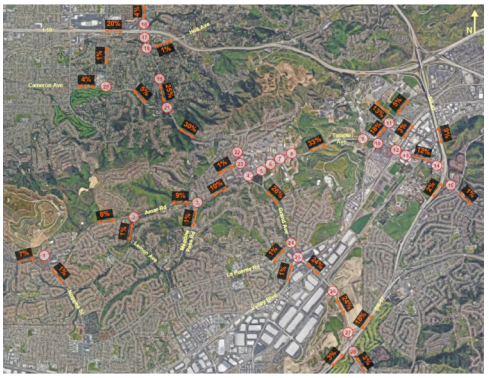
Traffic Impact Analysis for Mt. San Antonio College

Long Range Development Plan
2018 Educational and Facilities Master Plan



MT. SAC
Mt. San Antonio College

March 2019

Balancing the Natural and Built Environment

PSOMAS

TRAFFIC IMPACT ANALYSIS
FOR MT. SAN ANTONIO COLLEGE
LONG RANGE DEVELOPMENT PLAN
2018 EDUCATIONAL AND FACILITIES MASTER PLAN

Prepared For

MT. SAC
Mt. San Antonio College

Prepared By

PSOMAS

Psomas Project No. 3MTS010300

March 2019

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1. INTRODUCTION

This Traffic Impact Analysis (TIA) is part of the study to provide California Environmental Quality Act (CEQA) documentation for the Mt. San Antonio College (Mt. SAC) 2018 *Educational and Facilities Master Plan*[1] (EFMP) and associated 2017 *Parking and Circulation Master Plan*[2] (PCMP). Based on the EFMP (which is the Long Range Development Plan for the College), the construction of planned new buildings and parking structures, infrastructure facilities, site improvements, and renovation of existing buildings is expected to be completed in phases between 2019 and 2027. This study evaluates conditions at the completion of Phase 1A in 2021 and Phases 1B and 2 in 2027.

It should also be noted that certain projects included in the proposed EFMP have been evaluated in previous project-specific level environmental documents pursuant to CEQA, and do not require further approval from the Mt. San Antonio Community College District Board of Trustees. These projects include the following:

- Physical Education Project (Phase 1, 2)
    - Phase 1- Athletic Complex East, currently under construction
    - Phase 2- Physical Education Complex, included in this EFMP
    - Both phases were evaluated at a project-specific level in the *Physical Education Project (Phase 1, 2) Final Subsequent Project EIR to 2015 Facilities Master Plan Update and Physical Education Projects Final Program/Project EIR (SCH No. 2002041161)* certified by the Board of Trustees in August 2017
- West Parcel Site Improvements project
    - Currently under construction
    - Evaluated in the *West Parcel Solar Project Tiered Project EIR to the 2012 Facilities Master Plan Program EIR (SCH 2002041161*) and certified by the Board of Trustees in October 2017
- Additionally, project-specific level evaluation of the proposed Transit Center and associated circulation improvements has been conducted separately in coordination with Foothill Transit. On December 12, 2018, the Board of Trustees of the Mt. San Antonio Community College District adopted and certified the Final Initial Study/Mitigated Negative Declaration for the Mt. SAC Transit Center (SCH 2018091026) and approved the Transit Center project via Resolution No. 18-13.

These projects are addressed in this TIA to the extent that they are part of the larger "program" being evaluated.

Figure 1, taken from the EFMP, shows the planned facilities. Additional information about the specific buildings and parking structures can be found in the EFMP.

The estimation of project traffic generated by the implementation of the proposed EFMP and the associated traffic impact analysis in this study are based on student headcount. However, certain proposed facilities are relevant to the analysis of traffic conditions and potential project impacts. Notably, the new parking structures included with the project are considered in this traffic analysis because they are expected to influence the distribution of new trips around the campus.

With respect to headcount, the EFMP anticipates an increase in the campus headcount from 37,864 students in fall 2017 to between 40,802 and 42,745 students in fall 2027 (based on the estimated medium and high growth rates). To be conservative, this study considers the high growth rate of 1.22% (refer to the discussion provided in Section 4, Projected Traffic Volumes).

For this study, traffic impact analyses were conducted for existing conditions (2018), the interim Phase 1A (2021), and buildout (2027) to assess potential traffic impacts near Mt. SAC. In summary, the following scenarios were evaluated in this study:

- Existing Conditions
- Existing Plus Project (full EFMP buildout through Phase 2) Conditions
- 2021 Cumulative Conditions (Existing plus Related Projects)
- 2021 Cumulative Plus Project (Phase 1A) Conditions
- 2027 Cumulative Conditions
- 2027 Cumulative Plus Project (full EFMP buildout through Phase 2) Conditions

The project boundaries, the study area, and the traffic impact analysis methodology used in this study are described in the following sections, and Section 4 provides more information about the EFMP and the assumptions for each study scenario.

Figure 1. 2018 Facilities Master Plan

1.1. STUDY AREA

The 28 study intersections listed below were selected based on their inclusion in the 2015 Traffic Impact Study[3] and requests from the Cities of Walnut, Pomona, and West Covina. In addition, major intersections which directly serve Mt. SAC which were not included in the 2015 study were added. The jurisdiction in which each intersection is located is shown in parentheses, and Caltrans intersections are indicated as such.

1. Nogales Street and Amar Road (West Covina)
2. Lemon Avenue and Amar Road (Walnut)
3. Meadow Pass Road and Amar Road (Walnut)
4. Grand Avenue and Temple Avenue/Amar Road (Walnut) – will be referred to as Grand Avenue and Temple Avenue throughout this report
5. Mt. SAC Way and Temple Avenue (Walnut)
6. Proposed Transit Center Access and Temple Avenue (Walnut)
7. Bonita Drive and Temple Avenue (Walnut)
8. Lot F Entrance and Temple Avenue (Walnut)
9. University Drive and Temple Avenue (Pomona)
10. Campus Drive and Temple Avenue (Pomona)
11. Campus Drive and Kellogg Drive (Pomona)
12. Valley Boulevard and Temple Avenue (Pomona)
13. Pomona Boulevard and Temple Avenue (Pomona)
14. SR-57 SB Ramps and Temple Avenue (Pomona, Caltrans)
15. SR-57 NB Ramps and Temple Avenue (Pomona, Caltrans)
16. Grand Avenue and I-10 WB Ramp (West Covina, Caltrans)
17. Grand Avenue and I-10 EB Ramp (West Covina, Caltrans)
18. Grand Avenue and Holt Avenue (West Covina)
19. Grand Avenue and Cortez Street (West Covina)
20. Barranca Street and Cameron Avenue (West Covina)
21. Grand Avenue and Cameron Avenue (Los Angeles County)
22. Grand Avenue and Mountaineer Road (Walnut)
23. Grand Avenue and San Jose Hills Road (Walnut)
24. Grand Avenue and La Puente Road (Walnut)
25. Grand Avenue and Valley Boulevard (Walnut)

26. Grand Avenue and Baker Parkway (Industry)
27. Grand Avenue and SR-60 WB Ramps (Industry, Caltrans)
28. Grand Avenue and SR-60 EB Ramps (Diamond Bar, Caltrans)

After the initial draft of this study was completed, Mt. SAC was contacted by California State Polytechnic University, Pomona (Cal Poly Pomona) with a request to provide a preliminary discussion about a possible campus bypass which would include the following intersections:

29. I-10 eastbound off-ramp/East Campus Drive and Kellogg Drive (Los Angeles County, Caltrans)
30. East Campus Drive and South Campus Drive (Los Angeles County)

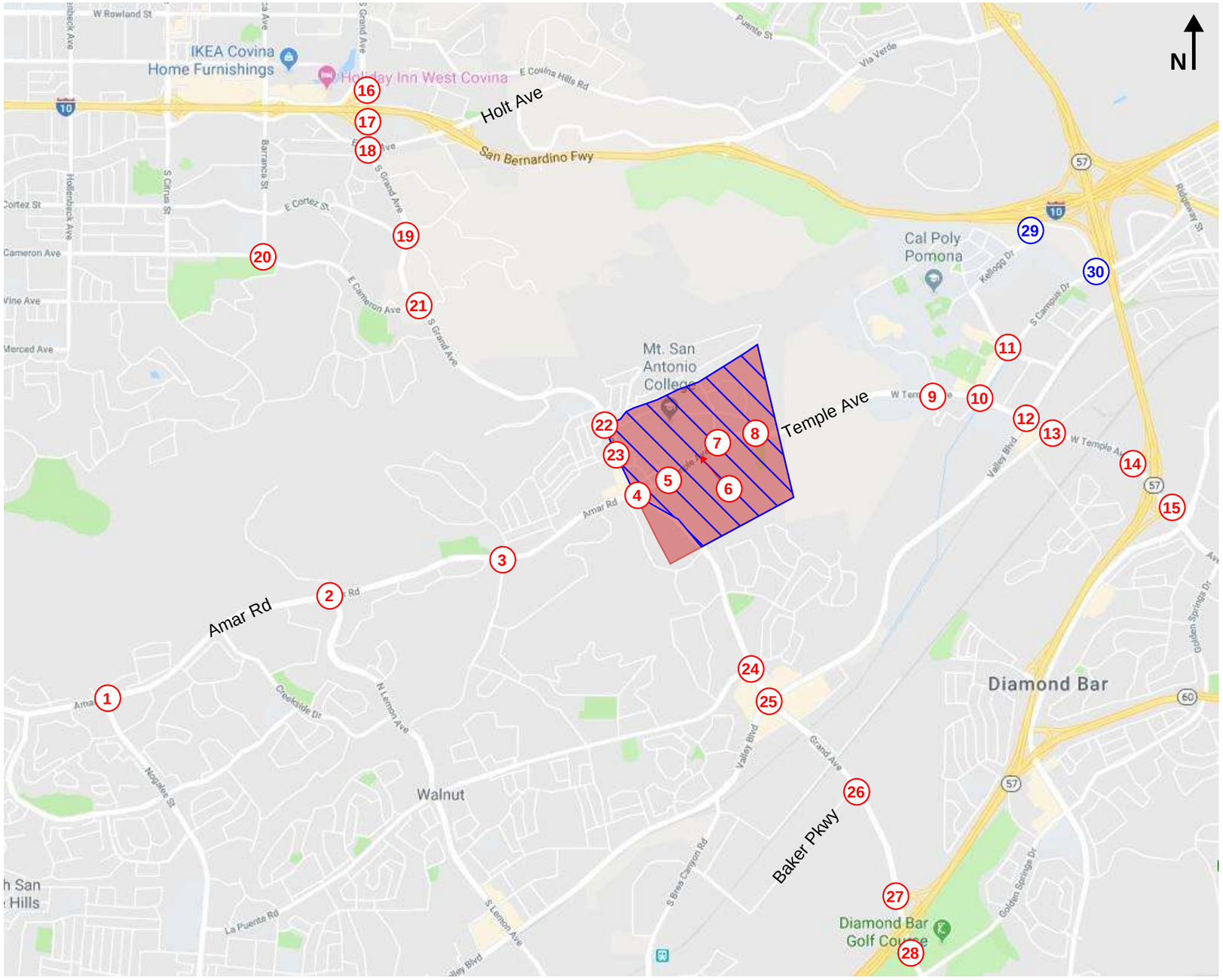
Although these two intersections are outside the study area for this document and were therefore not analyzed, traffic volume information for both (given the existing geometry and circulation) is provided throughout for reference. The potential plans for the area, along with the discussion and evaluation of these two intersections, are provided in Section 8 of this document.

In addition to the study intersections, the Caltrans facility segments listed below were analyzed because the project is expected to add 50 or more peak hour trips along each of the segments:

- I-10, Citrus Street to Holt Avenue
- SR-57, Grand Avenue to SR-60

The *2010 Congestion Management Program (CMP) for Los Angeles County*[4] provides guidelines to evaluate the potential impact of local growth on the regional transportation system. Although there are some CMP facilities in the project vicinity, the project trips are not expected to meet thresholds for analysis of any of the facilities and CMP analysis is therefore not required.

Figure 2 shows the project vicinity and the study intersections as well as the two intersections included for evaluation as requested by Cal Poly Pomona.



1. Nogales Street and Amar Road
2. Lemon Avenue and Amar Road
3. Meadow Pass Road and Amar Road
4. 4.Grand Avenue and Temple Avenue/Amar Road – will be referred to as Grand Avenue and Temple Avenue throughout this report
5. Mt. SAC Way and Temple Avenue
6. Proposed Transit Center Access and Temple Avenue
7. Bonita Drive and Temple Avenue
8. Lot F Entrance and Temple Avenue
9. University Drive and Temple Avenue
10. Campus Drive and Temple Avenue
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19. Grand Avenue and Cortez Street
20. Barranca Street and Cameron Avenue
21. Grand Avenue and Cameron Avenue
22. Grand Avenue and Mountaineer Road
23. Grand Avenue and San Jose Hills Road
24. Grand Avenue and La Puente Road
25. Grand Avenue and Valley Boulevard
26. Grand Avenue and Baker Parkway
27. Grand Avenue and SR-60 WB Ramps
28. Grand Avenue and SR-60 EB Ramps
29. I-10 eastbound off-ramp/East Campus Drive and Kellogg Drive
30. East Campus Drive and South Campus Drive

LEGEND

- XX Study Intersection
- XX Additional Intersection (Reference Only)
- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 2.
Project Location and Study Intersections

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1.2. ANALYSIS METHODOLOGY

Level of Service (LOS) is the typical measure used to characterize the quality of traffic operations at an intersection or roadway segment. LOS A represents relatively free operating conditions, whereas LOS F has unstable flow and congestion with volumes at or near the capacity of the facility. Excessive delays and queues can occur when the LOS is not acceptable.

The traffic generated by the project or by the project in combination with other projects in the area could worsen the LOS of a facility. To assess the potential traffic impacts due to the growth of the student population and the addition of new parking structures, and due to background traffic growth and related projects, the following scenarios were evaluated:

- Existing Conditions
- Existing Plus Project (full EFMP buildout through Phase 2) Conditions
- 2021 Cumulative Conditions (Existing plus Related Projects)
- 2021 Cumulative Plus Project (Phase 1A) Conditions
- 2027 Cumulative Conditions
- 2027 Cumulative Plus Project (full EFMP buildout through Phase 2) Conditions

This TIA follows the *Los Angeles County Traffic Impact Analysis Report Guidelines*[5]. Non-freeway ramp intersections were evaluated based on the LA County guidelines, which apply the Intersection Capacity Utilization (ICU) methodology at signalized intersections and the Highway Capacity Manual (HCM) methodology at unsignalized intersections. For the intersections operated under Caltrans' jurisdiction, operational analyses were based on the HCM methodology. The methodologies and significance thresholds are discussed further in the following sections.

1.2.1. Intersection Capacity Utilization (ICU)

The ICU methodology is used to determine the operating LOS of signalized intersections. This methodology requires the calculation of the intersection volume/capacity (V/C) ratio, which is the summation of critical lane group flow ratios with a yellow clearance adjustment. The LOS estimated by the ICU methodology is directly related to the intersection V/C ratio.

Per the LA County guidelines, a maximum of 2,880 vehicles per hour per lane should be used in the ICU method for dual left-turn lanes, and a maximum of 1,600 vehicles per hour per lane should be used for the remaining lane configurations. A ten percent yellow clearance time (i.e. lost time) should be included in the calculations.

The impact related to the project is considered significant if the increase in the volume to capacity (V/C) ratio with the project equals or exceeds the values shown in Table 1.

Table 1. Significant Impact Thresholds – ICU Methodology

Intersection Conditions Pre-Project		Project V/C Increase
LOS	V/C	
C	0.71 to 0.80	0.04 or more
D	0.81 to 0.90	0.02 or more
E/F	0.91 or more	0.01 or more

1.2.2. Highway Capacity Manual (HCM)

The LA County guidelines do not refer to significant impacts at unsignalized intersections. However, this study applied the *HCM*[6] methodology to evaluate unsignalized intersections, which defines LOS based on delay. The analyses for the unsignalized intersections were conducted using the software *Synchro*.

Although no thresholds are available for significant impacts at unsignalized intersections, several jurisdictions recommend evaluation methodologies. For example, the LADOT guidelines[7] recommend that if an unsignalized intersection has a LOS E or F in the "future with project" scenario, a signal warrant analysis should be conducted.

For this study, the LOS for unsignalized intersections is shown for each scenario. For intersections with LOS E or F, a preliminary peak hour signal warrant evaluation was conducted. However, the construction of a signal is not considered a mitigation measure, and the preliminary warrant analysis is provided for information only. Further, it is recommended that a full signal warrant analysis be conducted before a new traffic signal is installed at any location.

1.2.3. Caltrans Guidelines

The LOS at the intersections operating under Caltrans' jurisdiction is based on measures of effectiveness defined in the *HCM*. Caltrans aims to have facilities operate at the transition between LOS C and LOS D.

There are no formal thresholds from Caltrans to determine significant impacts. To be consistent with previous studies conducted for Mt. SAC and considering that Caltrans wants to maintain facilities operating at LOS D or better, this study assumed that a project-related impact is considered significant if the LOS changes from D or better to E or F. Further, a significant impact occurs if the facility operates at LOS E or F during existing conditions and the project-related traffic results in an increase in delay.

For freeway facilities, Caltrans uses the segment flow rates shown in Table 2, listed in passenger cars per hour per lane.

Table 2. Freeway Segment Capacity

LOS	Maximum Flow Rate (pc/hr/ln)
A	710
B	1,170
C	1,680
D	2,090
E	2,350

2. EXISTING STUDY AREA CONDITIONS

2.1. ROADWAY NETWORK

There are several existing roadways in the project traffic study area, as discussed below:

Grand Avenue is an existing four-lane divided roadway in the project vicinity, widening to six lanes further south in the study area. There are bike lanes along some portions of the roadway, and on-street parking is prohibited. The roadway is classified as a major arterial by the City of Walnut[8], and has a posted speed limit of 40 mph in the campus vicinity, increasing to 45 mph north of campus and 50 mph south of Temple Avenue.

Amar Road/Temple Avenue is a four-lane divided roadway through the campus area, widening to a six-lane facility to the east. On-street parking is generally prohibited along the roadway, except for the segment between Mt. SAC Way and Bonita Drive. The roadway is classified by the City of Walnut as a major arterial east of Grand Avenue and as a minor arterial west of Grand Avenue with a posted speed limit of 40 mph in the campus vicinity, increasing to 45 mph west of Heidelberg Avenue and 50 mph east of Bonita Drive.

Mountaineer Road is a two-lane divided roadway located on the northern boundary of the campus between Grand Avenue and Edinger Way and is classified as an important local street by the City of Walnut. Near the Grand Avenue intersection, the roadway is wider, providing four turn lanes onto Grand Avenue and two egress lanes from Grand Avenue. Mountaineer Road provides direct access to campus parking and facilities via Edinger Way. On-street parking is prohibited in this segment, and the posted speed limit is 30 mph.

Cameron Avenue is a four-lane undivided roadway with bike lanes which provides access to the area between I-10 and Grand Avenue via Citrus Street and Barranca Street. The roadway is classified as a principal arterial by the City of West Covina and has a posted speed limit of 45 mph.

La Puente Road is a four-lane divided roadway west of Grand Avenue; east of Grand Avenue, the roadway narrows to a two-lane undivided roadway and serves a large residential area. West of Grand Avenue, the roadway is classified as a secondary street by the City of Walnut and has a posted speed limit of 40 mph.

Valley Boulevard is a four- to six-lane divided roadway and is classified as a major arterial by the City of Walnut. South of Pomona Boulevard, the roadway has a raised median, and north of Pomona Boulevard, there is a two-way left turn lane. On-street parking is prohibited in the study area, and the roadway has a posted speed limit of 50 mph.

Nogales Street is a four-lane divided roadway with bike lanes south of Amar Road, and becomes the two-lane undivided Walnut Vista Way north of Amar Road. The portion of the roadway south of Amar Road is classified as a minor arterial by the City of Walnut and has a posted speed limit of 45 mph.

Lemon Avenue is a four-lane divided roadway south of Amar Road, narrowing to a two-lane undivided roadway north of Amar Road. The southern portion of the roadway is classified as a minor arterial by the City of Walnut and has a posted speed limit of 35 mph.

Meadow Pass Road is a two-lane divided roadway with a separate multi-use path south of Amar Road, and becomes the two-lane undivided Country Hollow Drive north of Amar Road. The portion of the roadway south of Amar Road is classified as an important local street by the City of Walnut and has a posted speed limit of 30 mph.

Campus Drive is a four-lane generally undivided roadway that passes through the Cal Poly Pomona campus, but also provides access between Temple Avenue and I-10 via Ridgeway Street. Between Temple Avenue and Kellogg Drive, the roadway is divided by either a raised median or left turn lanes. The roadway is classified as a collector by the City of Pomona[9] and has a posted speed limit of 45 mph.

2.2. PUBLIC TRANSIT

The Mt. SAC campus is currently served by five Foothill Transit routes, all of which travel along Temple Avenue from Grand Avenue to the east[10]. Routes 190 and 480 travel to/from the north along Grand Avenue, route 486 travels to/from the west on Amar Road, and routes 194 and 289 travel to/from the south along Grand Avenue. Figure 3 shows the existing routes as of December 2018 in a regional context and along the Mt. SAC frontage.

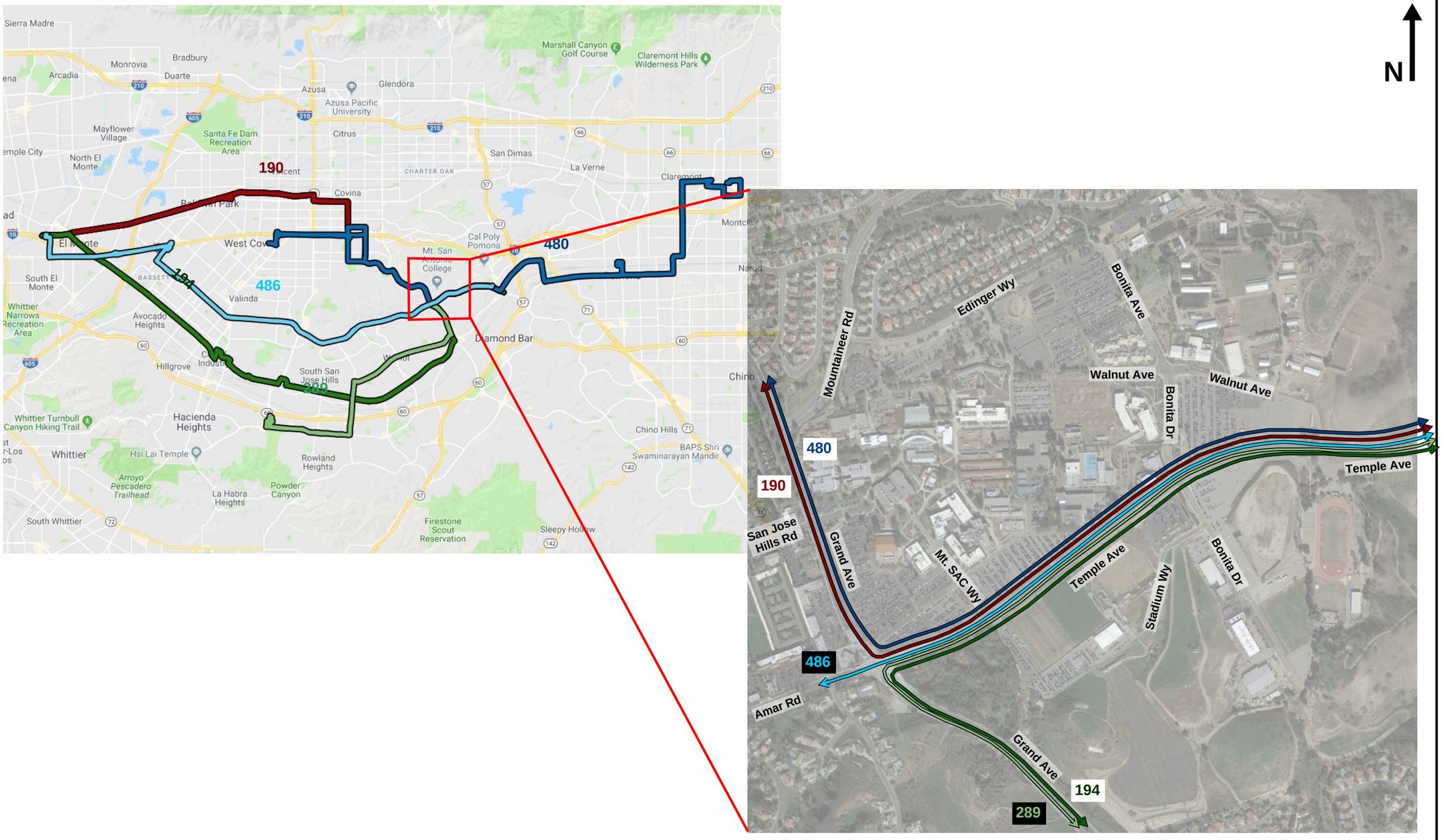
Further, on December 12, 2018, the Board of Trustees of the Mt. San Antonio Community College District adopted and certified the Final Initial Study/Negative Declaration for the Mt. San Antonio College Transit Center (SCH 2018091026) and approved the Transit Center project via Resolution No. 18-13. The proposed transit center will be located on the north side of Temple Avenue, just west of Bonita Drive.

2.3. TRAFFIC VOLUMES

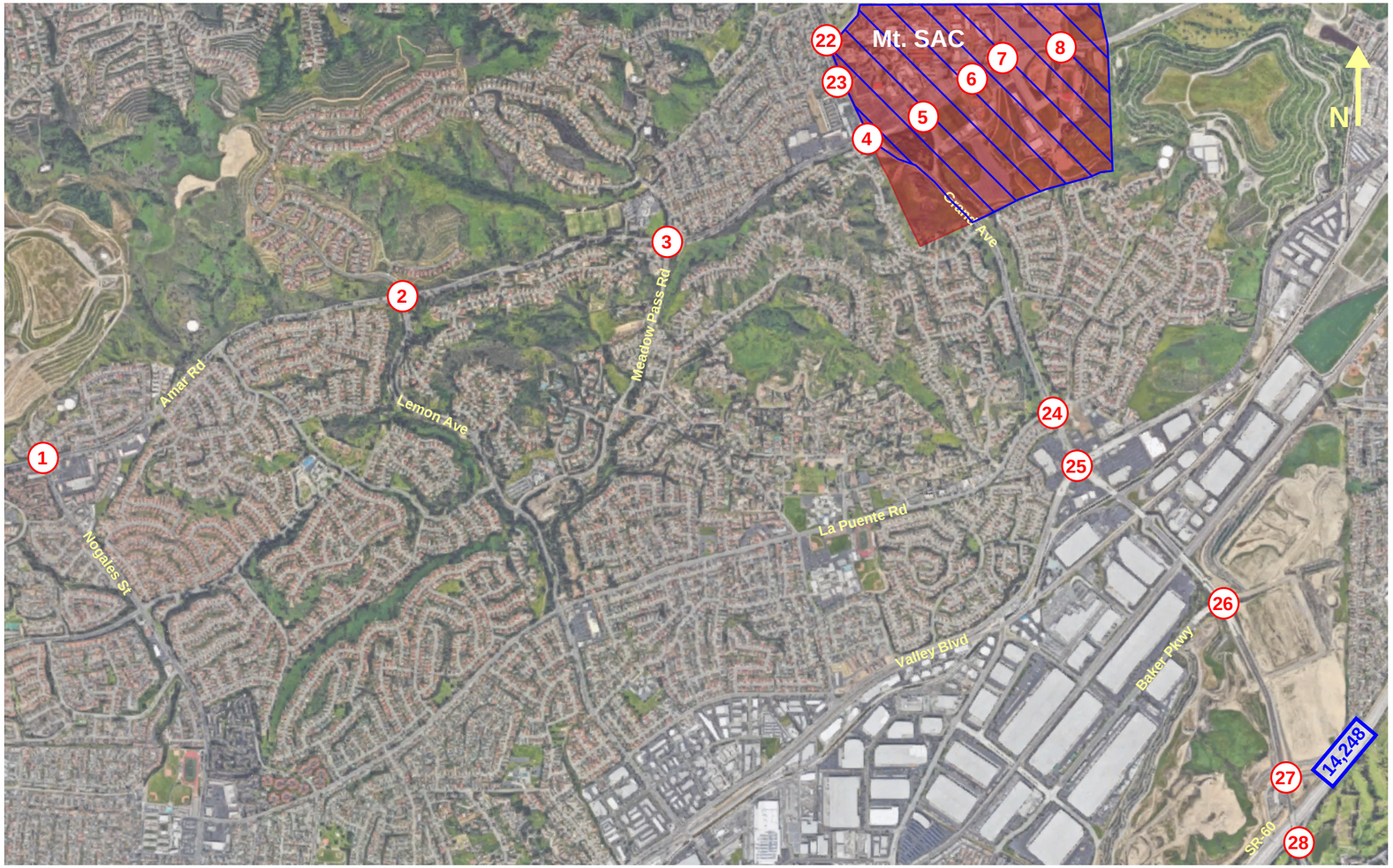
Traffic volume data was collected at most study intersections in May 2018 by National Data & Surveying Services for Psomas from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. Traffic volume data at the Proposed Transit Center Access and Temple Avenue intersection was also collected in March 2018 for a 24-hour period. The overall peak hours for the study area were found to be from 7:15 to 8:15 AM and from 5:00 to 6:00 PM.

The volumes along I-10 and SR-57 are from 2016 Caltrans data[11]. Traffic volume data for the two intersections added after the initial draft of this report (I-10 eastbound off ramp/East Campus Drive/Kellogg Drive and East Campus Drive/South Campus Drive) was collected in October 2018. Recall that these two intersections (numbers 29 and 30 in the figures) are not part of the study area and are not included in the detailed traffic analysis for this project; however, the volumes will be shown throughout for reference.

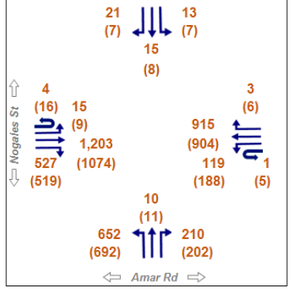
Figures 4A and 4B show the peak hour traffic volumes. All collected traffic volume data is included in Appendix A.



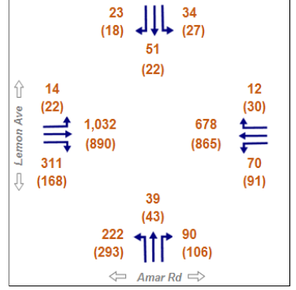
Traffic Impact Analysis Mt. San Antonio College 2018 EFMP	*Figure 3.* *Existing Foothill Transit Routes*	P S O M A S March 2019



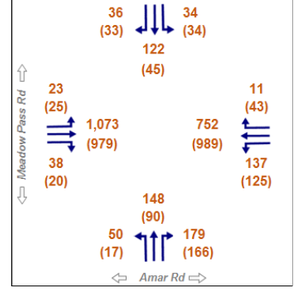
1 Amar Rd / Nogales St



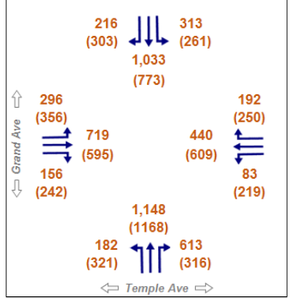
2 Amar Rd / Lemon Ave



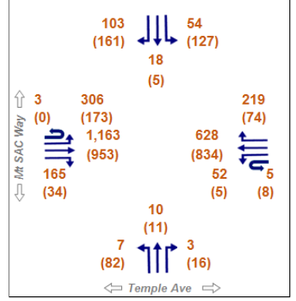
3 Amar Rd / Meadow Pass Rd



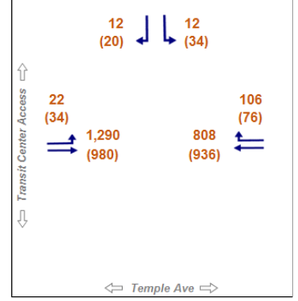
4 Temple Ave / Grand Ave



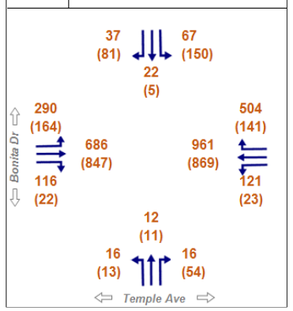
5 Temple Ave / Mt SAC Way



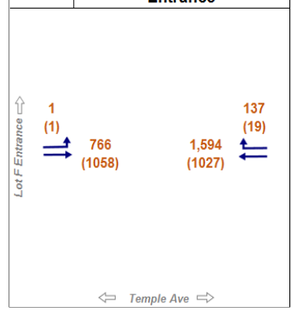
6 Temple Ave / Transit Center Access



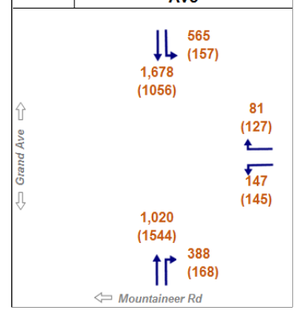
7 Temple Ave / Bonita Dr



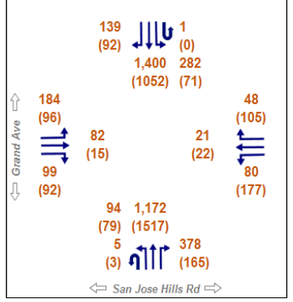
8 Temple Ave / Lot F Entrance



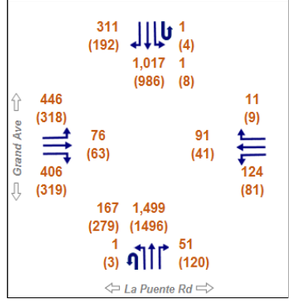
22 Mountaineer Rd / Grand Ave



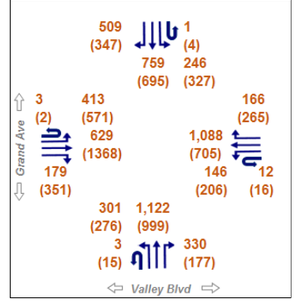
23 San Jose Hills Rd / Grand Ave



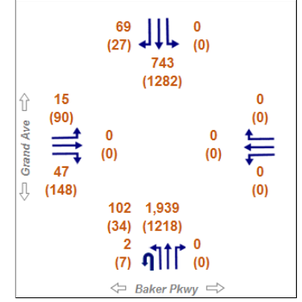
24 La Puente Rd / Grand Ave



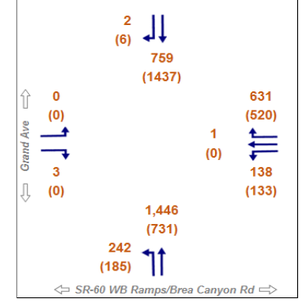
25 Valley Blvd / Grand Ave



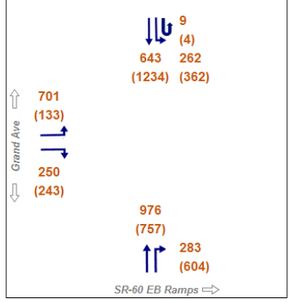
26 Baker Pkwy / Grand Ave



27 SR-60 WB Ramps / Grand Ave



28 SR-60 EB Ramps / Grand Ave



LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 4A.
Existing Traffic Volumes (Intersections 1-8, 22-28)

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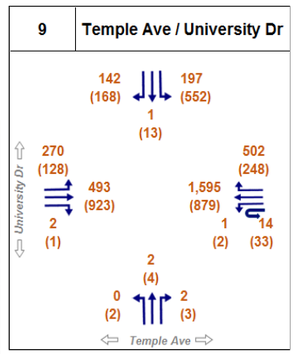
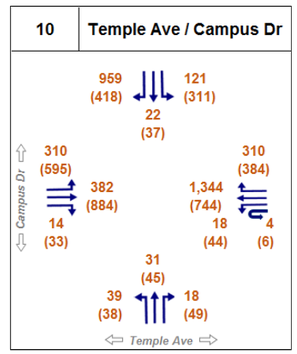
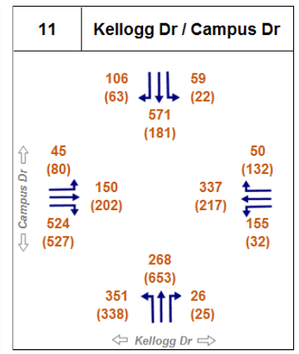
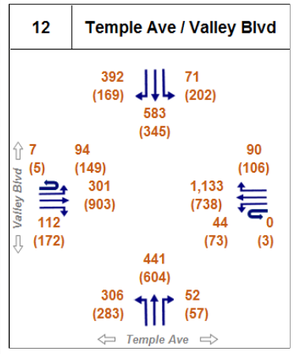
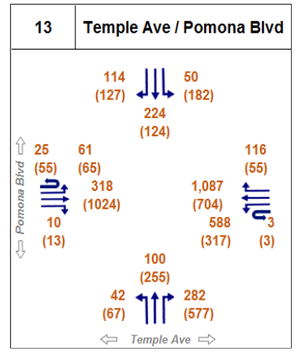
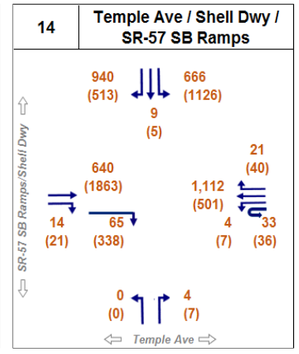


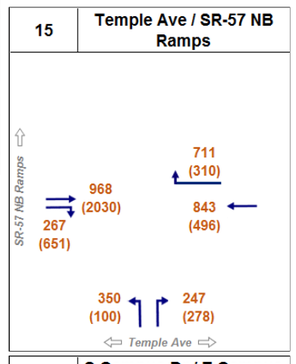


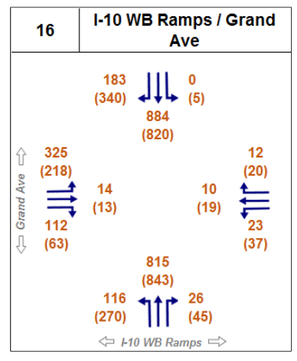


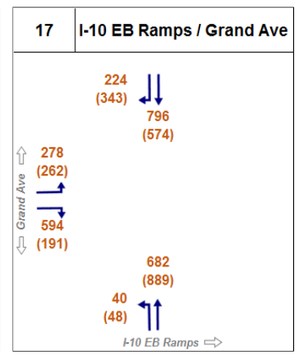


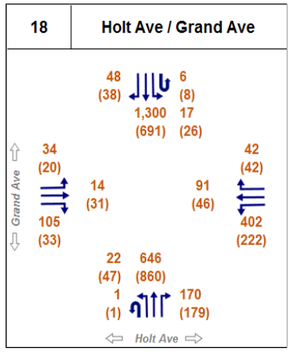


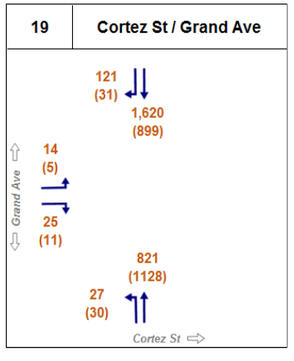


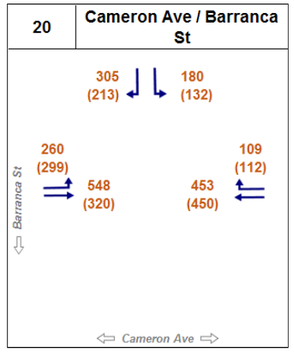


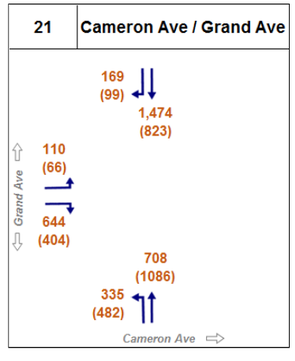


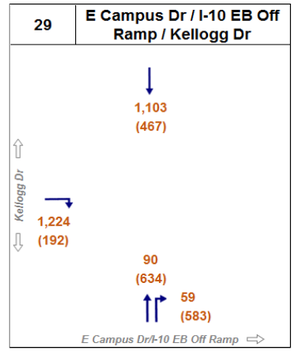


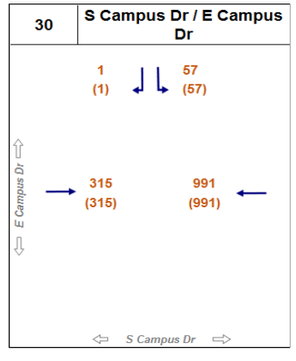












LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 4B.
Existing Traffic Volumes (Intersections 9-21, 29-30)

PSOMAS
March 2019

3. PROJECT DESCRIPTION

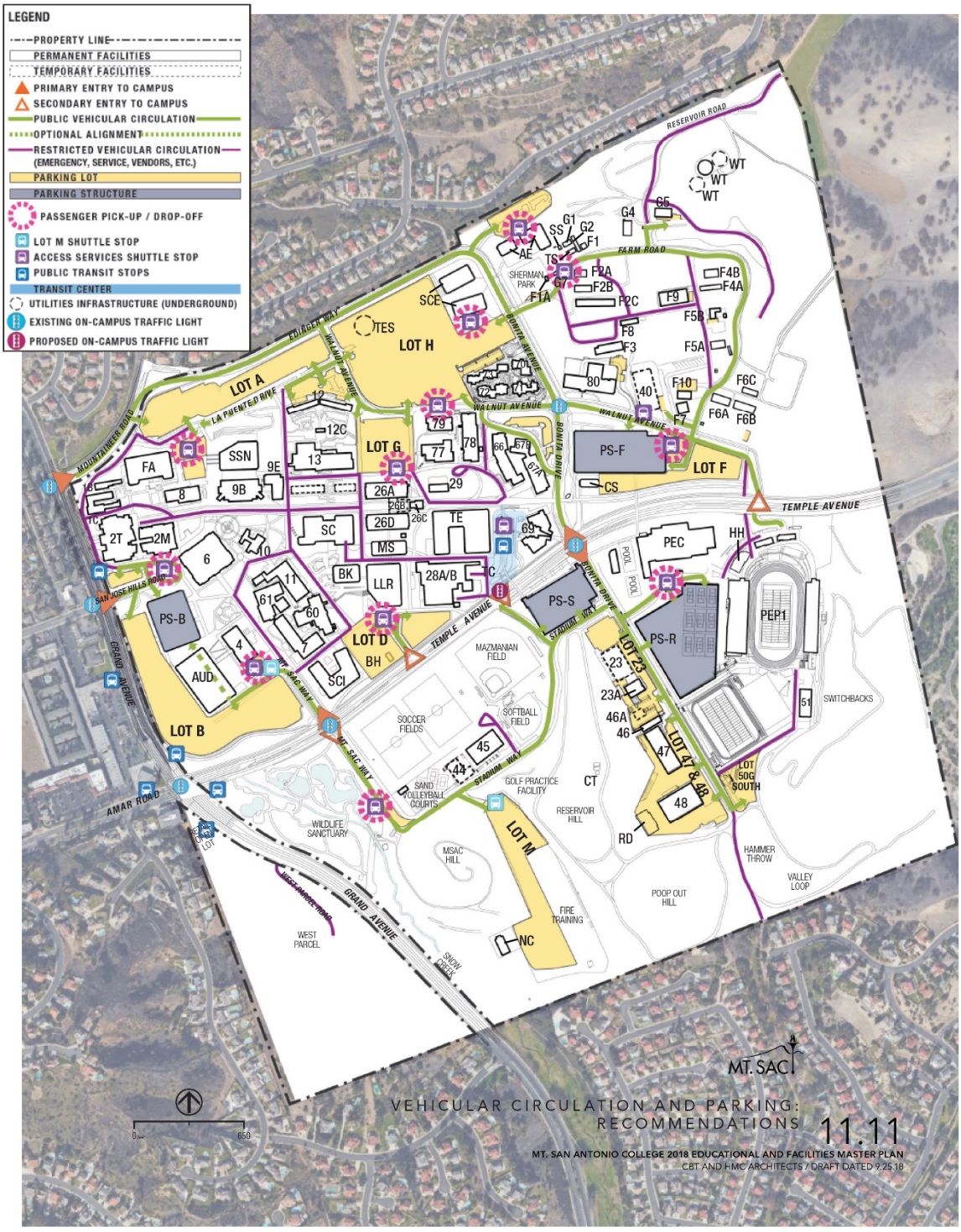
The *2018 Educational and Facilities Master Plan* (EFMP) is the subject of this TIA. Prior to the EFMP, the *2017 Parking and Circulation Master Plan* (PCMP) for Mt. SAC was completed in November 2017 and included recommendations for providing parking through the 2025-2026 school year. The projections were based on an annual increase in the student headcount of 0.75%, with an additional 5% buffer included in each year to ensure adequate parking was provided. The PCMP included distribution of new trips generated by the growth at the College and provided recommendations for the construction of four new parking structures by 2026. The final recommended parking improvements are shown in Figure 5 (taken from the EFMP).

The EFMP considers the assumptions in the PCMP, but also provides a higher potential student growth rate of 1.22% per year to be conservative. Per the EFMP, the parking structures recommended in the PCMP for lots R and S should be constructed with Phase 1A. The recommended parking structures in Lot B and Lot F are assumed to be constructed in Phase 2, with Lot B assumed to be constructed first. The plan also includes recommendations for numerous new educational buildings, with a 10-year horizon period. The overall master plan is shown in Figure 1 (page 3, taken from the EFMP).

The PCMP also introduced the proposed Transit Center to be constructed on campus by Foothill Transit (shown in Figure 5 across Temple Avenue from the parking structure in Lot S). The Final Initial Study/Mitigated Negative Declaration for the Transit Center was adopted and certified on December 12, 2018. Mt. SAC is committed to continuing its Class Pass program, which provides students with unlimited access to Foothill Transit buses as part of their student fees to help encourage more students and employees to commute to campus by bus. Mt. SAC also hopes to encourage transit agencies to expand their service to the campus. Lastly, the Transit Center will help prepare for possible bus connections to Los Angeles County's planned Metro Gold Line stations in La Verne and Pomona. The Gold Line connects Los Angeles Union Station to Azusa, and is planned to extend through Glendora, San Dimas, La Verne, Pomona, Claremont, and Montclair.

The focus on transit as well as the commitment to bicycle and pedestrian facilities all serve as Travel Demand Management (TDM) strategies which are part of the project.

Figure 5. 2018 EFMP Parking and Circulation Recommendations



Recommendations to improve bicycle, pedestrian, and transit facilities are also included in the EFMP. The complete details can be found in Chapter 11 of the EFMP, but the major ideas are listed below:

- Bicycle Circulation (see Figure 6, from the EFMP)
    - Provide safe access to campus
        - Includes continuous, protected bike lanes along Temple Avenue and Grand Avenue to provide a direct connection between Mt. SAC and two potential Class I greenway paths (one along Walnut Creek and one along San Jose Creek)
    - Provide service and convenient bicycle storage
        - Ensure adequate lighting and visibility
    - Encourage bicycle commuting by participating in and supporting a regional bicycle network
    - Provide bike share services on campus
- Pedestrian Circulation (see Figure 7, from the EFMP)
    - Connect all points of arrival and departure with campus destinations and nearby residential communities and businesses
    - Provide universally accessible circulation routes whenever possible
    - Complete and reinforce Miracle Mile as the primary east/west pedestrian route on campus
    - Provide enhanced pedestrian facilities along Mt. SAC Way and Bonita Drive (including wide pedestrian walkways, shade trees, seating, lighting, waste receptacles, and electrical outlets)
    - Replace the Bonita Drive Pedestrian Bridge
    - Develop the Healthy Living Loop as a publicly-accessible route around campus to encourage walking, jogging, and cycling
    - Provide sidewalks along both sides of Temple Avenue along the entire Mt. SAC frontage as part of the Temple Avenue Green Corridor
    - Complete the Grand Avenue sidewalk between San Jose Hills Road and Mountaineer Road
    - Reinforce pedestrian circulation hierarchy

Figure 6. 2018 EFMP Bicycle Circulation Recommendations

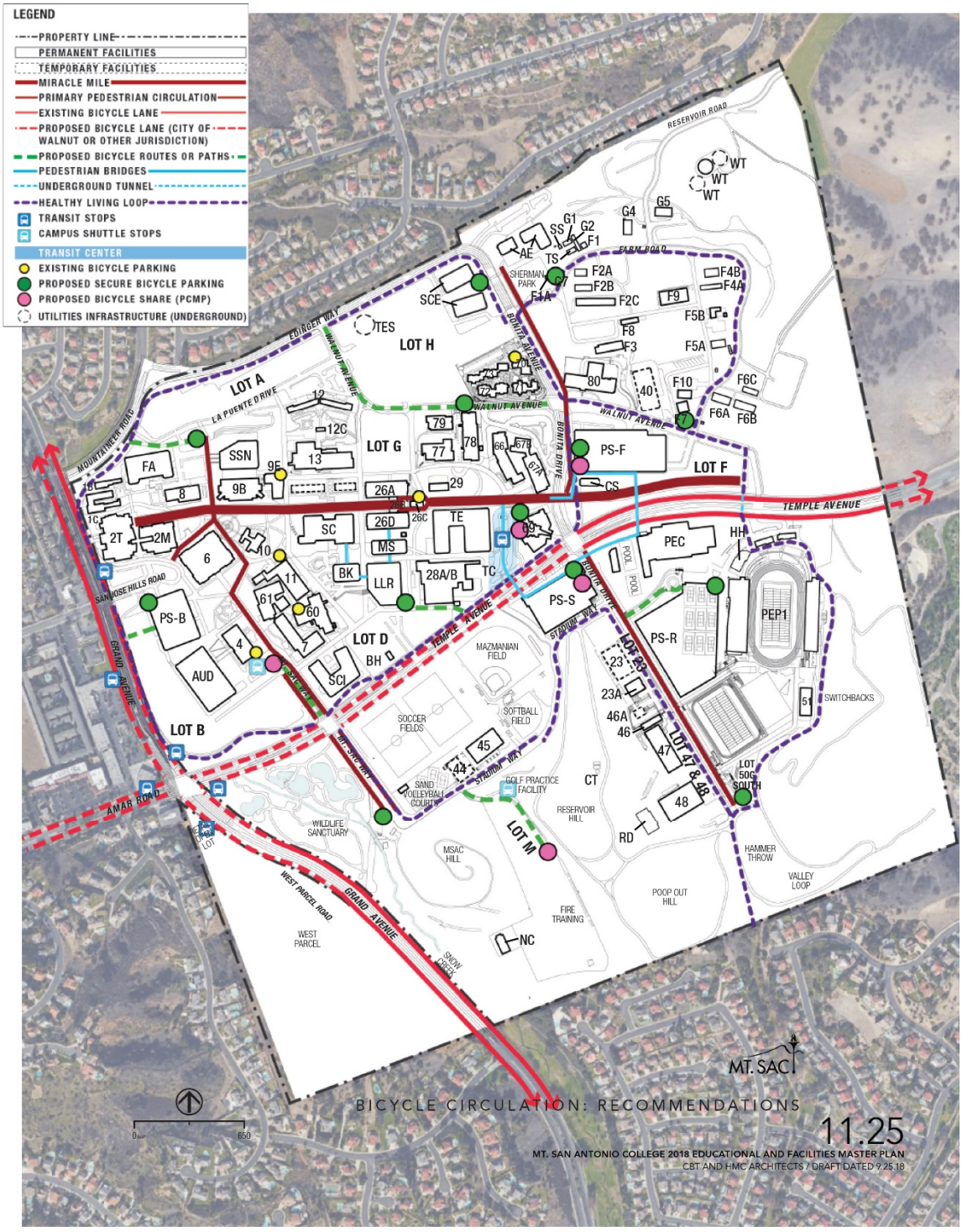
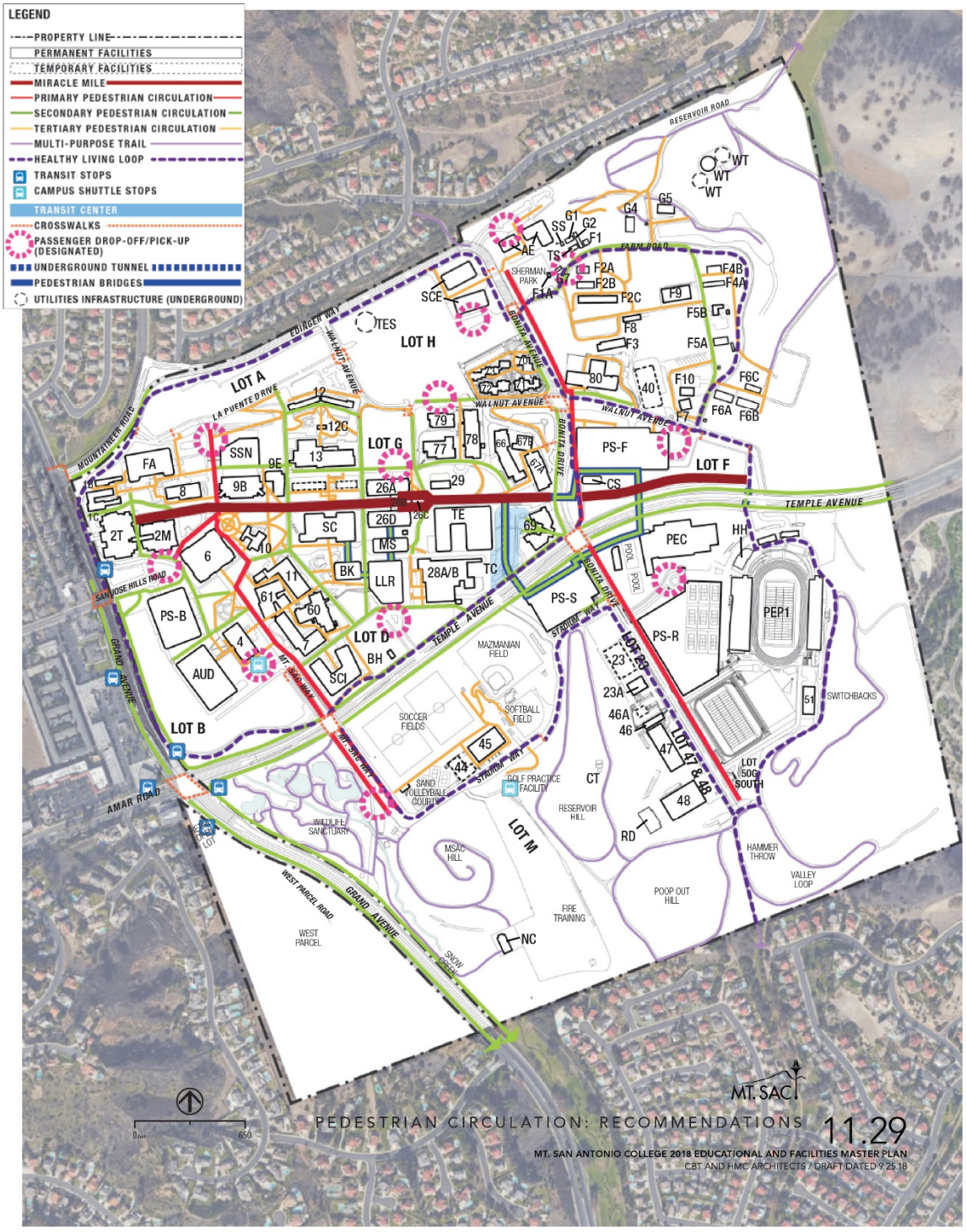


Figure 7. 2018 EFMP Pedestrian Circulation Recommendations



3.1. ASSUMPTIONS FOR THE TRAFFIC IMPACT ANALYSIS

The anticipated growth for this study was assumed to be 1.22% per year, which is the most conservative growth rate presented in the EFMP. The interim study year is at the completion of Phase 1A (assumed to be in 2021) and the buildout year is 2027, which is consistent with the 10-year horizon for buildout of Phase 2 of the EFMP.

Because parking needs may change over time due to the construction of the Transit Center and the general shift of trips away from personal vehicles, the structure in Lot F may not be needed when initially indicated, if at all. Therefore, it is recommended that parking demand data be collected in the third week (census week) of the fall semester on a regular basis (i.e. every year, every other year). A parking generation rate should be calculated as the total demand divided by the total number of students, and the rate should be compared to previous years to determine how the parking rate per student is changing over time.

Along with the EFMP growth, other ongoing development and roadway improvement projects (which have been previously approved and studied) must be accounted for in the appropriate study years. While specific educational facilities, the Physical Education Project (Phase 1,2), and the Transit Center (among others) are specified developments in the EFMP, this traffic study provided analyses based on the anticipated number of new students. The number of students is not necessarily tied to specific new buildings on campus; instead, the campus population is anticipated to grow as it has in the past, being served by the planned new and improved facilities. Therefore, the physical projects listed in the assumptions below are only those which influence traffic, such as new parking structures.

The project assumptions for each analysis scenario are listed below:

- Existing Conditions
    - Existing geometry at all intersections, including recently completed construction on Grand Avenue at Baker Parkway and at the SR-60 WB Ramps

- Existing + Project
    - School population increase of 4,881 students (42,745 total students, buildout conditions)
    - New developments include Transit Center and parking structures in Lots R, S, B, and F (buildout conditions)
    - Roadway geometry changes include:
        - New exclusive eastbound and westbound right turn lanes at Temple Avenue/Bonita Drive associated with the Physical Education Project (Phase 1,2)
        - New traffic signal at Temple Avenue/Transit Center access
        - New south leg (for parking structure S) at Temple Avenue/Transit Center access
        - Exclusive eastbound and westbound right turn lanes at Temple Avenue/Transit Center access
    - An additional possible improvement includes extending the existing westbound left turn lane storage length at the intersection of Temple Avenue and Bonita Drive
        - Mt. SAC and the City of Walnut are discussing this potential construction
        - The possible extension of the left turn lane does not have any effect on the analyses in this report
- Phase 1A (2021) Cumulative Conditions
    - Includes Transit Center
    - Roadway geometry changes include:
        - New exclusive eastbound right turn lane at Temple Avenue/Bonita Drive associated with the Physical Education Project (Phase 1,2)
        - New traffic signal at Temple Avenue/Transit Center access
        - New south leg at Temple Avenue/Transit Center access
        - Exclusive eastbound and westbound right turn lanes at Temple Avenue/Transit Center access
- Phase 1A (2021) Cumulative Conditions Plus Project
    - School population increase of 1,882 students (39,746 total students)
    - In addition to 2021 Cumulative Conditions, includes parking structures in Lots R and S

- Buildout (2027) Cumulative Conditions
    - Includes Transit Center
    - Roadway geometry changes include:
        - New exclusive eastbound right turn lane at Temple Avenue/Bonita Drive associated with the Physical Education Project (Phase 1,2)
        - New traffic signal at Temple Avenue/Transit Center access
        - New south leg at Temple Avenue/Transit Center access
        - Exclusive eastbound and westbound right turn lanes at Temple Avenue/Transit Center access
- Buildout (2027) Cumulative Conditions Plus Project
    - School population increase of 4,881 students (42,745 total students)
    - In addition to 2027 Cumulative Conditions, includes parking structures in Lots R, S, B, and F

4. PROJECTED TRAFFIC VOLUMES

4.1. INTERIM YEAR (2021) – PHASE 1A

4.1.1. Project Trip Generation

The EFMP provides low, medium, and high approximations for student population growth at Mt. SAC. To be conservative, the high annual growth rate (1.22% per year) was assumed in this study. Based on that growth rate, the student population is expected to grow from 37,864 students in the fall of 2017 to 39,746 students in 2021, a growth of 1,882 students.

The trip generation for the project was calculated using the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*[12]. The resulting trip generation is shown in Table 3. As seen in the table, the project is expected to generate 2,164 new daily trips at the completion of Phase 1A, including 207 peak hour trips in each of the AM and PM peak hours.

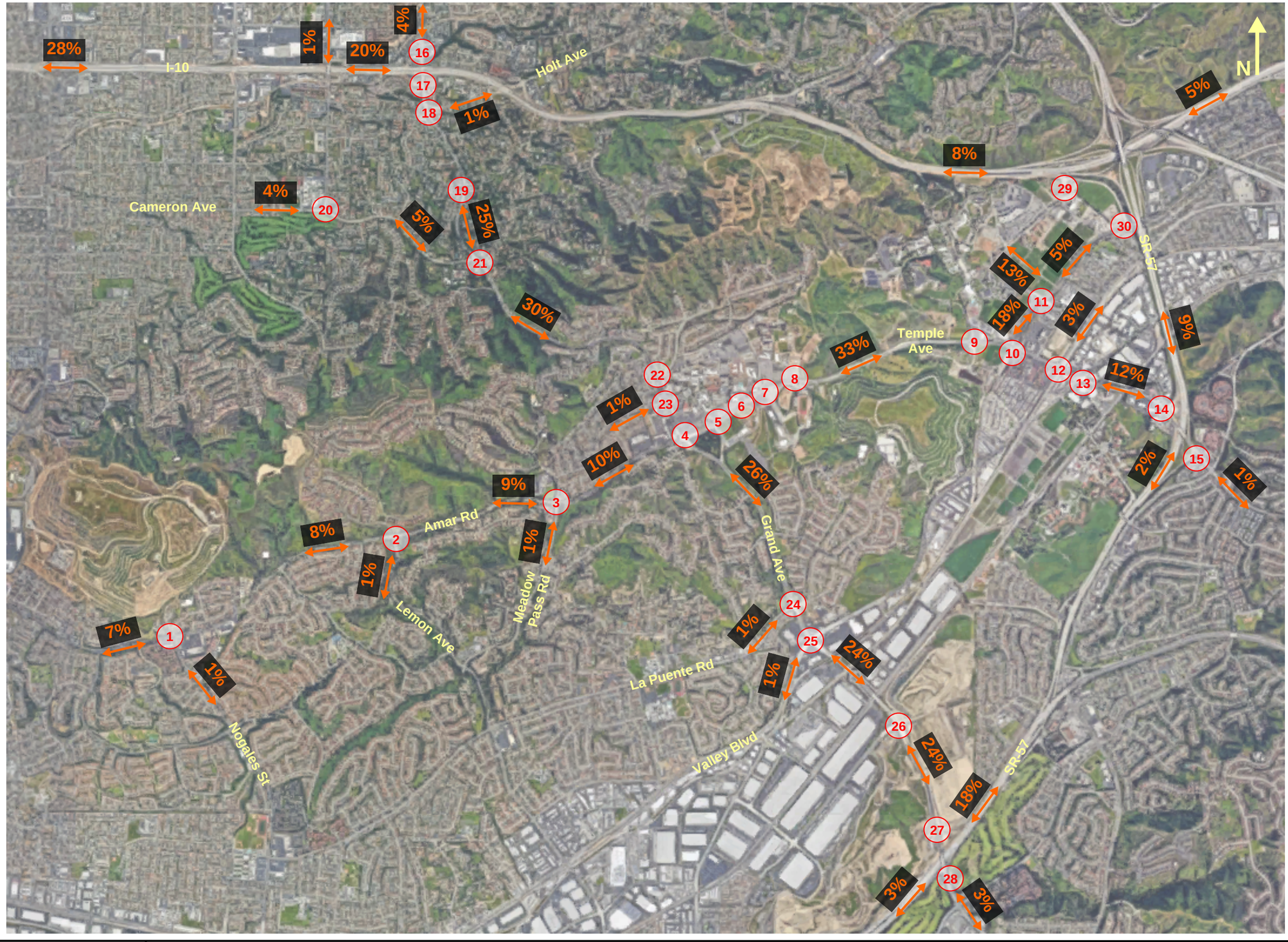
Table 3. Interim (2021) Project Trip Generation

ITE LU 540 (10th Edition) - Junior/Community College						
Students			1,882			
Period	Trips/Unit	Trips	% In	% Out	Trips In	Trips Out
AM Peak	0.11	207	81%	19%	168	39
PM Peak	0.11	207	56%	44%	116	91
Daily	1.15	2,164	50%	50%	1,082	1,082

4.1.2. Project Trip Distribution

The project trip distribution was estimated as shown in Figures 8 and 9. Figure 8 shows the distribution for the outlying intersections, while Figure 9 shows the inbound distribution at the campus access points.

Note that the distribution of traffic exiting campus is expected to be the same as the inbound percentages shown in Figure 9 with the exceptions of intersections 7 and 8; traffic which enters Lot F at intersection 8 is assumed to exit campus from Bonita Drive at intersection 7.



Traffic Impact Analysis Mt. San Antonio College 2018 EFMP	*Figure 8.* *Project Trip Distribution*	PSOMAS March 2019

Traffic Impact Analysis Mt. San Antonio College 2018 EFMP	*Figure 9.* *Project Trip Distribution (Inbound) - Campus Area*	PSOMAS March 2019

4.1.3. Project Traffic Volumes

Using the project trip generation and trip distribution, the project traffic volumes at each of the study intersections were calculated and are shown in Figures 10A and 10B.

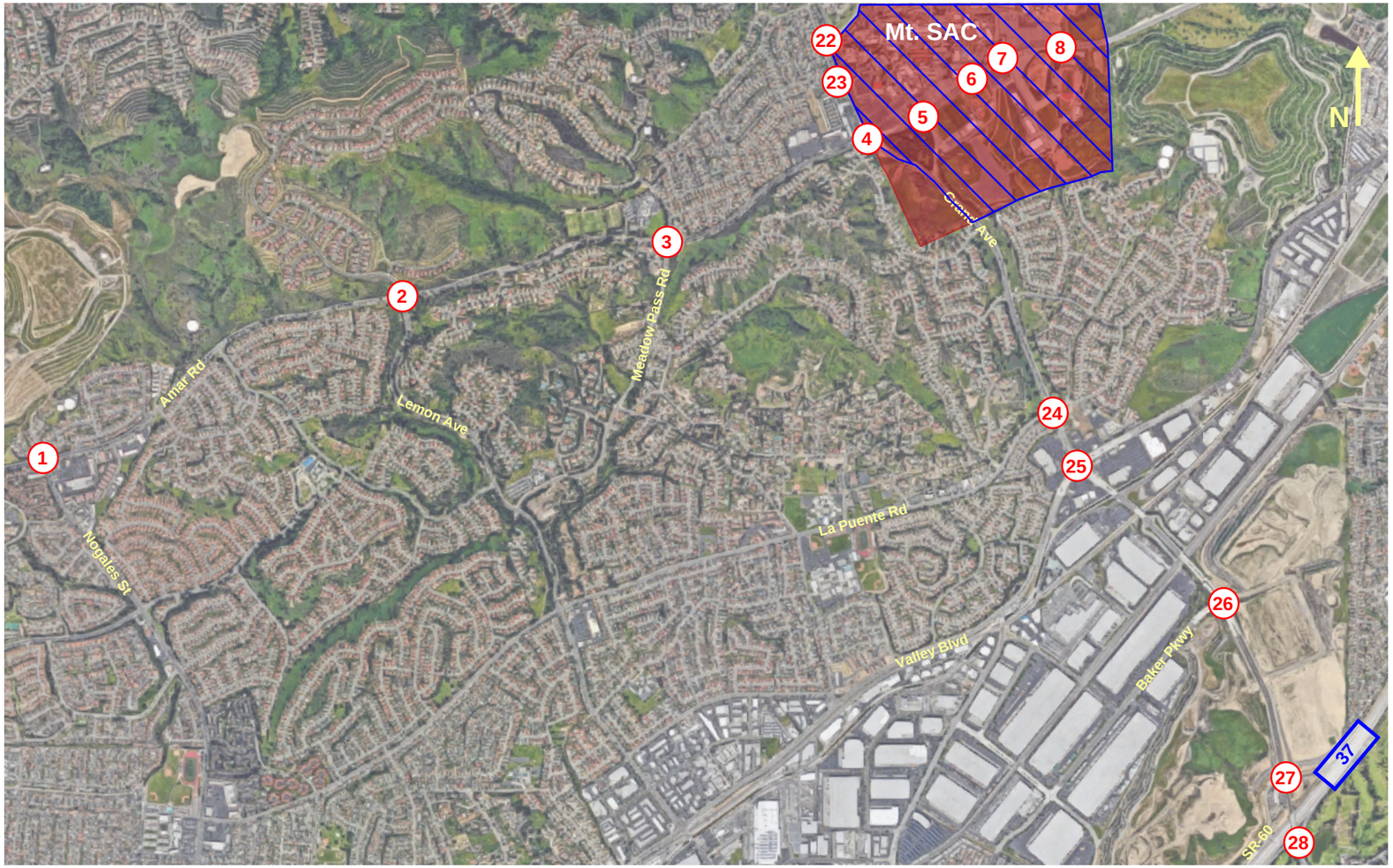
4.1.4. Related Project Traffic Volumes

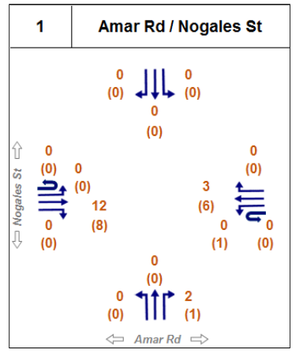
The Cities of Walnut, Pomona, Diamond Bar, Industry, and West Covina were contacted about any potential development projects located in the region of influence, which is bounded by I-10 to the north, State Route 60 to the south, State Route 71 to the east, and Azusa Avenue to the west. Note that this region is somewhat larger than the overall study area because trips generated outside the study area may still travel through the study intersections.

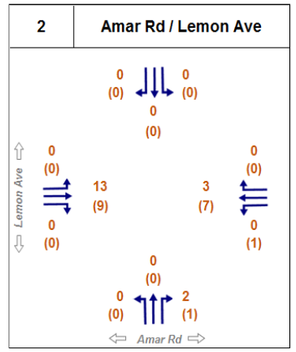
West Covina stated that they did not have any upcoming development projects in the study area. In addition, the City of Industry provided a land use plan for a large development north of Valley Boulevard on either side of Grand Avenue; however, the project is not expected to start construction until 2020 at the earliest. Therefore, that project was not included in this analysis for the interim year of 2021. A total of 13 related projects were included for consideration in this study, as listed in Table 4 and as shown in Figure 11. The figure also shows the study corridors for reference.

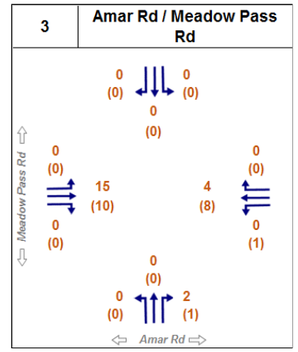
Trip generation for the related projects was based on the ITE *Trip Generation Manual*, and the trip distribution was estimated separately for each project based on their location and type of project (i.e. residential, commercial, etc.). No project-specific TIAs were provided. Where applicable, pass-by trips and internal capture trips were subtracted from the total. Further, if the project was replacing an existing active use, the existing trips were estimated using the *Trip Generation* Manual and were subtracted from the total.

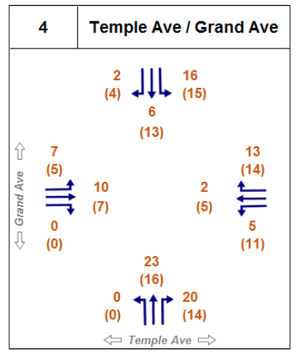
Table 5 shows the related project gross trips, pass-by and internal capture trips, replaced trips from existing developments, and the total new trips expected to be generated by the related projects in 2021. As seen in the table, the related projects are expected to generate nearly 3,000 new daily trips, including 340 trips in the AM peak hour and 211 trips in the PM peak hour. Based on the trip generation and trip distribution for each of the projects, the resulting peak hour traffic volumes at each of the study intersections was calculated and are shown in Figures 12A and 12B.

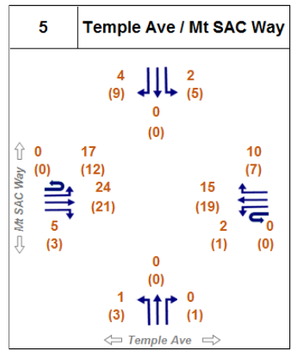


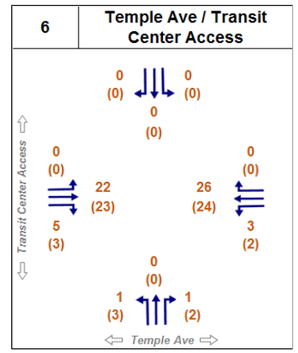


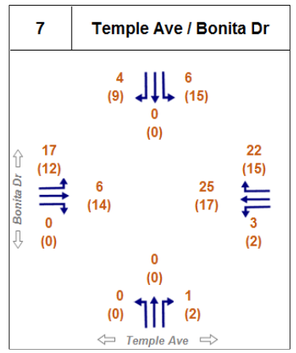


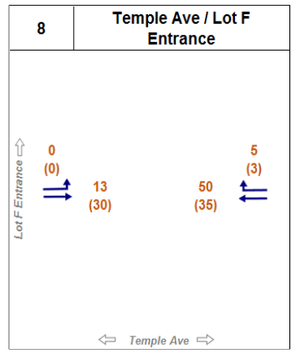


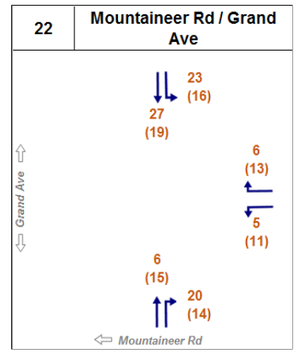


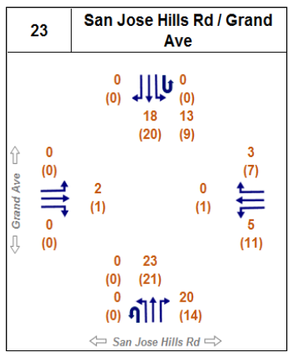


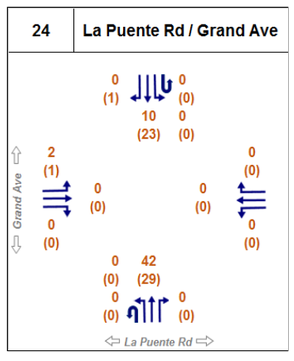


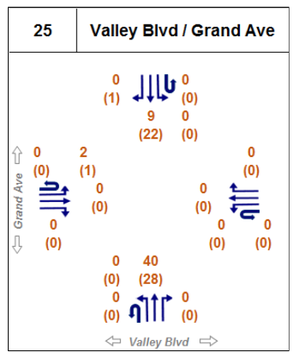


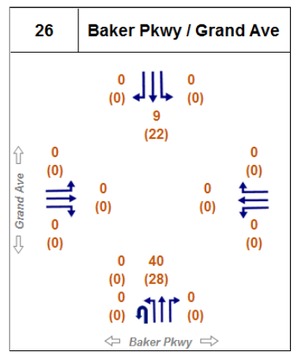


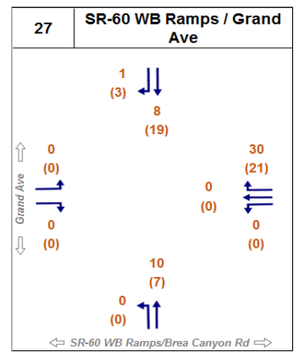


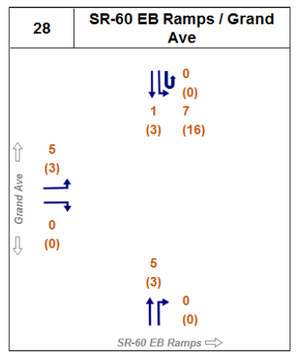












LEGEND

- XX — Intersection Number
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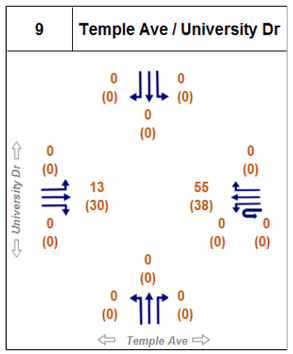
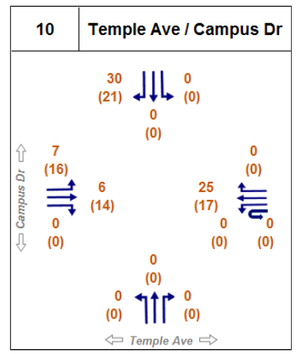
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

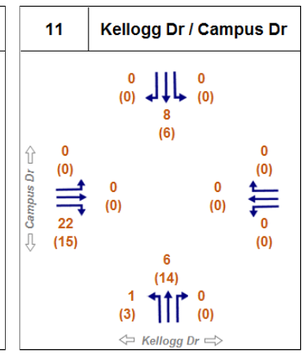
Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

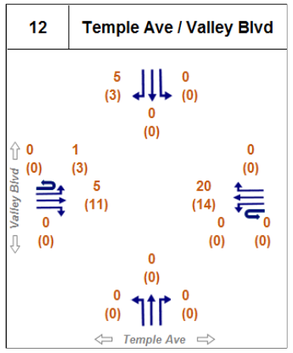
Figure 10A.
Interim (2021) Project Traffic Volumes (Intersections 1-8, 22-28)

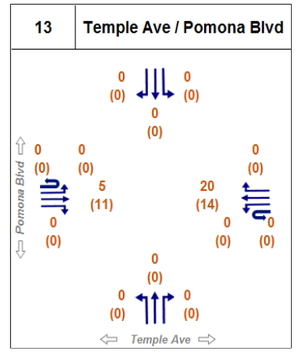
PSOMAS
March 2019

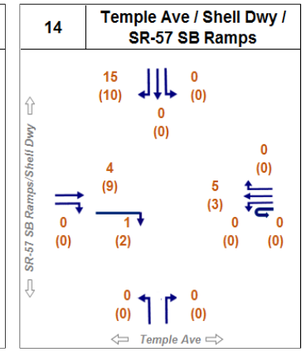


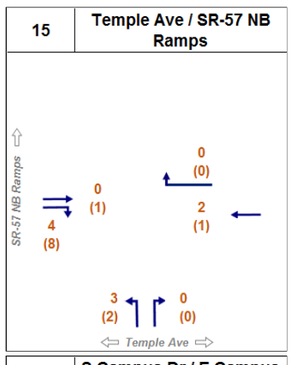


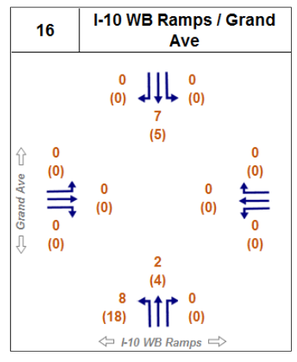


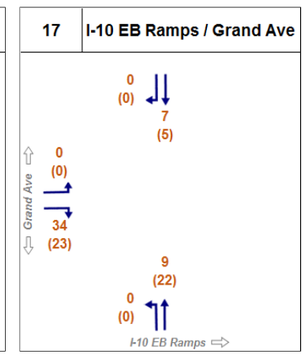


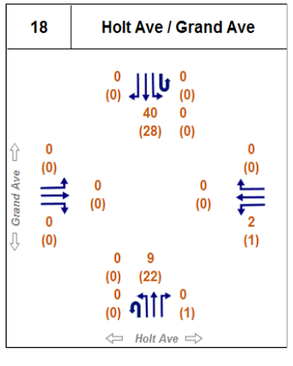


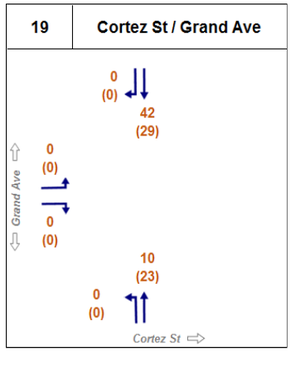


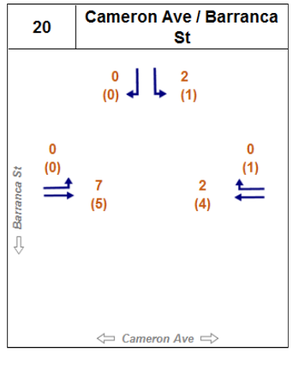


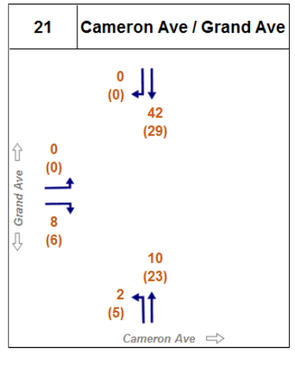


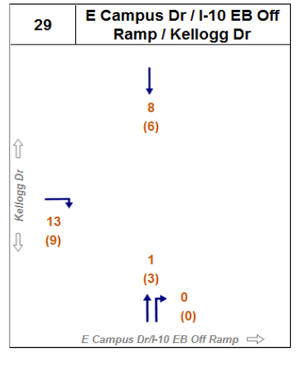


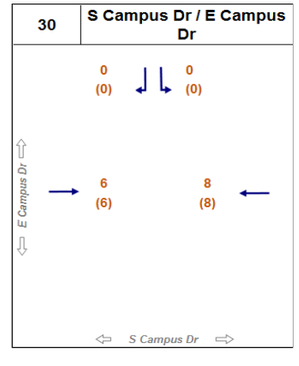












LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 10B.
Interim (2021) Project Traffic Volumes (Intersections 9-21, 29-30)

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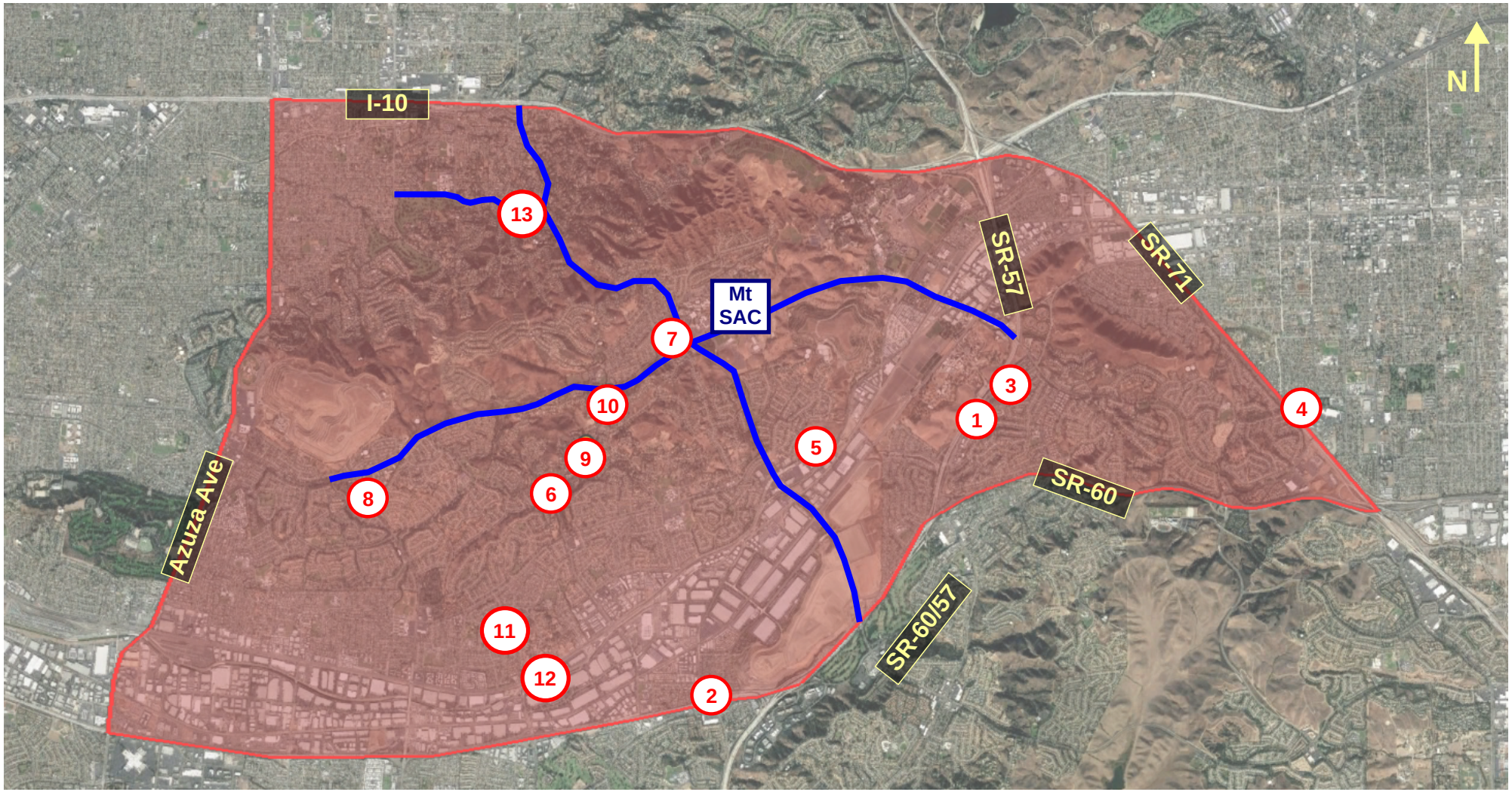
Table 4. Related Projects

Project	City	Project	
		Location	Description
1	Diamond Bar	888 Diamond Bar	Demolition of two neighborhood commercial centers (Oak Tree Plaza and Ranch Center), construction of 146 condos and 4,300 sq.ft. of commercial retail
2	Diamond Bar	850 Brea Canyon Road (Brea Canyon Road, north of 60 freeway)	Redevelopment of boat and RV storage to include 109-room hotel, 48,000 sq.ft. of office, and 9,500 sq.ft. of retail
3	Diamond Bar	1111 N. Diamond Bar (north side between Soltaire Street and Highland Valley Road)	Single-family residence on vacant lot, approximately 4,000 sq.ft.
4	Pomona	SW Corner of White Ave and Lexington Ave	110 single-family residential units
5	Walnut	1,300 feet east of Valley/Grand intersection	Specific Plan. Single-family residences (12 units), low-rise multifamily housing (277 units), public park (17 acres), shopping center (50,000 sq.ft.)
6	Walnut	800 Meadow Pass Road	28 single-family residential units
7	Walnut	20650 San Jose Hills Road	22 single-family homes
8	Walnut	Francesca Drive, east of Nogales St	36 low-rise multifamily housing units
9	Walnut	Pierre and Meadow Pass	6 single-family homes
10	Walnut	1521 Meadow Pass Road	13 single-family homes
11	Walnut	360 Camino de Teordoro	4 single-family homes
12	Walnut	19901 Valley Boulevard	Two buildings - one with 2 residential units, one with approximately 1,000 sq.ft. commercial on 1st floor and residence on second floor
13	West Covina	3501 E. Cameron Avenue	2 single-family homes



LEGEND

1. Mixed-Use (Residential and Commercial)
2. Business Park (Hotel, Office, and Retail)
3. Single-Family Housing
4. Single-Family Housing
5. Specific Plan (Residential, Park, Retail)
6. Single-Family Housing
7. Single-Family Housing
8. Multifamily Housing
9. Single-Family Housing
10. Single-Family Housing
11. Single-Family Housing
12. Mixed-Use (Residential and Commercial)
13. Single-Family Housing

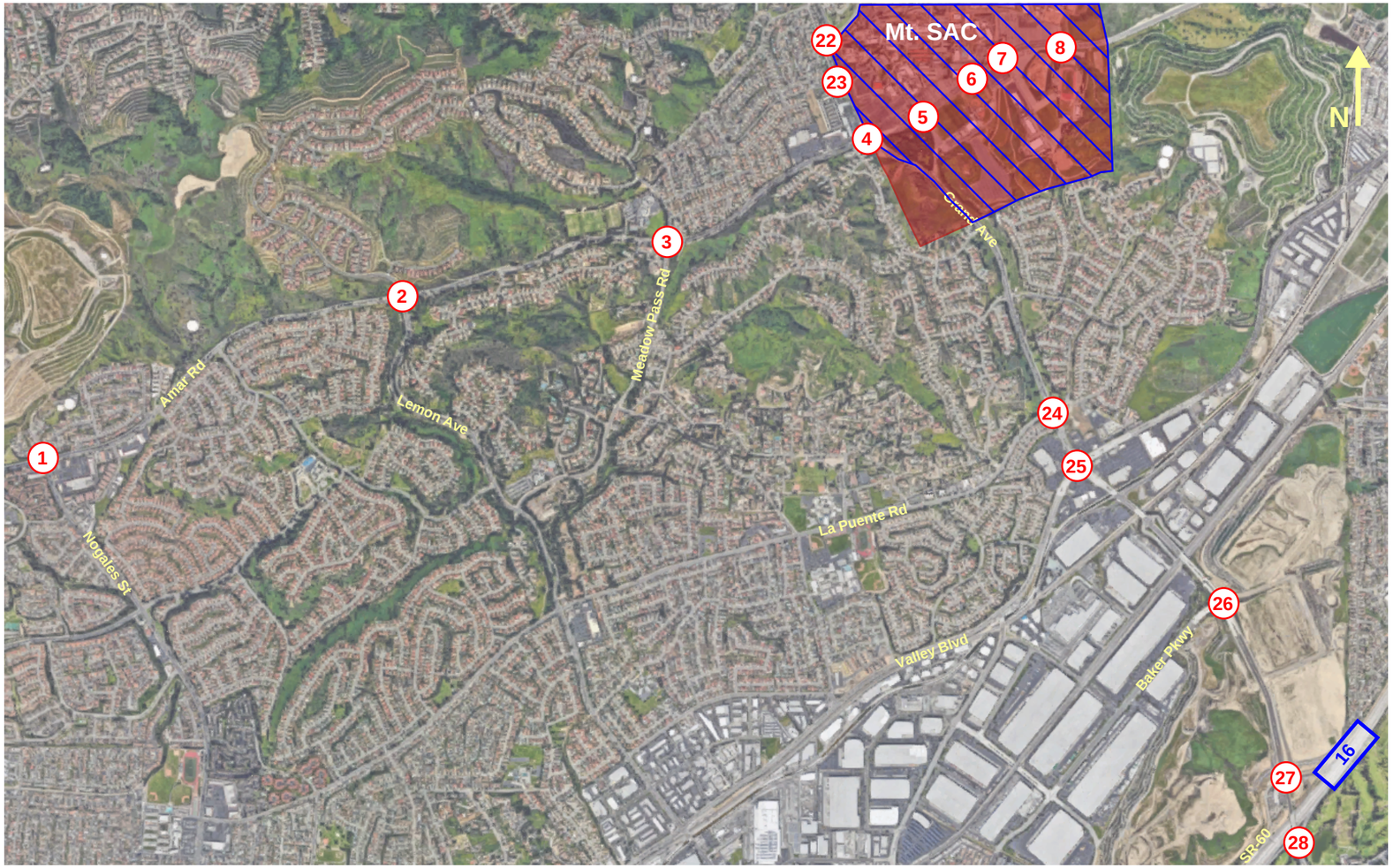
Region of Influence

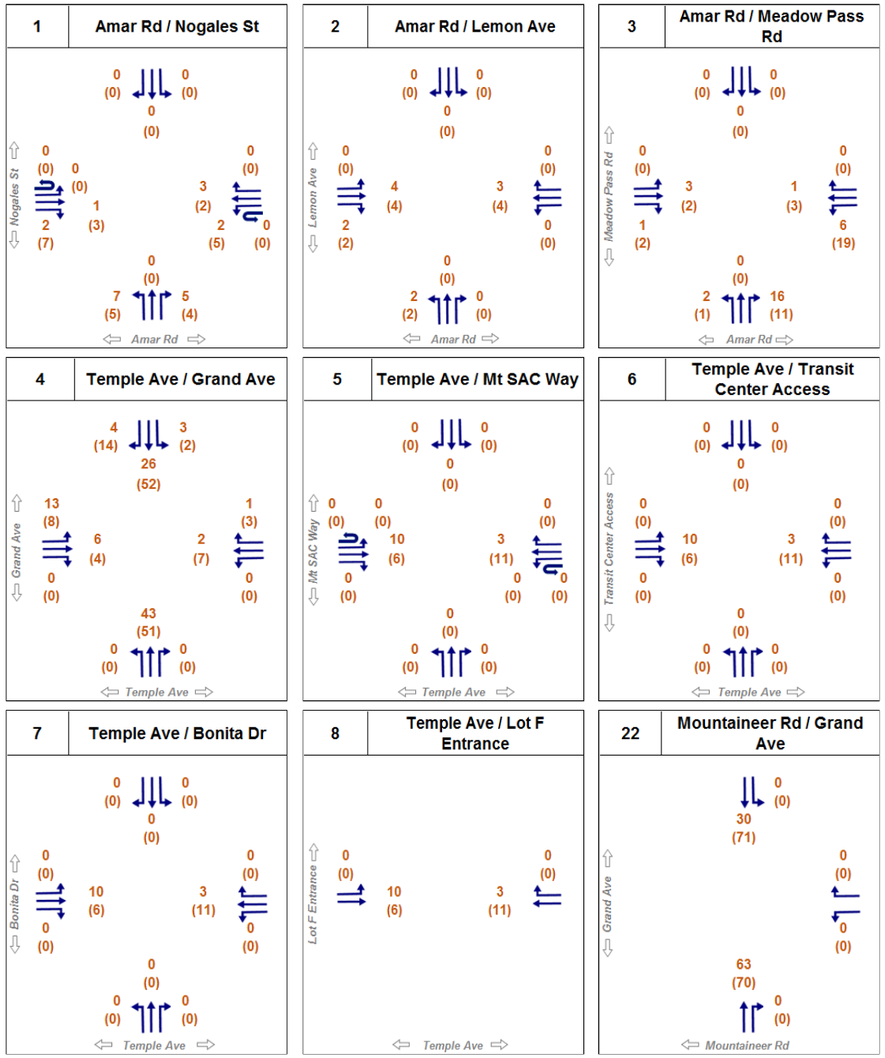
Study Corridors

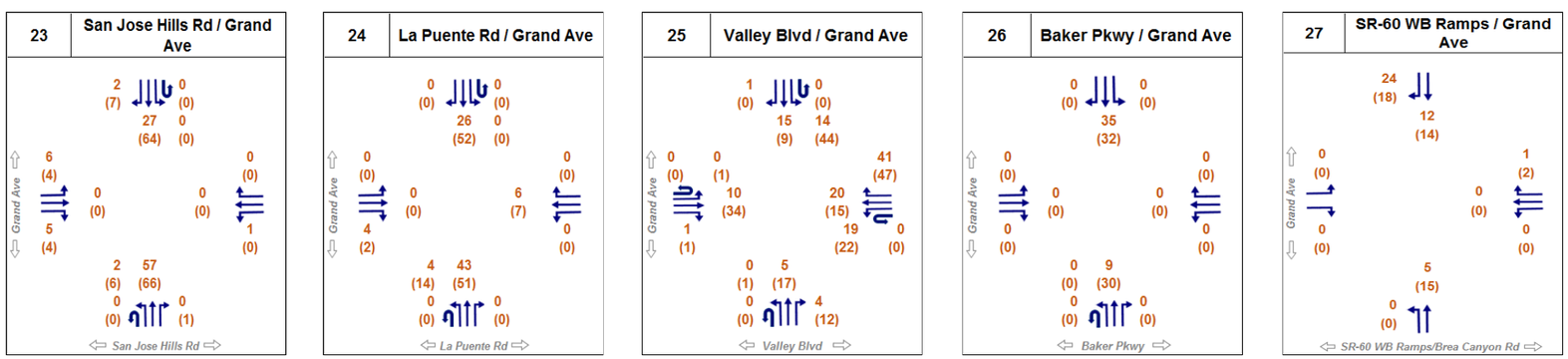
Traffic Impact Analysis Mt. San Antonio College 2018 EFMP	*Figure 11.* *Related Project Locations*	PSOMAS March 2019

Table 5. Related Projects Trip Generation

Related Projects Gross Trips			
Period	**Total Trips**	**Trips In**	**Trips Out**
AM Peak	527	202	326
PM Peak	825	449	376
Daily	9,096	4,548	4,548
Pass-By/Internal Capture Trips			
Period	**Total Trips**	**Trips In**	**Trips Out**
AM Peak	-49	-22	-28
PM Peak	-113	-58	-55
Daily	-1,247	-624	-624
Trips from Existing/Replaced Developments			
Period	**Total Trips**	**Trips In**	**Trips Out**
AM Peak	-139	-41	-97
PM Peak	-501	-309	-192
Daily	-4,917	-2,458	-2,458
Total Related Project New Trips			
Period	**Total Trips**	**Trips In**	**Trips Out**
AM Peak	**340**	**139**	**201**
PM Peak	**211**	**82**	**129**
Daily	**2,931**	**1,466**	**1,466**







LEGEND

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- Mt. SAC Campus
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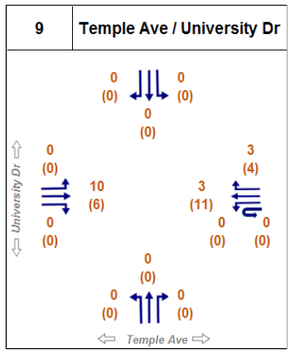
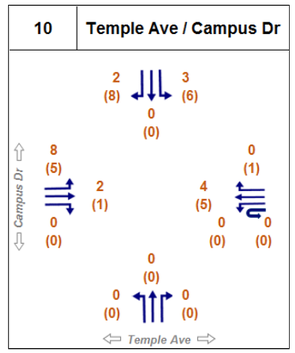
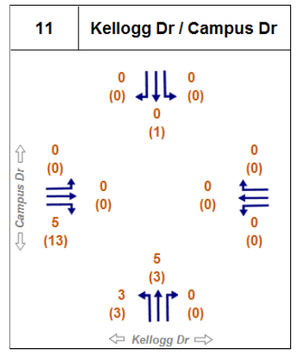
Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

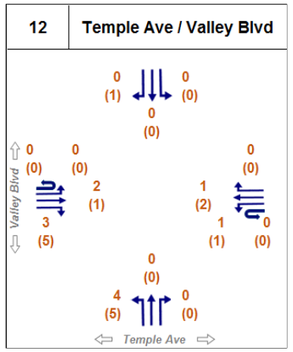
Figure 12A.
Related Projects Traffic Volumes (Intersections 1-8, 22-28)

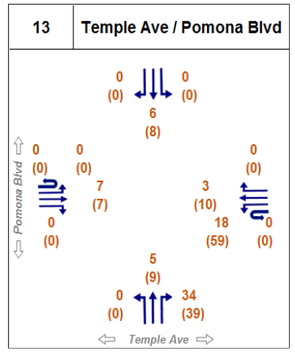
PSOMAS
March 2019

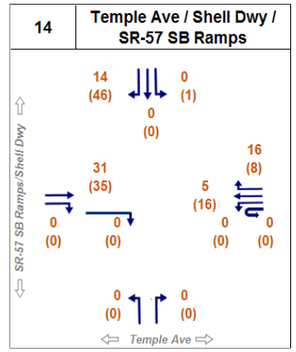


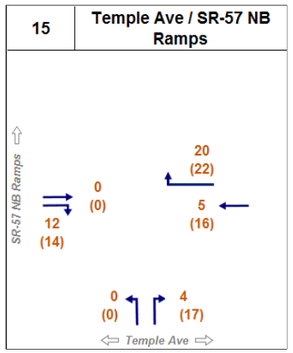


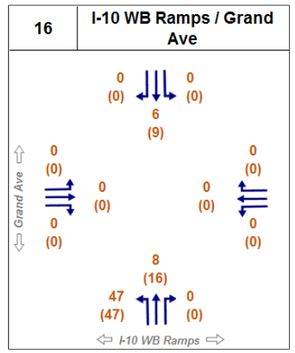


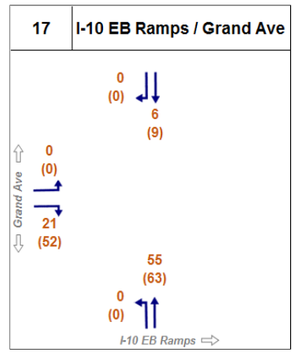


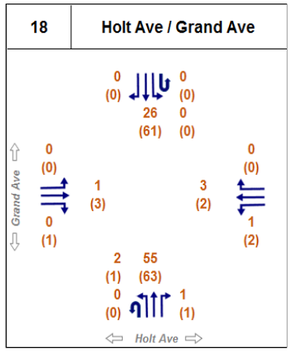


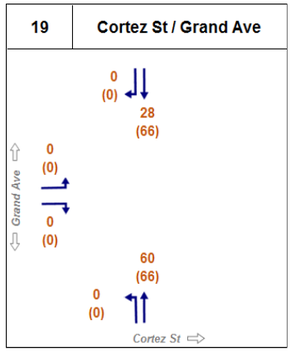


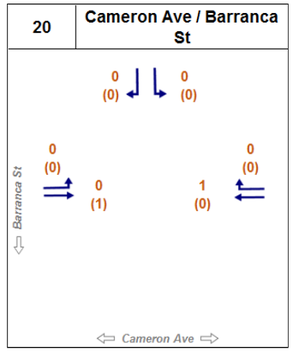


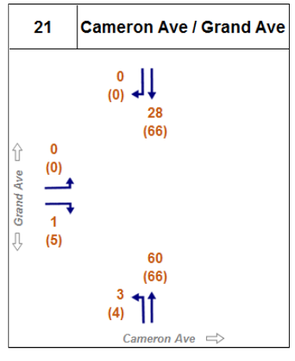


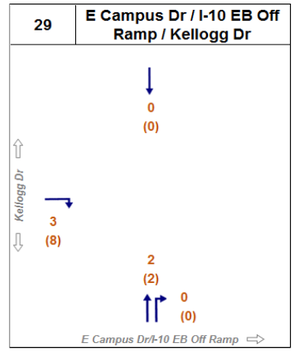


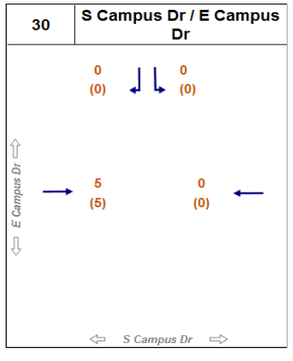












LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
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- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 12B.
Related Projects Traffic Volumes (Intersections 9-21, 29-30)

PSOMAS
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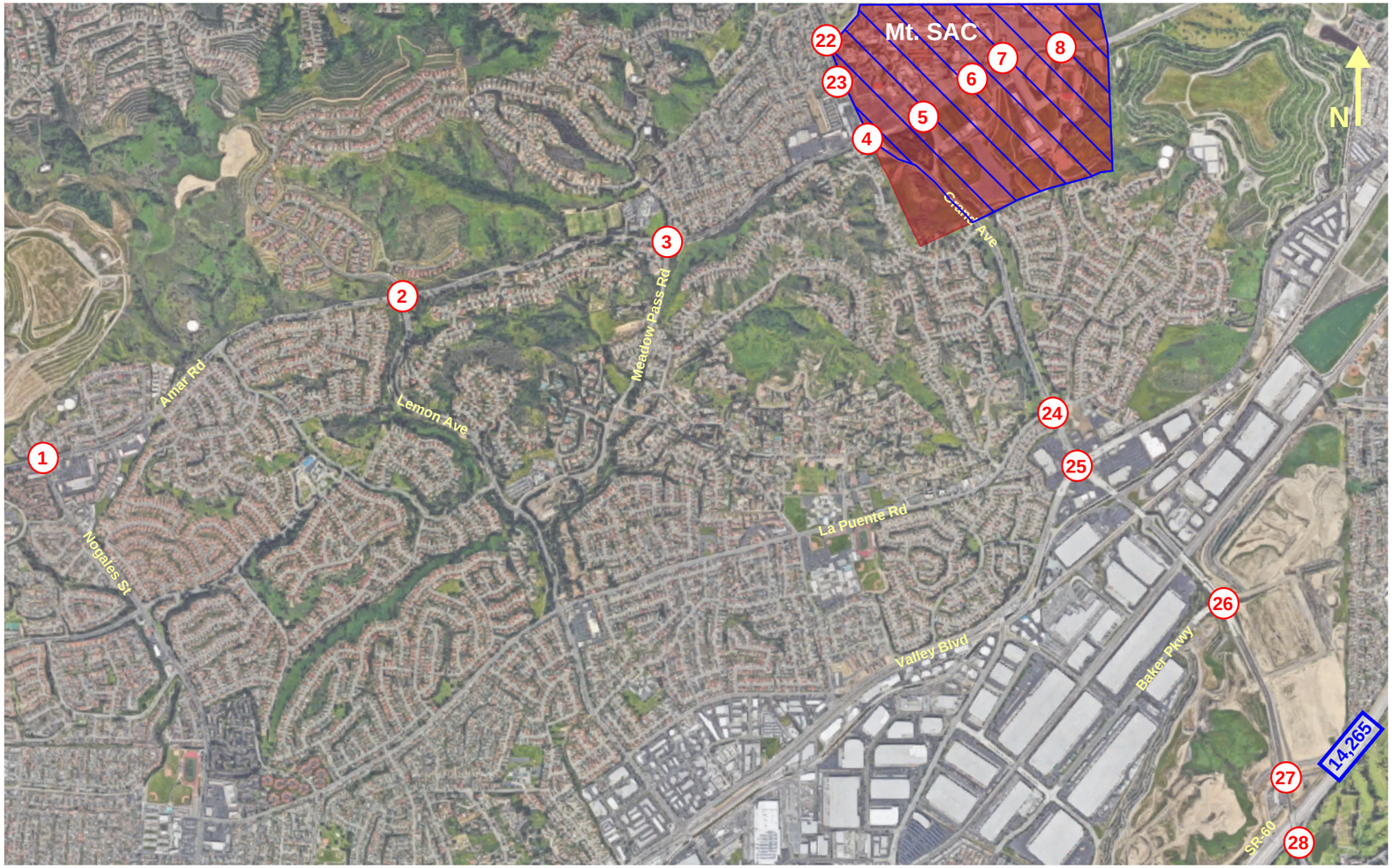
4.1.5. Cumulative Traffic Volumes

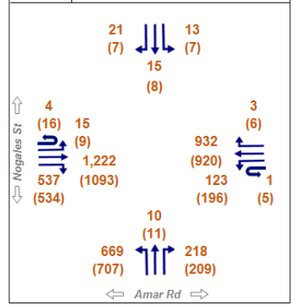
The cumulative traffic volumes are the anticipated traffic volumes in 2021 without the project, which include the existing traffic volumes and the related project volumes. In addition to the related project-specific volumes, a 0.5% annual growth rate was applied to existing traffic volumes to account for any additional growth not generated by the provided related projects (i.e. traffic from projects which are not yet in the planning process, but which would be constructed by 2021). The cumulative traffic volumes are shown in Figures 13A and 13B.

4.1.6. Cumulative Plus Project Traffic Volumes

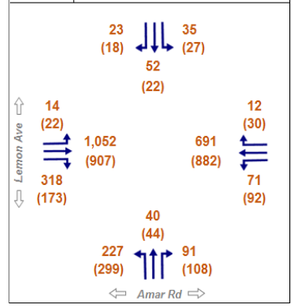
Figures 14A and 14B show the cumulative plus project traffic volumes in 2021 at each of the study intersections.



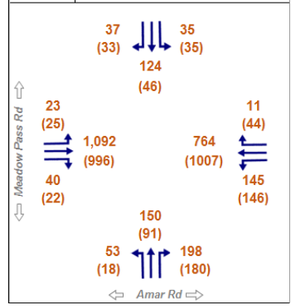
1	Amar Rd / Nogales St



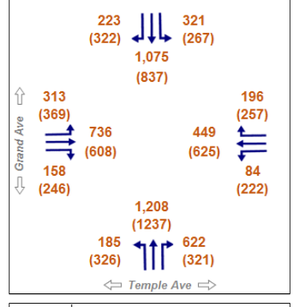
2	Amar Rd / Lemon Ave



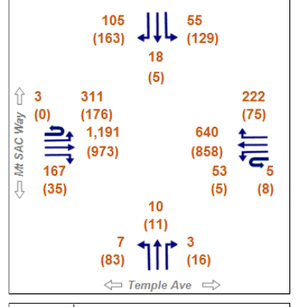
3	Amar Rd / Meadow Pass Rd



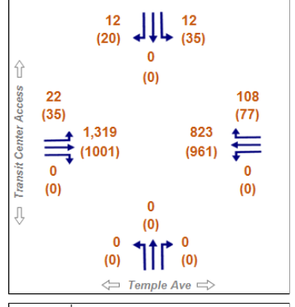
4	Temple Ave / Grand Ave



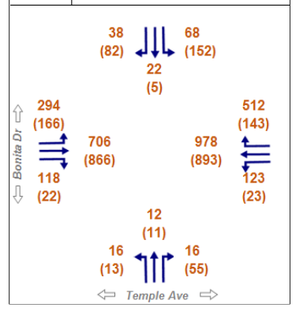
5	Temple Ave / Mt SAC Way



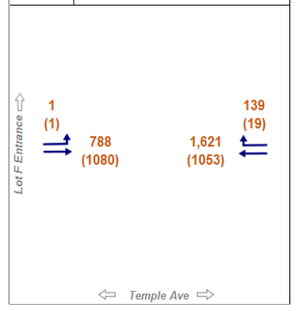
6	Temple Ave / Transit Center Access



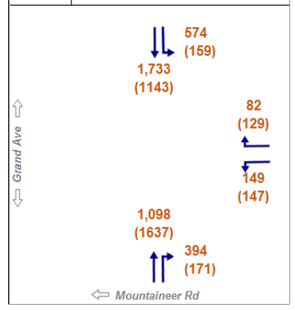
7	Temple Ave / Bonita Dr



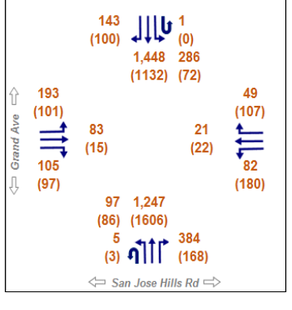
8	Temple Ave / Lot F Entrance



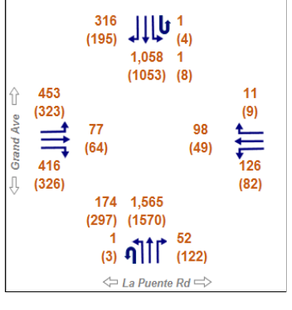
22	Mountaineer Rd / Grand Ave



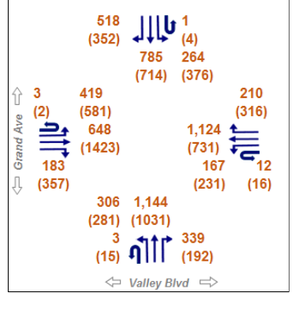
23	San Jose Hills Rd / Grand Ave



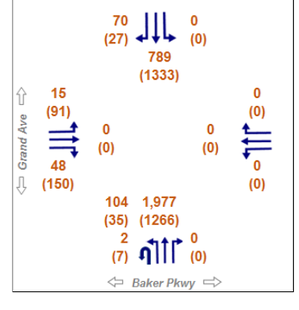
24	La Puente Rd / Grand Ave



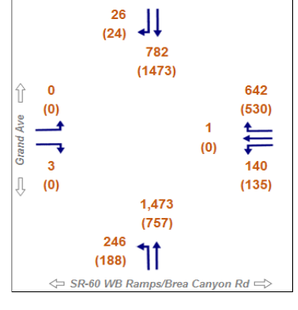
25	Valley Blvd / Grand Ave



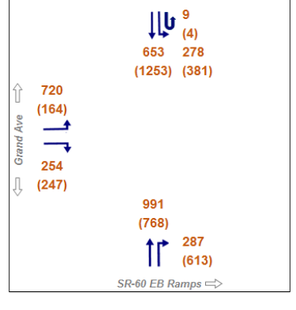
26	Baker Pkwy / Grand Ave



27	SR-60 WB Ramps / Grand Ave



28	SR-60 EB Ramps / Grand Ave



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2018 EFMP

Figure 13A.
Interim (2021) Cumulative Traffic Volumes (Intersections 1-8, 22-28)

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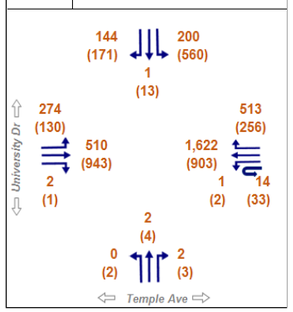
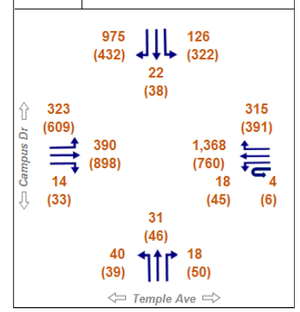
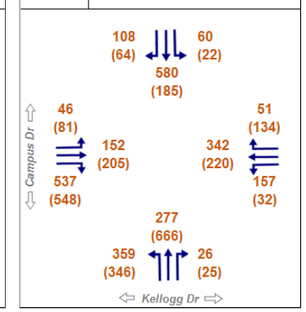
9	Temple Ave / University Dr



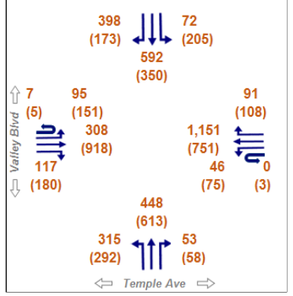
10	Temple Ave / Campus Dr



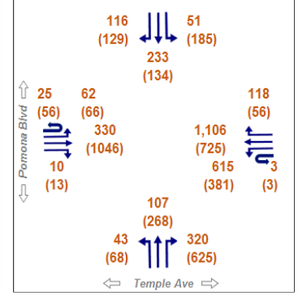
11	Kellogg Dr / Campus Dr



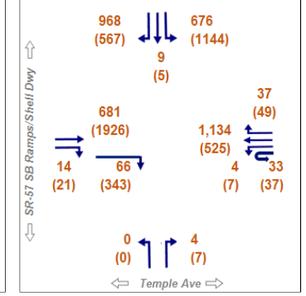
12	Temple Ave / Valley Blvd



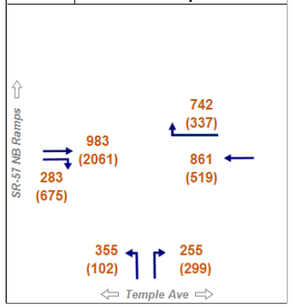
13	Temple Ave / Pomona Blvd



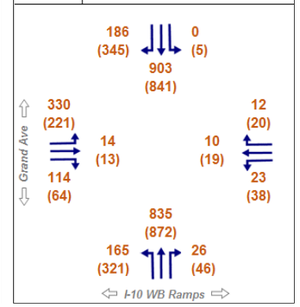
14	Temple Ave / Shell Dwy / SR-57 SB Ramps



15	Temple Ave / SR-57 NB Ramps



16	I-10 WB Ramps / Grand Ave



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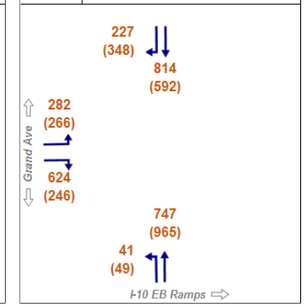
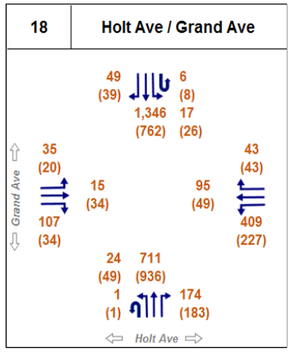


18	Holt Ave / Grand Ave



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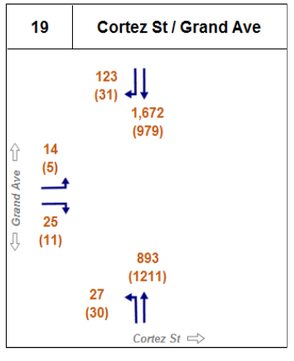
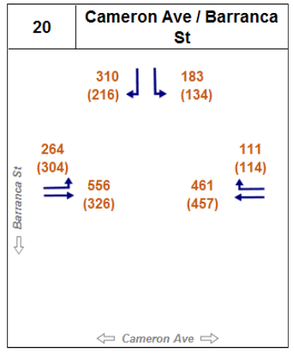
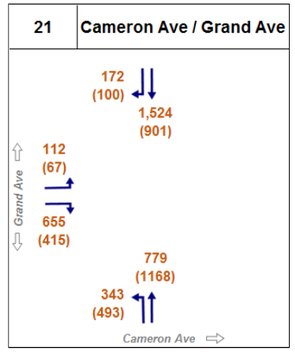


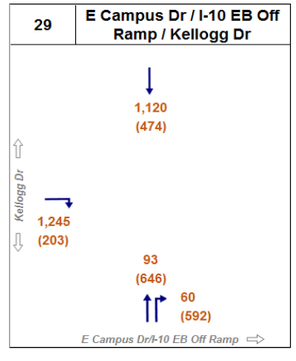
20	Cameron Ave / Barranca St



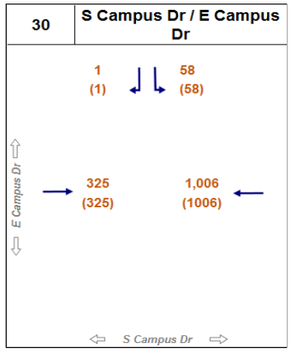
21	Cameron Ave / Grand Ave



29	E Campus Dr / I-10 EB Off Ramp / Kellogg Dr



30	S Campus Dr / E Campus Dr



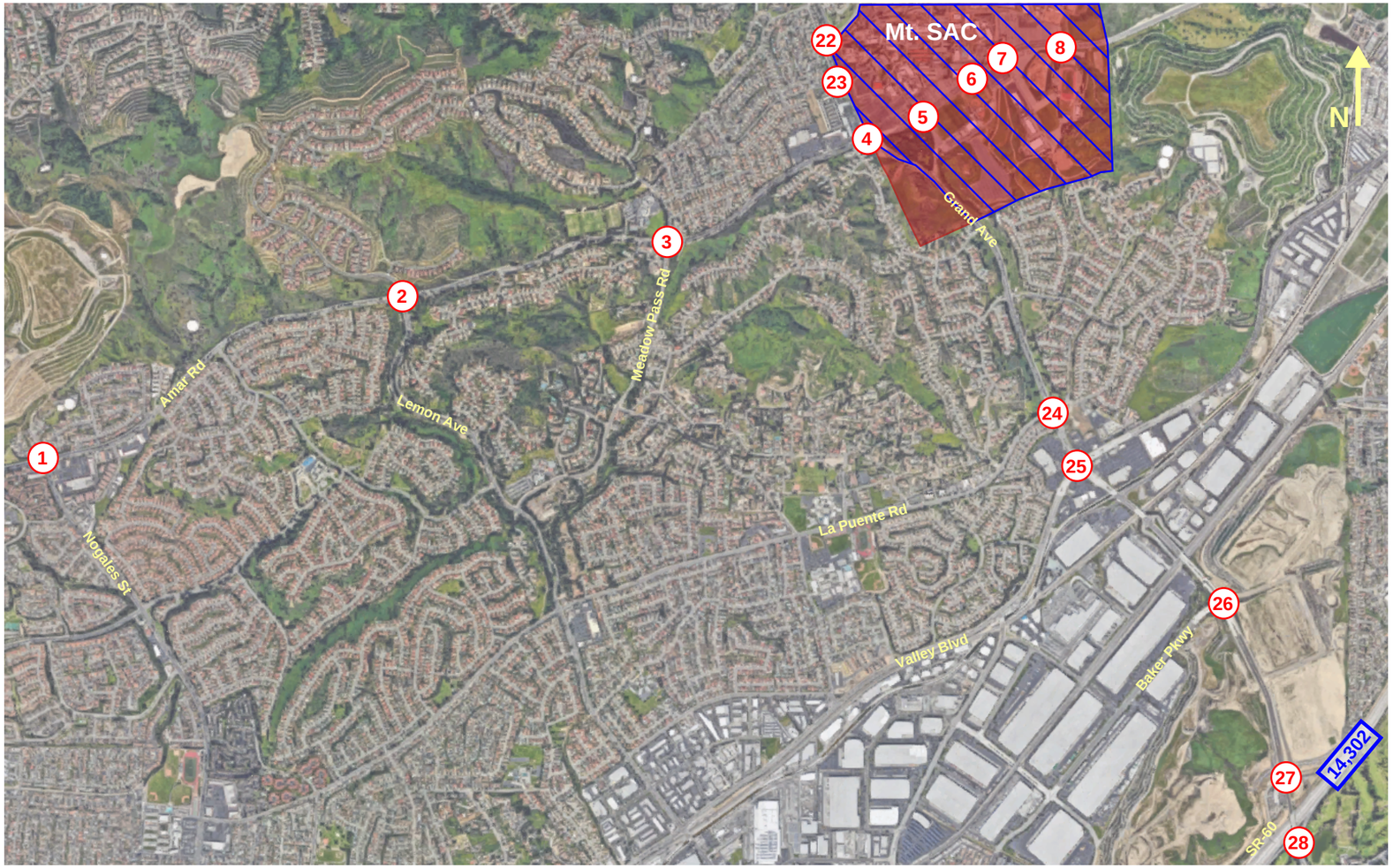
LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

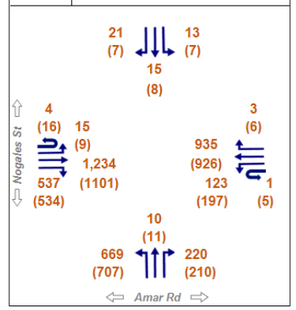
Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 13B.
Interim (2021) Cumulative Traffic Volumes (Intersections 9-21, 29-30)

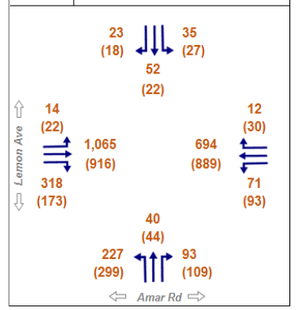
PSOMAS
March 2019



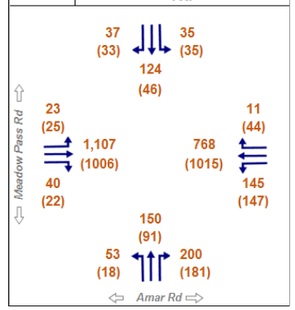
1	Amar Rd / Nogales St



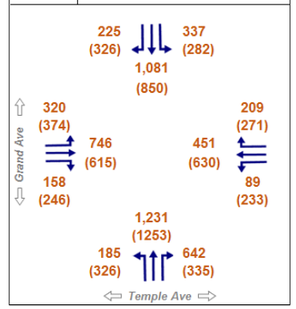
2	Amar Rd / Lemon Ave



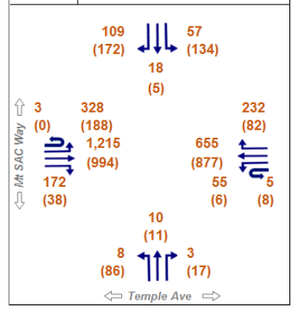
3	Amar Rd / Meadow Pass Rd



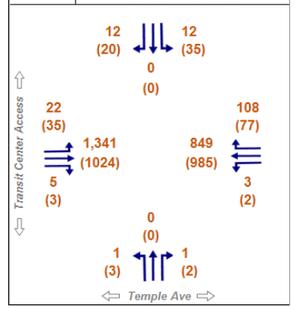
4	Temple Ave / Grand Ave



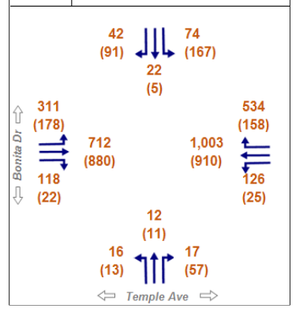
5	Temple Ave / Mt SAC Way



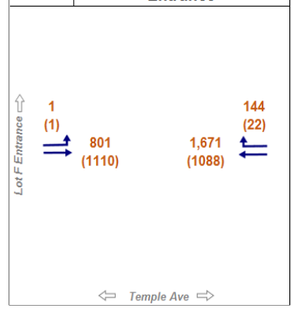
6	Temple Ave / Transit Center Access



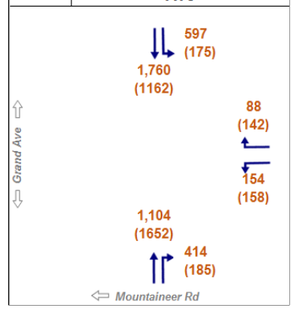
7	Temple Ave / Bonita Dr



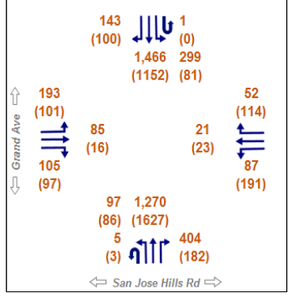
8	Temple Ave / Lot F Entrance



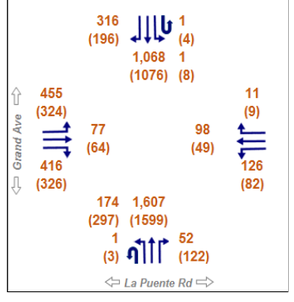
22	Mountaineer Rd / Grand Ave



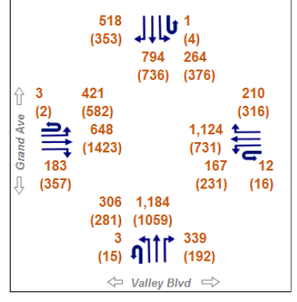
23	San Jose Hills Rd / Grand Ave



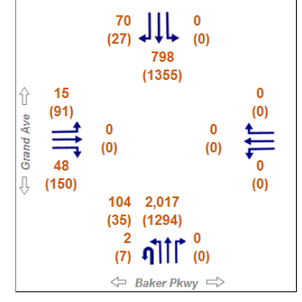
24	La Puente Rd / Grand Ave



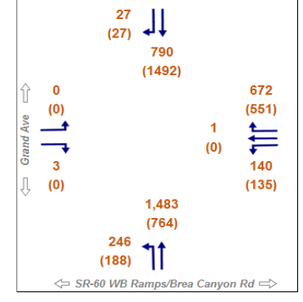
25	Valley Blvd / Grand Ave



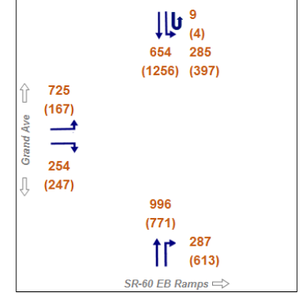
26	Baker Pkwy / Grand Ave



27	SR-60 WB Ramps / Grand Ave



28	SR-60 EB Ramps / Grand Ave



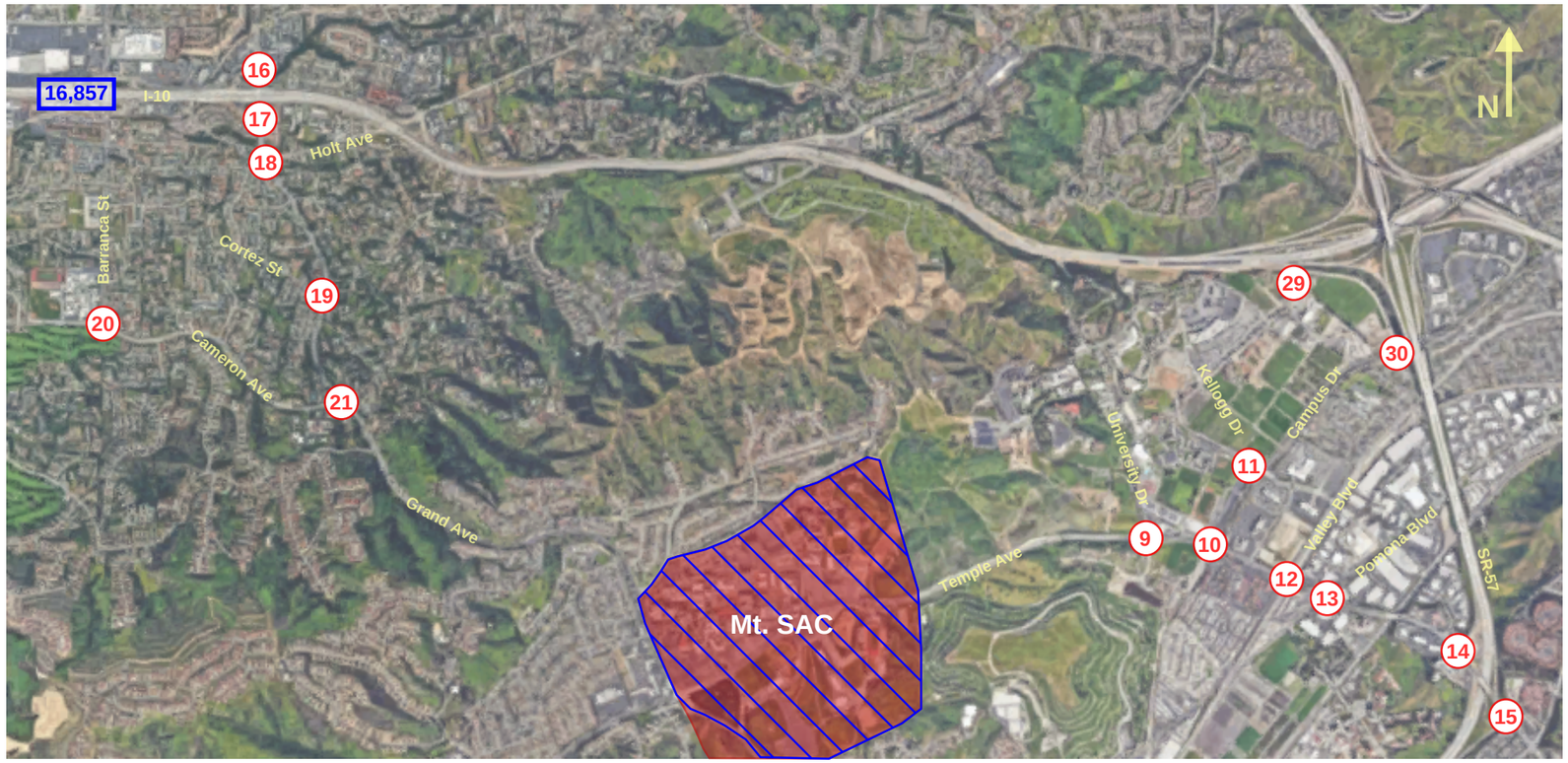
LEGEND

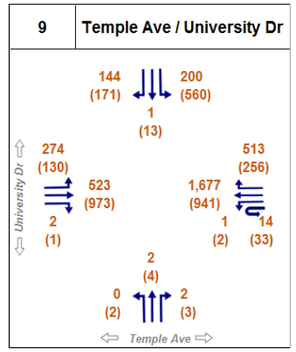
- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

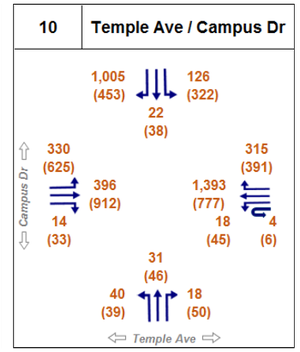
Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

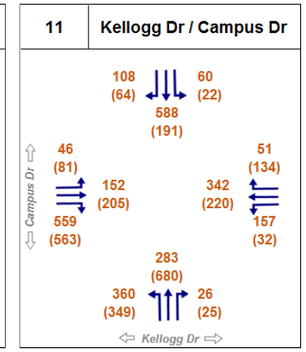
Figure 14A.
Interim (2021) Cumulative Plus Project Traffic Volumes (Intersections 1-8, 22-28)

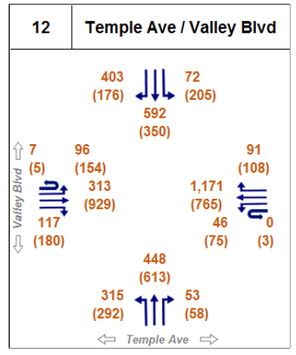
PSOMAS
March 2019

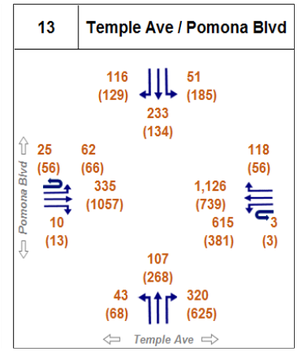


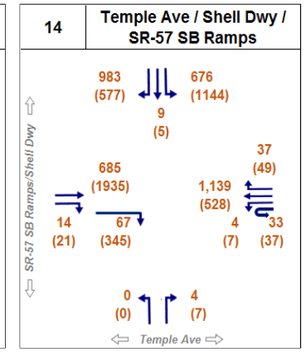


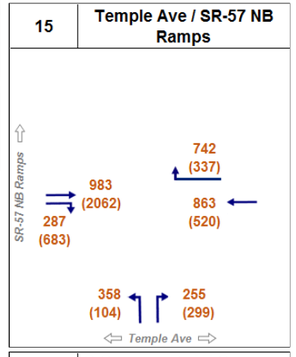


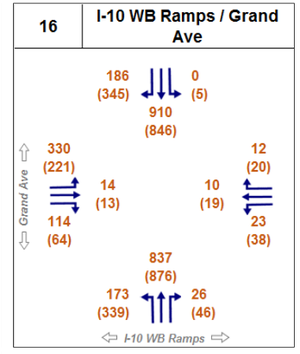


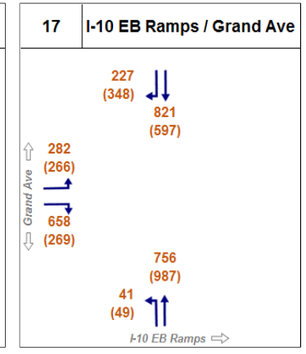


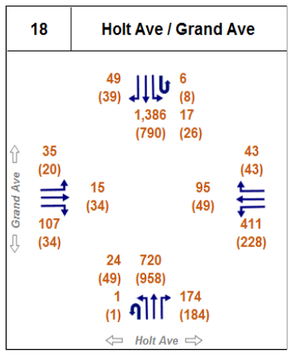


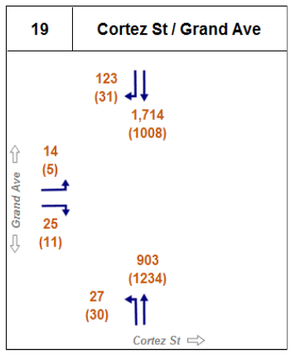


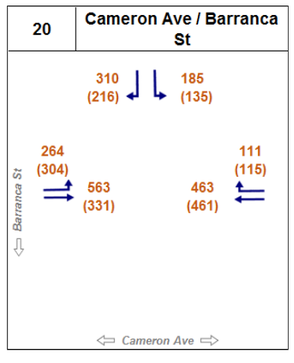


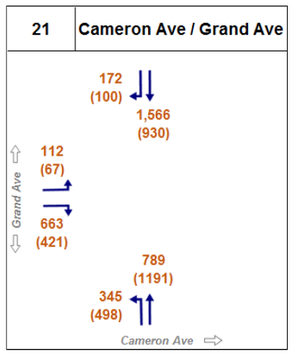


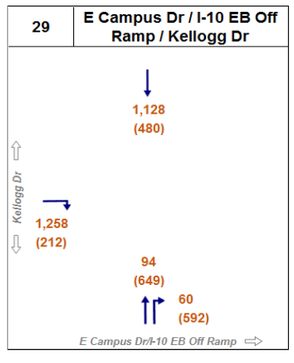


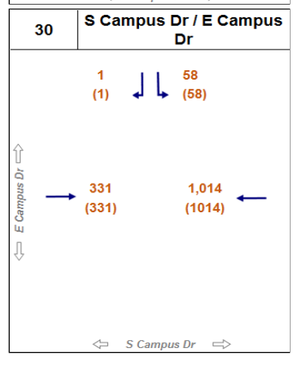












LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 14B.
Interim (2021) Cumulative Plus Project Traffic Volumes (Intersections 9-21, 29-30)

PSOMAS
March 2019

4.2. BUILDOUT YEAR (2027)

4.2.1. Project Trip Generation

As with Phase 1A conditions, the trip generation for the project was calculated based on the anticipated daily student headcount in the horizon year of the EFMP (2027). The student population is expected to grow from the fall 2017 count of 37,864 to 42,745 students in 2027, an increase of 4,881 students. Table 6 shows the trip generation for the 2027 horizon year for the new students. As shown in the table, 5,613 new daily trips are anticipated in the buildout year due to the project, including 537 trips in each peak hour.

Table 6. Buildout (2027) Project Trip Generation

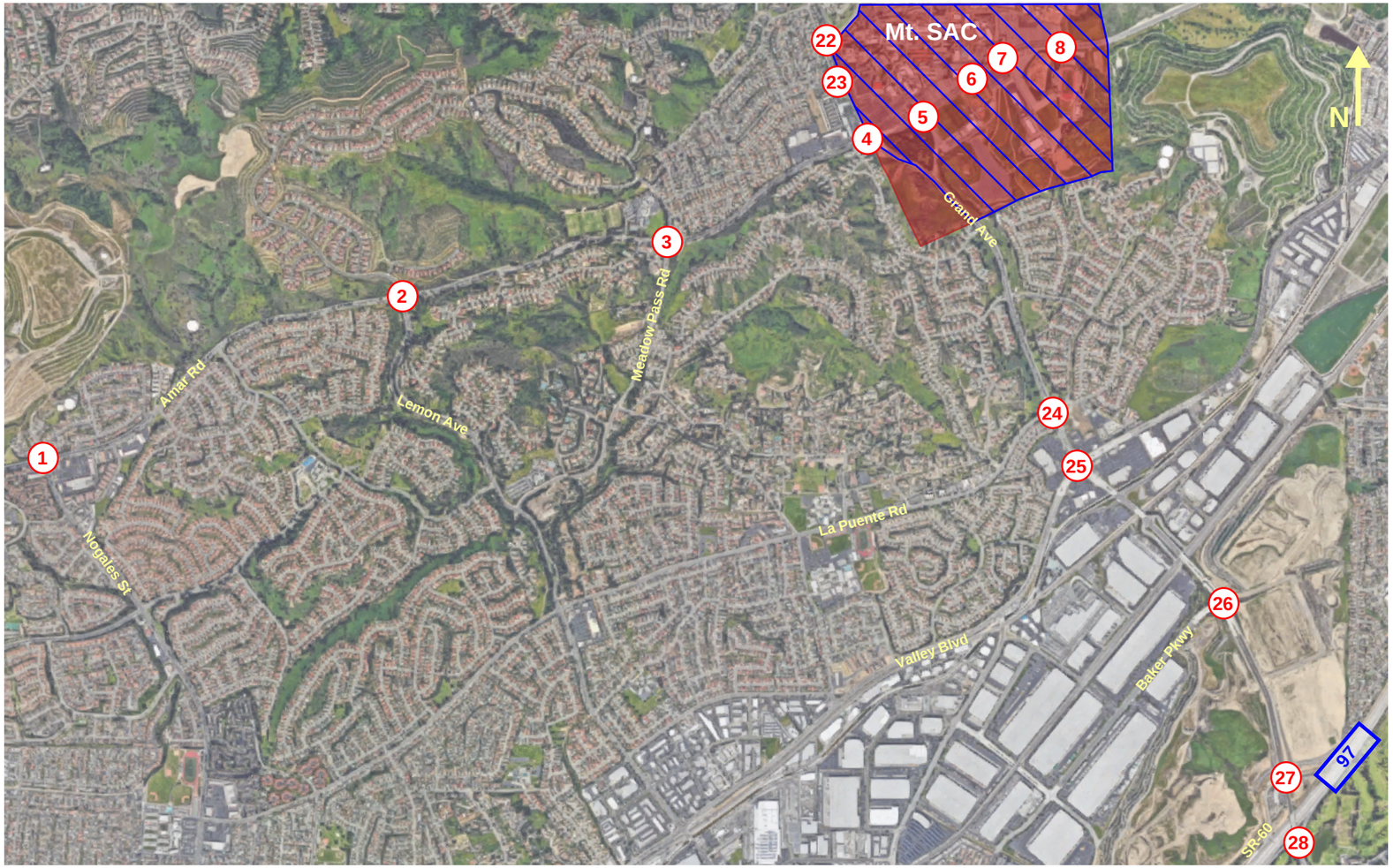
ITE LU 540 (10th Edition) - Junior/Community College						
Students			4,881			
Period	Trips/Unit	Trips	% In	% Out	Trips In	Trips Out
AM Peak	0.11	537	81%	19%	435	102
PM Peak	0.11	537	56%	44%	301	236
Daily	1.15	5,613	50%	50%	2,807	2,807

4.2.2. Project Trip Distribution

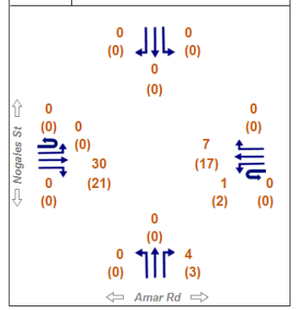
The distribution of project trips is shown in Figures 8 and 9 (Section 3.2.2). As seen in Figure 9, the distribution is expected to shift slightly between Phase 1A and the buildout year (2027). The shift is due to the anticipated construction of the parking structures in Lots B and F during that time. This is a conservative analysis and, as noted previously, parking needs may change over time due to the construction of the Transit Center and the general shift away from personal vehicles. The structure in Lot F may not be needed when initially indicated, if at all.

4.2.3. Project Traffic Volumes

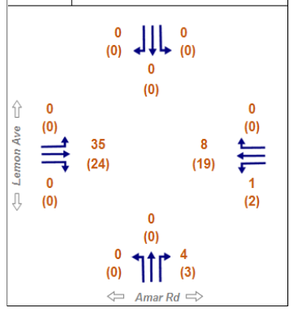
Based on the project trip generation and trip distribution, the project traffic volumes were calculated for each of the study intersections and are shown in Figures 15A and 15B.



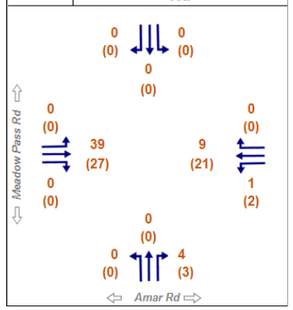
1	Amar Rd / Nogales St



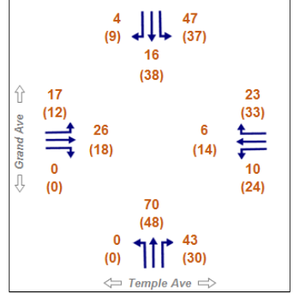
2	Amar Rd / Lemon Ave



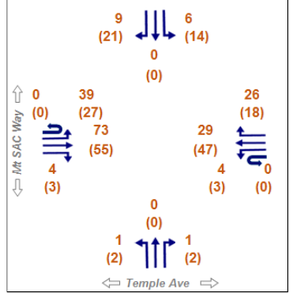
3	Amar Rd / Meadow Pass Rd



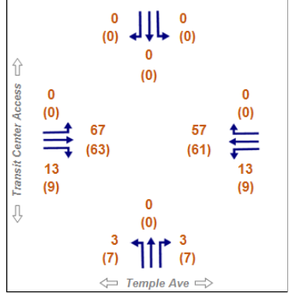
4	Temple Ave / Grand Ave



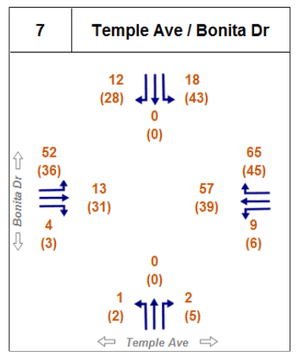
5	Temple Ave / Mt SAC Way



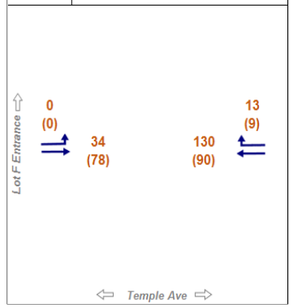
6	Temple Ave / Transit Center Access



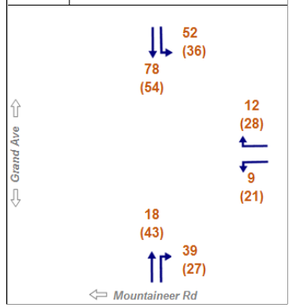
7	Temple Ave / Bonita Dr



8	Temple Ave / Lot F Entrance



22	Mountaineer Rd / Grand Ave



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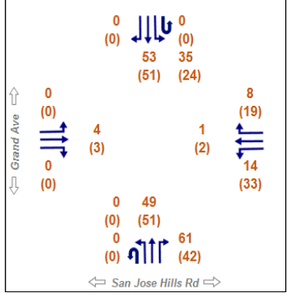

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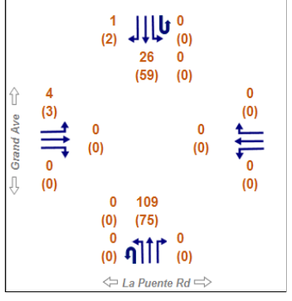

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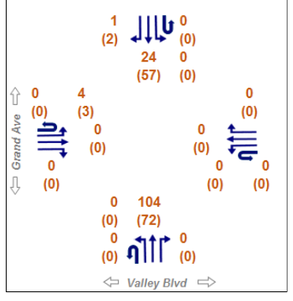

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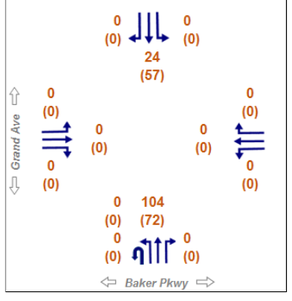
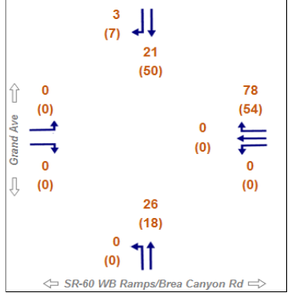
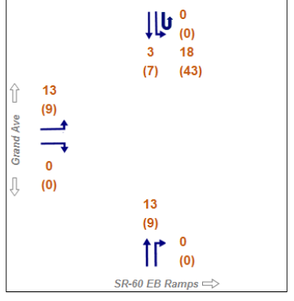


27	SR-60 WB Ramps / Grand Ave



28	SR-60 EB Ramps / Grand Ave



LEGEND

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- XX — AM Peak Hour Traffic Volume (veh/hr)
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- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
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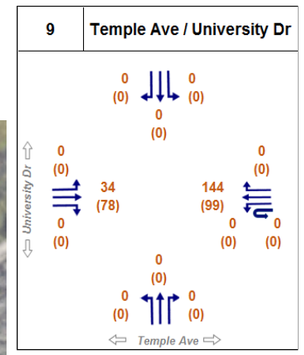
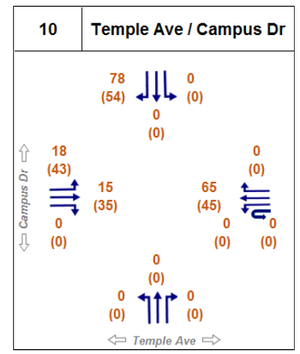
- Project Area (2018 EFMP)

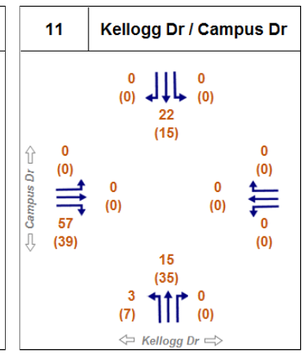
Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

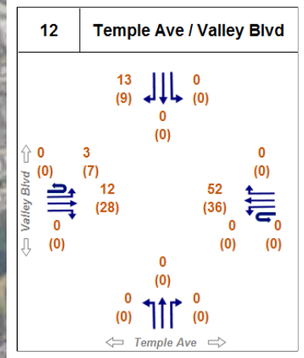
Figure 15A.
Buildout (2027) Project Traffic Volumes (Intersections 1-8, 22-28)

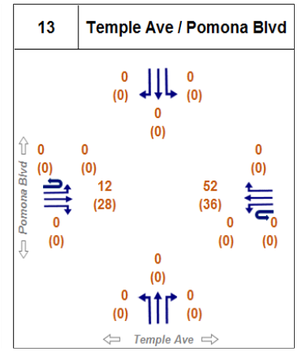
PSOMAS
March 2019

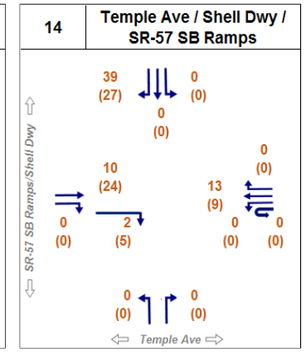


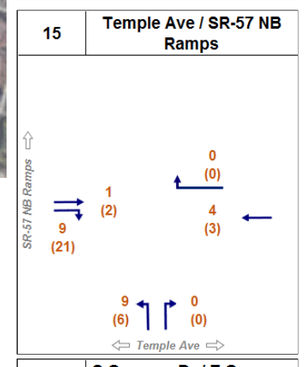


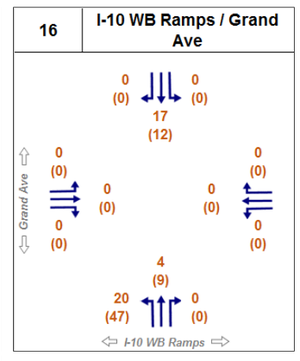


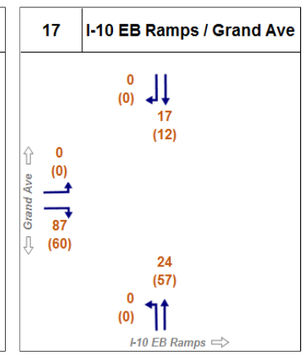


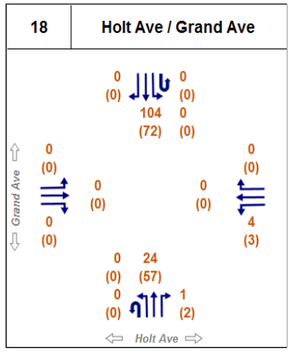


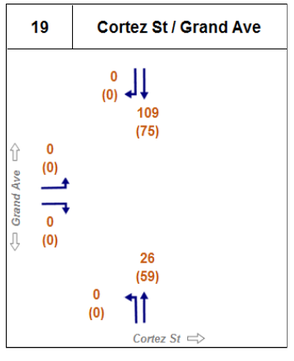


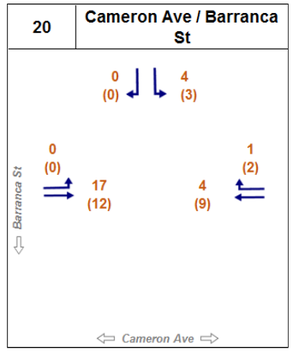


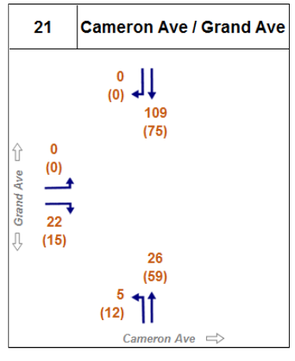


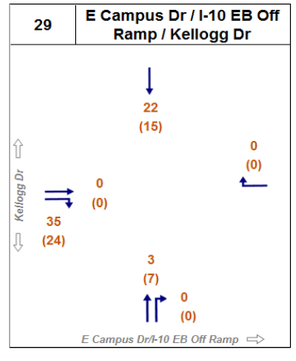


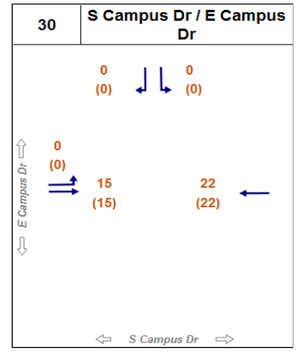












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Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 15B.
Buildout (2027) Project Traffic Volumes (Intersections 9-21, 29-30)

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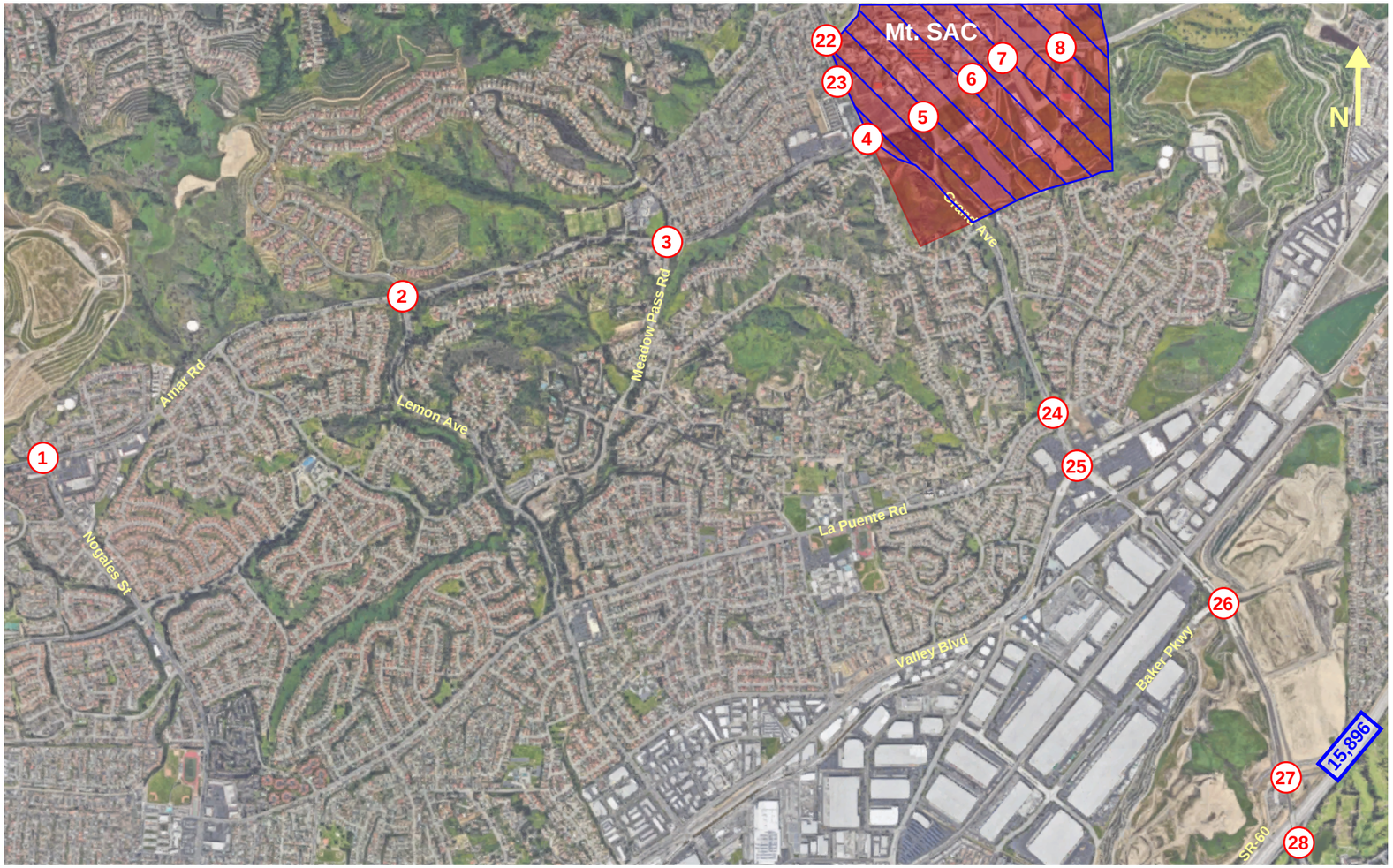
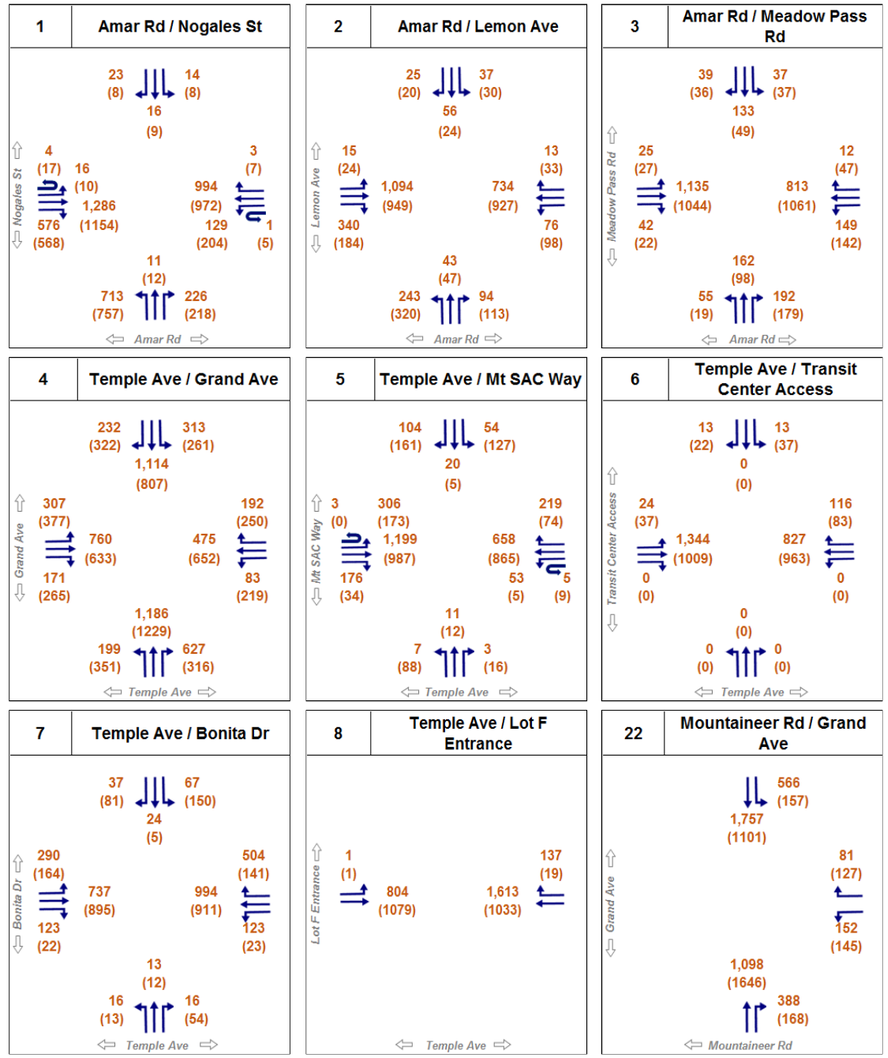
4.2.4. Cumulative Growth

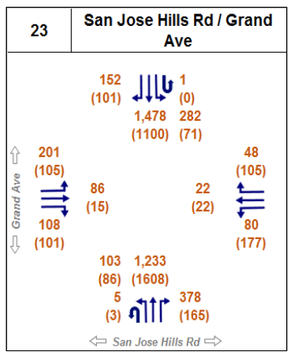
Originally, traffic volumes for 2027 were to be estimated based on information provided by the Southern California Association of Governments (SCAG), who maintains a long-term traffic model. However, the model showed 2035 traffic volumes which were lower than the existing traffic volumes in the project area.

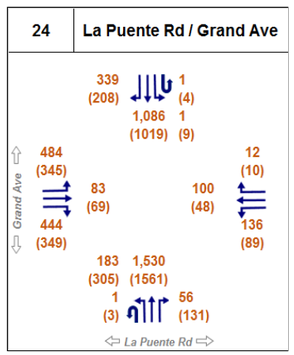
The project area is included in the *2010 Congestion Management Program (CMP) for Los Angeles County*, which includes estimated growth for various areas in the county. Based on the CMP, the annual growth rates from 2017 and 2027 are estimated to be 0.4% per year for West Covina and 0.8% per year for Pomona. The CMP does not explicitly provide growth projections for the City of Walnut, where Mt. SAC is located. Therefore, based on discussions with the City of Walnut traffic engineer, it was determined that 1.0% per year growth rate be used to calculate the projected traffic volumes for 2027 for this study. Based on the CMP, the 1.0% per year growth is conservative for the neighboring cities and was therefore used to calculate background growth for all the study intersections. By using this conservative growth rate, the traffic volume projections in this report are more likely to account for shorter periods of growth which may exceed the CMP projections due to fluctuations in the economy and development community.

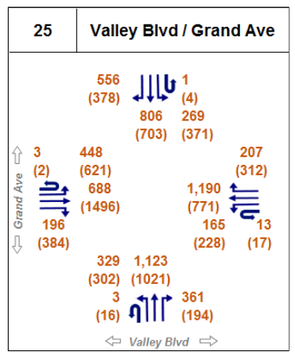
However, the project traffic volumes were assumed to be included within the 1.0% per year growth rate, so those volumes were subtracted to obtain 2027 traffic volumes without the project. In a few cases, generally near Mt. SAC, the project traffic growth was calculated to be greater than the growth calculated based on the annual growth rate. These differences are likely due to the anticipated redistribution of traffic near the campus due to the project. To be conservative, for movements where the project traffic resulted a larger increase than was generated by the assumed growth rate, the additional project traffic volume was added to the movement for conditions with the project. Figures 16A and 16B show the 2027 cumulative traffic volumes (without the project), and Figures 17A and 17B show the 2027 cumulative plus project traffic volumes.

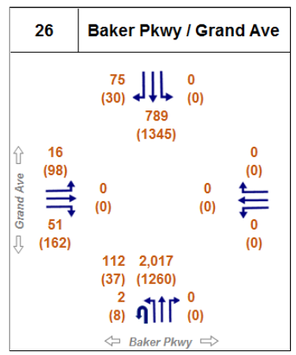


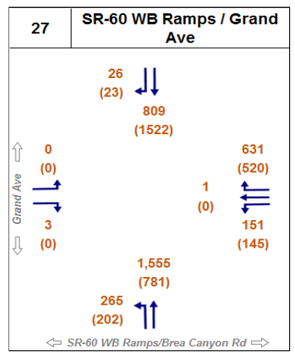


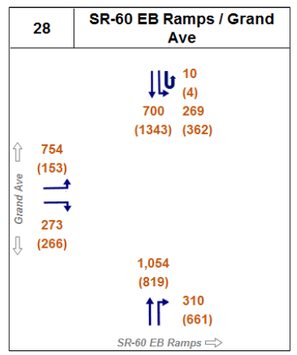












LEGEND

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Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 16A.
Buildout (2027) Cumulative Traffic Volumes (Intersections 1-8, 22-28)

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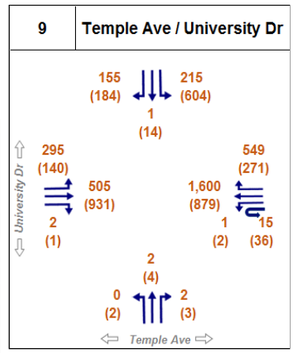

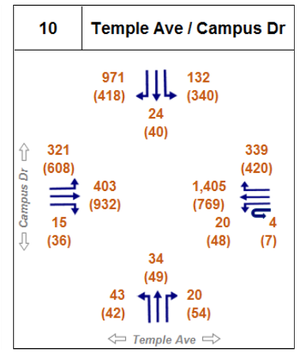

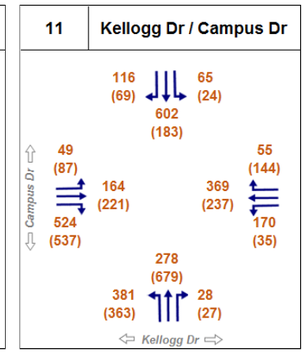

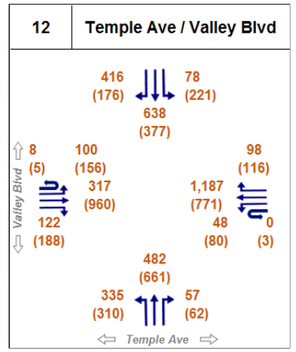

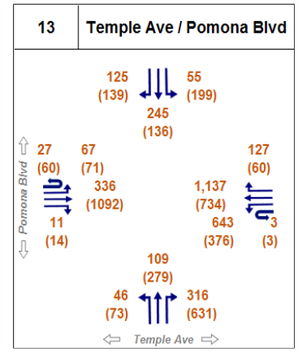

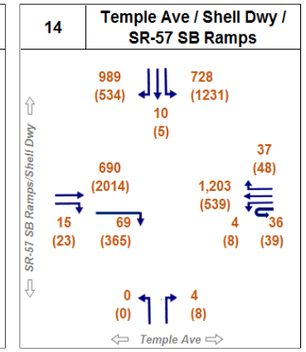

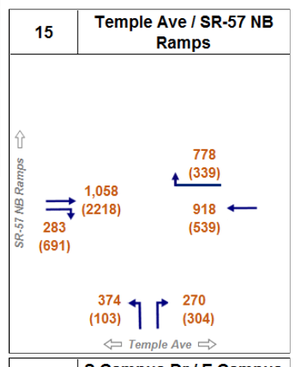

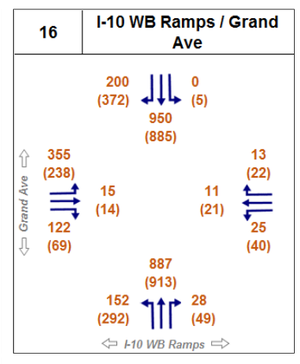

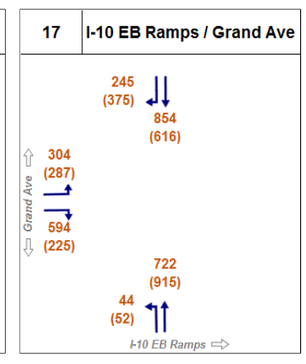

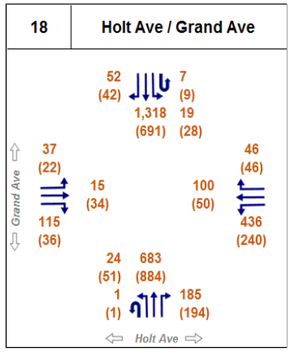

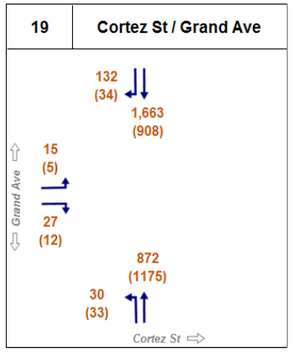

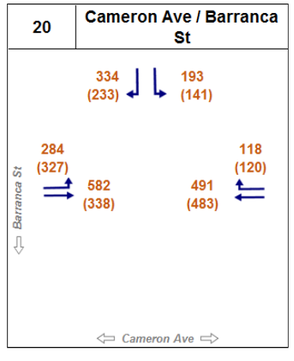

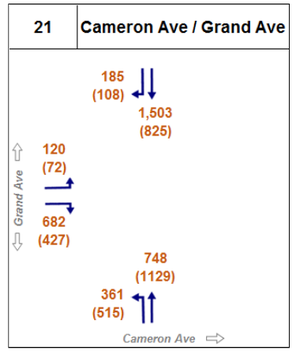

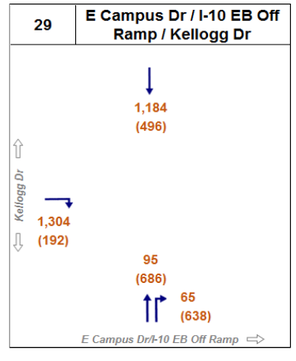

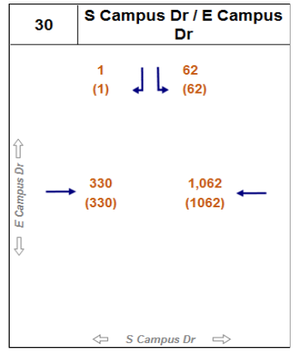

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Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 16B.
Buildout (2027) Cumulative Traffic Volumes (Intersections 9-21, 29-30)

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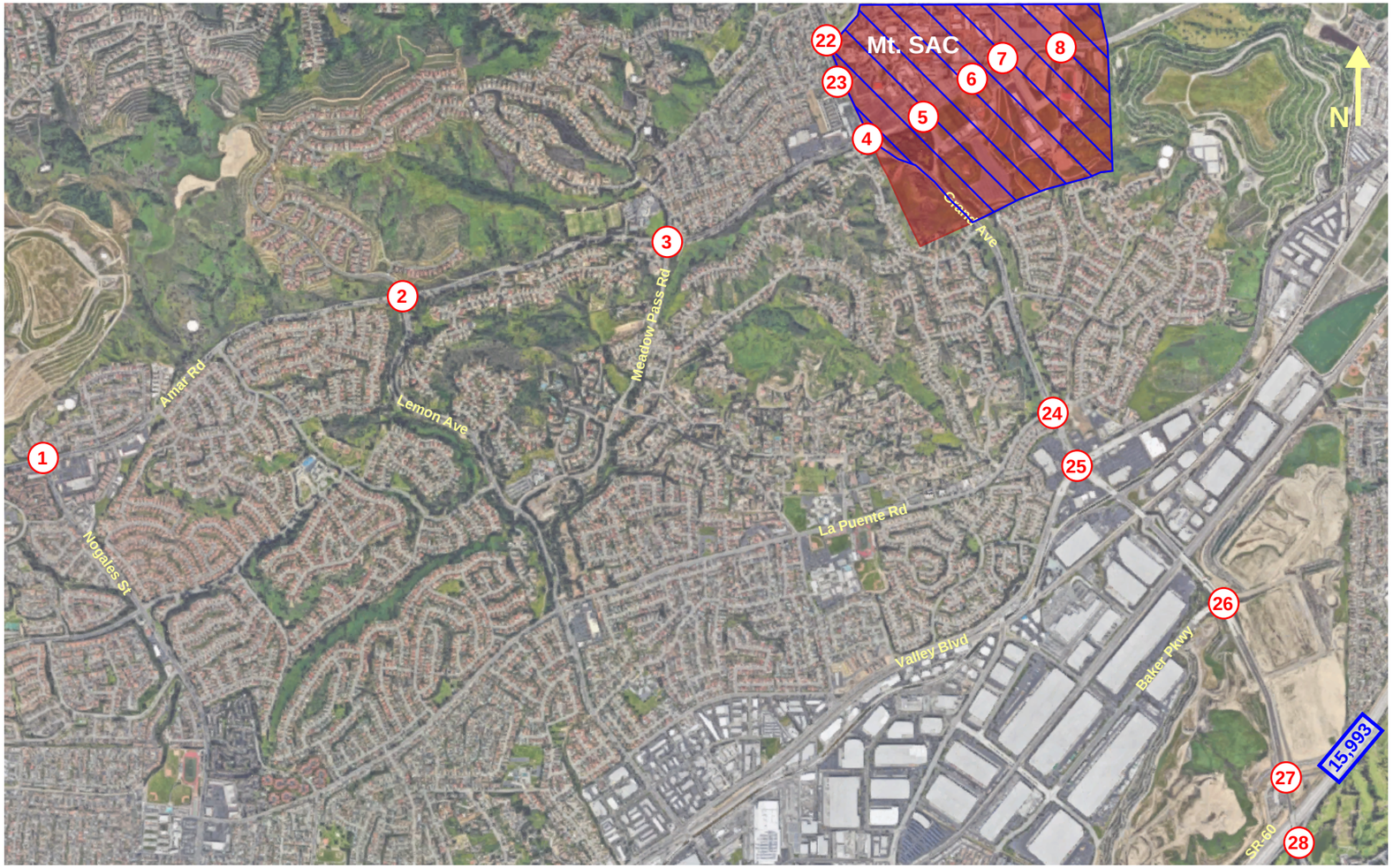
March 2019



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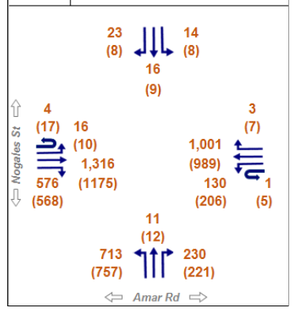
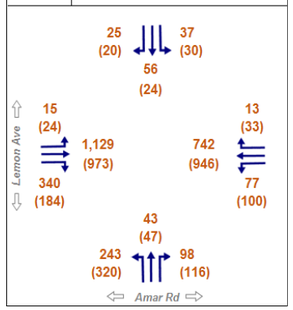
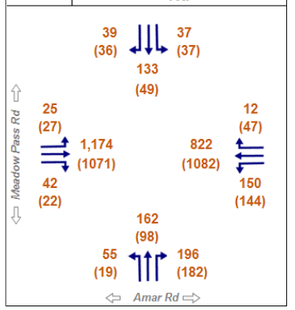


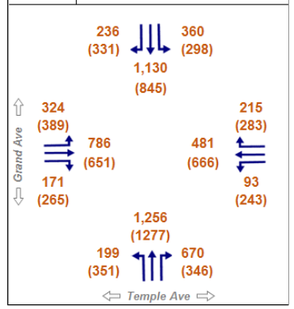
2 Amar Rd / Lemon Ave



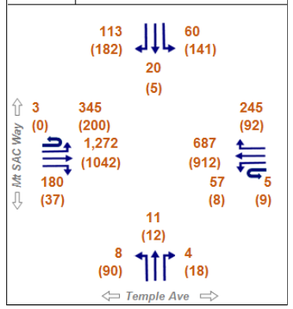
3 Amar Rd / Meadow Pass Rd



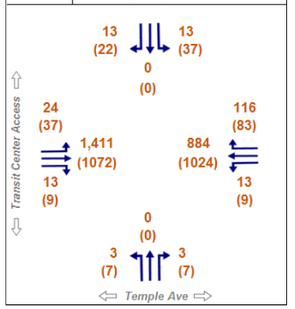
4 Temple Ave / Grand Ave



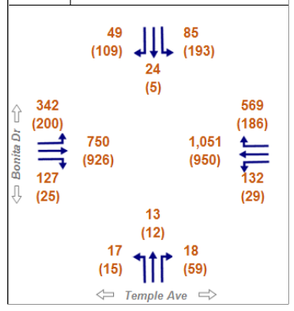
5 Temple Ave / Mt SAC Way



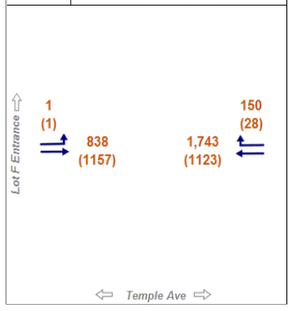
6 Temple Ave / Transit Center Access



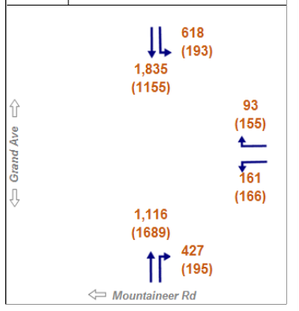
7 Temple Ave / Bonita Dr



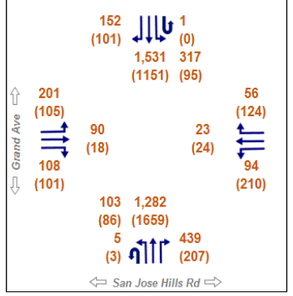
8 Temple Ave / Lot F Entrance



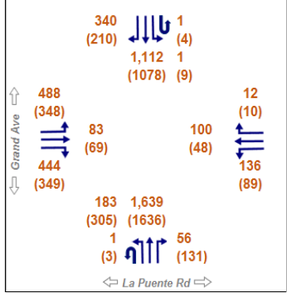
22 Mountaineer Rd / Grand Ave



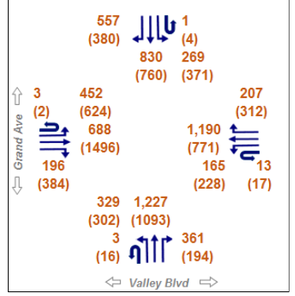
23 San Jose Hills Rd / Grand Ave



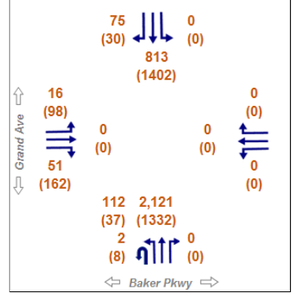
24 La Puente Rd / Grand Ave



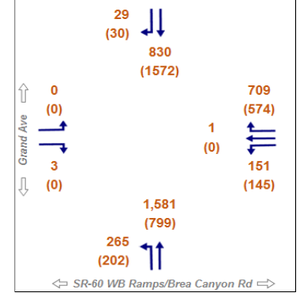
25 Valley Blvd / Grand Ave



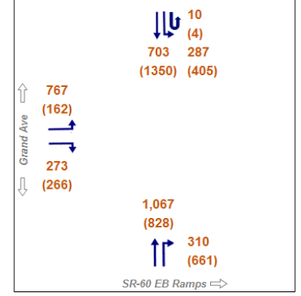
26 Baker Pkwy / Grand Ave



27 SR-60 WB Ramps / Grand Ave



28 SR-60 EB Ramps / Grand Ave



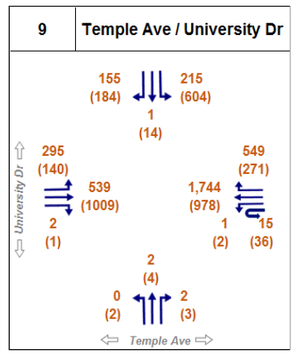
LEGEND

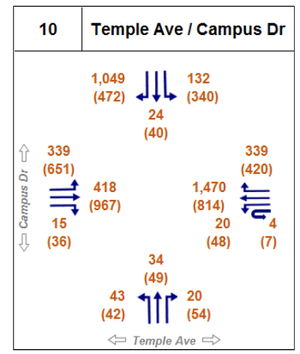
- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

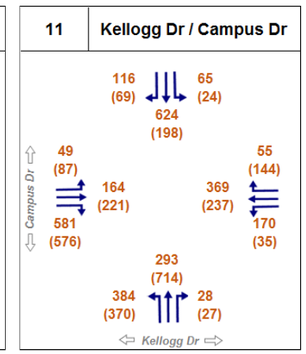
Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

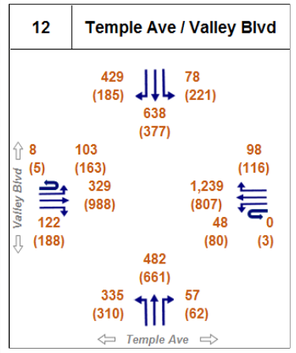
Figure 17A.
Buildout (2027) Cumulative Plus Project Traffic Volumes (Intersections 1-8, 22-28)

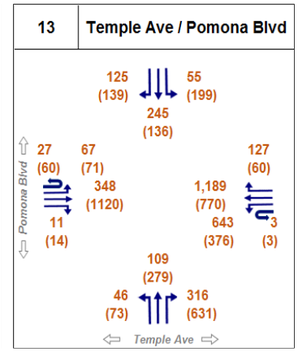
PSOMAS
March 2019

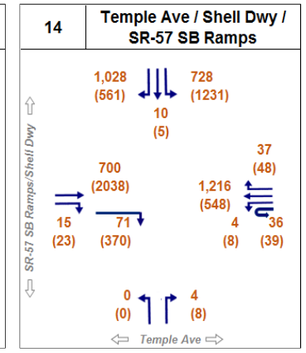


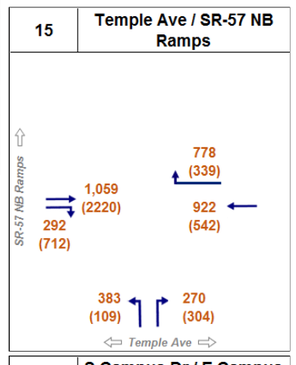


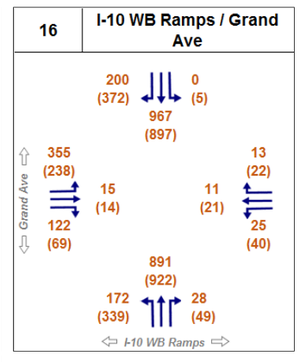


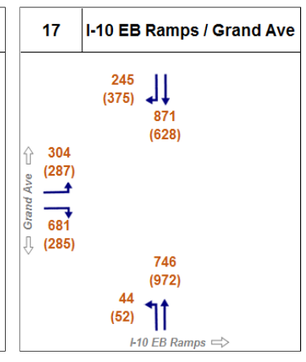


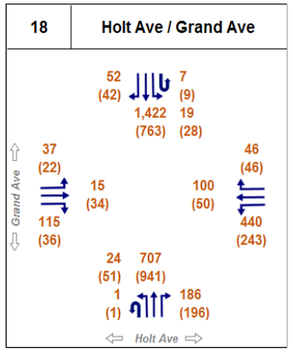


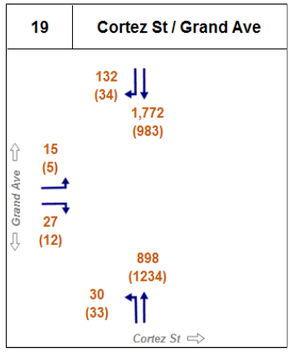


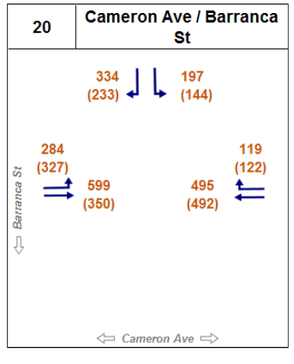


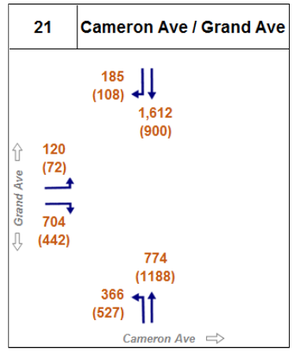


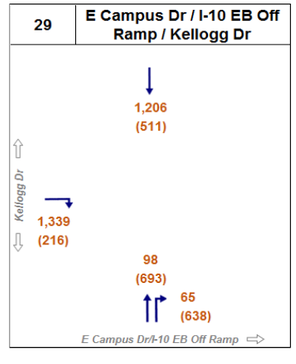


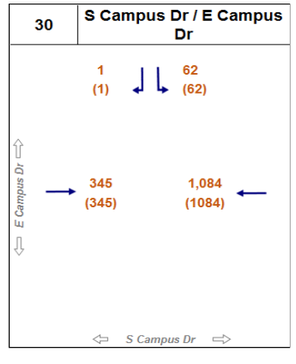












LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 17B.
Buildout (2027) Cumulative Plus Project Traffic Volumes (Intersections 9-21, 29-30)

PSOMAS
March 2019

5. OPERATIONAL ANALYSIS – EXISTING YEAR (2018)

5.1. EXISTING CONDITIONS

As previously discussed, the non-Caltrans signalized intersections were evaluated using the ICU methodology, and the unsignalized intersections and Caltrans signalized intersections were evaluated using the HCM methodology. For existing conditions, the ICU spreadsheets and HCM reports are included in Appendix B.

Table 7 in Section 5.3 shows the resulting LOS for each of the study intersections under existing conditions, with any unacceptable LOS highlighted in red.

As seen in the table, nine signalized intersections currently operate at LOS E or worse in one or both peak hours, including the following:

4. Temple Avenue/Grand Avenue (AM peak hour)
10. Temple Avenue/Campus Drive (AM peak hour)
12. Temple Avenue/Valley Boulevard (AM peak hour)
13. Temple Avenue/Pomona Boulevard (AM and PM peak hours)
18. Holt Avenue/Grand Avenue (AM peak hour)
21. Cameron Avenue/Grand Avenue (AM peak hour)
23. San Jose Hills Road/Grand Avenue (AM peak hour)
24. La Puente Road/Grand Avenue (AM peak hour)
25. Valley Boulevard/Grand Avenue (AM peak hour)

In addition, the worst minor-street (stop controlled) movement at the intersection of Cortez Street and Grand Avenue (#19) operates at LOS E or worse in both peak hours as well as at the intersection of Cameron Avenue and Barranca Street (#20) in the AM peak hour. Recall that for two-way stop-controlled intersections (such as Cortez Street/Grand Avenue and Cameron Avenue/Barranca Street), there is no defined intersection LOS.

In addition to the study intersections, the two study Caltrans segments were evaluated for existing conditions, as shown below:

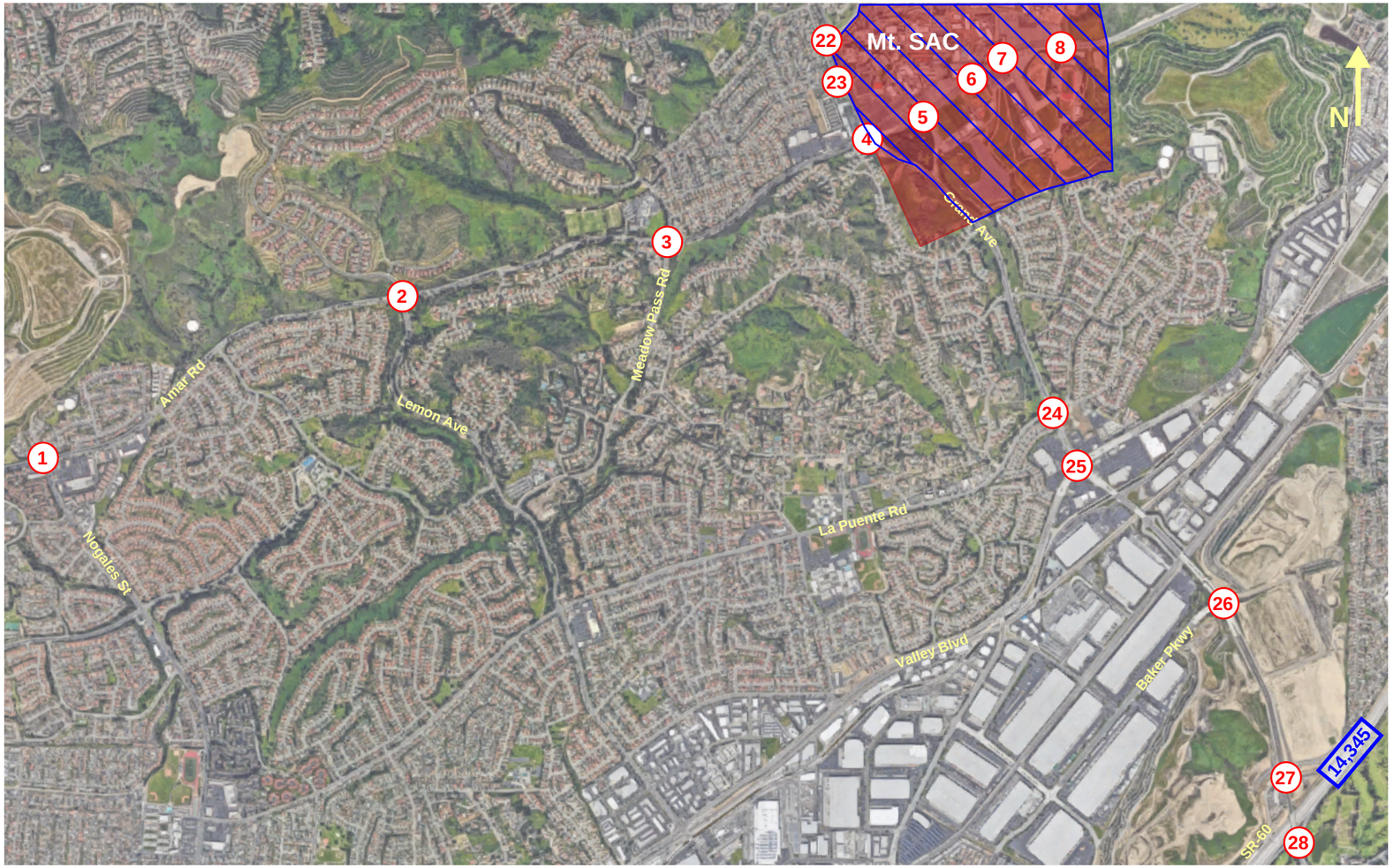
- I-10, Citrus Street to Holt Avenue
    - 1,857 passenger cars per hour per lane (pc/hr/ln), LOS D
- SR-57, Grand Avenue to SR-60
    - 792 pc/hr/ln, LOS B

5.2. EXISTING PLUS PROJECT CONDITIONS

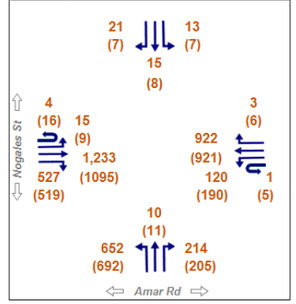
The same approach was used to evaluate existing conditions plus the project; the full buildout (2027) version of the project was assumed in this analysis. The purpose of the Existing Plus Project analysis is to provide the baseline for assessing environmental impacts, which is generally the existing conditions at the time that the environmental document for the project is prepared. The analysis assesses the transportation and circulation impacts of the proposed project against existing present-day traffic conditions, irrespective of the proposed project's horizon year. While a requirement of CEQA, a comparative traffic analysis of the impacts associated with implementation of the proposed project, and in this case realization of the full estimated student headcount in the year 2027, as assessed against existing traffic conditions, is an unrealistic, hypothetical scenario for the following reasons:

- Implementation of the proposed project is not an immediate-term construction project (the horizon year is 2027)
- This scenario does not account for future population and development growth in the City and surrounding areas with or without the proposed project
- This scenario does not account for other projected land use projects that should provide for, or contribute to, needed traffic improvements to the circulation system in the study area
- The circulation system is projected to change over time with or without the proposed project

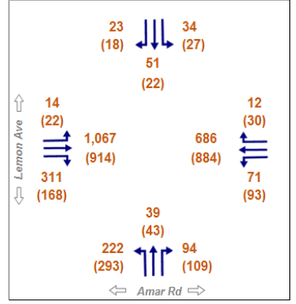
Figures 18A and 18B show the existing plus project traffic volumes. The ICU and HCM reports for existing conditions plus the project are included in Appendix B. The resulting level of service for each of the study intersections for existing plus project conditions is also shown in Table 7 in Section 5.3.



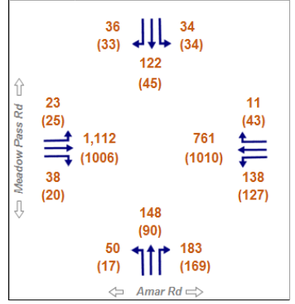
1 Amar Rd / Nogales St



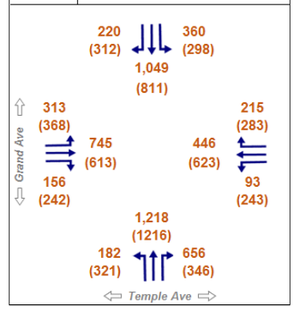
2 Amar Rd / Lemon Ave



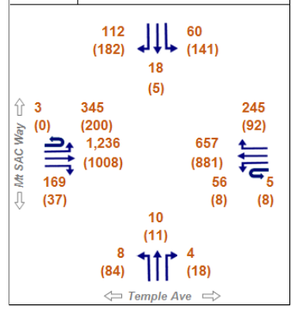
3 Amar Rd / Meadow Pass Rd



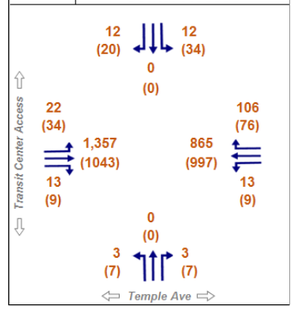
4 Temple Ave / Grand Ave



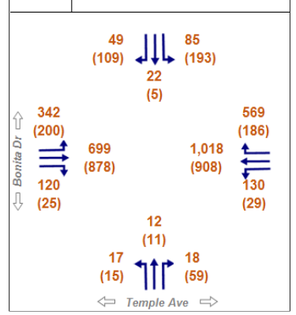
5 Temple Ave / Mt SAC Way



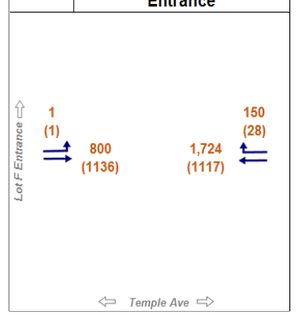
6 Temple Ave / Transit Center Access



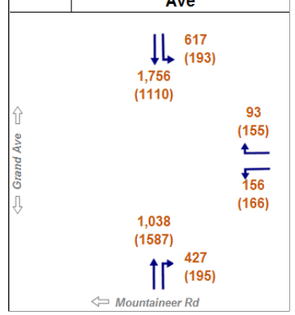
7 Temple Ave / Bonita Dr



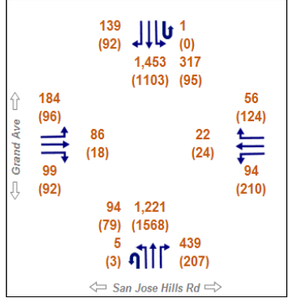
8 Temple Ave / Lot F Entrance



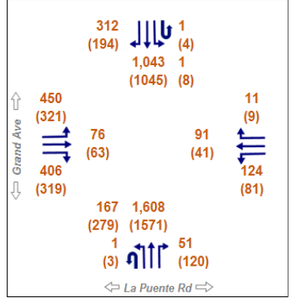
22 Mountaineer Rd / Grand Ave



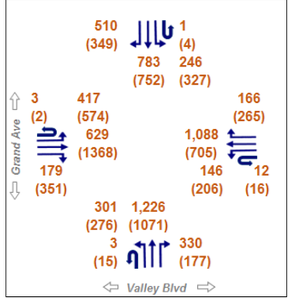
23 San Jose Hills Rd / Grand Ave



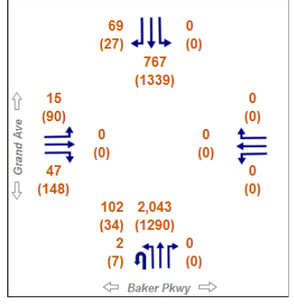
24 La Puente Rd / Grand Ave



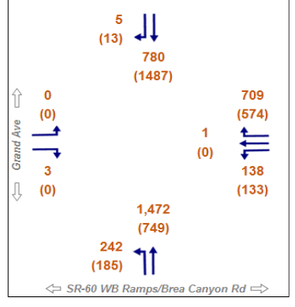
25 Valley Blvd / Grand Ave



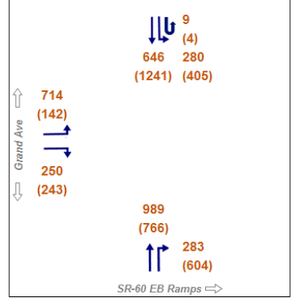
26 Baker Pkwy / Grand Ave



27 SR-60 WB Ramps / Grand Ave



28 SR-60 EB Ramps / Grand Ave



LEGEND

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- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 18A.
Existing Plus Project Traffic Volumes (Intersections 1-8, 22-28)

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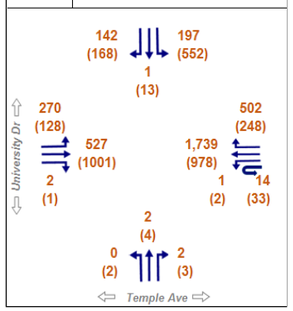
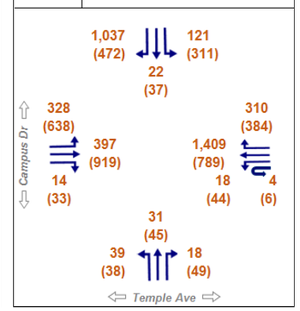
March 2019

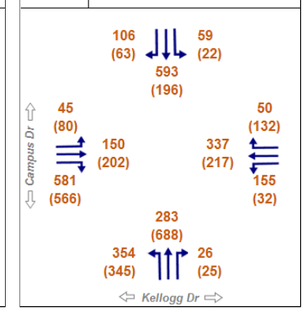
9 Temple Ave / University Dr



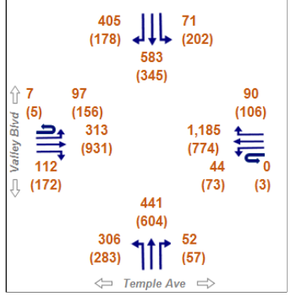
10 Temple Ave / Campus Dr



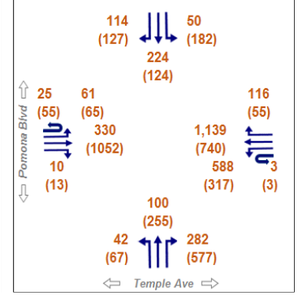
11 Kellogg Dr / Campus Dr



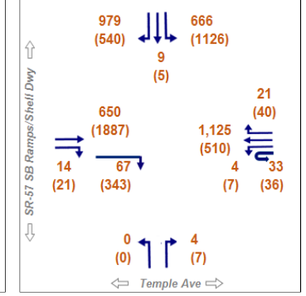
12 Temple Ave / Valley Blvd



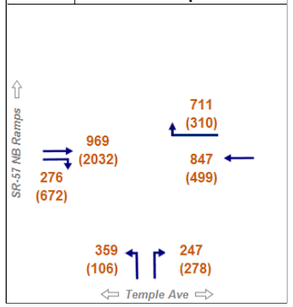
13 Temple Ave / Pomona Blvd



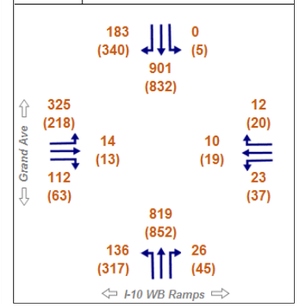
14 Temple Ave / Shell Dwy / SR-57 SB Ramps



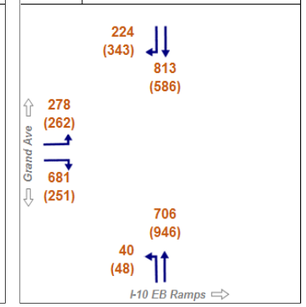
15 Temple Ave / SR-57 NB Ramps



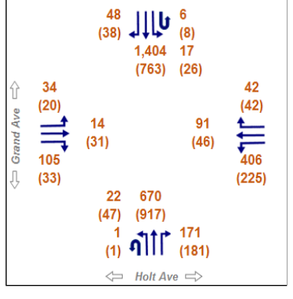
16 I-10 WB Ramps / Grand Ave



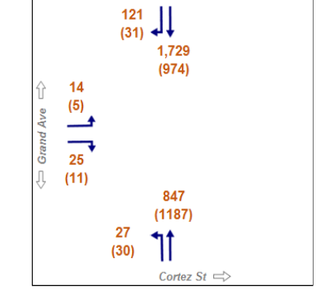
17 I-10 EB Ramps / Grand Ave



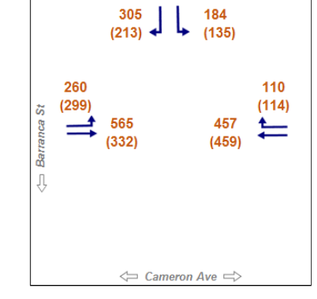
18 Holt Ave / Grand Ave



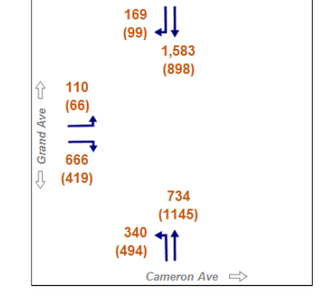
19 Cortez St / Grand Ave



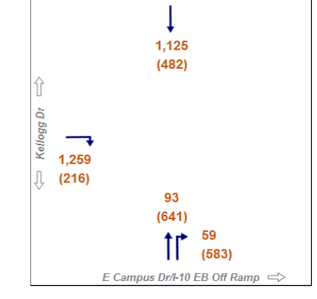
20 Cameron Ave / Barranca St



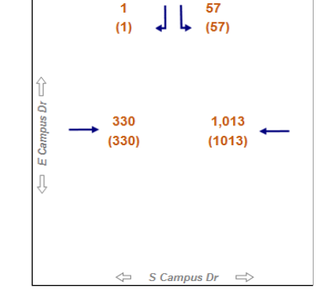
21 Cameron Ave / Grand Ave



29 E Campus Dr / I-10 EB Off Ramp / Kellogg Dr



30 S Campus Dr / E Campus Dr



LEGEND

- XX — Intersection Number
- XX — AM Peak Hour Traffic Volume (veh/hr)
- (XX) — PM Peak Hour Traffic Volume (veh/hr)
- XX,XXX — Segment Peak Hour Traffic Volume (pc/hr)
- Mt. SAC Campus
- Project Area (2018 EFMP)

Traffic Impact Analysis
Mt. San Antonio College
2018 EFMP

Figure 18B.
Existing Plus Project Traffic Volumes (Intersections 9-21, 29-30)

PSOMAS
March 2019

The intersections which would operate at LOS E or worse are the same as those listed in Section 5.1, Existing Conditions; further, the intersection of San Jose Hills Road and Grand Avenue, already operating at LOS E in the AM peak hour, would deteriorate from LOS D to LOS E in the PM peak hour.

For existing conditions plus project, the volumes and LOS on the Caltrans study segments are as listed below:

- I-10, Citrus Street to Holt Avenue
    - 1,869 passenger cars per hour per lane (pc/hr/ln), LOS D
- SR-57, Grand Avenue to SR-60
    - 797 pc/hr/ln, LOS B

5.3. EXISTING PLUS PROJECT SIGNIFICANT IMPACT EVALUATION

Table 7 shows the LOS for existing and existing plus project conditions as well as the increase in ICU for the non-Caltrans intersections with the project. For the Caltrans intersections, a significant impact can only occur if the intersection is operating at LOS E or F. As shown in the table, 12 intersections would have a significant impact for the hypothetical existing plus project condition.

Recall that although operational information is provided for unsignalized intersections, projects are not considered to have a significant impact on any unsignalized intersections. However, as previously discussed, a preliminary peak hour signal warrant evaluation was conducted for unsignalized intersections which are expected to operate at LOS E or F. Two unsignalized intersections are shown to operate at LOS E or F under existing and existing plus project conditions; the preliminary peak hour signal warrant evaluation is included in Section 5.4.

For the Caltrans study segments, both are expected to operate at LOS D or better with the project; therefore, no mitigation is required.

Table 7. Existing Plus Project Impacts Analysis

	Intersection	Intersection Control	Location of Intersection	Existing						Existing Plus Project						Increase in Delay (Caltrans E or F only)		Increase in V/C		Significant Impact?	
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour								
				Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	AM	PM	AM	PM	AM	PM
1	Amar Rd/Nogales St	Signalized	West Covina		0.862	D		0.829	D		0.874	D		0.838	D			0.01	0.01	NO	NO
2	Amar Rd/Lemon Ave	Signalized	Walnut		0.792	C		0.652	B		0.805	D		0.661	B			0.01	0.01	NO	NO
3	Amar Rd/Meadow Pass Rd	Signalized	Walnut		0.773	C		0.699	B		0.791	C		0.713	C			0.02	0.01	NO	NO
4	Temple Ave/Grand Ave	Signalized	Walnut		0.932	E		0.813	D		0.993	E		0.847	D			0.06	0.03	YES	YES
5	Temple Ave/Mt. SAC Way	Signalized	Walnut		0.625	B		0.687	B		0.664	B		0.738	C			0.04	0.05	NO	NO
6	Temple Ave/Transit Center	Signalized	Walnut		0.589	A		0.478	A		0.625	B		0.511	A			0.04	0.03	NO	NO
7	Temple Ave/Bonita Dr	Signalized	Walnut		0.602	B		0.571	A		0.677	B		0.621	B			0.07	0.05	NO	NO
8	Temple Ave/Lot F	Unsignalized	Walnut	27.2		D	18.7		C	32.0		D	20.6		C	N/A	N/A			N/A	N/A
9	Temple Ave/University Dr	Signalized	Pomona		0.839	D		0.688	B		0.885	D		0.722	C			0.05	0.03	YES	NO
10	Temple Ave/Campus Dr	Signalized	Pomona		1.003	F		0.759	C		1.056	F		0.783	C			0.05	0.02	YES	NO
11	Kellogg Dr/Campus Dr	Signalized	Pomona		0.828	D		0.579	A		0.853	D		0.601	B			0.03	0.02	YES	NO
12	Temple Ave/Valley Blvd	Signalized	Pomona		0.919	E		0.763	C		0.936	E		0.776	C			0.02	0.01	YES	NO
13	Temple Ave/Pomona Blvd	Signalized	Pomona		0.971	E		1.071	F		0.974	E		1.077	F			0.00	0.01	NO	YES
14	Temple Ave/SR-57 SB Ramps	Signalized*	Pomona	23.7		C	42.8		D	24.2		C	43.6		D	N/A	N/A			NO	NO
15	Temple Ave/SR-57 NB Ramps	Signalized*	Pomona	9.8		A	8.5		A	10.0		A	8.5		A	N/A	N/A			NO	NO
16	I-10 WB Ramps/Grand Ave	Signalized*	West Covina	21.8		C	20.6		C	23.8		C	22.1		C	N/A	N/A			NO	NO
17	I-10 EB Ramps/Grand Ave	Signalized*	West Covina	23.2		C	13.8		B	27.7		C	13.7		B	N/A	N/A			NO	NO
18	Holt Ave/Grand Ave	Signalized	West Covina		1.019	F		0.617	B		1.057	F		0.638	B			0.04	0.02	YES	NO
19	Cortez St/Grand Ave	Unsignalized**	West Covina	207.5		F	49.7		E	278.2		F	60.7		F	N/A	N/A			N/A	N/A
20	Cameron Ave/Barranca St	Unsignalized	West Covina	48.2		E	29.1		D	51.4		F	30.6		D	N/A	N/A			N/A	N/A
21	Cameron Ave/Grand Ave	Signalized	LA County		1.131	F		0.771	C		1.184	F		0.809	D			0.05	0.04	YES	YES
22	Mountaineer Rd/Grand Ave	Signalized	Walnut		0.719	C		0.753	C		0.748	C		0.790	C			0.03	0.04	NO	YES
23	San Jose Hills Rd/Grand Ave	Signalized	Walnut		0.934	E		0.897	D		0.992	E		0.960	E			0.06	0.06	YES	YES
24	La Puente Rd/Grand Ave	Signalized	Walnut		1.028	F		0.875	D		1.063	F		0.895	D			0.04	0.02	YES	YES
25	Valley Blvd/Grand Ave	Signalized	Walnut		0.907	E		0.824	D		0.933	E		0.841	D			0.03	0.02	YES	YES
26	Baker Pkwy/Grand Ave	Signalized	Industry		0.581	A		0.534	A		0.604	B		0.547	A			0.02	0.01	NO	NO
27	SR-60 WB Ramps/Grand Ave	Signalized*	Industry	24.2		C	15.2		B	26.7		C	15.9		B	N/A	N/A			NO	NO
28	SR-60 EB Ramps/Grand Ave	Signalized*	Diamond Bar	22.7		C	13.9		B	23.7		C	15.0		B	N/A	N/A			NO	NO

*Caltrans Intersection

**TWSC (delay shows highest lane delay)

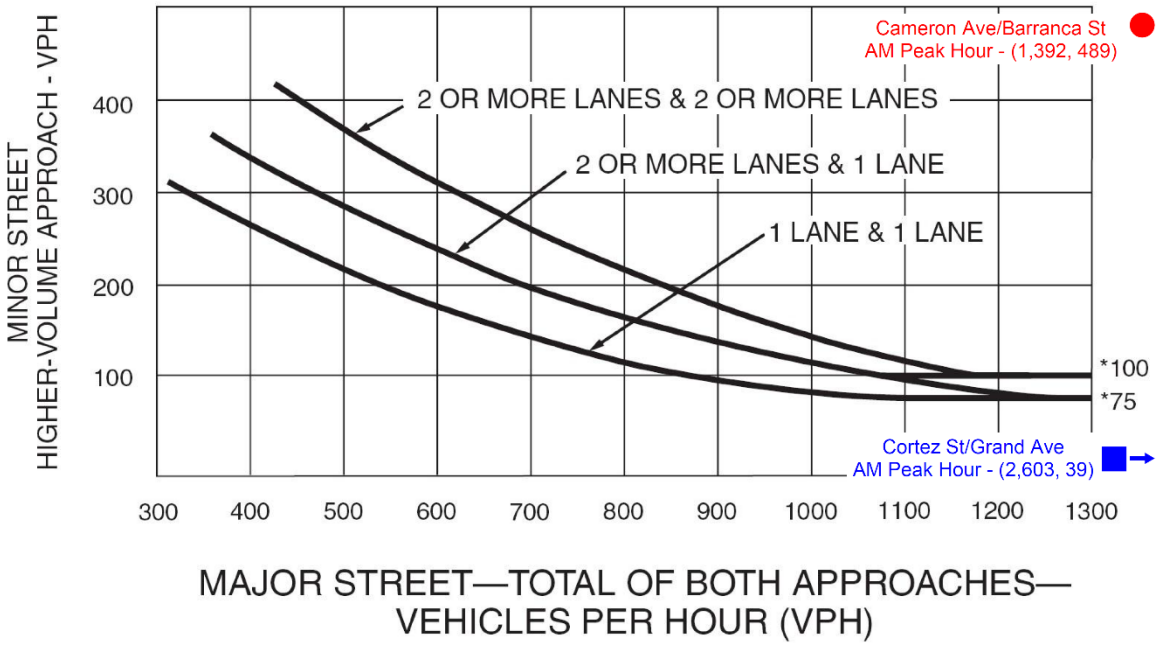
Highlighted cells indicate LOS E or F OR indicate significant impact

5.4. EXISITNG PLUS PROJECT PRELIMINARY SIGNAL WARRANT ANALYSIS

As seen in Table 7, the intersections of Cortez Street/Grand Avenue and Cameron Avenue/Barranca Street are expected to operate at LOS E or F under existing and existing plus project conditions. Therefore, the peak hour signal warrant (warrant 3 of the MUTCD) was evaluated for both intersections for conditions with the project. Because of the existing southbound right turn lane on Grand Avenue at Cortez Street, the right turn volume was not included in the total volume at that intersection.

As shown in Figure 19, the intersection of Cameron Avenue and Barranca Street is expected to meet the peak hour signal warrant, while the intersection of Cortez Street and Grand Avenue is not (due to the low volumes on Cortez Street).

Figure 19. Existing Plus Project Peak Hour Signal Warrant



5.5. MITIGATION MEASURES

The following list includes the recommended improvements for each of the intersections with a significant project impact under the Existing Plus Project scenario. These recommendations are also applicable to future year traffic analysis scenarios as noted:

4. Temple Avenue and Grand Avenue
    - Convert the eastbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third eastbound thru lane on the east leg of the intersection.
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.
    - These mitigation measures will reduce the project impact, but the impact is still considered to be significant. To fully mitigate the impacts, a second northbound right turn lane would need to be added on Grand Avenue, which is not feasible due to right-of-way constraints. Therefore, this impact would be **significant and unavoidable** and a statement of overriding considerations is required.
    - ***The recommendations will fully mitigate the impacts in 2021. The recommendations are also applicable in 2027 but will not fully mitigate the impacts.***

9. Temple Avenue and University Drive
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2021 and 2027.***

10. Temple Avenue and Campus Drive
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2021 and 2027.***

11. Kellogg Drive and Campus Drive
    - Convert the shared eastbound thru-right turn lane to an exclusive right turn lane. This will only require restriping on the eastbound approach.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2027.***
12. Temple Avenue and Valley Boulevard
    - Add a second northbound left turn lane. This will require restriping of both the north and south legs of the intersection (no physical reconstruction) and may result in the loss of some parking spaces along Valley Boulevard, south of Temple Avenue.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2021 and 2027.***
13. Temple Avenue and Pomona Boulevard
    - Convert the southbound lanes to provide two exclusive left turn lanes and a shared thru-right turn lane. This will require restriping on the southbound approach and the removal of the existing "right lane must turn right" and "right turn only" signs.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2027.***
18. Holt Avenue and Grand Avenue
    - Convert the southbound right turn lane to a shared thru-right turn lane. This will require additional striping on the south leg to either extend the right turn lane at Virginia Avenue north to Holt Avenue to act as a trap right turn lane (where drivers in that lane will be forced to turn right at Virginia Avenue), or to convert the lane to a shared thru-right turn lane at Virginia Avenue. Some physical improvements, including the removal of the existing raised median island and relocation of the signal pole, will also be needed for the northwest corner of the Holt Avenue/Grand Avenue intersection.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2021 and 2027.***

21. Cameron Avenue and Grand Avenue
    - Add a second eastbound right turn lane. This will only require restriping and will not require any physical improvements.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2021 and 2027.***
22. Mountaineer Road and Grand Avenue
    - This intersection already includes dual southbound and westbound left turn lanes, dual westbound right turn lanes, and a northbound (de-facto) right turn lane. To mitigate the impacts, a northbound through lane would need to be added on Grand Avenue, which is not feasible due to right-of-way constraints. This impact would be **significant and unavoidable** and a statement of overriding considerations is required.
23. San Jose Hills Road and Grand Avenue
    - Convert the westbound thru lane to a shared thru-left turn lane. This will only require striping, no physical reconstruction.
    - Convert the northbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third northbound thru lane on the north leg of the intersection.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2021 and 2027.***
24. La Puente Road and Grand Avenue
    - Modify the signal phasing to include an eastbound right turn overlap.
    - ***These recommendations are also applicable to impacts that occur at this intersection in 2021 and 2027.***
25. Valley Boulevard and Grand Avenue
    - Because this intersection includes dual left turn lanes in all directions and free right turn lanes in three directions, the intersection is considered to be built out. To mitigate the impact, a northbound through lane would need to be added on Grand Avenue, which is not feasible due to right-of-way constraints. This impact would be **significant and unavoidable** and a statement of overriding considerations is required.

Table 8 shows the significant impact evaluation with the recommended mitigation measures in place. As shown, the mitigation measures reduce the project impact to a less than significant level for 9 of the 12 intersections. However, the implementation of the identified improvements is subject to the approval of the cities of Walnut, Pomona, and West Covina as well as the County of Los Angeles. While Mt. SAC would work with these jurisdictions to implement the recommended improvements, Mt. SAC does not have the legal ability to compel these agencies to implement the improvements needed to mitigate this impact to a level of insignificance. As such, the impacts would be **significant and unavoidable** and a statement of overriding considerations is needed.

It should be noted that implementation of travel demand management (TDM) strategies included as part of the proposed EFMP may help reduce the project traffic overall and therefore further reduce the project impacts at study area intersections. For example, the construction of the Transit Center on campus, along with complementary programs (i.e. bike storage, bike share, etc.), may help shift student, staff, and faculty trips from personal vehicles to transit, therefore reducing campus vehicular traffic and reducing the severity of project impacts. However, even with implementation of TDM strategies, the project impacts at study area intersections would be **significant and unavoidable.**

Table 8. Existing Plus Mitigated Project Impacts Analysis

Intersection		Intersection Control	Location of Intersection	Existing				Existing + Project w/Mitigation				Increase in ICU		Significant Impact?	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour					
				V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM	AM	PM
4	Temple Ave/ Grand Ave	Signalized	Walnut	0.932	E	0.813	D	0.962	E	0.841	D	0.03	0.03	YES	YES
9	Temple Ave/ University Dr	Signalized	Pomona	0.839	D	0.688	B	0.807	D	0.709	C	-0.03	0.02	NO	NO
10	Temple Ave/ Campus Dr	Signalized	Pomona	1.003	F	0.759	C	0.973	E	0.780	C	-0.03	0.02	NO	NO
11	Kellogg Dr/ Campus Dr	Signalized	Pomona	0.828	D	0.579	A	0.802	D	0.530	A	-0.03	-0.05	NO	NO
12	Temple Ave/ Valley Blvd	Signalized	Pomona	0.919	E	0.763	C	0.832	D	0.776	C	-0.09	0.01	NO	NO
13	Temple Ave/ Pomona Blvd	Signalized	Pomona	0.971	E	1.071	F	0.936	E	1.034	F	-0.03	-0.04	NO	NO
18	Holt Ave/Grand Ave	Signalized	West Covina	1.019	F	0.617	B	0.911	E	0.638	B	-0.11	0.02	NO	NO
21	Cameron Ave/ Grand Ave	Signalized	LA County	1.131	F	0.771	C	0.985	E	0.702	C	-0.15	-0.07	NO	NO
22	Mountaineer Rd/ Grand Ave	Signalized	Walnut	0.719	C	0.753	C	0.748	C	0.790	C	0.03	0.04	NO	YES
23	San Jose Hills Rd/ Grand Ave	Signalized	Walnut	0.934	E	0.897	D	0.920	E	0.749	C	-0.01	-0.15	NO	NO
24	La Puente Rd/ Grand Ave	Signalized	Walnut	1.028	F	0.875	D	1.030	F	0.874	D	0.00	0.00	NO	NO
25	Valley Blvd/ Grand Ave	Signalized	Walnut	0.907	E	0.824	D	0.933	E	0.841	D	0.03	0.02	YES	YES

Highlighted cells indicate LOS E or F OR indicate significant impact

6. OPERATIONAL ANALYSIS – INTERIM YEAR (2021)

6.1. 2021 CUMULATIVE CONDITIONS WITHOUT THE PROJECT

As for existing conditions, the non-Caltrans signalized intersections were evaluated using the ICU methodology, and the unsignalized intersections and Caltrans signalized intersections were evaluated using the HCM methodology. Appendix C shows the ICU and HCM reports for 2021 cumulative conditions.

Table 9 in Section 6.3 shows the resulting LOS for each of the study intersections under 2021 cumulative conditions without the project.

As seen in the table, nine intersections would operate at LOS E or worse for 2021 cumulative conditions in one or both peak hours without the proposed project, including the following:

4. Temple Avenue/Grand Avenue (AM peak hour)
10. Temple Avenue/Campus Drive (AM peak hour)
12. Temple Avenue/Valley Boulevard (AM peak hour)
13. Temple Avenue/Pomona Boulevard (AM and PM peak hours)
18. Holt Avenue/Grand Avenue (AM peak hour)
21. Cameron Avenue/Grand Avenue (AM peak hour)
23. San Jose Hills Road/Grand Avenue (AM and PM peak hours)
24. La Puente Road/Grand Avenue (AM and PM peak hours)
25. Valley Boulevard/Grand Avenue (AM peak hour)

In addition, the worst minor-street (stop controlled) movement at the intersection of Cortez Street and Grand Avenue (#19) would operate at LOS E or worse in both peak hours as well as at the intersection of Cameron Avenue and Barranca Street (#20) in the AM peak hour. Recall that for two-way stop-controlled intersections (such as Cortez Street/Grand Avenue and Cameron Avenue/Barranca Street), there is no defined intersection LOS.

In addition to the study intersections, the two study Caltrans segments were evaluated for 2021 cumulative conditions, as shown below:

- I-10, Citrus Street to Holt Avenue
    - 1,868 passenger cars per hour per lane (pc/hr/ln), LOS D
- SR-57, Grand Avenue to SR-60
    - 792 pc/hr/ln, LOS B

6.2. 2021 CUMULATIVE PLUS PROJECT CONDITIONS

The same approach was used to evaluate 2021 cumulative conditions plus the project; the interim year (2021) version of the project was assumed in this analysis. The ICU and HCM reports for 2021 cumulative plus project conditions are included in Appendix C.

Table 9 in Section 6.3 shows the resulting level of service for each of the study intersections for 2021 cumulative plus project conditions. The intersections which would operate at LOS E or worse are the same as those listed in Section 6.1.

The two study Caltrans segments were also evaluated for 2021 cumulative plus project conditions and would operate at the same LOS as without the project, as shown below:

- I-10, Citrus Street to Holt Avenue
    - 1,873 passenger cars per hour per lane (pc/hr/ln), LOS D
- SR-57, Grand Avenue to SR-60
    - 795 pc/hr/ln, LOS B

6.3. 2021 CUMULATIVE PLUS PROJECT SIGNIFICANT IMPACT EVALUATION

The increase in ICU for the non-Caltrans intersections due to the project traffic is shown in Table 9. For the Caltrans intersections, a significant impact can only occur if the intersection operates at LOS E or F prior to adding project traffic. As shown in the table, nine intersections have a significant impact for 2021 cumulative plus project conditions.

For the Caltrans study segments, both are expected to operate at LOS D or better with the project; therefore, no mitigation is required.

Table 9. Interim (2021) Cumulative Plus Project Impacts Analysis

	Intersection	Intersection Control	Location of Intersection	2021 Cumulative						2021 Cumulative Plus Project						Increase in Delay (Caltrans E or F only)		Increase in V/C		Significant Impact?	
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour								
				Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	AM	PM	AM	PM	AM	PM
1	Amar Rd/Nogales St	Signalized	West Covina		0.877	D		0.846	D		0.882	D		0.849	D			0.00	0.00	NO	NO
2	Amar Rd/Lemon Ave	Signalized	Walnut		0.806	D		0.662	B		0.810	D		0.665	B			0.00	0.00	NO	NO
3	Amar Rd/Meadow Pass Rd	Signalized	Walnut		0.803	D		0.730	C		0.810	D		0.736	C			0.01	0.01	NO	NO
4	Temple Ave/Grand Ave	Signalized	Walnut		0.948	E		0.842	D		0.974	E		0.855	D			0.03	0.01	YES	NO
5	Temple Ave/Mt. SAC Way	Signalized	Walnut		0.637	B		0.699	B		0.650	B		0.722	C			0.01	0.02	NO	NO
6	Temple Ave/Transit Center	Signalized	Walnut		0.600	B		0.486	A		0.611	B		0.498	A			0.01	0.01	NO	NO
7	Temple Ave/Bonita Dr	Signalized	Walnut		0.610	B		0.582	A		0.635	B		0.601	B			0.03	0.02	NO	NO
8	Temple Ave/Lot F	Unsignalized	Walnut	28.2		D	19.2		C	29.9		D	20.0		C	N/A	N/A			N/A	N/A
9	Temple Ave/University Dr	Signalized	Pomona		0.851	D		0.700	C		0.868	D		0.713	C			0.02	0.01	YES	NO
10	Temple Ave/Campus Dr	Signalized	Pomona		1.021	F		0.774	C		1.042	F		0.781	C			0.02	0.01	YES	NO
11	Kellogg Dr/Campus Dr	Signalized	Pomona		0.841	D		0.590	A		0.851	D		0.598	A			0.01	0.01	NO	NO
12	Temple Ave/Valley Blvd	Signalized	Pomona		0.934	E		0.773	C		0.941	E		0.778	C			0.01	0.01	YES	NO
13	Temple Ave/Pomona Blvd	Signalized	Pomona		1.030	F		1.158	F		1.031	F		1.160	F			0.00	0.00	NO	NO
14	Temple Ave/SR-57 SB Ramps	Signalized*	Pomona	24.3		C	45.6		D	24.5		C	45.9		D	N/A	N/A			NO	NO
15	Temple Ave/SR-57 NB Ramps	Signalized*	Pomona	10.1		B	8.9		A	10.1		B	8.9		A	N/A	N/A			NO	NO
16	I-10 WB Ramps/Grand Ave	Signalized*	West Covina	24.9		C	22.5		C	25.4		C	23.4		C	N/A	N/A			NO	NO
17	I-10 EB Ramps/Grand Ave	Signalized*	West Covina	24.8		C	13.8		B	26.6		C	13.8		B	N/A	N/A			NO	NO
18	Holt Ave/Grand Ave	Signalized	West Covina		1.045	F		0.648	B		1.060	F		0.656	B			0.02	0.01	YES	NO
19	Cortez St/Grand Ave	Unsignalized**	West Covina	248.6		F	62.5		F	278.2		F	66.4		F	N/A	N/A			N/A	N/A
20	Cameron Ave/Barranca St	Unsignalized	West Covina	51.6		F	31.1		D	53.1		F	31.7		D	N/A	N/A			N/A	N/A
21	Cameron Ave/Grand Ave	Signalized	LA County		1.158	F		0.808	D		1.178	F		0.823	D			0.02	0.01	YES	NO
22	Mountaineer Rd/Grand Ave	Signalized	Walnut		0.750	C		0.786	C		0.763	C		0.802	D			0.01	0.02	NO	NO
23	San Jose Hills Rd/Grand Ave	Signalized	Walnut		0.972	E		0.934	E		0.995	E		0.957	E			0.02	0.02	YES	YES
24	La Puente Rd/Grand Ave	Signalized	Walnut		1.062	F		0.918	E		1.076	F		0.926	E			0.01	0.01	YES	YES
25	Valley Blvd/Grand Ave	Signalized	Walnut		0.931	E		0.888	D		0.941	E		0.894	D			0.01	0.01	YES	NO
26	Baker Pkwy/Grand Ave	Signalized	Industry		0.590	A		0.548	A		0.599	A		0.553	A			0.01	0.01	NO	NO
27	SR-60 WB Ramps/Grand Ave	Signalized*	Industry	24.8		C	15.4		B	25.7		C	15.8		B	N/A	N/A			NO	NO
28	SR-60 EB Ramps/Grand Ave	Signalized*	Diamond Bar	23.8		C	14.7		B	24.2		C	15.1		B	N/A	N/A			NO	NO

*Caltrans Intersection

**TWSC (delay shows highest lane delay)

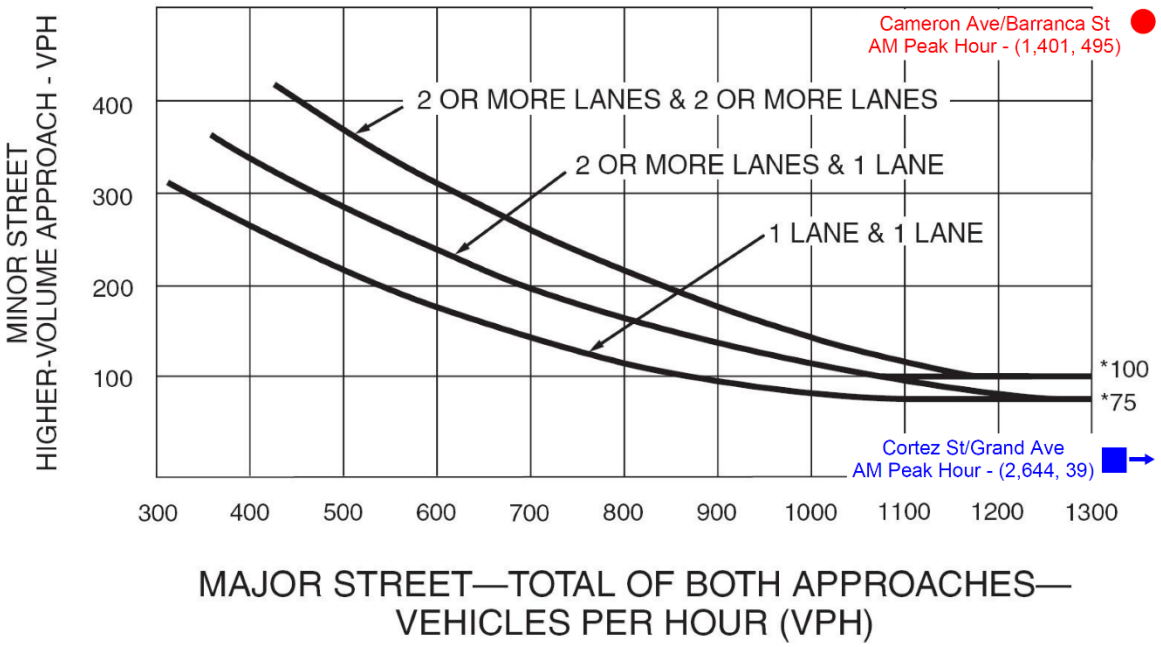
Highlighted cells indicate LOS E or F OR indicate significant impact

6.4. 2021 WITH PROJECT PRELIMINARY SIGNAL WARRANT ANALYSIS

As seen in Table 9, the intersections of Cortez Street/Grand Avenue and Cameron Avenue/Barranca Street are expected to operate at LOS E or F under existing and existing plus project conditions. Therefore, the peak hour signal warrant (warrant 3 of the MUTCD) was evaluated.

As seen in Figure 20, the Cameron Avenue/Barranca Street intersection is expected to meet the signal warrant, while the intersection of Cortez Street and Grand Avenue is still not expected to meet the signal warrant due to the low volumes on Cortez Street.

Figure 20. Interim (2021) Cumulative Plus Project Peak Hour Signal Warrant



6.5. MITIGATION MEASURES

As for existing conditions, mitigations were developed to reduce traffic impacts to a level considered to be less than significant for eight of the nine intersections with significant impacts for the 2021 cumulative plus project conditions. Note that each of the improvements are also included in the improvements listed in Section 5.3 for existing plus project conditions.

For the 2021 cumulative plus project scenario, the following improvements are recommended at each of the intersections with a significant project impact:

4. Temple Avenue and Grand Avenue
    - Convert the eastbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third eastbound thru lane on the east leg of the intersection.
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.
9. Temple Avenue and University Drive
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.
10. Temple Avenue and Campus Drive
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.
12. Temple Avenue and Valley Boulevard
    - Add a second northbound left turn lane. This will require restriping of both the north and south legs of the intersection (no physical reconstruction) and may result in the loss of some parking spaces along Valley Boulevard, south of Temple Avenue.
18. Holt Avenue and Grand Avenue
    - Convert the southbound right turn lane to a shared thru-right turn lane. This will require additional striping on the south leg to either extend the right turn lane at Virginia Avenue north to Holt Avenue to act as a trap right turn lane (where drivers in that lane will be forced to turn right at Virginia Avenue), or to convert the lane to a shared thru-right turn lane at Virginia Avenue.

Some physical improvements, including the removal of the existing raised median island and relocation of the signal pole, will also be needed for the northwest corner of the Holt Avenue/Grand Avenue intersection.

21. Cameron Avenue and Grand Avenue
    - Add a second eastbound right turn lane. This will only require restriping and will not require any physical improvements.
23. San Jose Hills Road and Grand Avenue
    - Convert the westbound thru lane to a shared thru-left turn lane. This will only require striping, no physical reconstruction.
    - Convert the northbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third northbound thru lane on the north leg of the intersection.
24. La Puente Road and Grand Avenue
    - Modify the signal phasing to include an eastbound right turn overlap.
25. Valley Boulevard and Grand Avenue
    - Because this intersection includes dual left turn lanes in all directions and free right turn lanes in three directions, the intersection is considered to be built out. To mitigate the impact, a northbound through lane would need to be added on Grand Avenue, which is not feasible due to right-of-way constraints. This impact would be **significant and unavoidable** and a statement of overriding considerations is required.

Table 10 shows the significant impact evaluation with the listed mitigation measures in place. As seen in the table, the mitigation measures reduce the project impact to a less than significant level for eight of the nine intersections. However, the implementation of the identified improvements is subject to the approval of the cities of Walnut, Pomona, and West Covina as well as the County of Los Angeles. While Mt. SAC would work with these jurisdictions to implement the recommended improvements, Mt. SAC does not have the legal ability to compel these agencies to implement the improvements needed to mitigate this impact to a level of insignificance. As such, the impacts would be **significant and unavoidable** and a statement of overriding considerations is needed.

It should be noted that implementation of travel demand management (TDM) strategies included as part of the proposed EFMP may help reduce the project traffic overall and therefore further reduce the project impacts at study area intersections. For example, the construction of the Transit Center on campus, along with complementary programs (i.e. bike storage, bike share, etc.), may help shift student, staff, and faculty trips from personal vehicles to transit, therefore reducing campus vehicular traffic and reducing the severity of project impacts. However, even with implementation of TDM strategies, the project impacts at study area intersections would be **significant and unavoidable.**

Table 10. Interim (2021) Cumulative Plus Mitigated Project Impacts Analysis

Intersection		Intersection Control	Location of Intersection	2021 Cumulative				2021 Cumulative + Project w/Mitigation				Increase in ICU		Significant Impact?	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour					
				V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM	AM	PM
4	Temple Ave/ Grand Ave	Signalized	Walnut	0.948	E	0.842	D	0.946	E	0.845	D	0.00	0.00	NO	NO
9	Temple Ave/ University Dr	Signalized	Pomona	0.851	D	0.700	C	0.800	C	0.702	C	-0.05	0.00	NO	NO
10	Temple Ave/ Campus Dr	Signalized	Pomona	1.021	F	0.774	C	0.962	E	0.779	C	-0.06	0.00	NO	NO
12	Temple Ave/ Valley Blvd	Signalized	Pomona	0.934	E	0.773	C	0.833	D	0.778	C	-0.10	0.01	NO	NO
18	Holt Ave/Grand Ave	Signalized	West Covina	1.045	F	0.648	B	0.916	E	0.656	B	-0.13	0.01	NO	NO
21	Cameron Ave/ Grand Ave	Signalized	LA County	1.158	F	0.808	D	0.980	E	0.715	C	-0.18	-0.09	NO	NO
23	San Jose Hills Rd/ Grand Ave	Signalized	Walnut	0.972	E	0.934	E	0.914	E	0.742	C	-0.06	-0.19	NO	NO
24	La Puente Rd/ Grand Ave	Signalized	Walnut	1.062	F	0.918	E	1.041	F	0.904	E	-0.02	-0.01	NO	NO
25	Valley Blvd/ Grand Ave	Signalized	Walnut	0.931	E	0.888	D	0.941	E	0.894	D	0.01	0.01	YES	NO

Highlighted cells indicate LOS E or F OR indicate significant impact

7. OPERATIONAL ANALYSIS – BUILDOUT YEAR (2027)

7.1. 2027 CUMULATIVE CONDITIONS

As previously discussed, the non-Caltrans signalized intersections were evaluated using the ICU methodology, and the unsignalized intersections and Caltrans signalized intersections were evaluated using the HCM methodology. The ICU and HCM reports for 2027 cumulative conditions are included in Appendix D, and the level of service for each of the study intersections for the 2027 cumulative conditions is shown in Table 11 in Section 7.3.

As seen in the table, 10 intersections operate at LOS E or worse for 2027 cumulative conditions without the project in one or both peak hours, including the following:

1. Amar Road/Nogales Street (AM peak hour)
4. Temple Avenue/Grand Avenue (AM peak hour)
10. Temple Avenue/Campus Drive (AM peak hour)
12. Temple Avenue/Valley Boulevard (AM peak hour)
13. Temple Avenue/Pomona Boulevard (AM and PM peak hours)
18. Holt Avenue/Grand Avenue (AM peak hour)
21. Cameron Avenue/Grand Avenue (AM peak hour)
23. San Jose Hills Road/Grand Avenue (AM and PM peak hours)
24. La Puente Road/Grand Avenue (AM and PM peak hours)
25. Valley Boulevard/Grand Avenue (AM peak hour)

In addition, the worst minor-street (stop controlled) movement at the intersection of Cortez Street and Grand Avenue (#19) would operate at LOS F in both peak hours, and the worse minor-street movement at the intersection of Cameron Avenue and Barranca Street (#20) would operate at LOS E or worse in both peak hours. Recall that for two-way stop-controlled intersections (such as Cortez Street/Grand Avenue and Cameron Avenue/Barranca Street), there is no defined intersection LOS.

In addition to the study intersections, the two study Caltrans segments were evaluated for 2027 cumulative conditions:

- I-10, Citrus Street to Holt Avenue
    - 1,695 passenger cars per hour per lane (pc/hr/ln), LOS D
- SR-57, Grand Avenue to SR-60
    - 883 pc/hr/ln, LOS B

7.2. 2027 CUMULATIVE PLUS PROJECT CONDITIONS

For 2027 cumulative plus project conditions, the same approach was used to evaluate the study intersections and segments, assuming full buildout of the project. The ICU and HCM reports for 2027 cumulative plus project conditions are included in Appendix D. Table 11 in Section 7.3 shows the resulting level of service for each of the study intersections for 2027 cumulative plus project conditions.

The intersections which would operate at LOS E or worse listed in Section 7.1 also operate at LOS E or worse for 2027 cumulative plus project conditions. Further, Temple Avenue/Grand Avenue and San Jose Hills/Grand Avenue intersections will deteriorate from LOS E to LOS F in the AM peak hour. In addition to those, the intersection of Temple Avenue and University Drive deteriorates from LOS D to LOS E in the AM peak hour.

The two study Caltrans segments were also evaluated for 2027 cumulative plus project conditions, as shown below:

- I-10, Citrus Street to Holt Avenue
    - 1,705 passenger cars per hour per lane (pc/hr/ln), LOS D
- SR-57, Grand Avenue to SR-60
    - 889 pc/hr/ln, LOS B

7.3. 2027 CUMULATIVE PLUS PROJECT SIGNIFICANT IMPACT EVALUATION

Table 11 shows the increase in ICU for the non-Caltrans intersections with the project. For the Caltrans intersections, a significant impact can only occur if the intersection is operating at LOS E or F without project traffic. As shown in the table, 15 intersections have a significant impact for 2027 cumulative plus project conditions. For the Caltrans study segments, both are expected to operate at LOS D or better with the project; therefore, no mitigation is required.

Table 11. Buildout (2027) Cumulative Plus Project Impacts Analysis

	Intersection	Intersection Control	Location of Intersection	2027 Cumulative						2027 Cumulative Plus Project						Increase in Delay (E or F only)		Increase in V/C		Significant Impact?	
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour								
				Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	AM	PM	AM	PM	AM	PM
1	Amar Rd/Nogales St	Signalized	West Covina		0.922	E		0.890	D		0.933	E		0.899	D			0.01	0.01	YES	NO
2	Amar Rd/Lemon Ave	Signalized	Walnut		0.843	D		0.695	B		0.857	D		0.704	C			0.01	0.01	NO	NO
3	Amar Rd/Meadow Pass Rd	Signalized	Walnut		0.818	D		0.747	C		0.836	D		0.761	C			0.02	0.01	YES	NO
4	Temple Ave/Grand Ave	Signalized	Walnut		0.957	E		0.852	D		1.018	F		0.884	D			0.06	0.03	YES	YES
5	Temple Ave/Mt. SAC Way	Signalized	Walnut		0.639	B		0.703	C		0.676	B		0.754	C			0.04	0.05	NO	YES
6	Temple Ave/Transit Center	Signalized	Walnut		0.611	B		0.492	A		0.647	B		0.525	A			0.04	0.03	NO	NO
7	Temple Ave/Bonita Dr	Signalized	Walnut		0.602	B		0.586	A		0.677	B		0.636	B			0.07	0.05	NO	NO
8	Temple Ave/Lot F	Unsignalized	Walnut	27.8		D	19.200		C	32.9		D	21.200		C	N/A	N/A			N/A	N/A
9	Temple Ave/University Dr	Signalized	Pomona		0.862	D		0.714	C		0.908	E		0.748	C			0.05	0.03	YES	NO
10	Temple Ave/Campus Dr	Signalized	Pomona		1.034	F		0.804	D		1.087	F		0.821	D			0.05	0.02	YES	YES
11	Kellogg Dr/Campus Dr	Signalized	Pomona		0.873	D		0.601	B		0.899	D		0.623	B			0.03	0.02	YES	NO
12	Temple Ave/Valley Blvd	Signalized	Pomona		0.979	E		0.811	D		0.996	E		0.825	D			0.02	0.01	YES	NO
13	Temple Ave/Pomona Blvd	Signalized	Pomona		1.055	F		1.176	F		1.059	F		1.182	F			0.00	0.01	NO	YES
14	Temple Ave/SR-57 SB Ramps	Signalized*	Pomona	25.6		C	53.4		D	26.2		C	54.6		D	N/A	N/A			NO	NO
15	Temple Ave/SR-57 NB Ramps	Signalized*	Pomona	10.9		B	9.5		A	11.0		B	9.5		A	N/A	N/A			NO	NO
16	I-10 WB Ramps/Grand Ave	Signalized*	West Covina	27.4		C	23.1		C	28.9		C	25.2		C	N/A	N/A			NO	NO
17	I-10 EB Ramps/Grand Ave	Signalized*	West Covina	24.8		C	14.6		B	30.1		C	14.7		B	N/A	N/A			NO	NO
18	Holt Ave/Grand Ave	Signalized	West Covina		1.066	F		0.644	B		1.105	F		0.665	B			0.04	0.02	YES	NO
19	Cortez St/Grand Ave	Unsignalized**	West Covina	259.4		F	53.900		F	376.0		F	64.400		F	N/A	N/A			N/A	N/A
20	Cameron Ave/Barranca St	Unsignalized	West Covina	67.9		F	39.800		E	72.4		F	40.900		E	N/A	N/A			N/A	N/A
21	Cameron Ave/Grand Ave	Signalized	LA County		1.174	F		0.796	C		1.227	F		0.834	D			0.05	0.04	YES	YES
22	Mountaineer Rd/Grand Ave	Signalized	Walnut		0.748	C		0.788	C		0.777	C		0.825	D			0.03	0.04	NO	YES
23	San Jose Hills Rd/Grand Ave	Signalized	Walnut		0.967	E		0.935	E		1.024	F		0.998	E			0.06	0.06	YES	YES
24	La Puente Rd/Grand Ave	Signalized	Walnut		1.080	F		0.929	E		1.115	F		0.949	E			0.04	0.02	YES	YES
25	Valley Blvd/Grand Ave	Signalized	Walnut		0.957	E		0.895	D		0.983	E		0.912	E			0.03	0.02	YES	YES
26	Baker Pkwy/Grand Ave	Signalized	Industry		0.602	B		0.561	A		0.625	B		0.574	A			0.02	0.01	NO	NO
27	SR-60 WB Ramps/Grand Ave	Signalized*	Industry	25.8		C	16.1		B	28.9		C	17.3		B	N/A	N/A			NO	NO
28	SR-60 EB Ramps/Grand Ave	Signalized*	Diamond Bar	25.2		C	15.8		B	26.4		C	17.0		B	N/A	N/A			NO	NO

*Caltrans Intersection

**TWSC (delay shows highest lane delay)

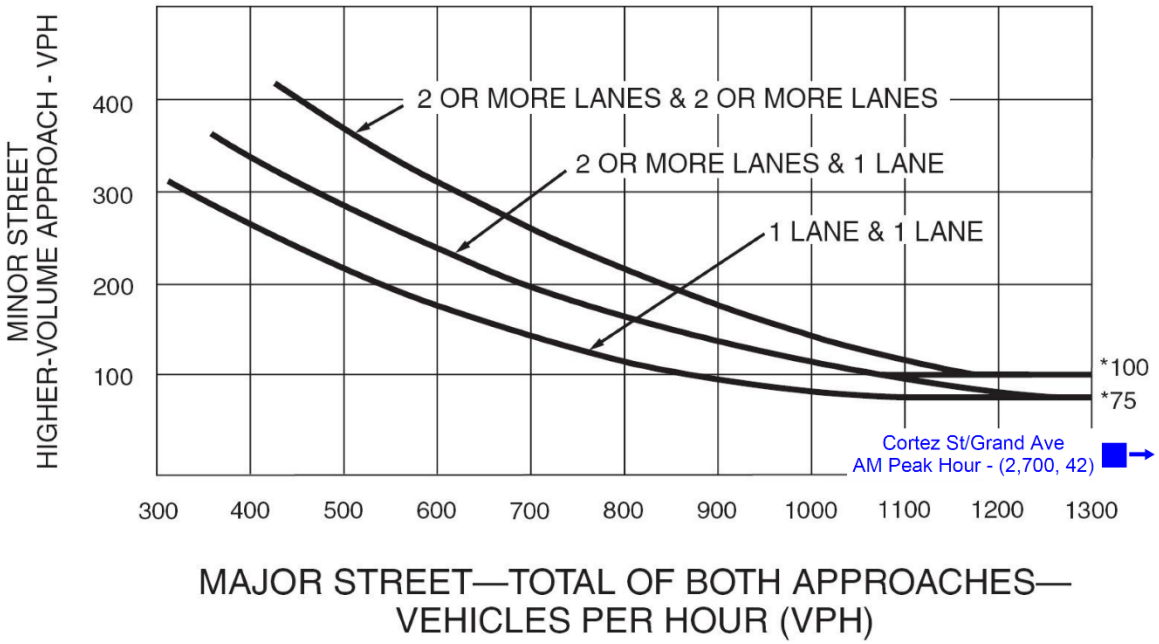
Highlighted cells indicate LOS E or F OR indicate significant impact

7.4. 2027 WITH PROJECT PRELIMINARY SIGNAL WARRANT ANALYSIS

As seen in Table 11, the intersections of Cortez Street/Grand Avenue and Cameron Avenue/Barranca Street are expected to operate at LOS E or F under buildout (2027) cumulative conditions, with and without the project. Therefore, the peak hour signal warrant (warrant 3 of the MUTCD) was evaluated.

Because the Cameron Avenue/Barranca Street intersection met the warrant for existing plus project conditions, it was not reevaluated for this condition. As seen in Figure 21, the intersection of Cortez Street and Grand Avenue is still not expected to meet the signal warrant due to the low volumes on Cortez Street.

Figure 21. Buildout (2027) Cumulative Plus Project Peak Hour Signal Warrant



7.5. MITIGATION MEASURES

To reduce significant traffic impacts to a level considered to be less than significant for the 2027 cumulative plus project conditions, several mitigation measures were recommended. Note that most of the improvements listed below were also included in the existing plus project mitigation.

The following list includes the improvements at each of the intersections with a significant project impact:

1. Amar Road and Nogales Street
    - Convert the eastbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third eastbound thru lane on the east leg of the intersection.
3. Amar Road and Meadow Pass Road
    - To mitigate the impacts, the eastbound right turn lane would have to be converted to a shared thru-right turn lane, and there would also be additional striping needs on the east leg to provide a third eastbound through lane. However, this would either require physical reconstruction or removal of the bike lane, neither of which are feasible. This impact would be **significant and unavoidable** and a statement of overriding considerations is required.
4. Temple Avenue and Grand Avenue
    - Convert the eastbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third eastbound thru lane on the east leg of the intersection.
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.
    - These mitigation measures will reduce the project impact, but the impact is still considered to be significant. To fully mitigate the impacts, a second northbound right turn lane would need to be added on Grand Avenue, which is not feasible due to right-of-way constraints. Therefore, this impact would be **significant and unavoidable** and a statement of overriding considerations is required.

5. Temple Avenue and Mt. SAC Way
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.

9. Temple Avenue and University Drive
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.

10. Temple Avenue and Campus Drive
    - Convert the westbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third westbound thru lane on the west leg of the intersection.

11. Kellogg Drive and Campus Drive
    - Convert the shared eastbound thru-right turn lane to an exclusive right turn lane. This will only require restriping on the eastbound approach.

12. Temple Avenue and Valley Boulevard
    - Add a second northbound left turn lane. This will require restriping of both the north and south legs of the intersection (no physical reconstruction) and may result in the loss of some parking spaces along Valley Boulevard, south of Temple Avenue.

13. Temple Avenue and Pomona Boulevard
    - Convert the southbound lanes to provide two exclusive left turn lanes and a shared thru-right turn lane. This will require restriping on the southbound approach and the removal of the existing “right lane must turn right” and “right turn only” signs.

18. Holt Avenue and Grand Avenue
    - Convert the southbound right turn lane to a shared thru-right turn lane. This will require additional striping on the south leg to either extend the right turn lane at Virginia Avenue north to Holt Avenue to act as a trap right turn lane (where drivers in that lane will be forced to turn right at Virginia Avenue), or

to convert the lane to a shared thru-right turn lane at Virginia Avenue. Some physical improvements, including the removal of the existing raised median island and relocation of the signal pole, will also be needed for the northwest corner of the Holt Avenue/Grand Avenue intersection.

21. Cameron Avenue and Grand Avenue
    - Add a second eastbound right turn lane. This will only require restriping and will not require any physical improvements.
22. Mountaineer Road and Grand Avenue
    - This intersection already includes dual southbound and westbound left turn lanes, dual westbound right turn lanes, and a northbound (de-facto) right turn lane. To mitigate the impacts, a northbound through lane would need to be added on Grand Avenue, which is not feasible due to right-of-way constraints. Therefore, this impact would be **significant and unavoidable** and a statement of overriding considerations is required.
23. San Jose Hills Road and Grand Avenue
    - Convert the westbound thru lane to a shared thru-left turn lane. This will only require striping, no physical reconstruction.
    - Convert the northbound right turn lane to a shared thru-right turn lane. This will not require any physical reconstruction but will require additional striping to provide a third northbound thru lane on the north leg of the intersection.
24. La Puente Road and Grand Avenue
    - Modify the signal phasing to include an eastbound right turn overlap.
25. Valley Boulevard and Grand Avenue
    - Because this intersection includes dual left turn lanes in all directions and free right turn lanes in three directions, the intersection is considered to be built out. To mitigate the impact, a northbound through lane would need to be added on Grand Avenue, which is not feasible due to right-of-way constraints. This impact would be **significant and unavoidable** and a statement of overriding considerations is required.

Table 12 shows the significant impact evaluation with the recommended mitigation measures in place. As shown, the mitigation measures reduce the project impact to a less than significant level for 11 of the 15 intersections.

Table 12. Buildout (2027) Cumulative Plus Mitigated Project Impacts Analysis

	Intersection	Intersection Control	Location of Intersection	2027 Cumulative				2027 Cumulative + Project w/Mitigation				Increase in ICU		Significant Impact?	
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour					
				ICU or V/C	LOS	ICU or V/C	LOS	ICU or V/C	LOS	ICU or V/C	LOS	AM	PM	AM	PM
1	Amar Rd/ Nogales St	Signalized	West Covina	0.922	E	0.890	D	0.914	E	0.894	D	-0.01	0.00	NO	NO
3	Amar Rd/Meadow Pass Rd	Signalized	Walnut	0.818	D	0.747	C	0.836	D	0.761	C	0.02	0.01	YES	NO
4	Temple Ave/ Grand Ave	Signalized	Walnut	0.957	E	0.852	D	0.984	E	0.873	D	0.03	0.02	YES	YES
5	Temple Ave/Mt. SAC Way	Signalized	Walnut	0.639	B	0.703	C	0.675	B	0.689	B	0.04	-0.01	NO	NO
9	Temple Ave/ University Dr	Signalized	Pomona	0.862	D	0.714	C	0.839	D	0.735	C	-0.02	0.02	NO	NO
10	Temple Ave/ Campus Dr	Signalized	Pomona	1.034	F	0.804	D	1.004	F	0.815	D	-0.03	0.01	NO	NO
11	Kellogg Dr/ Campus Dr	Signalized	Pomona	0.873	D	0.601	B	0.843	D	0.549	A	-0.03	-0.05	NO	NO
12	Temple Ave/ Valley Blvd	Signalized	Pomona	0.979	E	0.811	D	0.882	D	0.825	D	-0.10	0.01	NO	NO
13	Temple Ave/ Pomona Blvd	Signalized	Pomona	1.055	F	1.176	F	1.011	F	1.135	F	-0.04	-0.04	NO	NO
18	Holt Ave/Grand Ave	Signalized	West Covina	1.066	F	0.644	B	0.958	E	0.665	B	-0.11	0.02	NO	NO
21	Cameron Ave/ Grand Ave	Signalized	LA County	1.174	F	0.796	C	1.017	F	0.721	C	-0.16	-0.07	NO	NO
22	Mountaineer Rd/ Grand Ave	Signalized	Walnut	0.748	C	0.788	C	0.777	C	0.825	D	0.03	0.04	NO	YES
23	San Jose Hills Rd/ Grand Ave	Signalized	Walnut	0.967	E	0.935	E	0.948	E	0.777	C	-0.02	-0.16	NO	NO
24	La Puente Rd/ Grand Ave	Signalized	Walnut	1.080	F	0.929	E	1.079	F	0.926	E	0.00	0.00	NO	NO
25	Valley Blvd/ Grand Ave	Signalized	Walnut	0.957	E	0.895	D	0.983	E	0.912	E	0.03	0.02	YES	YES

Highlighted cells indicate LOS E or F OR indicate significant impact

However, the implementation of the identified improvements is subject to the approval of the cities of Walnut, Pomona, and West Covina as well as the County of Los Angeles. While Mt. SAC would work with these jurisdictions to implement the recommended improvements, Mt. SAC does not have the legal ability to compel these agencies to implement the improvements needed to mitigate this impact to a level of insignificance. As such, the impacts would be **significant and unavoidable** and a statement of overriding considerations is needed.

Travel demand management (TDM) strategies included as part of the proposed EFMP may help reduce the project traffic overall and therefore further reduce the project impacts at study area intersections. For example, the construction of the Transit Center on campus, along with complementary programs (i.e. bike storage, bike share, etc.), may help shift student, staff, and faculty trips from personal vehicles to transit, therefore reducing campus vehicular traffic and reducing the severity of project impacts. However, even with implementation of TDM strategies, the project impacts at study area intersections would be **significant and unavoidable.**

8. CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

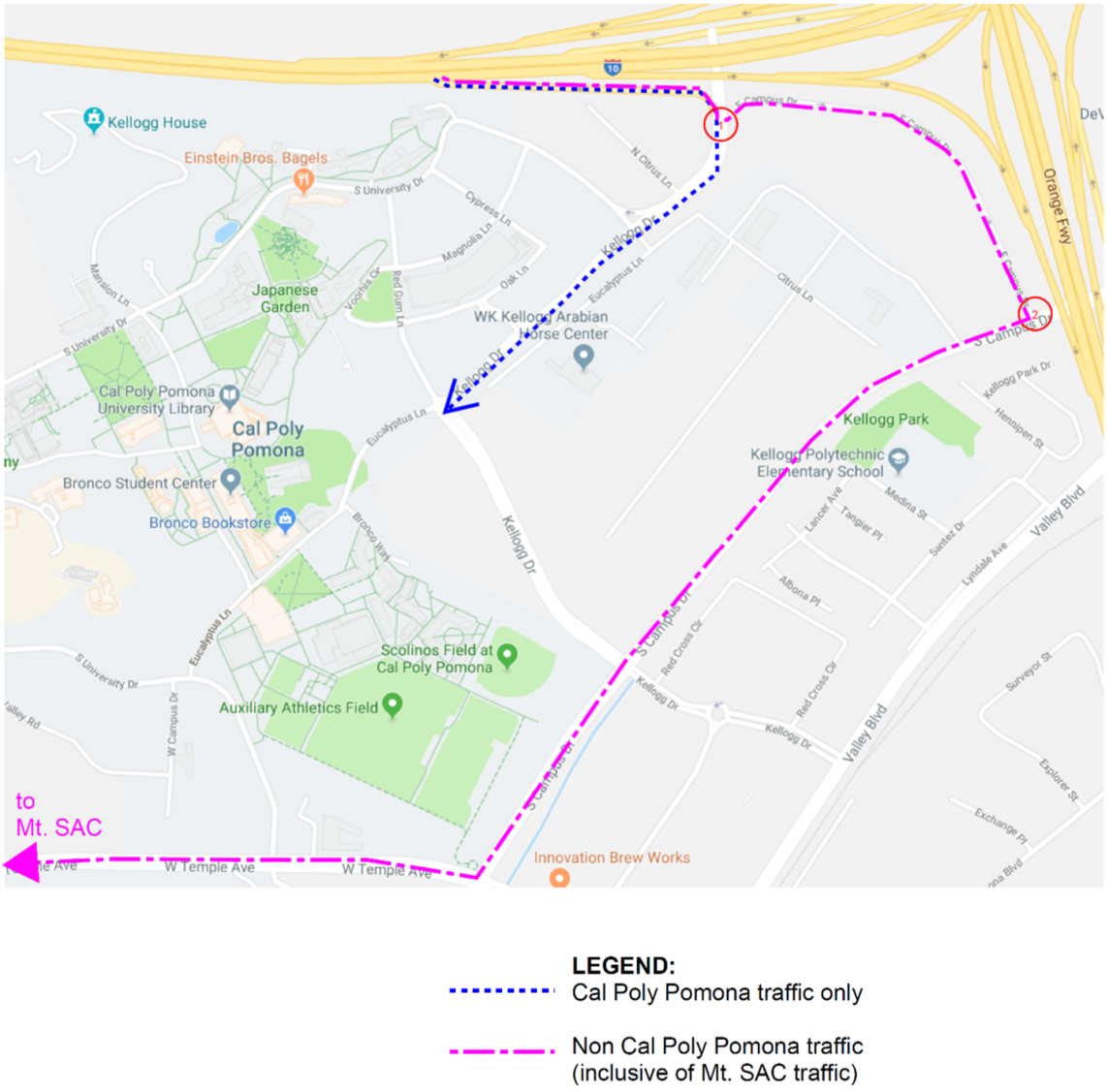
After the initial draft of this document was prepared, Mt. SAC was approached by officials involved in the master planning effort currently underway at California State Polytechnic University, Pomona (Cal Poly Pomona) regarding a traffic concern on the Cal Poly Pomona campus. Given the existing roadway network, drivers traveling eastbound along I-10 wishing to reach Mt. SAC or other areas in the vicinity can exit the freeway at Grand Avenue or at Kellogg Drive. If choosing to use the Kellogg Drive exit, the design of the interchange forces drivers to travel through the Cal Poly Pomona campus to South Campus Drive, and eventually to Temple Avenue or Valley Boulevard. This cut-through traffic is a concern for Cal Poly Pomona, both due to operations and due to the potential additional conflicts with the added non-campus traffic traveling through the area.

Although there is no available data to support the theory, it is likely that a considerable portion of the cut-through traffic which eventually reaches Temple Avenue is traveling to Mt. SAC. When approached by Cal Poly Pomona, Mt. SAC agreed that the presence of cut-through traffic on a campus can create concerns. Further, although the I-10 eastbound off-ramp/Kellogg Drive/East Campus Drive and East Campus Drive/South Campus Drive intersections are outside the study area for this analysis, Mt. SAC also agreed that a qualitative discussion of the issue and potential recommendations could be provided in this document as a precursor to future analyses.

To help reduce and potentially eliminate cut-through traffic, the I-10 eastbound off-ramp/Kellogg Drive/East Campus Drive intersection would need to be reconstructed. If the intersection allowed for a through movement from the off-ramp to East Campus Drive, the East Campus Drive segment between Kellogg Drive and South Campus Drive (see Figure 22) could serve as a bypass of the central portion of the Cal Poly Pomona campus. Drivers would then use South Campus Drive to access Temple Avenue. Cal Poly Pomona traffic would continue to turn right when exiting I-10 at Kellogg Drive, traveling into the center of campus.

This potential realignment and redistribution of traffic will need to be studied in detail to determine what changes and/or improvements would be feasible, and what improvements would be needed (i.e. traffic control).

Figure 22. Cal Poly Pomona Potential Bypass



It is recommended that Cal Poly Pomona conduct the analysis in conjunction with their ongoing master planning process. Further, Caltrans should be included in the discussion and development of recommendations.

9. FAIR SHARE CONTRIBUTION

It is anticipated that the project will contribute its fair share towards the cost of the mitigation measures listed in Sections 6.5 and 7.5. The project fair share (where applicable) was calculated for each of the intersections requiring mitigation based on the Caltrans methodology, which indicates that the fair share percentage is equal to the percentage of the total new trips which are generated by the project.

Table 13 shows the project fair share contribution; for instances where an intersection has impacts in both peak hours, the fair share is assumed to be an average of the two peak hour calculations. If the significant impact is only in one peak hour, the fair share contribution for the intersection is equal to the percentage calculated for the affected peak hour.

Table 13. Project Fair Share Contribution

Intersection		2021 Cumulative Plus Project			2027 Cumulative Plus Project		
		AM Peak Hour	PM Peak Hour	Fair Share	AM Peak Hour	PM Peak Hour	Fair Share
1	Amar Rd/Nogales St	N/A			12%	N/A	**12%**
3	Amar Rd/Meadow Pass Rd	N/A			Impact is significant and unavoidable.		
4	Temple Ave/Grand Ave	Impact is significant and unavoidable.					
5	Temple Ave/Mt. SAC Way	N/A			N/A	72%	**72%**
9	Temple Ave/University Dr	52%	N/A	**52%**	60%	N/A	**60%**
10	Temple Ave/Campus Dr	49%	N/A	**49%**	53%	50%	**51%**
11	Kellogg Dr/Campus Dr	N/A			38%	N/A	**38%**
12	Temple Ave/Valley Blvd	30%	N/A	**30%**	22%	N/A	**22%**
13	Temple Ave/Pomona Blvd	N/A			N/A	18%	**18%**
18	Holt Ave/Grand Ave	28%	N/A	**28%**	49%	N/A	**49%**
21	Cameron Ave/Grand Ave	30%	N/A	**30%**	50%	58%	**54%**
22	Mountaineer Rd/Grand Ave	N/A			Impact is significant and unavoidable.		
23	San Jose Hills Rd/Grand Ave	35%	29%	**32%**	54%	57%	**55%**
24	La Puente Rd/Grand Ave	27%	23%	**25%**	36%	38%	**37%**
25	Valley Blvd/Grand Ave	Impact is significant and unavoidable.					

N/A - No impact during the listed time period and/or analysis year

10. CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

The Congestion Management Program (CMP) has been implemented by the Los Angeles County Metropolitan Transportation Authority (Metro). The CMP for Los Angeles County requires that the potential regional traffic impact for development projects be analyzed. According to the CMP traffic impact analysis guidelines, a CMP traffic analysis is required for the following locations:

- CMP arterial monitoring intersections where the proposed project would add 50 or more trips during either the AM or PM weekday peak hours
- CMP freeway monitoring segments where the proposed project would add 150 or more trips in either direction during either the AM or PM weekday peak hours

The project is not expected to add 50 or more peak hour trips to any CMP intersections and is not expected to add 150 or more peak hour trips in either direction to any of the CMP freeway segments. Therefore, no CMP analysis for arterial monitoring intersections or freeway monitoring segments is required.

10.1. TRANSIT IMPACT ANALYSIS

The CMP also includes methodology for estimating the number of transit trips expected to be generated by the proposed project. The methodology assumes a factor of 1.4 person-trips for each trip generated by the project and assigns 3.5% of total person trips to the transit network. Using these guidelines, the project is expected to generate 10 new peak hour trips in the interim year of 2021 and 26 new peak hour trips at buildout (2027).

It is not expected that this increase in peak hour trips would result in a significant impact on transit operations, particularly given that the campus is currently served by five Foothill Transit routes.

11. SUMMARY

This traffic study provided an evaluation of the potential traffic impacts from the anticipated growth at Mt. San Antonio College, which is based on assumptions in the EFMP. The EFMP documents include recommendations for constructing new buildings and new parking structures on campus to serve the anticipated population growth of the College; based on the high growth rate in the EFMP, nearly 4,900 new students are expected by 2027. With input from Mt. SAC and the Cities of Walnut, Pomona, West Covina, Diamond Bar, and Industry, 28 intersections were evaluated in this study along with two segments of Caltrans facilities.

Under existing conditions, the following nine intersections are operating at LOS E or worse in either the AM or PM peak hour:

4. Temple Avenue/Grand Avenue (AM peak hour)
10. Temple Avenue/Campus Drive (AM peak hour)
12. Temple Avenue/Valley Boulevard (AM peak hour)
13. Temple Avenue/Pomona Boulevard (AM and PM peak hours)
18. Holt Avenue/Grand Avenue (AM peak hour)
21. Cameron Avenue/Grand Avenue (AM peak hour)
23. San Jose Hills Road/Grand Avenue (AM peak hour)
24. La Puente Road/Grand Avenue (AM peak hour)
25. Valley Boulevard/Grand Avenue (AM peak hour)

In addition, the worst minor-street (stop controlled) movement at the intersections of Cortez Street and Grand Avenue (#19, both peak hours) and Cameron Avenue and Barranca Street (#20, AM peak hour) operate at LOS E or worse. Recall that for two-way stop-controlled intersections (such as Cortez Street/Grand Avenue and Cameron Avenue/Barranca Street), there is no defined intersection LOS.

In the interim analysis year of 2021, the project is expected to generate 2,164 new daily trips, including 207 trips in each peak hour. In 2027, the project is expected to generate 5,613 daily trips, including 537 in each peak hour. Based on the anticipated project traffic and other cumulative traffic volume increases, the project is anticipated to have a significant impact at 15 of the study intersections in at least one of the analysis years.

Table 14 shows the mitigation measures at each of the intersections in each scenario. As seen in the table, the mitigation measure(s) listed under the existing plus project scenario would also be effective in mitigating the impacts to a less-than-significant impact in the interim and buildout study years except for the mitigation measures at Temple Avenue and Grand Avenue. Note that any mitigation listed in the existing plus project condition is the full responsibility of the project.

Many of the mitigation measures consist of relatively simple striping and/or signal phasing changes at the intersection. Mitigation measures at the intersection of Cameron Avenue and Grand Avenue will require some physical reconstruction. At locations where a right turn lane is converted to a shared thru-right turn lane, striping will also be required on the downstream leg of the intersection.

The four intersections of Amar Road/Meadow Pass Road, Temple Avenue/Grand Avenue, Mountaineer Road/Grand Avenue and Valley Boulevard/Grand Avenue will have **significant and unavoidable** impacts. The impacts at the Temple Avenue/Grand Avenue intersection can be partially mitigated with the measures listed above for existing and 2027 conditions and will be fully mitigated in 2021. Therefore, a statement of overriding considerations is required for these four intersections.

In addition, the implementation of the identified improvements is subject to the approval of the cities of Walnut, Pomona, and West Covina as well as the County of Los Angeles. While Mt. SAC would work with these jurisdictions to implement the recommended improvements, Mt. SAC does not have the legal ability to compel these agencies to implement the improvements needed to mitigate this impact to a level of insignificance. Therefore, the impacts would be **significant and unavoidable** and a statement of overriding considerations is needed.

However, travel demand management strategies, such as the addition of a Transit Center on campus or improved bicycle facilities and access, may help reduce overall project traffic and therefore further reduce the project impact on the listed intersections. Additionally, increasing the cost of parking on campus and/or providing incentives for carpooling may further reduce demand. For purposes of this analysis, however, impacts would remain **significant and unavoidable** and would require a statement of overriding considerations.

Table 14. Summary of Mitigation Measures

Intersection			Mitigation Measures		
			Existing + Project	2021 + Project	2027 + Project
1	Amar Rd	Nogales St	N/A	N/A	**Convert EB right turn lane to shared thru-right turn lane (striping only)**
3	Amar Rd	Meadow Pass Rd	N/A	N/A	No improvements are feasible due to ROW constraints
4*	Temple Ave	Grand Ave	**Convert EB right turn lane to shared thru-right turn lane (striping only)**	Same as Existing	Same as Existing
			Convert WB right turn lane to shared thru-right turn lane (striping only)	Same as Existing	Same as Existing
5	Temple Ave	Mt SAC Way	N/A	N/A	**Convert WB right turn lane to shared thru-right turn lane (striping only)**
9	Temple Ave	University Dr	**Convert WB right turn lane to shared thru-right turn lane (striping only)**	Same as Existing	Same as Existing
10	Temple Ave	Campus Dr	**Convert WB right turn lane to shared thru-right turn lane (striping only)**	Same as Existing	Same as Existing
11	Kellogg Dr	Campus Dr	**Convert shared EB thru-right turn lane to exclusive right turn lane (striping only)**	N/A	Same as Existing
12	Temple Ave	Valley Blvd	**Add second NB left turn lane (striping only)**	Same as Existing	Same as Existing
13	Temple Ave	Pomona Blvd	**Convert SB to two left turn lanes and shared thru-right turn lane (striping and sign removal only)**	N/A	Same as Existing
18	Holt Ave	Grand Ave	**Covert SB right turn lane to shared thru-right turn lane**	Same as Existing	Same as Existing
21	Cameron Ave	Grand Ave	**Add second EB right turn lane (striping only)**	Same as Existing	Same as Existing
22	Mountaineer Rd	Grand Ave	No improvements are feasible due to ROW constraints		
23	San Jose Hills Rd	Grand Ave	**Convert WB thru lane to shared thru-left turn lane (striping only)**	Same as Existing	Same as Existing
			Convert NB right turn lane to shared thru-right turn lane (striping only)	Same as Existing	Same as Existing
24	La Puente Rd	Grand Ave	**Modify the signal to include an EB right turn overlap**	Same as Existing	Same as Existing
25	Valley Blvd	Grand Ave	Intersection is built out and no improvements are feasible due to ROW constraints		

N/A - No impact during the listed time period and/or analysis year

*Recommendations will fully mitigate project impact for 2021, but not for existing or 2027 conditions.

Indicates intersection where no improvements are feasible

Lastly, because parking needs may change over time due to the construction of the Transit Center and the general shift of trips away from personal vehicles, the structure in Lot F may not be needed when initially indicated, if at all. Although the EFMP and PCMP both include a recommendation to build a parking structure in Lot F, the demand management strategies previously discussed and the general changing nature of how people travel may delay or eliminate the need for a structure in Lot F. Further, the projected traffic volumes in this study are not contingent on the construction of the structure, and it is not expected that there would be any additional impacts to the study intersections if the structure was not constructed by 2027.

Estimates in the PCMP show that the structure in Lot F will eliminate approximately 800 parking spaces during construction, and that construction will take approximately 18 months. It is recommended that parking demand data be collected in the third week (census week) of the fall semester on a regular basis (i.e. every year, every other year). A parking generation rate should be calculated as the total demand divided by the total number of students, and the rate should be compared to previous years to determine how the parking rate per student is changing over time. (Note that traffic volume counts may not be directly related to parking demand; students who are dropped off and/or picked up on campus contribute to the overall trip generation, but not to the parking needs.)

The student growth rate and parking generation rate can then be used to estimate future parking demand for the future school years; if the estimated demand two years in the future from the current year of data collection would result in fewer than 1,000 surplus parking spaces, the College should move forward with the construction of a parking structure in Lot F. Otherwise, it is expected that the campus will continue to have sufficient parking until the next data collection period.

12. REFERENCES

[1] *Mt. San Antonio College Draft 2018 Educational and Facilities Master Plan*. http://www.mtsac.edu/efmp/Draft_EFMP.html, accessed August 2018, dated May 9, 2018.

[2] *Mt. San Antonio College 2017 Parking and Circulation Master Plan*. Psomas, November 2017.

[3] *Mt. SAC 2015 Facilities Master Plan Update & Physical Education Projects, Traffic Impact Study, Final Report*. Iteris, September 2016.

[4] *2010 Congestion Management Program.* Los Angeles County Metropolitan Transportation Authority, 2010.

[5] *Traffic Impact Analysis Report Guidelines*. Los Angeles County, December 2013 (Draft Update).

[6] *Highway Capacity Manual, 6th Edition*. Transportation Research Board, October 2016.

[7] Transportation Impact Study Guidelines. City of Los Angeles Department of Transportation (LADOT), 2016

[8] City of Walnut General Plan, City of Walnut, 2018.

[9] City of Pomona General Plan Update. City of Pomona, 2014.

[10] Foothill Transit, system map. http://foothilltransit.org/wp-content/uploads/2018/06/system-map-20180624-la.pdf, accessed September 2018.

[11] Caltrans Traffic Volumes. http://www.dot.ca.gov/trafficops/census/, accessed September 2018.

[12] *Trip Generation Manual 10th Edition*. Institute of Transportation Engineers, Washington D.C., 2017.

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