City of San Luis Obispo

Phase 2 of the Proposed 3450 Broad Street SLOCA Campus Project Traffic Impact Study: Multimodal Operational Analysis

Project Report

June 2025

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AMG ADVANCED MOBILITY GROUP

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The purpose of this report is to present Phase 2 of the Traffic Impact Study for the proposed SLO Classical Academy (SLOCA) Campus project at 3450 Broad Street in the City of San Luis Obispo (SLO), Multimodal Traffic Operations Analysis & Policy Assessment. Phase 1 of the Traffic Impact Study, the California Environmental Quality Act (CEQA) Transportation Analysis, which includes a Vehicle Miles Travelled (VMT) Analysis and Transportation Safety Assessment, is provided in a separate standalone report.

Operations Analysis Approach

A. Analysis Scenarios

The Operations Analysis includes the following analysis scenarios for each project alternative:

1. **Existing Conditions:** AMG evaluated existing conditions level of service (LOS), delay, and any relevant performance metrics per the City of San Luis Obispo General Plan with existing lane geometry, traffic control and traffic volumes.
2. **Existing + Project:** Proposed project trips estimated as discussed in the following sections were added to the existing conditions traffic models to evaluate the impact of the proposed project at the project intersections.
3. **Cumulative Conditions:** This scenario evaluated the cumulative buildout traffic projections envisioned in the City's General Plan and regional growth consistent with the San Luis Obispo Council of Government (SLOCOG) projections for Year 2045.
4. **Cumulative + Project:** Proposed project trips were added to the cumulative background volumes to evaluate the impact of the project on cumulative conditions in this scenario.

Each scenario analyzed weekday a.m. (7:00 a.m. – 9:00 a.m.) peak hour conditions, and roadway segments analyzed daily volumes as necessary.

B. Study Facilities

Broad Street is a bi-directional north-south highway with varying lane configurations throughout its length. Near the project site, it consists of five lanes—two in each direction with a center turn lane with a posted speed limit of 45 mph. The posted speed limit changes along the corridor, set at 40 mph between South Street and Orcutt Road, increasing to 45 mph between Orcutt Road and Aero Drive, and reaching 55 mph between Aero Drive and Buckley Road. The ADT on Broad Street was 28,334 between Orcutt Road and Capitolio Way.

The roadway features a slight horizontal curve along its entire length. Major intersecting streets include South Street, Orcutt Road, Tank Farm Road, Buckley Road, and Edna Road. There are marked crosswalks at all the signalized intersections along this corridor. A signalized (HAWK) crosswalk is present at Woodbridge Street to facilitate pedestrian movement. On-street parking is permitted in the southbound direction between Funston Avenue and Sweeney Lane, while parking is not allowed in the northbound direction. Class II bike lanes are provided in both directions along the entire corridor, ensuring dedicated space for cyclists. Sidewalks are present intermittently, with segments in the southbound direction between South Street and Rockview Place, 900 feet n/o Industrial Way and 400 feet s/o Industrial Way, and Tank Farm Road and Aero Drive. In the northbound direction, sidewalks are

present between Aero Drive and Fuller Road, as well as between Calle de Caminos and South Street. There are no pedestrian warning signs installed along the roadway.

Sacramento Drive is a bi-directional north-south commercial collector consisting of two lanes, one in each direction, with a posted speed limit of 25 mph between Orcutt Road & Capitolio Way and a posted speed limit of 35 mph between Capitolio Way & Industrial Way. The ADT on Sacramento Drive was approximately 4,150 vehicles per day between Orcutt Road & Capitolio Way in 2023 and 5,100 vehicles per day between Capitolio Way & Industrial Way in 2018.

The street features a slight horizontal curve throughout its length, with a sharp horizontal curve located north of Via Esteban toward Orcutt Road. Major intersecting streets along the corridor include Orcutt Road and Industrial Way. There is a marked crossing at the signalized intersection of Sacramento Drive & Orcutt Road. On-street parking is permitted in the southbound direction between Industrial Way and Via Esteban. Class II bike lanes are provided in both directions along the entire corridor, offering dedicated space for cyclists. Sidewalks are present on both sides of the roadway, except for a gap in the southbound direction between Capitolio Way and Via Esteban.

Capitolio Way is a bi-directional east-west commercial collector consisting of two lanes, one in each direction, with a posted speed limit of 30 mph. The ADT on Capitolio Way between Broad Street and Sacramento Drive was approximately 2,700 vehicles per day in 2018.

There is a slight horizontal curve near Sacramento Drive. Major intersecting streets along the corridor include Broad Street and Sacramento Drive. There are no marked crosswalks along this segment. On-street parking is permitted in both directions throughout the entire corridor. Class III bike lanes are designated in both directions between Broad Street and Sacramento Drive, allowing cyclists to share the roadway with vehicles. Sidewalks are present on both sides of the street for the entire length of the corridor. However, no pedestrian warning signs are installed along this roadway.

Via Esteban is a bi-directional east-west local commercial roadway consisting of two lanes, one in each direction, with a posted speed limit of 25 mph. Sidewalks are present on both sides of the street for the entire length of the corridor. However, no pedestrian warning signs are installed along this roadway.

Roadways that are also a part of the study intersections and study roadway segments but are not within the project vicinity include:

Higuera Street is a bi-directional, north-south arterial roadway with a posted speed limit that varies from 30 to 40 mph. Its lane configuration varies, with five lanes between Prado Road and Margarita Avenue, four lanes between Margarita Avenue and Fontana Avenue, and six lanes between Madonna Street and South Street. A slight horizontal curve is present between Elks Lane and Prado Road. Major intersecting streets include Prado Road, Margarita Avenue, Elks Lane, Madonna Road, and South Street. There are marked crosswalks at all the signalized intersections along this corridor. There are also a few marked crossings at midblock locations with advanced pedestrian warning signs near downtown. On-street parking is not permitted. Class II bike lanes run in both directions throughout the entire corridor, and sidewalks are present on both sides.

Madonna Road is a bi-directional, east-west arterial roadway with a posted speed limit of 35 mph. It has six lanes—three in each direction—between Dalidio Drive and the US-101 ramp, narrowing to five lanes with a center turn lane between the US-101 ramp and Higuera Street. A slight horizontal curve is

present at the western end of the segment. Major intersecting streets include Dalidio Drive, US-101, and Higuera Street. There are marked crosswalks at all the signalized intersections along this corridor. A signalized (HAWK) crosswalk is midway between Dalidio Drive and Oceanaire Drive to facilitate pedestrian movement. On-street parking is not permitted. A Class I separated bike path runs along the north side of the roadway between US 101 SB off-ramp at Madonna Road and Dalidio Drive. Class II bike lanes run in both directions intermittently between Higuera Street and Pereira Drive. Sidewalks are present on both sides throughout the entire segment. However, no pedestrian warning signs are installed along the roadway.

South Street is a bi-directional, east-west residential arterial roadway with a posted speed limit of 35 mph. It consists of three lanes—one in each direction with a center turn lane. The roadway is relatively straight with no curves. Major intersecting streets include Higuera Street, Exposition Drive, and Broad Street. There is a marked crosswalk with Rectangular Rapidly Flashing Beacons (RRFB) across the east leg at the intersection of South Street and King Street. There are advanced pedestrian warning crossings in both directions to the east and west of the crosswalk. On-street parking is allowed on both sides throughout most of the segment. Class II bike lanes run in both directions along the entire corridor, and sidewalks are present on both sides.

Santa Barbara Street is a bi-directional, north-south arterial roadway with a posted speed limit of 30 mph. It consists of three lanes—one in each direction with a center turn lane. A slight horizontal curve is present around Upham Street. Major intersecting streets along this corridor include Leff Street, Upham Street, and Broad Street. There are marked crosswalks at all the signalized intersections along this corridor. There are two marked crosswalks with Rectangular Rapidly Flashing Beacons (RRFB) at the intersection of Santa Barbara Street and High Street. There are advanced pedestrian warning crossings in both directions to the east and west of the crosswalk. On-street parking is permitted in the southbound direction throughout most of the corridor. Class IV bike lanes run in both directions between Upham Street and Broad Street. Sidewalks are present on both sides of the roadway.

Orcutt Road is a bi-directional east-west arterial roadway with four lanes, two in each direction between Broad Street and Laurel Lane. It becomes a three lane roadway – one lane in each direction with a center turn lane from Laurel Lane to the west of Ranch House Road roundabout and shifts to a two lane road east of the roundabout. The posted speed limit is 40 mph. Unlike other nearby streets, this segment has no horizontal or vertical curves. Major intersecting streets include Broad Street, Sacramento Drive, Bullock Lane, and Tank Farm Road. There are marked crosswalks at all the signalized intersections along this corridor and at the Ranch House Road roundabout. On-street parking is not permitted along the corridor. Class II bike lanes are provided in both directions, offering dedicated space for cyclists. Sidewalks are present on both sides of the street throughout the entire corridor.

Industrial Way is a bi-directional east-west commercial collector consisting of two lanes, one in each direction, with a posted speed limit of 30 mph. The roadway is relatively straight with no horizontal or vertical curves. Major intersecting streets include Broad Street and Sacramento Drive. There are no marked crosswalks along this segment. On-street parking is permitted on both sides of the street west of 838 Industrial Way. Class III bike lanes are designated in both directions, allowing cyclists to share the roadway with vehicles. Sidewalks are present on both sides of the street throughout the entire corridor.

Tank Farm Road is a bi-directional, east-west parkway arterial with a posted speed limit that varies from 35 to 40 mph. The number of lanes varies between four and six throughout the segment. The roadway is relatively straight with no curves. Major intersecting streets include Santa Fe Road and Poinsettia Street. There are marked crosswalks at all the signalized intersections along this corridor and both the Righetti Ranch Road & Orcutt Road roundabouts. There is a marked crosswalk with Rectangular Rapidly Flashing Beacons (RRFB) across the west leg at the intersection of Santa Barbara Street and High Street. There are advanced pedestrian warning crossings in both directions to the east and west of the crosswalk. On-street parking is not permitted. Class II bike lanes run in both directions along the entire segment. Sidewalks are present on the westbound side between Santa Fe Road and Broad Street, and on both sides between Broad Street and Poinsettia Street.

Aerovista Place is a bi-directional, east-west local roadway with a posted speed limit of 25 mph. It consists of two lanes, one in each direction. A slight horizontal curve is present on the east end of the segment. There are no marked crosswalks along this corridor. On-street parking is permitted on both sides throughout most of the segment. Unlike other nearby roadways, there are no designated bike facilities. Sidewalks are present on both sides of the street for the entire corridor.

Aero Drive is a bi-directional, east-west local roadway with a posted speed limit of 25 mph. It consists of three lanes, with one in each direction and a center turn lane. A horizontal curve is present throughout most of the segment. There are marked crosswalks at the intersection of Broad Street and Aero Drive. On-street parking is not permitted. Class II bike lanes run in both directions along the entire segment. Sidewalks are present only on the eastbound side for the full length of the corridor

Edna Road/State Route 227 is a bi-directional, north-south highway with a posted speed limit of 55 mph. It consists of two lanes, one in each direction. While the observed segment is relatively straight, there is a slight curvature south of this area. Major intersecting streets include Los Ranchos Road, Crestmont Drive, Buckley Road, and Broad Street. On-street parking is permitted along most of the segment on the shoulders. Unlike other nearby roadways, there are no designated bike facilities or sidewalks.

Farmhouse Lane is a bi-directional, east-west local roadway with a posted speed limit of 25 mph. It consists of two lanes, one in each direction, with a slight horizontal curve present throughout the corridor. There are no marked crosswalks along this segment. On-street parking is permitted on both sides of the roadway. Unlike other nearby streets, there are no designated bike facilities. Sidewalks are present on both sides throughout the entire corridor.

Buckley Road is a bi-directional roadway with 2 to 3 lanes running east-west. The speed limit is 55 mph. The road features a horizontal curve at the west end of the corridor and offers on-street parking on both sides throughout most of the segment. There are marked crosswalks at all the signalized intersections along this corridor. There are no bike facilities, and sidewalks are only present in the west direction, available in certain segments of the corridor.

Los Ranchos Road is a bi-directional, two-lane north-south roadway with a speed limit of 40 miles per hour (mph), reducing to 25 mph in school zones. The road features a curve at the north end of the segment and has on-street parking available on both sides throughout the entire corridor. There are marked crosswalks at all the signalized intersections along this corridor. There is a marked crosswalk with Rectangular Rapidly Flashing Beacons (RRFB) in front of Los Ranchos Elementary School. There are advanced pedestrian warning crossings in both directions to the east and west of the crosswalk.

There are no bike facilities, but sidewalks are present on both sides of the road throughout the entire segment.

The following are the study intersections:

1) Higuera Street & Madonna Road
2) Higuera Street & South Street
3) Orcutt Road & Sacramento Drive/Duncan Road
4) Sacramento Drive & Capitolio Way
5) Broad Street & South Street/Santa Barbara Avenue
6) Broad Street & Orcutt Road
7) Broad Street & Capitolio Way
8) Broad Street & Industrial Way
9) Broad Street & Tank Farm Road
10) Broad Street & Aerovista Place
11) Broad Street & Aero Drive
12) Broad Street & Farmhouse Lane
13) Edna Road (SR 227) & Buckley Road*
14) Edna Road (SR 227) & Los Ranchos Road*

* Intersection is under Caltrans' jurisdiction. Caltrans analysis procedures & performance measures will apply here.

The following are the study roadway segments:

1) Broad Street (South Street to Orcutt Road)
2) Broad Street (Orcutt Road to Tank Farm Road)
3) Broad Street (Tank Farm to City Limits)
4) Sacramento Drive (Orcutt Road to Capitolio Way)
5) Orcutt Road (Broad Street to Sacramento Drive)

Figure 1 shows all the study intersections and **Figure 2** shows the study roadways segments.

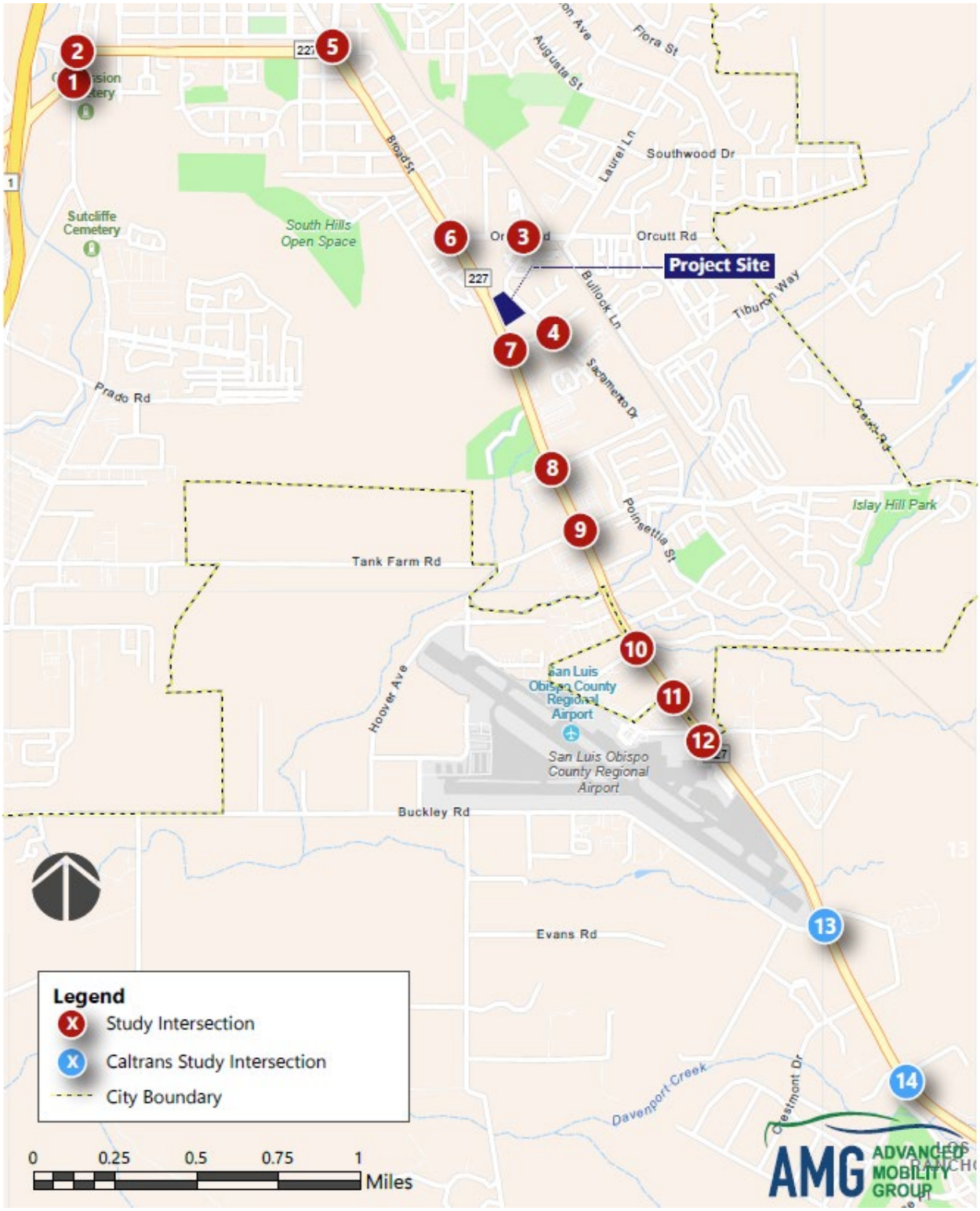


Figure 1: Study Intersections

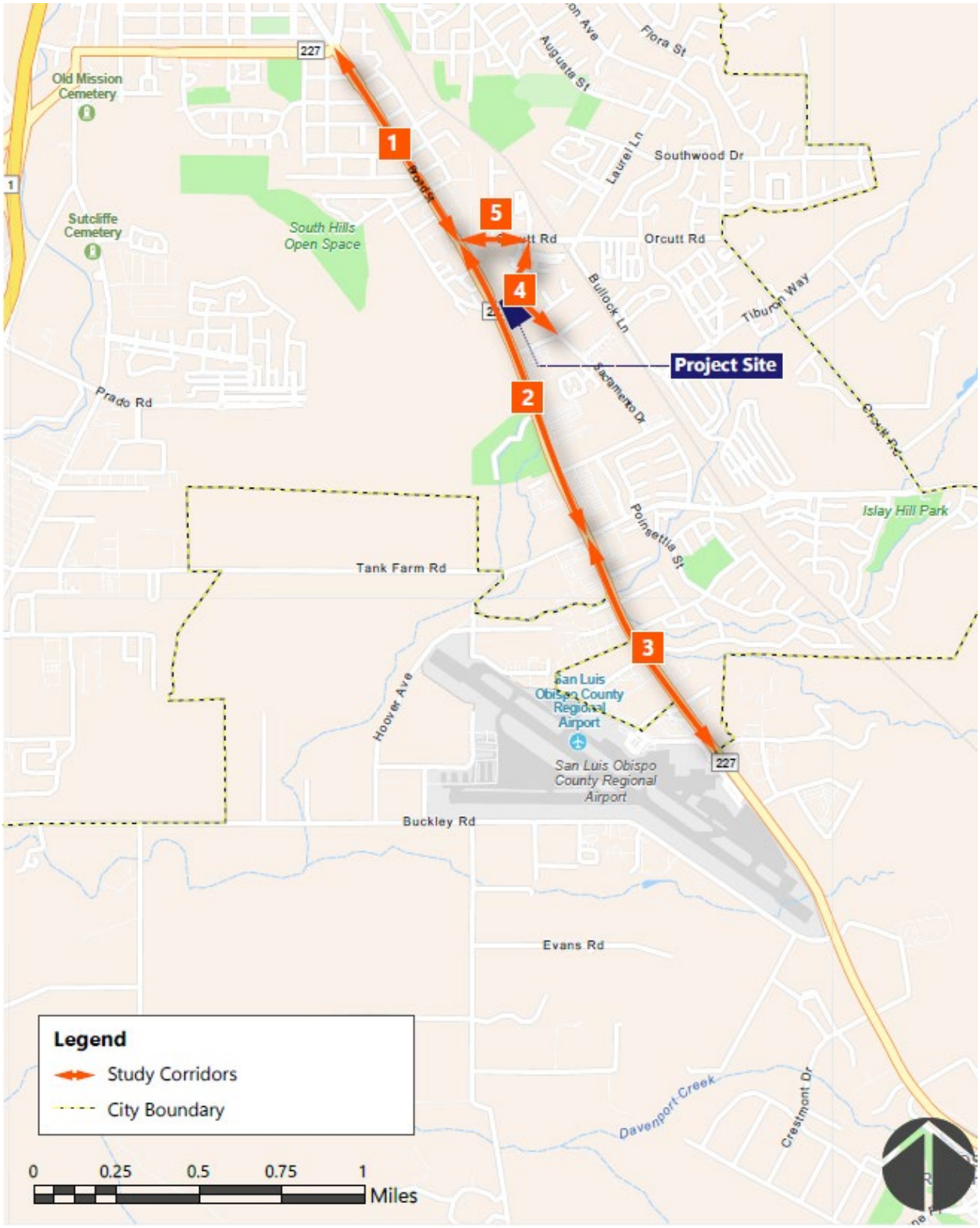


Figure 2: Study Roadway Segments

C. Local Thresholds of Significance, Methodologies, and Assumptions

i. Local, Regional, and State Plans and Regulatory Policies

The City of San Luis Obispo has established criteria to determine the level of significance of traffic impacts based on standards set in the SLO General Plan and the City's Traffic Impact Study (TIS) guidelines and standards set by Caltrans.

The following policies/goals are applicable to the proposed project and are **related to the Multimodal Traffic Operations Analysis:**

SLO General Plan

- **Policy 4.1.4 – New Development:** The City shall require that new development provide bikeways, secure storage facilities, parking facilities, and showers consistent with City plans and development standards. When evaluating transportation impact, the City shall use a Multimodal Level of Service Analysis.
- **Policy 5.1.3 – New Development:** New Development shall provide sidewalks and pedestrian paths consistent with City policies, plans programs and standards. When evaluating transportation impact, the City shall use a Multimodal Level of Service Analysis.
- **Policy 6.1.2 – Multimodal Level of Service (LOS) Objectives, Service Standards, and Significance Criteria:** The City shall strive to achieve level of service objectives and shall maintain level of service minimums for all four modes of travel: Pedestrians, Bicyclists, Transit, and Vehicles per the Highway Capacity Manual and the following Table (**Table 1).**

Table 1: MMLOS Objectives & Service Standards (SLO General Plan)

Travel Mode	LOS Objective	Minimum LOS Standard
Bicycle[1]	B	D
Pedestrian[2]	B	C
Transit[3]	C	Baseline LOS or LOS D, whichever is lower
Vehicle	C	E (Downtown), D (All other Routes)

Note:

(1) Bicycle LOS objectives & standards only apply to routes identified in the City's adopted Bicycle Transportation Plan.

(2) Exceptions to minimum pedestrian LOS objectives & standards may apply when it's determined that sidewalks are not consistent with the neighborhood character including topography, street design and existing density.

(3) Transit LOS objectives & standards only apply to routes identified in the City's Short Range Transit Plan.

- **Policy 6.1.3 –** In addition to maintaining minimum levels of service, multimodal service levels should be prioritized in accordance with the established modal priorities designated in **Table 2** below, such that construction, expansion, or alteration for one mode should not degrade the service level of a higher priority mode.

Table 2: Modal Priorities for Level of Service (SLO General Plan)

Complete Streets Areas	Priority Mode Ranking
Downtown & Upper Monterey Street	1. Pedestrians 3. Transit 2. Bicycles 4. Vehicle
Residential Corridors & Neighborhoods	1. Pedestrians 3. Vehicle 2. Bicycles 4. Transit
Commercial Corridors & Areas	1. Vehicles 3. Transit 2. Bicycles 4. Pedestrians
Regional Arterial and Highway Corridors	1. Vehicles 3. Bicycles 2. Transit 4. Pedestrians

Note: Exceptions to multimodal priorities may apply when in conflict with safety or regulatory requirements or conflicts with area character, topography, street design, and existing density.

- **Policy 6.1.4 – Defining Significant Circulation Impact:** Any degradation of the level of service shall be minimized to the extent feasible in accordance with the modal priorities established in Policy 6.1.3 and **Table 2**. If the level of service degrades below thresholds established in Policy 6.1.2 and **Table 1**, it shall be determined to be a significant impact for purposes of environmental review under the California Environmental Quality Act (CEQA). For roadways already operating below the established MMLOS standards, any further degradation to the MMLOS score will be considered a significant impact under CEQA.

  Where a potential impact is identified, the City in accordance with the modal priorities established in Policy 6.1.3 and **Table 2**, can determine if the modal impact in question is adequately served through other means e.g., another parallel facility or like service. Based on this determination, a finding of no significant impact may be determined by the City.

- **Policy 6.1.5 – Mitigation:** For significant impacts, developments shall be responsible for their fair share of any improvements required. Potential improvements for alternative mode may include, but are not limited to:

  A. **Pedestrian**: Provision of sidewalk, providing or increasing a buffer from vehicular travel lanes, increased sidewalk clear width, providing a continuous barrier between pedestrians and vehicular travel lanes, increased sidewalk clear width, providing a continuous barrier between pedestrians and vehicle traffic, improved crossings, reduced signal delay, traffic calming, no right turn on red, reducing intersection crossing distance.

  B. **Bicycle**: Addition of a bicycle lane, traffic calming, provision of a buffer between bicycle and vehicle traffic, pavement resurfacing, reduced number of access points, or provision of an exclusive bicycle path, reducing intersection crossing distance.

  C. **Transit**: For transit-related impacts, developments shall be responsible for their fair share of any infrastructural improvements required. This may involve provision of street furniture at transit stops, transit shelters, and/or transit shelter amenities, pullouts for transit vehicles, transit signal prioritization, provision of additional transit vehicles, or exclusive transit lanes.

- **Policy 7.1.2 – Street Network**: The City shall manage to the extent feasible the street network so that the standards presented in **Table 1** are not exceeded. This will require new development to mitigate the traffic impacts it causes or the City to limit development that affects streets where congestion levels may be exceeded.
- **Policy 8.1.7 – New Project Evaluation**: The City shall not approve development that impacts the quality of life and livability of residential neighborhoods by generating traffic conditions that significantly exceed the thresholds established in **Table 1** except as provided under CEQA. The City shall also not approve development which significantly worsens already deficient residential neighborhood traffic conditions as established in **Table 3** except as provided under CEQA. New development shall incorporate traffic calming features to minimize speeding and cut-through traffic.

Table 3: Street Classification Descriptions and Standards

Descriptions of Street Types	Maximum ADT/LOS	Desired Maximum Speeds[1]
Local Commercial Streets directly serve non-residential development that front them and channel traffic to commercial collector streets	5,000	25 MPH
Local Residential Streets directly serve residential development that front them and channel traffic to minor and major residential collector streets	1,500	25 MPH
Commercial Collector Streets collect traffic from commercial areas and channel it to arterials	10,000	25 MPH
Residential Collector Streets (Minor) collect traffic from residential areas and channel it to arterials	3,000	25 MPH
Residential Collector Streets (Major) collect traffic from neighborhood commercial, high density residential and residential areas and channel it to arterials	5,000	25 MPH
Residential Arterials are bordered by residential property where preservation of neighborhood character is as important as providing for traffic flow and where speeds should be controlled.	LOS D	CVC*
Arterial Streets provide circulation between major activity centers and residential areas	LOS E (downtown) LOS D (other routes)	CVC*
Parkway Arterials/Regional Routes are arterial routes with landscaped medians where the number of cross streets is limited and direct access from fronting properties is discouraged. The routes connect the city with other parts of the county and are used by people traveling thoughout the county and state and are designated as primary traffic carriers.	LOS D	CVC*
Highway/Freeway/Ramps are a regional route of significance where access is controlled. Segments of these routes leading into SLO should include landscaped medians and roadside areas to better define them as community entryways.	LOS D	CVC*

* Speed Limits are dictated by prevailing speeds per the California Vehicle Code (CVC)

Note:

(1) Desired Maximum Speed means that 85% of motorists using the street will drive at or slower than this speed. To account for seasonal shifts speeds shall be calculated using an annual average or for individual speed surveys the threshold shall be adjusted by 2.7 mph.

- **Policy 9.1.1 – New Development:** The city shall require that new development assumes its fair share of responsibility for constructing new streets, bike lanes, sidewalks, pedestrian paths, and bus turn-outs or reconstructing existing facilities.

SLO TIS Guidelines

The San Luis Obispo Traffic Impact Study Guidelines provide guidance on how impacts are determined for facilities where project-related traffic causes standards of Level of Service, Level of Traffic Stress (LTS) or Queues be exceeded and for facilities already operating at deficient LOS, LTS or Queues. The following explains the specific thresholds of significance.

Intersections:

At signalized intersections, the following thresholds determine whether project-related LOS/Queue deficiencies are identified where:

1. Project causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards, and the V/C ratio is increased by .01 or more.
2. Project causes or exacerbates 95th percentile turning movement queues exceeding available turning pocket capacity by one vehicle length (25') or more and presents a contextually significant safety hazard.
3. Project proposes roadway geometry changes that cause minimum LOS standards to be exceeded or further degrades already exceeded LOS standards for the overall intersection or individual lane groups.

At roundabout intersections, the following thresholds determine whether project-related LOS/Queue deficiencies are identified where:

1. Project traffic causes minimum LOS standards to be exceeded or further degrades already exceeded LOS Standards and the V/C ratio is increased by 0.01 or more.
2. Project causes or exacerbates 95th percentile turning movement queues exceeding available turning pocket capacity by one vehicle length (25') or more and presents a contextually significant safety hazard.
3. Project causes or exacerbates 95th percentile queues by at least one vehicle length (25') at an adjacent intersection to the point where queues spill back into the roundabout functional area.
4. Project proposes roadway geometric changes that causes minimum LOS standards to be exceeded or further degrade already exceeded LOS standards.

At unsignalized intersections, the following thresholds determine whether project-related LOS deficiencies are identified where:

1. Project traffic causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards and all of the following three conditions are met:
    a. V/C ratio is increased by 0.01 or more; and
    b. The project adds at least 10 trips to the critical approach/movement; and
    c. The intersection satisfies a signal warrant analysis. It should be noted that the satisfaction of signal warrants alone does not dictate that a traffic signal would be the required solution to address operational deficiencies.

2. Project proposes roadway geometric changes that causes minimum LOS standards to be exceeded or further degrade already exceeded LOS standards.

For bicycles and pedestrians, the following thresholds determine whether project-related LOS deficiencies are identified where:

1. Project traffic causes minimum LOS standards to be exceeded.
2. Project proposes modifications to roadway geometry that causes minimum LOS standards to be exceeded or conflicts with engineering best practices for design of safe intersection and driveway crossings.
3. Project-related traffic or geometric modifications further degrades already exceeded LOS standards and there is contextual significance to the impact. Contextual significance may be evaluated qualitatively and can generally be interpreted as a project-related action that results in a negative change to the bicycle/pedestrian environment that is likely to be noticeable to the average user. (i.e. a decrease in the effective buffer width between motor vehicles and bicyclists/pedestrians, addition of traffic adjacent to a bicycle/pedestrian facility that would be noticeable during a typical walk/bike trip, significant increases in crossing delays., etc.)

Roadway Segments:

For vehicles, the following thresholds determine whether project-related LOS deficiencies are identified where:

1. Project traffic causes minimum LOS standards for either direction to be exceeded, or further degrades already exceeded LOS standards and the Volume-to-Capacity (V/C) ratio increases by at least 0.01 with the project.
2. Project proposes roadway geometry changes that causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards.

For bicycles and pedestrians, the following thresholds determine whether project-related LOS/LTS deficiencies are identified where:

1. Project traffic causes minimum LOS/LTS standards to be exceeded.
2. Project proposes modifications to roadway geometry that causes minimum LOS/LTS standards to be exceeded or conflicts with engineering best practices for bicycle and pedestrian facility design, including safety at intersection and driveway crossings.
3. Project-related traffic or geometric modifications further degrades already exceeded LOS standards and there is contextual significance to the impact. Contextual significance may be evaluated qualitatively and can generally be interpreted as a project-related action that results in a negative change to the bicycle/pedestrian environment that is likely to be noticeable to the average user. (i.e. a decrease in the effective buffer width between motor vehicles and bicyclists/pedestrians, addition of traffic adjacent to a bicycle/pedestrian facility that would be noticeable during a typical walk/bike trip, etc.)

Caltrans

Facilities under the jurisdiction of Caltrans include freeway segments, ramps, ramp terminals, and arterials. Caltrans is responsible for the maintenance and operation of State routes and highways. In San Luis Obispo, Caltrans facilities include Hwy 101 and SR 227. Although Caltrans has not designated a LOS standard, Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) indicates attempts to maintain LOS of a State highway facility between the LOS "C/D" threshold. When existing State highway facilities are operating at higher levels of service than noted above, 20-year forecasts or general plan build-out analysis for the facility should be considered to establish equitable project contributions to local development impact fee programs that address cumulative traffic impacts.

ii. Analysis Methodologies

Intersection Analyses

This study uses two different methods to determine vehicular Level of Service (LOS). Typically, the LOS criteria established in the Highway Capacity Manual (HCM), 7th Edition published and updated by the Transportation Research Board is used for all study intersections. The Highway Capacity Manual (HCM) assigns vehicular intersection level of service (LOS) based on average control delay. Signalized intersection LOS is defined in terms of weighted average control delay for the entire intersection.

However, the HCM 7th Edition methodology in Synchro 12 does not provide delay or LOS when signal timing includes non-standard ring-barrier structures (NEMA phasing). Therefore, the percentile delay method was used for analysis at signalized intersections where there is a non-standard ring-barrier structure present. The percentile delay method is based on HCM 2000 methodology that Synchro uses for optimization.

Unsignalized intersection LOS criteria can be reduced into three intersection types: all-way stop control, two-way stop control, and roundabout control. All-way stop control intersection LOS is expressed in terms of the weighted average control delay for the entire intersection. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as critical major-street left-turns. Roundabout control LOS is expressed using both average control delay for the intersection as well as LOS for the worst performing lane.

Table 4 provides the relationship between LOS rating and delay for signalized and unsignalized intersections based on the HCM 7th Edition and HCM 2000 thresholds.

Table 4: Level of Service Thresholds Based on Intersection Delay for Vehicles

Level of Service	Signalized Intersection Delay (sec)	Unsignalized Intersection Delay (sec)
A	0 ≤ D ≤ 10	0 ≤ D ≤ 10
B	10 < D ≤ 20	10 < D ≤ 15
C	20 < D ≤ 35	15 < D ≤ 25
D	35 < D ≤ 55	25 < D ≤ 35
E	55 < D ≤ 80	35 < D ≤ 50
F	80 < D	50 < D

Criteria established in the HCM 7th edition will be also used to determine Pedestrian LOS (PLOS) and Bicycle LOS (BLOS) at the study intersections. For bicycles, Level of Service is assigned through a Level of Service score. This LOS score considers vehicular demand and cross-section properties including width of the cross street, outside through lane, bicycle lane, parking lane, and paved shoulder width. Bicycle LOS methodology only applies to signalized intersections, as no methodology has been developed in the HCM 7th edition to assess bicyclists at all-way stop control, two-way stop control, or roundabout controlled intersections. Therefore, a BLOS intersectional analysis was only conducted at signalized intersections. **Table 5** provides the relationship between LOS rating and LOS Score evaluation BLOS for signalized intersections based on the HCM 7th Edition thresholds. BLOS will be provided for all intersection approaches, even if an approach does not have a dedicated bicycle lane.

Table 5: Level of Service Thresholds Based on LOS Score at Signalized Intersections for Peds & Bikes

Level of Service	Level of Service Score
A	≤ 1.50
B	> 1.50-2.50
C	> 2.50-3.50
D	> 3.50-4.50
E	> 4.50-5.50
F	> 5.50

Pedestrian LOS methodology only applies to signalized intersections and two-way stop controlled intersections, as no methodology has been developed in the HCM 7th edition to assess pedestrians at all-way stop control or roundabout controlled intersections. Pedestrian LOS is assigned based on the type of control. At signalized intersections, the LOS score is used to determine LOS and follows the same relationship between rating and score for BLOS as shown in **Table 5**. This LOS score considers vehicular demand, cross-section properties, vehicular speed, and pedestrian delay. At two-way stop controlled intersections, LOS is determined based on the proportion of pedestrians that would rate their crossing experience as "dissatisfied" or worse. Pedestrian "satisfaction" or "dissatisfaction" is

based on the probability of crossing the major street (or the street without the stop-control) without delay and the type(s) of treatment(s) provided at the major street crossing. The calculation of the proportion is also based on crosswalk length and width, pedestrian speed, pedestrian start-up time, and conflicting vehicular demand. **Table 6** provides the relationship between LOS rating and proportion of pedestrians that would rate their crossing experience as "dissatisfied" at two-way stop controlled intersections based on the HCM 7th Edition thresholds. PLOS will be provided for each crossing at the intersection, even at crossings that do not have a marked crosswalk.

Table 6: Level of Service Thresholds Based on Pedestrian "Dissatisfaction" at two-way stop controlled intersections

Level of Service	Proportion of Pedestrians "dissatisfied"	Comments
A	$P_D < 0.05$	Nearly all pedestrians would be satisfied
B	$0.05 \leq P_D < 0.15$	At least 85% of pedestrians would be satisfied
C	$0.15 \leq P_D < 0.25$	Fewer than one-quarter of pedestrians would be dissatisfied
D	$0.25 \leq P_D < 0.33$	Fewer than one-third of pedestrians would be dissatisfied
E	$0.33 \leq P_D < 0.50$	Fewer than one-half of pedestrians would be dissatisfied
F	$P_D \geq 0.50$	The majority of pedestrians would be dissatisfied

Vehicle queuing analysis will be conducted for each lane or lane group that has a dedicated turn pocket. The queuing analysis will be performed via the 95th Percentile Queuing Analysis that is based on Highway Capacity Manual (HCM) methodology. The 95th Percentile queuing analysis is the potential queue where there is only 5% probability that the queue would be exceeded during the (analysis) time. In practice, the 95th Percentile queue is approximately 1.6 times the average (50th Percentile) queue for high-volume movements to approximately 2.0 times the average queue for low-volume movements.

Roadway Segment Analyses

Roadway segment analysis for vehicular operations will use guidelines presented in the City's General Plan Circulation Element. The City uses daily volume thresholds, number of lanes, and whether the roadway is undivided or divided to designate Level of Service, as shown in **Table 7** below. The daily volume thresholds will be bi-directional and will not be split in any one direction.

Roadway segment analysis for bicycle operations will be performed using Bicycle Level of Traffic Stress (LTS) methodology. The LTS methodology was published in the 2012 Mineta Transportation Institute Report 11-19: *Low-Stress Bicycling and Network Connectivity*. This methodology measures how comfortable or stressful a given roadway segment is for a typical bicyclist. The perception of stress is based on the bicycle infrastructure present on the roadway segment as well as surrounding factors such as roadway speed limit, number of through lanes adjacent to the bike lane, and bike lane blockage.

Table 7: Level of Service Thresholds Based on AADT

Lanes	Divided	Level of Service				
		A	B	C	D	E
2	Undivided	0	3,200	10,480	12,400	13,040
2	Undivided	0	4,000	13,100	15,500	16,300
2	Divided	0	4,200	13,755	15,500	16,300
4	Undivided	3,450	20,925	24,600	25,650	25,650
4	Undivided	4,370	26,505	31,160	32,490	32,490
4	Divided	4,600	27,900	32,800	34,200	34,200
6	Undivided	5,175	32,100	36,975	38,550	38,550
6	Undivided	6,555	40,660	46,835	48,830	48,830
6	Divided	6,900	42,800	49,300	51,400	51,400

Level of Traffic stress is quantified by using a ranking system from 1 to 4,with LTS 1 representing a comfortable, low stress experience for all users, while a LTS 4 represents a very stressful experience and is meant for only experienced riders. A shared-use path or trail that is physically separated from the roadway is typically considered LTS 1 and a roadway segment with limited or no bicycle facilities on a high speed arterial roadway segment is typically considered LTS 4. **Figure 3** below, taken from the City's Active transportation Plan, shows how each rank is categorized.

Figure 3: Level of Traffic Stress Ranking System

Roadway segment analysis for pedestrian operations will be based on HCM 7th Edition methodology. A segment is composed of a link and a boundary intersection. A link can span multiple blocks when intersections between these blocks are not signalized or are controlled by two-way stops where the cross-street to the link stops and traffic parallel to the direction of the link does not stop. The boundary of a link is defined as where the link hits a signal or a stop that stops traffic on the link, this is also known as the boundary intersection. For segment evaluation, performance of the link and the boundary intersection must be considered, so link level of service and intersection level of service must be calculated. If there are multiple segments throughout the span of the given roadway boundaries, this is

considered a facility. **Figure 4** outlines the boundaries of an intersection, link, segment, and facility, respectively.

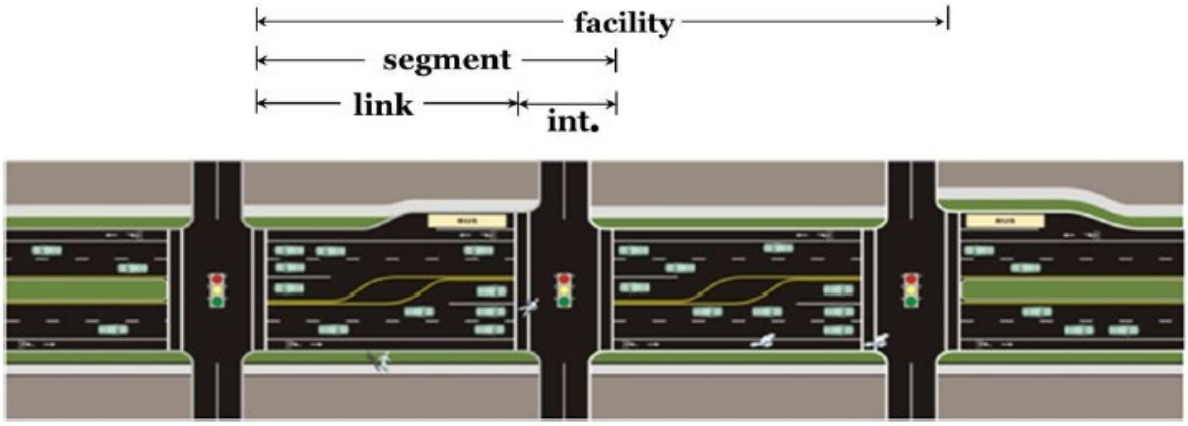


Figure 4: Pedestrian Segment LOS Analysis Components

To determine the Level of service of a segment, pedestrian space and pedestrian LOS score are considered. Pedestrian space reflects the level of crowding on the sidewalk. Pedestrian space typically only influences overall pedestrian LOS when pedestrian facilities are very narrow, pedestrian volumes are very high, or both. Pedestrian LOS score considers pedestrian delay at the boundary intersection, pedestrian travel speed along the segment, vehicular volume along the link, vehicular speed along the segment, roadway cross-sectional properties, and sidewalk cross-sectional properties. **Table 8** provides the relationship between Pedestrian Space, Pedestrian LOS Score and the LOS rating for a segment. The LOS for a facility is calculated by a length-weighted average of segment LOS scores. Pedestrian LOS analyses will be conducted for both directions along the roadway segment/facility.

Table 8: Level of Service Thresholds based on Pedestrian Space & Pedestrian LOS score on Segments

Segment-Based Pedestrian LOS Score	Segment-Based Average Pedestrian Space (ft^2/p)					
	> 60	> 40 - 60	> 24 - 40	> 15 - 24	> 8.0 - 15	≤ 8.0
≤ 2.00	A	B	C	D	E	F
> 2.00 – 2.75	B	B	C	D	E	F
> 2.75 – 3.50	C	C	C	D	E	F
> 3.50 – 4.25	D	D	D	D	E	F
> 4.25 – 5.00	E	E	E	E	E	F
> 5.00	F	F	F	F	F	F

iii. Analysis Assumptions

All Analyses were conducted during the weekday a.m. peak hour only because there will be no significant project impact to the transportation network during the p.m. peak hours. The p.m. peak hours were omitted from the analysis because the school generates little traffic during the typical p.m. peak hours (4-6 pm). City staff also confirmed that baseline traffic volumes within the vicinity of the project site during the existing pm peak (4-6 pm) are higher than existing volumes plus project traffic during the peak school afternoon pickup period(2:30-3:30 pm) , thus making the significance of the project-related traffic during the pm peak negligible.

Vehicular heavy volume percentages were obtained from Replica[1]. All conditions assumed the same heavy vehicle percentages. Similarly, all conditions assumed the same peak hour factor as the existing peak hour factors.

The Existing and Existing Plus Project scenarios assumed existing traffic signal timings and parameters while the Cumulative and Cumulative Plus Project scenarios used optimized traffic signal timings and parameters consistent with typical standards and best practices, if it was deemed necessary.

The Cumulative and Cumulative Plus Project scenarios also assumed changes to lane geometry and control changes at the following locations:

- Lane changes at the intersection of Higuera Street & Madonna Road
- Signal timing changes at the intersection of Higuera Street & South Street
- Intersection control change (from signalized to roundabout control) at the intersections of Edna Road (SR227) & Buckley Road and Edna Road (SR227) & Los Ranchos Road
- Lane changes at the intersection of Broad Street & Tank Farm Road

These changes are part of anticipated transportation improvements that will occur within the City of San Luis Obispo with the buildout of the City's General Plan Land use and circulation elements. These improvements are further expanded upon in the **Intersection & Roadway Geometrics and Volumes section** for the Cumulative Base conditions, as well as other assumptions made for the cumulative base model.

Existing lane widths, parking designations, sidewalk widths and features, cross-section properties, crosswalk properties and crossing treatments were used for Pedestrian and Bicycle LOS calculations for all scenarios.

In the Existing Plus Project scenario, pedestrian and bicycle demand was based on the existing pedestrian and bicycle demand plus pedestrian and bicycle trips created by the project. For the Cumulative scenario, pedestrian and bicycle demand was based on a growth rate determined by the City's Travel Demand Forecasting Model. For the Cumulative Plus Project scenario, uses the cumulative pedestrian and bicycle demand plus the demand plus pedestrian and bicycle trips created by the project.

[1] Replica is a nationwide activity-based model updated each week with near-real-time data on mobility, consumer spending, and land use at census-tract-level level. Replica uses activity-based travel models that simulate the movements of residents, visitors, and commercial vehicles in a given area. Data outputs can be queried down to the network link level.

Baseline Analysis Conditions

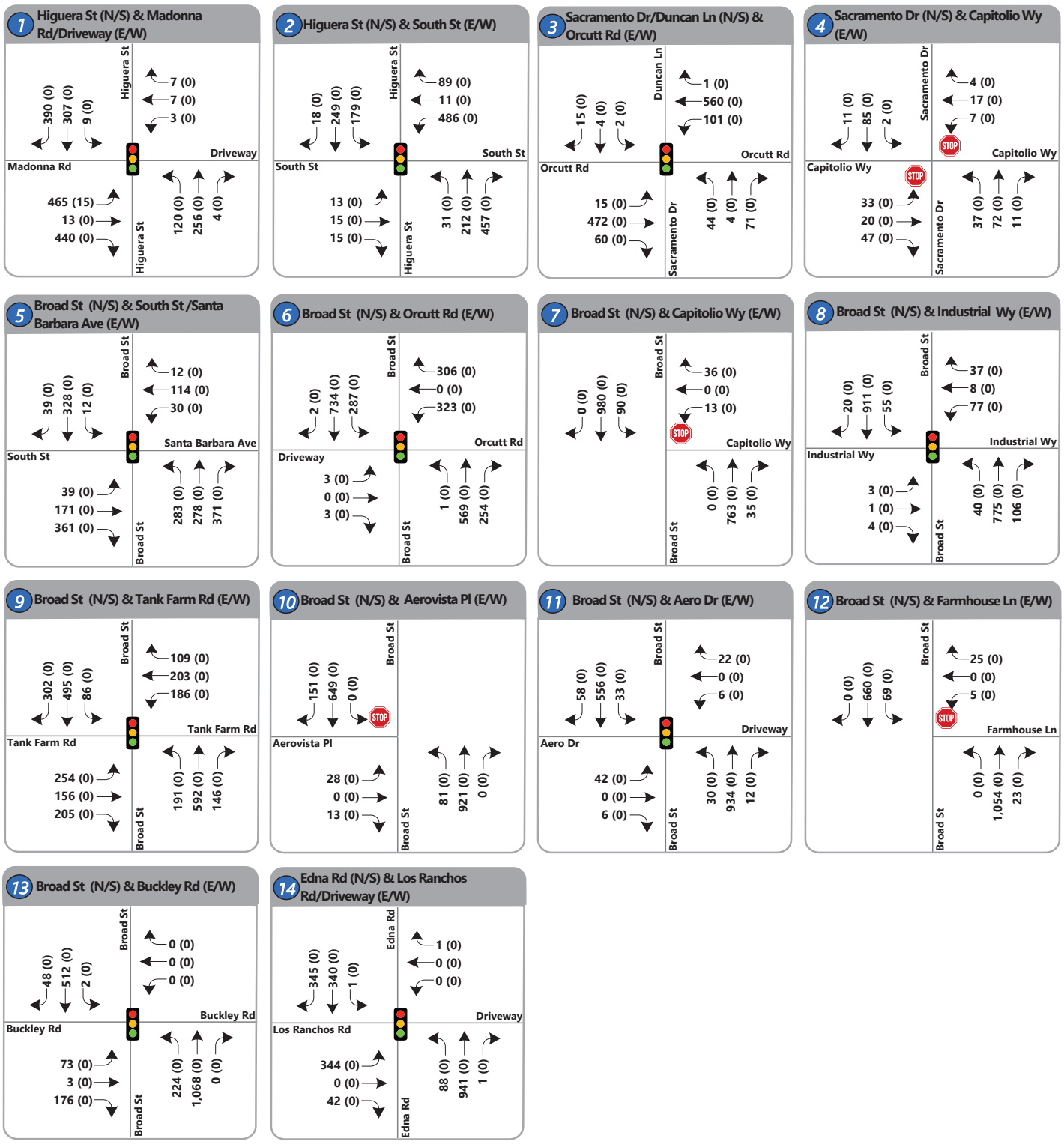
The Baseline Analysis analyzed the Existing Conditions near the project site and at the study intersections and study roadway segments. The Baseline Analysis also included Cumulative Base Conditions near the project site and at the study intersections and study roadway segments. However, the roadway geometrics, controls, and volumes for the cumulative base evaluated the cumulative buildout traffic projections for Year 2045.

A. Intersection & Roadway Geometrics and Volumes

i. Existing Conditions

Figure 5 illustrates the existing vehicular intersection turning movement counts, lane geometry & traffic controls. **Figure 6** illustrates the existing average daily traffic along the study roadway segments.

Appendix A contains all the data for the collected vehicular turning movement counts and average daily volumes. The Appendix also contains collected pedestrian and bicycle counts at the study intersections and study segments.

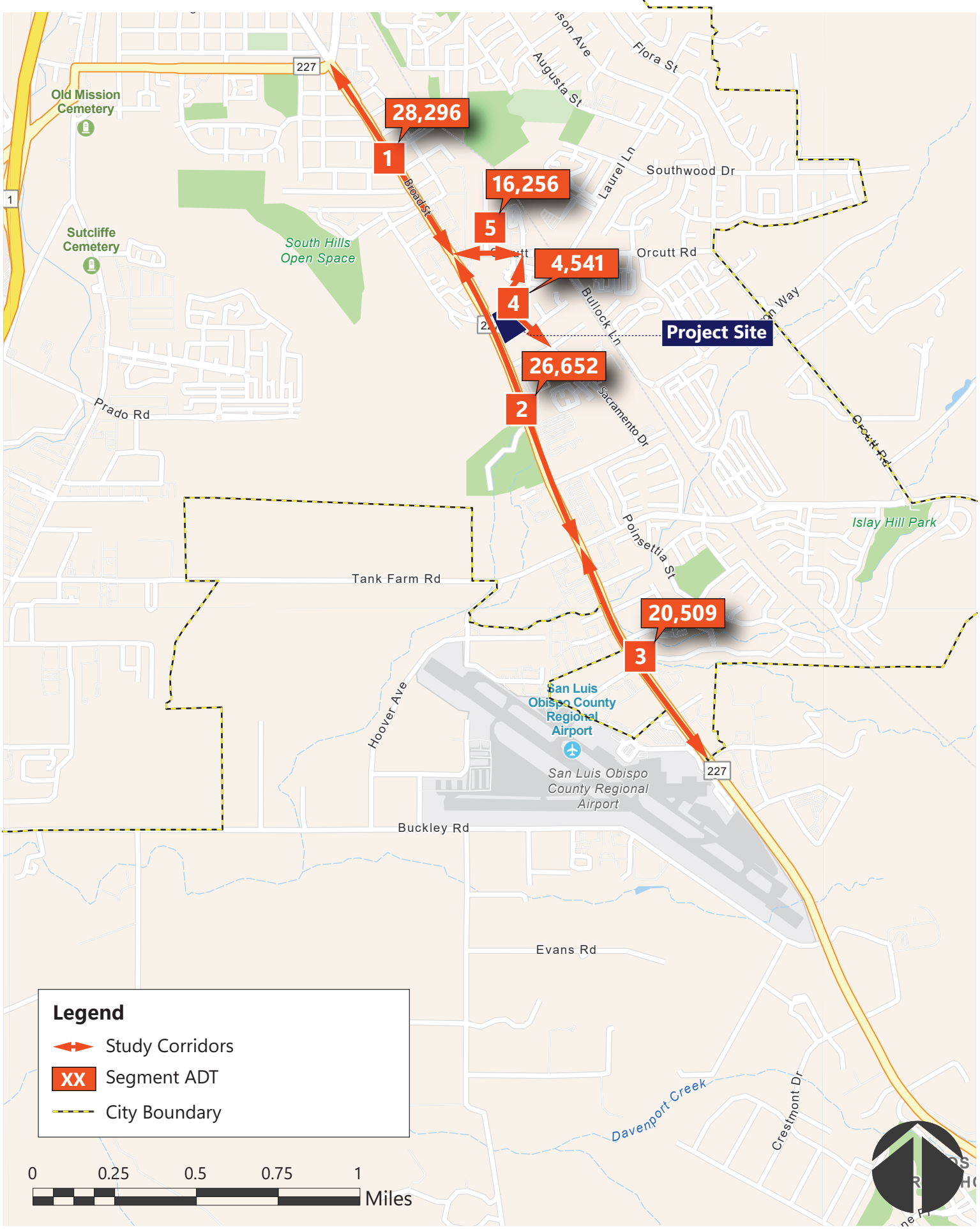


Legend

- Signal
- STOP Stop-control
- XX AM Peak Hour
- (XX) PM Peak Hour *

* PM Peak Volumes are zero because no PM peak hour analysis was conducted for this project

AMG ADVANCED MOBILITY GROUP


28,296
1
16,256
5
4,541
4
Project Site
26,652
2
20,509
3
227
Broad St
Augusta St
Flora St
Laurel Ln
Southwood Dr
Orcutt Rd
Bullock Ln
Sacramento Dr
Prado Rd
Tank Farm Rd
Poinsettia St
Islay Hill Park
Hoover Ave
San Luis Obispo County Regional Airport
Buckley Rd
Evans Rd
Davenport Creek
Crestmont Dr
Old Mission Cemetery
Sutcliffe Cemetery
South Hills Open Space
Legend
Study Corridors
XX Segment ADT
City Boundary
0 0.25 0.5 0.75 1
Miles

ii. Cumulative Base Conditions

The intersection & roadway geometrics under the Cumulative Base Condition are based on the anticipated transportation improvements that will occur within the City of San Luis Obispo with the buildout of the City's General Plan Land use and circulation elements. The following transportation improvements will change the intersection & roadway geometrics:

- Higuera Street & Madonna Road intersection
    - Convert the northbound shared through/left-turn lane to a dedicated left-turn lane
    - Convert the southbound shared through/left-turn lane to a through-turn lane
    - Convert the westbound dedicated left-turn lane to a shared through/left-turn lane
    - Change cycle length and update various signal timing parameters including minimum green, yellow time, all-red time, walk time, flash don't walk time, and maximum splits
- Higuera Street and South Street intersection
    - Change cycle length and update various signal timing parameters including minimum green, yellow time, all-red time, walk time, and maximum splits
- Broad Street & Tank Farm Road intersection
    - An additional southbound left-turn lane pocket with 200' in storage length
    - A new dedicated northbound right turn lane pocket with 200' in storage length
    - Convert the westbound right-turn lane to a shared through/right-turn lane
- Multilane roundabouts will be constructed at Edna Road (SR 227)/Buckley Road and Edna Road (SR 227)/Los Ranchos Road. The roundabouts will have the following features at each intersection:
    - Edna Road (SR 227)/Buckley Road: Shared through/right-turn lane and shared through/left-turn lane on the northbound and southbound approaches. A shared through/left-turn lane and a dedicated right-turn lane with a channelized island on the eastbound approach. A shared through/left-turn/right-turn lane on the westbound approach.
    - Edna Road (SR 227)/Los Ranchos Road: Shared through/right-turn lane and shared through/left-turn lane on the northbound and southbound approaches. A shared through/right-turn lane and a dedicated left-turn lane on the eastbound approach. A shared through/left-turn/right-turn lane on the westbound approach.
    - Both roundabouts will also install pedestrian crossings with splitter islands across each approach.

Cumulative traffic volume forecasts were developed using the City's travel demand forecasting model, and assumed full development of the San Luis Ranch, Avila Ranch, Froom Ranch Specific Plan, Orcutt Area Specific Plan and Margarita Area Specific Plan developments. The travel demand forecasting model also assumed that the transportation improvements detailed above will be implemented by

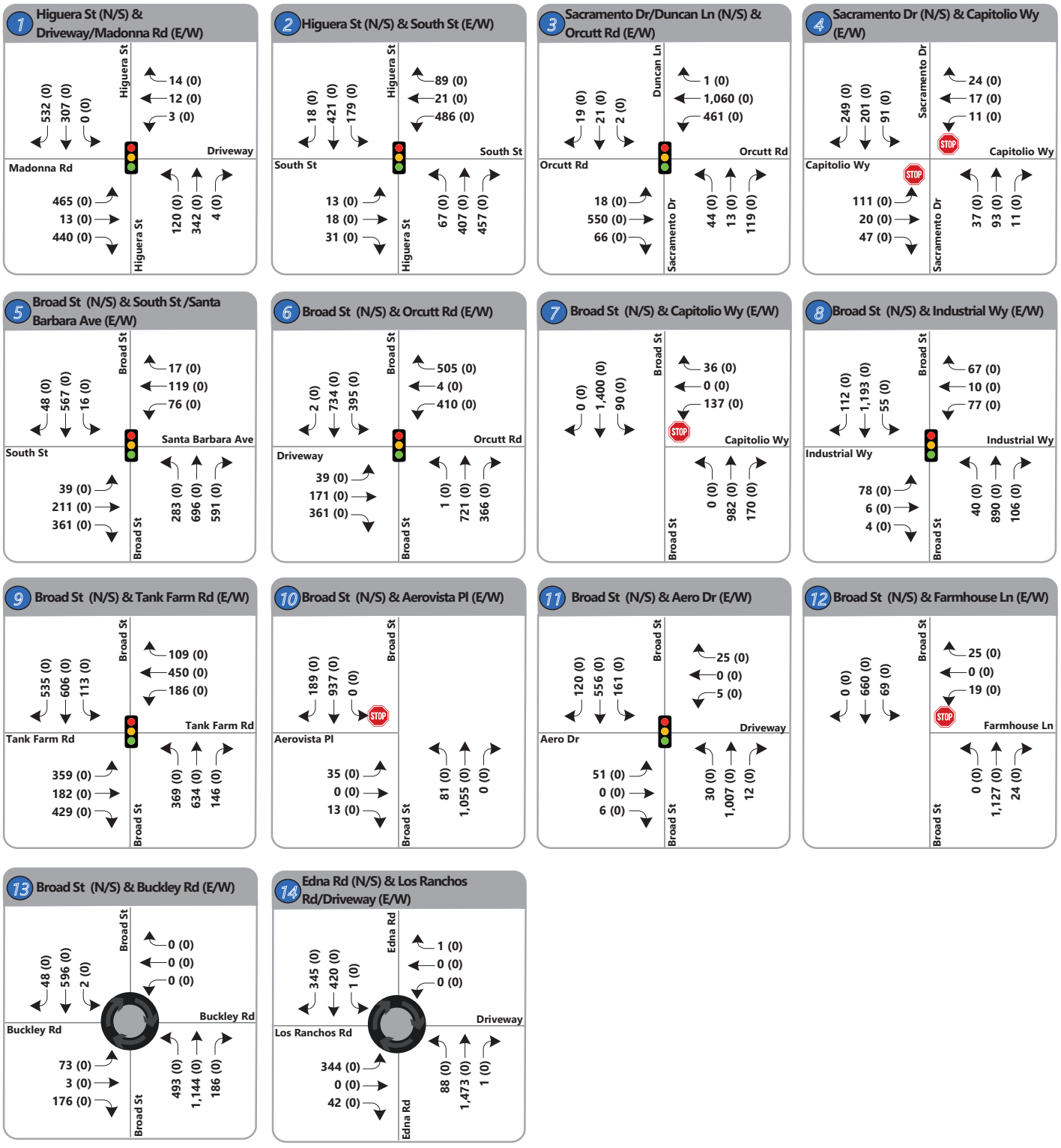
2045. Additionally, the following key transportation changes were incorporated into the forecasting model, but did not directly change any intersection or roadway geometrics:

- Extension of Prado Road as a four-lane regional route from South Higuera Street to Broad Street with a new intersection between Capitolio Way and Industrial Way
- Construction of a new interchange at Prado Road and US 101 along with replacement of the Prado Road Creek Bridge
- Bullock Lane is extended as a residential collector, connecting Orcutt Road with Tank Farm Road

Once the changes were verified, the forecasting model was used to obtain the cumulative intersection turning movement counts and roadway daily traffic volumes. A delta method was used between the existing counts, the 2016 base year volumes, and the proposed 2045 forecast volumes to calibrate the model. The delta method ensured that any volume discrepancies between existing volumes and baseline volumes were minimized. Here is a breakdown of other assumptions made in the model.

- The model AM time period was 7-8AM and the project AM period is 7-9AM
- Growth of one-hour AM Intersection Turning Movements were estimated from model output, as follows
    - The growth from 2025 to 2045 was calculated by linear interpolation of delta of (2040-2016) AM ITM
- Growth times 2, to reflect growth in two-hour AM period, was added to the observed volume to get AM Intersection Turning Movements
    - If the growth was calculated to be negative, observed volumes were assumed, effectively setting a floor of zero growth.

Figure 7 illustrates the Cumulative vehicular intersection turning movement counts, lane geometry & traffic controls. **Figure 8** illustrates the Cumulative average daily traffic along the study roadway segments.

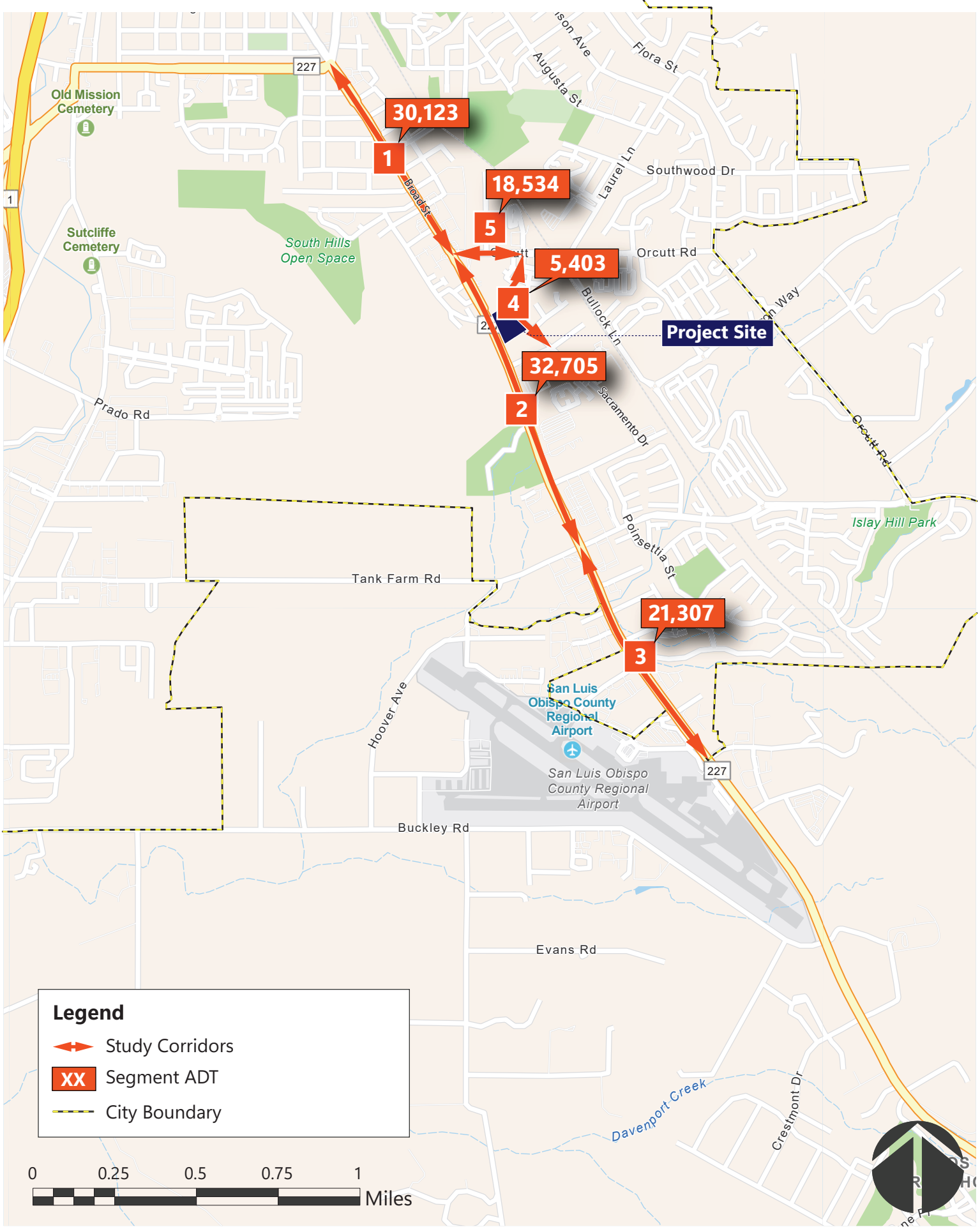


Legend

- Signal
- Stop-control
- XX AM Peak Hour
- (XX) PM Peak Hour*
- Roundabout

* PM Peak Volumes are zero because no PM peak hour analysis was conducted for this project

AMG ADVANCED MOBILITY GROUP


30,123
1
18,534
5
5,403
4
Project Site
32,705
2
21,307
3
227
Broad St
Augusta St
Flora St
Laurel Ln
Southwood Dr
Orcutt Rd
Bullock Ln
Sacramento Dr
Prado Rd
Tank Farm Rd
Poinsettia St
Islay Hill Park
Hoover Ave
San Luis Obispo County Regional Airport
Buckley Rd
Evans Rd
Davenport Creek
Crestmont Dr
Old Mission Cemetery
Sutcliffe Cemetery
South Hills Open Space
Legend
Study Corridors
XX Segment ADT
City Boundary
0 0.25 0.5 0.75 1
Miles

B. LOS Analysis

i. Existing Conditions

Intersection Analyses

AMG developed existing conditions traffic simulation models using Synchro 12 software using existing lane configuration, traffic signal timings and traffic volumes.

The results of the vehicle LOS and delay analysis conducted at the signalized intersections are summarized in **Table 9**. The results of the vehicle LOS and delay analysis conducted at the unsignalized intersections are summarized in **Table 10**.

Table 9: Existing Conditions Vehicle LOS results - Signalized intersections

#	Intersection	Existing Conditions	
		Delay	LOS
1	Higuera Street & Madonna Road*	17.4	B
2	Higuera Street & South Street	31.7	C
3	Orcutt Road & Sacramento Drive/Duncan Road*	10.6	B
5	Broad Street & South Street/Santa Barbara Avenue*	26.7	C
6	Broad Street & Orcutt Road	25.0	C
8	Broad Street & Industrial Way	15.5	B
9	Broad Street & Tank Farm Road	28.2	C
11	Broad Street & Aero Drive	13.3	B
13	Edna Road (SR 227) & Buckley Road*	31.8	C
14	Edna Road (SR 227) & Los Ranchos Road*	69.9	E

Legend:
* = Uses HCM 2000 for Analysis due to non-standard phasing (NEMA)
Intersections highlighted in Light Blue are Caltrans Intersections

Table 10: Existing Conditions Vehicle LOS results - Unsignalized intersections

#	Intersection	Existing Conditions					
		Minor Street Approaches - Unsignalized			Major Street Turning Movements -Unsignalized		
		Approach	Delay	LOS	Movement	Delay	LOS
4	Sacramento Drive & Capitolio Way	EB	11.1	B	NBL	7.5	A
		WB	11.3	B	SBL	7.4	A
7	Broad Street & Capitolio Way	WB	15.1	C	NBTR	0.0	A
					SBTL	10.5	B
10	Broad Street & Aerovista Place	EB	19.5	C	NBL	10.4	B
					SBR	0.0	A
12	Broad Street & Farmhouse Lane	WB	28.1	D	NBR	0.0	A
					SBL	13.0	B

All the intersections operate at acceptable LOS D or better except for the Edna Road (SR 227) & Los Ranchos Road intersection that operates at LOS E. Note that design for the installation of a roundabout

is currently underway, the intersection will improve to LOS D or better after the improvement is complete. **Appendix B** contains the Existing conditions Synchro analysis reports.

The results for the Bicycle LOS and delay analysis are summarized in **Table 11**. All the intersection approaches operate at acceptable LOS D. **Appendix B** contains the existing conditions bicycle delay and LOS calculations.

Table 11: Existing Conditions Bicycle LOS results

#	Intersection	Approach	Existing Conditions		
			Delay (s/b)	Score	LOS
1	Higuera Street & Madonna Road	EB	28.23	3.11	C
		WB	42.16	2.72	C
		NB	24.56	2.10	B
		SB	33.58	2.86	C
2	Higuera Street & South Street	EB	32.27	2.92	C
		WB	23.19	2.71	C
		NB	28.52	2.31	B
		SB	21.25	1.73	B
3	Orcutt Road & Sacramento Drive/Duncan Road	EB	24.70	1.56	B
		WB	19.18	1.89	B
		NB	36.51	1.96	B
		SB	36.47	1.82	B
5	Broad Street & South Street/Santa Barbara Avenue	EB	51.55	4.17	D
		WB	50.76	2.37	B
		NB	33.81	2.56	C
		SB	49.11	2.03	B
6	Broad Street & Orcutt Road	EB	50.66	2.92	C
		WB	41.22	3.23	C
		NB	36.91	2.90	C
		SB	27.68	2.76	C
8	Broad Street & Industrial Way	EB	49.49	3.35	C
		WB	44.56	3.46	C
		NB	23.73	2.47	B
		SB	22.86	2.37	B
9	Broad Street & Tank Farm Road	EB	59.76	2.95	C
		WB	52.84	3.38	C
		NB	47.26	2.65	C
		SB	48.69	2.49	B
11	Broad Street & Aero Drive	EB	45.18	1.87	B
		WB	45.45	2.40	B
		NB	12.11	2.43	B
		SB	12.18	1.34	A
13	Edna Road (SR 227) & Buckley Road	EB	63.07	1.61	B
		WB	N/A	1.57	B
		NB	13.54	3.10	C
		SB	39.73	3.57	D
14	Edna Road (SR 227) & Los Ranchos Road	EB	46.93	3.92	D
		WB	62.44	3.01	C
		NB	20.15	2.77	C
		SB	27.65	2.44	B

The results for the Pedestrian LOS and delay analysis are summarized in **Table 12**. Many of the crossings operate below acceptable LOS C. At the signalized intersections, this may be due to low effective green walk time for that crossing, high conflicting vehicular demand, or there are many lanes that the pedestrian must cross. At the unsignalized intersections, this may be due to the crossings being unmarked crosswalks and that there are many lanes that the pedestrian must cross. **Appendix B** contains the existing conditions pedestrian delay and LOS calculations.

Table 12: Existing Conditions Pedestrian LOS results

#	Intersection	Existing Control	Crosswalk	Existing Conditions	
				Score	LOS
1	Higuera Street & Madonna Road	Signal	EB	3.46	C
			WB	1.98	B
			NB	2.62	C
			SB	3.98	D
2	Higuera Street & South Street	Signal	EB	2.05	B
			WB	3.02	C
			NB	4.17	D
			SB	2.50	B
3	Orcutt Road & Sacramento Drive/Duncan Road	Signal	EB	2.78	C
			WB	2.64	C
			NB	2.28	B
			SB	2.00	B
4	Sacramento Drive & Capitolio Way	TWS	NB	0.52	F
			SB	0.50	E
5	Broad Street & South Street/Santa Barbara Avenue	Signal	EB	3.59	D
			WB	2.25	B
			NB	3.59	D
			SB	2.59	C
6	Broad Street & Orcutt Road	Signal	EB	1.96	B
			WB	3.58	D
			NB	3.74	D
			SB	2.93	C
7	Broad Street & Capitolio Way	OWS	NB	0.80	F
			SB	0.80	F
8	Broad Street & Industrial Way	Signal	EB	2.04	B
			WB	2.19	B
			NB	3.24	C
			SB	2.97	C
9	Broad Street & Tank Farm Road	Signal	EB	3.36	C
			WB	2.70	C
			NB	3.43	C
			SB	3.76	D
10	Broad Street & Aerovista Place	OWS	NB	0.73	F
			SB	0.76	F
11	Broad Street & Aero Drive	Signal	EB	2.05	B
			WB	2.07	B
			NB	2.84	C
			SB	3.04	C
12	Broad Street & Farmhouse Lane	OWS	NB	0.84	F
			SB	0.84	F
13	Edna Road (SR 227) & Buckley Road	Signal	EB	2.94	C
			WB	1.75	B
			NB	3.32	C
			SB	3.23	C
14	Edna Road (SR 227) & Los Ranchos Road	Signal	EB	2.57	C
			WB	1.74	B
			NB	2.91	C
			SB	4.25	D

Roadway Analyses

Using existing geometric conditions and traffic volumes, Existing conditions level of service for vehicles and pedestrians, and level of traffic stress for cyclists were evaluated.

The results of the vehicle LOS analysis are summarized in **Table 13** . All roadway segments are within the acceptable LOS D for arterials and regional routes and below the maximum ADT threshold (10,000 vehicles) for commercial collector streets.

Table 13: Existing Conditions Vehicle Roadway Segment LOS results

Segment	Road Type	Lanes	Divided	Existing	
				ADT	LOS
Broad St (South to Orcutt)	Arterial	4	YES	28,296	C
Broad St (Orcutt to Tank Farm)	Regional Route	4	YES	26,652	B
Broad St (Tank Farm to City Limits	Regional Route	2 or 4	YES	20,509	B
Sacramento Dr (Orcutt to Capitolio)	Collector	2	NO	4,541	C
Orcutt Rd (Broad to Sacramento)	Arterial	4	YES	16,256	B

The results of the bicycle level of traffic stress are summarized in **Table 14**. The existing LTS is at rank 4 due to the perception of high stress a cyclists feel while riding on the study roadways. The perceived stress is high due to high roadway speed limit and large vehicular demand on the through lanes adjacent to the bike lane.

Table 14: Existing Conditions Bicycle Roadway Segment LTS results

Segment	Existing LTS
Broad St (South to Orcutt)	4
Broad St (Orcutt to Tank Farm)	4
Broad St (Tank Farm to City Limits	4
Sacramento Dr (Orcutt to Capitolio)	3
Orcutt Rd (Broad to Sacramento)	4

The results of the pedestrian LOS analysis are summarized in **Table 15**. Some of the segments operate below acceptable LOS C. This is due to the narrow sidewalks, narrow buffers between the sidewalks and the roadway, and high crossing delay at the boundary intersection. **Appendix B** contains the existing conditions pedestrian delay and LOS calculations.

Table 15: Existing Conditions Pedestrian Roadway Segment LOS results

Segment	Existing					
	NB or EB Ped Space (ft2/s)	NB or EB Ped LOS score	LOS	SB or WB Ped Space (ft2/s)	SB or WB Ped LOS score	LOS
Broad St (South to Orcutt)	9,883	3.68	D	6,123	3.30	C
Broad St (Orcutt to Tank Farm)	7,220	3.35	C	14,657	3.56	D
Broad St (Tank Farm to City Limits	50,361	3.50	D	37,771	3.62	D
Sacramento (Orcutt to Capitolio)	9,332	2.73	B	3,485	1.39	A
Orcutt (Broad to Sacramento)	6,123	2.94	C	9,883	3.46	C

ii. Cumulative Baseline Conditions

Intersection Analyses

AMG developed Cumulative conditions traffic simulation models using Synchro 12 software using the existing lane configurations in addition to the corresponding intersection and roadway geometric changes based on the anticipated transportation improvements that will occur within the City of San Luis Obispo with the buildout of the City's General Plan Land use and circulation elements. Cumulative traffic volumes were obtained from the travel forecasting model. Cumulative signal timings were optimized based on best practices to improve overall intersection performance.

The results of the vehicle LOS and delay analysis conducted at the signalized intersections are summarized in **Table 16**. The results of the vehicle LOS and delay analysis conducted at the stop controlled intersections are summarized in **Table 17**. The results of the vehicle LOS and delay analysis conducted at the roundabout controlled intersections are summarized in **Table 18**.

Table 16: Cumulative Conditions Vehicle LOS results - Signalized intersections

#	Intersection	Cumulative Conditions	
		Delay	LOS
1	Higuera Street & Madonna Road*	32.8	C
2	Higuera Street & South Street	34.5	C
3	Orcutt Road & Sacramento Drive/Duncan Road*	18.5	B
5	Broad Street & South Street/Santa Barbara Avenue*	31.9	C
6	Broad Street & Orcutt Road	34.9	C
8	Broad Street & Industrial Way	21.2	C
9	Broad Street & Tank Farm Road	38.4	D
11	Broad Street & Aero Drive	35.3	D

Legend:
* = Uses HCM 2000 for Analysis due to non-standard phasing (NEMA)

Table 18: Cumulative Conditions Vehicle LOS results - Stop controlled intersections

#	Intersection	Cumulative Conditions					
		Minor Street Approaches - Unsignalized			Major Street Turning Movements -Unsignalized		
		Approach	Delay	LOS	Movement	Delay	LOS
4	Sacramento Drive & Capitolio Way	EB	72.0	F	NBL	8.8	A
		WB	18.5	C	SBL	7.7	A
7	Broad Street & Capitolio Way	WB	163.5	F	NBTR	0.0	A
					SBTL	13.9	B
10	Broad Street & Aerovista Place	EB	30.8	D	NBL	13.6	B
					SBR	0.0	A
12	Broad Street & Farmhouse Lane	WB	39.8	E	NBR	0.0	A
					SBL	14.3	B

Table 17: Cumulative Conditions Vehicle LOS results - Roundabout intersections

#	Intersection	Cumulative Conditions							
		Intersection		Minor Street Approaches - Unsignalized			Major Street Turning Movements - Unsignalized		
		Delay	LOS	Approach	Delay	LOS	Movement	Delay	LOS
13	Edna Road (SR 227) & Buckley Road	21.8	C	EB	9.4	A	NBTR	29.7	D
				WB	0.0	A	SBLT	12.8	B
14	Edna Road (SR 227) & Los Ranchos Road	30.9	D	EB	7.1	A	NBTR	52.2	F
				WB	18.2	C	SBLT & SBTR	6.8	A

Note:
Both intersections are Caltrans intersections

All the signalized intersections and both roundabout intersections operate at acceptable LOS D or better. The two-way stop controlled intersection at Broad Street & Aerovista Place operates at acceptable LOS D, while the rest of the stop controlled intersections operate below acceptable LOS D. These intersections fall below acceptable levels of service due to the increasing vehicular demand on the main streets, making it difficult for the vehicles to exit the minor streets. These intersections should be monitored to see if all-way stop control or signalization is warranted in the future. **Appendix C** contains the Cumulative conditions Synchro analysis reports.

The results for the Bicycle LOS and delay analysis are summarized in **Table 19** . All the intersection approaches operate at acceptable LOS D. **Appendix C** contains the cumulative conditions bicycle delay and LOS calculations.

The results for the Pedestrian LOS and delay analysis are summarized in **Table 20** . Many of the crossings operate below acceptable LOS C. At the signalized intersections, this may be due to low effective green walk time for that crossing, high conflicting vehicular demand, or there are many lanes that the pedestrian must cross. At the unsignalized intersections, this may be due to the crossings being unmarked crosswalks and that there are many lanes that the pedestrian must cross. **Appendix C** contains the cumulative conditions pedestrian delay and LOS calculations.

Table 19: Cumulative Conditions Bicycle LOS results

#	Intersection	Approach	Cumulative Conditions		
			Delay (s/b)	Score	LOS
1	Higuera Street & Madonna Road	EB	41.73	3.11	C
		WB	66.49	2.74	C
		NB	27.98	2.57	C
		SB	39.81	2.98	C
2	Higuera Street & South Street	EB	47.18	2.96	C
		WB	30.86	2.73	C
		NB	35.85	2.52	C
		SB	30.44	1.88	B
3	Orcutt Road & Sacramento Drive/Duncan Road	EB	40.46	1.64	B
		WB	16.84	2.64	C
		NB	55.46	2.06	B
		SB	55.39	1.85	B
5	Broad Street & South Street/Santa Barbara Avenue	EB	50.61	4.24	D
		WB	46.97	2.48	B
		NB	27.90	3.15	C
		SB	40.58	2.27	B
6	Broad Street & Orcutt Road	EB	50.75	2.92	C
		WB	37.24	3.76	D
		NB	33.15	3.14	C
		SB	23.08	2.86	C
8	Broad Street & Industrial Way	EB	45.30	3.49	C
		WB	43.07	3.51	D
		NB	23.81	2.57	C
		SB	20.96	2.70	C
9	Broad Street & Tank Farm Road	EB	58.00	3.26	C
		WB	46.79	3.17	C
		NB	40.93	2.83	C
		SB	45.86	2.80	C
11	Broad Street & Aero Drive	EB	44.82	1.89	B
		WB	44.82	2.50	B
		NB	19.04	2.50	B
		SB	12.00	1.52	B

Table 20: Cumulative Conditions Pedestrian LOS results

#	Intersection	Existing Control	Crosswalk	Cumulative Conditions	
				Score	LOS
1	Higuera Street & Madonna Road	Signal	EB	3.50	C
			WB	2.00	B
			NB	2.66	C
			SB	4.22	D
2	Higuera Street & South Street	Signal	EB	2.18	B
			WB	3.04	C
			NB	4.26	D
			SB	2.60	C
3	Orcutt Road & Sacramento Drive/Duncan Road	Signal	EB	2.97	C
			WB	2.93	C
			NB	3.04	C
			SB	2.03	B
4	Sacramento Drive & Capitolio Way	TWS	NB	0.59	F
			SB	0.57	F
5	Broad Street & South Street/Santa Barbara Avenue	Signal	EB	3.60	D
			WB	2.38	B
			NB	4.20	D
			SB	2.75	C
6	Broad Street & Orcutt Road	Signal	EB	1.97	B
			WB	4.20	D
			NB	4.11	D
			SB	3.04	C
7	Broad Street & Capitolio Way	OWS	NB	0.88	F
			SB	0.88	F
8	Broad Street & Industrial Way	Signal	EB	2.09	B
			WB	2.25	B
			NB	3.34	C
			SB	3.37	C
9	Broad Street & Tank Farm Road	Signal	EB	4.18	D
			WB	2.83	C
			NB	3.62	D
			SB	4.45	D
10	Broad Street & Aerovista Place	OWS	NB	0.82	F
			SB	0.84	F
11	Broad Street & Aero Drive	Signal	EB	2.08	B
			WB	2.42	B
			NB	2.87	C
			SB	3.27	C
12	Broad Street & Farmhouse Lane	OWS	NB	0.85	F
			SB	0.85	F

Roadway Analyses

Using cumulative geometric conditions and traffic volumes, Cumulative conditions level of service for vehicles and pedestrians, and level of traffic stress for cyclists were evaluated.

The results of the vehicle LOS analysis are summarized in **Table 21.** All roadway segments are within the acceptable LOS D for arterials and regional routes and below the maximum ADT threshold (10,000 vehicles) for commercial collector streets.

Table 21: Cumulative Conditions Vehicle Roadway Segment LOS results

Segment	Road Type	Lanes	Divided	Cumulative	
				ADT	LOS
Broad St (South to Orcutt)	Arterial	4	YES	30,123	C
Broad St (Orcutt to Tank Farm)	Regional Route	4	YES	32,705	C
Broad St (Tank Farm to City Limits	Regional Route	2 or 4	YES	21,307	B
Sacramento Dr (Orcutt to Capitolio)	Collector	2	NO	5,403	C
Orcutt Rd (Broad to Sacramento)	Arterial	4	YES	18,534	B

The results of the bicycle level of traffic stress are summarized in **Table 22**. Compared to existing conditions, the Level of Traffic Stress will be improved on all roadway segments under Cumulative conditions. The city is currently in the process of installing a bicycle buffer with raised pavement markers along some portions of Sacramento Drive between Orcutt Road and Capitolio Way as well as green bike lane conflict markings at intersections and high traffic driveways. This will improve the LTS 3 ranking to a LTS 2 ranking on Sacramento Drive. Per the city's Active Transportation Plan, the city is proposing to install protected bike lanes along Broad Street from South Street all the way to Farmhouse Lane (City Limits) and along Orcutt Road between Broad Street and Johnson Avenue within the General Plan & Circulation element's buildout timeline. If the protected bike lanes are installed, the LTS 4 ranking will improve to a LTS 2 ranking on Broad Street and Orcutt Road.

Table 22: Cumulative Conditions Bicycle Roadway Segment LTS results

Segment	Cumulative LTS
Broad St (South to Orcutt)	2
Broad St (Orcutt to Tank Farm)	2
Broad St (Tank Farm to City Limits	2
Sacramento Dr (Orcutt to Capitolio)	2
Orcutt Rd (Broad to Sacramento)	2

The results of the pedestrian LOS analysis are summarized in **Table 23**. Some of the segments operate below acceptable LOS C. This is due to the narrow sidewalks, narrow buffers between the sidewalks and the roadway, and high crossing delay at the boundary intersection. **Appendix C** contains the cumulative conditions pedestrian delay and LOS calculations.

Table 23: Cumulative Conditions Pedestrian Roadway Segment LOS results

Segment	Cumulative					
	NB or EB Ped Space (ft2/s)	NB or EB Ped LOS score	LOS	SB or WB Ped Space (ft2/s)	SB or WB Ped LOS score	LOS
Broad St (South to Orcutt)	4,647	4.11	D	3,485	3.78	D
Broad St (Orcutt to Tank Farm)	4,899	3.71	D	7,264	3.95	D
Broad St (Tank Farm to City Limits	50,361	3.74	D	37,771	3.78	D
Sacramento (Orcutt to Capitolio)	2,796	3.23	C	1,300	2.33	B
Orcutt (Broad to Sacramento)	3,485	3.41	C	4,647	3.61	D

C. Intersection Queuing

For vehicle queuing analysis, Synchro 12 software was used to obtain the 95th percentile queues at most of the study intersections. However, if oversaturated conditions were present at a study intersection, SimTraffic microsimulation analysis was conducted to obtain 95th percentile queues. SimTraffic analysis was also used at Caltrans intersections, as it is a Caltrans requirement. Caltrans requires that SimTraffic analysis uses five (5) SimTraffic runs, four 15-minute intervals with a 10-minute seeding period.

i. Existing Conditions

The results of the vehicle queuing analysis under Existing conditions are summarized in **Table 24**. Most of the lanes or lane groups with a dedicated turn pocket have an existing 95th percentile queue that does not extend past the available storage length under existing conditions. **Appendix B** contains the 95th percentile Synchro and SimTraffic reports under the existing conditions.

Table 24: Existing Conditions 95th Percentile Queuing Analysis results

				Synchro	Simtraffic
ID #	Intersection	Movements	Total Existing Storage Length (ft.)	Existing 95th Queue Length (ft.)	Existing 95th Queue Length (ft.)
1	Higuera Street & Madonna Road	NBL	160	116	N/A
		SBT1	220	126	
		SBT2	220	126	
		EBR	110	32	
2	Higuera Street & South Street*	NBL	60	39	51
		NBR	150	38	153
		SBL	100	189	143
		EBR	50	0	36
		WBL1	230	150	163
3	Orcutt Road & Sacramento Drive / Duncan Road	NBL	90	38	N/A
		SBL	50	5	
		EBL	120	19	
		WBL	120	69	
4	Sacramento Drive & Capitolio Way	N/A			
5	Broad Street & South Street/Santa Barbara Avenue	NBL1	250	150	N/A
		NBL2	250	150	
		NBR	200	60	
		SBL	100	28	
		EBL	170	58	
6	Broad Street & Orcutt Road	NBL	130	6	N/A
		NBR	200	12	
		SBL1	350	193	
		SBL2	350	193	
		WBL	210	164	
		EBR	50	0	
7	Broad Street & Capitolio Way	N/A			
8	Broad Street & Industrial Way	NBL	150	57	N/A
		NBR	170	33	
		SBL	110	68	
		SBR	430	0	
		EBR	100	0	
		WBR	180	0	
9	Broad Street & Tank Farm Road	NBL1	280	103	N/A
		NBL2	280	103	
		SBL	250	141	
		SBR	300	64	
		EBL1	270	122	
		EBL2	270	122	
		EBR	130	68	
		WBL	150	174	
10	Broad Street & Aerovista Place	N/A			
11	Broad Street & Aero Drive	NBL	150	47	N/A
		SBL	200	51	
		EBR	120	0	
12	Broad Street & Farmhouse Lane	N/A			
13	Edna Road (SR 227) & Buckley Road**	NBL	360	242	168
		SBL	400	10	12
		SBR	400	17	41
		EBTL	440	110	83
14	Edna Road (SR 227) & Los Ranchos Road**	NBL	220	164	132
		SBL	80	8	0
		SBR	110	65	147
		EBR	265	0	81

Legend:
** = Used Simtraffic due to oversaturated conditions*
*** = Used Simtraffic due to Caltrans guidelines*

ii. Cumulative Baseline Conditions

The results of the vehicle queuing analysis under Cumulative conditions are summarized in **Table 25**. Most of the lanes or lane groups with a dedicated turn pocket have an existing 95th percentile queue that does not extend past the available storage length under cumulative conditions. **Appendix C** contains the 95th percentile Synchro and SimTraffic reports under the cumulative conditions.

Table 25: Cumulative Conditions 95th Percentile Queuing Analysis results

				Synchro	Simtraffic
ID #	Intersection	Movements	Total Cumulative Storage Length (ft.)	Cumulative 95th Queue Length (ft.)	Cumulative 95th Queue Length (ft.)
1	Higuera Street & Madonna Road	NBL1	160	96	N/A
		NBL2	160	96	
		SBT	220	167	
		EBR	110	57	
2	Higuera Street & South Street	NBL	60	91	N/A
		NBR	150	61	
		SBL	100	201	
		EBR	50	0	
		WBL1	130	225	
3	Orcutt Road & Sacramento Drive / Duncan Road	NBL	90	41	N/A
		SBL	50	6	
		EBL	120	23	
		WBL	120	356	
4	Sacramento Drive & Capitolio Way	N/A			
5	Broad Street & South Street/Santa Barbara Avenue	NBL1	250	178	N/A
		NBL2	250	178	
		NBR	200	264	
		SBL	100	40	
		EBL	170	68	
6	Broad Street & Orcutt Road	NBL	130	6	N/A
		NBR	200	17	
		SBL1	350	262	
		SBL2	350	262	
		WBL	210	208	
		EBR	50	0	
7	Broad Street & Capitolio Way	N/A			
8	Broad Street & Industrial Way	NBL	150	64	N/A
		NBR	170	37	
		SBL	110	78	
		SBR	430	37	
		EBR	100	0	
		WBR	180	5	
9	Broad Street & Tank Farm Road	NBL1	250	308	N/A
		NBL2	250	308	
		NBR	200	70	
		SBL 1	200	85	
		SBL 2	200	85	
		SBR	300	455	
		EBL1	300	193	
		EBL2	300	193	
		EBR	300	312	
		WBL	150	184	
10	Broad Street & Aerovista Place	N/A			
11	Broad Street & Aero Drive	NBL	150	44	N/A
		SBL	200	279	
		EBR	120	0	
12	Broad Street & Farmhouse Lane	N/A			
13	Edna Road (SR 227) & Buckley Road*	NBTL	150	300	497
		NBTR	N/A	400	852
		SBTL	360	75	274
		SBTR	N/A	75	376
		EBTL	N/A	0	47
		EBR	440	25	57
		WBTLR	N/A	0	0
14	Edna Road (SR 227) & Los Ranchos Road*	NBTL	220	400	332
		NBTR	N/A	475	950
		SBTL	110	50	27
		SBTR	N/A	50	23
		EBL	N/A	25	129
		EBTR	265	25	43
		WBTLR	N/A	0	12

Legend:
** = Used Simtraffic due to Caltrans guidelines*

Project Analysis Conditions

The Project Analysis Conditions analyzed the Existing Plus Project Conditions near the project site and at the study intersections and study roadway segments. The Project Analysis Conditions also included the Cumulative Plus Project Conditions near the project site and at the study intersections and study roadway segments. However, the roadway geometrics, controls, and volumes for the Cumulative Plus Project evaluated the cumulative buildout with the project traffic projections for Year 2045.

The proposed SLOCA Campus project will consolidate current SLOCA students and staff from three separate locations (K-8th grade campus, preschool and infant care site, and staff offices) into one facility at 3450 Broad Street, repurposing a 54,495 s.f. office building into a private elementary school campus. The number of students enrolled will increase from 249 students to 372 students with the construction of the new campus. The project will encompass a total area of 55,154 sq. ft. across two stories, featuring 36 classrooms, daycare, common and assembly areas, a library, a meeting room, a break room, a reception/store, and a gym. On-site parking will include 88 spaces, comprising 4 ADA-compliant spaces and 4 designated motorcycle spaces. **Figure 9** shows the site plan of the proposed SLO Classical Academy Campus Project. **Appendix D** contains the fully detailed SLOCA Campus Site Plan.

Figure 9: Proposed SLOCA Campus Project Site Plan

A. Project Trip Generation

AMG proposed that the peak hour trip generation for the project should be based on the *Trip Generation Manual, 11th Edition*, published by the Institute of Transportation Engineers (ITE). Based on the proposed project land use and site plan, Private School (K-8) (ITE 530) and General Office Building (ITE 710) seemed to be the most appropriate for the proposed and existing uses.

The ITE Trip Generation Manual classifies various educational institutions, including Private Schools (K-8), which cater to elementary and middle school students in a private, non-sectarian or sectarian setting. The proposed development aligns with ITE Land Use Code 530 – Private School (K-8), which represents facilities that provide structured education for kindergarten through eighth grade. These schools typically include classrooms, administrative offices, common areas, recreational spaces, and other support facilities tailored to student learning. The trip generation characteristics of a Private School (K-8) are influenced by factors such as student enrollment, faculty size, school bus services, and parent drop-off/pick-up operations. The proposed development includes necessary infrastructure to accommodate student transportation needs while ensuring safe and efficient site circulation.

It is estimated that the project will generate approximately 844 daily trips and approximately 376 trips during the AM peak hour and 97 trips during the PM peak hour. However, an existing use credit based on the current office use on the project site was applied. **Table 26** below shows the Trip Generation for the proposed project and summarizes the net new AM and PM peak hour trips generated by the SLOCA Campus project.

Table 26: Trip Generation with Existing Credit use applied for SLOCA Campus Project

	Land Use	ITE Code	Size[1]	Daily		Weekday A.M.				Weekday P.M.			
				Rate	Total	Rate	In	Out	Total	Rate	In	Out	Total
Proposed	Private School (K-8)[2]	ITE 530	372 STU	2.27	844	1.01	210	166	376	0.26	44	53	97
Existing	General Office Building[3]	ITE 710	50.3 KSF	-	-638	-	-82	-11	-93	-	-16	-78	-94
Net New Trips				-	**206**	-	**128**	**155**	**283**	-	**28**	**-25**	**3**

Notes:
Based on ITE Trip Generation Manual 11th Edition, 2022
1. STU = Students
   KSF = 1,000 Square Feet
2. Average Rates used for AM & PM. Daily Rate was developed from Elementary School (ITE 520).
3. Fitted Curve Equations Used

Details of the ITE 530 Private School (K-8) and ITE 710 General Office Building categories are contained in **Appendix E**.

The proposed SLOCA project is expected to generate a net new amount of 206 daily trips, and 283 and 3 during the AM and PM peak, respectively. Since the number of new PM peak hour trips is very low, the impact of these new trips can be considered negligible. Therefore, the operational analysis will not consider the PM Peak hour trips, since the impact of these trips will be close to existing conditions.

The net new trips as shown in **Table 26** above, do not reflect the modal split created by the project. Modal split assumptions were derived based on information from the American Community Survey (ACS), Replica and Existing Counts. **Table 27** shows the percentage of the modal split from these different sources near the project site. Based on the average, the modal split was generated as shown below.

Table 27: Multimodal Split

Mode	Replica	ACS	Counts	Average
Vehicle	92.0%	88.5%	91.2%	90.6%
Pedestrian	2.5%	8.3%	5.0%	5.3%
Bicycle	3.6%	1.9%	3.8%	3.1%
Transit	0.2%	0.9%	0.0%	0.6%

It is worth noting, other local K-12 schools in San Luis Obispo likely have a higher share of non-vehicle trips. However, this mode share assumption is appropriate for the SLOCA campus because most students live outside of SLO city limits, making it difficult for most students walk, bike, or use transit. Additionally, SLOCA does not provide school bus or shuttle service to campus, so students living in SLO but far from campus will also use vehicles to travel to campus.

Based on this modal split, the estimated trip generation for each mode was estimated as shown in **Table 28**.

Table 28: Multimodal Trip Generation

	AM Trips		
	In	Out	Total
Vehicle Trip Generation	117	141	258
Pedestrian Trip Generation	6	8	14
Bicycle Trip Generation	4	5	9
Transit Trip Generation	1	1	2
Net Project Trip Generation	**128**	**155**	**283**

B. Project Trip Distribution & Trip Assignment

Trip distribution is a process that determines in what proportion vehicles would be expected to travel between a project site and various destinations outside the project study area. The process of trip assignment determines the various routes that vehicles would take from the project site to each destination using the estimated trip distribution.

Based on data provided by SLOCA representatives, the existing students travel from the following areas:

- 37% from within the City of San Luis Obispo
- 28% south of the City of SLO (Avila, Five Cities, Nipomo, Santa Barbara County, Kern County)
- 23% North of the City of SLO (North County, Tulare County)
- 12% West of the City of SLO (Cambria, Cayucos, Los Osos, Morro Bay)

To provide a more detailed Trip Distribution within the City of SLO, student address data was used to determine the origin locations of where students come from.

To maintain student confidentiality, full student addresses were not provided. SLOCA asked AMG to break down the City of SLO into various zones, as shown in **Figure 10**.

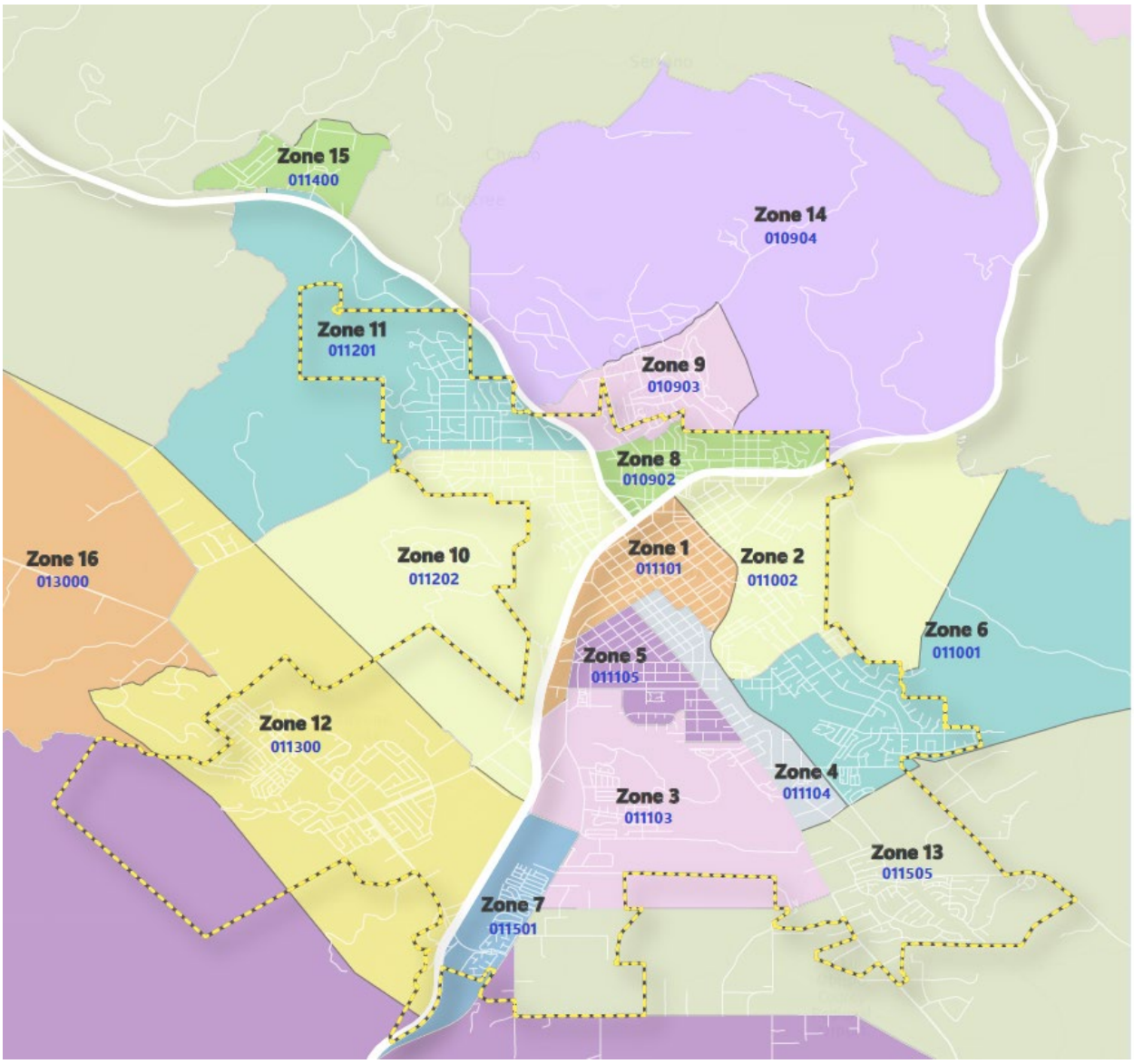


Figure 10: Zones within the City of SLO

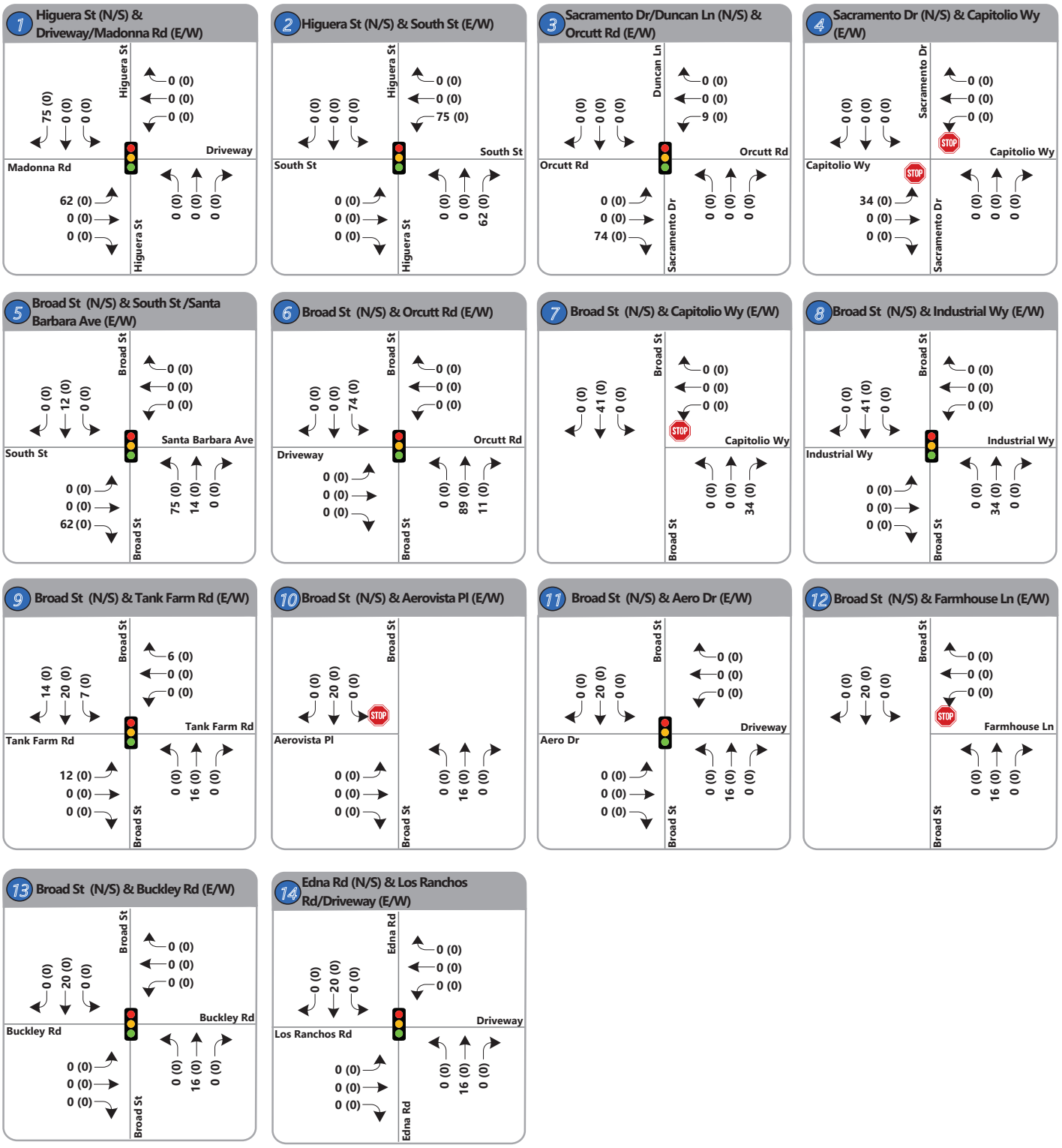
Based on these zones, the school provided the number of students that go to campus from each distinctive zone. The school is on a hybrid schedule, some students go to campus on Mondays & Wednesdays, and other students go to school on Tuesdays & Thursdays, while a portion of students from each tract goes to elective classes on Fridays. Since the number of students that go to campus differs 3 times a week, AMG calculated the average number of students that go to campus from each zone. **Table 29** shows the number of students that go to school based on their schedule tract, and the average of those totals.

From these averages, the distribution within the City of SLO was derived, which accounts for 37% of the total trips. The estimated vehicular trip distribution patterns are shown on **Figure 11**. The vehicular trip assignment and project only trips are shown in **Figure 12**.The trip assignment follows the assumption that the on-site driveway along Sacramento Drive (near Via Esteban) will serve as a one-way entrance and the driveway along Broad Street will serve as a one-way exit. This means circulation within the site is one-way westbound travel, as proposed by SLOCA and recommended by AMG in the **CEQA Transportation Analysis**.

Table 29: Distribution of Student Residences within the City of SLO

Zones	Schedule/Tract			Average	Average %-age
	Monday & Wednesday	Tuesday & Thursday	Friday		
1	9	8	8	8	9%
2	7	6	7	7	8%
3	8	9	9	9	10%
4	7	7	7	7	8%
5	4	6	6	5	6%
6	14	16	16	15	17%
7	1	1	1	1	1%
8	3	3	5	4	4%
9	1	1	1	1	1%
10	8	7	8	8	9%
11	5	5	5	5	6%
12	7	9	8	8	9%
13	11	11	11	11	12%
14	0	0	0	0	0%
15	0	0	0	0	0%
16	0	0	0	0	0%
TOTAL					100%


High St
Broad St
Johnson Ave
Augusta St
Flora St
Laurel Ln
Southwood Dr
Orcutt Rd
Project Site
Bullock Ln
Tiburon Way
Sacramento Dr
Prado Rd
Sutcliffe Cemetery
South Hills Open Space
Tank Farm Rd
Poinsettia St
Islay Hill Park
San Luis Obispo County Regional Airport
Evans Rd
Davenport Creek
Crestmont Dr
10%
53%
8%
5%
10%
14%
14%
14%
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Regional Distribution
9%
23%
3%
16%
City of San Luis Obispo
14%
14%
AMG ADVANCED MOBILITY GROUP



Legend

- Signal
- Stop-control
- XX AM Peak Hour
- (XX) PM Peak Hour*

* PM Peak Volumes are zero because no PM peak hour analysis was conducted for this project

AMG ADVANCED MOBILITY GROUP

Trip Distribution for pedestrian and bicycle trips was limited to intersections within a 0.5 mile radius of the project site, as typically, most students that live farther than a 0.5 mile radius from a school campus use transit, carpool, or vehicles to get to school. **Figure 13** shows the Trip Distribution for pedestrian and bicycle trips. **Figure 14** shows the pedestrian and bicycle trip assignment at certain intersections.

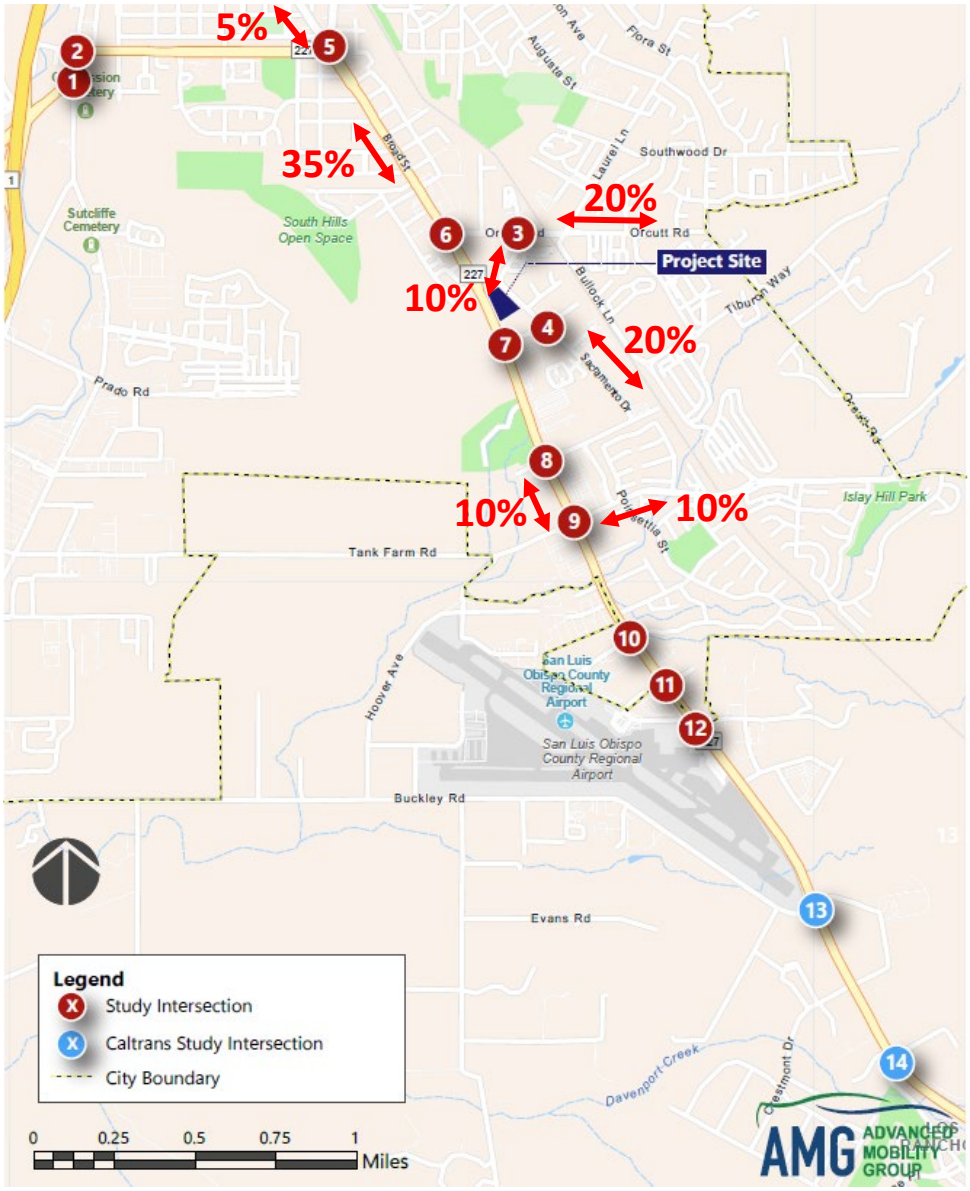


Figure 13: Pedestrian and Bicycle Project Trip Distribution

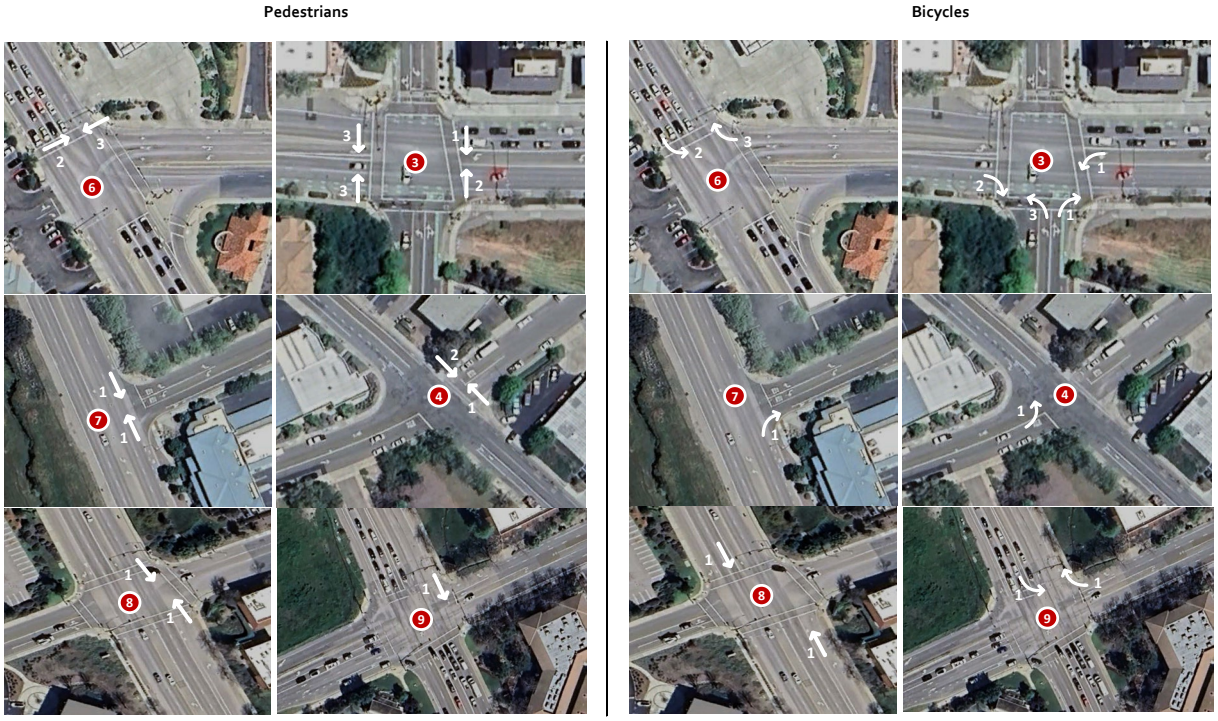


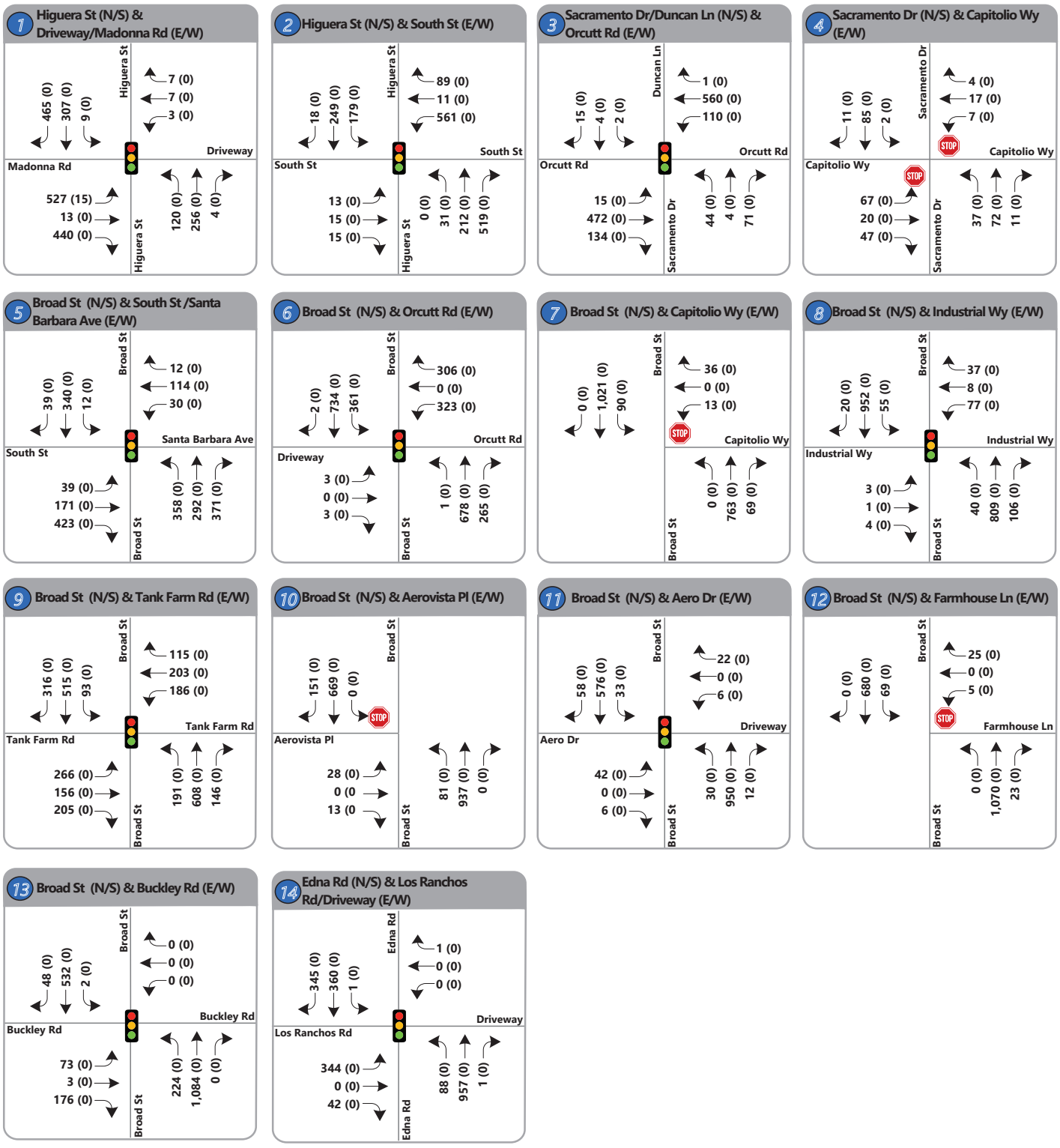
Figure 14: Pedestrian Project Only Peak Hour Volumes (left) & Bicycle Project Only Peak Hour Volumes (right)

C. Intersection & Roadway Geometrics and Volumes

i. Existing Plus Project Conditions

The Existing Plus Project Condition does not present any intersection or roadway geometric changes to the Existing conditions. The only changes between the Existing conditions and the Existing Plus Project conditions are the project trips generated by the project, as shown in **Figure 12**.

Figure 15 illustrates the Existing Plus Project vehicular intersection turning movement counts, lane geometry & traffic controls. **Figure 16** illustrates the Existing Plus Project average daily traffic along the study roadway segments.

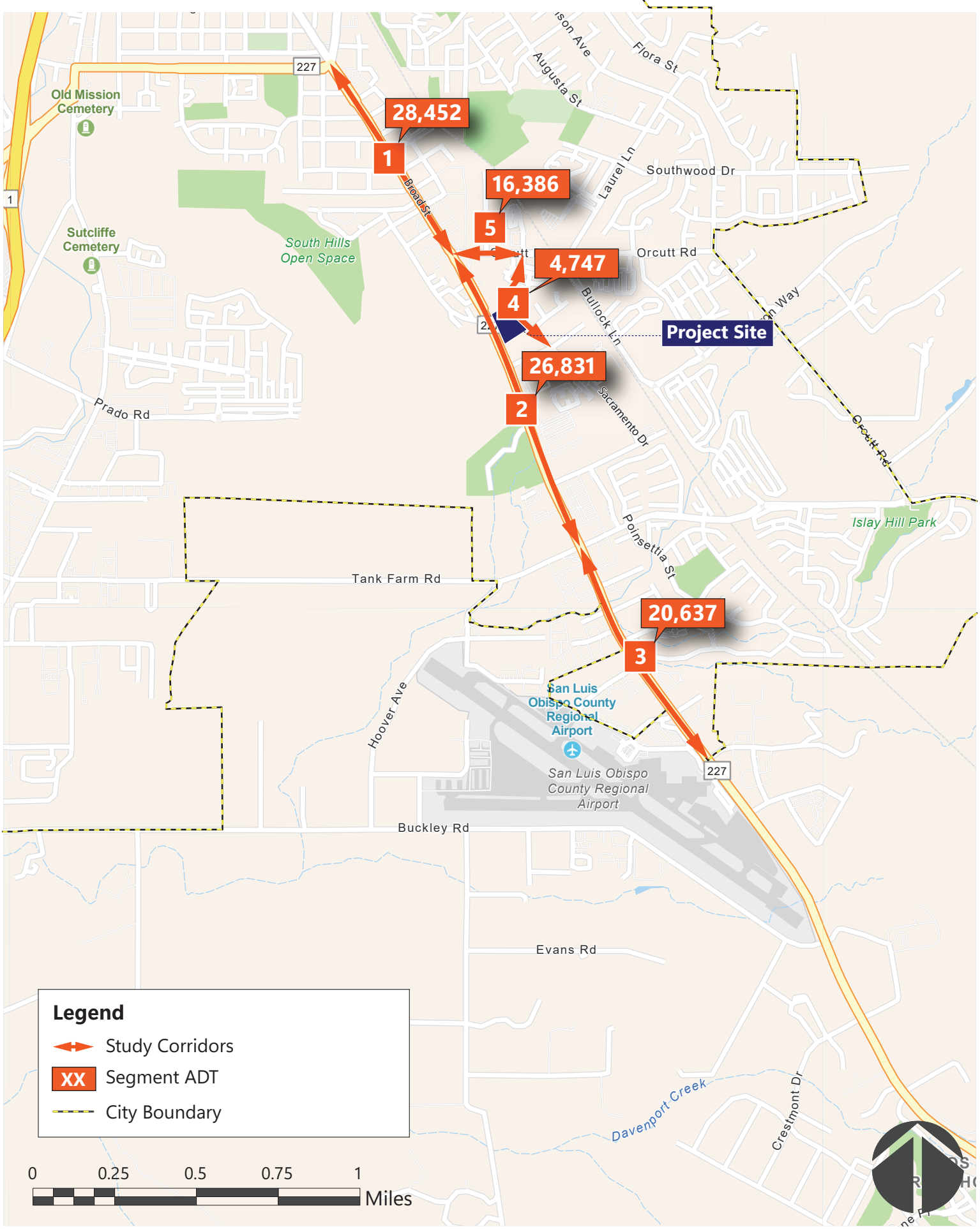


Legend

- Signal
- Stop-control
- XX AM Peak Hour
- (XX) PM Peak Hour*

* PM Peak Volumes are zero because no PM peak hour analysis was conducted for this project

AMG ADVANCED MOBILITY GROUP


28,452
1
16,386
5
4,747
4
Project Site
26,831
2
20,637
3
Broad St
Augusta St
Flora St
Laurel Ln
Southwood Dr
Orcutt Rd
Bullock Ln
Sacramento Dr
Prado Rd
Tank Farm Rd
Poinsettia St
Hoover Ave
Buckley Rd
Evans Rd
Davenport Creek
Crestmont Dr
Old Mission Cemetery
Sutcliffe Cemetery
South Hills Open Space
Islay Hill Park
San Luis Obispo County Regional Airport
San Luis Obispo County Regional Airport
227
1
Legend
Study Corridors
XX Segment ADT
City Boundary
0 0.25 0.5 0.75 1
Miles

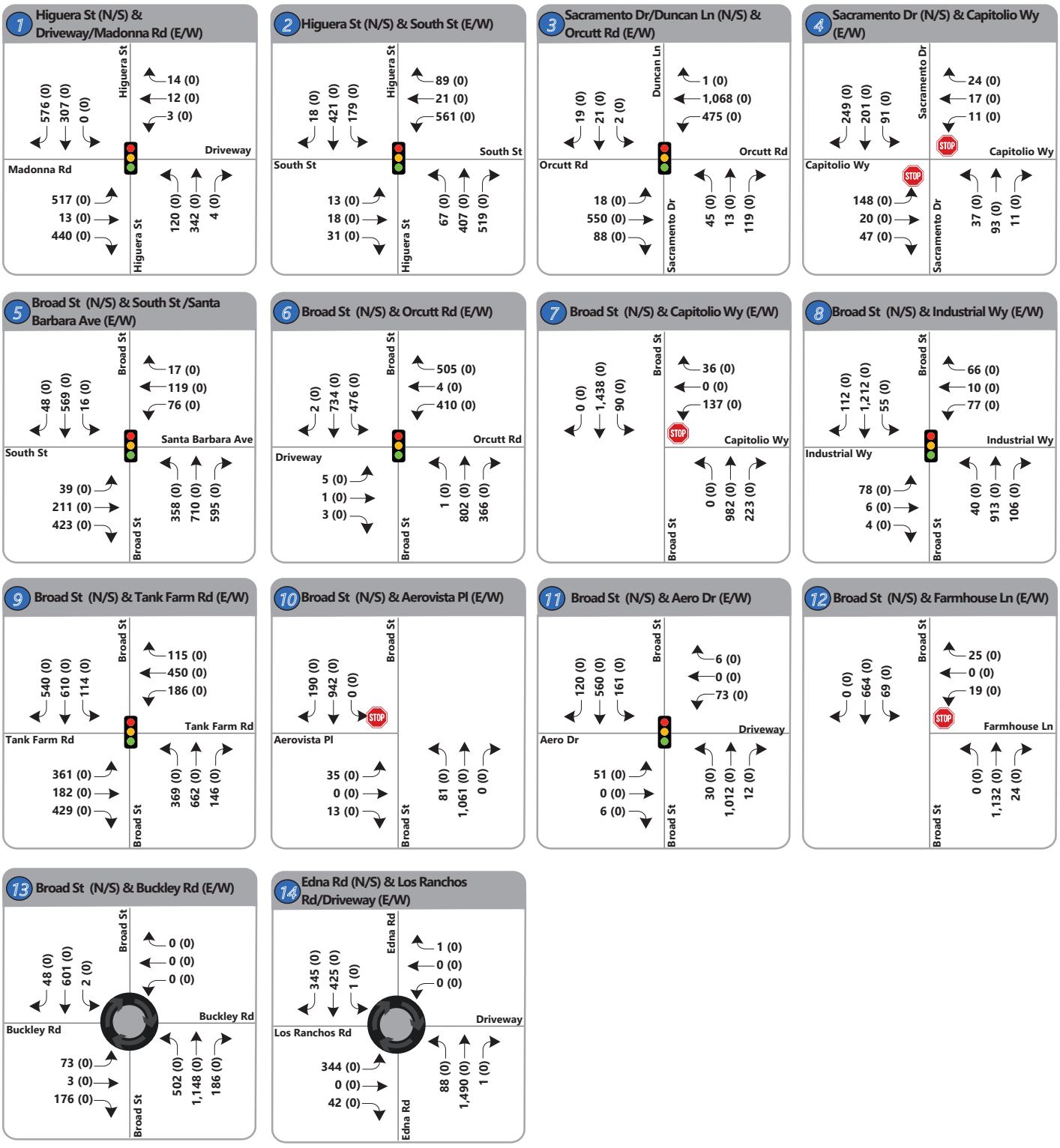
ii. Cumulative Plus Project Conditions

The Cumulative Plus Project Condition does not present any intersection or roadway geometric changes to the baseline Cumulative conditions.

Cumulative Plus Project traffic volume forecasts were developed using the same travel demand forecasting model that was used for the Cumulative conditions traffic volumes. However, changes were made to land use of the model to represent to project. The following land use changes and assumptions were used:

- Moved K-8 enrollment to the new site and move ¼ of existing office SF to the new site to represent the project.
- The number of students at the project TAZ was adjusted by the same ratio, and the growth of enrollment from 2016 to 2045 was applied to Cumulative Plus Project scenario.
- No Land use adjustments were made to SLOCA's current site on Grand Avenue. Although it is unknown if the site on Grand Avenue will continue to operate as a school with similar characteristics/intensity, it was left in the analysis to account for any differences in use at that site. This represents a conservative approach because it assumed that a similar use (private education) would occupy the vacated space of the existing campus in the future. Therefore, it did not account for any potential reduction in vehicle trips to/from the existing SLOCA Campus.

Figure 17 illustrates the Cumulative Plus Project vehicular intersection turning movement counts, lane geometry & traffic controls. **Figure 18** illustrates the Cumulative Plus Project average daily traffic along the study roadway segments.

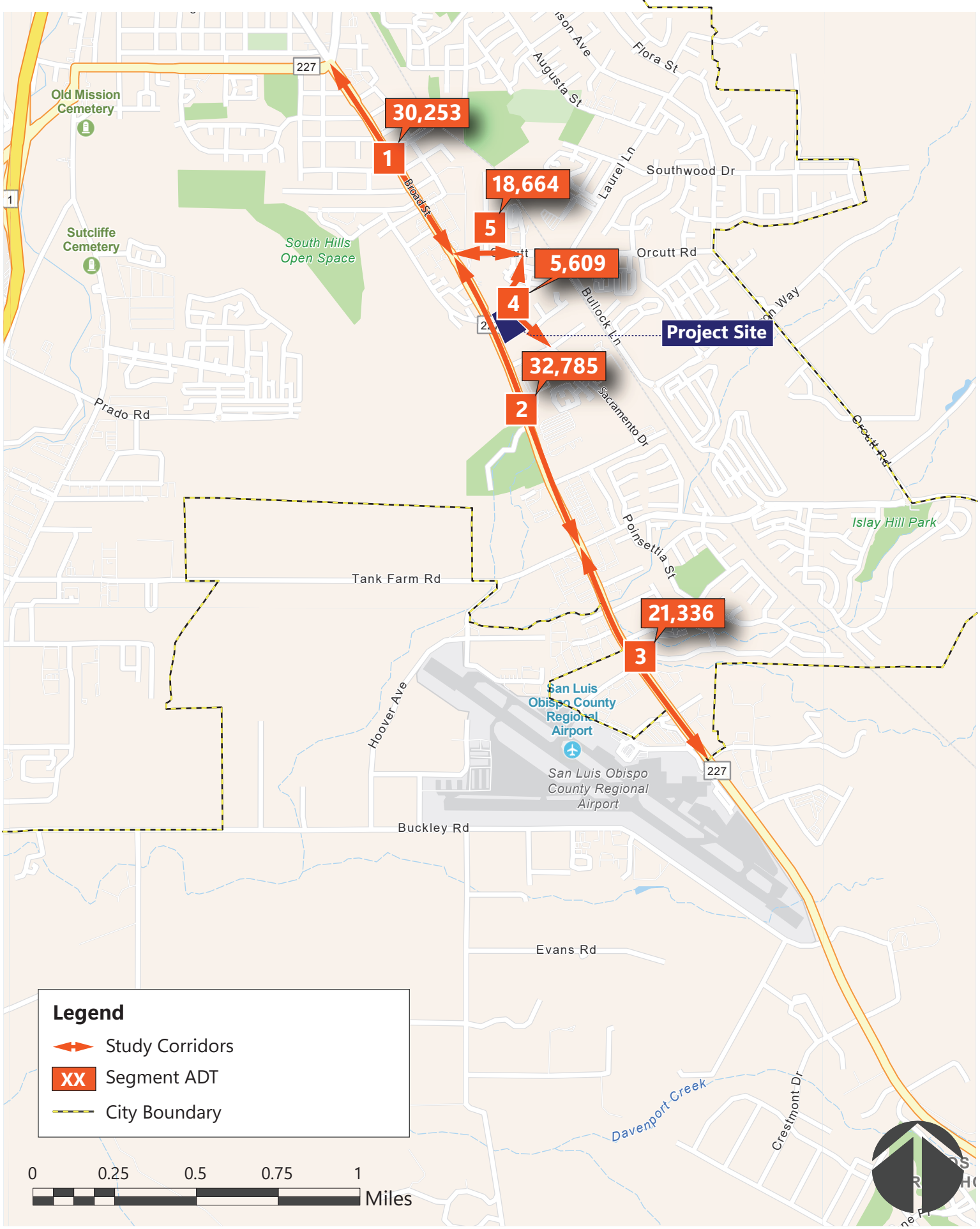


Legend

- Signal
- Stop-control
- XX AM Peak Hour
- (XX) PM Peak Hour*
- Roundabout

* PM Peak Volumes are zero because no PM peak hour analysis was conducted for this project

AMG ADVANCED MOBILITY GROUP


30,253
1
18,664
5
5,609
4
Project Site
32,785
2
21,336
3
227
Broad St
Augusta St
Flora St
Laurel Ln
Southwood Dr
Orcutt Rd
Bullock Ln
Sacramento Dr
Prado Rd
Tank Farm Rd
Poinsettia St
Islay Hill Park
Hoover Ave
San Luis Obispo County Regional Airport
Buckley Rd
Evans Rd
Davenport Creek
Crestmont Dr
Old Mission Cemetery
Sutcliffe Cemetery
South Hills Open Space
Legend
Study Corridors
XX Segment ADT
City Boundary
0 0.25 0.5 0.75 1
Miles

D. LOS Analysis

i. Existing Plus Project Conditions

Intersection Analyses

AMG developed Existing Plus Project conditions traffic simulation models using Synchro 12 software using existing lane configuration, traffic signal timings and traffic volumes.

The results of the vehicle LOS and delay analysis conducted at the signalized intersections are summarized in **Table 30**. The results of the vehicle LOS and delay analysis conducted at the unsignalized intersections are summarized in **Table 31**.

Table 30: Existing Plus Project Conditions Vehicle LOS results - Signalized intersections

#	Intersection	Existing Conditions		Existing + Project Conditions		Delay Difference
		Delay	LOS	Delay	LOS	
1	Higuera Street & Madonna Road*	17.4	B	17.5	B	+0.1
2	Higuera Street & South Street	31.7	C	33.6	C	+1.9
3	Orcutt Road & Sacramento Drive/Duncan Road*	10.6	B	10.8	B	+0.2
5	Broad Street & South Street/Santa Barbara Avenue*	26.7	C	27.8	C	+1.1
6	Broad Street & Orcutt Road	25.0	C	29.6	C	+4.6
8	Broad Street & Industrial Way	15.5	B	15.6	B	+0.1
9	Broad Street & Tank Farm Road	28.2	C	28.9	C	+0.7
11	Broad Street & Aero Drive	13.3	B	13.4	B	+0.1
13	Edna Road (SR 227) & Buckley Road*	31.8	C	33.4	C	+1.6
14	Edna Road (SR 227) & Los Ranchos Road*	69.9	E	71.9	E	+2.0

Legend:
* = Uses HCM 2000 for Analysis due to non-standard phasing (NEMA)
Intersections highlighted in Light Blue are Caltrans Intersections

Table 31: Existing Plus Project Conditions Vehicle LOS results - Unsignalized intersections

#	Intersection	Existing Conditions						Existing + Project Conditions						Delay Difference	
		Minor Street Approaches - Unsignalized			Major Street Turning Movements -Unsignalized			Minor Street Approaches - Unsignalized			Major Street Turning Movements -Unsignalized			Minor Approach	Major Approach
		Approach	Delay	LOS	Movement	Delay	LOS	Approach	Delay	LOS	Movement	Delay	LOS		
4	Sacramento Drive & Capitolio Way	EB	11.1	B	NBL	7.5	A	EB	12.1	B	NBL	7.5	A	+1.0	0.0
		WB	11.3	B	SBL	7.4	A	WB	11.3	B	SBL	7.4	A	0.0	0.0
7	Broad Street & Capitolio Way	WB	15.1	C	NBTR	0.0	A	WB	15.6	C	NBTR	0.0	A	+0.5	0.0
					SBTL	10.5	B				SBTL	10.7	B		+0.2
10	Broad Street & Aerovista Place	EB	19.5	C	NBL	10.4	B	EB	20.2	C	NBL	11.0	B	+0.7	+0.6
					SBR	0.0	A				SBR	0.0	A		0.0
12	Broad Street & Farmhouse Lane	WB	28.1	D	NBR	0.0	A	WB	29.6	D	NBR	0.0	A	+1.5	0.0
					SBL	13.0	B				SBL	13.6	B		+0.6

All the intersections operate at acceptable LOS D or better except for the Edna Road (SR 227) & Los Ranchos Road intersection that operates at LOS E. Note that design for the installation of a roundabout is currently underway, the intersection will improve to LOS D or better after the improvement is complete. Additionally, project-related traffic does not further degrade already exceeded LOS standards at any of the study intersections. Nonetheless, the project would provide a fair share

contribution towards the roundabout improvement at the intersection through payment of the County's SR 227 Corridor Mitigation Fees. More details on the project's fair share contribution are found in the **Route 227 Corridor Mitigation Fees** section of this report.

Appendix F contains the Existing Plus Project conditions Synchro analysis reports.

The results for the Bicycle LOS and delay analysis are summarized in **Table 32**. All the study intersection approaches operate at acceptable LOS D and project-related traffic does not cause minimum LOS standards to be exceeded. **Appendix F** contains existing plus project conditions bicycle delay and LOS calculations.

Table 32: Existing Plus Project Conditions Bicycle LOS results

#	Intersection	Approach	Existing Conditions			Existing + Project Conditions		
			Delay (s/b)	Score	LOS	Delay (s/b)	Score	LOS
1	Higuera Street & Madonna Road	EB	28.23	3.11	C	27.55	3.22	C
		WB	42.16	2.72	C	42.25	2.72	C
		NB	24.56	2.10	B	24.35	2.10	B
		SB	33.58	2.86	C	33.49	2.93	C
2	Higuera Street & South Street	EB	32.27	2.92	C	32.27	2.92	C
		WB	23.19	2.71	C	23.19	2.84	C
		NB	28.52	2.31	B	28.52	2.37	B
		SB	21.25	1.73	B	21.25	1.73	B
3	Orcutt Road & Sacramento Drive/Duncan Road	EB	24.70	1.56	B	23.37	1.62	B
		WB	19.18	1.89	B	17.86	1.90	B
		NB	36.51	1.96	B	36.49	1.96	B
		SB	36.47	1.82	B	36.38	1.82	B
5	Broad Street & South Street/Santa Barbara Avenue	EB	51.55	4.17	D	51.64	4.28	D
		WB	50.76	2.37	B	50.76	2.37	B
		NB	33.81	2.56	C	32.04	2.65	C
		SB	49.11	2.03	B	48.68	2.05	B
6	Broad Street & Orcutt Road	EB	50.66	2.92	C	50.75	2.92	C
		WB	41.22	3.23	C	40.62	3.23	C
		NB	36.91	2.90	C	34.13	3.01	C
		SB	27.68	2.76	C	25.49	2.83	C
8	Broad Street & Industrial Way	EB	49.49	3.35	C	49.49	3.35	C
		WB	44.56	3.46	C	44.65	3.46	C
		NB	23.73	2.47	B	23.61	2.50	B
		SB	22.86	2.37	B	22.81	2.40	B
9	Broad Street & Tank Farm Road	EB	59.76	2.95	C	59.58	2.96	C
		WB	52.84	3.38	C	52.61	3.39	C
		NB	47.26	2.65	C	46.36	2.66	C
		SB	48.69	2.49	B	47.87	2.52	C
11	Broad Street & Aero Drive	EB	45.18	1.87	B	45.18	1.87	B
		WB	45.45	2.40	B	45.55	2.40	B
		NB	12.11	2.43	B	11.97	2.44	B
		SB	12.18	1.34	A	12.03	1.36	A
13	Edna Road (SR 227) & Buckley Road	EB	63.07	1.61	B	63.25	1.61	B
		WB	N/A	1.57	B	N/A	1.57	B
		NB	13.54	3.10	C	13.72	3.10	C
		SB	39.73	3.57	D	40.99	3.57	D
14	Edna Road (SR 227) & Los Ranchos Road	EB	46.93	3.92	D	47.10	3.92	D
		WB	62.44	3.01	C	62.44	3.01	C
		NB	20.15	2.77	C	18.55	2.80	C
		SB	27.65	2.44	B	25.72	2.47	B

The results for the Pedestrian LOS and delay analysis are summarized in **Table 33**. Many of the crossings operate below acceptable LOS C. At the signalized intersections, this may be due to low effective green walk time for that crossing, high conflicting vehicular demand, or there are many lanes that the pedestrian must cross. At the unsignalized intersections, this may be due to the crossings being unmarked crosswalks and that there are many lanes that the pedestrian must cross. Although some crossings operate below acceptable LOS C, project-related traffic does not cause minimum LOS standards to be further degraded at any of the crossings for all the study intersections. Further, as shown in **Figure 14**, the net new pedestrian trips generated by the project beyond the campus pick-up/drop-off area are expected to be relatively low. **Appendix F** contains existing plus project conditions pedestrian delay and LOS calculations.

Additionally, AMG recommended several traffic calming and pedestrian crossing safety improvements on Sacramento Drive near the campus pick-up/drop-off area. These recommendations include enhanced crosswalks at the school entry for bicyclist and pedestrian crossing safety, advanced pedestrian warning signs, and school pavement markings . For further details on these recommendations please refer to the **CEQA Transportation Analysis** report, which is Phase 1 of this Traffic Impact Study.

Table 33: Existing Plus Project Conditions Pedestrian LOS results

#	Intersection	Existing Control	Crosswalk	Existing Conditions		Existing + Project Conditions	
				Score	LOS	Score	LOS
1	Higuera Street & Madonna Road	Signal	EB	3.46	C	3.47	C
			WB	1.98	B	1.98	B
			NB	2.62	C	2.62	C
			SB	3.98	D	4.19	D
2	Higuera Street & South Street	Signal	EB	2.05	B	2.05	B
			WB	3.02	C	3.05	C
			NB	4.17	D	4.41	D
			SB	2.50	B	2.50	B
3	Orcutt Road & Sacramento Drive/Duncan Road	Signal	EB	2.78	C	2.91	C
			WB	2.64	C	2.64	C
			NB	2.28	B	2.32	B
			SB	2.00	B	2.00	B
4	Sacramento Drive & Capitolio Way	TWS	NB	0.52	F	0.52	F
			SB	0.50	E	0.50	E
5	Broad Street & South Street/Santa Barbara Avenue	Signal	EB	3.59	D	3.72	D
			WB	2.25	B	2.25	B
			NB	3.59	D	3.62	D
			SB	2.59	C	2.60	C
6	Broad Street & Orcutt Road	Signal	EB	1.96	B	1.96	B
			WB	3.58	D	3.72	D
			NB	3.74	D	3.78	D
			SB	2.93	C	2.97	C
7	Broad Street & Capitolio Way	OWS	NB	0.80	F	0.81	F
			SB	0.80	F	0.81	F
8	Broad Street & Industrial Way	Signal	EB	2.04	B	2.04	B
			WB	2.19	B	2.19	B
			NB	3.24	C	3.26	C
			SB	2.97	C	2.99	C
9	Broad Street & Tank Farm Road	Signal	EB	3.36	C	3.36	C
			WB	2.70	C	2.73	C
			NB	3.43	C	3.43	C
			SB	3.76	D	3.82	D
10	Broad Street & Aerovista Place	OWS	NB	0.73	F	0.74	F
			SB	0.76	F	0.77	F
11	Broad Street & Aero Drive	Signal	EB	2.05	B	2.05	B
			WB	2.07	B	2.07	B
			NB	2.84	C	2.86	C
			SB	3.04	C	3.05	C
12	Broad Street & Farmhouse Lane	OWS	NB	0.84	F	0.84	F
			SB	0.84	F	0.84	F
13	Edna Road (SR 227) & Buckley Road	Signal	EB	2.94	C	2.94	C
			WB	1.75	B	1.75	B
			NB	3.32	C	3.34	C
			SB	3.23	C	3.25	C
14	Edna Road (SR 227) & Los Ranchos Road	Signal	EB	2.57	C	2.57	C
			WB	1.74	B	1.74	B
			NB	2.91	C	2.93	C
			SB	4.25	D	4.27	D

Roadway Analyses

Using existing geometric conditions and traffic volumes, Existing Plus Project conditions level of service for vehicles and pedestrians, and level of traffic stress for cyclists were evaluated.

The results of the vehicle LOS analysis are summarized in **Table 34** . All roadway segments are within the acceptable LOS D for arterials and regional routes and below the maximum ADT threshold (10,000 vehicles) for commercial collector streets. Project-related traffic does not cause LOS standards to be exceeded.

Table 34: Existing Plus Project Conditions Vehicle Roadway Segment LOS results

Segment	Road Type	Lanes	Divided	Existing		Existing + Project	
				ADT	LOS	ADT	LOS
Broad St (South to Orcutt)	Arterial	4	YES	28,296	C	28,452	C
Broad St (Orcutt to Tank Farm)	Regional Route	4	YES	26,652	B	26,831	B
Broad St (Tank Farm to City Limits	Regional Route	2 or 4	YES	20,509	B	20,637	B
Sacramento Dr (Orcutt to Capitolio)	Collector	2	NO	4,541	C	4,747	C
Orcutt Rd (Broad to Sacramento)	Arterial	4	YES	16,256	B	16,386	B

The results of the bicycle level of traffic stress are summarized in **Table 35**. Project-related traffic does not cause LTS standards to be exceeded or further degraded from the existing conditions, and the net increase in bicycle and vehicle trips outside of the campus pick-up/drop-off area is not expected to represent a notable change in user experience compared to existing conditions.

Table 35: Existing Plus Project Conditions Bicycle Roadway Segment LTS results

Segment	Existing + Project LTS	Net Increase Bike Trips	Net Increase Vehicle Trips	% Net Increase Vehicle Trips
Broad St (South to Orcutt)	4	+5	+156	0.55%
Broad St (Orcutt to Tank Farm)	4	+1	+179	0.67%
Broad St (Tank Farm to City Limits	4	+1	+128	0.62%
Sacramento Dr (Orcutt to Capitolio)	3	+9	+206	4.54%
Orcutt Rd (Broad to Sacramento)	4	+5	+130	0.80%

It is worth noting that there will be a 300' long drop-off zone adjacent to the southbound bicycle lane along Sacramento Drive near the project site. Potential conflicts between bicyclists and vehicles entering and existing the drop-off zone could arise. Consequently, AMG recommended several traffic calming and safety improvements along Sacramento drive near the campus pick-up/drop-off area in Phase 1 of the TIS, the **CEQA Transportation Analysis**. These recommendations include green bike lane markings along the 300' drop-off zone and through the site driveway on Sacramento Drive, advance warning signage, radar speed feedback signs approaching the school on Sacramento Drive, and enhanced crosswalks at the school entry for bicyclist and pedestrian crossing safety.

Additionally, a follow-up study will be conducted 3-6 months after school opening to further monitor conflicts after occupancy. If any conflicts or significant impacts are found, the study will recommend any additional improvements.

The results of the pedestrian LOS analysis are summarized in **Table 36**. Some of the segments operate below acceptable LOS C. This is due to the narrow sidewalks, narrow buffers between the sidewalks and the roadway, and high crossing delay at the boundary intersection. Project-related traffic does not cause LOS standards to be exceeded or further degraded from the existing conditions in a manner that would be noticeable to the average road user, or contextually significant in a negative manner. Further, as shown in **Figure 14**, the net new pedestrian trips generated by the project beyond the campus pick-up/drop-off area are expected to be relatively low. **Appendix F** contains existing plus project conditions pedestrian delay and LOS calculations.

Table 36: Existing Plus Project Conditions Pedestrian Roadway Segment LOS results

Segment	Existing						Existing + Project					
	NB or EB Ped Space (ft2/s)	NB or EB Ped LOS score	LOS	SB or WB Ped Space (ft2/s)	SB or WB Ped LOS score	LOS	NB or EB Ped Space (ft2/s)	NB or EB Ped LOS score	LOS	SB or WB Ped Space (ft2/s)	SB or WB Ped LOS score	LOS
Broad St (South to Orcutt)	9,883	3.68	D	6,123	3.30	C	5,986	3.75	D	4,489	3.35	C
Broad St (Orcutt to Tank Farm)	7,220	3.35	C	14,657	3.56	D	6,270	3.38	C	9,472	3.58	D
Broad St (Tank Farm to City Limits	50,361	3.50	D	37,771	3.62	D	50,361	3.53	D	37,771	3.70	D
Sacramento (Orcutt to Capitolio)	9,332	2.73	B	3,485	1.39	A	3,485	3.14	C	1,891	1.54	B
Orcutt (Broad to Sacramento)	6,123	2.94	C	9,883	3.46	C	4,489	2.95	C	5,986	3.47	C

Additionally, AMG recommended several traffic calming and pedestrian crossing safety improvements on Sacramento Drive near the campus pick-up/drop-off area. These recommendations include enhanced crosswalks at the school entry for bicyclist and pedestrian crossing safety, advanced pedestrian warning signs, and school pavement markings . The project also proposes to construct a 5-foot wide asphalt sidewalk on the west side along Sacramento Drive, ensuring pedestrian connectivity between the school and Capitolio Way to the south. For further details on these recommendations please refer to the **CEQA Transportation Analysis** report, which is Phase 1 of this Traffic Impact Study.

ii. Cumulative Plus Project Conditions

Intersection Analyses

AMG developed Cumulative Plus Project conditions traffic simulation models using Synchro 12 software using the cumulative lane configurations based on the anticipated transportation improvements that will occur within the City of San Luis Obispo with the buildout of the City's General Plan Land use and circulation elements. Cumulative Plus Project traffic volumes were obtained from the travel forecasting model that included the project land use. Cumulative Plus Project condition signal timings were optimized based on best practices to improve overall intersection performance.

The results of the vehicle LOS and delay analysis conducted at the signalized intersections are summarized in **Table 37**. The results of the vehicle LOS and delay analysis conducted at the stop controlled intersections are summarized in **Table 38**. The results of the vehicle LOS and delay analysis conducted at the roundabout controlled intersections are summarized in **Table 39**.

Table 37: Cumulative Plus Project Conditions Vehicle LOS results - Signalized intersections

#	Intersection	Cumulative Conditions		Cumulative + Project Conditions		Delay Difference
		Delay	LOS	Delay	LOS	
1	Higuera Street & Madonna Road*	32.8	C	33.6	C	+0.8
2	Higuera Street & South Street	34.5	C	35.7	D	+1.2
3	Orcutt Road & Sacramento Drive/Duncan Road*	18.5	B	19.0	B	+0.5
5	Broad Street & South Street/Santa Barbara Avenue*	31.9	C	33.5	C	+1.6
6	Broad Street & Orcutt Road	34.9	C	37.9	D	+3.0
8	Broad Street & Industrial Way	21.2	C	21.4	C	+0.2
9	Broad Street & Tank Farm Road	38.4	D	38.9	D	+0.5
11	Broad Street & Aero Drive	35.3	D	35.6	D	+0.3

Legend:
* = Uses HCM 2000 for Analysis due to non-standard phasing (NEMA)

Table 38: Cumulative Plus Project Conditions Vehicle LOS results - Stop controlled intersections

#	Intersection	Cumulative Conditions						Cumulative + Project Conditions						Delay Difference	
		Minor Street Approaches - Unsignalized			Major Street Turning Movements -Unsignalized			Minor Street Approaches - Unsignalized			Major Street Turning Movements -Unsignalized			Minor Approach	Major Approach
		Approach	Delay	LOS	Movement	Delay	LOS	Approach	Delay	LOS	Movement	Delay	LOS		
4	Sacramento Drive & Capitolio Way	EB	72.0	F	NBL	8.8	A	EB	123.7	F	NBL	8.8	A	+51.7	0.0
		WB	18.5	C	SBL	7.7	A	WB	18.5	C	SBL	7.7	A	0	0.0
7	Broad Street & Capitolio Way	WB	163.5	F	NBTR	0.0	A	WB	181.4	F	NBTR	0.0	A	+17.9	0.0
					SBTL	13.9	B				SBTL	14.6	B		+0.7
10	Broad Street & Aerovista Place	EB	30.8	D	NBL	13.6	B	EB	31.0	D	NBL	13.6	B	+0.3	0.0
					SBR	0.0	A				SBR	0.0	A		0.0
12	Broad Street & Farmhouse Lane	WB	39.8	E	NBR	0.0	A	WB	40.2	E	NBR	0.0	A	+0.4	0.0
					SBL	14.3	B				SBL	14.4	B		+0.1

Table 39: Cumulative Plus Project Conditions Vehicle LOS results - Roundabout intersections

#	Intersection	Cumulative Conditions								Cumulative + Project Conditions							
		Intersection		Minor Street Approaches - Unsignalized			Major Street Turning Movements - Unsignalized			Intersection		Minor Street Approaches - Unsignalized			Major Street Turning Movements -Unsignalized		
		Delay	LOS	Approach	Delay	LOS	Movement	Delay	LOS	Delay	LOS	Approach	Delay	LOS	Movement	Delay	LOS
13	Edna Road (SR 227) & Buckley Road	21.8	C	EB	9.4	A	NBTR	29.7	D	22.5	C	EB	9.4	A	NBTR	30.7	D
				WB	0.0	A	SBLT	12.8	B			WB	0.0	A	SBLT	13.1	B
14	Edna Road (SR 227) & Los Ranchos Road	30.9	D	EB	7.1	A	NBTR	52.2	F	32.5	D	EB	7.1	A	NBTR	55.0	F
				WB	18.2	C	SBLT & SBTR	6.8	A			WB	18.6	C	SBTR	6.9	A

Note:
Both intersections are Caltrans intersections

All the signalized intersections and both roundabout intersections operate at acceptable LOS D or better. The two-way stop controlled intersection at Broad Street & Aerovista Place operates at acceptable LOS D, while the rest of the stop controlled intersections operate below acceptable LOS D. These intersections fall below acceptable levels of service due to the increasing vehicular demand on the main streets, making it difficult for the vehicles to exit the minor streets. **Appendix G** contains the Cumulative Plus Project conditions Synchro analysis reports.

Although the intersections of Broad Street & Capitolio Way and Broad Street & Farmhouse Lane fall below LOS D, the project adds less than 10 trips to the critical approach/movement. As mentioned in the **SLO TIS Guidelines** section of the report, the City's thresholds of significance for unsignalized

intersections states that already deficient LOS requires a project to (a) increase V/C ratio by 0.01 or more, (b) add at least 10 trips to the critical movement, and (c) make the intersection meet the signal warrants. All three conditions must be met, and at both intersections, condition (b) is not met. Therefore, project related traffic is not significant in further degrading LOS standards and does not trigger city thresholds.

The city should monitor both intersections and consider solutions in improving the LOS, such as signalization. Another possible mitigation measure the city could consider at the Broad Street & Capitolio Way intersection is to restrict left-turns exiting Capitolio Way if a collision trend caused by that movement materializes in the future. Currently, at the intersection of Broad Street & Farmhouse Lane, there is no planned future improvement. However, the intersection is included in the County's SR 227 Corridor Mitigation Fee Program, which includes costs for future improvements (signalization or roundabout installation). The project would provide a fair share contribution towards future improvement at the intersection through payment of the County's SR 227 Corridor Mitigation Fees.

At the intersection of Sacramento Drive & Capitolio Way, the project increases the v/c ratio by more than 0.01 and adds more than 10 trips to the critical approach/movement. However, signal warrants are not met, so it does not trigger city thresholds. Nonetheless, existing volumes are just under the volumes required to meet an all-way stop control warrant. AMG recommends assessing the all-way stop control warrant at the intersection, as part of the overall monitoring study after the school is operational. The **Operational Analysis Conclusions and Recommendations** section of the report will expand on the potential mitigation measure considered for this impact.

The results for the Bicycle LOS and delay analysis are summarized in **Table 40**. All the study intersection approaches operate at acceptable LOS D and project-related traffic does not cause minimum LOS standards to be exceeded. **Appendix G** contains cumulative plus project conditions bicycle delay and LOS calculations.

Table 40: Cumulative Plus Project Conditions Bicycle LOS results

#	Intersection	Approach	Cumulative Conditions			Cumulative + Project Conditions		
			Delay (s/b)	Score	LOS	Delay (s/b)	Score	LOS
1	Higuera Street & Madonna Road	EB	41.73	3.11	C	39.15	3.20	C
		WB	66.49	2.74	C	66.58	2.74	C
		NB	27.98	2.57	C	27.86	2.57	C
		SB	39.81	2.98	C	39.59	3.02	C
2	Higuera Street & South Street	EB	47.18	2.96	C	47.28	2.96	C
		WB	30.86	2.73	C	30.41	2.86	C
		NB	35.85	2.52	C	35.93	2.58	C
		SB	30.44	1.88	B	29.25	1.93	B
3	Orcutt Road & Sacramento Drive/Duncan Road	EB	40.46	1.64	B	39.62	1.64	B
		WB	16.84	2.64	C	16.02	2.64	C
		NB	55.46	2.06	B	55.57	2.06	B
		SB	55.39	1.85	B	55.39	1.85	B
5	Broad Street & South Street/Santa Barbara Avenue	EB	50.61	4.24	D	48.58	4.36	D
		WB	46.97	2.48	B	46.80	2.48	B
		NB	27.90	3.15	C	26.81	3.23	C
		SB	40.58	2.27	B	40.27	2.27	B
6	Broad Street & Orcutt Road	EB	50.75	2.92	C	50.84	2.92	C
		WB	37.24	3.76	D	37.14	3.76	D
		NB	33.15	3.14	C	32.33	3.21	C
		SB	23.08	2.86	C	21.26	2.94	C
8	Broad Street & Industrial Way	EB	45.30	3.49	C	45.30	3.49	C
		WB	43.07	3.51	D	43.07	3.51	D
		NB	23.81	2.57	C	23.82	2.59	C
		SB	20.96	2.70	C	20.97	2.71	C
9	Broad Street & Tank Farm Road	EB	58.00	3.26	C	58.18	3.26	C
		WB	46.79	3.17	C	47.06	3.17	C
		NB	40.93	2.83	C	40.85	2.86	C
		SB	45.86	2.80	C	45.89	2.81	C
11	Broad Street & Aero Drive	EB	44.82	1.89	B	44.82	1.89	B
		WB	44.82	2.50	B	44.82	2.50	B
		NB	19.04	2.50	B	19.04	2.50	B
		SB	12.00	1.52	B	12.00	1.52	B

The results for the Pedestrian LOS and delay analysis are summarized in . Many of the crossings operate below acceptable LOS C. At the signalized intersections, this may be due to low effective green walk time for that crossing, high conflicting vehicular demand, or there are many lanes that the pedestrian must cross. At the unsignalized intersections, this may be due to the crossings being unmarked crosswalks and that there are many lanes that the pedestrian must cross. Although some crossings operate below acceptable LOS C, project-related traffic does not cause minimum LOS standards to be further degraded at any of the crossings for all the study intersections. Further, as shown in **Figure 14**, the net new pedestrian trips generated by the project beyond the campus pick-up/drop-off area are expected to be relatively low. **Appendix G** contains the cumulative plus project conditions pedestrian delay and LOS calculations.

Additionally, AMG recommended several traffic calming and pedestrian crossing safety improvements on Sacramento Drive near the campus pick-up/drop-off area. These recommendations include enhanced crosswalks at the school entry for bicyclist and pedestrian crossing safety, advanced

pedestrian warning signs, and school pavement markings . For further details on these recommendations please refer to the **CEQA Transportation Analysis** report, which is Phase 1 of this Traffic Impact Study.

Table 41: Cumulative Plus Project Conditions Pedestrian LOS results

#	Intersection	Existing Control	Crosswalk	Cumulative Conditions		Cumulative+ Project Conditions	
				Score	LOS	Score	LOS
1	Higuera Street & Madonna Road	Signal	EB	3.50	C	3.50	C
			WB	2.00	B	2.00	B
			NB	2.66	C	2.66	C
			SB	4.22	D	4.23	D
2	Higuera Street & South Street	Signal	EB	2.18	B	2.18	B
			WB	3.04	C	3.07	C
			NB	4.26	D	4.49	D
			SB	2.60	C	2.60	C
3	Orcutt Road & Sacramento Drive/Duncan Road	Signal	EB	2.97	C	3.01	C
			WB	2.93	C	2.93	C
			NB	3.04	C	3.08	C
			SB	2.03	B	2.03	B
4	Sacramento Drive & Capitolio Way	TWS	NB	0.59	F	0.65	F
			SB	0.57	F	0.63	F
5	Broad Street & South Street/Santa Barbara Avenue	Signal	EB	3.60	D	3.86	D
			WB	2.38	B	2.38	B
			NB	4.20	D	4.24	D
			SB	2.75	C	2.76	C
6	Broad Street & Orcutt Road	Signal	EB	1.97	B	1.97	B
			WB	4.20	D	4.35	D
			NB	4.11	D	4.12	D
			SB	3.04	C	3.08	C
7	Broad Street & Capitolio Way	OWS	NB	0.88	F	0.88	F
			SB	0.88	F	0.88	F
8	Broad Street & Industrial Way	Signal	EB	2.09	B	2.09	B
			WB	2.25	B	2.25	B
			NB	3.34	C	3.35	C
			SB	3.37	C	3.39	C
9	Broad Street & Tank Farm Road	Signal	EB	4.18	D	4.18	D
			WB	2.83	C	2.85	C
			NB	3.62	D	3.63	D
			SB	4.45	D	4.47	D
10	Broad Street & Aerovista Place	OWS	NB	0.82	F	0.82	F
			SB	0.84	F	0.84	F
11	Broad Street & Aero Drive	Signal	EB	2.08	B	2.08	B
			WB	2.42	B	2.42	B
			NB	2.87	C	2.88	C
			SB	3.27	C	3.28	C
12	Broad Street & Farmhouse Lane	OWS	NB	0.85	F	0.85	F
			SB	0.85	F	0.85	F

Roadway Analyses

Using cumulative geometric conditions and traffic volumes, Cumulative conditions level of service for vehicles and pedestrians, and level of traffic stress for cyclists were evaluated.

The results of the vehicle LOS analysis are summarized in **Table 42** . All roadway segments are within the acceptable LOS D for arterials and regional routes and below the maximum ADT threshold (10,000 vehicles) for commercial collector streets. Project-related traffic does not cause LOS standards to be exceeded.

Table 42: Cumulative Plus Project Conditions Vehicle Roadway Segment LOS results

Segment	Road Type	Lanes	Divided	Cumulative		Cumulative + Project	
				ADT	LOS	ADT	LOS
Broad St (South to Orcutt)	Arterial	4	YES	30,123	C	30,253	C
Broad St (Orcutt to Tank Farm)	Regional Route	4	YES	32,705	C	32,785	C
Broad St (Tank Farm to City Limits	Regional Route	2 or 4	YES	21,307	B	21,336	B
Sacramento Dr (Orcutt to Capitolio)	Collector	2	NO	5,403	C	5,609	C
Orcutt Rd (Broad to Sacramento)	Arterial	4	YES	18,534	B	18,664	B

The results of the bicycle level of traffic stress are summarized in **Table 43**. Project-related traffic does not cause LTS standards to be exceeded or further degraded from the existing conditions, and the net increase in bicycle and vehicle trips outside of the campus pick-up/drop-off area is not expected to represent a notable change in user experience compared to existing conditions.

Table 43: Cumulative Plus Project Conditions Bicycle Roadway Segment LTS results

Segment	Cumulative + Project LTS	Net Increase Bike Trips	Net Increase Vehicle Trips	% Net Increase Vehicle Trips
Broad St (South to Orcutt)	2	+5	+130	0.43%
Broad St (Orcutt to Tank Farm)	2	+1	+80	0.24%
Broad St (Tank Farm to City Limits	2	+1	+29	0.14%
Sacramento Dr (Orcutt to Capitolio)	2	+9	+206	3.81%
Orcutt Rd (Broad to Sacramento)	2	+5	+130	0.70%

It is worth noting that there will be a 300' long drop-off zone adjacent to the southbound bicycle lane along Sacramento Drive near the project site. Potential conflicts between bicyclists and vehicles entering and existing the drop-off zone could arise. Consequently, AMG recommended several traffic calming and safety improvements along Sacramento drive near the campus pick-up/drop-off area in Phase 1 of the TIS, the **CEQA Transportation Analysis**. These recommendations include green bike lane markings along the 300' drop-off zone and through the site driveway on Sacramento Drive, advance warning signage, radar speed feedback signs approaching the school on Sacramento Drive, and enhanced crosswalks at the school entry for bicyclist and pedestrian crossing safety.

Additionally, a follow-up study will be conducted 3-6 months after school opening to further monitor conflicts after occupancy. If any conflicts or significant impacts are found, the study will recommend any additional improvements.

The results of the pedestrian LOS analysis are summarized in **Table 44**. Some of the segments operate below acceptable LOS C. This is due to the narrow sidewalks, narrow buffers between the sidewalks and the roadway, and high crossing delay at the boundary intersection. Project-related traffic does not cause LOS standards to be exceeded or further degraded from the existing conditions in a manner that would be noticeable to the average road user, or contextually significant in a negative manner. Further, as shown in **Figure 14**, the net new pedestrian trips generated by the project beyond the campus pick-up/drop-off area are expected to be relatively low. **Appendix G** contains cumulative plus project conditions pedestrian delay and LOS calculations.

Table 44: Cumulative Plus Project Conditions Pedestrian Roadway Segment LOS results

Segment	Cumulative						Cumulative + Project					
	NB or EB Ped Space (ft2/s)	NB or EB Ped LOS score	LOS	SB or WB Ped Space (ft2/s)	SB or WB Ped LOS score	LOS	NB or EB Ped Space (ft2/s)	NB or EB Ped LOS score	LOS	SB or WB Ped Space (ft2/s)	SB or WB Ped LOS score	LOS
Broad St (South to Orcutt)	4,647	4.11	D	3,485	3.78	D	3,366	4.15	D	2,796	3.81	D
Broad St (Orcutt to Tank Farm)	4,899	3.71	D	7,264	3.95	D	4,384	3.74	D	5,678	3.96	D
Broad St (Tank Farm to City Limits	50,361	3.74	D	37,771	3.78	D	50,361	3.76	D	37,771	3.81	D
Sacramento (Orcutt to Capitolio)	2,796	3.23	C	1,300	2.33	B	1,569	3.29	C	727	2.45	B
Orcutt (Broad to Sacramento)	3,485	3.41	C	4,647	3.61	D	2,796	3.46	C	3,366	3.62	D

Additionally, AMG recommended several traffic calming and pedestrian crossing safety improvements on Sacramento Drive near the campus pick-up/drop-off area. These recommendations include enhanced crosswalks at the school entry for bicyclist and pedestrian crossing safety, advanced pedestrian warning signs, and school pavement markings . The project also proposes to construct a 5-foot wide asphalt sidewalk on the west side along Sacramento Drive, ensuring pedestrian connectivity between the school and Capitolio Way to the south. For further details on these recommendations please refer to the **CEQA Transportation Analysis** report, which is Phase 1 of this Traffic Impact Study.

E. Intersection Queuing

For vehicle queuing analysis, Synchro 12 software was used to obtain the 95th percentile queues at most of the study intersections. However, if oversaturated conditions were present at a study intersection, SimTraffic microsimulation analysis was conducted to obtain 95th percentile queues. SimTraffic analysis was also used at Caltrans intersections, as it is a Caltrans requirement. Caltrans requires that SimTraffic analysis uses five (5) SimTraffic runs, four 15-minute intervals with a 10-minute seeding period.

i. Existing Plus Project Conditions

The results of the vehicle queuing analysis under Existing Plus Project conditions are summarized in **Table 45**. Most of the lanes or lane groups with a dedicated turn pocket have a 95th percentile queue that does not extend past the available storage length under existing plus project conditions. Although some of the lanes do extend past the available storage length, project-related traffic does not cause a queue that is greater than one vehicle length (25') from the 95th percentile queues in the existing conditions. Therefore, project-related traffic does not exacerbate existing queues. **Appendix F** contains the 95th percentile Synchro and SimTraffic reports under the existing plus project conditions.

Table 45: Existing Plus Project Conditions 95th Percentile Queuing Analysis results

				Synchro			SimTraffic		
ID #	Intersection	Movements	Total Existing Storage Length (ft.)	Existing 95th Queue Length (ft.)	Existing + Project 95th Queue Length (ft.)	Difference (ft.)	Existing 95th Queue Length (ft.)	Existing + Project 95th Queue Length (ft.)	Difference (ft.)
1	Higuera Street & Madonna Road	NBL	160	116	116	0	N/A		
		SBT1	220	126	126	0			
		SBT2	220	126	126	0			
		EBR	110	32	32	0			
2	Higuera Street & South Street*	NBL	60	39	39	0	50	58	+8
		NBR	150	38	47	+9	130	153	+23
		SBL	100	189	189	0	142	164	+22
		EBR	50	0	0	0	30	34	+4
		WBL 1	230	150	175	+25	155	159	+4
3	Orcutt Road & Sacramento Drive / Duncan Road	NBL	90	38	40	+2	N/A		
		SBL	50	5	6	+1			
		EBL	120	19	20	+1			
		WBL	120	69	77	+8			
4	Sacramento Drive & Capitolio Way	N/A							
5	Broad Street & South Street/Santa Barbara Avenue	NBL1	250	150	190	+40	N/A		
		NBL2	250	150	190	+40			
		NBR	200	60	60	0			
		SBL	100	28	28	0			
		EBL	170	58	59	+1			
6	Broad Street & Orcutt Road	NBL	130	6	6	0			
		NBR	200	12	13	+1			
		SBL1	350	193	259	+66			
		SBL2	350	193	259	+66			
		WBL	210	164	164	0			
		EBR	50	0	0	0			
7	Broad Street & Capitolio Way	N/A							
8	Broad Street & Industrial Way	NBL	150	57	57	0	N/A		
		NBR	170	33	33	0			
		SBL	110	68	68	0			
		SBR	430	0	0	0			
		EBR	100	0	0	0			
		WBR	180	0	0	0			
9	Broad Street & Tank Farm Road	NBL1	280	103	108	+5			
		NBL2	280	103	108	+5			
		SBL	250	141	158	+17			
		SBR	300	64	70	+6			
		EBL1	270	122	129	+7			
		EBL2	270	122	129	+7			
		EBR	130	68	69	+1			
		WBL	150	174	178	+4			
10	Broad Street & Aerovista Place	N/A							
11	Broad Street & Aero Drive	NBL	150	47	47	0	N/A		
		SBL	200	51	51	0			
		EBR	120	0	0	0			
12	Broad Street & Farmhouse Lane	N/A							
13	Edna Road (SR 227) & Buckley Road**	NBL	360	242	245	+3	168	203	+35
		SBL	400	10	10	0	12	11	-1
		SBR	400	17	16	-1	41	130	+89
		EBTL	440	110	110	0	83	88	+5
14	Edna Road (SR 227) & Los Ranchos Road**	NBL	220	164	164	0	132	167	+35
		SBL	80	8	8	0	0	11	+11
		SBR	110	65	76	+11	147	139	-8
		EBR	265	0	0	0	81	183	+102

Legend:
** = Used Simtraffic due to oversaturated conditions*
*** = Used Simtraffic due to Caltrans guidelines*

ii. Cumulative Plus Project Conditions

The results of the vehicle queuing analysis under Cumulative Plus Project conditions are summarized in . Most of the lanes or lane groups with a dedicated turn pocket have a 95th percentile queue that does not extend past the available storage length under cumulative plus project conditions. Although some of the lanes do extend past the available storage length, project-related traffic does not cause a queue that is greater than one vehicle length (25') from the 95th percentile queues in cumulative conditions. Therefore, project-related traffic does not exacerbate existing queues. **Appendix G** contains the 95th percentile Synchro and SimTraffic reports under the cumulative plus project conditions.

Table 46: Cumulative Plus Project Conditions 95th Percentile Queuing Analysis results

				Synchro			SimTraffic		
ID #	Intersection	Movements	Total Cumulative Storage Length (ft.)	Cumulative 95th Queue Length (ft.)	Cumulative + Project 95th Queue Length (ft.)	Difference (ft.)	Cumulative 95th Queue Length (ft.)	Cumulative + Project 95th Queue Length (ft.)	Difference (ft.)
1	Higuera Street & Madonna Road	NBL 1	160	96	96	0	N/A		
		NBL 2	160	96	96	0			
		SBT1	220	96	168	+72			
		SBT2	110	167	168	+1			
		EBR	60	57	80	+23			
2	Higuera Street & South Street	NBL	150	91	95	+4			
		NBR	100	61	104	+43			
		SBL	50	201	203	+2			
		EBR	130	0	0	0			
		WBL 1	90	225	266	+41			
3	Orcutt Road & Sacramento Drive / Duncan Road	NBL	50	41	60	+19			
		SBL	120	6	8	+2			
		EBL	120	23	32	+9			
		WBL	0	356	374	+18			
4	Sacramento Drive & Capitolio Way	N/A							
5	Broad Street & South Street/Santa Barbara Avenue	NBL1	250	178	257	+79	N/A		
		NBL2	250	178	257	+79			
		NBR	200	264	268	+4			
		SBL	100	40	40	0			
		EBL	170	68	69	+1			
6	Broad Street & Orcutt Road	NBL	130	6	6	0			
		NBR	200	17	17	0			
		SBL1	350	262	318	+56			
		SBL2	350	262	318	+56			
		WBL	210	208	211	+3			
		EBR	50	0	0	0			
7	Broad Street & Capitolio Way	N/A							
8	Broad Street & Industrial Way	NBL	150	64	64	0	N/A		
		NBR	170	37	37	0			
		SBL	110	78	78	0			
		SBR	430	37	37	0			
		EBR	100	0	0	0			
		WBR	180	5	4	-1			
9	Broad Street & Tank Farm Road	NBL1	250	308	308	0			
		NBL2	250	308	308	0			
		NBR	200	70	75	+5			
		SBL 1	200	85	85	0			
		SBL 2	200	85	85	0			
		SBR	300	455	464	+9			
		EBL1	300	193	194	+1			
		EBL2	300	193	194	+1			
		EBR	300	312	312	0			
		WBL	150	184	184	0			
10	Broad Street & Aerovista Place	N/A							
11	Broad Street & Aero Drive	NBL	150	44	50	+6	N/A		
		SBL	200	279	329	+50			
		EBR	120	0	0	0			
12	Broad Street & Farmhouse Lane	N/A							
13	Edna Road (SR 227) & Buckley Road*	NBTL	150	300	300	0	497	545	+48
		NBTR	N/A	400	400	0	852	622	-230
		SBTL	360	75	75	0	274	300	+26
		SBTR	N/A	75	75	0	376	537	+161
		EBTL	N/A	0	0	0	47	44	-3
		EBR	440	25	25	0	57	50	-7
		WBTLR	N/A	0	0	0	0	0	0
14	Edna Road (SR 227) & Los Ranchos Road*	NBTL	220	400	400	0	332	347	+15
		NBTR	N/A	475	500	+25	950	971	+21
		SBTL	110	50	50	0	27	33	+6
		SBTR	N/A	50	50	0	23	28	+5
		EBL	N/A	25	25	0	129	147	+18
		EBTR	265	25	25	0	43	51	+8
		WBTLR	N/A	0	0	0	12	8	-4

Legend:
** = Used Simtraffic due to Caltrans guidelines*

F. Transit Analysis

Transit service in the City of SLO is provided by San Luis Obispo's Transit Division, SLO Transit. The project site is bounded to the west by Broad Street and to the east by Sacramento Drive. Near the project site, a single bus stop for the SLO Transit Route 1A is found. Route 1A provides service between SLO County Airport to the south and downtown San Luis Obispo to the north. The route is looping, and buses make stops in the clockwise direction. Route 1A provides 16 daily trips from the Transit Center in Downtown Luis Obispo during the Academic year (September-June) and 14 daily trips in the summer (June-August). On weekends, 12 daily trips are provided.

The bus stop near the project site is the Broad at Rockview stop. The stop is located approximately 250' to the north along Broad Avenue from the project site access on Broad Avenue and can be accessed by pedestrians and bicyclists via sidewalk. The stop provides passengers with a covered bus shelter as well as a trash can. **Figure 19** shows the location of the bus stop in relation to the project site.

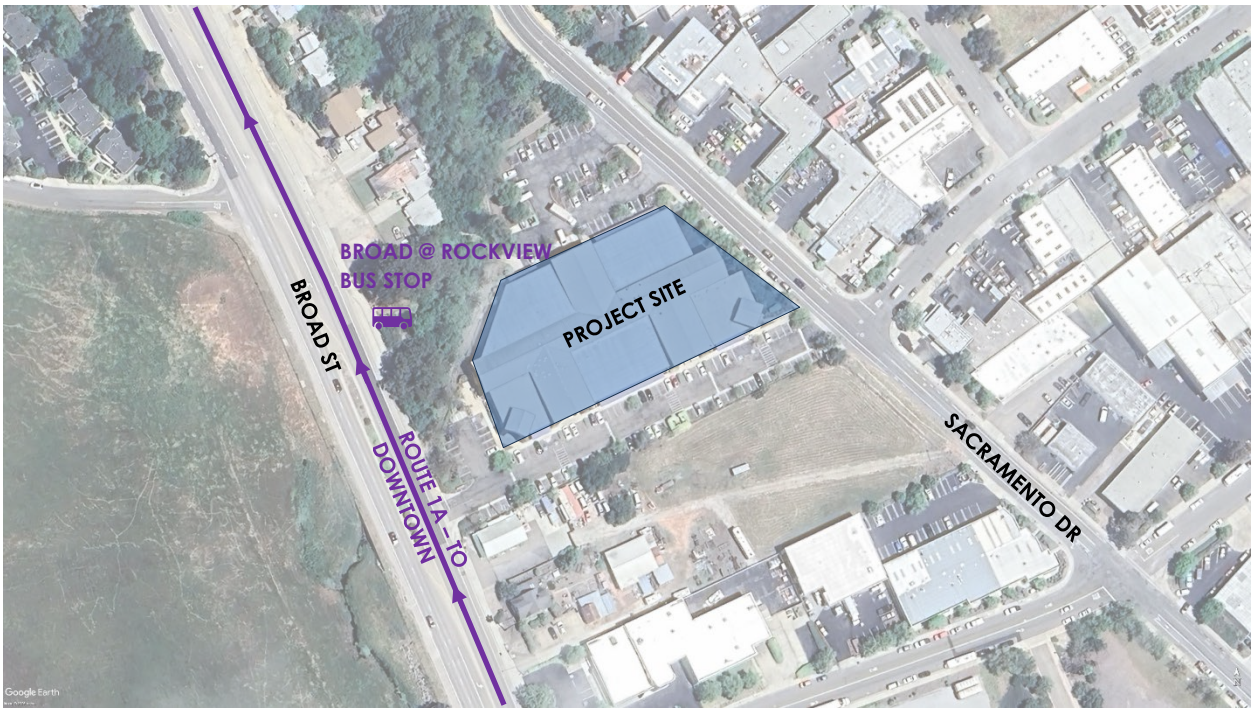


Figure 19: Bus Stop near project site

To determine project impacts on transit, transit load factors with and without the project-generated ridership demand were evaluated. The multimodal trip generation calculated that 2 transit trips would be generated by the project. Since school will not offer a private school bus or shuttle bus service to students, both of those transit trips will be served by SLO Transit's Route 1A.

Route 1A has a frequency of 1 bus per hour, so to analyze future crowding conditions, additional trips were added to a single bus trip on the route. Ridership data shows that the highest average ridership has an average of approximately 12 riders on the bus. Assigning the project trips to this hour, the average ridership for the peak hour would be 14. The vehicles used on Route 1A by SLO Transit have a seated capacity of 40 passengers. The peak factor is calculated by dividing the ridership data by the seated bus capacity.

Table 47 shows the transit load factors with and without the project-generated ridership demand. The city's transit load factor threshold for significant impact is 0.83. Analysis shows that the additional trips generated by the project will not exceed this threshold and therefore have no significant impact on transit services.

Table 47: Transit Load Factor results

No Project Transit Load Factor	With Project Transit Load Factor
0.30	0.35

G. Assessment of Conflicts with Applicable Plans, Programs, & Ordinances

AMG assessed any potential conflicts and significant traffic impacts that the proposed SLOCA Campus project could have with applicable Plans, Programs, and Ordinances. A traffic impact is considered significant if the project proposes to implement transportation infrastructure inconsistent with any of the adopted plans or policies, impedes or constrains future planned transportation infrastructure, increase LOS that exceeds the City thresholds, or exacerbates traffic volumes on neighborhood streets.

Based on the planning documents, plans and policies outlined in the **Local, Regional, and State Plans and Regulatory Policies** section of the Operational Analysis Approach, the proposed project:

- Does not implement transportation infrastructure that is inconsistent with any of the applicable plans, programs, policies, or ordinances. The transportation infrastructure that is being implemented by the project (new curb ramps, new sidewalks, pedestrian improvements) are consistent with the General Plan and the Active Transportation Plan.
- Does not constrain or impede any future planned transportation infrastructure.
- Does not increase LOS that exceeds City thresholds at most study intersections and segments. For locations where LOS exceeds City thresholds or exacerbates already deficient LOS, mitigation measures will be recommended to offset these deficiencies.
- Does not increase 95th percentile queues by more than one vehicle length (25') or exceed storage length. Does not cause queues that would cause significant impact.

H. Route 227 Corridor Mitigation Fees

San Luis Obispo County, in coordination with SLOCOG and Caltrans, is in the process of making improvements along Broad Street and Edna Road (State Route 227). These improvements involve installing roundabouts at Broad Street & Farmhouse Lane, Edna Road/SR 227 & Buckley Road , and Edna Road/SR227 & Los Ranchos Road intersections. In order to collect a proportionate share of the costs for these improvements from new development projects that add traffic to the State Route 227 Corridor, SLO County has created the State Route 227 Mitigation Fee Program. This program is used to calculate each project's fair share participation.

The mitigation fees are calculated by the number of peak hour trips the project will generate along the State Route 227 intersections. **Table 48** below summarizes the fair share calculation this project will need to contribute to the mitigation fee program. Since the project will only generate AM trips, the project will only pay for the AM share.

Table 48: State Route 227 Corridor Mitigation Fee Calculation

Improvement	2035 Cumulative AM Peak Volume	AM Peak Project Trips	Improvement Cost	AM Fair Share Fee
Broad St & Farmhouse Ln	2,269	40	$2,000,000	$35,257.82
Edna Rd/SR227 & Buckley Rd	2,371	40	$2,000,000	$45,550.40
Edna Rd/SR227 & Crestmont Dr	2,333	40	$2,000,000	$46,292.33
Edna Rd/SR227 & Los Ranchos Rd	2,352	40	$2,000,000	$45,918.37
			Total	$173,018.92

Operational Analysis Conclusions and Recommendations

The Multimodal Operational Transportation Analysis for the SLOCA Campus Project confirms a **less than significant impact on Level Of Service** for vehicles, pedestrians, and bicyclists at most study intersections and roadway segments during Existing, Existing Plus Project, Cumulative, and Cumulative Plus Project conditions. Project-generated transit demand confirms a **less than significant impact on Transit** services. The project must **pay $173,019** into SLO County's State Route 227 Corridor Mitigation Fee Program.

The following are deficiencies that are not project related but are outlined below:

- Broad Street & Capitolio Way and Broad Street & Farmhouse Lane intersections have a level of service below LOS D, not caused by project-related traffic and not exacerbated by the project to the extent that would be considered significant per city adopted impact thresholds. The city should monitor both intersections and consider solutions in improving LOS.
- At the Broad Street & Capitolio Way intersection, the city should continue monitoring for signal warrants and consider restricting left-turns exiting Capitolio Way if a collision trend caused by that movement materializes in the future.
- At Broad Street and Farmhouse Lane, there is a future roundabout planned and funded through the County's SR 227 Corridor Impact Fee. Timing for implementation is uncertain for now, but payment of SR 227 Mitigation fees satisfies the project's fair share contribution.

The following are the project-related deficiencies found from the multimodal operational analysis:

- Project-related traffic leads to vehicular LOS deficiency during Cumulative Plus Project conditions at the Sacramento Drive & Capitolio Way intersection. However, project-related traffic does not exacerbate it to the extent that would be considered significant per city adopted impact thresholds.
- Project has the potential to increase bicyclist conflicts near the project site on Sacramento Drive due to dedicated drop-off zone.

To offset project related deficiencies, a monitoring study after occupancy of the school should be conducted. This study should be conducted a few months (3-6) after school occupancy at the site and should monitor potential pedestrian and bicycle conflicts along Sacramento Drive near the project site and project driveway. If traffic patterns and behaviors show an increase in pedestrian and bicycle conflicts, a Rectangular Rapidly Flashing Beacon should be installed at the project driveway crossing and green bike lane striping should be installed along southbound Sacramento Drive adjacent to the project. These measures may also be considered for implementation prior to project occupancy as preemptive strategies, if desired.

Additionally, as part of the recommended monitoring program, traffic counts should be collected at the Sacramento Drive & Capitolio Way intersection to verify if warrants for all-way stop control are met following occupancy of the project. An all-way stop control warrant is needed at this intersection because it will improve LOS from LOS F to LOS D during the Cumulative Plus Project conditions. Currently, the existing volumes are just below the thresholds needed to meet the all-way stop control

warrant. However, counts should be taken again after occupancy (preferably during monitoring study), to verify that an all-way stop is warranted.

An all-way stop control improvement at Sacramento Drive & Capitolio Way is not currently contained in the City's Transportation Impact Fee (TIF) program. If it is found that the warrant is met, the school must install the all-way stop control. If the warrant is not met after school occupancy, the school must pay the fair share mitigation fee to City for the costs of installing an all-way stop control at a future date.

For analysis and recommendations pertaining to VMT, Safety, and Site Circulation, please refer to the **CEQA Transportation Analysis** report, which is Phase 1 of this Traffic Impact Study.

Technical Appendices Available Upon Request