICLES MILES TRAVELED (VMT) ANALYSIS

California Senate Bill 743 (SB 743) directs the State Office of Planning and Research (OPR) to amend the California Environmental Quality Act (CEQA) Guidelines for evaluating transportation impacts to provide alternatives to Level of Service that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. Agencies may currently opt-in to applying the updated CEQA guidelines for VMT analysis and implementation is required State-wide by July 1, 2020.

The updated CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation. Where quantitative models or methods are unavailable, Section 15064.3 allows agencies to assess VMT qualitatively using factors such as availability of transit and proximity to other destinations. The Technical Advisory on Evaluating Transportation Impacts in CEQA (State of California, December 2018) ["Technical Advisory"] provides technical considerations regarding methodologies and thresholds with a focus on office, residential, and retail developments as these projects tend to have the greatest influence on VMT.

The City of La Verne has established VMT analysis guidelines which were adopted at the June 15, 2020 City Council Meeting. Project-related VMT impact is included within these guidelines and is based on guidance from the Technical Advisory on Evaluating Transportation Impacts in CEQA (State of California, December 2018).

The City of La Verne VMT provides a framework for "screening thresholds" for when a project is expected to cause a less than significant impact without conducting a detailed VMT study.

The project generates more than 110 daily trips and is not located within a Transit Priority Area (TPA). Thus, the project does not meet these screening criteria. The City is currently testing a VMT Evaluation Tool (prepared by Fehr & Peers for SGVCOG) to assist in determining if the project is in a low-VMT generating area, and would meet this screening criteria. If the project is screened out for being in a low-VMT generating area, this information will be included in the traffic impact analysis. If not, a detailed VMT analysis will be required and conducted in consultation with City staff.

CONCLUSION

We appreciate the opportunity to provide this scoping document for your review. Should you have any questions or comments regarding the proposed scope, please contact me at (714) 795-3100 x 104.

Table 1
Project Trip Generation

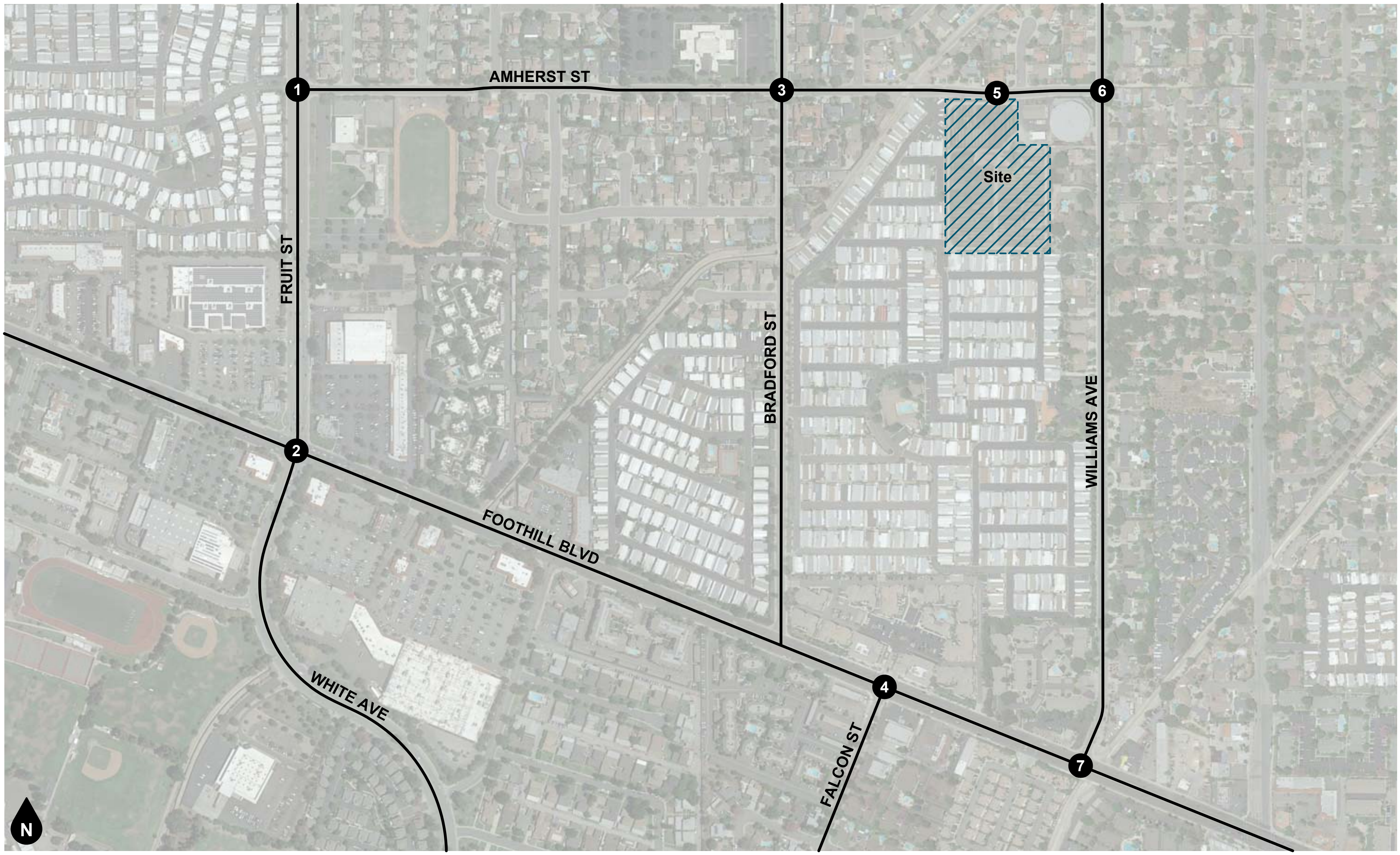
Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			
Land Use	Source[1]	Unit[2]	% In	% Out	Rate	% In	% Out	Rate	Daily
Single-Family Detached Housing	ITE 210	DU	25%	75%	0.74	63%	37%	0.99	9.44
Nursery (Wholesale)	ITE 818	AC	50%	50%	0.26	48%	52%	0.45	19.50

Trips Generated									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Unit[2]	In	Out	Total	In	Out	Total	Daily
Proposed Single-Family Detached Housing	43	DU	8	24	32	27	16	43	406
Existing Nursery (Wholesale)	5.5	AC	-1	-1	-2	-1	-1	-2	-107
Net Trip Generation			**7**	**23**	**30**	**26**	**15**	**41**	**299**

Notes:

(1) ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; ### = Land Use Code

(2) DU = Dwelling Units; AC = Acres



Legend
Study Intersection

Figure 1
Project Location Map

gandini

Amherst Residential
Traffic Study Scope
19254

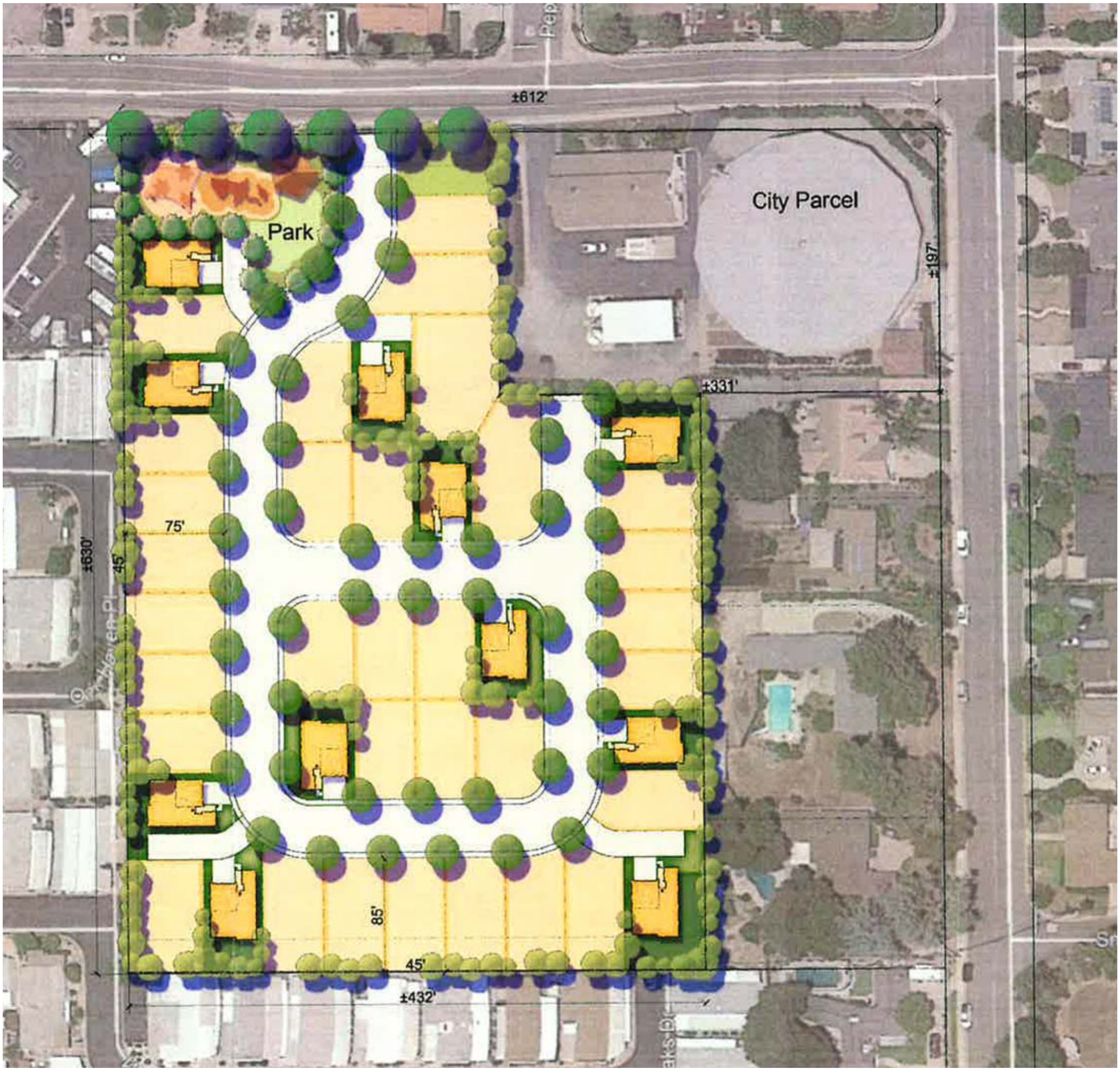
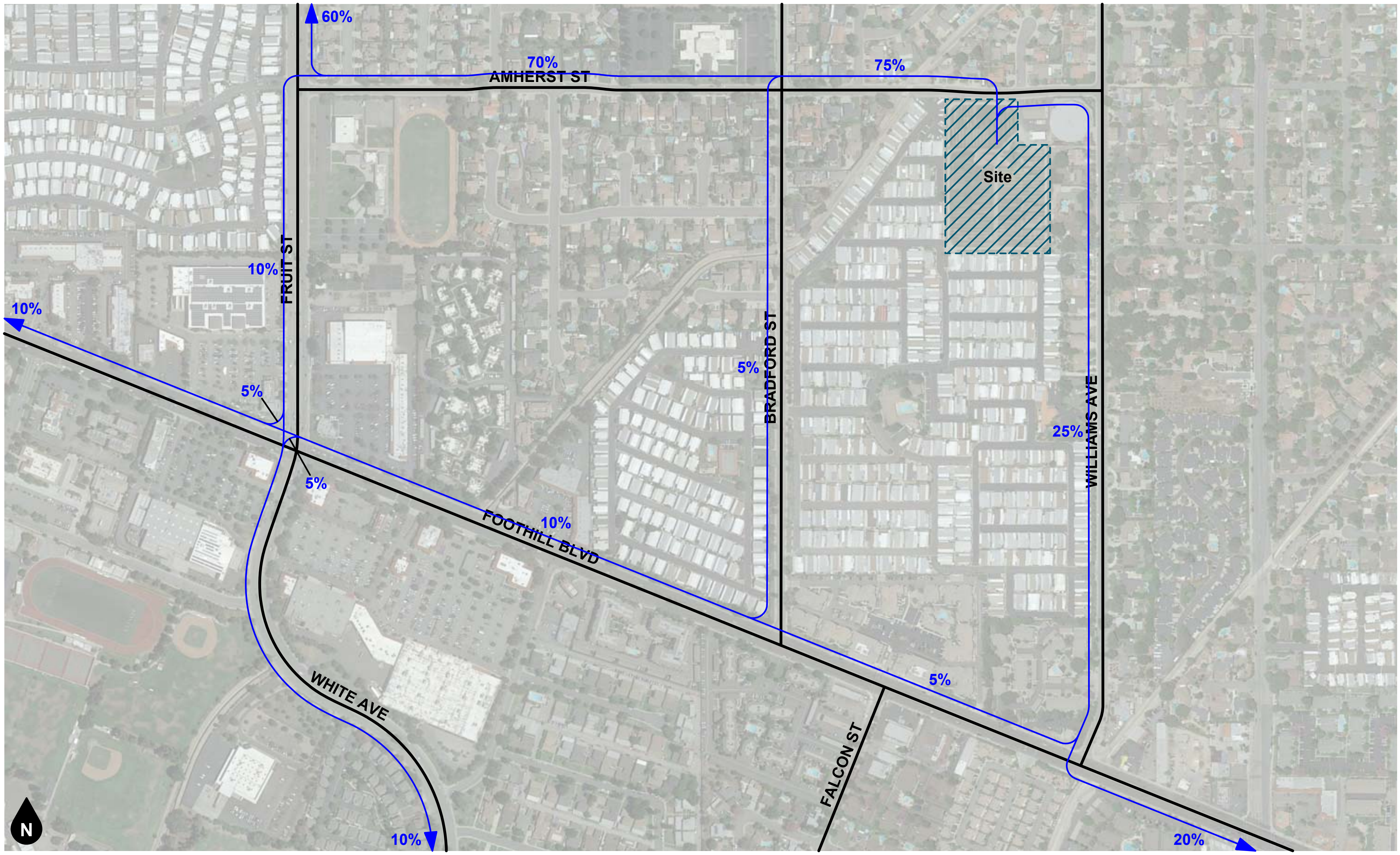


Figure 2
Site Plan

Amherst Residential
Traffic Study Scope
19254



Legend
10% Percent To/From Project

Figure 3
Project Trip Distribution

Amherst Residential
Traffic Study Scope
19254

Gmail **Bryan Crawford <bryandavidcrawford@gmail.com>**

19254 Amherst Residential Traffic Scoping Agreement

John Leveillee <jleveillee@rkagroup.com> Thu, Aug 6, 2020 at 3:33 PM
To: Bryan Crawford <bryan@ganddini.com>
Cc: Christine Donoghue <cdonoghue@rinconconsultants.com>, Candice Bowcock <cbowcock@cityoflaverne.org>, "matt@walbern.com" <matt@walbern.com>, "dmilano@rkagroup.com" <dmilano@rkagroup.com>

Hi Bryan,
The revised scoping agreement is acceptable, including the trip distribution.
Thanks.
John
[Quoted text hidden]

APPENDIX C

VOLUME COUNT WORKSHEETS

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 5, 20	LOCATION:	La Verne	PROJECT #:	SC
	NORTH & SOUTH:	Fruit	LOCATION #:	1
	EAST & WEST:	Amherst	CONTROL:	STOP E/W

NOTES:

AM
PM
MD
OTHER
OTHER

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E ►
S ▼

		NORTHBOUND Fruit			SOUTHBOUND Fruit			EASTBOUND Amherst			WESTBOUND Amherst			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	0	1	2	0	0	1	0	0	1	0	
AM	7:00 AM	0	91	2	5	66	1	1	0	0	1	0	7	174
AM	7:15 AM	1	82	1	4	110	1	0	0	1	0	0	14	214
AM	7:30 AM	1	92	0	1	106	0	4	0	0	1	0	11	216
AM	7:45 AM	2	101	3	5	167	4	2	0	1	3	0	13	301
AM	8:00 AM	4	92	0	5	119	0	2	1	1	1	0	11	236
AM	8:15 AM	3	94	2	5	135	0	2	0	3	1	0	8	253
AM	8:30 AM	1	94	3	4	120	0	3	0	3	2	0	7	237
AM	8:45 AM	3	110	5	6	144	0	2	1	6	3	0	10	290
AM	VOLUMES	15	756	16	35	967	6	16	2	15	12	0	81	1,921
AM	APPROACH %	2%	96%	2%	3%	96%	1%	48%	6%	45%	13%	0%	87%	
AM	APP/DEPART	787	/	852	1,008	/	994	33	/	53	93	/	22	0
AM	BEGIN PEAK HR		7:45 AM											
AM	VOLUMES	10	381	8	19	541	4	9	1	8	7	0	39	1,027
AM	APPROACH %	3%	95%	2%	3%	96%	1%	50%	6%	44%	15%	0%	85%	
AM	PEAK HR FACTOR		0.941			0.801			0.750			0.719		0.853
AM	APP/DEPART	399	/	429	564	/	556	18	/	28	46	/	14	0
PM	4:00 PM	2	181	4	7	126	4	3	0	3	2	1	9	342
PM	4:15 PM	3	169	5	12	136	3	2	0	4	3	0	8	345
PM	4:30 PM	7	183	1	11	112	2	0	0	6	3	0	14	339
PM	4:45 PM	4	160	3	9	136	2	0	0	2	4	0	12	332
PM	5:00 PM	5	214	3	8	134	2	3	0	5	2	1	5	382
PM	5:15 PM	2	187	7	13	128	3	8	0	5	4	0	7	364
PM	5:30 PM	6	177	9	16	121	0	1	1	1	2	0	13	347
PM	5:45 PM	5	146	10	15	119	1	2	0	4	1	0	7	310
PM	VOLUMES	34	1,417	42	91	1,012	17	19	1	30	21	2	75	2,761
PM	APPROACH %	2%	95%	3%	8%	90%	2%	38%	2%	60%	21%	2%	77%	
PM	APP/DEPART	1,493	/	1,510	1,120	/	1,065	50	/	133	98	/	53	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	17	738	22	46	519	7	12	1	13	12	1	37	1,425
PM	APPROACH %	2%	95%	3%	8%	91%	1%	46%	4%	50%	24%	2%	74%	
PM	PEAK HR FACTOR		0.875			0.973			0.500			0.781		0.933
PM	APP/DEPART	777	/	786	572	/	546	26	/	68	50	/	25	0

AimTD LLC

TURNING MOVEMENT COUNTS

La Verne

SC

ALL HOURS

Fruit (north)

2,128	**23**	**1,979**	**126**	**TOTAL**	**2,362**
1,120	17	1,012	91	**PM**	1,510
1,008	6	967	35	**AM**	852

Amherst (west)

	TOTAL	PM	AM
	75	53	22
	35	19	16
	3	1	2
	45	30	15
	83	**50**	**33**

Amherst (east)

	AM	PM	TOTAL
	93	**98**	**191**
	81	75	**156**
	0	2	**2**
	12	21	**33**
	53	133	**186**

Fruit (south)

994	**AM**	15	756	16	**787**
1,065	**PM**	34	1,417	42	**1,493**
2,059	**TOTAL**	**49**	**2,173**	**58**	**2,280**

PEAK HOUR

AM 7:45 AM

PM 4:45 PM

Fruit (north)

1,136	**11**	**1,060**	**65**	**TOTAL**	**1,215**
572	7	519	46	**PM**	786
564	4	541	19	**AM**	429

Amherst (west)

	TOTAL	PM	AM
	39	25	14
	21	12	9
	2	1	1
	21	13	8
	44	**26**	**18**

Amherst (east)

	AM	PM	TOTAL
	46	**50**	**96**
	39	37	**76**
	0	1	**1**
	7	12	**19**
	28	68	**96**

Fruit (south)

556	**AM**	10	381	8	**399**
546	**PM**	17	738	22	**777**
1,102	**Total**	**27**	**1,119**	**30**	**1,176**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	La Verne	PROJECT #:	SC
Wed, Aug 5, 20	NORTH & SOUTH:	Fruit	LOCATION #:	2
	EAST & WEST:	Foothill	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

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S ▼

		NORTHBOUND Fruit			SOUTHBOUND Fruit			EASTBOUND Foothill			WESTBOUND Foothill		
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	2	2	0	1	2	1	1	3	0	1	2	1	
AM	7:00 AM	11	39	0	21	37	6	14	26	4	5	34	34	231
AM	7:15 AM	10	44	3	29	61	15	12	25	5	12	37	26	279
AM	7:30 AM	13	46	4	22	62	18	18	39	6	10	48	31	317
AM	7:45 AM	15	56	5	39	100	20	12	31	7	11	50	36	382
AM	8:00 AM	12	50	4	24	62	21	12	32	10	10	59	38	334
AM	8:15 AM	18	53	4	35	86	18	18	29	11	6	53	38	369
AM	8:30 AM	28	42	1	40	60	19	21	37	14	10	73	36	381
AM	8:45 AM	18	57	7	42	68	37	16	47	6	20	85	29	432
AM	VOLUMES	125	387	28	252	536	154	123	266	63	84	439	268	2,725
AM	APPROACH %	23%	72%	5%	27%	57%	16%	27%	59%	14%	11%	55%	34%	
AM	APP/DEPART	540	/	738	942	/	676	452	/	552	791	/	759	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	76	202	16	141	276	95	67	145	41	46	270	141	1,516
AM	APPROACH %	26%	69%	5%	28%	54%	19%	26%	57%	16%	10%	59%	31%	
AM	PEAK HR FACTOR		0.896			0.871			0.878			0.853		0.877
AM	APP/DEPART	294	/	391	512	/	360	253	/	305	457	/	460	0
PM	4:00 PM	54	110	11	45	66	29	35	150	24	22	128	39	713
PM	4:15 PM	44	115	9	39	81	30	43	132	32	31	105	42	703
PM	4:30 PM	48	120	13	46	70	21	41	132	25	25	98	33	672
PM	4:45 PM	57	101	14	51	69	25	30	153	27	21	73	46	667
PM	5:00 PM	49	120	5	58	83	26	48	148	50	28	97	54	766
PM	5:15 PM	50	100	10	36	63	26	42	178	28	18	101	54	706
PM	5:30 PM	57	111	10	49	70	35	44	128	19	20	97	46	686
PM	5:45 PM	42	72	7	45	75	20	43	157	34	26	93	46	660
PM	VOLUMES	401	849	79	369	577	212	326	1,178	239	191	792	360	5,573
PM	APPROACH %	30%	64%	6%	32%	50%	18%	19%	68%	14%	14%	59%	27%	
PM	APP/DEPART	1,329	/	1,478	1,158	/	970	1,743	/	1,663	1,343	/	1,462	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	213	432	39	194	285	112	164	607	124	87	368	200	2,825
PM	APPROACH %	31%	63%	6%	33%	48%	19%	18%	68%	14%	13%	56%	31%	
PM	PEAK HR FACTOR		0.961			0.885			0.902			0.915		0.922
PM	APP/DEPART	684	/	773	591	/	477	895	/	860	655	/	715	0

AimTD LLC

TURNING MOVEMENT COUNTS

La Verne

SC

ALL HOURS

Fruit (north leg)

2,100	**366**	**1,113**	**621**	**TOTAL**		**2,216**
1,158	212	577	369	**PM**		1,478
942	154	536	252	**AM**		738

Foothill (west leg)

	TOTAL	PM	AM
	2,221	1,462	759
	449	326	123
	1,444	1,178	266
	302	239	63
	2,195	**1,743**	**452**

Foothill (east leg)

	AM	PM	TOTAL
	791	**1,343**	**2,134**
	268	360	**628**
	439	792	**1,231**
	84	191	**275**
	552	1,663	**2,215**

Fruit (south leg)

676		**AM**	125	387	28	**540**
970		**PM**	401	849	79	**1,329**
1,646		**TOTAL**	**526**	**1,236**	**107**	**1,869**

PEAK HOUR

AM 8:00 AM

PM 4:45 PM

Fruit (north leg)

1,103	**207**	**561**	**335**	**TOTAL**		**1,164**
591	112	285	194	**PM**		773
512	95	276	141	**AM**		391

Foothill (west leg)

	TOTAL	PM	AM
	1,175	715	460
	231	164	67
	752	607	145
	165	124	41
	1,148	**895**	**253**

Foothill (east leg)

	AM	PM	TOTAL
	457	**655**	**1,112**
	141	200	**341**
	270	368	**638**
	46	87	**133**
	305	860	**1,165**

Fruit (south leg)

360		**AM**	76	202	16	**294**
477		**PM**	213	432	39	**684**
837		**Total**	**289**	**634**	**55**	**978**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	La Verne	PROJECT #:	SC
Wed, Aug 5, 20	NORTH & SOUTH:	Bradford	LOCATION #:	3
	EAST & WEST:	Amherst	CONTROL:	STOP ALL

NOTES:

AM
PM
MD
OTHER
OTHER

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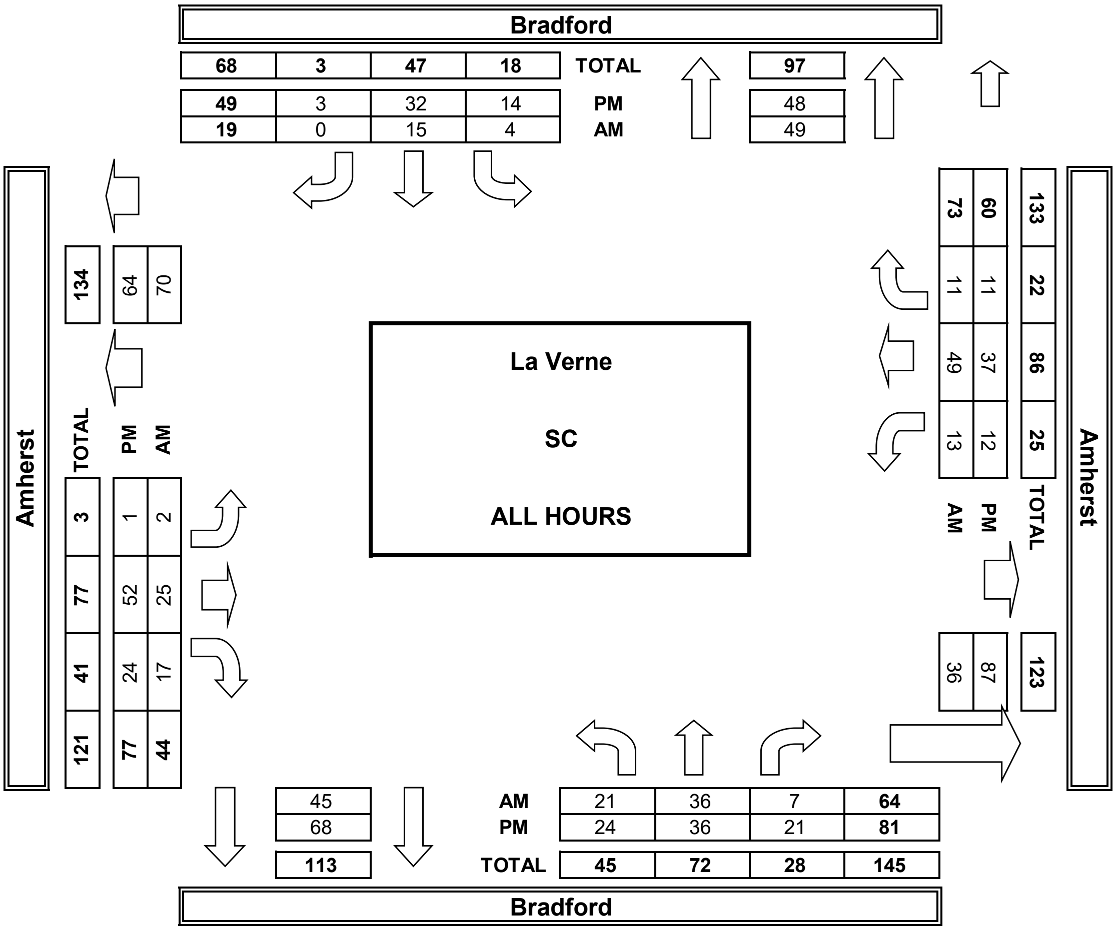
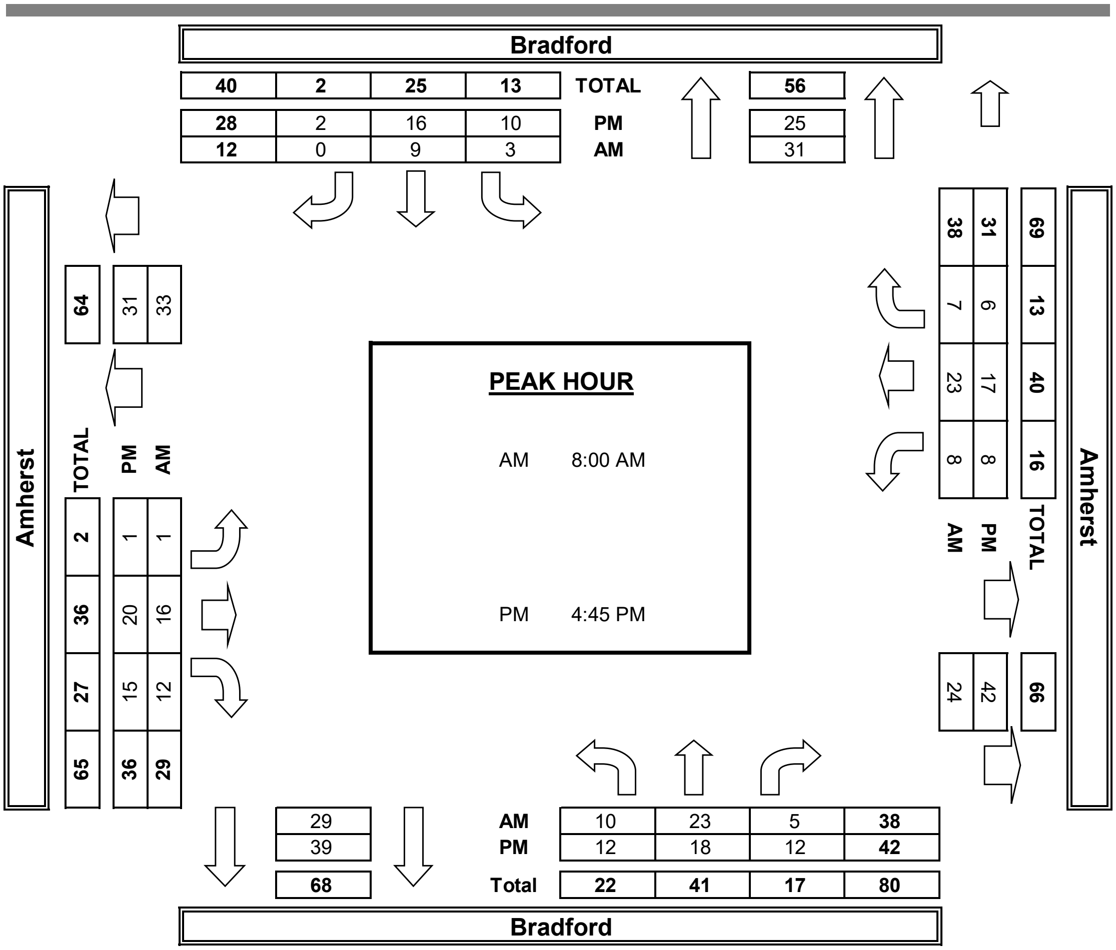
		NORTHBOUND Bradford			SOUTHBOUND Bradford			EASTBOUND Amherst			WESTBOUND Amherst			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM	7:00 AM	2	2	1	0	2	0	0	2	0	1	4	0	14
AM	7:15 AM	4	4	1	1	2	0	0	3	2	1	5	1	24
AM	7:30 AM	2	3	0	0	0	0	1	1	1	2	5	3	18
AM	7:45 AM	3	4	0	0	2	0	0	3	2	1	12	0	27
AM	8:00 AM	1	9	1	1	0	0	0	3	1	1	9	0	26
AM	8:15 AM	1	4	1	0	3	0	0	5	2	2	3	2	23
AM	8:30 AM	6	6	1	0	3	0	0	4	2	3	5	3	33
AM	8:45 AM	2	4	2	2	3	0	1	4	7	2	6	2	35
AM	VOLUMES	21	36	7	4	15	0	2	25	17	13	49	11	200
AM	APPROACH %	33%	56%	11%	21%	79%	0%	5%	57%	39%	18%	67%	15%	
AM	APP/DEPART	64	/	49	19	/	45	44	/	36	73	/	70	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	10	23	5	3	9	0	1	16	12	8	23	7	117
AM	APPROACH %	26%	61%	13%	25%	75%	0%	3%	55%	41%	21%	61%	18%	
AM	PEAK HR FACTOR		0.731			0.600			0.604			0.864		0.836
AM	APP/DEPART	38	/	31	12	/	29	29	/	24	38	/	33	0
PM	4:00 PM	3	4	2	0	3	0	0	5	1	2	2	2	24
PM	4:15 PM	4	7	4	0	6	1	0	11	2	2	6	1	44
PM	4:30 PM	5	4	2	2	3	0	0	8	3	0	8	1	36
PM	4:45 PM	3	3	2	1	2	1	1	3	3	3	4	1	27
PM	5:00 PM	2	4	1	1	6	0	0	5	2	1	2	1	25
PM	5:15 PM	4	3	4	3	4	0	0	5	5	1	3	3	35
PM	5:30 PM	3	8	5	5	4	1	0	7	5	3	8	1	50
PM	5:45 PM	0	3	1	2	4	0	0	8	3	0	4	1	26
PM	VOLUMES	24	36	21	14	32	3	1	52	24	12	37	11	267
PM	APPROACH %	30%	44%	26%	29%	65%	6%	1%	68%	31%	20%	62%	18%	
PM	APP/DEPART	81	/	48	49	/	68	77	/	87	60	/	64	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	12	18	12	10	16	2	1	20	15	8	17	6	137
PM	APPROACH %	29%	43%	29%	36%	57%	7%	3%	56%	42%	26%	55%	19%	
PM	PEAK HR FACTOR		0.656			0.700			0.750			0.646		0.685
PM	APP/DEPART	42	/	25	28	/	39	36	/	42	31	/	31	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	La Verne	PROJECT #:	SC
Wed, Aug 5, 20	NORTH & SOUTH:	Falcon	LOCATION #:	6
	EAST & WEST:	Foothill	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

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E ►
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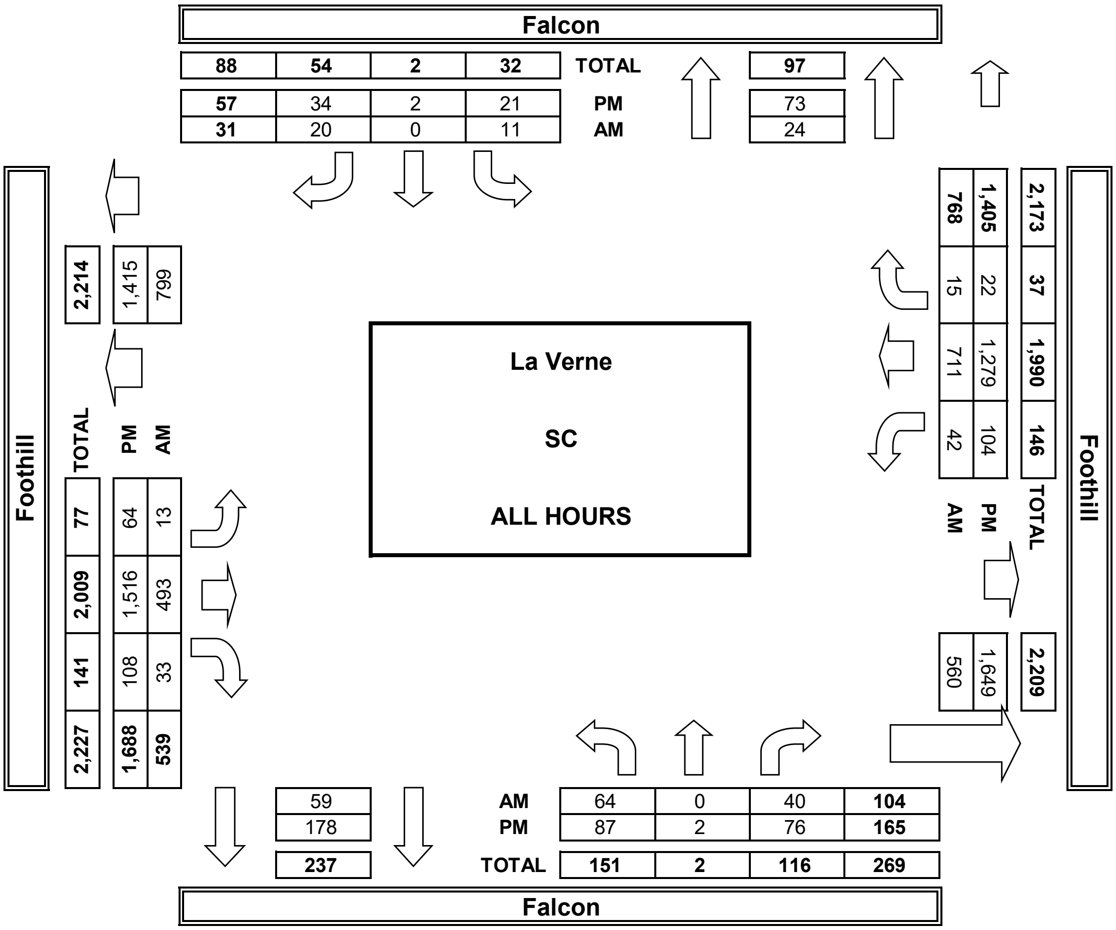
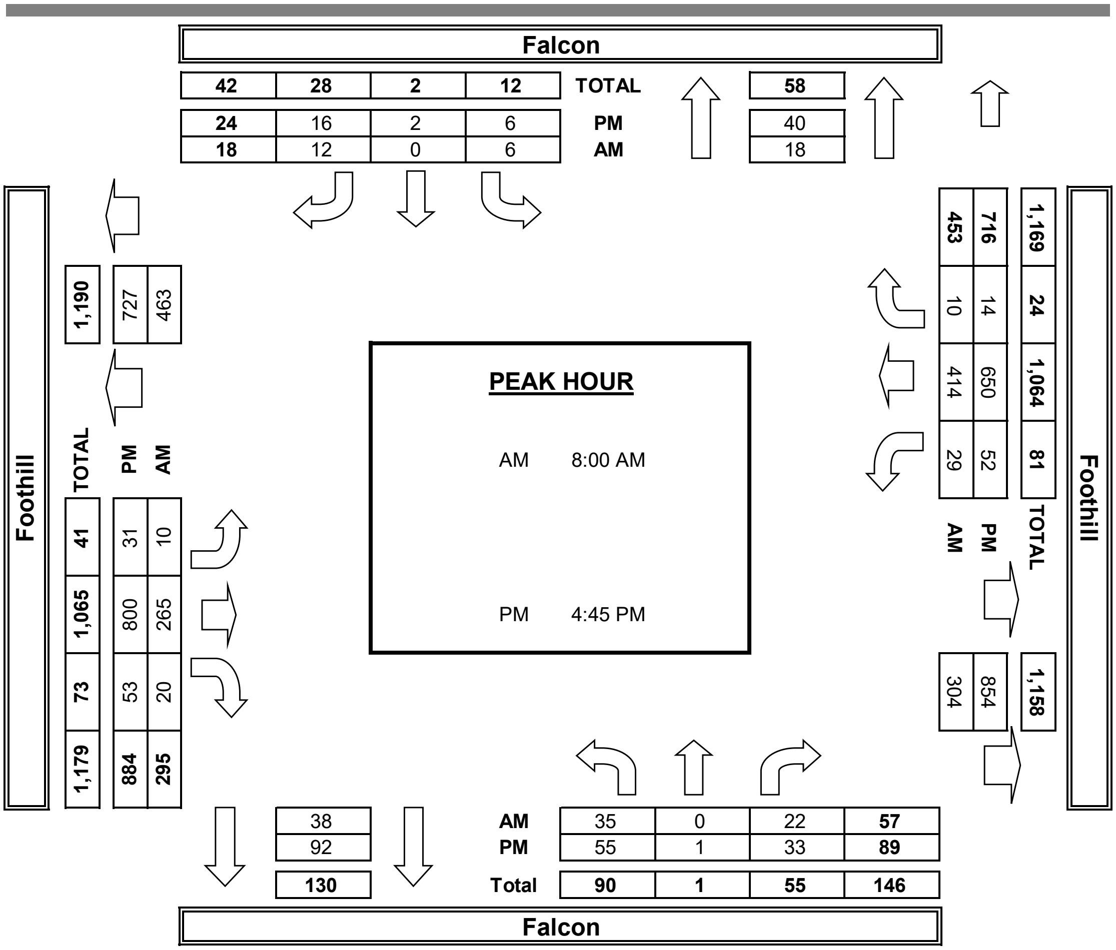
		NORTHBOUND Falcon			SOUTHBOUND Falcon			EASTBOUND Foothill			WESTBOUND Foothill			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
AM	7:00 AM	9	0	5	0	0	3	1	47	5	1	51	2	124
AM	7:15 AM	5	0	3	3	0	0	1	64	1	3	67	1	148
AM	7:30 AM	5	0	5	1	0	2	1	53	4	2	78	0	151
AM	7:45 AM	10	0	5	1	0	3	0	64	3	7	101	2	196
AM	8:00 AM	9	0	4	3	0	3	3	71	5	7	90	5	200
AM	8:15 AM	8	0	6	2	0	5	2	61	1	6	93	0	184
AM	8:30 AM	9	0	8	0	0	1	3	59	6	10	108	1	205
AM	8:45 AM	9	0	4	1	0	3	2	74	8	6	123	4	234
AM	VOLUMES	64	0	40	11	0	20	13	493	33	42	711	15	1,442
AM	APPROACH %	62%	0%	38%	35%	0%	65%	2%	91%	6%	5%	93%	2%	
AM	APP/DEPART	104	/	24	31	/	59	539	/	560	768	/	799	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	35	0	22	6	0	12	10	265	20	29	414	10	823
AM	APPROACH %	61%	0%	39%	33%	0%	67%	3%	90%	7%	6%	91%	2%	
AM	PEAK HR FACTOR		0.838			0.643			0.878			0.852		0.879
AM	APP/DEPART	57	/	18	18	/	38	295	/	304	453	/	463	0
PM	4:00 PM	7	0	10	3	0	2	9	207	13	12	167	4	434
PM	4:15 PM	9	0	14	1	0	6	6	157	17	19	172	0	401
PM	4:30 PM	7	0	12	3	0	6	6	184	14	12	150	3	397
PM	4:45 PM	8	0	12	1	0	3	9	184	14	12	156	5	404
PM	5:00 PM	13	0	9	2	0	9	8	207	14	16	149	5	432
PM	5:15 PM	19	1	6	2	1	0	5	221	13	11	173	2	454
PM	5:30 PM	15	0	6	1	1	4	9	188	12	13	172	2	423
PM	5:45 PM	9	1	7	8	0	4	12	168	11	9	140	1	370
PM	VOLUMES	87	2	76	21	2	34	64	1,516	108	104	1,279	22	3,315
PM	APPROACH %	53%	1%	46%	37%	4%	60%	4%	90%	6%	7%	91%	2%	
PM	APP/DEPART	165	/	73	57	/	178	1,688	/	1,649	1,405	/	1,415	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	55	1	33	6	2	16	31	800	53	52	650	14	1,713
PM	APPROACH %	62%	1%	37%	25%	8%	67%	4%	90%	6%	7%	91%	2%	
PM	PEAK HR FACTOR		0.856			0.545			0.925			0.957		0.943
PM	APP/DEPART	89	/	40	24	/	92	884	/	854	716	/	727	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	La Verne	PROJECT #:	SC
Wed, Aug 5, 20	NORTH & SOUTH:	Williams	LOCATION #:	4
	EAST & WEST:	Amherst	CONTROL:	STOP E

NOTES:

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		NORTHBOUND Williams			SOUTHBOUND Williams			EASTBOUND Amherst			WESTBOUND Amherst			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
AM	7:00 AM	3	0	0	0	1	3	1	0	3	0	0	0	11
	7:15 AM	4	1	0	0	2	2	0	0	4	0	1	0	14
	7:30 AM	4	0	0	0	1	5	0	0	2	0	0	0	12
	7:45 AM	6	1	0	0	4	4	1	0	3	0	0	0	19
	8:00 AM	7	2	0	0	3	2	0	0	6	0	0	0	20
	8:15 AM	5	1	0	0	3	3	2	0	2	0	0	0	16
	8:30 AM	6	2	0	0	1	2	1	0	4	0	0	0	16
	8:45 AM	11	2	0	0	3	1	3	0	7	0	0	0	27
	VOLUMES	46	9	0	0	18	22	8	0	31	0	1	0	135
	APPROACH %	84%	16%	0%	0%	45%	55%	21%	0%	79%	0%	100%	0%	
	APP/DEPART	55	/	17	40	/	49	39	/	0	1	/	69	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	29	7	0	0	10	8	6	0	19	0	0	0	79
	APPROACH %	81%	19%	0%	0%	56%	44%	24%	0%	76%	0%	0%	0%	
	PEAK HR FACTOR		0.692			0.750			0.625			0.000		0.731
	APP/DEPART	36	/	13	18	/	29	25	/	0	0	/	37	0
PM	4:00 PM	5	5	0	1	5	3	2	0	6	0	0	0	27
	4:15 PM	3	5	0	0	6	2	4	0	9	0	0	0	29
	4:30 PM	5	6	0	0	4	2	5	0	11	0	0	0	33
	4:45 PM	4	7	0	0	5	2	0	0	6	0	0	0	24
	5:00 PM	2	8	0	0	9	2	2	0	6	0	0	0	29
	5:15 PM	4	4	0	0	6	3	3	0	9	0	0	0	29
	5:30 PM	6	4	0	0	4	4	6	0	10	0	0	0	34
	5:45 PM	4	8	0	0	6	1	4	0	6	0	0	1	30
	VOLUMES	33	47	0	1	45	19	26	0	63	0	0	1	235
	APPROACH %	41%	59%	0%	2%	69%	29%	29%	0%	71%	0%	0%	100%	
	APP/DEPART	80	/	75	65	/	108	89	/	0	1	/	52	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	16	24	0	0	25	10	15	0	31	0	0	1	122
	APPROACH %	40%	60%	0%	0%	71%	29%	33%	0%	67%	0%	0%	100%	
	PEAK HR FACTOR		0.833			0.795			0.719			0.250		0.897
	APP/DEPART	40	/	40	35	/	56	46	/	0	1	/	26	0

AimTD LLC

TURNING MOVEMENT COUNTS

La Verne

SC

ALL HOURS

Williams

105	**41**	**63**	**1**	**TOTAL**
65	19	45	1	**PM**
40	22	18	0	**AM**

TOTAL	**92**
PM	75
AM	17

Amherst

	TOTAL	**PM**	**AM**
	121	52	69
	34	26	8
	0	0	0
	94	63	31
	128	**89**	**39**

Amherst

	AM	**PM**	**TOTAL**
	1	**1**	**2**
	0	1	**1**
	1	0	**1**
	0	0	**0**
	0	0	**0**

Williams

49	**AM**	46	9	0	**55**
108	**PM**	33	47	0	**80**
157	**TOTAL**	**79**	**56**	**0**	**135**

PEAK HOUR

AM 8:00 AM

PM 5:00 PM

Williams

53	**18**	**35**	**0**	**TOTAL**
35	10	25	0	**PM**
18	8	10	0	**AM**

TOTAL	**53**
PM	40
AM	13

Amherst

	TOTAL	**PM**	**AM**
	63	26	37
	21	15	6
	0	0	0
	50	31	19
	71	**46**	**25**

Amherst

	AM	**PM**	**TOTAL**
	0	**1**	**1**
	0	1	**1**
	0	0	**0**
	0	0	**0**
	0	0	**0**

Williams

29	**AM**	29	7	0	**36**
56	**PM**	16	24	0	**40**
85	**Total**	**45**	**31**	**0**	**76**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	La Verne	PROJECT #:	SC
Wed, Aug 5, 20	NORTH & SOUTH:	Williams	LOCATION #:	5
	EAST & WEST:	Foothill	CONTROL:	STOP S

NOTES:

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		NORTHBOUND Williams			SOUTHBOUND Williams			EASTBOUND Foothill			WESTBOUND Foothill			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	X	X	X	0	X	0	0	2	X	X	2	0	
AM	7:00 AM	0	0	0	2	0	2	0	52	0	0	54	2	112
AM	7:15 AM	0	0	0	2	0	1	3	66	0	0	67	3	142
AM	7:30 AM	0	0	0	1	0	4	0	58	0	0	75	1	139
AM	7:45 AM	0	0	0	5	0	4	0	70	0	0	107	3	189
AM	8:00 AM	0	0	0	2	0	4	2	72	0	0	95	3	178
AM	8:15 AM	0	0	0	3	0	2	0	67	0	0	97	5	174
AM	8:30 AM	0	0	0	4	0	6	3	67	0	0	112	3	195
AM	8:45 AM	0	0	0	2	0	3	2	87	0	0	132	1	227
AM	VOLUMES	0	0	0	21	0	26	10	539	0	0	739	21	1,365
AM	APPROACH %	0%	0%	0%	45%	0%	55%	2%	98%	0%	0%	96%	3%	
AM	APP/DEPART	0	/	31	47	/	0	549	/	569	769	/	765	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	0	0	0	11	0	15	7	293	0	0	436	12	782
AM	APPROACH %	0%	0%	0%	42%	0%	58%	2%	98%	0%	0%	96%	3%	
AM	PEAK HR FACTOR		0.000			0.650			0.843			0.851		0.857
AM	APP/DEPART	0	/	19	26	/	0	300	/	312	456	/	451	0
PM	4:00 PM	0	0	0	3	0	7	5	221	0	0	180	8	424
PM	4:15 PM	0	0	0	4	0	4	7	188	0	0	188	2	393
PM	4:30 PM	0	0	0	6	0	5	7	179	0	0	151	5	353
PM	4:45 PM	0	0	0	0	0	6	14	206	0	0	169	10	405
PM	5:00 PM	0	0	0	8	0	9	7	218	0	0	160	7	409
PM	5:15 PM	0	0	0	5	0	12	7	226	0	0	170	6	426
PM	5:30 PM	0	0	0	3	0	11	6	182	0	0	175	7	384
PM	5:45 PM	0	0	0	3	0	11	10	174	0	0	146	4	348
PM	VOLUMES	0	0	0	32	0	65	63	1,594	0	0	1,339	49	3,187
PM	APPROACH %	0%	0%	0%	33%	0%	66%	4%	96%	0%	0%	94%	3%	
PM	APP/DEPART	0	/	113	98	/	0	1,668	/	1,659	1,421	/	1,415	0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	0	0	0	16	0	38	34	832	0	0	674	30	1,651
PM	APPROACH %	0%	0%	0%	29%	0%	69%	4%	95%	0%	0%	93%	4%	
PM	PEAK HR FACTOR		0.000			0.764			0.932			0.978		0.958
PM	APP/DEPART	0	/	65	55	/	0	872	/	868	724	/	718	0

AimTD LLC

TURNING MOVEMENT COUNTS

La Verne

SC

ALL HOURS

Williams (north leg)

TOTAL	**145**	**91**	**0**	**53**
PM	**98**	65	0	32
AM	**47**	26	0	21

TOTAL	**144**
PM	113
AM	31

Foothill (west leg)

TOTAL	**2,180**
PM	1,415
AM	765

TOTAL	**73**	**2,133**	**0**	**2,217**
PM	63	1,594	0	**1,668**
AM	10	539	0	**549**

Foothill (east leg)

AM	**769**	21	739	0
PM	**1,421**	49	1,339	0
TOTAL	**2,190**	**70**	**2,078**	**0**

AM	569
PM	1,659
TOTAL	**2,228**

Williams (south leg)

AM	0
PM	0
TOTAL	**0**

AM	0	0	0	**0**
PM	0	0	0	**0**
TOTAL	**0**	**0**	**0**	**0**

PEAK HOUR

AM 8:00 AM

PM 4:45 PM

Williams (north leg)

TOTAL	**81**	**53**	**0**	**27**
PM	**55**	38	0	16
AM	**26**	15	0	11

TOTAL	**84**
PM	65
AM	19

Foothill (west leg)

TOTAL	**1,169**
PM	718
AM	451

TOTAL	**41**	**1,125**	**0**	**1,172**
PM	34	832	0	**872**
AM	7	293	0	**300**

Foothill (east leg)

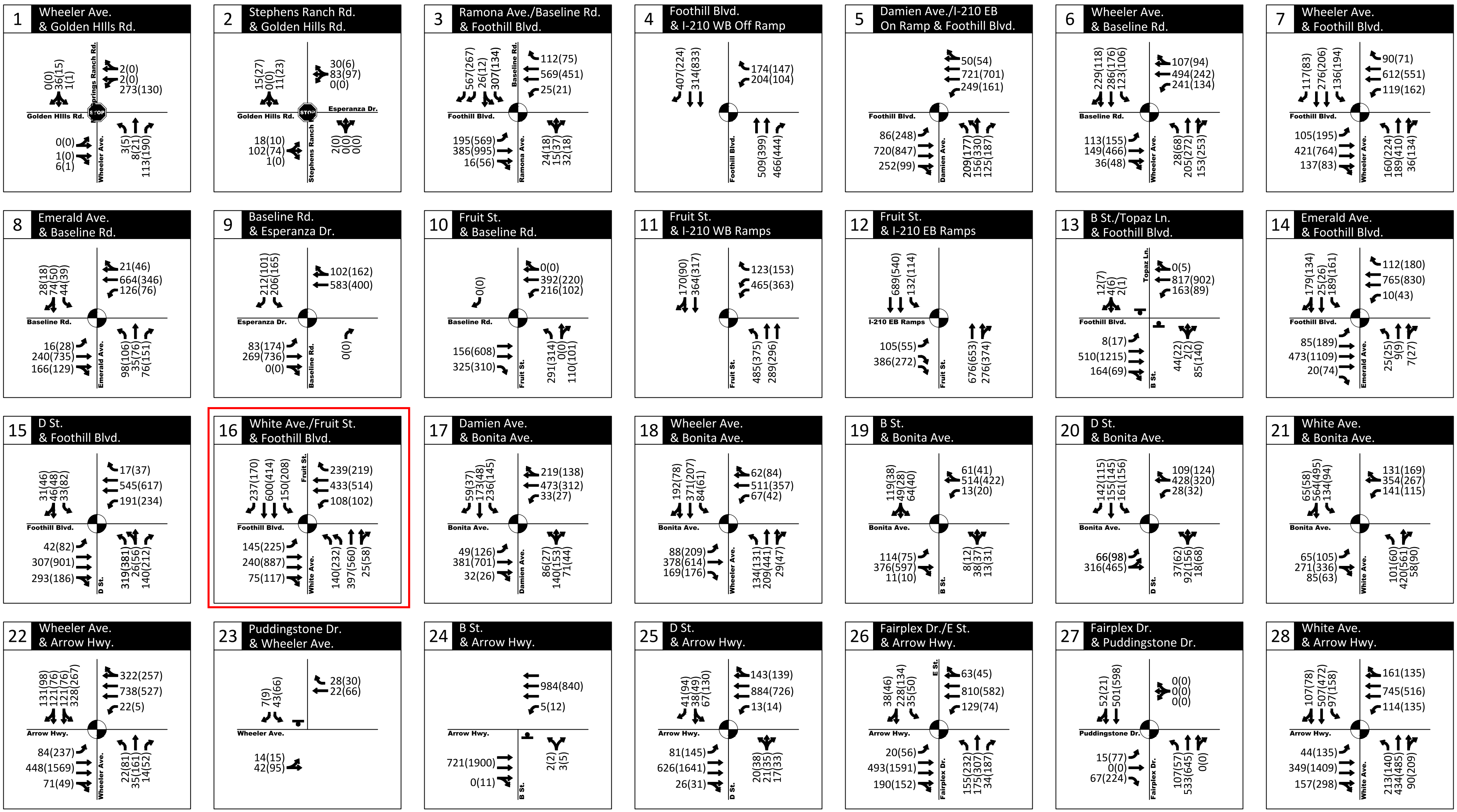
AM	**456**	12	436	0
PM	**724**	30	674	0
TOTAL	**1,180**	**42**	**1,110**	**0**

AM	312
PM	868
TOTAL	**1,180**

Williams (south leg)

AM	0
PM	0
Total	**0**

AM	0	0	0	**0**
PM	0	0	0	**0**
Total	**0**	**0**	**0**	**0**



AM(PM) - Traffic Volume

STOP - All-Way Stop

- Stop Sign

- Traffic Signal

Existing Intersection Volumes and Geometries
La Verne, CA

Figure 2-9

KITTELSON & ASSOCIATES

Pandemic Factorization Calculation Summary

Modified Historical Traffic Count					
Peak Hour Total Turning Movement Volumes	Intersection				Total
	Fruit St at Amherst St	Fruit St at Foothill Blvd	Bradford St at Amherst St	Williams Ave at Foothill Blvd	
AM	1,711	2,781	144	1,528	6,164
PM	1,888	4,085	191	2,380	8,544

Existing Traffic Count (Pandemic Conditions)					
Peak Hour Total Turning Movement Volumes	Intersection				Total
	Fruit St at Amherst St	Fruit St at Foothill Blvd	Bradford St at Amherst St	Williams Ave at Foothill Blvd	
AM	1,027	1,516	117	774	3,434
PM	1,425	2,825	137	1,624	6,011

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	79.50%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	42.14%

Fruit Street (NS) at Amherst Street (EW)

Modified Traffic Count

Historical Traffic Count[1]												
2011												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
3	556	12	43	816	3	7	0	8	32	0	38	1,518
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
22	852	39	49	627	14	11	1	14	27	1	19	1,676

Annual Ambient Growth Rate:	1.34%

Modified Historical Traffic Count												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
3	627	14	48	920	3	8	0	9	36	0	43	1,711
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
25	960	44	55	707	16	12	1	16	30	1	21	1,888

Notes:
(1) Source: La Verne Village Mixed Use Traffic Impact Analysis (LSA, March 2, 2011).

Existing Traffic Count (Pandemic Conditions)												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
10	381	8	19	541	4	9	1	8	7	0	39	1,027
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
17	738	22	46	519	7	12	1	13	12	1	37	1,425

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	66.60%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	32.49%

Fruit Street (NS) at Foothill Boulevard (EW)
Modified Traffic Count

Historical Traffic Count[1]												
2011												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
116	271	25	173	448	179	121	347	73	81	449	185	2,468
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
220	546	66	202	347	135	235	840	173	134	516	210	3,624

Annual Ambient Growth Rate:	1.34%

Modified Historical Traffic Count												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
131	305	28	195	505	202	136	391	82	91	506	209	2,781
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
248	615	74	228	391	152	265	947	195	151	582	237	4,085

Notes:
(1) Source: La Verne Village Mixed Use Traffic Impact Analysis (LSA, March 2, 2011).

Existing Traffic Count (Pandemic Conditions)												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
76	202	16	141	276	95	67	145	41	46	270	141	1,516
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
213	432	39	194	285	112	164	607	124	87	368	200	2,825

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	83.44%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	44.60%

Bradford Street (NS) at Amherst Street (EW)

Modified Traffic Count

Historical Traffic Count[1]												
2011												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
7	19	7	14	13	0	0	18	7	7	18	18	128
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
15	33	11	16	18	3	2	27	10	12	14	10	171

Annual Ambient Growth Rate:	1.34%

Modified Historical Traffic Count												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
8	21	8	16	15	0	0	20	8	8	20	20	144
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
17	37	12	18	20	3	2	30	11	14	16	11	191

Notes:
(1) Source: La Verne Village Mixed Use Traffic Impact Analysis (LSA, March 2, 2011).

Existing Traffic Count (Pandemic Conditions)												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
10	23	5	3	9	0	1	16	12	8	23	7	117
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
12	18	12	10	16	2	1	20	15	8	17	6	137

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	23.08%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	39.42%

Williams Avenue (NS) at Foothill Boulevard (EW)

Modified Traffic Count

Historical Traffic Count[1]												
2011												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	10	0	24	10	525	0	0	762	25	1,356
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	14	0	9	25	1,076	0	0	941	46	2,111

Annual Ambient Growth Rate:	1.34%

Modified Historical Traffic Count												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	11	0	27	11	592	0	0	859	28	1,528
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	16	0	10	28	1,213	0	0	1,061	52	2,380

Notes:
(1) Source: La Verne Village Mixed Use Traffic Impact Analysis (LSA, March 2, 2011).

Existing Traffic Count (Pandemic Conditions)												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	11	0	15	7	293	0	0	436	12	774
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	16	0	38	34	832	0	0	674	30	1,624

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	97.42%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	46.55%

Modified Traffic Counts to Convert Existing Traffic Counts to Pre Pandemic Conditions

AM Peak Hour Growth Rate to Convert Existing Traffic Counts to Pre Pandemic Conditions:	79.50%
PM Peak Hour Growth Rate to Convert Existing Traffic Counts to Pre Pandemic Conditions:	42.14%

Fruit Street (NS) at Amherst Street (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
3	556	12	43	816	3	7	0	8	32	0	38	1,518
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
22	852	39	49	627	14	11	1	14	27	1	19	1,676

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
5	998	22	77	1,465	5	13	0	14	57	0	68	2,724
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
31	1,211	55	70	891	20	16	1	20	38	1	27	2,381

Fruit Street (NS) at Foothill Boulevard (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
76	202	16	141	276	95	67	145	41	46	270	141	1,516
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
213	432	39	194	285	112	164	607	124	87	368	200	2,825

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
136	363	29	253	495	171	120	260	74	83	485	253	2,722
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
303	614	55	276	405	159	233	863	176	124	523	284	4,015

Bradford Street (NS) at Amherst Street (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
10	23	5	3	9	0	1	16	12	8	23	7	117
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
12	18	12	10	16	2	1	20	15	8	17	6	137

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
18	41	9	5	16	0	2	29	22	14	41	13	210
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
17	26	17	14	23	3	1	28	21	11	24	9	194

Falcon Street (NS) at Foothill Boulevard (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
35	0	22	6	0	12	10	265	20	29	414	10	823
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
55	1	33	6	2	16	31	800	53	52	650	14	1,713

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
63	0	39	11	0	22	18	476	36	52	743	18	1,478
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
78	1	47	9	3	23	44	1,137	75	74	924	20	2,435

Williams Avenue (NS) at Amherst Street (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
29	7	0	0	10	8	6	0	19	0	0	0	79
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
16	24	0	0	25	10	15	0	31	0	0	1	122

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
52	13	0	0	18	14	11	0	34	0	0	0	142
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
23	34	0	0	36	14	21	0	44	0	0	1	173

Williams Avenue (NS) at Foothill Boulevard (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	11	0	15	7	293	0	0	436	12	774
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	16	0	38	34	832	0	0	674	30	1,624

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	20	0	27	13	526	0	0	783	22	1,391
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	23	0	54	48	1,183	0	0	958	43	2,309

APPENDIX D

LEVEL OF SERVICE WORKSHEETS

EXISTING

Amherst Residential

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing AM Peak Hour
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Left	1.693	562.6	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.614	-	B
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	NB Thru	0.081	7.4	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.424	-	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.015	9.6	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.104	23.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	562.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.693

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	250	6	19	366	1	4	0	4	16	0	17
Total Analysis Volume [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.11	0.01	0.00	0.62	0.00	0.04	1.69	0.00	0.13
d_M, Delay for Movement [s/veh]	12.83	0.00	0.00	10.89	0.00	0.00	262.25	279.08	113.19	562.60	639.35	472.86
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.38	0.00	0.00	2.45	2.45	2.45	11.63	11.63	11.63
95th-Percentile Queue Length [ft/ln]	0.81	0.00	0.00	9.40	0.00	0.00	61.26	61.26	61.26	290.72	290.72	290.72
d_A, Approach Delay [s/veh]	0.06			0.54			187.72			516.02		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	27.01											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.614

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	91	7	63	124	43	30	65	19	21	121	63
Total Analysis Volume [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.12	0.12	0.16	0.15	0.11	0.08	0.07	0.07	0.05	0.15	0.16
Intersection LOS	B											
Intersection V/C	0.614											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.081

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	╋			╋			╋			╋		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	10	2	2	4	0	1	7	6	4	10	3
Total Analysis Volume [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	865	841	917	882
Degree of Utilization, x	0.08	0.03	0.06	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.26	0.08	0.18	0.25
95th-Percentile Queue Length [ft]	6.58	2.01	4.60	6.35
Approach Delay [s/veh]	7.53	7.40	7.17	7.43
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.39			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.424

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	10	3	0	6	5	119	9	13	186	5
Total Analysis Volume [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.07	0.01	0.00	0.02	0.01	0.16	0.16	0.03	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.424											

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	57	13	18	14	12	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	57	13	18	14	12	34
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	3	5	4	3	9
Total Analysis Volume [veh/h]	57	13	18	14	12	34
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.01	0.03
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	0.00	9.60	8.59
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft/ln]	2.78	2.78	0.00	0.00	3.69	3.69
d_A, Approach Delay [s/veh]	5.98		0.00		8.85	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.58					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.104

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	22	27	13	526	783	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	27	13	526	783	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	7	3	132	196	6
Total Analysis Volume [veh/h]	22	27	13	526	783	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.04	0.02	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	23.90	12.87	9.42	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.52	0.52	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.91	12.91	1.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.82		0.23		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	C					

Amherst Residential

Vistro File: C:\...\PME.vistro | Scenario 1 Existing PM Peak Hour
Report File: C:\...\PME.pdf | 8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.033	379.0	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.805	-	D
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	SB Thru	0.070	7.3	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.615	-	B
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.027	9.5	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.301	60.4	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	379.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	303	14	18	223	5	5	0	5	11	0	7
Total Analysis Volume [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.13	0.01	0.00	0.37	0.03	0.04	1.16	0.03	0.06
d_M, Delay for Movement [s/veh]	9.96	0.00	0.00	12.41	0.00	0.00	109.39	155.62	40.85	360.03	379.01	269.28
Movement LOS	A	A	A	B	A	A	F	F	E	F	F	F
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.43	0.00	0.00	1.84	1.84	1.84	6.08	6.08	6.08
95th-Percentile Queue Length [ft/ln]	3.20	0.00	0.00	10.73	0.00	0.00	46.08	46.08	46.08	152.06	152.06	152.06
d_A, Approach Delay [s/veh]	0.24			0.89			75.42			325.30		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	11.27											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.805

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	154	14	69	101	40	58	216	44	31	131	71
Total Analysis Volume [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.21	0.21	0.17	0.13	0.10	0.15	0.22	0.22	0.08	0.16	0.18
Intersection LOS	D											
Intersection V/C	0.805											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.070

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	7	4	4	6	1	0	7	5	3	6	2
Total Analysis Volume [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	892	859	919	878
Degree of Utilization, x	0.07	0.05	0.05	0.05

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.22	0.15	0.17	0.16
95th-Percentile Queue Length [ft]	5.59	3.75	4.31	4.05
Approach Delay [s/veh]	7.34	7.40	7.14	7.32
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.30			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	284	19	19	231	5
Total Analysis Volume [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.08	0.01	0.02	0.02	0.03	0.38	0.38	0.05	0.30	0.30
Intersection LOS	B											
Intersection V/C	0.615											

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	34	36	14	23	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	34	36	14	23	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	9	9	4	6	11
Total Analysis Volume [veh/h]	25	34	36	14	23	44
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	0.00	9.47	8.76
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.22	0.22
95th-Percentile Queue Length [ft/ln]	1.21	1.21	0.00	0.00	5.58	5.58
d_A, Approach Delay [s/veh]	3.11		0.00		9.01	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.47					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	60.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.301

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	54	48	1183	958	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	54	48	1183	958	43
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	14	12	296	240	11
Total Analysis Volume [veh/h]	25	54	48	1183	958	43
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.10	0.07	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	60.35	23.91	10.52	0.00	0.00	0.00
Movement LOS	F	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.81	1.81	0.22	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	45.33	45.33	5.51	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	35.44		0.41		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	1.43					
Intersection LOS	F					

EXISTING - CALTRANS

Amherst Residential

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing AM Peak Hour
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.528	25.0	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.326	22.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.528

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	91	7	63	124	43	30	65	19	21	121	63
Total Analysis Volume [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	16	26	0	12	22	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	12	28	28	6	14	14	6	14	14
g / C, Green / Cycle	0.09	0.32	0.32	0.16	0.39	0.39	0.09	0.20	0.20	0.08	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.10	0.14	0.14	0.11	0.07	0.06	0.07	0.05	0.13	0.16
s, saturation flow rate [veh/h]	2663	1900	1851	1810	3618	1615	1810	3618	1699	1810	3618	1615
c, Capacity [veh/h]	250	610	594	299	1420	634	166	739	347	147	703	314
d1, Uniform Delay [s]	30.38	18.07	18.08	28.43	15.01	14.49	31.03	23.69	23.77	31.05	26.32	27.03
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.84	1.41	1.46	6.50	0.68	1.05	5.90	0.23	0.52	3.35	1.22	4.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.54	0.32	0.33	0.85	0.35	0.27	0.72	0.30	0.32	0.56	0.69	0.81
d, Delay for Lane Group [s/veh]	32.22	19.48	19.54	34.93	15.68	15.53	36.93	23.91	24.29	34.40	27.55	31.93
Lane Group LOS	C	B	B	C	B	B	D	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.09	2.42	2.38	4.34	2.57	1.81	2.09	1.44	1.46	1.38	3.51	4.06
50th-Percentile Queue Length [ft/ln]	27.25	60.53	59.49	108.58	64.13	45.15	52.21	36.09	36.50	34.61	87.86	101.59
95th-Percentile Queue Length [veh/ln]	1.96	4.36	4.28	7.76	4.62	3.25	3.76	2.60	2.63	2.49	6.33	7.31
95th-Percentile Queue Length [ft/ln]	49.05	108.95	107.09	194.02	115.44	81.28	93.97	64.96	65.70	62.29	158.14	182.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.22	19.51	19.54	34.93	15.68	15.53	36.93	23.97	24.29	34.40	27.55	31.93
Movement LOS	C	B	B	C	B	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.78			20.95			27.45			29.59		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.00											
Intersection LOS	C											
Intersection V/C	0.528											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.695	2.798	2.743	2.865
Crosswalk LOS	B	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	486	629	514	486
d_b, Bicycle Delay [s]	20.06	16.46	19.31	20.06
I_b,int, Bicycle LOS Score for Intersection	1.995	2.318	1.809	2.237
Bicycle LOS	A	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.326

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	10	3	0	6	5	119	9	13	186	5
Total Analysis Volume [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	12	28	0	11	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	2	13	13	4	15	15
g / C, Green / Cycle	0.52	0.52	0.03	0.21	0.21	0.07	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.07	0.02	0.01	0.14	0.14	0.03	0.20	0.20
s, saturation flow rate [veh/h]	1506	1550	1810	1900	1854	1810	1900	1884
c, Capacity [veh/h]	878	884	57	405	395	125	476	472
d1, Uniform Delay [s]	7.43	7.13	28.48	21.55	21.57	26.82	21.13	21.14
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.08	3.06	1.68	1.74	2.18	3.19	3.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.04	0.31	0.64	0.64	0.41	0.80	0.80
d, Delay for Lane Group [s/veh]	7.72	7.21	31.54	23.23	23.31	29.00	24.33	24.36
Lane Group LOS	A	A	C	C	C	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.69	0.21	0.28	3.05	3.00	0.72	4.70	4.67
50th-Percentile Queue Length [ft/ln]	17.17	5.15	6.95	76.35	75.08	17.93	117.55	116.70
95th-Percentile Queue Length [veh/ln]	1.24	0.37	0.50	5.50	5.41	1.29	8.26	8.21
95th-Percentile Queue Length [ft/ln]	30.90	9.28	12.51	137.43	135.14	32.28	206.46	205.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.72	7.72	7.72	7.21	7.21	7.21	31.54	23.27	23.31	29.00	24.34	24.36
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	7.72			7.21			23.55			24.64		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.62											
Intersection LOS	C											
Intersection V/C	0.326											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.772	1.721	2.774	2.774
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	767
d_b, Bicycle Delay [s]	15.41	15.41	10.80	11.41
I_b,int, Bicycle LOS Score for Intersection	1.738	1.616	1.997	2.230
Bicycle LOS	A	A	A	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Amherst Residential

Vistro File: C:\...\PME.vistro
Report File: C:\...\PME.pdf

Scenario 1 Existing PM Peak Hour
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	WB Left	0.712	30.6	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.522	19.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.712

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	154	14	69	101	40	58	216	44	31	131	71
Total Analysis Volume [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	16	21	0	16	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	19	19	13	22	22	11	20	20	7	15	15
g / C, Green / Cycle	0.14	0.26	0.26	0.17	0.29	0.29	0.15	0.27	0.27	0.09	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.18	0.15	0.11	0.10	0.13	0.19	0.19	0.07	0.14	0.18
s, saturation flow rate [veh/h]	2663	1900	1846	1810	3618	1615	1810	3618	1740	1810	3618	1615
c, Capacity [veh/h]	377	488	474	314	1044	466	277	967	465	162	738	330
d1, Uniform Delay [s]	31.26	25.29	25.29	30.31	21.43	21.11	30.97	25.03	25.04	33.46	27.85	28.91
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.01	7.97	8.19	7.85	1.09	1.99	6.84	1.05	2.18	7.31	1.27	6.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.70	0.70	0.88	0.39	0.34	0.84	0.72	0.73	0.77	0.71	0.86
d, Delay for Lane Group [s/veh]	35.27	33.26	33.48	38.16	22.52	23.10	37.81	26.09	27.22	40.77	29.12	35.55
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.70	6.11	5.97	5.21	2.78	2.29	4.30	5.23	5.18	2.39	4.11	5.09
50th-Percentile Queue Length [ft/ln]	67.58	152.83	149.19	130.34	69.53	57.15	107.56	130.65	129.53	59.63	102.71	127.33
95th-Percentile Queue Length [veh/ln]	4.87	10.17	9.97	8.96	5.01	4.12	7.70	8.98	8.91	4.29	7.40	8.79
95th-Percentile Queue Length [ft/ln]	121.65	254.20	249.35	223.96	125.15	102.88	192.60	224.38	222.85	107.33	184.88	219.86

Movement, Approach, & Intersection Results

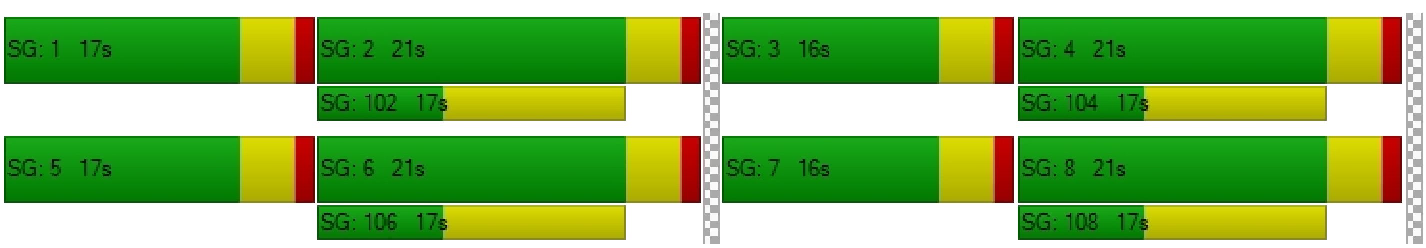
d_M, Delay for Movement [s/veh]	35.27	33.36	33.48	38.16	22.52	23.10	37.81	26.30	27.22	40.77	29.12	35.55
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	33.96			27.77			28.53			32.63		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	30.64											
Intersection LOS	C											
Intersection V/C	0.712											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.806	2.870	2.993	3.028
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	453	453	453	453
d_b, Bicycle Delay [s]	22.43	22.43	22.43	22.43
I_b,int, Bicycle LOS Score for Intersection	2.362	2.253	2.259	2.328
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	284	19	19	231	5
Total Analysis Volume [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	17	28	0	11	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	4	22	22	5	23	23
g / C, Green / Cycle	0.35	0.35	0.06	0.37	0.37	0.08	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.09	0.02	0.02	0.32	0.32	0.04	0.25	0.25
s, saturation flow rate [veh/h]	1509	1595	1810	1900	1859	1810	1900	1886
c, Capacity [veh/h]	626	635	113	696	681	152	738	732
d1, Uniform Delay [s]	13.76	12.98	27.10	17.82	17.83	26.30	14.99	14.99
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	0.17	2.19	3.81	3.94	2.38	0.94	0.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.06	0.39	0.88	0.88	0.49	0.64	0.64
d, Delay for Lane Group [s/veh]	14.54	13.15	29.29	21.63	21.77	28.68	15.94	15.94
Lane Group LOS	B	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.32	0.33	0.61	7.06	6.94	1.01	4.38	4.35
50th-Percentile Queue Length [ft/ln]	33.11	8.28	15.35	176.38	173.61	25.14	109.45	108.67
95th-Percentile Queue Length [veh/ln]	2.38	0.60	1.11	11.41	11.27	1.81	7.81	7.77
95th-Percentile Queue Length [ft/ln]	59.59	14.91	27.63	285.28	281.66	45.26	195.24	194.16

Movement, Approach, & Intersection Results

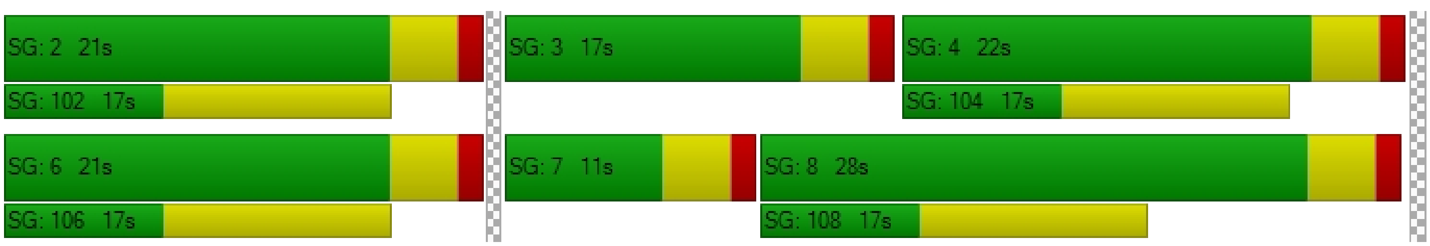
d_M, Delay for Movement [s/veh]	14.54	14.54	14.54	13.15	13.15	13.15	29.29	21.69	21.77	28.68	15.94	15.94
Movement LOS	B	B	B	B	B	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	14.54			13.15			21.96			16.86		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	19.30											
Intersection LOS	B											
Intersection V/C	0.522											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.809	1.733	3.069	2.984
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	600
d_b, Bicycle Delay [s]	15.41	15.41	10.80	14.70
I_b,int, Bicycle LOS Score for Intersection	1.781	1.619	2.596	2.399
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING PLUS PROJECT

Amherst Residential

Vistro File: C:\...\AME.vistro
Report File: C:\...\AMEP.pdf

Scenario 2 Existing Plus Project AM Peak Hour
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Left	1.782	609.4	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.615	-	B
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	NB Thru	0.098	7.5	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.424	-	A
5	Project Access (NS) at Williams Ave (EW)	Two-way stop	HCM 6th Edition	NB Left	0.019	9.2	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.015	9.7	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.128	24.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	609.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.782

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	4	0	0	0	0	0	2	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	998	23	81	1465	5	14	0	14	65	0	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	250	6	20	366	1	4	0	4	16	0	21
Total Analysis Volume [veh/h]	5	998	23	81	1465	5	14	0	14	65	0	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.12	0.01	0.00	0.65	0.00	0.04	1.78	0.00	0.16
d_M, Delay for Movement [s/veh]	12.83	0.00	0.00	10.93	0.00	0.00	281.92	294.00	124.54	609.45	687.66	517.78
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.40	0.00	0.00	2.54	2.54	2.54	13.11	13.11	13.11
95th-Percentile Queue Length [ft/ln]	0.81	0.00	0.00	9.96	0.00	0.00	63.59	63.59	63.59	327.85	327.85	327.85
d_A, Approach Delay [s/veh]	0.06			0.57			203.23			558.31		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	32.24											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	0	1	1	1	1	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	364	30	253	496	172	121	261	74	84	486	253
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	91	8	63	124	43	30	65	19	21	122	63
Total Analysis Volume [veh/h]	136	364	30	253	496	172	121	261	74	84	486	253
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.12	0.12	0.16	0.16	0.11	0.08	0.07	0.07	0.05	0.15	0.16
Intersection LOS	B											
Intersection V/C	0.615											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.098

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	0	0	0	0	5	0	1	16	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	41	10	6	16	0	2	34	22	16	57	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	10	3	2	4	0	1	9	6	4	14	3
Total Analysis Volume [veh/h]	20	41	10	6	16	0	2	34	22	16	57	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	857	831	906	876
Degree of Utilization, x	0.08	0.03	0.06	0.10

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.27	0.08	0.20	0.33
95th-Percentile Queue Length [ft]	6.76	2.04	5.12	8.13
Approach Delay [s/veh]	7.58	7.45	7.24	7.55
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.48			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.424

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	1	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	0	39	12	0	22	18	477	36	52	744	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	10	3	0	6	5	119	9	13	186	5
Total Analysis Volume [veh/h]	69	0	39	12	0	22	18	477	36	52	744	18
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.07	0.01	0.00	0.02	0.01	0.16	0.16	0.03	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.424											

Intersection Level Of Service Report
Intersection 5: Project Access (NS) at Williams Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	45	0	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	6	0	6	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	6	45	6	2	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	2	11	2	1	17
Total Analysis Volume [veh/h]	17	6	45	6	2	66
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.19	8.61	0.00	0.00	7.30	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.93	1.93	0.00	0.00	0.10	0.10
d_A, Approach Delay [s/veh]	9.03		0.00		0.21	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.57					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	57	13	18	14	12	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	13	18	14	12	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	3	5	4	3	10
Total Analysis Volume [veh/h]	59	13	18	14	12	40
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.01	0.04
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	0.00	9.65	8.61
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.17	0.17
95th-Percentile Queue Length [ft/ln]	2.88	2.88	0.00	0.00	4.17	4.17
d_A, Approach Delay [s/veh]	6.02		0.00		8.85	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.73					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	22	27	13	526	783	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	1	1	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	28	14	526	783	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	7	4	132	196	6
Total Analysis Volume [veh/h]	27	28	14	526	783	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.05	0.02	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	24.49	13.38	9.43	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.62	0.62	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	15.57	15.57	1.29	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.83		0.24		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.83					
Intersection LOS	C					

Amherst Residential

Vistro File: C:\...\PME.vistro

Report File: C:\...\PMEP.pdf

Scenario 2 Existing Plus Project PM Peak Hour

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.036	459.1	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.807	-	D
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	SB Thru	0.077	7.4	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.616	-	B
5	Project Access (NS) at Williams Ave (EW)	Two-way stop	HCM 6th Edition	NB Left	0.013	9.2	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.027	9.6	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.342	63.8	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	459.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.036

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	┐‖├			┐‖├			┼			┼		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	16	0	0	0	0	0	2	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	1211	58	86	891	20	18	1	20	44	1	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	303	15	22	223	5	5	0	5	11	0	9
Total Analysis Volume [veh/h]	31	1211	58	86	891	20	18	1	20	44	1	35
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.16	0.01	0.00	0.42	0.04	0.04	1.32	0.04	0.08
d_M, Delay for Movement [s/veh]	9.96	0.00	0.00	12.68	0.00	0.00	125.14	174.07	48.48	438.72	459.10	339.14
Movement LOS	A	A	A	B	A	A	F	F	E	F	F	F
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.55	0.00	0.00	2.04	2.04	2.04	7.21	7.21	7.21
95th-Percentile Queue Length [ft/ln]	3.20	0.00	0.00	13.64	0.00	0.00	51.10	51.10	51.10	180.20	180.20	180.20
d_A, Approach Delay [s/veh]	0.24			1.09			87.08			395.41		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	15.08											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	0	1	1	2	2	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	303	616	57	276	406	160	235	865	176	125	524	284
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	154	14	69	102	40	59	216	44	31	131	71
Total Analysis Volume [veh/h]	303	616	57	276	406	160	235	865	176	125	524	284
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.21	0.21	0.17	0.13	0.10	0.15	0.22	0.22	0.08	0.16	0.18
Intersection LOS	D											
Intersection V/C	0.807											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.077

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	┼			┼			┼			┼		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	0	0	0	0	19	0	1	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	26	19	15	23	3	1	47	21	13	34	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	7	5	4	6	1	0	12	5	3	9	2
Total Analysis Volume [veh/h]	19	26	19	15	23	3	1	47	21	13	34	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	880	845	899	869
Degree of Utilization, x	0.07	0.05	0.08	0.06

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.23	0.15	0.25	0.21
95th-Percentile Queue Length [ft]	5.87	3.82	6.22	5.16
Approach Delay [s/veh]	7.41	7.48	7.34	7.43
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.41			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.616

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	1	47	10	3	23	44	1139	75	74	925	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	285	19	19	231	5
Total Analysis Volume [veh/h]	86	1	47	10	3	23	44	1139	75	74	925	20
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.08	0.01	0.02	0.02	0.03	0.38	0.38	0.05	0.30	0.30
Intersection LOS	B											
Intersection V/C	0.616											

Intersection Level Of Service Report
Intersection 5: Project Access (NS) at Williams Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	65	0	0	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	4	0	21	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	4	65	21	7	37
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	16	5	2	9
Total Analysis Volume [veh/h]	11	4	65	21	7	37
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.21	8.70	0.00	0.00	7.37	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.27	1.27	0.00	0.00	0.35	0.35
d_A, Approach Delay [s/veh]	9.07		0.00		1.17	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.29					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	34	36	14	23	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	34	36	14	23	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	9	9	4	6	12
Total Analysis Volume [veh/h]	32	34	36	14	23	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.03	0.05
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	0.00	9.59	8.78
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.24	0.24
95th-Percentile Queue Length [ft/ln]	1.56	1.56	0.00	0.00	5.97	5.97
d_A, Approach Delay [s/veh]	3.56		0.00		9.04	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.69					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	63.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.342

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	54	48	1183	958	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	2	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	55	50	1183	958	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	14	13	296	240	12
Total Analysis Volume [veh/h]	28	55	50	1183	958	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.11	0.07	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	63.79	26.78	10.57	0.00	0.00	0.00
Movement LOS	F	D	B	A	A	A
95th-Percentile Queue Length [veh/ln]	2.09	2.09	0.23	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	52.25	52.25	5.78	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	39.27		0.43		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	1.63					
Intersection LOS	F					

EXISTING PLUS PROJECT - CALTRANS

Amherst Residential

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Report File: C:\...\AMEP.pdf

Scenario 2 Existing Plus Project AM Peak Hour

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.529	25.0	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.327	22.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	0	1	1	1	1	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	364	30	253	496	172	121	261	74	84	486	253
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	91	8	63	124	43	30	65	19	21	122	63
Total Analysis Volume [veh/h]	136	364	30	253	496	172	121	261	74	84	486	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	16	26	0	12	22	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	12	28	28	6	14	14	6	14	14
g / C, Green / Cycle	0.09	0.32	0.32	0.16	0.39	0.39	0.09	0.20	0.20	0.08	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.11	0.14	0.14	0.11	0.07	0.06	0.07	0.05	0.13	0.16
s, saturation flow rate [veh/h]	2663	1900	1850	1810	3618	1615	1810	3618	1700	1810	3618	1615
c, Capacity [veh/h]	250	610	593	299	1420	634	166	739	347	148	703	314
d1, Uniform Delay [s]	30.38	18.09	18.10	28.43	15.02	14.50	31.04	23.70	23.78	31.04	26.33	27.03
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.84	1.43	1.48	6.50	0.68	1.05	6.01	0.23	0.53	3.40	1.23	4.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.54	0.33	0.33	0.85	0.35	0.27	0.73	0.30	0.32	0.57	0.69	0.81
d, Delay for Lane Group [s/veh]	32.22	19.52	19.58	34.93	15.70	15.56	37.04	23.93	24.31	34.44	27.56	31.93
Lane Group LOS	C	B	B	C	B	B	D	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.09	2.44	2.39	4.34	2.57	1.82	2.11	1.45	1.47	1.40	3.52	4.06
50th-Percentile Queue Length [ft/ln]	27.25	60.93	59.86	108.58	64.32	45.48	52.74	36.22	36.63	35.04	88.08	101.59
95th-Percentile Queue Length [veh/ln]	1.96	4.39	4.31	7.76	4.63	3.27	3.80	2.61	2.64	2.52	6.34	7.31
95th-Percentile Queue Length [ft/ln]	49.05	109.68	107.74	194.02	115.77	81.86	94.94	65.19	65.93	63.07	158.54	182.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.22	19.54	19.58	34.93	15.70	15.56	37.04	23.98	24.31	34.44	27.56	31.93
Movement LOS	C	B	B	C	B	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.80			20.95			27.50			29.61		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.01											
Intersection LOS	C											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.696	2.798	2.744	2.866
Crosswalk LOS	B	C	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	486	629	514	486
d_b, Bicycle Delay [s]	20.06	16.46	19.31	20.06
I_b,int, Bicycle LOS Score for Intersection	1.997	2.319	1.810	2.239
Bicycle LOS	A	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.327

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	1	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	0	39	12	0	22	18	477	36	52	744	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	10	3	0	6	5	119	9	13	186	5
Total Analysis Volume [veh/h]	69	0	39	12	0	22	18	477	36	52	744	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	12	28	0	11	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	2	13	13	4	15	15
g / C, Green / Cycle	0.52	0.52	0.03	0.21	0.21	0.07	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.07	0.02	0.01	0.14	0.14	0.03	0.20	0.20
s, saturation flow rate [veh/h]	1506	1550	1810	1900	1854	1810	1900	1884
c, Capacity [veh/h]	878	884	57	406	396	125	477	473
d1, Uniform Delay [s]	7.44	7.14	28.48	21.55	21.56	26.82	21.13	21.13
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.08	3.06	1.68	1.74	2.18	3.19	3.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.04	0.31	0.64	0.64	0.41	0.80	0.80
d, Delay for Lane Group [s/veh]	7.73	7.22	31.54	23.22	23.31	29.00	24.32	24.35
Lane Group LOS	A	A	C	C	C	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.69	0.21	0.28	3.06	3.01	0.72	4.71	4.67
50th-Percentile Queue Length [ft/ln]	17.18	5.16	6.95	76.49	75.21	17.93	117.68	116.83
95th-Percentile Queue Length [veh/ln]	1.24	0.37	0.50	5.51	5.42	1.29	8.27	8.22
95th-Percentile Queue Length [ft/ln]	30.93	9.28	12.51	137.67	135.38	32.28	206.64	205.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.73	7.73	7.73	7.22	7.22	7.22	31.54	23.26	23.31	29.00	24.33	24.35
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	7.73			7.22			23.55			24.63		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.62											
Intersection LOS	C											
Intersection V/C	0.327											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.772	1.721	2.775	2.775
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	767
d_b, Bicycle Delay [s]	15.41	15.41	10.80	11.41
I_b,int, Bicycle LOS Score for Intersection	1.738	1.616	1.998	2.231
Bicycle LOS	A	A	A	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Amherst Residential

Vistro File: C:\...\PME.vistro

Report File: C:\...\PMEP.pdf

Scenario 2 Existing Plus Project PM Peak Hour

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	WB Left	0.714	30.7	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.523	19.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	0	1	1	2	2	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	303	616	57	276	406	160	235	865	176	125	524	284
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	154	14	69	102	40	59	216	44	31	131	71
Total Analysis Volume [veh/h]	303	616	57	276	406	160	235	865	176	125	524	284
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	16	21	0	16	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	19	19	13	22	22	12	20	20	7	15	15
g / C, Green / Cycle	0.14	0.26	0.26	0.17	0.29	0.29	0.15	0.27	0.27	0.09	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.18	0.15	0.11	0.10	0.13	0.19	0.19	0.07	0.14	0.18
s, saturation flow rate [veh/h]	2663	1900	1844	1810	3618	1615	1810	3618	1740	1810	3618	1615
c, Capacity [veh/h]	377	486	472	314	1041	465	279	968	466	163	738	329
d1, Uniform Delay [s]	31.26	25.39	25.39	30.31	21.49	21.18	30.93	25.03	25.04	33.43	27.87	28.92
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.01	8.24	8.47	7.85	1.10	2.02	6.86	1.05	2.18	7.28	1.28	6.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.70	0.70	0.88	0.39	0.34	0.84	0.73	0.73	0.77	0.71	0.86
d, Delay for Lane Group [s/veh]	35.27	33.62	33.86	38.16	22.59	23.20	37.80	26.08	27.22	40.71	29.15	35.60
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.70	6.19	6.04	5.21	2.79	2.31	4.34	5.24	5.19	2.40	4.12	5.10
50th-Percentile Queue Length [ft/ln]	67.58	154.81	151.03	130.34	69.85	57.68	108.48	130.91	129.80	60.06	102.99	127.43
95th-Percentile Queue Length [veh/ln]	4.87	10.27	10.07	8.96	5.03	4.15	7.76	8.99	8.93	4.32	7.42	8.80
95th-Percentile Queue Length [ft/ln]	121.65	256.84	251.80	223.96	125.74	103.83	193.88	224.73	223.22	108.10	185.39	220.00

Movement, Approach, & Intersection Results

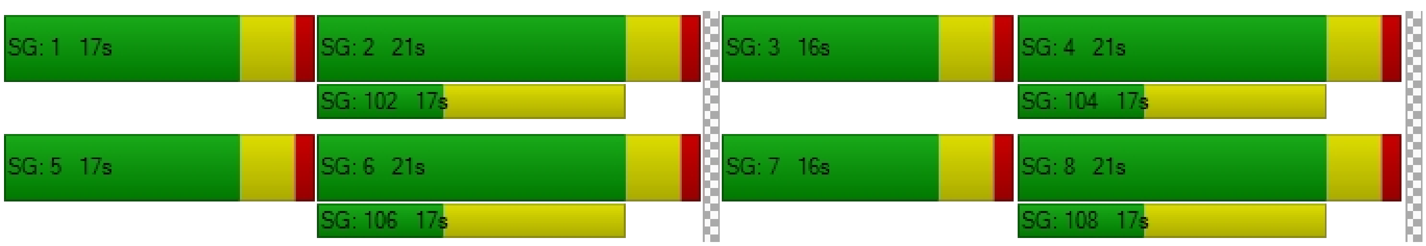
d_M, Delay for Movement [s/veh]	35.27	33.73	33.86	38.16	22.59	23.20	37.80	26.30	27.22	40.71	29.15	35.60
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	34.21			27.81			28.54			32.66		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	30.72											
Intersection LOS	C											
Intersection V/C	0.714											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.807	2.871	2.994	3.029
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	453	453	453	453
d_b, Bicycle Delay [s]	22.43	22.43	22.43	22.43
I_b,int, Bicycle LOS Score for Intersection	2.365	2.254	2.261	2.329
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.523

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	1	47	10	3	23	44	1139	75	74	925	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	285	19	19	231	5
Total Analysis Volume [veh/h]	86	1	47	10	3	23	44	1139	75	74	925	20
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	17	28	0	11	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	4	22	22	5	23	23
g / C, Green / Cycle	0.35	0.35	0.06	0.37	0.37	0.08	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.09	0.02	0.02	0.32	0.32	0.04	0.25	0.25
s, saturation flow rate [veh/h]	1509	1596	1810	1900	1859	1810	1900	1886
c, Capacity [veh/h]	626	634	113	697	682	152	739	733
d1, Uniform Delay [s]	13.78	13.00	27.10	17.81	17.82	26.30	14.98	14.98
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	0.17	2.19	3.81	3.95	2.38	0.94	0.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.06	0.39	0.88	0.88	0.49	0.64	0.64
d, Delay for Lane Group [s/veh]	14.56	13.17	29.29	21.62	21.77	28.68	15.92	15.92
Lane Group LOS	B	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.33	0.33	0.61	7.07	6.96	1.01	4.38	4.35
50th-Percentile Queue Length [ft/ln]	33.14	8.29	15.35	176.64	173.88	25.14	109.47	108.70
95th-Percentile Queue Length [veh/ln]	2.39	0.60	1.11	11.42	11.28	1.81	7.81	7.77
95th-Percentile Queue Length [ft/ln]	59.65	14.93	27.63	285.62	282.01	45.26	195.27	194.19

Movement, Approach, & Intersection Results

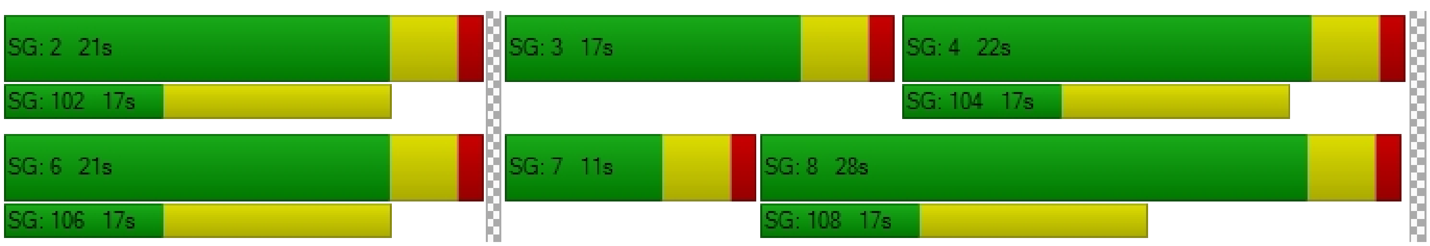
d_M, Delay for Movement [s/veh]	14.56	14.56	14.56	13.17	13.17	13.17	29.29	21.69	21.77	28.68	15.92	15.92
Movement LOS	B	B	B	B	B	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	14.56			13.17			21.96			16.85		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	19.30											
Intersection LOS	B											
Intersection V/C	0.523											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.809	1.733	3.070	2.984
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	600
d_b, Bicycle Delay [s]	15.41	15.41	10.80	14.70
I_b,int, Bicycle LOS Score for Intersection	1.781	1.619	2.597	2.400
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



OPENING YEAR (2022) WITHOUT PROJECT

Amherst Residential

Vistro File: C:\...\AME.vistro

Scenario 4 Opening Year (2022) Without Project AM Peak Hour

Report File: C:\...\AMOYWO.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Left	1.941	688.6	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.630	-	B
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	NB Thru	0.083	7.4	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Thru	0.434	-	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.015	9.6	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.114	25.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	688.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.941

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	1028	23	79	1509	5	14	0	14	65	0	70
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	257	6	20	377	1	4	0	4	16	0	18
Total Analysis Volume [veh/h]	5	1028	23	79	1509	5	14	0	14	65	0	70
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.12	0.02	0.00	0.70	0.00	0.04	1.94	0.00	0.14
d_M, Delay for Movement [s/veh]	13.14	0.00	0.00	11.09	0.00	0.00	313.42	332.67	143.67	688.56	777.57	588.26
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.40	0.00	0.00	2.68	2.68	2.68	12.74	12.74	12.74
95th-Percentile Queue Length [ft/ln]	0.85	0.00	0.00	9.97	0.00	0.00	67.02	67.02	67.02	318.41	318.41	318.41
d_A, Approach Delay [s/veh]	0.06			0.55			228.55			636.55		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	33.17											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	374	30	261	510	176	124	268	76	85	500	261
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	94	8	65	128	44	31	67	19	21	125	65
Total Analysis Volume [veh/h]	140	374	30	261	510	176	124	268	76	85	500	261
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.13	0.13	0.16	0.16	0.11	0.08	0.07	0.07	0.05	0.16	0.16
Intersection LOS	B											
Intersection V/C	0.630											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.083

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	42	9	6	16	0	2	30	23	15	42	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	11	2	2	4	0	1	8	6	4	11	3
Total Analysis Volume [veh/h]	21	42	9	6	16	0	2	30	23	15	42	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	864	839	915	880
Degree of Utilization, x	0.08	0.03	0.06	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.27	0.08	0.19	0.26
95th-Percentile Queue Length [ft]	6.80	2.02	4.79	6.46
Approach Delay [s/veh]	7.55	7.41	7.18	7.44
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.41			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.434

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	0	40	12	0	23	19	490	37	54	765	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	10	3	0	6	5	123	9	14	191	5
Total Analysis Volume [veh/h]	71	0	40	12	0	23	19	490	37	54	765	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.07	0.01	0.00	0.02	0.01	0.16	0.16	0.03	0.25	0.25
Intersection LOS	A											
Intersection V/C	0.434											

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	57	13	18	14	12	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	13	19	14	12	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	3	5	4	3	9
Total Analysis Volume [veh/h]	59	13	19	14	12	35
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.01	0.03
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	0.00	9.64	8.60
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft/ln]	2.88	2.88	0.00	0.00	3.78	3.78
d_A, Approach Delay [s/veh]	6.02		0.00		8.86	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.59					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.114

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	22	27	13	526	783	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	28	13	542	806	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	7	3	136	202	6
Total Analysis Volume [veh/h]	23	28	13	542	806	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.05	0.02	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	25.00	13.25	9.51	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.57	0.57	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	14.17	14.17	1.22	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.55		0.22		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.75					
Intersection LOS	D					

Amherst Residential

Vistro File: C:\...\PME.vistro

Scenario 4 Opening Year (2022) Without Project PM Peak Hour

Report File: C:\...\PMOYWO.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.037	469.8	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.826	-	D
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	SB Thru	0.073	7.3	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.630	-	B
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.028	9.5	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.339	67.0	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	469.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	1247	57	72	918	21	19	1	21	43	1	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	312	14	18	230	5	5	0	5	11	0	7
Total Analysis Volume [veh/h]	32	1247	57	72	918	21	19	1	21	43	1	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.13	0.01	0.00	0.44	0.04	0.04	1.33	0.04	0.07
d_M, Delay for Movement [s/veh]	10.10	0.00	0.00	12.73	0.00	0.00	129.02	181.97	52.30	448.15	469.84	345.81
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.14	0.00	0.00	0.46	0.00	0.00	2.20	2.20	2.20	6.72	6.72	6.72
95th-Percentile Queue Length [ft/ln]	3.39	0.00	0.00	11.51	0.00	0.00	54.89	54.89	54.89	168.08	168.08	168.08
d_A, Approach Delay [s/veh]	0.24			0.91			91.02			408.65		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	13.98											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.826

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	632	57	284	417	164	240	889	181	128	539	293
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	158	14	71	104	41	60	222	45	32	135	73
Total Analysis Volume [veh/h]	312	632	57	284	417	164	240	889	181	128	539	293
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.22	0.22	0.18	0.13	0.10	0.15	0.22	0.22	0.08	0.17	0.18
Intersection LOS	D											
Intersection V/C	0.826											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.073

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	27	18	15	24	3	1	29	22	12	25	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	7	5	4	6	1	0	7	6	3	6	2
Total Analysis Volume [veh/h]	20	27	18	15	24	3	1	29	22	12	25	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	890	858	917	875
Degree of Utilization, x	0.07	0.05	0.06	0.05

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.24	0.15	0.18	0.17
95th-Percentile Queue Length [ft]	5.89	3.86	4.50	4.16
Approach Delay [s/veh]	7.36	7.41	7.16	7.34
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.32			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	1	48	10	3	24	45	1171	77	76	952	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	293	19	19	238	5
Total Analysis Volume [veh/h]	89	1	48	10	3	24	45	1171	77	76	952	21
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.09	0.09	0.01	0.02	0.02	0.03	0.39	0.39	0.05	0.30	0.30
Intersection LOS	B											
Intersection V/C	0.630											

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	34	36	14	23	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	35	37	14	24	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	9	9	4	6	11
Total Analysis Volume [veh/h]	26	35	37	14	24	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	0.00	9.51	8.78
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	1.26	1.26	0.00	0.00	5.78	5.78
d_A, Approach Delay [s/veh]	3.13		0.00		9.03	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.50					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	67.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.339

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	54	48	1183	958	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	56	49	1218	987	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	14	12	305	247	11
Total Analysis Volume [veh/h]	26	56	49	1218	987	44
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.11	0.07	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	67.00	27.16	10.69	0.00	0.00	0.00
Movement LOS	F	D	B	A	A	A
95th-Percentile Queue Length [veh/ln]	2.09	2.09	0.23	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	52.32	52.32	5.79	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	39.79		0.41		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	1.59					
Intersection LOS	F					

OPENING YEAR (2022) WITHOUT PROJECT - CALTRANS

Amherst Residential

Vistro File: C:\...\AME.vistro

Scenario 4 Opening Year (2022) Without Project AM Peak Hour

Report File: C:\...\AMOYWO.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.544	25.2	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.336	22.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	374	30	261	510	176	124	268	76	85	500	261
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	94	8	65	128	44	31	67	19	21	125	65
Total Analysis Volume [veh/h]	140	374	30	261	510	176	124	268	76	85	500	261
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	16	26	0	12	22	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	12	27	27	6	15	15	6	14	14
g / C, Green / Cycle	0.09	0.31	0.31	0.17	0.39	0.39	0.09	0.21	0.21	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.11	0.14	0.14	0.11	0.07	0.06	0.07	0.05	0.14	0.16
s, saturation flow rate [veh/h]	2663	1900	1851	1810	3618	1615	1810	3618	1700	1810	3618	1615
c, Capacity [veh/h]	251	592	577	306	1399	625	167	756	355	149	719	321
d1, Uniform Delay [s]	30.39	18.63	18.64	28.30	15.37	14.82	31.05	23.46	23.54	31.03	26.15	26.88
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.93	1.59	1.64	6.62	0.74	1.13	6.37	0.23	0.52	3.44	1.22	4.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.34	0.35	0.85	0.36	0.28	0.74	0.30	0.32	0.57	0.70	0.81
d, Delay for Lane Group [s/veh]	32.32	20.22	20.29	34.92	16.10	15.94	37.42	23.69	24.06	34.47	27.37	31.86
Lane Group LOS	C	C	C	C	B	B	D	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.12	2.56	2.52	4.48	2.69	1.89	2.18	1.48	1.49	1.42	3.61	4.19
50th-Percentile Queue Length [ft/ln]	28.11	64.03	62.91	112.07	67.37	47.34	54.39	36.97	37.33	35.48	90.32	104.74
95th-Percentile Queue Length [veh/ln]	2.02	4.61	4.53	7.96	4.85	3.41	3.92	2.66	2.69	2.55	6.50	7.54
95th-Percentile Queue Length [ft/ln]	50.60	115.25	113.24	198.88	121.27	85.21	97.90	66.55	67.19	63.86	162.57	188.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.32	20.25	20.29	34.92	16.10	15.94	37.42	23.74	24.06	34.47	27.37	31.86
Movement LOS	C	C	C	C	B	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.36			21.26			27.42			29.47		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.17											
Intersection LOS	C											
Intersection V/C	0.544											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.702	2.809	2.752	2.874
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	486	629	514	486
d_b, Bicycle Delay [s]	20.06	16.46	19.31	20.06
I_b,int, Bicycle LOS Score for Intersection	2.008	2.341	1.817	2.258
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.336

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	0	40	12	0	23	19	490	37	54	765	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	10	3	0	6	5	123	9	14	191	5
Total Analysis Volume [veh/h]	71	0	40	12	0	23	19	490	37	54	765	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	12	28	0	11	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	2	13	13	4	15	15
g / C, Green / Cycle	0.51	0.51	0.03	0.22	0.22	0.07	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.07	0.02	0.01	0.14	0.14	0.03	0.21	0.21
s, saturation flow rate [veh/h]	1506	1552	1810	1900	1854	1810	1900	1884
c, Capacity [veh/h]	867	872	60	417	407	128	488	484
d1, Uniform Delay [s]	7.69	7.37	28.41	21.31	21.33	26.76	20.94	20.94
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.09	2.97	1.63	1.69	2.18	3.19	3.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.04	0.32	0.64	0.64	0.42	0.81	0.81
d, Delay for Lane Group [s/veh]	7.99	7.45	31.38	22.95	23.02	28.94	24.13	24.16
Lane Group LOS	A	A	C	C	C	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.72	0.22	0.29	3.12	3.07	0.74	4.82	4.79
50th-Percentile Queue Length [ft/ln]	18.09	5.43	7.28	78.01	76.67	18.58	120.58	119.68
95th-Percentile Queue Length [veh/ln]	1.30	0.39	0.52	5.62	5.52	1.34	8.43	8.38
95th-Percentile Queue Length [ft/ln]	32.57	9.78	13.10	140.42	138.01	33.44	210.63	209.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.99	7.99	7.99	7.45	7.45	7.45	31.38	22.98	23.02	28.94	24.14	24.16
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	7.99			7.45			23.28			24.45		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.45											
Intersection LOS	C											
Intersection V/C	0.336											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.774	1.722	2.789	2.784
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	767
d_b, Bicycle Delay [s]	15.41	15.41	10.80	11.41
I_b,int, Bicycle LOS Score for Intersection	1.743	1.617	2.010	2.251
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Amherst Residential

Vistro File: C:\...\PME.vistro

Scenario 4 Opening Year (2022) Without Project PM Peak Hour

Report File: C:\...\PMOYWO.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	WB Left	0.733	31.3	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.538	19.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	31.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	632	57	284	417	164	240	889	181	128	539	293
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	158	14	71	104	41	60	222	45	32	135	73
Total Analysis Volume [veh/h]	312	632	57	284	417	164	240	889	181	128	539	293
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	16	21	0	16	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	19	19	13	21	21	12	21	21	7	16	16
g / C, Green / Cycle	0.14	0.25	0.25	0.17	0.28	0.28	0.16	0.27	0.27	0.09	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.12	0.18	0.18	0.16	0.12	0.10	0.13	0.20	0.20	0.07	0.15	0.18
s, saturation flow rate [veh/h]	2663	1900	1845	1810	3618	1615	1810	3618	1740	1810	3618	1615
c, Capacity [veh/h]	384	473	459	314	1006	449	282	989	476	165	756	337
d1, Uniform Delay [s]	31.16	25.97	25.97	30.43	22.13	21.79	30.85	24.76	24.77	33.37	27.61	28.71
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.19	9.98	10.25	9.62	1.26	2.29	7.12	1.05	2.18	7.53	1.27	6.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.74	0.74	0.90	0.41	0.37	0.85	0.73	0.73	0.77	0.71	0.87
d, Delay for Lane Group [s/veh]	35.34	35.95	36.22	40.06	23.39	24.08	37.97	25.82	26.95	40.89	28.88	35.51
Lane Group LOS	D	D	D	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.79	6.59	6.44	5.52	2.94	2.42	4.44	5.36	5.31	2.47	4.22	5.26
50th-Percentile Queue Length [ft/ln]	69.69	164.80	160.93	138.00	73.43	60.60	111.07	134.09	132.85	61.63	105.55	131.51
95th-Percentile Queue Length [veh/ln]	5.02	10.80	10.60	9.37	5.29	4.36	7.90	9.16	9.09	4.44	7.59	9.02
95th-Percentile Queue Length [ft/ln]	125.45	270.06	264.96	234.33	132.17	109.08	197.49	229.04	227.36	110.93	189.80	225.54

Movement, Approach, & Intersection Results

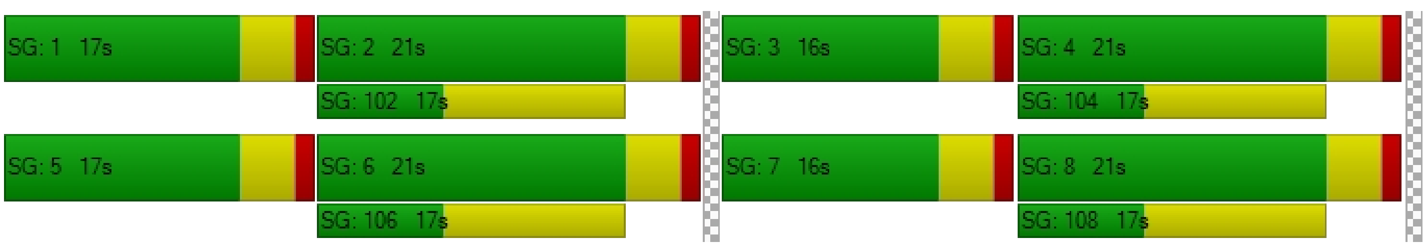
d_M, Delay for Movement [s/veh]	35.34	36.07	36.22	40.06	23.39	24.08	37.97	26.03	26.95	40.89	28.88	35.51
Movement LOS	D	D	D	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	35.85			28.99			28.34			32.50		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.26											
Intersection LOS	C											
Intersection V/C	0.733											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.817	2.883	3.010	3.041
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	453	453	453	453
d_b, Bicycle Delay [s]	22.43	22.43	22.43	22.43
I_b,int, Bicycle LOS Score for Intersection	2.385	2.273	2.280	2.352
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	1	48	10	3	24	45	1171	77	76	952	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	293	19	19	238	5
Total Analysis Volume [veh/h]	89	1	48	10	3	24	45	1171	77	76	952	21
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	17	28	0	11	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	4	23	23	5	24	24
g / C, Green / Cycle	0.34	0.34	0.06	0.38	0.38	0.08	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.09	0.02	0.02	0.33	0.33	0.04	0.26	0.26
s, saturation flow rate [veh/h]	1507	1598	1810	1900	1859	1810	1900	1886
c, Capacity [veh/h]	613	621	114	710	695	154	752	747
d1, Uniform Delay [s]	14.17	13.34	27.06	17.64	17.66	26.26	14.77	14.77
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	0.18	2.18	3.98	4.14	2.41	0.95	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.06	0.39	0.89	0.89	0.49	0.65	0.65
d, Delay for Lane Group [s/veh]	15.03	13.52	29.25	21.62	21.80	28.68	15.72	15.73
Lane Group LOS	B	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.40	0.35	0.63	7.26	7.15	1.03	4.47	4.44
50th-Percentile Queue Length [ft/ln]	34.91	8.68	15.67	181.42	178.82	25.81	111.68	110.88
95th-Percentile Queue Length [veh/ln]	2.51	0.63	1.13	11.67	11.54	1.86	7.93	7.89
95th-Percentile Queue Length [ft/ln]	62.85	15.63	28.21	291.87	288.48	46.46	198.34	197.22

Movement, Approach, & Intersection Results

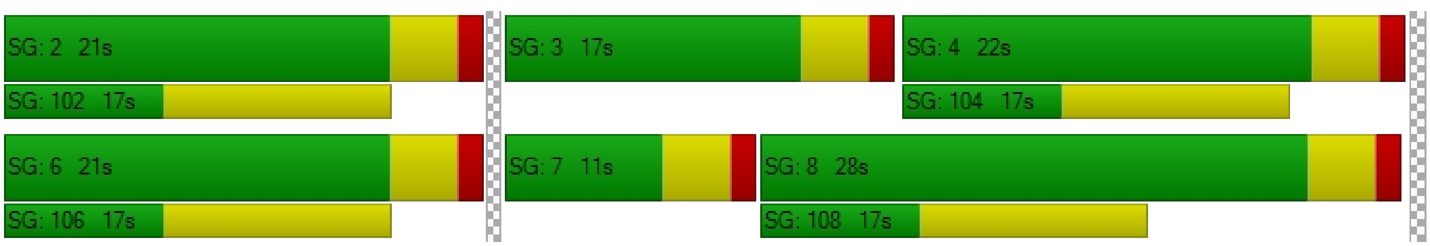
d_M, Delay for Movement [s/veh]	15.03	15.03	15.03	13.52	13.52	13.52	29.25	21.70	21.80	28.68	15.72	15.73
Movement LOS	B	B	B	B	B	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	15.03			13.52			21.97			16.66		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	19.25											
Intersection LOS	B											
Intersection V/C	0.538											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.812	1.735	3.094	3.000
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	600
d_b, Bicycle Delay [s]	15.41	15.41	10.80	14.70
I_b,int, Bicycle LOS Score for Intersection	1.787	1.621	2.626	2.425
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



OPENING YEAR (2022) WITH PROJECT

Amherst Residential

Vistro File: C:\...\AME.vistro

Scenario 6 Opening Year (2022) With Project AM Peak Hour

Report File: C:\...\AMOYW.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Left	2.041	741.7	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.631	-	B
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	NB Thru	0.099	7.5	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Thru	0.434	-	A
5	Project Access (NS) at Williams Ave (EW)	Two-way stop	HCM 6th Edition	NB Left	0.019	9.2	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.015	9.7	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.139	25.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	741.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.041

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	4	0	0	0	0	0	2	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	1028	24	83	1509	5	14	0	14	67	0	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	257	6	21	377	1	4	0	4	17	0	21
Total Analysis Volume [veh/h]	5	1028	24	83	1509	5	14	0	14	67	0	84
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.12	0.02	0.00	0.74	0.00	0.04	2.04	0.00	0.17
d_M, Delay for Movement [s/veh]	13.14	0.00	0.00	11.14	0.00	0.00	337.77	351.46	158.36	741.67	832.41	639.20
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.42	0.00	0.00	2.78	2.78	2.78	14.29	14.29	14.29
95th-Percentile Queue Length [ft/ln]	0.85	0.00	0.00	10.55	0.00	0.00	69.40	69.40	69.40	357.23	357.23	357.23
d_A, Approach Delay [s/veh]	0.06			0.58			248.07			684.67		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	39.29											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	0	1	1	1	1	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	375	31	261	511	177	125	269	76	86	501	261
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	94	8	65	128	44	31	67	19	22	125	65
Total Analysis Volume [veh/h]	140	375	31	261	511	177	125	269	76	86	501	261
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.13	0.13	0.16	0.16	0.11	0.08	0.07	0.07	0.05	0.16	0.16
Intersection LOS	B											
Intersection V/C	0.631											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.099

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	╋			╋			╋			╋		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	0	0	0	0	5	0	1	16	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	42	10	6	16	0	2	35	23	16	58	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	11	3	2	4	0	1	9	6	4	15	3
Total Analysis Volume [veh/h]	21	42	10	6	16	0	2	35	23	16	58	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	855	829	906	875
Degree of Utilization, x	0.09	0.03	0.07	0.10

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.28	0.08	0.21	0.33
95th-Percentile Queue Length [ft]	6.98	2.04	5.31	8.26
Approach Delay [s/veh]	7.60	7.46	7.26	7.57
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.49			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.434

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	1	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	0	40	12	0	23	19	491	37	54	766	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	10	3	0	6	5	123	9	14	192	5
Total Analysis Volume [veh/h]	71	0	40	12	0	23	19	491	37	54	766	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.07	0.01	0.00	0.02	0.01	0.17	0.17	0.03	0.25	0.25
Intersection LOS	A											
Intersection V/C	0.434											

Intersection Level Of Service Report
Intersection 5: Project Access (NS) at Williams Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	45	0	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	6	0	6	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	6	46	6	2	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	2	12	2	1	17
Total Analysis Volume [veh/h]	17	6	46	6	2	68
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.20	8.61	0.00	0.00	7.30	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.94	1.94	0.00	0.00	0.10	0.10
d_A, Approach Delay [s/veh]	9.05		0.00		0.21	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.54					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	57	13	18	14	12	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	13	19	14	12	41
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	3	5	4	3	10
Total Analysis Volume [veh/h]	61	13	19	14	12	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.01	0.04
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	0.00	9.69	8.62
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.17	0.17
95th-Percentile Queue Length [ft/ln]	2.99	2.99	0.00	0.00	4.26	4.26
d_A, Approach Delay [s/veh]	6.06		0.00		8.86	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.74					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.139

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	22	27	13	526	783	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	1	1	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	29	14	542	806	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	7	4	136	202	6
Total Analysis Volume [veh/h]	28	29	14	542	806	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.05	0.02	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	25.66	13.82	9.52	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.68	0.68	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	17.03	17.03	1.32	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	19.63		0.24		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.87					
Intersection LOS	D					

Amherst Residential

Vistro File: C:\...\PME.vistro
Scenario 6 Opening Year (2022) With Project PM Peak Hour

Report File: C:\...\PMOYW.pdf
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.040	565.6	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.828	-	D
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	SB Thru	0.079	7.4	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.631	-	B
5	Project Access (NS) at Williams Ave (EW)	Two-way stop	HCM 6th Edition	NB Left	0.013	9.2	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.029	9.6	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.383	71.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	565.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	16	0	0	0	0	0	2	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	1247	60	88	918	21	19	1	21	45	1	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	312	15	22	230	5	5	0	5	11	0	9
Total Analysis Volume [veh/h]	32	1247	60	88	918	21	19	1	21	45	1	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.16	0.01	0.00	0.49	0.04	0.04	1.51	0.04	0.09
d_M, Delay for Movement [s/veh]	10.10	0.00	0.00	13.03	0.00	0.00	149.35	205.48	63.41	542.23	565.58	429.82
Movement LOS	B	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.14	0.00	0.00	0.58	0.00	0.00	2.43	2.43	2.43	7.90	7.90	7.90
95th-Percentile Queue Length [ft/ln]	3.39	0.00	0.00	14.57	0.00	0.00	60.76	60.76	60.76	197.42	197.42	197.42
d_A, Approach Delay [s/veh]	0.24			1.12			106.70			493.16		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	18.60											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.828

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	0	1	1	2	2	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	634	59	284	418	165	242	891	181	129	540	293
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	159	15	71	105	41	61	223	45	32	135	73
Total Analysis Volume [veh/h]	312	634	59	284	418	165	242	891	181	129	540	293
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.22	0.22	0.18	0.13	0.10	0.15	0.22	0.22	0.08	0.17	0.18
Intersection LOS	D											
Intersection V/C	0.828											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	0	0	0	0	19	0	1	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	27	20	15	24	3	1	48	22	13	35	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	7	5	4	6	1	0	12	6	3	9	2
Total Analysis Volume [veh/h]	20	27	20	15	24	3	1	48	22	13	35	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	879	844	897	866
Degree of Utilization, x	0.08	0.05	0.08	0.07

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.25	0.16	0.26	0.21
95th-Percentile Queue Length [ft]	6.18	3.92	6.43	5.27
Approach Delay [s/veh]	7.43	7.49	7.36	7.45
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.42			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	1	48	10	3	24	45	1173	77	76	953	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	293	19	19	238	5
Total Analysis Volume [veh/h]	89	1	48	10	3	24	45	1173	77	76	953	21
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.09	0.09	0.01	0.02	0.02	0.03	0.39	0.39	0.05	0.30	0.30
Intersection LOS	B											
Intersection V/C	0.631											

Intersection Level Of Service Report
Intersection 5: Project Access (NS) at Williams Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	65	0	0	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	4	0	21	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	4	67	21	7	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	17	5	2	10
Total Analysis Volume [veh/h]	11	4	67	21	7	38
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.23	8.71	0.00	0.00	7.38	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.28	1.28	0.00	0.00	0.35	0.35
d_A, Approach Delay [s/veh]	9.09		0.00		1.15	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.27					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	34	36	14	23	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	35	37	14	24	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	9	9	4	6	12
Total Analysis Volume [veh/h]	33	35	37	14	24	49
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.03	0.05
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	0.00	9.63	8.80
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.25	0.25
95th-Percentile Queue Length [ft/ln]	1.61	1.61	0.00	0.00	6.18	6.18
d_A, Approach Delay [s/veh]	3.56		0.00		9.07	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.71					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	71.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.383

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	54	48	1183	958	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	2	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	57	51	1218	987	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	14	13	305	247	12
Total Analysis Volume [veh/h]	29	57	51	1218	987	49
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.38	0.11	0.08	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	71.31	30.87	10.73	0.00	0.00	0.00
Movement LOS	F	D	B	A	A	A
95th-Percentile Queue Length [veh/ln]	2.41	2.41	0.24	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	60.29	60.29	6.07	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	44.51		0.43		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	1.83					
Intersection LOS	F					

OPENING YEAR (2022) WITH PROJECT - CALTRANS

Amherst Residential

Vistro File: C:\...\AME.vistro
Scenario 6 Opening Year (2022) With Project AM Peak Hour

Report File: C:\...\AMOYW.pdf
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.546	25.2	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.336	22.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.546

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	0	1	1	1	1	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	375	31	261	511	177	125	269	76	86	501	261
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	94	8	65	128	44	31	67	19	22	125	65
Total Analysis Volume [veh/h]	140	375	31	261	511	177	125	269	76	86	501	261
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	16	26	0	12	22	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	22	22	12	27	27	6	15	15	6	14	14
g / C, Green / Cycle	0.09	0.31	0.31	0.17	0.39	0.39	0.09	0.21	0.21	0.08	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.11	0.14	0.14	0.11	0.07	0.06	0.07	0.05	0.14	0.16
s, saturation flow rate [veh/h]	2663	1900	1850	1810	3618	1615	1810	3618	1700	1810	3618	1615
c, Capacity [veh/h]	251	592	576	306	1398	624	167	755	355	149	719	321
d1, Uniform Delay [s]	30.39	18.65	18.67	28.30	15.38	14.84	31.06	23.48	23.56	31.03	26.16	26.88
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.93	1.61	1.66	6.62	0.74	1.14	6.49	0.23	0.52	3.48	1.23	4.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.35	0.35	0.85	0.37	0.28	0.75	0.31	0.32	0.58	0.70	0.81
d, Delay for Lane Group [s/veh]	32.32	20.26	20.33	34.92	16.12	15.97	37.55	23.70	24.08	34.51	27.39	31.86
Lane Group LOS	C	C	C	C	B	B	D	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.12	2.58	2.53	4.48	2.70	1.91	2.20	1.48	1.50	1.44	3.62	4.19
50th-Percentile Queue Length [ft/ln]	28.11	64.45	63.29	112.07	67.56	47.67	54.94	37.10	37.46	35.92	90.54	104.74
95th-Percentile Queue Length [veh/ln]	2.02	4.64	4.56	7.96	4.86	3.43	3.96	2.67	2.70	2.59	6.52	7.54
95th-Percentile Queue Length [ft/ln]	50.60	116.00	113.91	198.88	121.61	85.80	98.89	66.78	67.42	64.65	162.97	188.53

Movement, Approach, & Intersection Results

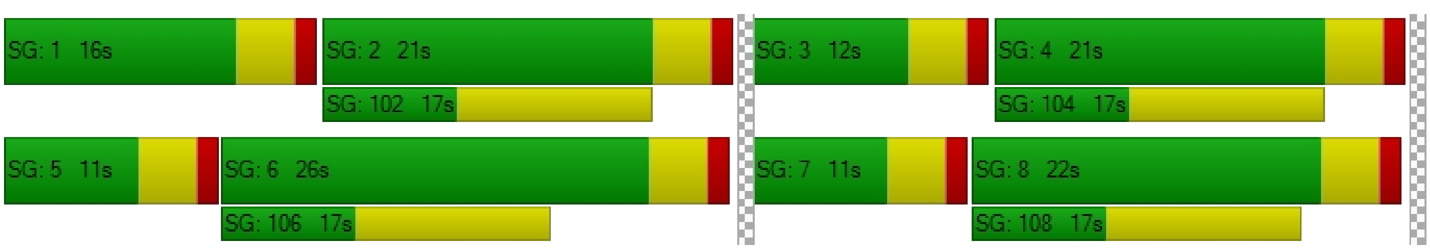
d_M, Delay for Movement [s/veh]	32.32	20.29	20.33	34.92	16.12	15.97	37.55	23.76	24.08	34.51	27.39	31.86
Movement LOS	C	C	C	C	B	B	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.38			21.26			27.48			29.49		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.19											
Intersection LOS	C											
Intersection V/C	0.546											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.703	2.810	2.753	2.874
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	486	629	514	486
d_b, Bicycle Delay [s]	20.06	16.46	19.31	20.06
I_b,int, Bicycle LOS Score for Intersection	2.010	2.343	1.818	2.259
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.336

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	1	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	0	40	12	0	23	19	491	37	54	766	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	10	3	0	6	5	123	9	14	192	5
Total Analysis Volume [veh/h]	71	0	40	12	0	23	19	491	37	54	766	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	12	28	0	11	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	2	13	13	4	15	15
g / C, Green / Cycle	0.51	0.51	0.03	0.22	0.22	0.07	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.07	0.02	0.01	0.14	0.14	0.03	0.21	0.21
s, saturation flow rate [veh/h]	1506	1552	1810	1900	1854	1810	1900	1884
c, Capacity [veh/h]	866	872	60	417	407	128	489	485
d1, Uniform Delay [s]	7.70	7.37	28.41	21.31	21.32	26.76	20.93	20.93
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.09	2.97	1.63	1.69	2.18	3.19	3.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.04	0.32	0.64	0.64	0.42	0.81	0.81
d, Delay for Lane Group [s/veh]	8.00	7.46	31.38	22.94	23.02	28.94	24.12	24.15
Lane Group LOS	A	A	C	C	C	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.72	0.22	0.29	3.13	3.07	0.74	4.83	4.79
50th-Percentile Queue Length [ft/ln]	18.11	5.44	7.28	78.14	76.80	18.58	120.71	119.81
95th-Percentile Queue Length [veh/ln]	1.30	0.39	0.52	5.63	5.53	1.34	8.43	8.38
95th-Percentile Queue Length [ft/ln]	32.59	9.79	13.10	140.66	138.25	33.44	210.81	209.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.00	8.00	8.00	7.46	7.46	7.46	31.38	22.97	23.02	28.94	24.13	24.15
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	8.00			7.46			23.27			24.44		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	22.44											
Intersection LOS	C											
Intersection V/C	0.336											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.774	1.722	2.790	2.784
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	767
d_b, Bicycle Delay [s]	15.41	15.41	10.80	11.41
I_b,int, Bicycle LOS Score for Intersection	1.743	1.617	2.011	2.252
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Amherst Residential

Vistro File: C:\...\PME.vistro

Scenario 6 Opening Year (2022) With Project PM Peak Hour

Report File: C:\...\PMOYW.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	WB Left	0.736	31.4	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.538	19.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	31.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	0	1	1	2	2	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	634	59	284	418	165	242	891	181	129	540	293
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	159	15	71	105	41	61	223	45	32	135	73
Total Analysis Volume [veh/h]	312	634	59	284	418	165	242	891	181	129	540	293
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	21	0	17	21	0	16	21	0	16	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	19	19	13	21	21	12	21	21	7	16	16
g / C, Green / Cycle	0.14	0.25	0.25	0.17	0.28	0.28	0.16	0.27	0.27	0.09	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.12	0.19	0.19	0.16	0.12	0.10	0.13	0.20	0.20	0.07	0.15	0.18
s, saturation flow rate [veh/h]	2663	1900	1844	1810	3618	1615	1810	3618	1740	1810	3618	1615
c, Capacity [veh/h]	384	471	457	314	1003	448	284	990	476	166	755	337
d1, Uniform Delay [s]	31.16	26.07	26.07	30.43	22.18	21.85	30.81	24.76	24.77	33.34	27.63	28.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.19	10.34	10.63	9.62	1.28	2.33	7.15	1.06	2.18	7.50	1.28	6.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.75	0.75	0.90	0.42	0.37	0.85	0.73	0.73	0.78	0.71	0.87
d, Delay for Lane Group [s/veh]	35.34	36.41	36.70	40.06	23.46	24.18	37.96	25.82	26.95	40.84	28.91	35.57
Lane Group LOS	D	D	D	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.79	6.68	6.52	5.52	2.95	2.45	4.48	5.37	5.33	2.48	4.23	5.27
50th-Percentile Queue Length [ft/ln]	69.69	167.07	163.06	138.00	73.76	61.14	112.00	134.35	133.13	62.06	105.84	131.63
95th-Percentile Queue Length [veh/ln]	5.02	10.92	10.71	9.37	5.31	4.40	7.95	9.18	9.11	4.47	7.61	9.03
95th-Percentile Queue Length [ft/ln]	125.45	273.06	267.76	234.33	132.77	110.06	198.78	229.40	227.75	111.70	190.20	225.71

Movement, Approach, & Intersection Results

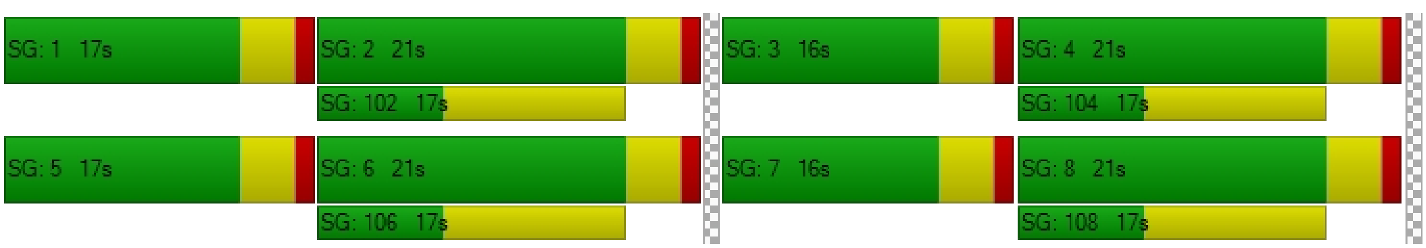
d_M, Delay for Movement [s/veh]	35.34	36.54	36.70	40.06	23.46	24.18	37.96	26.03	26.95	40.84	28.91	35.57
Movement LOS	D	D	D	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]		36.18			29.03			28.36			32.54	
Approach LOS		D			C			C			C	
d_I, Intersection Delay [s/veh]	31.36											
Intersection LOS	C											
Intersection V/C	0.736											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.818	2.884	3.011	3.043
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	453	453	453	453
d_b, Bicycle Delay [s]	22.43	22.43	22.43	22.43
I_b,int, Bicycle LOS Score for Intersection	2.389	2.275	2.282	2.353
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	1	48	10	3	24	45	1173	77	76	953	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	0	12	3	1	6	11	293	19	19	238	5
Total Analysis Volume [veh/h]	89	1	48	10	3	24	45	1173	77	76	953	21
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	17	28	0	11	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	4	23	23	5	24	24
g / C, Green / Cycle	0.34	0.34	0.06	0.38	0.38	0.08	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.09	0.02	0.02	0.33	0.33	0.04	0.26	0.26
s, saturation flow rate [veh/h]	1507	1598	1810	1900	1859	1810	1900	1886
c, Capacity [veh/h]	612	621	114	711	696	154	753	747
d1, Uniform Delay [s]	14.19	13.36	27.06	17.63	17.65	26.26	14.75	14.75
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	0.18	2.18	3.99	4.15	2.41	0.95	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.06	0.39	0.89	0.89	0.49	0.65	0.65
d, Delay for Lane Group [s/veh]	15.05	13.54	29.25	21.62	21.80	28.68	15.70	15.71
Lane Group LOS	B	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.40	0.35	0.63	7.27	7.16	1.03	4.47	4.44
50th-Percentile Queue Length [ft/ln]	34.95	8.69	15.67	181.70	179.11	25.81	111.71	110.90
95th-Percentile Queue Length [veh/ln]	2.52	0.63	1.13	11.69	11.55	1.86	7.93	7.89
95th-Percentile Queue Length [ft/ln]	62.91	15.64	28.21	292.23	288.86	46.46	198.37	197.26

Movement, Approach, & Intersection Results

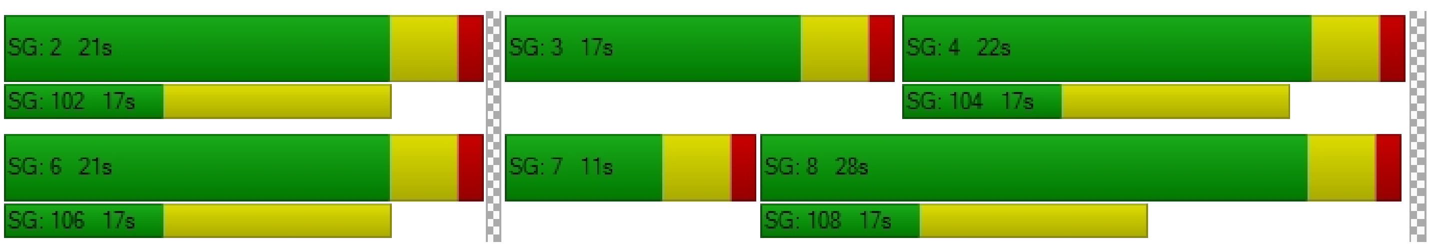
d_M, Delay for Movement [s/veh]	15.05	15.05	15.05	13.54	13.54	13.54	29.25	21.71	21.80	28.68	15.71	15.71
Movement LOS	B	B	B	B	B	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	15.05			13.54			21.97			16.64		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	19.25											
Intersection LOS	B											
Intersection V/C	0.538											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.812	1.735	3.095	3.001
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	600
d_b, Bicycle Delay [s]	15.41	15.41	10.80	14.70
I_b,int, Bicycle LOS Score for Intersection	1.787	1.621	2.628	2.426
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



YEAR 2040 WITHOUT PROJECT

Amherst Residential

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Report File: C:\...\AM40WO.pdf

Scenario 8 Year 2040 Without Project AM Peak Hour

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Left	7.074	3,310.8	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.773	-	C
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	NB Thru	0.109	7.6	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.525	-	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.021	10.0	B
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.229	40.4	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	3,310.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	7.074

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	1307	29	101	1919	7	18	0	18	83	0	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	327	7	25	480	2	5	0	5	21	0	22
Total Analysis Volume [veh/h]	7	1307	29	101	1919	7	18	0	18	83	0	89
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.19	0.02	0.00	3.10	0.00	0.07	7.07	0.00	0.22
d_M, Delay for Movement [s/veh]	16.86	0.00	0.00	13.53	0.00	0.00	1942.07	2005.69	1336.47	3310.80	3675.61	3012.87
Movement LOS	C	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.71	0.00	0.00	5.52	5.52	5.52	21.55	21.55	21.55
95th-Percentile Queue Length [ft/ln]	1.73	0.00	0.00	17.72	0.00	0.00	138.08	138.08	138.08	538.64	538.64	538.64
d_A, Approach Delay [s/veh]	0.09			0.67			1639.27			3156.64		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	168.65											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	476	38	331	648	224	157	341	97	109	635	331
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	119	10	83	162	56	39	85	24	27	159	83
Total Analysis Volume [veh/h]	178	476	38	331	648	224	157	341	97	109	635	331
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.16	0.16	0.21	0.20	0.14	0.10	0.09	0.09	0.07	0.20	0.21
Intersection LOS	C											
Intersection V/C	0.773											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.109

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✛			✛			✛			✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	54	12	8	21	0	3	38	29	20	54	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	14	3	2	5	0	1	10	7	5	14	4
Total Analysis Volume [veh/h]	26	54	12	8	21	0	3	38	29	20	54	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	847	819	895	863
Degree of Utilization, x	0.11	0.04	0.08	0.11

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.36	0.11	0.25	0.35
95th-Percentile Queue Length [ft]	9.11	2.75	6.35	8.81
Approach Delay [s/veh]	7.77	7.56	7.36	7.66
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.61			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.525

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	0	51	16	0	29	24	624	47	68	973	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	13	4	0	7	6	156	12	17	243	6
Total Analysis Volume [veh/h]	90	0	51	16	0	29	24	624	47	68	973	24
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.09	0.01	0.00	0.03	0.02	0.21	0.21	0.04	0.31	0.31
Intersection LOS	A											
Intersection V/C	0.525											

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	57	13	18	14	12	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	17	24	18	16	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	4	6	5	4	11
Total Analysis Volume [veh/h]	75	17	24	18	16	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	7.39	0.00	0.00	0.00	10.03	8.70
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.21	0.21
95th-Percentile Queue Length [ft/ln]	3.73	3.73	0.00	0.00	5.14	5.14
d_A, Approach Delay [s/veh]	6.03		0.00		9.05	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.67					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	40.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.229

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	22	27	13	526	783	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	35	17	689	1026	29
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	9	4	172	257	7
Total Analysis Volume [veh/h]	29	35	17	689	1026	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.07	0.03	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	40.43	19.20	10.53	0.00	0.00	0.00
Movement LOS	E	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.20	1.20	0.08	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	30.05	30.05	1.96	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	28.82		0.25		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	E					

Amherst Residential

Vistro File: C:\...\PME.vistro
Report File: C:\...\PM40WO.pdf

Scenario 8 Year 2040 Without Project PM Peak Hour
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.115	2,648.4	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	1.023	-	F
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	SB Thru	0.093	7.5	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.775	-	C
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.037	9.8	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.933	270.4	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	2,648.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.115

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	1586	72	92	1167	26	24	1	26	55	1	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	397	18	23	292	7	6	0	7	14	0	9
Total Analysis Volume [veh/h]	41	1586	72	92	1167	26	24	1	26	55	1	35
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.02	0.00	0.23	0.01	0.00	1.59	0.12	0.06	5.21	0.11	0.11
d_M, Delay for Movement [s/veh]	11.53	0.00	0.00	16.90	0.00	0.00	775.00	964.14	544.44	2576.29	2648.38	2246.72
Movement LOS	B	A	A	C	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.22	0.00	0.00	0.89	0.00	0.00	5.97	5.97	5.97	12.10	12.10	12.10
95th-Percentile Queue Length [ft/ln]	5.56	0.00	0.00	22.33	0.00	0.00	149.25	149.25	149.25	302.53	302.53	302.53
d_A, Approach Delay [s/veh]	0.28			1.21			661.17			2450.32		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	82.77											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.023

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	397	804	72	362	531	208	305	1131	231	162	685	372
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	201	18	91	133	52	76	283	58	41	171	93
Total Analysis Volume [veh/h]	397	804	72	362	531	208	305	1131	231	162	685	372
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.27	0.27	0.23	0.17	0.13	0.19	0.28	0.28	0.10	0.21	0.23
Intersection LOS	F											
Intersection V/C	1.023											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.093

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	34	22	20	30	4	1	37	28	16	31	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	9	6	5	8	1	0	9	7	4	8	3
Total Analysis Volume [veh/h]	25	34	22	20	30	4	1	37	28	16	31	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	874	842	899	859
Degree of Utilization, x	0.09	0.06	0.07	0.07

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.31	0.21	0.24	0.22
95th-Percentile Queue Length [ft]	7.64	5.13	5.93	5.52
Approach Delay [s/veh]	7.54	7.57	7.32	7.50
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.48			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	1	62	13	4	30	58	1489	98	97	1210	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	16	3	1	8	15	372	25	24	303	7
Total Analysis Volume [veh/h]	113	1	62	13	4	30	58	1489	98	97	1210	26
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.11	0.01	0.03	0.03	0.04	0.50	0.50	0.06	0.39	0.39
Intersection LOS	C											
Intersection V/C	0.775											

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	34	36	14	23	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	45	47	18	30	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	11	12	5	8	15
Total Analysis Volume [veh/h]	33	45	47	18	30	58
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.04	0.06
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	0.00	9.84	8.94
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.00	0.00	0.31	0.31
95th-Percentile Queue Length [ft/ln]	1.63	1.63	0.00	0.00	7.77	7.77
d_A, Approach Delay [s/veh]	3.12		0.00		9.25	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.58					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	270.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.933

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	54	48	1183	958	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	71	63	1550	1255	56
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	18	16	388	314	14
Total Analysis Volume [veh/h]	33	71	63	1550	1255	56
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.93	0.17	0.12	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	270.41	177.31	12.63	0.00	0.00	0.00
Movement LOS	F	F	B	A	A	A
95th-Percentile Queue Length [veh/ln]	6.89	6.89	0.40	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	172.35	172.35	9.96	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	206.85		0.49		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	7.37					
Intersection LOS	F					

YEAR 2040 WITHOUT PROJECT – CALTRANS

Amherst Residential

Vistro File: C:\...\AME.vistro
Scenario 8 Year 2040 Without Project AM Peak Hour

Report File: C:\...\AM40WO.pdf
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	SB Left	0.691	28.4	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.427	20.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	476	38	331	648	224	157	341	97	109	635	331
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	119	10	83	162	56	39	85	24	27	159	83
Total Analysis Volume [veh/h]	178	476	38	331	648	224	157	341	97	109	635	331
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	17	27	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	13	24	24	7	17	17	6	16	16
g / C, Green / Cycle	0.10	0.25	0.25	0.19	0.34	0.34	0.10	0.24	0.24	0.09	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.14	0.14	0.18	0.18	0.14	0.09	0.08	0.08	0.06	0.18	0.20
s, saturation flow rate [veh/h]	2663	1900	1851	1810	3618	1615	1810	3618	1698	1810	3618	1615
c, Capacity [veh/h]	259	484	472	336	1243	555	181	877	412	160	835	373
d1, Uniform Delay [s]	30.61	22.55	22.55	28.44	18.41	17.54	31.07	21.90	21.97	30.98	25.15	26.09
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.23	4.22	4.35	19.41	1.57	2.18	11.58	0.22	0.51	4.98	1.46	7.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.54	0.54	0.98	0.52	0.40	0.87	0.34	0.35	0.68	0.76	0.89
d, Delay for Lane Group [s/veh]	33.84	26.77	26.91	47.84	19.97	19.72	42.65	22.12	22.48	35.97	26.61	33.32
Lane Group LOS	C	C	C	D	B	B	D	C	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.47	3.94	3.86	6.88	4.00	2.79	2.98	1.81	1.81	1.87	4.55	5.49
50th-Percentile Queue Length [ft/ln]	36.84	98.43	96.52	171.97	100.05	69.87	74.53	45.37	45.17	46.65	113.82	137.20
95th-Percentile Queue Length [veh/ln]	2.65	7.09	6.95	11.18	7.20	5.03	5.37	3.27	3.25	3.36	8.05	9.33
95th-Percentile Queue Length [ft/ln]	66.30	177.17	173.74	279.50	180.09	125.76	134.15	81.67	81.30	83.97	201.31	233.26

Movement, Approach, & Intersection Results

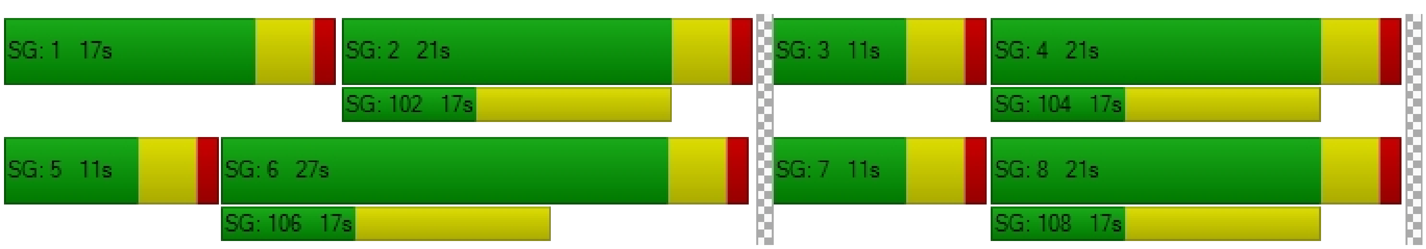
d_M, Delay for Movement [s/veh]	33.84	26.83	26.91	47.84	19.97	19.72	42.65	22.17	22.48	35.97	26.61	33.32
Movement LOS	C	C	C	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	28.64			27.59			27.63			29.63		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.42											
Intersection LOS	C											
Intersection V/C	0.691											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.774	2.909	2.837	2.953
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	486	657	486	486
d_b, Bicycle Delay [s]	20.06	15.78	20.06	20.06
I_b,int, Bicycle LOS Score for Intersection	2.131	2.552	1.887	2.446
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.427

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	0	51	16	0	29	24	624	47	68	973	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	13	4	0	7	6	156	12	17	243	6
Total Analysis Volume [veh/h]	90	0	51	16	0	29	24	624	47	68	973	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	12	28	0	11	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	2	16	16	5	19	19
g / C, Green / Cycle	0.45	0.45	0.04	0.27	0.27	0.08	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.09	0.03	0.01	0.18	0.18	0.04	0.26	0.26
s, saturation flow rate [veh/h]	1505	1560	1810	1900	1854	1810	1900	1884
c, Capacity [veh/h]	766	773	75	523	510	149	600	595
d1, Uniform Delay [s]	10.12	9.58	28.08	19.29	19.30	26.39	19.17	19.17
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	0.14	2.42	1.37	1.41	2.19	3.14	3.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.06	0.32	0.65	0.65	0.46	0.83	0.83
d, Delay for Lane Group [s/veh]	10.65	9.72	30.49	20.66	20.71	28.58	22.31	22.34
Lane Group LOS	B	A	C	C	C	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.12	0.34	0.35	3.74	3.66	0.92	5.88	5.84
50th-Percentile Queue Length [ft/ln]	28.07	8.41	8.85	93.38	91.46	23.09	147.01	145.89
95th-Percentile Queue Length [veh/ln]	2.02	0.61	0.64	6.72	6.58	1.66	9.86	9.80
95th-Percentile Queue Length [ft/ln]	50.53	15.13	15.92	168.08	164.62	41.57	246.43	244.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.65	10.65	10.65	9.72	9.72	9.72	30.49	20.68	20.71	28.58	22.32	22.34
Movement LOS	B	B	B	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	10.65			9.72			21.02			22.72		
Approach LOS	B			A			C			C		
d_I, Intersection Delay [s/veh]	20.94											
Intersection LOS	C											
Intersection V/C	0.427											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.796	1.730	2.928	2.881
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	767
d_b, Bicycle Delay [s]	15.41	15.41	10.80	11.41
I_b,int, Bicycle LOS Score for Intersection	1.792	1.634	2.133	2.438
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Amherst Residential

Vistro File: C:\...\PME.vistro
Scenario 8 Year 2040 Without Project PM Peak Hour

Report File: C:\...\PM40WO.pdf
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	SB Left	0.917	47.8	D
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	WB Left	0.678	19.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	47.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.917

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	0	1	1	2	2	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	397	806	74	362	532	209	307	1133	231	163	686	372
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	202	19	91	133	52	77	283	58	41	172	93
Total Analysis Volume [veh/h]	397	806	74	362	532	209	307	1133	231	163	686	372
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	26	0	21	21	0	19	30	0	13	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	22	22	17	23	23	15	26	26	9	20	20
g / C, Green / Cycle	0.17	0.25	0.25	0.19	0.26	0.26	0.17	0.29	0.29	0.10	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.15	0.23	0.24	0.20	0.15	0.13	0.17	0.25	0.25	0.09	0.19	0.23
s, saturation flow rate [veh/h]	2663	1900	1845	1810	3618	1615	1810	3618	1740	1810	3618	1615
c, Capacity [veh/h]	466	469	455	342	942	421	302	1037	499	181	796	355
d1, Uniform Delay [s]	36.01	33.39	33.42	36.52	28.87	28.29	37.52	30.73	30.75	40.07	33.80	35.12
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.48	31.12	32.22	40.04	2.45	4.15	28.59	2.80	5.62	14.59	2.91	35.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.95	0.95	1.06	0.56	0.50	1.02	0.89	0.89	0.90	0.86	1.05
d, Delay for Lane Group [s/veh]	40.49	64.51	65.64	76.56	31.32	32.44	66.11	33.53	36.36	54.66	36.70	70.62
Lane Group LOS	D	E	E	F	C	C	F	C	D	D	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.32	13.10	12.89	10.94	5.05	4.13	8.65	9.20	9.26	4.13	7.06	10.76
50th-Percentile Queue Length [ft/ln]	108.12	327.41	322.15	273.62	126.33	103.21	216.23	229.96	231.47	103.17	176.42	268.93
95th-Percentile Queue Length [veh/ln]	7.74	19.03	18.77	16.84	8.74	7.43	13.58	14.17	14.25	7.43	11.41	16.53
95th-Percentile Queue Length [ft/ln]	193.38	475.79	469.33	421.12	218.50	185.78	339.61	354.31	356.22	185.70	285.34	413.24

Movement, Approach, & Intersection Results

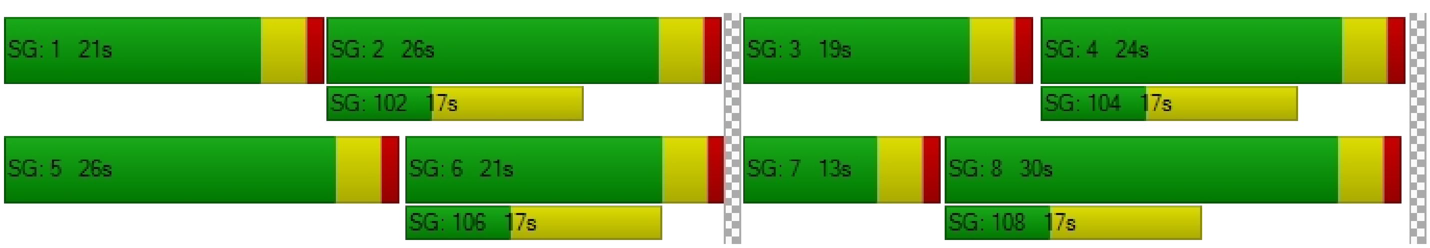
d_M, Delay for Movement [s/veh]	40.49	65.01	65.64	76.56	31.32	32.44	66.11	34.06	36.36	54.66	36.70	70.62
Movement LOS	D	E	E	F	C	C	F	C	D	D	D	F
d_A, Approach Delay [s/veh]	57.42			46.38			40.27			49.43		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	47.82											
Intersection LOS	D											
Intersection V/C	0.917											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.930	3.013	3.175	3.176
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	378	578	444
d_b, Bicycle Delay [s]	25.69	29.61	22.76	27.22
I_b,int, Bicycle LOS Score for Intersection	2.613	2.470	2.479	2.567
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	1	62	13	4	30	58	1491	98	97	1211	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	16	3	1	8	15	373	25	24	303	7
Total Analysis Volume [veh/h]	113	1	62	13	4	30	58	1491	98	97	1211	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	21	0	23	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	5	29	29	6	31	31
g / C, Green / Cycle	0.27	0.27	0.07	0.45	0.45	0.09	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.12	0.03	0.03	0.42	0.42	0.05	0.33	0.33
s, saturation flow rate [veh/h]	1521	1636	1810	1900	1859	1810	1900	1886
c, Capacity [veh/h]	510	521	127	856	838	162	893	886
d1, Uniform Delay [s]	19.02	17.56	29.04	16.93	17.06	28.49	13.58	13.58
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.85	0.34	2.53	5.37	6.17	3.53	0.99	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.09	0.46	0.93	0.94	0.60	0.70	0.70
d, Delay for Lane Group [s/veh]	20.87	17.90	31.57	22.30	23.23	32.03	14.56	14.58
Lane Group LOS	C	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.32	0.55	0.88	10.02	10.14	1.48	5.77	5.74
50th-Percentile Queue Length [ft/ln]	57.88	13.86	22.06	250.43	253.55	36.98	144.18	143.38
95th-Percentile Queue Length [veh/ln]	4.17	1.00	1.59	15.21	15.36	2.66	9.71	9.66
95th-Percentile Queue Length [ft/ln]	104.18	24.94	39.70	380.19	384.12	66.57	242.64	241.57

Movement, Approach, & Intersection Results

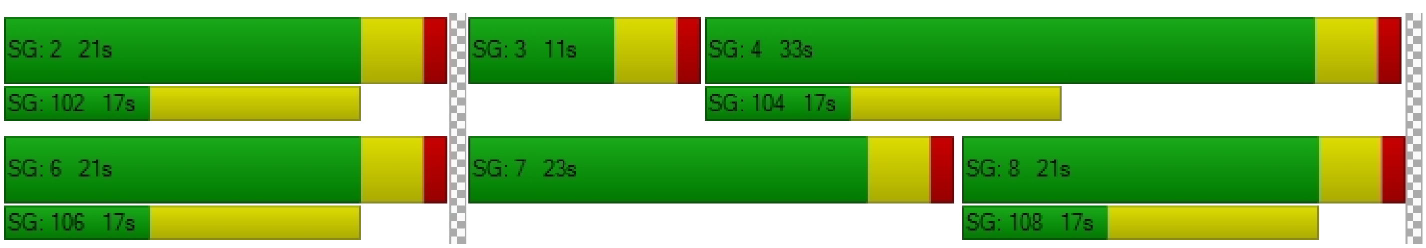
d_M, Delay for Movement [s/veh]	20.87	20.87	20.87	17.90	17.90	17.90	31.57	22.73	23.23	32.03	14.57	14.58
Movement LOS	C	C	C	B	B	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	20.87			17.90			23.07			15.84		
Approach LOS	C			B			C			B		
d_I, Intersection Delay [s/veh]	19.86											
Intersection LOS	B											
Intersection V/C	0.678											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	1.849	1.751	3.320	3.160
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	523	523	523	892
d_b, Bicycle Delay [s]	17.72	17.72	17.72	9.97
I_b,int, Bicycle LOS Score for Intersection	1.850	1.637	2.918	2.660
Bicycle LOS	A	A	C	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



YEAR 2040 WITH PROJECT

Amherst Residential

Vistro File: C:\...\AME.vistro

Scenario 10 Year 2040 With Project AM Peak Hour

Report File: C:\...\AM40W.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Left	7.408	3,476.7	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Right	0.774	-	C
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	NB Thru	0.126	7.7	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	WB Thru	0.525	-	A
5	Project Access (NS) at Williams Ave (EW)	Two-way stop	HCM 6th Edition	NB Left	0.020	9.4	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.021	10.1	B
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	0.270	42.4	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	3,476.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	7.408

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	5	998	22	77	1465	5	14	0	14	63	0	68
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	4	0	0	0	0	0	2	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	1307	30	105	1919	7	18	0	18	85	0	103
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	327	8	26	480	2	5	0	5	21	0	26
Total Analysis Volume [veh/h]	7	1307	30	105	1919	7	18	0	18	85	0	103
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.20	0.02	0.00	3.31	0.00	0.07	7.41	0.00	0.25
d_M, Delay for Movement [s/veh]	16.86	0.00	0.00	13.62	0.00	0.00	2098.73	2135.77	1450.17	3476.72	3850.18	3171.87
Movement LOS	C	A	A	B	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.74	0.00	0.00	5.59	5.59	5.59	23.44	23.44	23.44
95th-Percentile Queue Length [ft/ln]	1.73	0.00	0.00	18.60	0.00	0.00	139.65	139.65	139.65	586.01	586.01	586.01
d_A, Approach Delay [s/veh]	0.09			0.70			1774.45			3309.70		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	191.07											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	0	1	1	1	1	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	477	39	331	649	225	158	342	97	110	636	331
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	119	10	83	162	56	40	86	24	28	159	83
Total Analysis Volume [veh/h]	178	477	39	331	649	225	158	342	97	110	636	331
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.16	0.16	0.21	0.20	0.14	0.10	0.09	0.09	0.07	0.20	0.21
Intersection LOS	C											
Intersection V/C	0.774											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.126

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	41	9	6	16	0	2	29	22	15	41	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	0	0	0	0	5	0	1	16	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	54	13	8	21	0	3	43	29	21	70	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	14	3	2	5	0	1	11	7	5	18	4
Total Analysis Volume [veh/h]	26	54	13	8	21	0	3	43	29	21	70	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	836	807	884	857
Degree of Utilization, x	0.11	0.04	0.08	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.37	0.11	0.28	0.43
95th-Percentile Queue Length [ft]	9.35	2.79	6.93	10.77
Approach Delay [s/veh]	7.84	7.63	7.45	7.81
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.71			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.525

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	1	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	0	51	16	0	29	24	625	47	68	974	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	13	4	0	7	6	156	12	17	244	6
Total Analysis Volume [veh/h]	90	0	51	16	0	29	24	625	47	68	974	24
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.09	0.01	0.00	0.03	0.02	0.21	0.21	0.04	0.31	0.31
Intersection LOS	A											
Intersection V/C	0.525											

Intersection Level Of Service Report
Intersection 5: Project Access (NS) at Williams Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	45	0	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	6	0	6	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	6	59	6	2	86
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	2	15	2	1	22
Total Analysis Volume [veh/h]	17	6	59	6	2	86
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.38	8.68	0.00	0.00	7.33	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.01	2.01	0.00	0.00	0.10	0.10
d_A, Approach Delay [s/veh]	9.20		0.00		0.17	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.28					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	57	13	18	14	12	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	17	24	18	16	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	4	6	5	4	13
Total Analysis Volume [veh/h]	77	17	24	18	16	51
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.02	0.05
d_M, Delay for Movement [s/veh]	7.40	0.00	0.00	0.00	10.08	8.72
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	3.84	3.84	0.00	0.00	5.64	5.64
d_A, Approach Delay [s/veh]	6.06		0.00		9.05	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.79					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	42.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.270

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	22	27	13	526	783	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	1	1	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	36	18	689	1026	30
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	9	5	172	257	8
Total Analysis Volume [veh/h]	34	36	18	689	1026	30
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.07	0.03	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	42.44	21.06	10.55	0.00	0.00	0.00
Movement LOS	E	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.44	1.44	0.08	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	35.89	35.89	2.08	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	31.45		0.27		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	1.30					
Intersection LOS	E					

Amherst Residential

Vistro File: C:\...\PME.vistro
Scenario 10 Year 2040 With Project PM Peak Hour

Report File: C:\...\PM40W.pdf
8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fruit St (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	WB Thru	0.128	3,084.6	F
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Right	1.026	-	F
3	Bradford St (NS) at Amherst St (EW)	All-way stop	HCM 6th Edition	SB Thru	0.096	7.6	A
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	ICU 1	EB Thru	0.775	-	C
5	Project Access (NS) at Williams Ave (EW)	Two-way stop	HCM 6th Edition	NB Left	0.013	9.4	A
6	Williams Ave (NS) at Amherst St (EW)	Two-way stop	HCM 6th Edition	EB Left	0.038	10.0	A
7	Williams Ave (NS) at Foothill Blvd (EW)	Two-way stop	HCM 6th Edition	SB Left	1.034	310.5	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fruit St (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	3,084.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	115.00	100.00	100.00	105.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	31	1211	55	70	891	20	18	1	20	42	1	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	16	0	0	0	0	0	2	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	1586	75	108	1167	26	24	1	26	57	1	43
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	397	19	27	292	7	6	0	7	14	0	11
Total Analysis Volume [veh/h]	41	1586	75	108	1167	26	24	1	26	57	1	43
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.02	0.00	0.27	0.01	0.00	1.82	0.13	0.06	6.02	0.13	0.14
d_M, Delay for Movement [s/veh]	11.53	0.00	0.00	17.60	0.00	0.00	929.30	1133.13	664.32	3005.65	3084.63	2636.64
Movement LOS	B	A	A	C	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	0.22	0.00	0.00	1.10	0.00	0.00	6.26	6.26	6.26	13.44	13.44	13.44
95th-Percentile Queue Length [ft/ln]	5.56	0.00	0.00	27.58	0.00	0.00	156.47	156.47	156.47	335.89	335.89	335.89
d_A, Approach Delay [s/veh]	0.28			1.46			798.21			2849.33		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	104.87											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.026

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	0	1	1	2	2	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	397	806	74	362	532	209	307	1133	231	163	686	372
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	202	19	91	133	52	77	283	58	41	172	93
Total Analysis Volume [veh/h]	397	806	74	362	532	209	307	1133	231	163	686	372
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.28	0.28	0.23	0.17	0.13	0.19	0.28	0.28	0.10	0.21	0.23
Intersection LOS	F											
Intersection V/C	1.026											

Intersection Level Of Service Report
Intersection 3: Bradford St (NS) at Amherst St (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.096

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	┼			┼			┼			┼		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	26	17	15	23	3	1	28	21	12	24	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	0	0	0	0	19	0	1	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	34	24	20	30	4	1	56	28	17	41	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	9	6	5	8	1	0	14	7	4	10	3
Total Analysis Volume [veh/h]	25	34	24	20	30	4	1	56	28	17	41	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	862	828	883	851
Degree of Utilization, x	0.10	0.07	0.10	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.32	0.21	0.32	0.27
95th-Percentile Queue Length [ft]	7.97	5.22	7.97	6.71
Approach Delay [s/veh]	7.62	7.65	7.51	7.61
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.59			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	1	62	13	4	30	58	1491	98	97	1211	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	16	3	1	8	15	373	25	24	303	7
Total Analysis Volume [veh/h]	113	1	62	13	4	30	58	1491	98	97	1211	26
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.11	0.01	0.03	0.03	0.04	0.50	0.50	0.06	0.39	0.39
Intersection LOS	C											
Intersection V/C	0.775											

Intersection Level Of Service Report
Intersection 5: Project Access (NS) at Williams Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	65	0	0	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	4	0	21	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	4	85	21	7	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	21	5	2	12
Total Analysis Volume [veh/h]	11	4	85	21	7	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.39	8.80	0.00	0.00	7.41	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.32	1.32	0.00	0.00	0.35	0.35
d_A, Approach Delay [s/veh]	9.23		0.00		0.94	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.08					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Williams Ave (NS) at Amherst St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	34	36	14	23	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	45	47	18	30	62
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	11	12	5	8	16
Total Analysis Volume [veh/h]	40	45	47	18	30	62
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.04	0.06
d_M, Delay for Movement [s/veh]	7.38	0.00	0.00	0.00	9.97	8.97
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.33	0.33
95th-Percentile Queue Length [ft/ln]	1.99	1.99	0.00	0.00	8.21	8.21
d_A, Approach Delay [s/veh]	3.47		0.00		9.29	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.75					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: Williams Ave (NS) at Foothill Blvd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	310.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.034

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	25	54	48	1183	958	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	1	2	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	72	65	1550	1255	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	18	16	388	314	15
Total Analysis Volume [veh/h]	36	72	65	1550	1255	61
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.03	0.17	0.12	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	310.52	215.91	12.71	0.00	0.00	0.00
Movement LOS	F	F	B	A	A	A
95th-Percentile Queue Length [veh/ln]	7.63	7.63	0.41	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	190.85	190.85	10.36	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	247.44		0.51		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	9.07					
Intersection LOS	F					

YEAR 2040 WITH PROJECT - CALTRANS

Amherst Residential

Vistro File: C:\...\AME.vistro

Scenario 10 Year 2040 With Project AM Peak Hour

Report File: C:\...\AM40W.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	SB Left	0.692	28.5	C
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	EB Left	0.428	20.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.692

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	136	363	29	253	495	171	120	260	74	83	485	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	1	0	1	1	1	1	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	477	39	331	649	225	158	342	97	110	636	331
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	119	10	83	162	56	40	86	24	28	159	83
Total Analysis Volume [veh/h]	178	477	39	331	649	225	158	342	97	110	636	331
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	0	17	27	0	11	21	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	18	18	13	24	24	7	17	17	6	16	16
g / C, Green / Cycle	0.10	0.25	0.25	0.19	0.34	0.34	0.10	0.24	0.24	0.09	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.14	0.14	0.18	0.18	0.14	0.09	0.08	0.08	0.06	0.18	0.20
s, saturation flow rate [veh/h]	2663	1900	1850	1810	3618	1615	1810	3618	1698	1810	3618	1615
c, Capacity [veh/h]	259	484	472	336	1242	555	181	876	411	161	835	373
d1, Uniform Delay [s]	30.61	22.56	22.57	28.44	18.41	17.55	31.09	21.91	21.99	30.99	25.16	26.08
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.23	4.26	4.39	19.41	1.57	2.20	12.00	0.23	0.51	5.07	1.47	7.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.54	0.54	0.98	0.52	0.41	0.87	0.34	0.35	0.68	0.76	0.89
d, Delay for Lane Group [s/veh]	33.84	26.82	26.96	47.84	19.98	19.75	43.09	22.14	22.50	36.05	26.63	33.32
Lane Group LOS	C	C	C	D	B	B	D	C	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.47	3.96	3.88	6.88	4.01	2.81	3.02	1.82	1.81	1.89	4.56	5.49
50th-Percentile Queue Length [ft/ln]	36.84	98.96	97.00	171.97	100.25	70.25	75.47	45.50	45.30	47.15	114.06	137.20
95th-Percentile Queue Length [veh/ln]	2.65	7.13	6.98	11.18	7.22	5.06	5.43	3.28	3.26	3.39	8.07	9.33
95th-Percentile Queue Length [ft/ln]	66.30	178.13	174.60	279.50	180.45	126.45	135.84	81.91	81.53	84.87	201.63	233.25

Movement, Approach, & Intersection Results

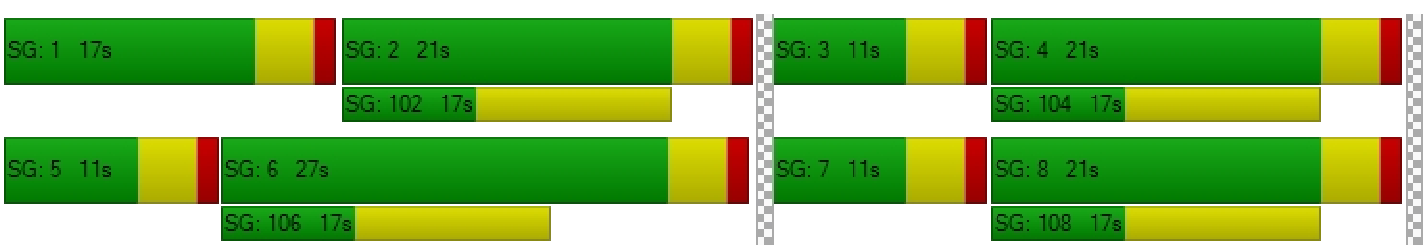
d_M, Delay for Movement [s/veh]	33.84	26.89	26.96	47.84	19.98	19.75	43.09	22.19	22.50	36.05	26.63	33.32
Movement LOS	C	C	C	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	28.67			27.59			27.77			29.65		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.45											
Intersection LOS	C											
Intersection V/C	0.692											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.775	2.909	2.838	2.954
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	486	657	486	486
d_b, Bicycle Delay [s]	20.06	15.78	20.06	20.06
I_b,int, Bicycle LOS Score for Intersection	2.132	2.554	1.888	2.448
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	0	39	12	0	22	18	476	36	52	743	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	1	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	0	51	16	0	29	24	625	47	68	974	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	13	4	0	7	6	156	12	17	244	6
Total Analysis Volume [veh/h]	90	0	51	16	0	29	24	625	47	68	974	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	12	28	0	11	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	2	17	17	5	19	19
g / C, Green / Cycle	0.45	0.45	0.04	0.27	0.27	0.08	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.09	0.03	0.01	0.18	0.18	0.04	0.26	0.26
s, saturation flow rate [veh/h]	1505	1560	1810	1900	1854	1810	1900	1884
c, Capacity [veh/h]	765	773	75	523	510	149	600	595
d1, Uniform Delay [s]	10.13	9.59	28.08	19.29	19.29	26.39	19.16	19.16
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	0.14	2.42	1.37	1.41	2.19	3.14	3.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.06	0.32	0.65	0.65	0.46	0.83	0.83
d, Delay for Lane Group [s/veh]	10.66	9.73	30.49	20.65	20.70	28.58	22.30	22.33
Lane Group LOS	B	A	C	C	C	C	C	C
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.12	0.34	0.35	3.74	3.66	0.92	5.89	5.84
50th-Percentile Queue Length [ft/ln]	28.09	8.41	8.85	93.50	91.58	23.09	147.13	146.01
95th-Percentile Queue Length [veh/ln]	2.02	0.61	0.64	6.73	6.59	1.66	9.86	9.80
95th-Percentile Queue Length [ft/ln]	50.56	15.14	15.92	168.29	164.84	41.57	246.59	245.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.66	10.66	10.66	9.73	9.73	9.73	30.49	20.68	20.70	28.58	22.32	22.33
Movement LOS	B	B	B	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	10.66			9.73			21.02			22.72		
Approach LOS	B			A			C			C		
d_I, Intersection Delay [s/veh]	20.94											
Intersection LOS	C											
Intersection V/C	0.428											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
I_p,int, Pedestrian LOS Score for Intersection	1.796	1.730	2.929	2.882
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	567	800	767
d_b, Bicycle Delay [s]	15.41	15.41	10.80	11.41
I_b,int, Bicycle LOS Score for Intersection	1.792	1.634	2.134	2.439
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Amherst Residential

Vistro File: C:\...\PME.vistro

Scenario 10 Year 2040 With Project PM Peak Hour

Report File: C:\...\PM40W.pdf

8/25/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Fruit St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	SB Left	0.917	47.8	D
4	Falcon St (NS) at Foothill Blvd (EW)	Signalized	HCM 6th Edition	WB Left	0.678	19.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Fruit St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	47.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.917

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	125.00	100.00	100.00	375.00	100.00	100.00	135.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	303	614	55	276	405	159	233	863	176	124	523	284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	2	0	1	1	2	2	0	1	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	397	806	74	362	532	209	307	1133	231	163	686	372
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	202	19	91	133	52	77	283	58	41	172	93
Total Analysis Volume [veh/h]	397	806	74	362	532	209	307	1133	231	163	686	372
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	26	0	21	21	0	19	30	0	13	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	22	22	17	23	23	15	26	26	9	20	20
g / C, Green / Cycle	0.17	0.25	0.25	0.19	0.26	0.26	0.17	0.29	0.29	0.10	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.15	0.23	0.24	0.20	0.15	0.13	0.17	0.25	0.25	0.09	0.19	0.23
s, saturation flow rate [veh/h]	2663	1900	1845	1810	3618	1615	1810	3618	1740	1810	3618	1615
c, Capacity [veh/h]	466	469	455	342	942	421	302	1037	499	181	796	355
d1, Uniform Delay [s]	36.01	33.39	33.42	36.52	28.87	28.29	37.52	30.73	30.75	40.07	33.80	35.12
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.48	31.12	32.22	40.04	2.45	4.15	28.59	2.80	5.62	14.59	2.91	35.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.95	0.95	1.06	0.56	0.50	1.02	0.89	0.89	0.90	0.86	1.05
d, Delay for Lane Group [s/veh]	40.49	64.51	65.64	76.56	31.32	32.44	66.11	33.53	36.36	54.66	36.70	70.62
Lane Group LOS	D	E	E	F	C	C	F	C	D	D	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.32	13.10	12.89	10.94	5.05	4.13	8.65	9.20	9.26	4.13	7.06	10.76
50th-Percentile Queue Length [ft/ln]	108.12	327.41	322.15	273.62	126.33	103.21	216.23	229.96	231.47	103.17	176.42	268.93
95th-Percentile Queue Length [veh/ln]	7.74	19.03	18.77	16.84	8.74	7.43	13.58	14.17	14.25	7.43	11.41	16.53
95th-Percentile Queue Length [ft/ln]	193.38	475.79	469.33	421.12	218.50	185.78	339.61	354.31	356.22	185.70	285.34	413.24

Movement, Approach, & Intersection Results

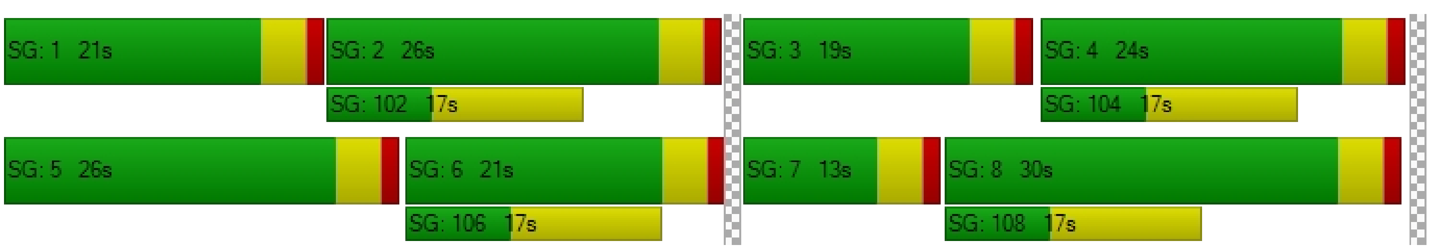
d_M, Delay for Movement [s/veh]	40.49	65.01	65.64	76.56	31.32	32.44	66.11	34.06	36.36	54.66	36.70	70.62
Movement LOS	D	E	E	F	C	C	F	C	D	D	D	F
d_A, Approach Delay [s/veh]		57.42			46.38			40.27			49.43	
Approach LOS		E			D			D			D	
d_I, Intersection Delay [s/veh]	47.82											
Intersection LOS	D											
Intersection V/C	0.917											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.930	3.013	3.175	3.176
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	378	578	444
d_b, Bicycle Delay [s]	25.69	29.61	22.76	27.22
I_b,int, Bicycle LOS Score for Intersection	2.613	2.470	2.479	2.567
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Falcon St (NS) at Foothill Blvd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	86	1	47	10	3	23	44	1137	75	74	924	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	2	0	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	1	62	13	4	30	58	1491	98	97	1211	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	0	16	3	1	8	15	373	25	24	303	7
Total Analysis Volume [veh/h]	113	1	62	13	4	30	58	1491	98	97	1211	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	21	0	23	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	5	29	29	6	31	31
g / C, Green / Cycle	0.27	0.27	0.07	0.45	0.45	0.09	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.12	0.03	0.03	0.42	0.42	0.05	0.33	0.33
s, saturation flow rate [veh/h]	1521	1636	1810	1900	1859	1810	1900	1886
c, Capacity [veh/h]	510	521	127	856	838	162	893	886
d1, Uniform Delay [s]	19.02	17.56	29.04	16.93	17.06	28.49	13.58	13.58
k, delay calibration	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.85	0.34	2.53	5.37	6.17	3.53	0.99	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.09	0.46	0.93	0.94	0.60	0.70	0.70
d, Delay for Lane Group [s/veh]	20.87	17.90	31.57	22.30	23.23	32.03	14.56	14.58
Lane Group LOS	C	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.32	0.55	0.88	10.02	10.14	1.48	5.77	5.74
50th-Percentile Queue Length [ft/ln]	57.88	13.86	22.06	250.43	253.55	36.98	144.18	143.38
95th-Percentile Queue Length [veh/ln]	4.17	1.00	1.59	15.21	15.36	2.66	9.71	9.66
95th-Percentile Queue Length [ft/ln]	104.18	24.94	39.70	380.19	384.12	66.57	242.64	241.57

Movement, Approach, & Intersection Results

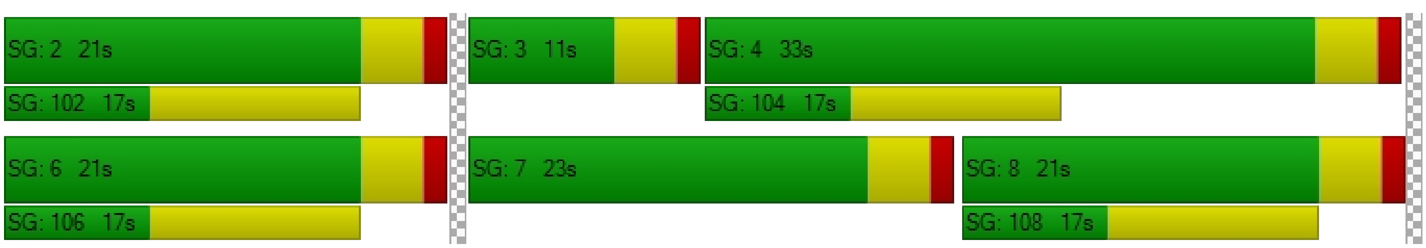
d_M, Delay for Movement [s/veh]	20.87	20.87	20.87	17.90	17.90	17.90	31.57	22.73	23.23	32.03	14.57	14.58
Movement LOS	C	C	C	B	B	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	20.87			17.90			23.07			15.84		
Approach LOS	C			B			C			B		
d_I, Intersection Delay [s/veh]	19.86											
Intersection LOS	B											
Intersection V/C	0.678											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	1.849	1.751	3.320	3.160
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	523	523	523	892
d_b, Bicycle Delay [s]	17.72	17.72	17.72	9.97
I_b,int, Bicycle LOS Score for Intersection	1.850	1.637	2.918	2.660
Bicycle LOS	A	A	C	B

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX E

TRAFFIC SIGNAL WARRANT WORKSHEETS

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Existing - AM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2572**

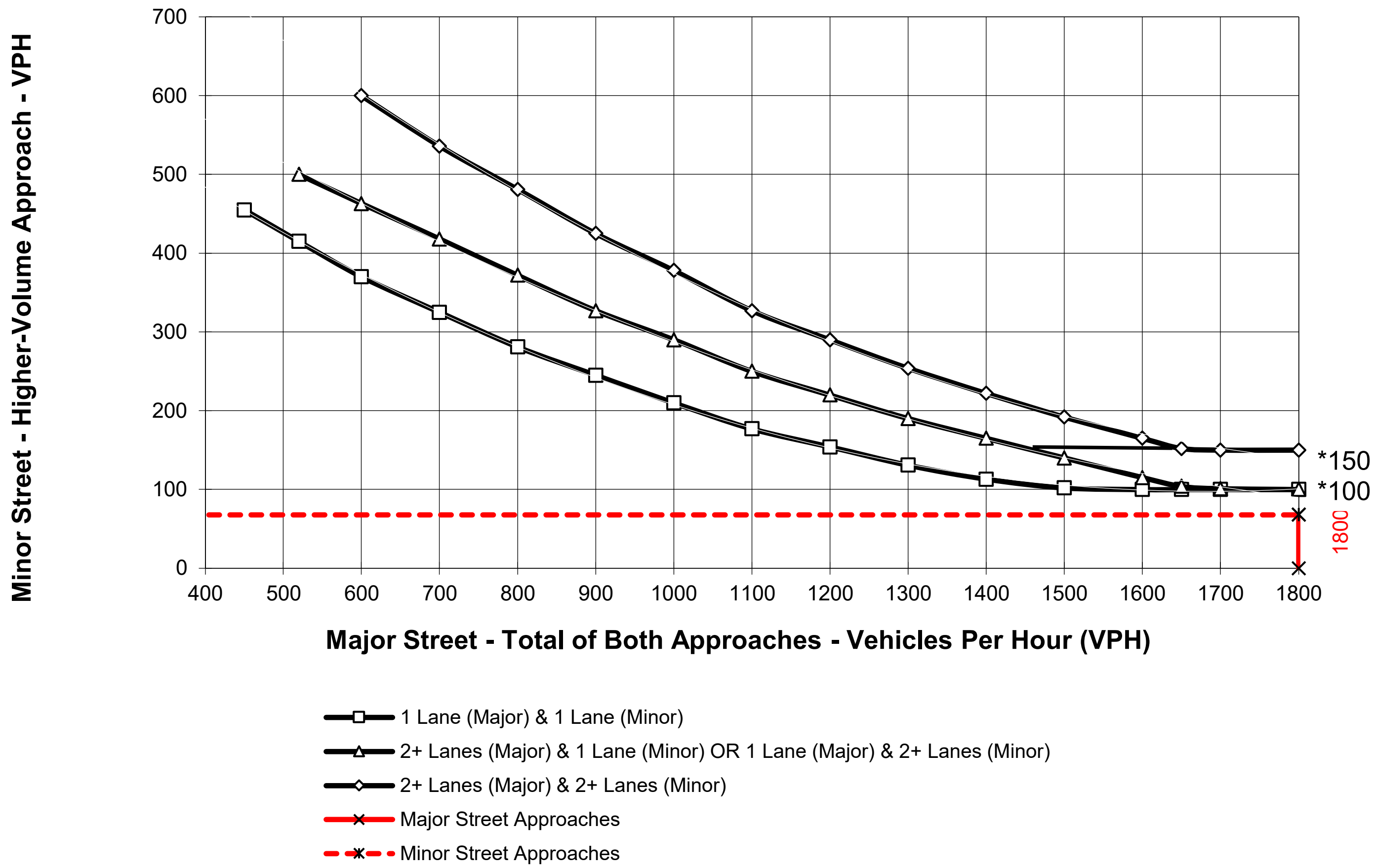
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **68**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Existing - PM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2278**

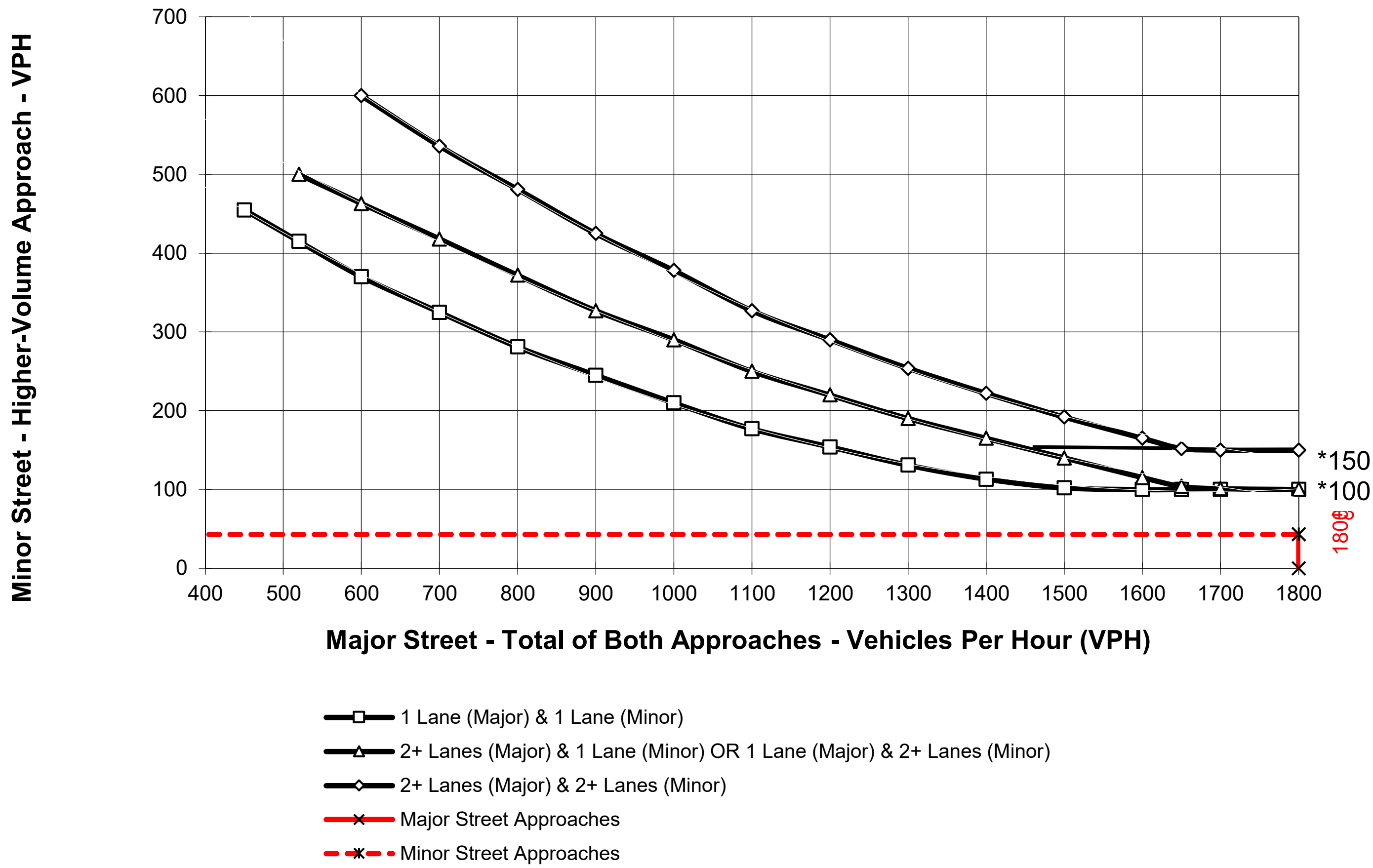
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **43**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Existing Plus Project - AM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2577**

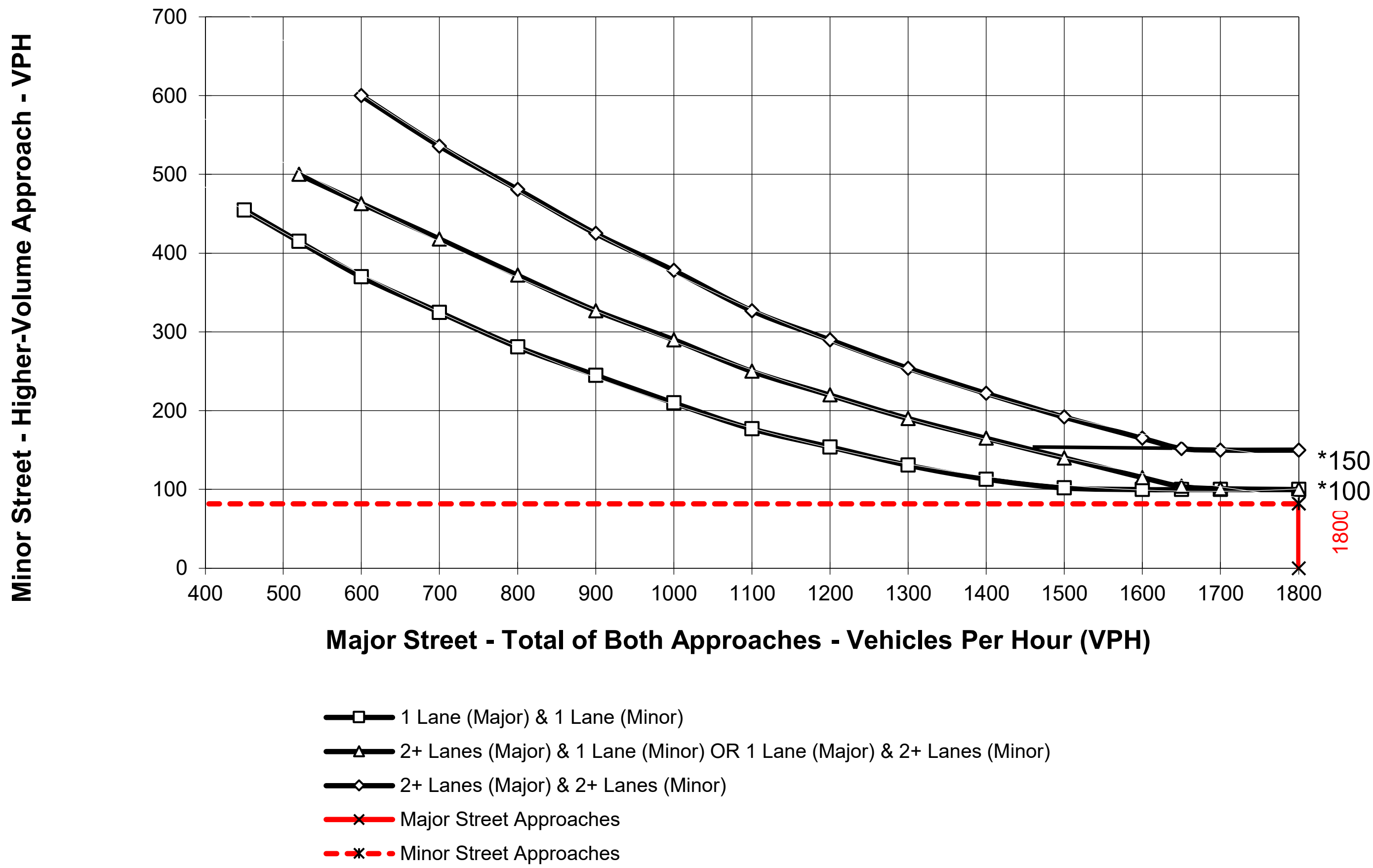
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **82**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Existing Plus Project - PM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2297**

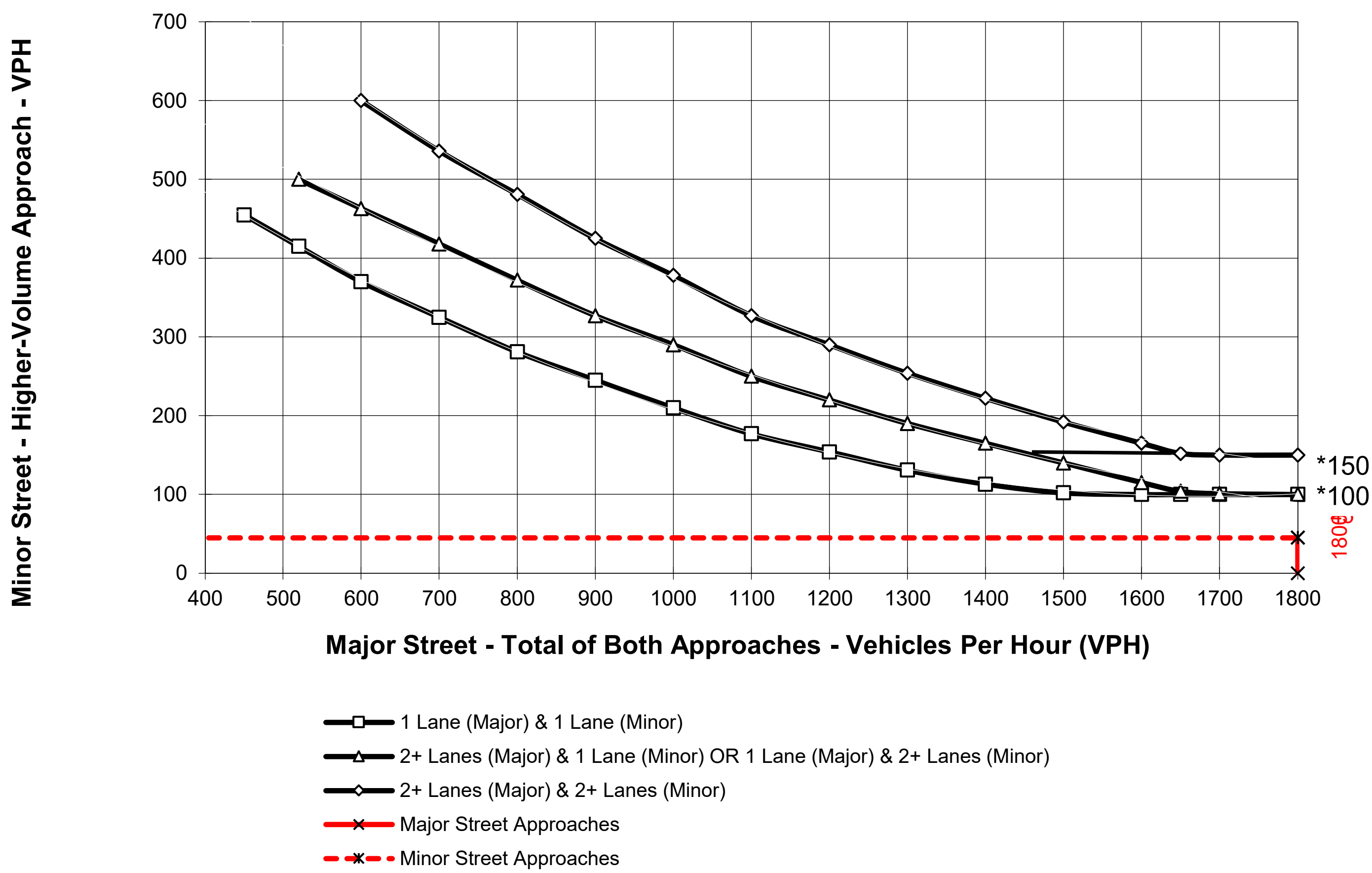
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **45**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Opening Year (2020) Without Project - AM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2649**

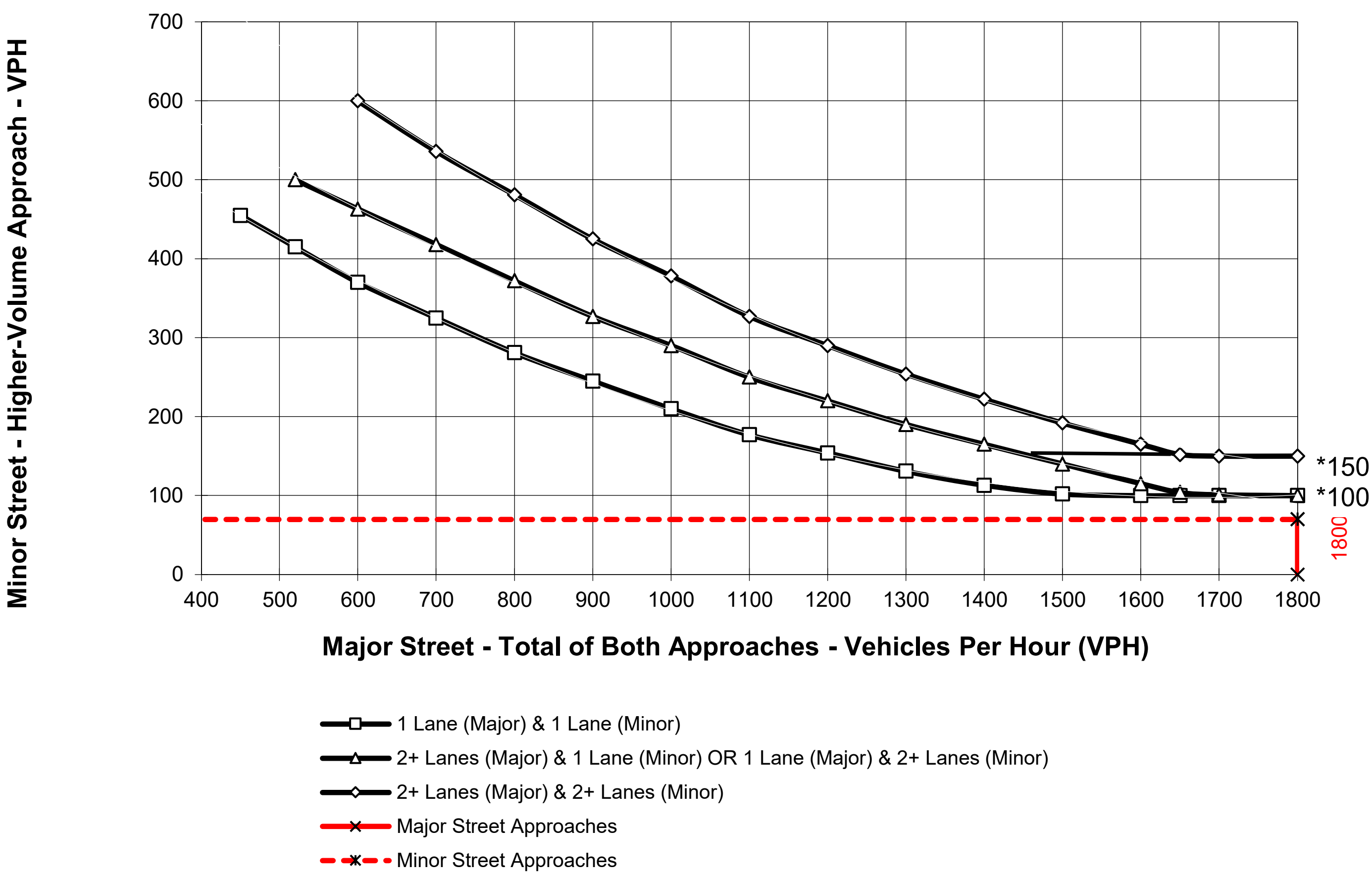
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **70**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Opening Year (2020) Without Project - PM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2347**

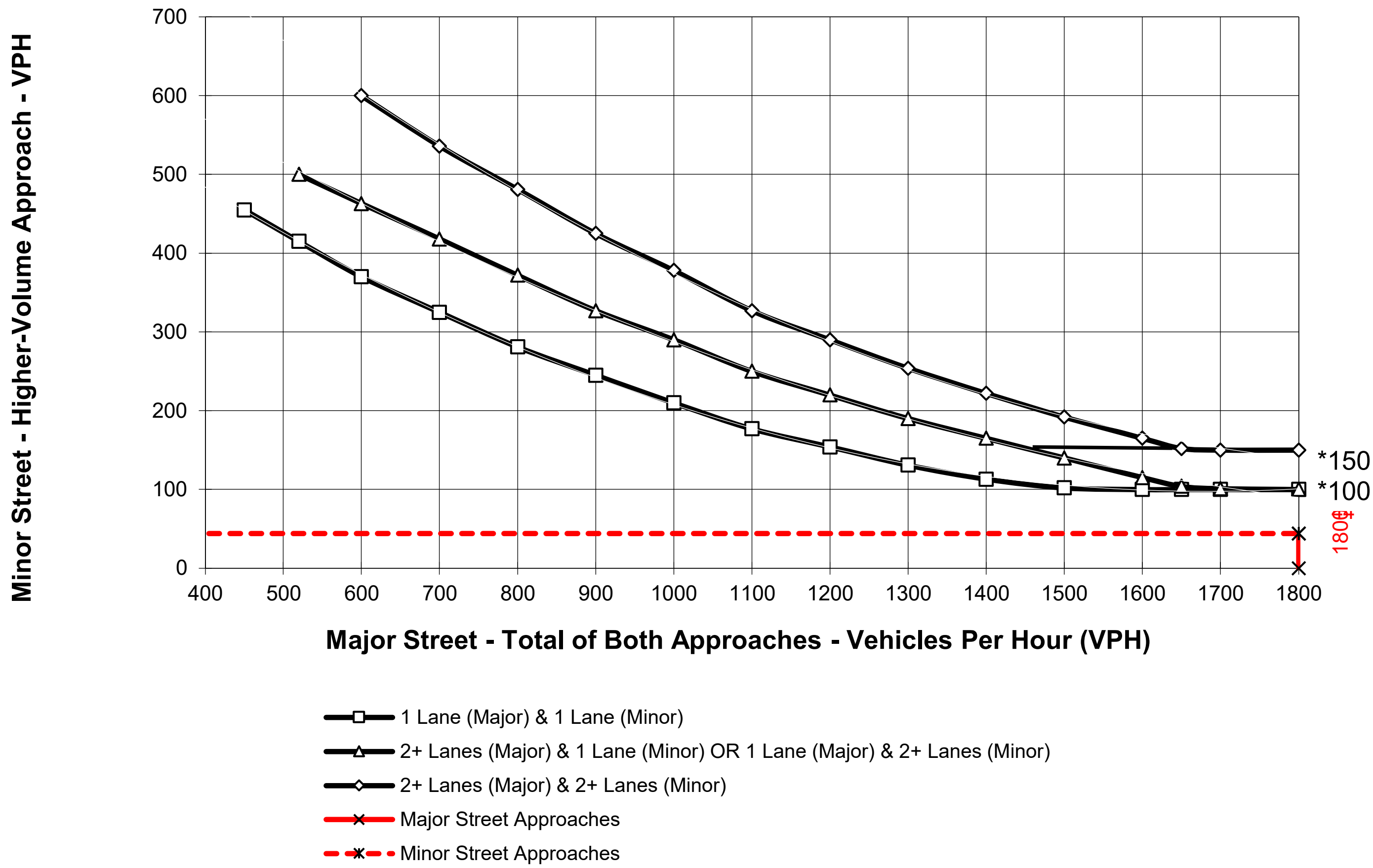
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **44**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Opening Year (2020) With Project - AM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2654**

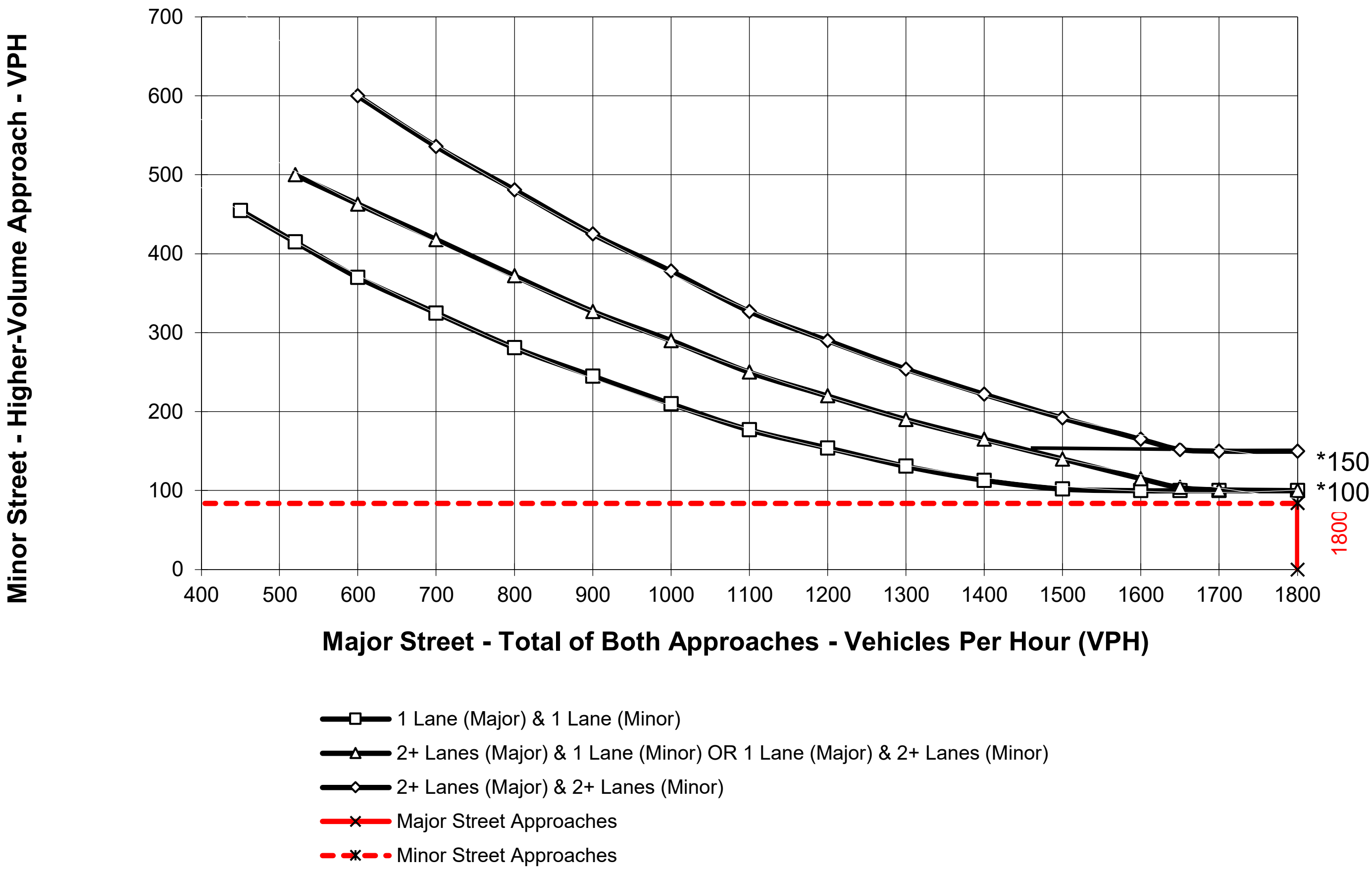
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **84**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Opening Year (2020) With Project - PM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2366**

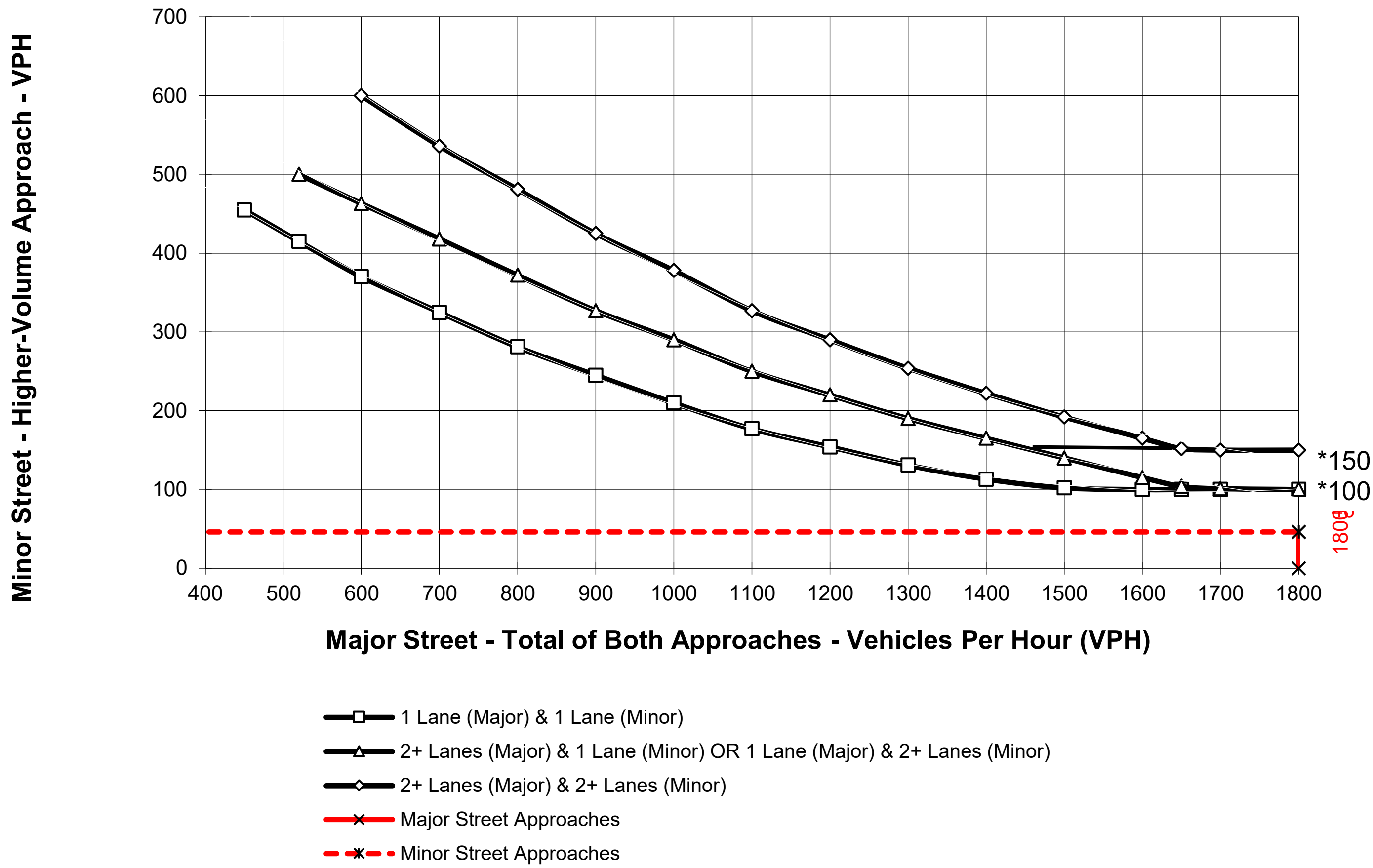
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **46**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Year 2040 Without Project - AM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **3370**

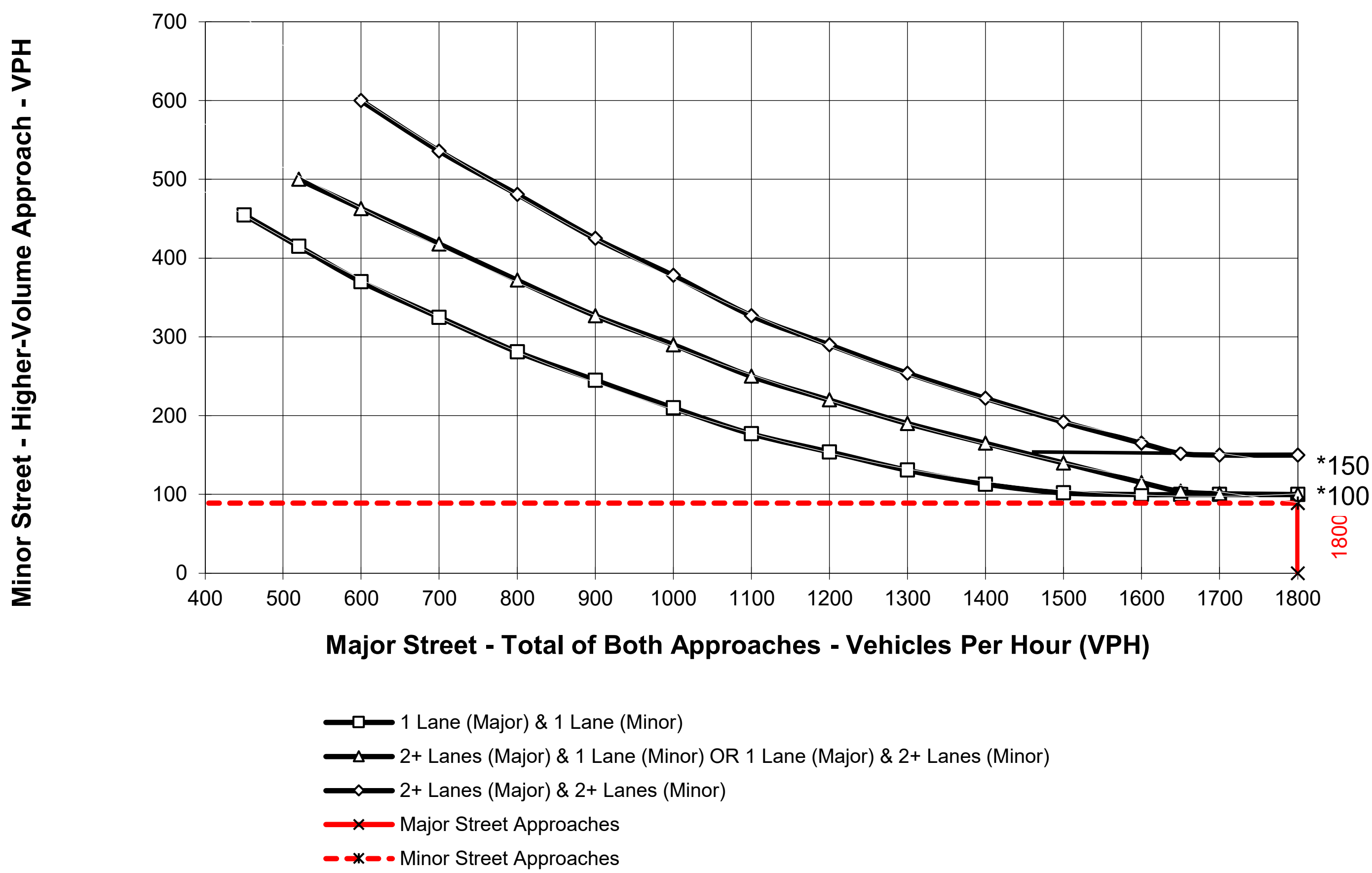
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **89**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Year 2040 Without Project - PM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **2984**

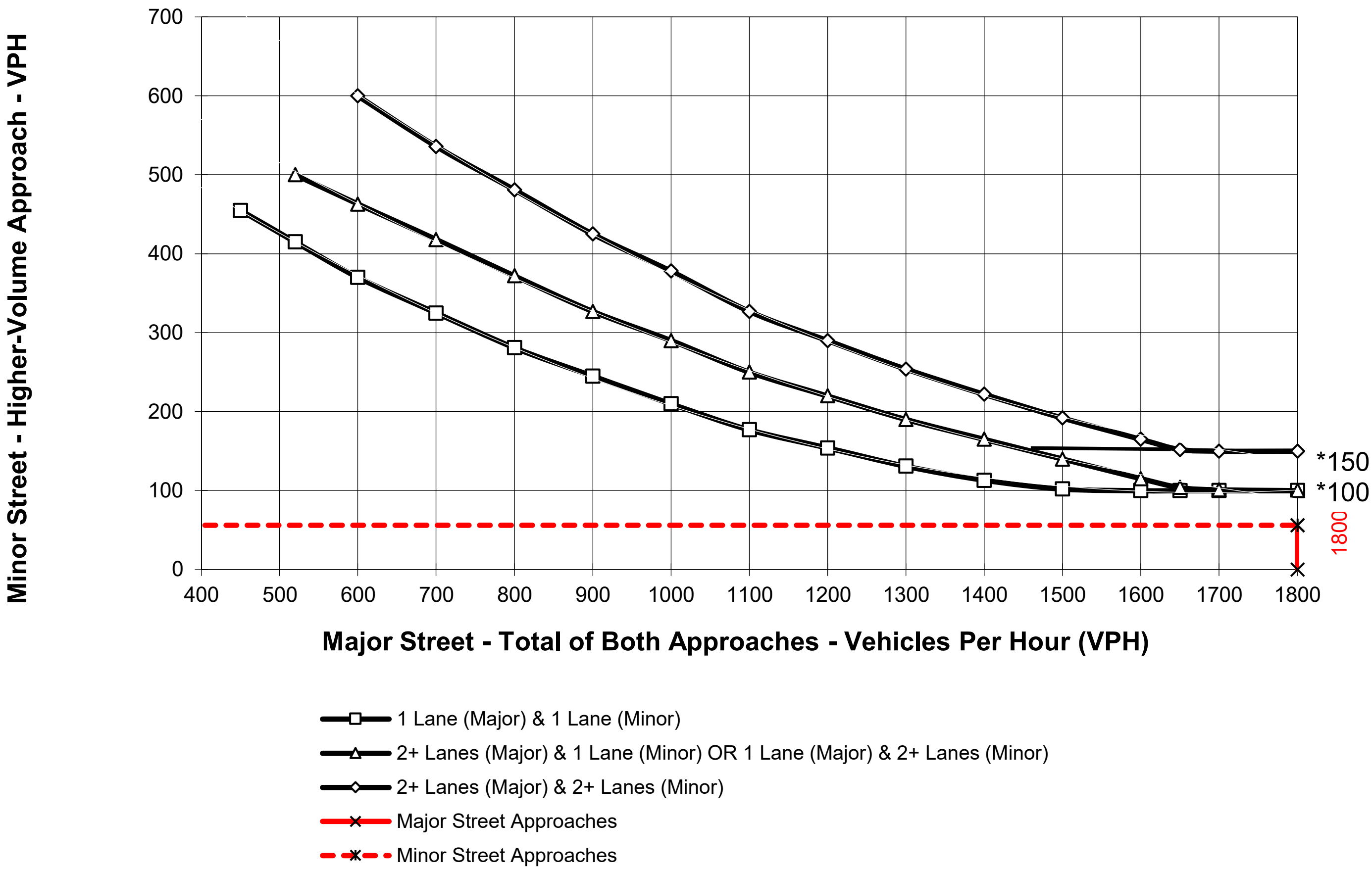
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **56**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Year 2040 With Project - AM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **3375**

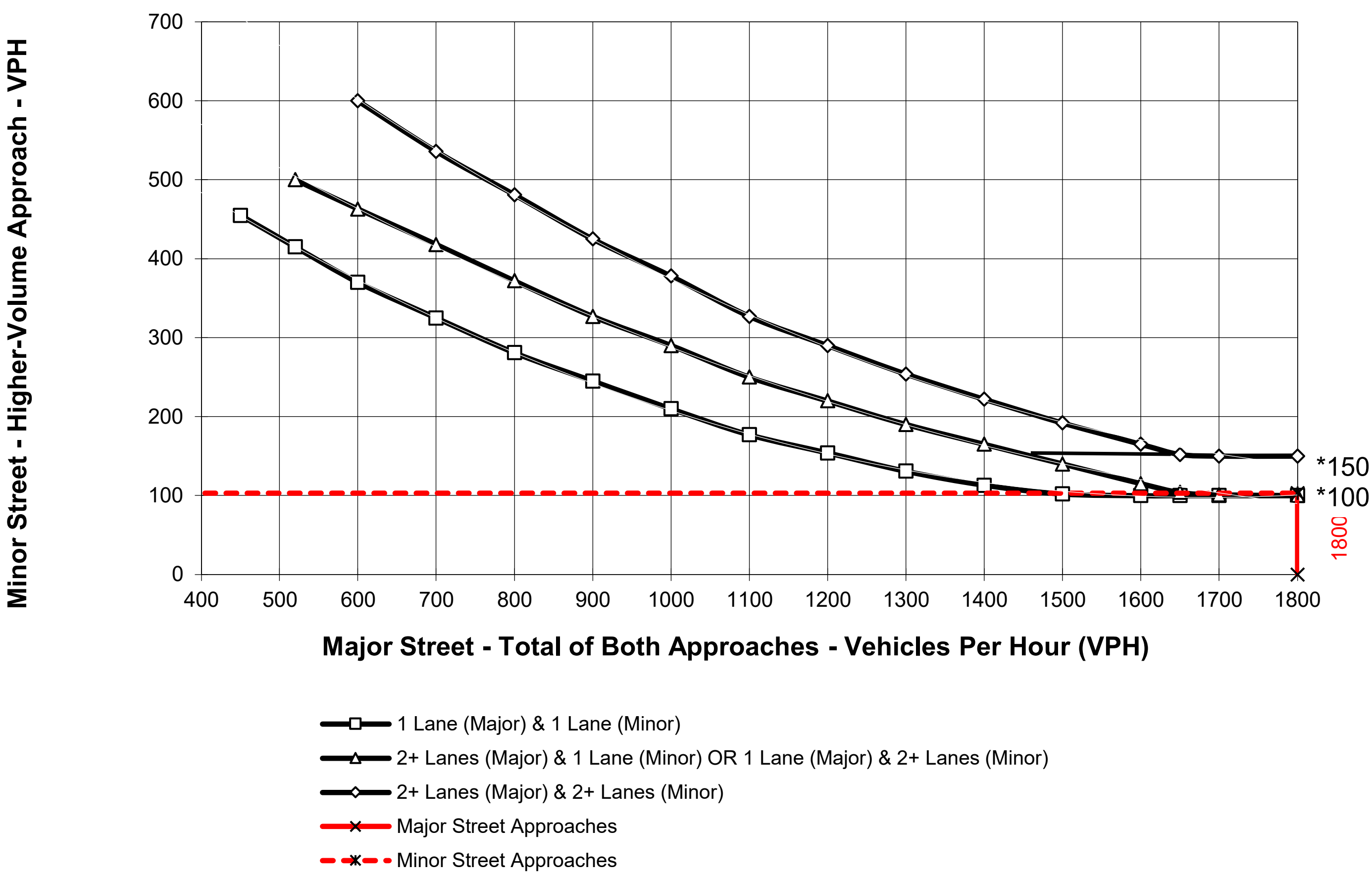
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **103**

Number of Approach Lanes On Minor Street = **1**

WARRANTED FOR A SIGNAL



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

WARRANT 3, PEAK HOUR
(Urban Areas)

Traffic Conditions = **Year 2040 With Project - PM Peak Hour**

Major Street Name = **Fruit Street**

Total of Both Approaches (VPH) = **3003**

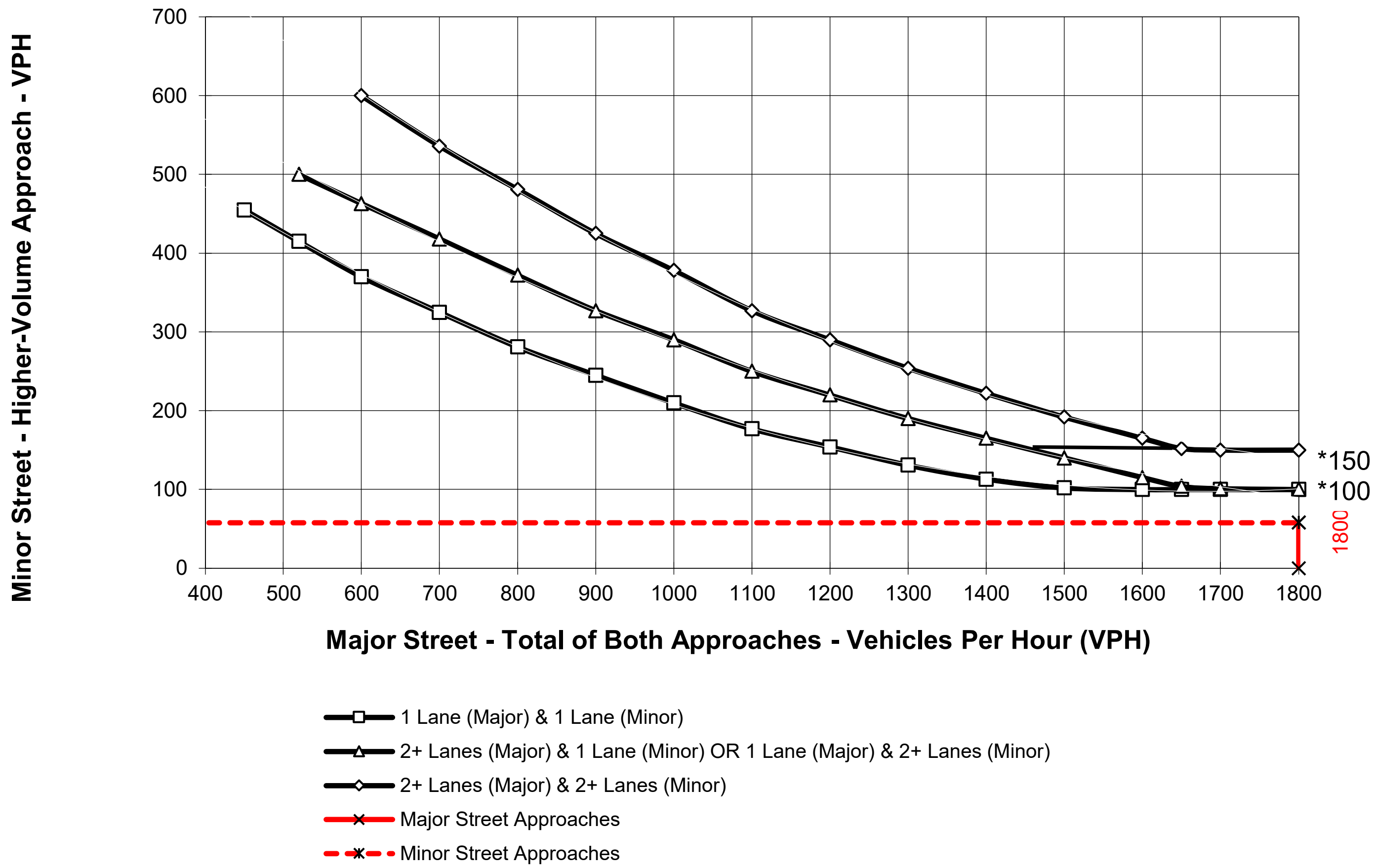
Number of Approach Lanes on Major Street = **2**

Minor Street Name = **Amherst Street**

High Volume Approach (VPH) = **58**

Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** 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.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing AM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1344**

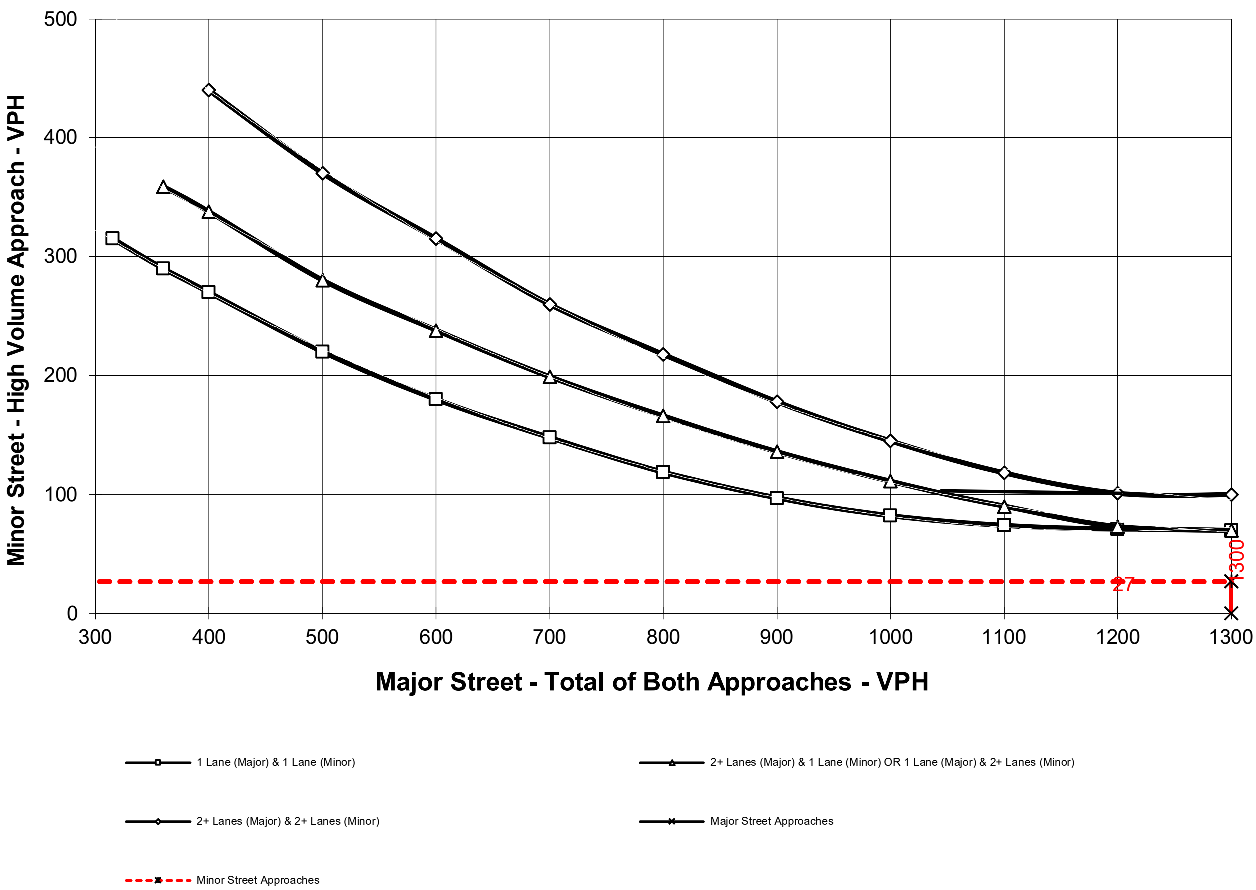
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **27**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing PM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **2232**

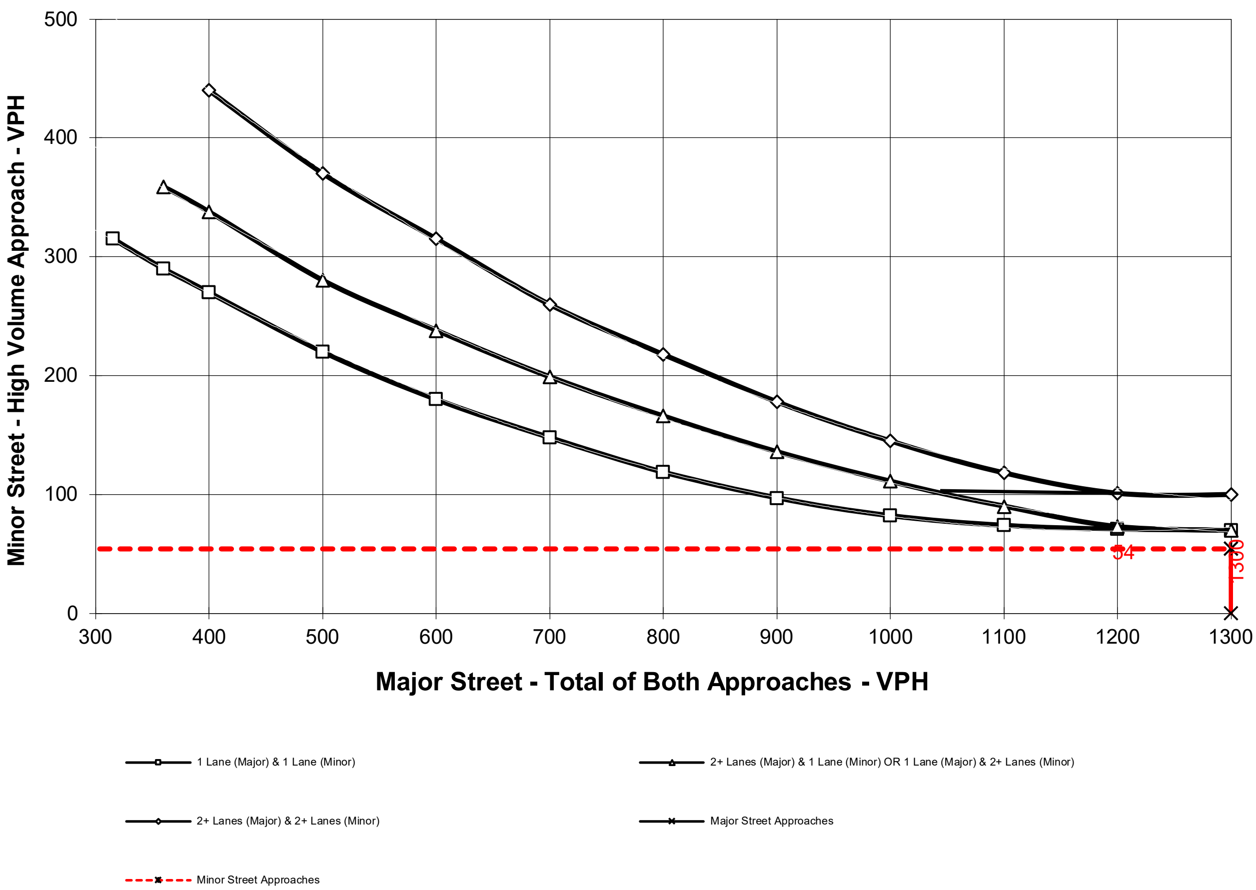
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **54**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Project AM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1346**

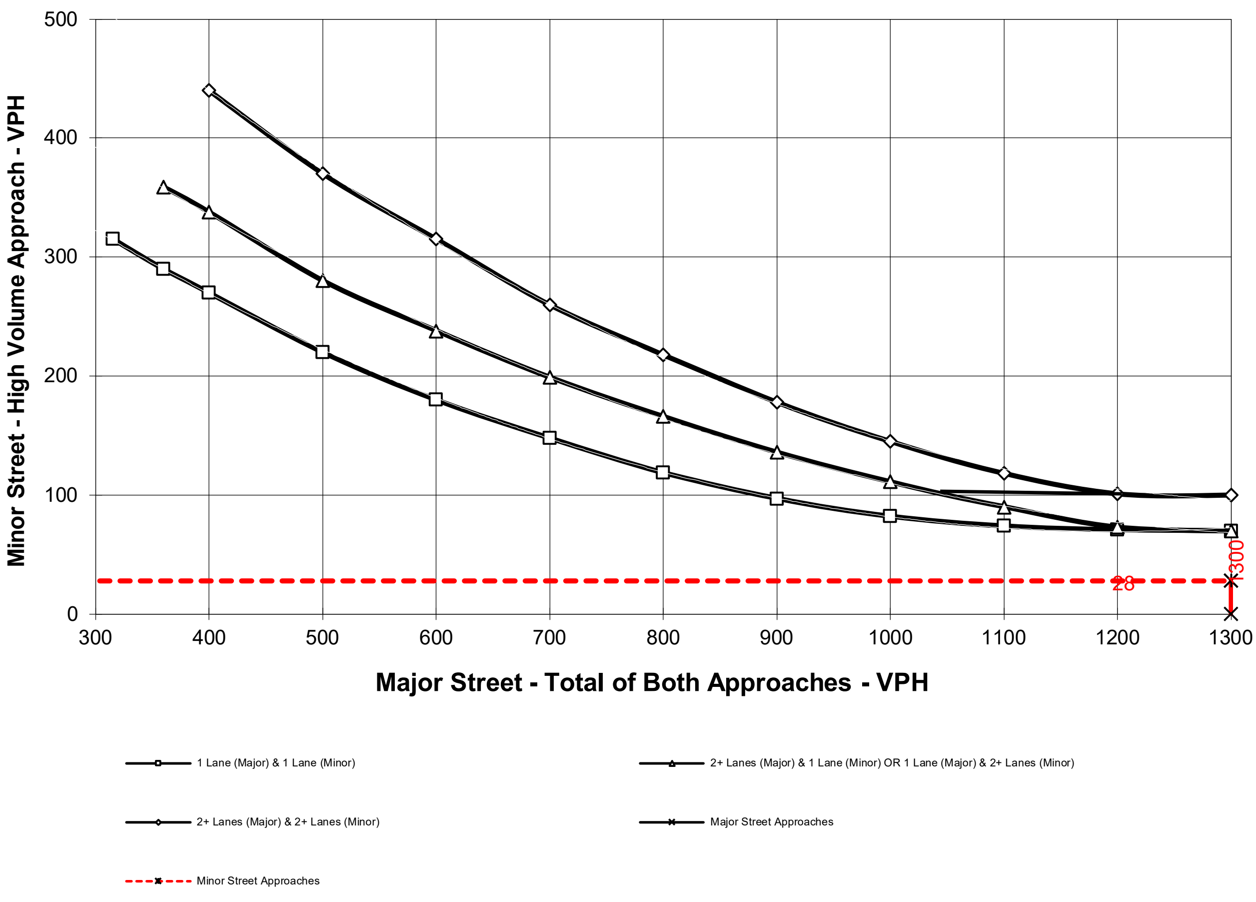
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **28**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Project PM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **2239**

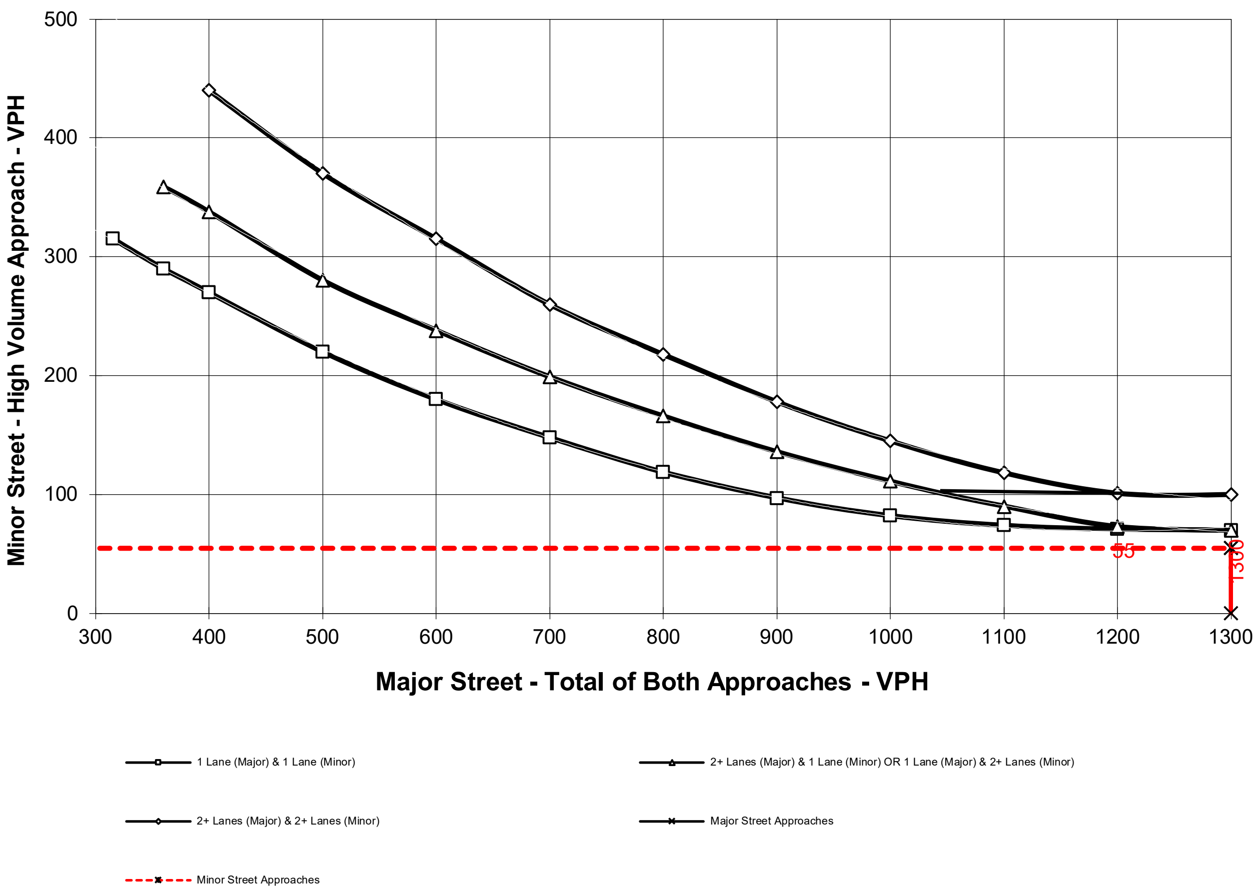
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **55**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Opening Year (2020) Without Project AM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1384**

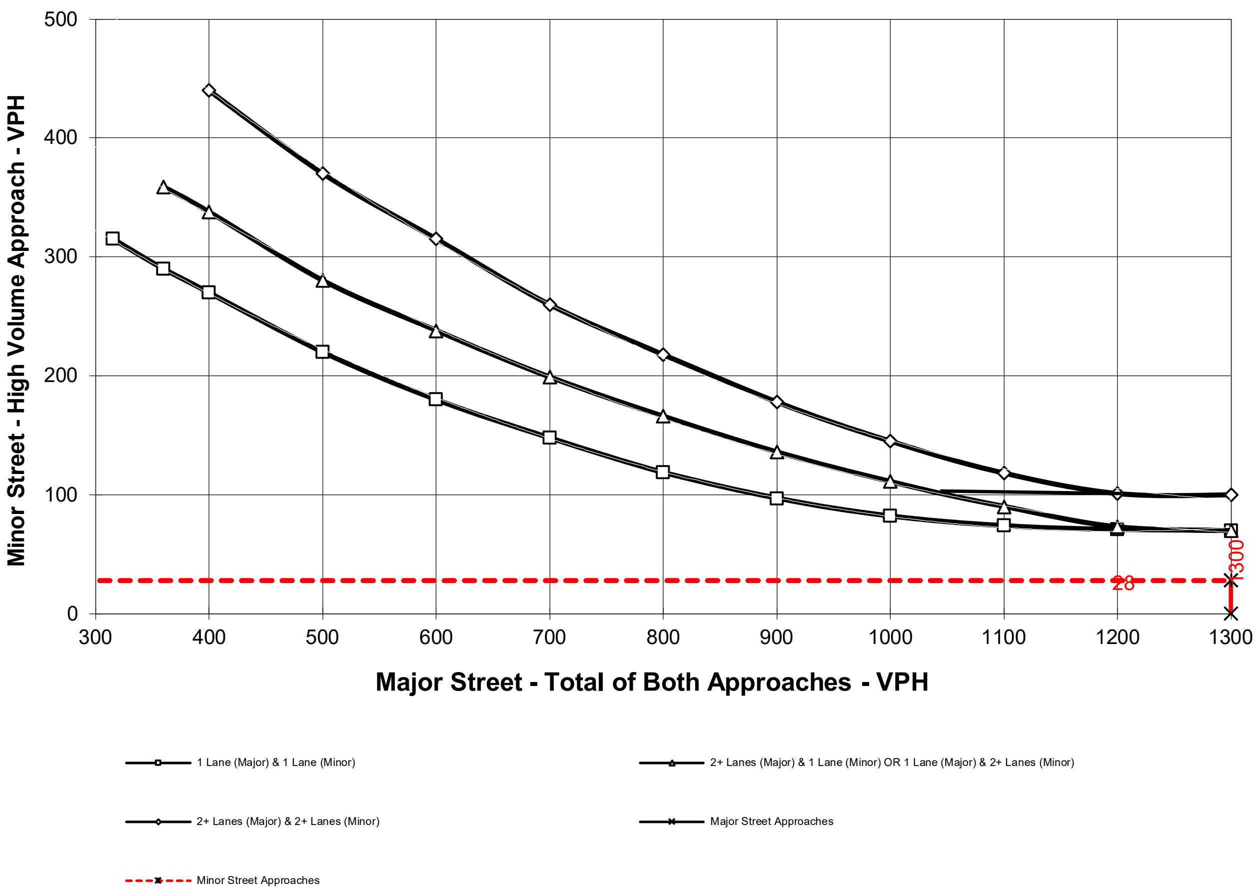
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **28**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Opening Year (2020) Without Project PM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **2298**

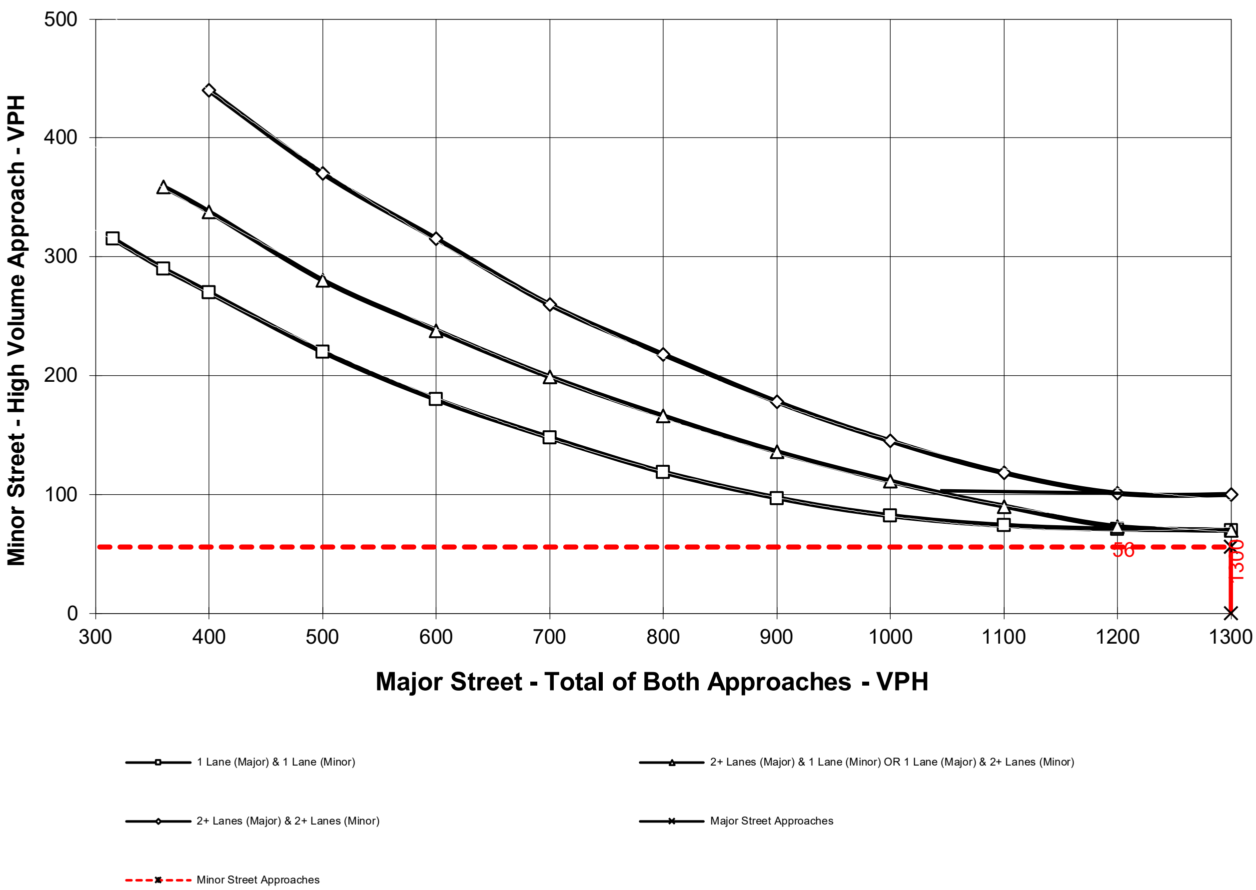
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **56**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Opening Year (2020) With Project AM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1386**

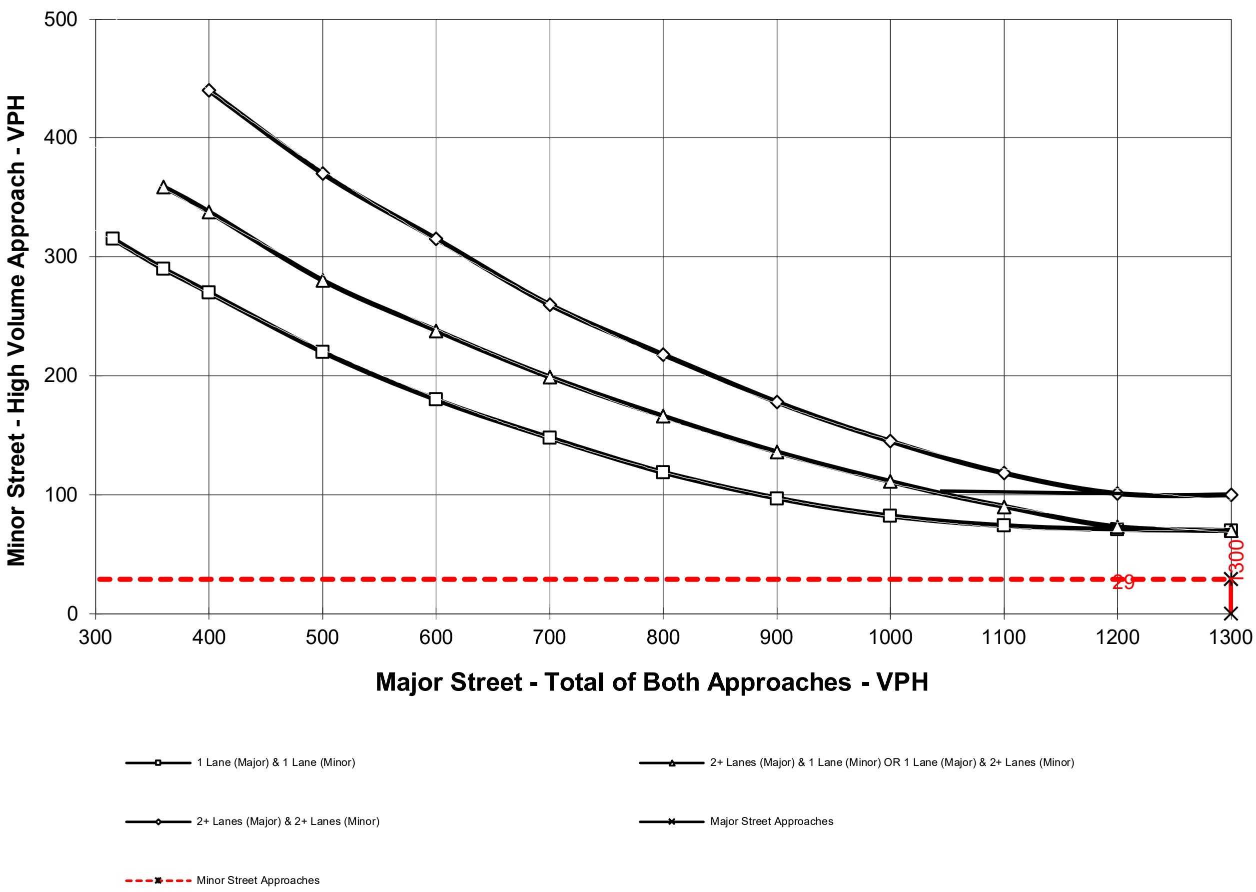
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **29**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Opening Year (2020) With Project PM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **2305**

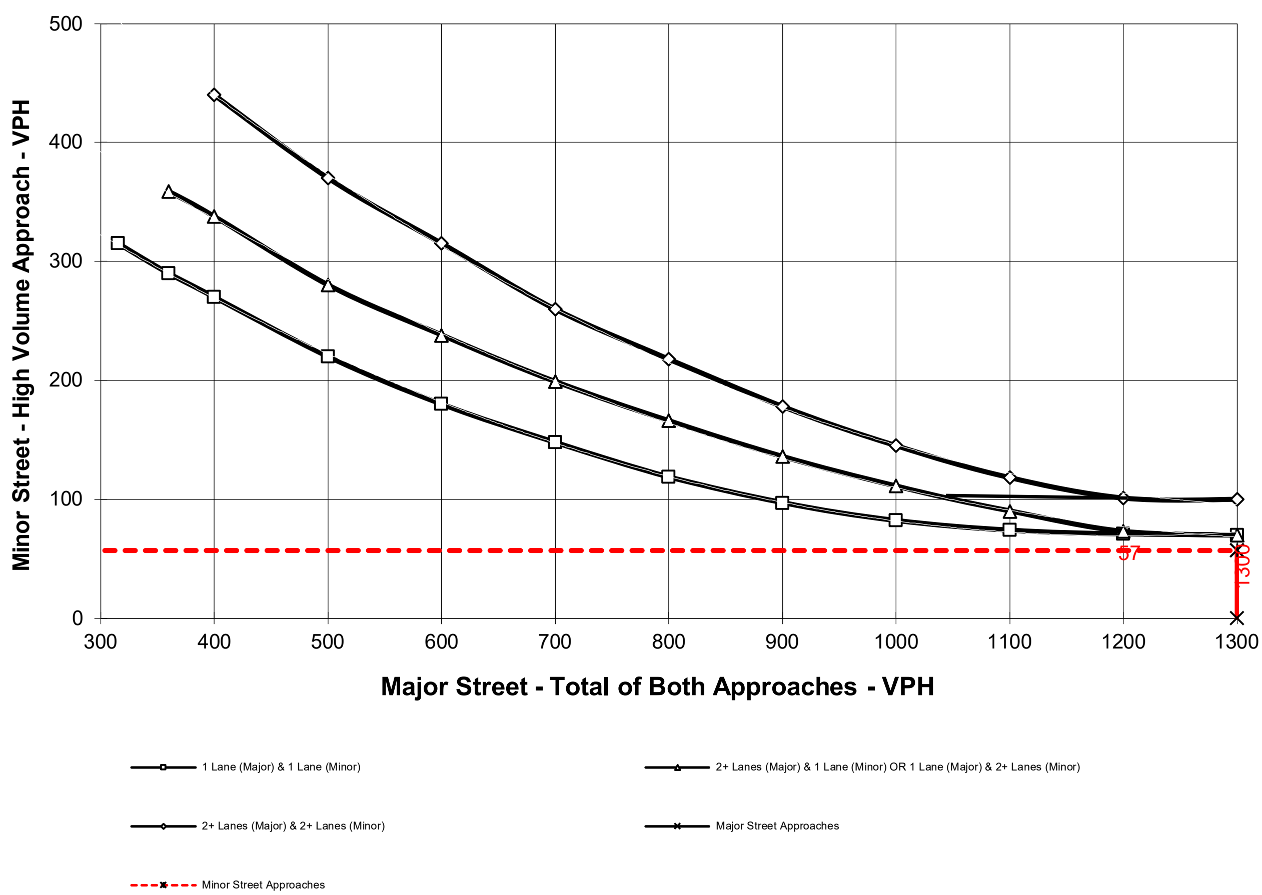
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **57**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Year 2040 Without Project AM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **1761**

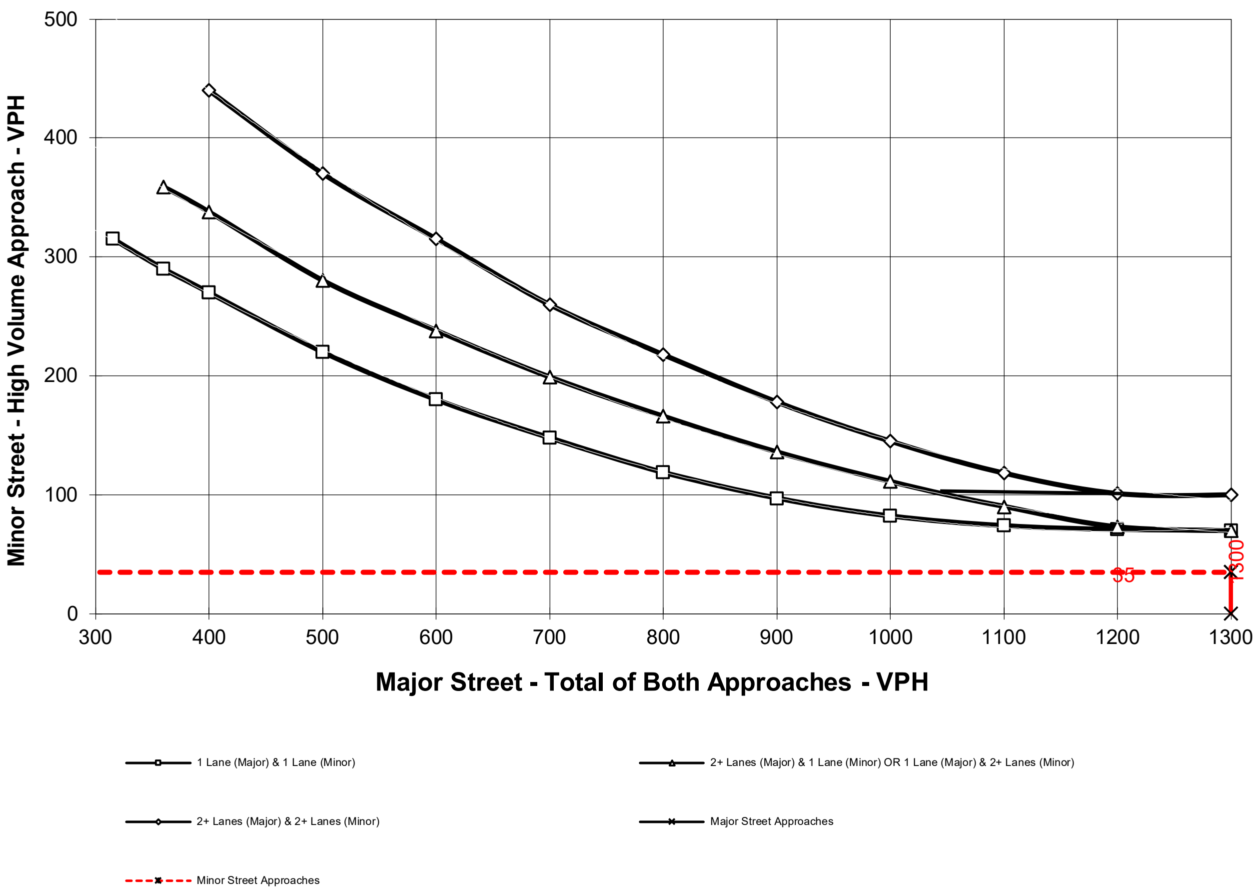
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **35**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Year 2040 Without Project PM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **2924**

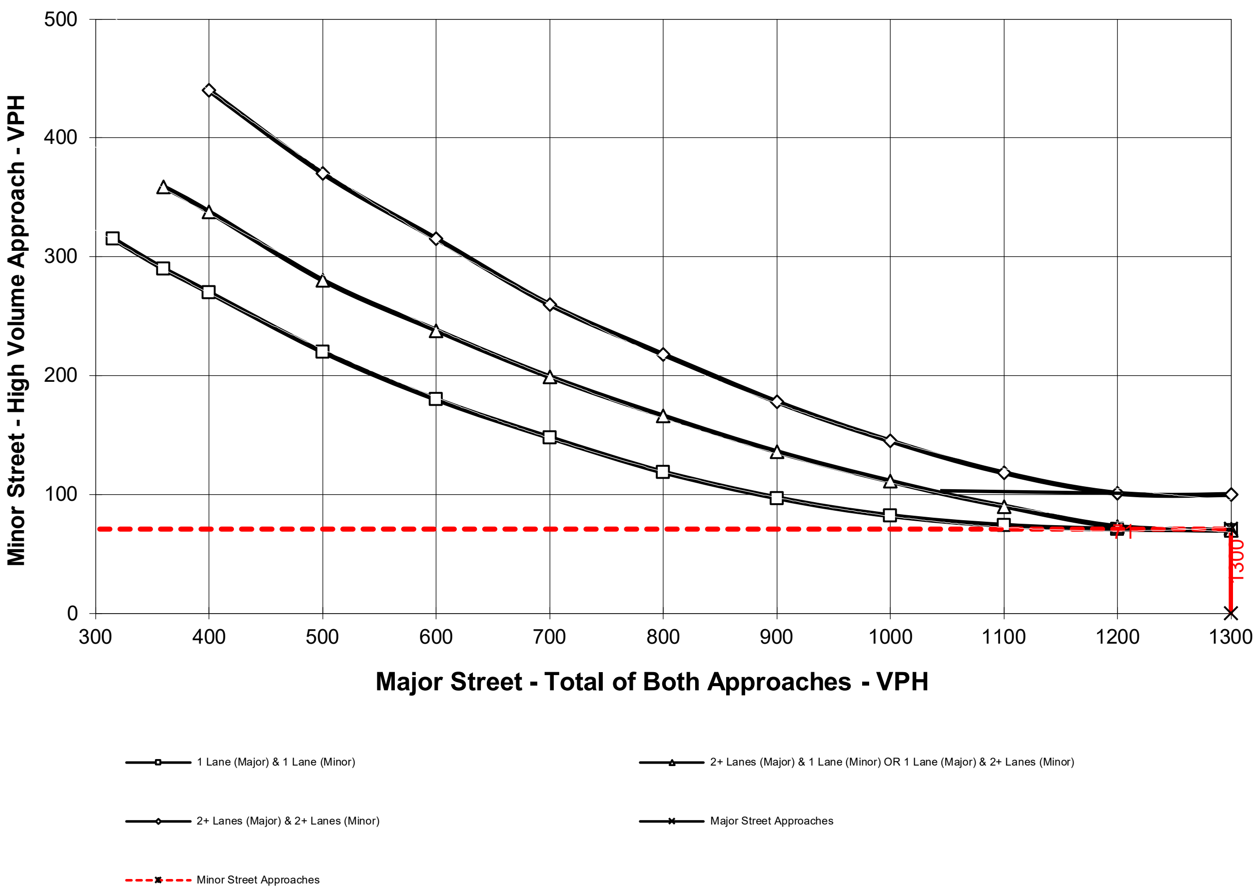
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **71**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

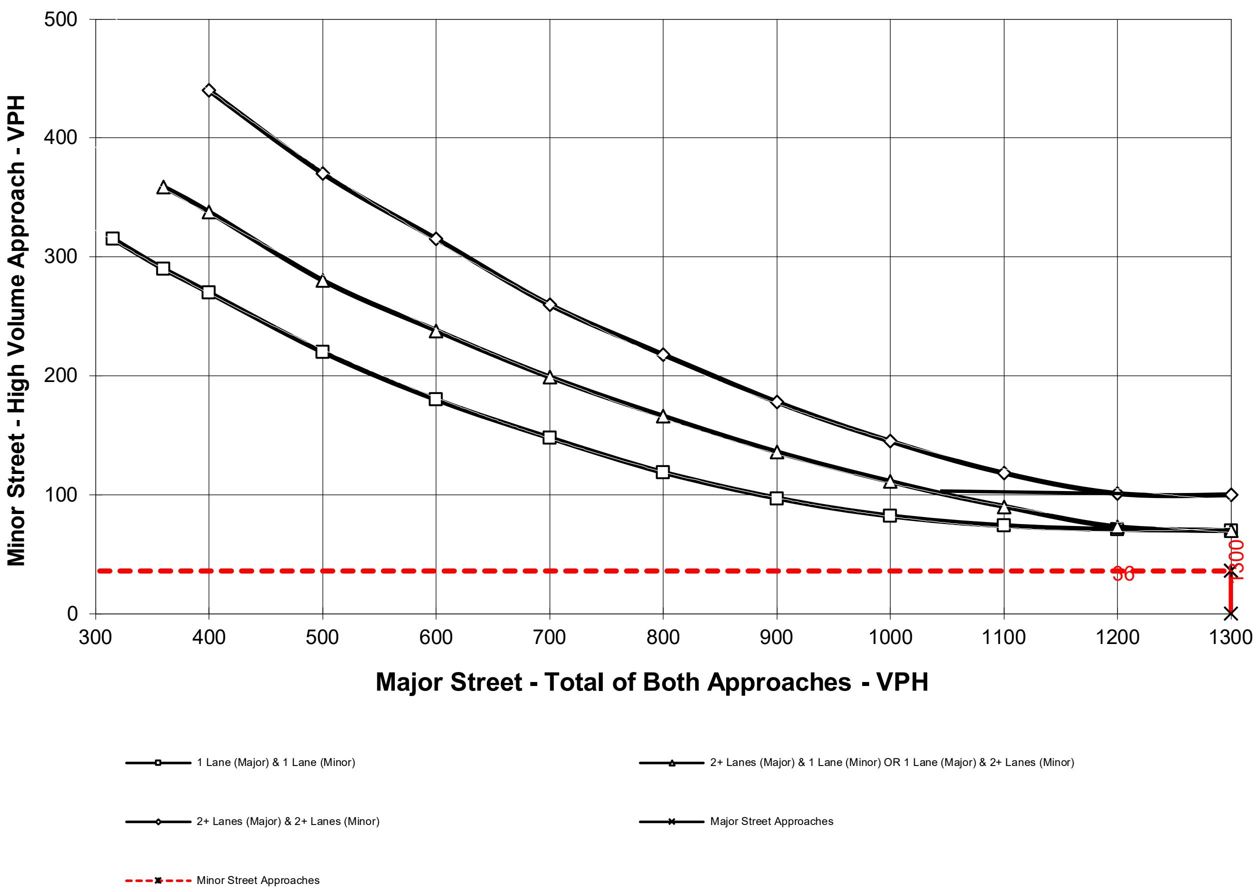
PEAK HOUR VOLUME WARRANT
(Rural Areas)

Year 2040 With Project AM Peak Hour

Major Street Name = **Foothill Boulevard** Total of Both Approaches (VPH) = **1763**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue** High Volume Approach (VPH) = **36**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:
Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Year 2040 With Project PM Peak Hour

Major Street Name = **Foothill Boulevard**

Total of Both Approaches (VPH) = **2931**

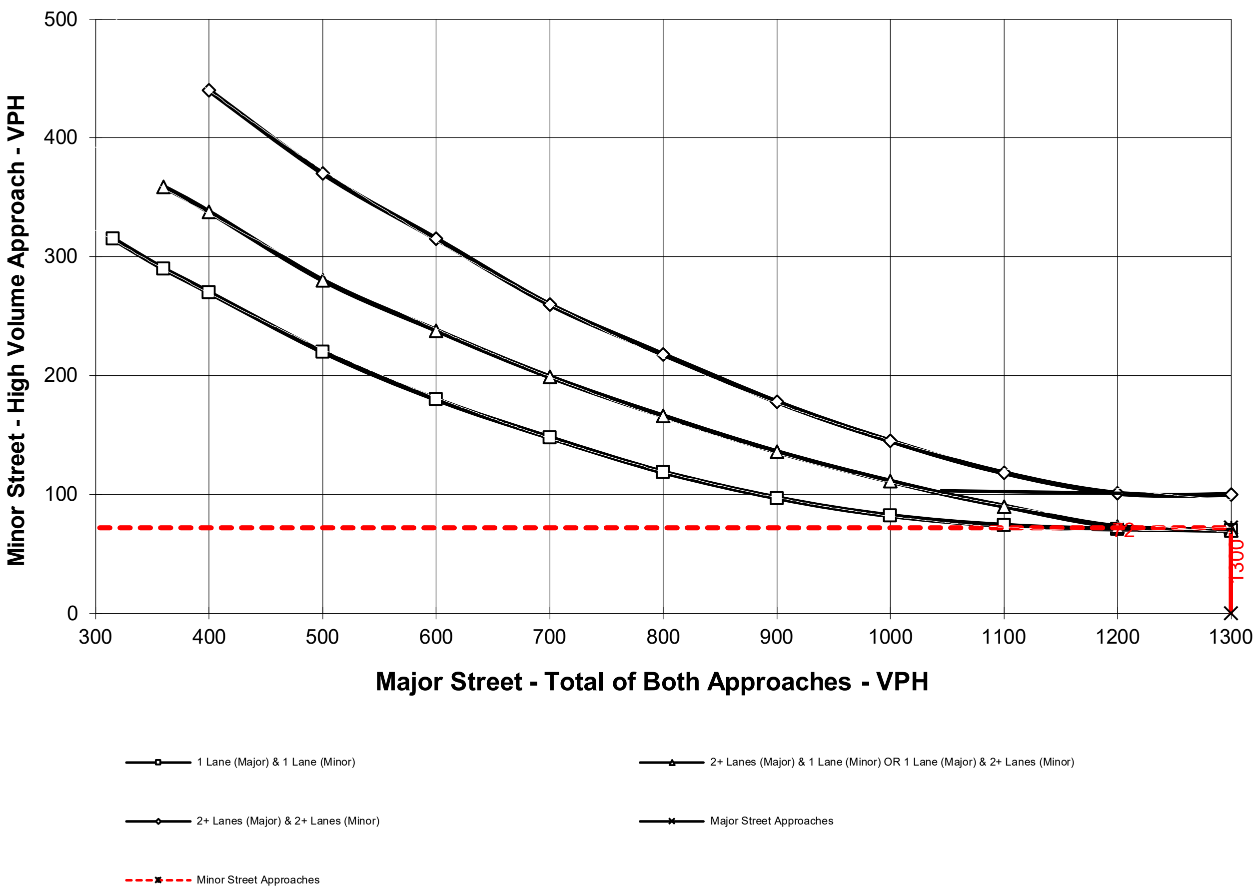
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Williams Avenue**

High Volume Approach (VPH) = **72**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* NOTE:

Warrant includes adjustments to right turning movements from the minor approach consistent with CAMUTCD procedures.

** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

GANDDINI GROUP, INC.
550 Parkcenter Drive, Suite 202, Santa Ana, CA 92705
714.795.3100 | www.ganddini.com

Appendix D

Tribal Cultural Resources Correspondence

GABRIELENO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The Gabrielino Tribal Council - San Gabriel Band of Mission Indians
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

July 31, 2020

Project Name: Amherst Residential Development project, City of La Verne, Los Angeles County, Ca

Dear Candice Bowcock,

Thank you for your letter dated July 28, 2020 regarding SB18 consultation. The above proposed project location is within our Ancestral Tribal Territory; therefore, our Tribal Government requests to schedule a consultation with you as the lead agency, to discuss the project and the surrounding location in further detail.

Please contact us at your earliest convenience. ***Please Note :AB 52, "consultation" shall have the same meaning as provided in SB 18 (Govt. Code Section 65352.4).***

Thank you for your time,

Andrew Salas, Chairman
Gabrieleno Band of Mission Indians – Kizh Nation
1(844)390-0787

Lynette Leighton

From: Candice Bowcock <cbowcock@cityoflaverne.org>
Sent: Wednesday, August 5, 2020 4:55 PM
To: Christine Donoghue
Subject: [EXT] FW: Amherst Residential Development Project

CAUTION: This email originated from outside of Rincon Consultants. Be cautious before clicking on any links, or opening any attachments, until you are confident that the content is safe .

From: Quechan Historic Preservation Officer [mailto:historicpreservation@quechantribe.com]
Sent: Wednesday, August 05, 2020 2:53 PM
To: Candice Bowcock
Subject: Amherst Residential Development Project

This email is to inform you that we do not wish to comment on this project. We defer to the more local Tribe(s) and support their decisions on the project.

Thank you,
H. Jill McCormick, M.A.

Quechan Indian Tribe
Historic Preservation Officer
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-572-2423
Cell: 928-261-0254
E-mail: historicpreservation@quechantribe.com

Lynette Leighton

From: Candice Bowcock <cbowcock@cityoflaverne.org>
Sent: Thursday, August 6, 2020 3:28 PM
To: Christine Donoghue
Subject: [EXT] FW: Amherst Residential Development Project City of La Verne, Los Angeles County, California

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From: Ryan Nordness [mailto:Ryan.Nordness@sanmanuel-nsn.gov]
Sent: Thursday, August 06, 2020 3:01 PM
To: Candice Bowcock
Cc: Jessica Mauck
Subject: RE: Amherst Residential Development Project City of La Verne, Los Angeles County, California

Hello Candice Bowcock,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by our Cultural Resources Management Department on 5 August 6, 2020, pursuant to CEQA (as amended, 2015) and CA PRC 21080.3.1. The proposed project area exists within Serrano ancestral territory and, therefore, is of interest to the Tribe.

Due to the nature and location of the proposed project, SMBMI respectfully requests the following for review upon availability, if required for the project:

- Cultural report
- Geotechnical report
- Project plans showing the depth of proposed disturbance

The provision of this information will assist San Manuel Band of Mission Indians in ascertaining how the Tribe will assume consulting party status under CEQA and participate, moving forward, in project review and implementation. Please note that if this information cannot be provided within the Tribe's 30-day response window, the Tribe automatically elects to be a consulting party under CEQA, as stipulated in AB52. If you should have any questions with regard to this matter, please do not hesitate to contact me at your convenience, as I will be your Point of Contact (POC) for SMBMI with respect to this project.

Once again, the San Manuel Band of Mission Indians appreciates the opportunity to comment on the proposed project.

Respectfully,
Ryan Nordness

Ryan Nordness
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