HEXAGON TRANSPORTATION CONSULTANTS, INC.

El Paseo Mixed-Use Development

Transportation Analysis

Prepared for:

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Executive Summary

This report presents the results of the transportation analysis (TA) conducted for the mixed-use development at 1312 El Paseo de Saratoga and 1777 Saratoga Avenue in San Jose, California. The site is currently occupied by multiple commercial buildings totaling 96,440 square feet (s.f.) at 1312 El Paseo de Saratoga (El Paseo site) and office buildings totaling 25,184 s.f. at 1777 Saratoga Avenue (Saratoga site). The project proposes to demolish the existing buildings and considers two development options to replace the existing buildings:

- Non-Education Option: Up to 1,100 residential dwelling units, 76,372 s.f. of retail space, 52,508 s.f. of office space, 36,120 s.f. of medical office space, and a park/plaza in the southwest corner of the site.
- Education Option: Up to 730 residential dwelling units, up to 67,500 s.f. of retail/commercial space, and a private K-12 school with up to 2,500 students.

Under both options, the project would reconfigure the existing parking area with traffic circles within the surface parking lot from the northern most Saratoga Avenue and Campbell Avenue entrances. The surface parking lot located to the east of the proposed site would also be reconfigured. As part of the project, a northbound left-turn lane from Saratoga Avenue into the Saratoga site would be implemented.

Access to the site would be provided via existing driveways on Saratoga Avenue, Quito Road, and W. Campbell Avenue, as well as a new driveway on Saratoga Avenue. For the non-education option, the existing driveway on Quito Road would be moved approximately 120 feet north of the current location.

The potential impacts of the project were evaluated in accordance with the standards and methodologies set forth by the City of San Jose. Based on the City of San Jose's Transportation Analysis Policy (Council Policy 5-1) and the *Transportation Analysis Handbook 2018*, the transportation analysis report for the project includes a CEQA transportation analysis and a local transportation analysis (LTA). The CEQA transportation analysis comprises an evaluation of Vehicle Miles Traveled (VMT) and cumulative impact analysis for the project's consistency with the Envision San Jose 2040 General Plan. The LTA supplements the CEQA transportation analysis by identifying transportation operational issues via an evaluation of weekday AM and PM peak-hour traffic conditions for 21 signalized intersections and three unsignalized intersections in the vicinity of the project site. The LTA also includes an analysis of freeway segment capacity, freeway ramp operations, site access, on-site circulation, parking, vehicle queueing, and effects to transit, bicycle, and pedestrian access.

CEQA Transportation Analysis

The CEQA transportation impacts of the project were evaluated based on a VMT analysis and a cumulative impact analysis for the project's consistency with the Envision San Jose 2040 General Plan.

Non-Education Option

VMT Impacts

The City of San Jose VMT Evaluation Tool was used to evaluate the VMT impact for the residential and office uses of the project. For the retail/commercial use, because the project would not result in an increase in retail space on the site, the proposed retail/commercial use is not expected to cause an increase in VMT and is expected to result in a less-than-significant VMT impact. Thus, a VMT analysis is not required for the retail use.

According to the VMT tool, the VMT generated by the residential use of the project (11.07 VMT per capita) would exceed the threshold of 10.12 VMT per capita; therefore, the residential use would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact.

To evaluate the medical office VMT using the VMT tool, trips generated by the medical office were converted into equivalent office square footage. According to the VMT tool, the VMT generated by the office and medical office uses of the project (13.38 VMT per employee) would exceed the threshold of 12.21 VMT per employee. Therefore, the office uses would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact.

Mitigation Measures – Residential Use

Based on the list of selected VMT reduction measures included in the VMT Evaluation Tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements.
    - Campbell Avenue and Hamilton Avenue: The City has identified the following improvements to remove the pork chop island at the southwest corner of the intersection and improve pedestrian access across W. Campbell Avenue from the south side of Hamilton Avenue. The scope of the conditioned improvements the project should implement at the intersection will be determined based on final cost estimates.

      Improvement to remove pork chop island at Campbell Avenue and Hamilton Avenue

        - Modify the existing signal to provide a 5-phase signal operation
        - Provide a signalized pedestrian crosswalk for the south leg
        - Provide bike signal heads at near and far sides for eastbound through bicycle movement
        - Install new signal poles with mast arms lengths shadowing opposing left-turn pockets at the northwest and southeast intersection corners; include two new directional ADA curb ramps at the southeast corner and one new directional ADA curb ramp at the northwest corner
        - Install a new signal pole with mast arm at the southwest intersection corner; include new directional ADA curb ramp

- Replace the existing signal pole at the north leg of the intersection with a signal pole and mast arm for the northbound Campbell Avenue movements
- Remove the existing signal poles from the raised medians along Campbell Avenue
- Construct a new ADA directional curb ramp at the northeast corner
- Retain the existing accessible pedestrian signal (APS) equipment for all pedestrian crosswalks and existing video detection for all intersection approaches
- Provide and install a Point-Zoom (PTZ) camera
- Replace the existing signal cabinet at the northwest corner with a new ATC signal cabinet
- Construct curb/gutter/sidewalk (about 550 feet) along eastbound Campbell Avenue, providing a 10-foot-wide sidewalk with tree wells at 35 feet off-center (O.C.)
- Remove existing asphalt concrete along the portion of Campbell Avenue being abandoned and replace with decomposed granite (DG)

Utility reconstruction due to pork chop island removal

- Retain the existing 30-foot reinforced concrete pipe (RCP) along the portion of Campbell Avenue being abandoned to vehicular movements.
- Relocate one existing drainage inlet (west). Conform to existing drainage inlet (east). Abandon existing drainage inlets in-place for the abandoned portion of Campbell Avenue (mid).

Streetlighting and communications improvement

- Provide a new streetlight every 150 feet along the new 10-foot-wide sidewalk along eastbound Campbell Avenue
- Provide LED lighting for each new signal pole.

- Provide Unbundled On-Site Parking Costs. This would allow residents without cars to rent a unit without having to pay for a parking spot. Unbundling of parking encourages residents to forego a second car or to have no car at all.

The combination of the mitigation measures would reduce the project VMT per capita by 2.21 (or 18%) as compared to the area VMT and would reduce the project VMT per capita to 10.09, which would make the project impact less than significant.

Mitigation Measures – Office/Medical Office Use

Based on the list of selected VMT reduction measures included in the VMT evaluation tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements. The improvements are described above for the residential use.

- Provide Commute Trip Reduction Marketing and Education. The office would be required to routinely provide commute trip reduction marketing/educational campaign to employees to promote the use of transit, shared rides, walking, and bicycling, therefore lowering the number of single occupancy vehicle (SOV) trips and VMT.
- Telecommuting and Alternative Work Schedule Program. The office tenants would be required to implement a flexible work schedule to encourage employees telecommuting, commuting outside of peak congestion periods, or working with alternative schedules. This program would allow some employees to work a few days from home, and thus reducing the number of trips and VMT.

The combination of the mitigation measures would reduce the project VMT per employee by 1.35 (or 10 %) as compared to the area VMT and would reduce the project VMT per employee to 12.15, which would make the project impact less than significant.

Education Option

Similar to the non-education option, the project would not result in an increase in retail space on the site, and thus, a VMT analysis is not required for the retail use. The project VMT and the VMT impact of the proposed residential use under this option would be the same as the VMT impact and mitigation measures for the residential use under the non-education option.

For the proposed school, the VMT analysis compares the average per-student VMT generated by the project to the regional average per-student VMT for private schools and public schools. The analysis results showed that the per-student VMT generated by the proposed school would be approximately 10.3% above the existing per-student VMT, which is considered as a VMT impact. Therefore, the project would be required to provide mitigation measures to reduce the project student VMT by 10.3%.

Mitigation Measures – School Use

In order for the project to have a less than significant impact on VMT, the project needs to reduce the VMT by 10.3%. Therefore, the VMT evaluation tool was used to identify mitigation measures that would reduce the VMT by at least 10.3%.

Based on the list of selected VMT reduction measures included in the VMT evaluation tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements. The improvements are described above for the non-education use.
- Provide Commute Trip Reduction Marketing and Education. The school would be required to routinely provide commute trip reduction marketing/educational campaign to faculty, staff, student drivers, and parents to promote the use of transit, shared rides, walking, and bicycling, therefore lowering the number of SOV trips and VMT.
- Provide a Rideshare/Carpool Program. The school would be required to implement a rideshare/carpool program to coordinate carpools amongst parents, student drivers, and employees to reduce SOV trips and VMT generated by the school.

The school would be required to prepare a transportation demand management (TDM) plan that that offers the commute trip reduction measures to 95% of the students and employees. The VMT estimate also assumes that 2% of the students and employees would participate in the rideshare/carpool program. The combination of the mitigation measures would reduce the project VMT per student by 10.44% as compared to the area VMT, which would make the project impact less than significant.

Cumulative Impact

The project for either option is consistent with the General Plan for the following reasons:

- The project would be a mixed-use development with higher intensity commercial development.
- The project would increase the equivalent employment density in the project area.
- The project would include ground floor-commercial spaces fronting Saratoga Avenue.
- The project would provide a public plaza at the corner of the Saratoga Avenue/Lawrence Expressway intersection.
- The project would provide 22-foot sidewalks with planters and landscaping on Saratoga Avenue along the Saratoga site project frontage. Wider sidewalks would improve pedestrian access to the transit stop and other destinations.
- The project would provide 15-foot sidewalks with planters along Quito Road and 18-foot sidewalks with landscaping along Lawrence Expressway, which meets typical Urban Village requirements.
- The project would provide a parking garage that it is not attached to a single development but can be shared by land uses on the site.
- The project would provide the minimum amount of parking required to adequately serve the residential, retail, and school parking demand of the project, thereby avoiding excessive parking supply.
- The project would be integrated with the City's transportation system, including transit, roads, and pedestrian facilities.
- The project would not negatively impact existing transit, bicycle, or pedestrian infrastructure, nor would it conflict with any adopted plans or policies for new transit, bicycle, or pedestrian facilities.
- As part of the project-level mitigation measures, the project would implement trip reduction measures to reduce vehicle trips and VMT generated by the residential, office, and school uses.

Therefore, the project would be considered part of the cumulative solution to meet the General Plan's long-range transportation goals and would result in a less-than-significant cumulative impact.

Local Transportation Analysis

Non-Education Option

Project Trip Generation

Based on the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* and applicable reductions, it is estimated that the proposed project would generate a total of 5,159 new daily trips, with 386 net new trips (147 inbound and 238 outbound) occurring during the AM peak hour and 434 new trips (231 inbound and 207 outbound) occurring during the PM peak hour.

Intersection Traffic Operations

The results of the intersection level of service analysis show that all of the signalized study intersections are currently operating at an acceptable level of service during the AM and PM peak hours of traffic and

would continue to do so under project conditions. Therefore, the added project trips would not cause an adverse operations effect at any of the signalized study intersections.

The study also evaluated three unsignalized intersections: Quito Road/Northlawn Drive, Quito Road/Cox Avenue, and Quito Road/McCoy Avenue.

At the Quito Road/Northlawn Drive intersection, the westbound approach on Northlawn Drive is estimated to experience heavy delay (equivalent to LOS F) during the AM peak hour under existing, background, and project conditions, and AM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project). However, the added delay by the project is not expected to cause a noticeable effect on traffic operations at this intersection. The need for intersection improvement or modification of traffic control at the intersection should be evaluated further with actual traffic counts and field observations in the future when volumes return to pre-Covid levels. It is recommended that the City evaluate the need for signalization or improvement at the intersection prior to the issuance of the occupancy permit of the project. If the City determined an improvement or signalization is warranted, it would be appropriate for the project applicant to pay a fair share contribution towards the improvement.

At the Quito Road/Cox Avenue intersection, the eastbound approach on Cox Avenue is estimated to experience heavy delay (equivalent to LOS F) during the PM peak hour under existing, background, and project conditions. Although PM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project), field observations showed that the upstream and downstream signal-controlled intersections on Quito Road allow the eastbound traffic to easily find gaps in traffic to make a left or right turn from Cox Avenue onto Quito Road. The eastbound traffic also has the option of using the Quito Road/Bucknall Road intersection. Therefore, a signal is not recommended.

At the Quito Road/McCoy Avenue intersection, the eastbound approach on McCoy Avenue is estimated to operate adequately (equivalent to LOS E) during both the AM and PM peak hours under all scenarios. The added project trips on Quito Road at the intersection would slightly increase the delay of the eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection.

Freeway Segment Capacity Analysis

The results of the freeway segment analysis show that the project is not projected to add traffic volumes representing one percent or more of the freeway capacity. Based on CMP freeway impact criteria, none of the freeway segments would be impacted by the project.

Urban Village/Grand Boulevard Requirements and Vision Zero San Jose Recommendation

The project site is located within the Paseo de Saratoga Urban Village Boundary and fronts Saratoga Avenue, which has been designated as a Grand Boulevard by the Envision San José 2040 General Plan. Although an Urban Village Plan has not yet been developed for the Paseo de Saratoga area, according to the adopted Urban Village Plans in other Urban Villages, the project might be subject to implement the following Urban Village and Grand Boulevard design features to improve pedestrian and transit facilities:

- Provide a minimum 20 feet sidewalk width along the El Paseo and Saratoga site frontage on Saratoga Avenue based on typical Urban Village requirements.
- Provide a minimum 15 feet sidewalk width along the El Paseo site frontage on Quito Road based on typical Urban Village requirements.

- Relocate and improve the current bus stop along the project frontage on Saratoga Avenue. The project should work with VTA to provide the bus stop that meets the current VTA shelter and bus stop standards at the new location.

The Saratoga Avenue and Lawrence Expressway/Quito Road intersection is within the Paseo de Saratoga Urban Village Plan area, and Saratoga Avenue is identified as a "Priority Safety Corridor" as part of *Vision Zero San Jose*. Although the current Vision Zero San Jose has not identified safety improvement plans for the corridor, the City has considered the following improvements for the intersection:

- Remove pork chop islands and tighten the corner radius at the southeast and northeast corners along the project frontages and modify the signal to accommodate pork chop removals. Removal of pork chop islands would improve the multi-modal environment by eliminating unsignalized pedestrian/vehicle conflict points, increasing visibility of pedestrians at the intersection corner, decreasing the crossing distance for pedestrians, providing safer refuge for pedestrians waiting to use the crosswalks, and providing ADA standard curb ramps.

The project applicant should work with City staff to implement the improvements if approved by the County.

Other Transportation Issues

Hexagon has the following recommendations resulting from the pedestrian access, vehicle site access, on-site circulation, and parking evaluations.

Recommendations for Site Access and Project Driveways

- The project should work with City staff to implement or contribute to the pedestrian access/traffic calming improvements at the Campbell Avenue/Hamilton Avenue intersection described above. The improvement is a VMT mitigation measure to improve the pedestrian network.
- The left-turn pocket on Saratoga Avenue to the Saratoga site should be a minimum of 120 feet long.
- A lane reduction should be considered along northbound Saratoga Avenue between the Quito Road/Lawrence Expressway intersection and the Mall Entrance intersection to accommodate a minimum 120-foot northbound left-turn pocket to the Saratoga site and a second left-turn lane from Saratoga Avenue to southbound Quito Road.
- The project should modify the traffic signal at the Saratoga Avenue/Mall Entrance intersection to provide 8-phase operation in order to enhance pedestrian crossing for the crosswalks crossing Saratoga Avenue. To accommodate the 8-phase signal, the Saratoga site driveway should include a separate left-turn lane.
- The project should implement or contribute to an in-lieu fee for the construction of a Class IV bike lane along the project frontages on Saratoga Avenue and Quito Road.
- The Saratoga site driveway should be aligned perpendicular to Saratoga Avenue.
- At the Saratoga site driveway, the first 4 parking spaces west of the loading area should be removed to provide at least 125 feet of clearance between the face of the curb and the first 90-degree parking space.
- At the Quito Road driveway, retail motorists should have the option to stay at ground level. It is recommended that the driveway not directly lead to the underground garage, but connect to a surface drive aisle.

- The mall entrance driveways on Saratoga Avenue and W. Campbell Avenue should provide adequate storage length to accommodate the maximum vehicle queue. It is recommended that the project remove the traffic circles on mall entrance driveways and reconfigure the on-site circulation to make the inbound and outbound traffic along the driveway aisle a through movement without stops within the site.
- The project would relocate the current bus stop along the project frontage on Saratoga Avenue approximately 300 feet northward to the north side of the Mall Entrance driveway. The project should work with VTA to provide the bus stop that meets the current VTA shelter and bus stop standards at the new location.

Recommendations for On-Site Circulation and Parking

- At the Saratoga site, the project should provide a turnaround space at all dead-end aisles in the parking garage to provide adequate circulation for drivers or designate parking spaces for residents.
- According to the City of San Jose Zoning Code, the project will be required to provide four loading zones at the El Paseo site for the commercial/retail uses. The project applicant should coordinate with City staff to determine if three loading zones would be adequate to serve the proposed commercial/retail uses.
- The site plan for the El Paseo site should be modified so that trucks can exit directly to Quito Road as they do today.
- For the Buildings 1 and 3 underground garage at the El Paseo site, the project should move the location of the northern garage ramp on Level B1 to align with the drive aisle and to avoid potential conflicts at the bottom of the ramp. Ultimately, to improve on-site circulation, the northern ramp should be removed or relocated.
- For the Buildings 1 and 3 underground garage at the El Paseo site, the project should assign the tandem spaces to employees and residents to ensure that all spaces are being used when possible.
- The project would be required to provide adequate bicycle parking spaces that meet City parking requirements. Additionally, the long-term parking spaces for each building should meet the parking requirements for proposed uses in each building.

Education Option

Project Trip Generation

Based on the ITE *Trip Generation Manual*, 10th Edition and applicable reductions, it is estimated that the proposed project would generate a total of 6,410 net new daily trips, with 1,525 new trips (853 inbound and 672 outbound) occurring during the AM peak hour and 447 new trips (239 inbound and 208 outbound) occurring during the PM peak hour.

Intersection Traffic Operations

The results of the intersection level of service analysis show that all of the signalized study intersections are currently operating at an acceptable level of service during the AM and PM peak hours of traffic and would continue to do so under project conditions. Therefore, the added project trips would not cause an adverse operations effect at any of the signalized study intersections.

At the Saratoga Avenue/Quito Road intersection, the intersection queuing analysis shows that the southbound left-turn queue on Saratoga Avenue exceeds the storage length under existing and background conditions. The project would increase the length of the 95th percentile queue by 2 vehicles during the AM peak hour and one vehicle during PM peak hour. As described in the non-education option, the City requires a minimum 120-foot northbound left-turn pocket on Saratoga Avenue to the Saratoga site. Extending the storage lane at the project driveway would require further shortening of the southbound left-turn pocket to Quito Road. Therefore, the addition of a second left-turn lane on the southbound approach would be required to accommodate the existing and projected queue.

The addition of a second southbound left-turn lane at the intersection can be achieved by implementing a lane reduction along northbound Saratoga Avenue between Quito Road and Mall Entrance, which would provide a lane width for the northbound left-turn pocket to the Saratoga site and a second left-turn lane from Saratoga Avenue to southbound Quito Road. The project applicant should work with City staff to implement or contribute to the improvement.

The study also evaluated three unsignalized intersections: Quito Road/Northlawn Drive, Quito Road/Cox Avenue, and Quito Road/McCoy Avenue.

At the Quito Road/Northlawn Drive intersection, the westbound approach on Northlawn Drive is estimated to experience heavy delay (equivalent to LOS F) during the AM peak hour under existing, background, and project conditions. Although AM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project), the need for intersection improvement or modification of traffic control at the intersection should be evaluated further with actual traffic counts and field observations in the future when volumes return to pre-Covid levels. It is recommended that the City evaluate the need for signalization or improvement at the intersection prior to the issuance of the occupancy permit of the project. If the City determined an improvement or signalization is warranted, it would be appropriate for the project applicant to pay a fair share contribution towards the improvement.

At the Quito Road/Cox Avenue intersection, the eastbound approach on Cox Avenue is estimated to experience heavy delay (equivalent to LOS F) during the PM peak hour under existing, background, and background plus project conditions. Although PM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project), a signal is not recommended as described under the non-education option.

At the Quito Road/McCoy Avenue intersection, the eastbound approach on McCoy Avenue is estimated to operate adequately (equivalent to LOS E) during both the AM and PM peak hours under all scenarios. The added project trips on Quito Road at the intersection would increase the delay of the eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection.

Freeway Segment Capacity Analysis

The results of the freeway segment analysis show that the education option would cause substantial increases in traffic volumes (one percent or more of freeway capacity) on one of the study freeway segments (northbound SR 85 from Winchester Boulevard to Saratoga Avenue) currently operating at LOS F during the AM peak hour. Therefore, based on CMP freeway impact criteria, one (1) of the study freeway segments would be adversely affected by the project.

Improvements to address the adverse effect on the freeway segment would require either widening the freeway or reducing the project trips. Caltrans has no plans to widen SR 85, and the cost of widening the freeway is beyond the capability of the project. In order to eliminate the adverse effect through TDM, it would be necessary to reduce project trips by 55%. This level of trip reduction is not feasible.

The City has proposed multimodal improvements surrounding the project site, which the project applicant would facilitate. These multimodal improvements would encourage the use of alternative modes of transportation and minimize the adverse effects to the freeways.

Urban Village/Grand Boulevard Requirements and Vision Zero San Jose Recommendation

The improvements mentioned for the non-education option should also be provided for the education option.

Other Transportation Issues

The recommendations for site access and project driveways for the education option are the same as the non-education option. However, a separate supplemental LTA with an updated site plan and discussions concerning on-site circulation and pick-up/drop-off would be needed in the future if the project moves forward with the education option.

In addition to the recommendations for the non-education option, Hexagon has the following recommendation resulting from the parking evaluation.

- The project would be required to provide adequate vehicle and bicycle parking spaces that meet City parking requirements.

1. Introduction

This report presents the results of the transportation analysis (TA) conducted for the mixed-use development at 1312 El Paseo de Saratoga and 1777 Saratoga Avenue in San Jose, California (see Figure 1). The transportation impacts of the project were evaluated following the standards and methodologies established by the Cities of San Jose, Saratoga, and Campbell and the Santa Clara Valley Transportation Authority (VTA)'s Congestion Management Program (CMP). Based on the City of San Jose's Transportation Analysis Policy (Council Policy 5-1) and the *Transportation Analysis Handbook* (April 2018), the TA report for the project includes a California Environmental Quality Act (CEQA) transportation analysis and a local transportation analysis (LTA).

Project Description

The site is currently occupied by a surface parking lot and multiple commercial buildings totaling 96,440 square feet (s.f.) at 1312 El Paseo de Saratoga (El Paseo site) and office buildings totaling 25,184 s.f. at 1777 Saratoga Avenue (Saratoga site). The project proposes to demolish the existing buildings and considers two development options to replace the existing buildings:

- Non-Education Option: Up to 1,100 residential dwelling units, 76,372 s.f. of retail space, 52,508 s.f. of office space, 36,120 s.f. of medical office space, and a park/plaza in the southwest corner of the site (see Figures 2, 3, and 4).
- Education Option: Up to 730 residential dwelling units, up to 67,500 s.f. of retail space, and a private K-12 school with up to 2,500 students (see Figures 5 and 6).

Under both options, the project would reconfigure the existing parking area with traffic circles within the surface parking lot from the northern most Saratoga Avenue and Campbell Avenue entrances. The surface parking lot located to the east of the proposed site would also be reconfigured. As part of the project, a northbound left-turn lane from Saratoga Avenue into the Saratoga site would be implemented. Figures 2 and 5 are not reflective of the left-turn lane. Figure 3 shows the new lane configuration for the Saratoga site.

Access to the site would be provided via existing driveways on Saratoga Avenue, Quito Road, and W. Campbell Avenue, as well as a new driveway on Saratoga Avenue. For the non-education option, the existing driveway on Quito Road would be moved approximately 120 feet north of the current location.

Non-Education Option

At the Saratoga site, the project proposes to construct a residential building with up to 280 residential unit and up to 6,000 s.f. of ground-floor retail space. Access to the site would be provided via a new full

access driveway on Saratoga Avenue, opposite to the existing mall entrance driveway to the El Paseo site (see Figure 3). The driveway would provide access to the parking garage for the site.

At the El Paseo site, the project proposes to develop the site with up to 820 residential units, 70,372 s.f. of ground-floor commercial/retail space, 52,508 s.f. of office space, and 36,120 s.f. of medical office space in three buildings (see Figure 4). Parking would be provided within three new parking garages, surface parking spaces between buildings within the site, and the existing reconfigured surface lot in the shopping mall for the retail use. The project would include a park/plaza within the southwest corner of the site and a pedestrian promenade leading to the center of the three buildings. The El Paseo site would be accessed via a new right-turn in and right-turn out driveway on Saratoga Avenue, a new right-turn in and right-turn out driveway on Quito Road (approximately 120 feet north of the existing driveway to be closed), and the existing mall entrance driveways on Saratoga Avenue and W. Campbell Avenue. The existing mall entrance driveways on Saratoga Avenue and W. Campbell Avenue would lead to a new traffic circle within the existing surface parking lot, and the traffic circle near the W. Campbell Avenue driveway would lead to a new main drive aisle.

Education Option

At the Saratoga site, the proposed land uses and access to the site under the education option would be the same as the non-education option descripted above (see Figure 3).

At the El Paseo site, the project proposes to develop the site with up to 450 residential units and up to 61,500 s.f. of ground-floor retail space in two buildings and a private K-12 school with on-site boarding in Buildings 1 and 2 (see Figure 5). Access to the El Paseo site would be the same as the non-education option. However, the Quito Road driveway would remain as existing. Parking would be provided within a new below-grade parking garage for the school and residential uses and the existing surface lot in the shopping mall for the retail use.

Proposed Private K-12 School

The school would have a capacity for 2,500 students and 500 faculty and staff. Building 2 would include dorm rooms and faculty units to house a total 600 boarding students within grades 7-12 and 60 faculty or staff. The majority of the boarders in the dorms are expected to be high school students (grades 9-12), with approximately 500 boarders. The two buildings would have classrooms, multi-purpose rooms, a gymnasium, and a cafeteria. An outdoor play area is proposed to the southeast of Building 2.

The school is anticipated to operate Monday through Friday, 7:30 AM to 4:00 PM, with early care starting at 7:00 AM and after school care provided until 8:00 PM. The school proposes to stagger drop-off and pick-up times for all grade levels.

The school would also offer classes, services, and programs to students and the community on the ground floor of Buildings 1 and 2 on weekdays, weekends, and most holidays from 3:00 PM to 8:00 PM.

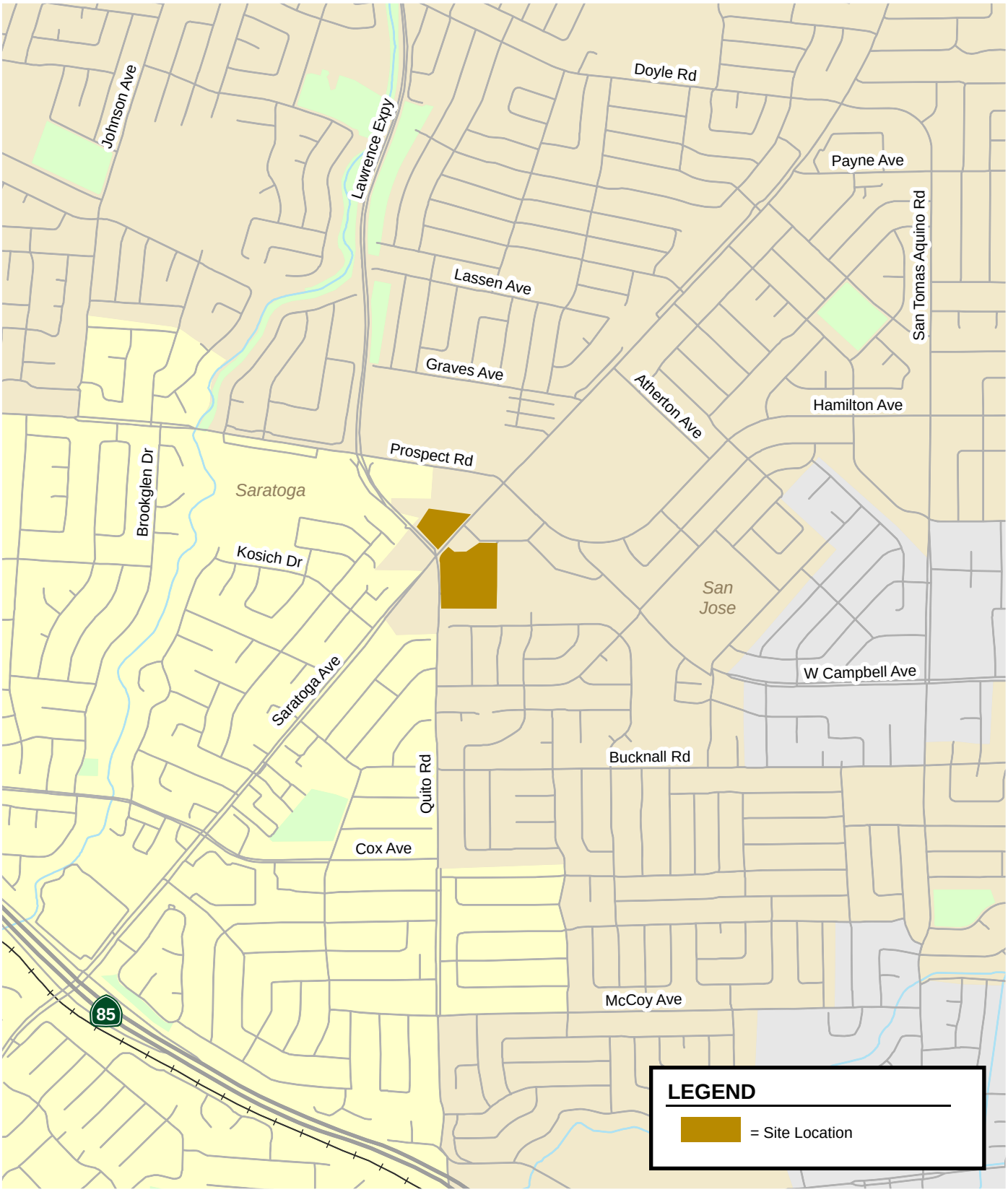


Figure 1
Site Location

NORTH
Not to Scale

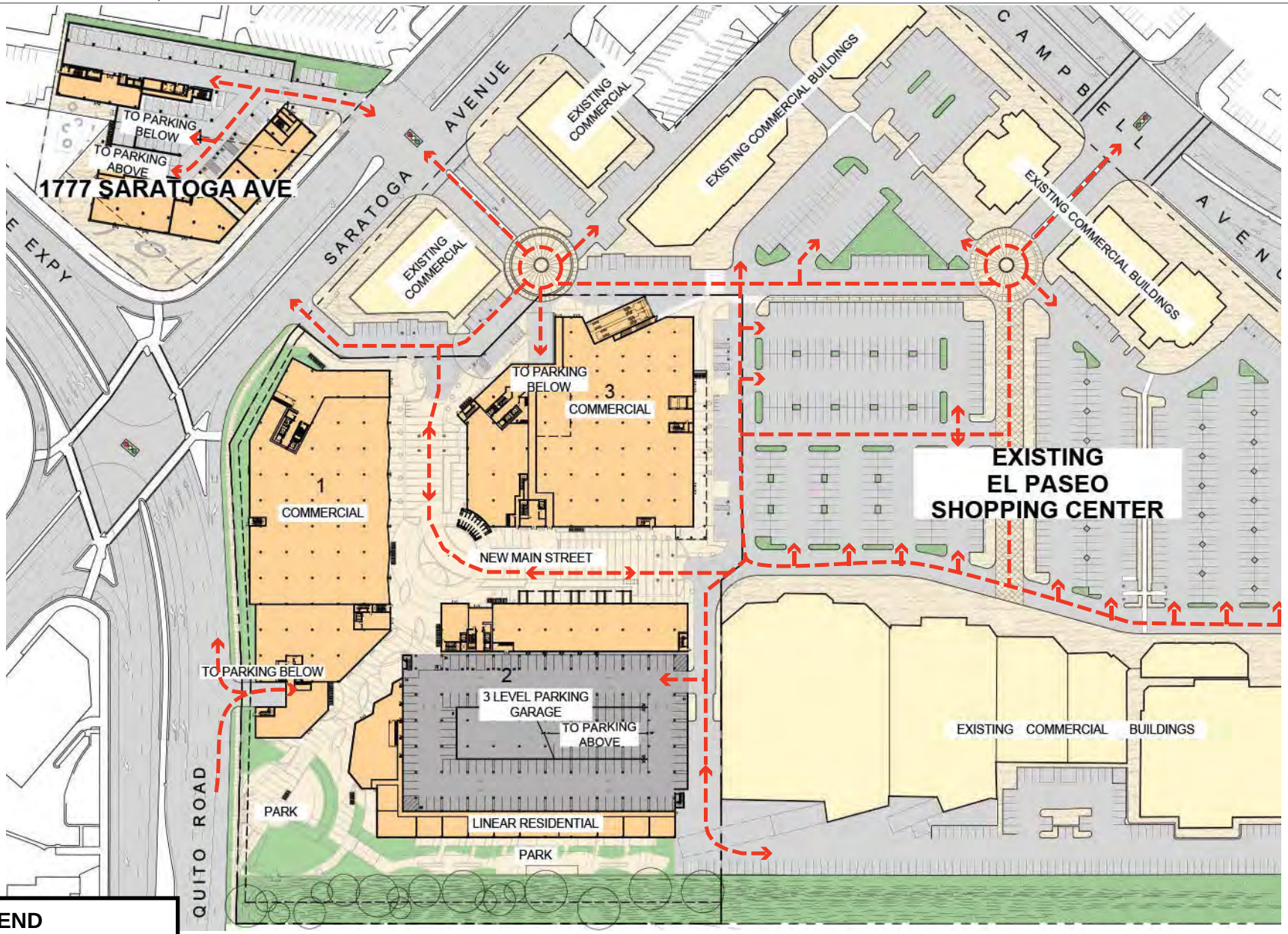


Figure 2
Overall Project Site Plan - Non-Education Option

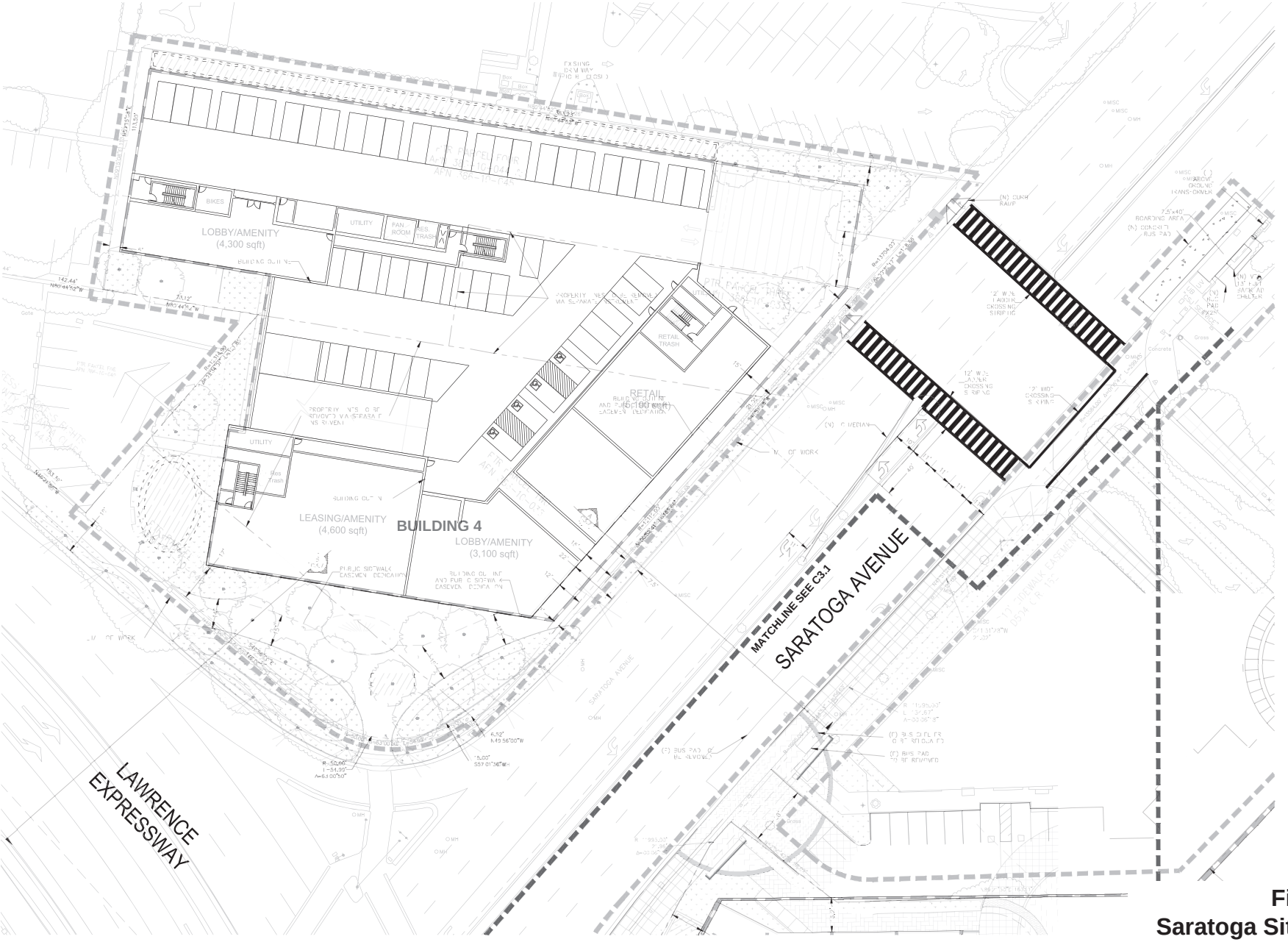


Figure 3
Saratoga Site Plan

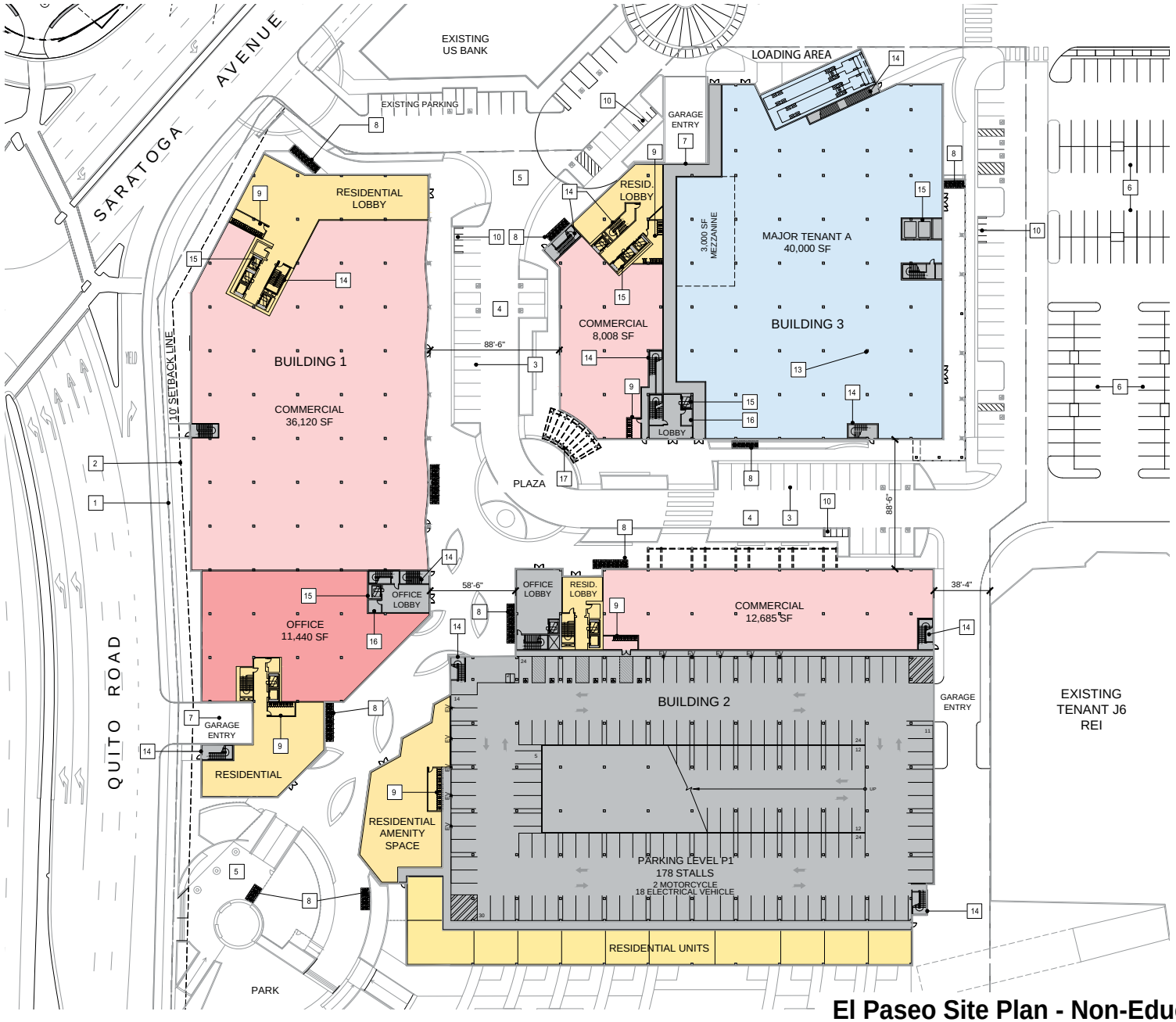


Figure 4
El Paseo Site Plan - Non-Education Option

NORTH
Not to Scale

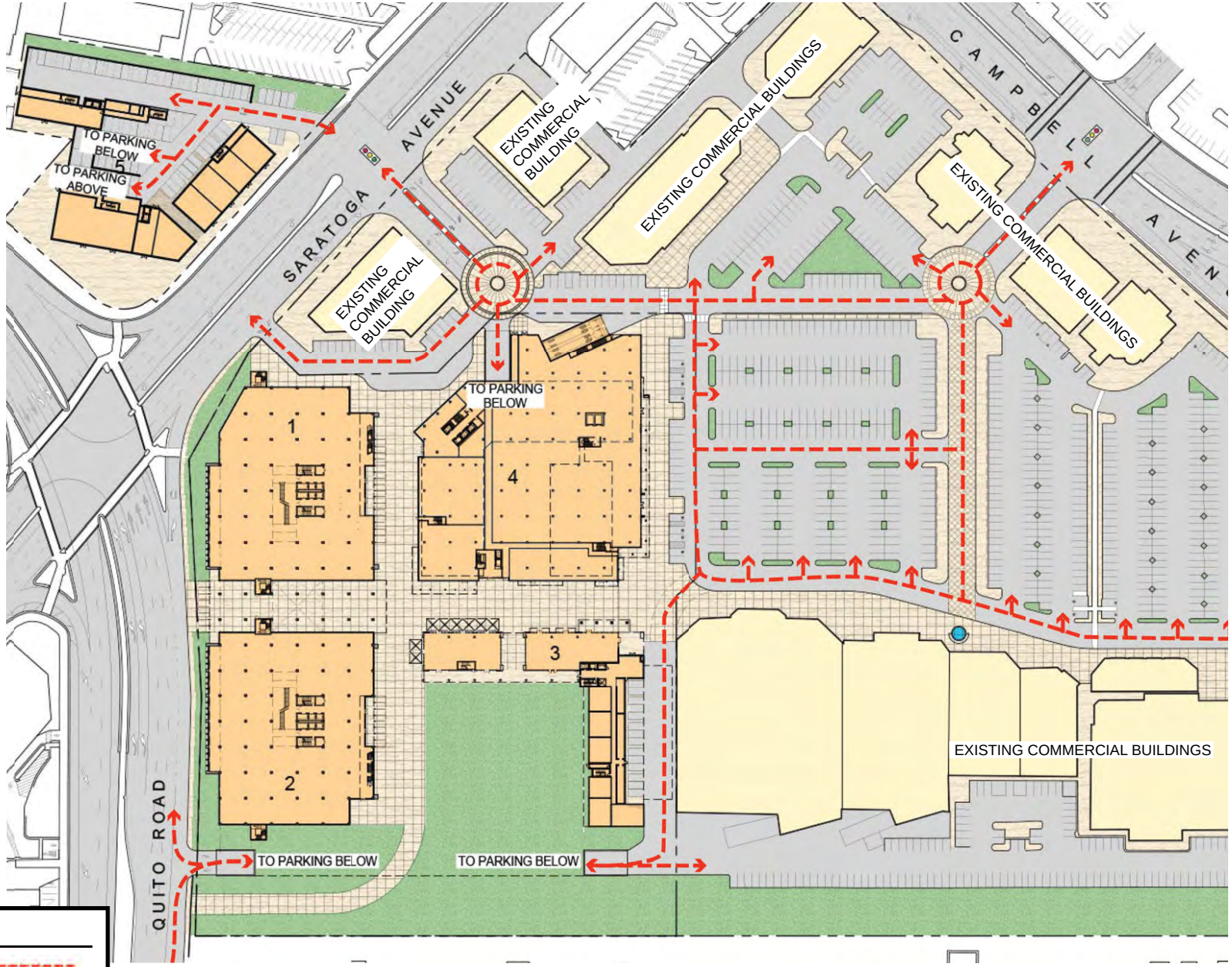


Figure 5
Overall Project Site Plan - Education Option

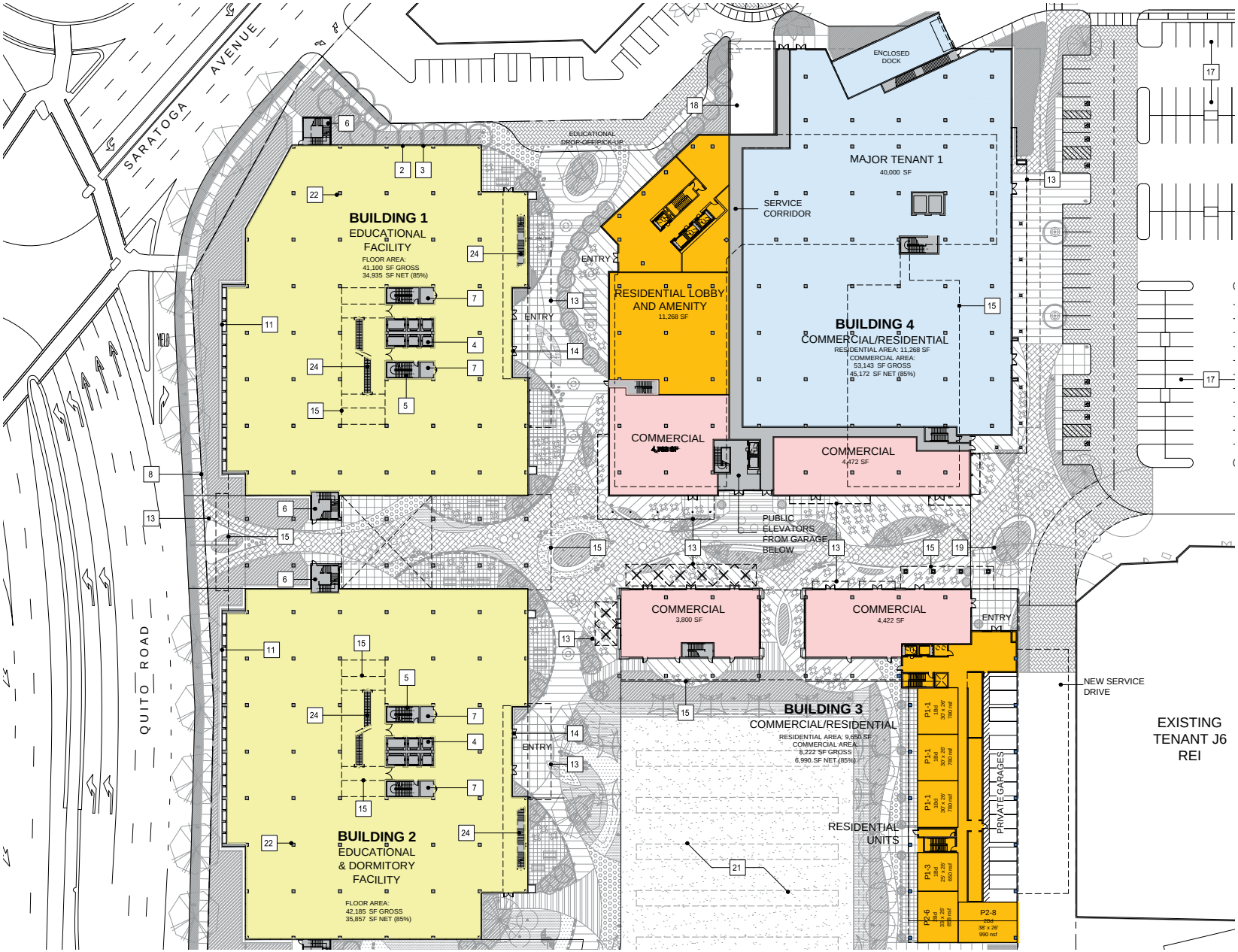


Figure 6
El Paseo Site Plan - Education Option

Urban Village and Grand Boulevard

The project site is located within the Paseo de Saratoga Urban Village per the *Envision San José 2040 General Plan*, although an Urban Village Plan has not yet been developed for the area. The Paseo de Saratoga Urban Village boundaries include the segment of Saratoga Avenue between Kosich Drive and Graves Avenue. Urban Villages are designated to provide a vibrant and inviting mixed-use settings to attract pedestrians, bicyclists, and transit users of all ages and to promote higher density housing growth in combination with a significant amount of job growth, thus supporting the General Plan's environmental goals. The urban village strategy fosters:

- Engagement of village area residents in the urban village planning process;
- Mixed residential and employment activities that are attractive to an innovative workforce;
- Revitalization of underutilized properties that have access to existing infrastructure;
- Densities that support transit use, bicycling, and walking; and
- High-quality urban design.

The project fronts Quito Road, Lawrence Expressway, and Saratoga Avenue. Saratoga Avenue is designated as a Grand Boulevard in the *Envision San José 2040 General Plan*. Grand Boulevards are designated as major transportation corridors that connect City neighborhoods.

Transportation Analysis Policy

Historically, transportation analysis has utilized delay and congestion on the roadway system as the primary metric for the identification of traffic impacts and potential roadway improvements to relieve traffic congestion that may result due to proposed/planned growth. However, the State of California has recognized the limitations of measuring and mitigating only vehicle delay at intersections and in 2013 passed Senate Bill (SB) 743, which requires jurisdictions to stop using congestion and delay metrics, such as Level of Service (LOS), as the measurement for CEQA transportation analysis. With the adoption of SB 743 legislation, public agencies are required to base the determination of transportation impacts on VMT rather than level of service.

In adherence to SB 743, the City of San Jose has adopted a new Transportation Analysis Policy, Council Policy 5-1. The policy replaces its predecessor (Council Policy 5-3) and establishes the thresholds for transportation impacts under the CEQA based on VMT instead of LOS. The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses. The new transportation policy aligns with the currently adopted General Plan which seeks to focus new development growth within Planned Growth Areas, bringing together office, residential, and supporting service land uses to internalize trips and reduce VMT. All new development projects are required to analyze transportation impacts using the VMT metric and conform to Council Policy 5-1.

CEQA Transportation Analysis Scope

The CEQA transportation analysis for the project consists of a project-level VMT impact analysis and a cumulative evaluation that demonstrates the project's consistency with the Envision San Jose 2040 General Plan.

VMT Analysis Scope

The City of San Jose's Transportation Analysis Policy establishes procedures for determining project impacts on VMT based on project description, characteristics, and/or location. VMT is the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT measures the full

distance of personal motorized vehicle-trips with one end within the project. Typically, development projects that are farther from other, complementary land uses (such as a business park far from housing) and in areas without transit or active transportation infrastructure (bike lanes, sidewalks, etc.) generate more driving than development near complementary land uses with more robust transportation options. Therefore, developments located in a central business district with high density and diversity of complementary land uses and frequent transit services are expected to internalize trips and generate shorter and fewer vehicle trips than developments located in a suburban area with low density of residential developments and no transit service in the project vicinity.

A project's VMT is compared to the appropriate thresholds of significance based on the project location and type of development. When assessing a residential project, the project's VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita. When assessing an office or industrial project, the project's VMT is divided by the number of employees to determine the VMT per employee. The VMT thresholds of significance are established based on the average area VMT.

To identify whether a project would result in VMT impacts and whether the impacts can be mitigated, the City has created heat maps for residential and employment developments (Figures 7 and 8, respectively) that show the current VMT per capita and per worker based on the locations of residences and jobs. Areas are color-coded based on the level of existing VMT:

- Green-filled areas are parcels with existing VMT below the thresholds of significance.
- Yellow-filled areas are parcels with existing VMT close to the average VMT level.
- Orange-filled areas are parcels with existing VMT greater than the thresholds of significance. However, a project's VMT impact may be mitigated by implementing VMT-reducing measures.
- Red-filled areas are parcels with existing VMT greater than the residential or employee threshold. Implementing VMT-reducing measures will not be sufficient to reduce a project's VMT to less than the threshold of significance.

As shown in Figure 7, the project site is in an orange area for residents, which means that the current VMT level per capita in the project area is greater than the threshold of significance. As shown in Figure 8, the project site is in a yellow area for workers, which means that the current VMT level per worker in the project area is close to the average VMT level but greater than the thresholds of significance for office uses. However, the project's VMT impact may be mitigated by implementing the VMT reducing measures described in Chapter 3.

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT Evaluation Tool to streamline the analysis for residential and employment development projects. For large developments and retail developments that require VMT analysis, the City's Travel Demand Model (model) is used to determine project VMT. The project would include a school for which the City's VMT tool is not capable of estimating VMT. Therefore, based on direction from City staff, an approach has been developed to estimate the school's VMT. The VMT analysis approach is described under CEQA Transportation Analysis Methodology below.

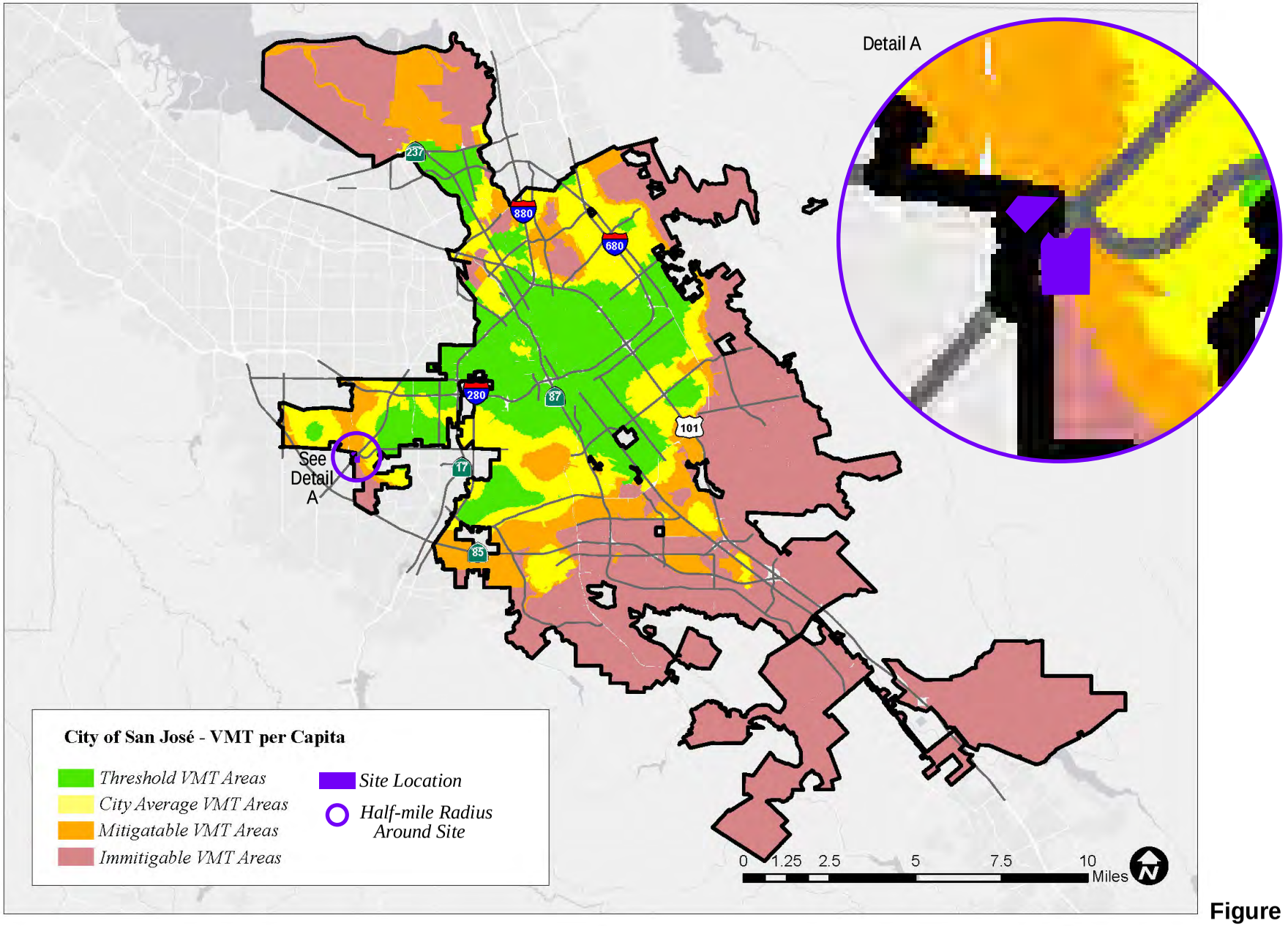


Figure 7
VMT Heat Map for Residents in San Jose

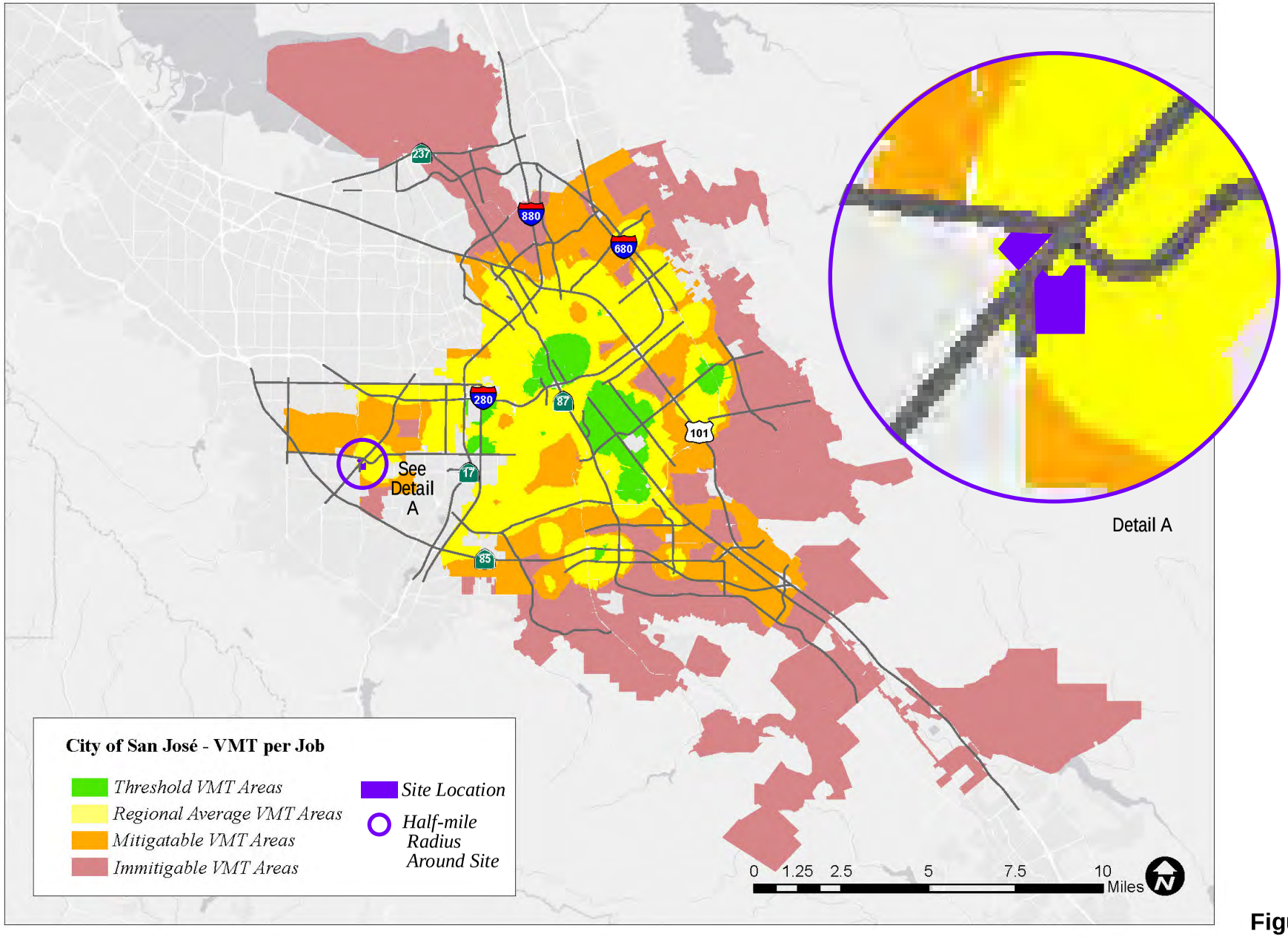


Figure 8
VMT Heat Map for Workers in San Jose

Cumulative Evaluation

Projects that require a CEQA transportation analysis must demonstrate consistency with the *Envision San José 2040 General Plan* to address cumulative impacts. Consistency with the City's General Plan is based on the project's density, design, and conformance to the General Plan goals and policies. If a project is consistent with General Plan, it will be considered as part of the cumulative solution to meet the General Plan's long-range transportation goals, and therefore, will result in a less-than-significant cumulative impact. If a project is determined to be inconsistent with the General Plan, a cumulative impact analysis is required as part of the as part of the General Plan amendment to determine the project's cumulative effects.

General Plan Policies Addressing VMT

The Circulation Element of the *Envision San José 2040 General Plan* includes a set of balanced, long-range, multi-modal transportation goals and policies that provide for a transportation network that is safe, efficient, and sustainable (minimizes environmental, financial, and neighborhood impacts). These transportation goals and policies are intended to improve multi-modal accessibility to all land uses and create a city where people are less reliant on driving to meet their daily needs. The *Envision San José 2040 General Plan* contains the following policies to encourage the use of non-automobile transportation modes to minimize vehicle trip generation and reduce VMT:

- Accommodate and encourage the use of non-automobile transportation modes to achieve San Jose's mobility goals and reduce vehicle trip generation and VMT (TR-1.1);
- Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects (TR-1.2);
- Through the entitlement process for new development, projects shall be required to fund or construct needed transportation improvements for all transportation modes, giving first consideration to improvement of bicycling, walking and transit facilities and services that encourage reduced vehicle travel demand (TR-1.4);
- Require new development where feasible to provide on-site facilities such as bicycle storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, or share in the cost of improvements (TR-2.8);
- As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute towards transit ridership, and require that new development is designed to accommodate and provide direct access to transit facilities (TR-3.3);
- Require large employers to develop and maintain TDM programs to reduce the vehicle trips generated by their employees (TR-7.1);
- Balance business viability and land resources by maintaining an adequate supply of parking to serve demand while avoiding excessive parking supply that encourages automobile use (TR-8.2);
- Support using parking supply limitations and pricing as strategies to encourage the use of non-automobile modes (TR-8.3);
- Discourage, as part of the entitlement process, the provision of parking spaces significantly above the number of spaces required by code for a given use (TR-8.4);

- Allow reduced parking requirements for mixed-use developments and for developments providing shared parking or a comprehensive transportation demand management (TDM) program, or developments located near major transit hubs or within Urban Villages and other Growth Areas (TR-8.6);
- Within new development, create and maintain a pedestrian-friendly environment by connecting the internal components with safe, convenient, accessible, and pleasant pedestrian facilities and by requiring pedestrian connections between building entrances, other site features, and adjacent public streets (CD-3.3);
- Create a pedestrian-friendly environment by connecting new residential development with safe, convenient, accessible, and pleasant pedestrian facilities. Provide such connections between new development, its adjoining neighborhood, transit access points, schools, parks, and nearby commercial areas (LU-9.1);
- Facilitate the development of housing close to jobs to provide residents with the opportunity to live and work in the same community (LU-10.5).

CEQA Transportation Analysis Methodology

Screening for VMT Analysis

The City of San Jose's *Transportation Analysis Handbook* includes screening criteria for projects that are expected to result in less-than-significant VMT impacts based on the project description, characteristics and/or location. Projects that meet the screening criteria do not require a CEQA transportation analysis but may be required to provide an LTA. The type of development projects that may meet screening criteria include small infill projects, local-serving retail, or local-serving public facilities.

The proposed residential use under either option does not meet the screening criteria set forth in the *Transportation Analysis Handbook* for small infill residential projects of multi-family housing of 25 units or less. The project proposes to construct 52,508 s.f. of office space and 36,120 s.f. of medical office space under the non-education option. Since the City has not established screening criteria for medical offices, based on direction from the City staff, the vehicle trips generated by the medical office were converted to an equivalent office square footage, for which the City has established a screening criterion and threshold of significance. Medical office exhibits similar vehicle mode share characteristics, travel patterns, and trip length characteristics to that of office uses. Based on the conversion process, the proposed medical office space would generate daily trips equivalent to 129,100 square feet of office space (see Table 1). With the proposed office space, the total daily trips generated by the medical office and office uses are equivalent to 181,608 square feet of office space, which is greater than the screening criterion for office developments (10,000 s.f. or less). Therefore, a CEQA transportation analysis is required to evaluate the project's VMT relative to the threshold of significance.

Under the non-education and education option, the project would remove a total of 96,440 s.f. of commercial space and construct 76,372 s.f. and 67,500 s.f. of retail use, respectively. Because the project would not result in an increase in retail space on the site, the proposed retail use is not expected to cause an increase in VMT and is expected to result in a less-than-significant VMT impact. Thus, a VMT analysis is not required for the retail use under both options.

For the school use, the City of San Jose has determined that the project VMT per student needs to be compared to the existing VMT per student.

Thus, the project requires a detailed VMT analysis for the residential and office uses (general office and medical office) under the non-education option and the residential and school uses under the education option.

Table 1
Equivalent Office Space for Medical Office Space

Land Use	Size	Daily	
		Trip Rate	Trips
Proposed Land Use			
Medical Clinic/Office[1]	36,120 s.f.	34.80	1,257
Equivalent Land Use			
General Office[2]	129,100 s.f.	9.74	1,257

Source: ITE *Trip Generation Manual*, 10th Edition, 2017.
s.f. = square feet
Notes:
1. Average daily trip rate (in trips per 1,000 s.f.) for Medical-Dental Office Building (ITE Land Use 720) is used.
2. Average daily trip rate (in trips per 1,000 s.f.) for General Office (ITE Land Use 710) is used.

Thresholds of Significance

For a project that does not meet the screening criteria, a project's VMT impact is determined by comparing the project VMT to the appropriate thresholds of significance (see Table 2) based on the type of development. The VMT thresholds of significance are established based on the existing citywide average VMT level for residential uses and the existing regional average VMT level for employment uses.

The project does not meet the screening criteria for the proposed residential, office/medical office, and school uses, and a VMT analysis is required to evaluate the project's VMT against the thresholds of significance for these proposed uses, as listed below.

- For the residential use, the threshold of significance is the citywide average VMT per capita minus 15 percent, which calculates to 10.12 daily miles per capita.
- For the office use, the threshold of significance is the regional average VMT per employee minus 15 percent, which calculates to 12.21 daily miles per employee.
- For the proposed school, the threshold of significance is defined as the existing VMT per student (see Appendix A for a detailed discussion of the student VMT analysis methodology).

If a project is found to have a significant impact on VMT, the impact must be reduced by modifying the project to reduce its VMT to an acceptable level (below the established thresholds of significance applicable to the project) and/or mitigating the impact through multimodal transportation improvements or establishing a trip cap.

Projects that trigger a VMT impact can assess a variety of the four strategies described below under VMT Evaluation Tool to reduce impacts. A significant impact is said to be satisfactorily mitigated when the strategies and VMT reductions implemented render the VMT impact less than significant.

VMT Analysis Methodology

To determine whether a project would result in CEQA transportation impacts related to VMT, the City has developed the San Jose VMT evaluation tool to streamline the analysis for residential, office, and industrial projects with local traffic. For non-residential or non-office projects, very large projects, or projects that can potentially shift travel patterns, the City's Travel Demand Model (model) can be used to determine project VMT.

Table 2
VMT Thresholds of Significance for Development Projects

Project Types	Significance Criteria	Current Level	Threshold
Residential Uses	Project VMT per capita exceeds existing citywide average VMT per capita minus 15 percent, or existing regional average VMT per capita minus 15 percent, whichever is lower.	11.91 VMT per capita (Citywide Average)	10.12 VMT per capita
General Employment Uses	Project VMT per employee exceeds existing regional average VMT per employee minus 15 percent.	14.37 VMT per employee (Regional Average)	12.21 VMT per employee
Industrial Employment Uses	Project VMT per employee exceeds existing regional average VMT per employee.	14.37 VMT per employee (Regional Average)	14.37 VMT per employee
Retail / Hotel / School Uses	Net increase in existing regional total VMT.	Regional Total VMT	Net Increase
Public / Quasi-Public Uses	In accordance with most appropriate type(s) as determined by Public Works Director.	Appropriate levels listed above	Appropriate thresholds listed above
Mixed-Uses	Evaluate each land use component of a mixed-use project independently, and apply the threshold of significance for each land use type included.	Appropriate levels listed above	Appropriate thresholds listed above
Change of Use / Additions to Existing Development	Evaluate the full site with the change of use or additions to existing development, and apply the threshold of significance for each project type included.	Appropriate levels listed above	Appropriate thresholds listed above
Area Plans	Evaluate each land use component of the Area Plan independently, and apply the threshold of significance for each land use type included.	Appropriate levels listed above	Appropriate thresholds listed above

Source: City of San Jose, *2018 Transportation Analysis Handbook* , Table 2.

The VMT evaluation tool evaluates a list of selected VMT reduction measures that can be applied to a project to reduce the project VMT. There are four strategy tiers whose effects on VMT can be calculated with the VMT evaluation tool:

1. Project characteristics (e.g., density, diversity of uses, design, and affordability of housing) that encourage walking, biking and transit uses.
2. Multimodal network improvements that increase accessibility for transit users, bicyclists, and pedestrians,
3. Parking measures that discourage personal motorized vehicle-trips, and

4. Transportation demand management (TDM) measures that provide incentives and services to encourage alternatives to personal motorized vehicle-trips.

The first three strategies – land use characteristics, multimodal network improvements, and parking – are physical design strategies that can be incorporated into the project design. TDM includes programmatic measures that aim to reduce VMT by decreasing personal motorized vehicle mode share and by encouraging more walking, biking, and riding transit. TDM measures should be enforced through annual trip monitoring to assess the project's status in meeting the VMT reduction goals.

VMT Modeling for Proposed School Use

As described above, for non-residential or non-office projects, very large projects, or projects that can potentially shift travel patterns, the City's model can be used to determine project VMT. Given the size and land use of the proposed school, the model was used to analyze the VMT impact of the proposed school (see Appendix A for a detailed discussion of the student VMT analysis methodology). The project VMT per student estimated using the model was compared to the existing VMT per student (the threshold of significance) to determine the VMT impact of the school.

Local Transportation Analysis Scope

The LTA evaluates potential adverse operational effects that may arise due to a new development on transportation system, site access, circulation, and other safety-related elements in the proximate area of the project.

As part of the LTA, a project is required to conduct an intersection operations analysis if the project is expected to add 10 or more vehicle trips per hour per lane to any signalized intersection that is currently operating at LOS D or worse, a CMP intersection outside of the City's infill opportunity zones, or outside the City limits with potential to be affected by the project. Based on these criteria, as outlined in the City's *Transportation Analysis Handbook,* a list of study intersections was developed. Note that intersections that do not meet all the criteria may be added to the list of study intersections at the City's discretion. The LTA comprises an analysis of AM and PM peak-hour traffic conditions for the following 21 signalized intersections and three unsignalized intersections (see Figure 9). Four study intersections are located in Saratoga, and one study intersection is located in Campbell.

1. Saratoga Avenue and Payne Avenue
2. Saratoga Avenue and Graves Avenue
3. Saratoga Avenue and Prospect Road/Campbell Avenue (CMP intersection)
4. Saratoga Avenue and Mall Entrance
5. Lawrence Expressway/Quito Road and Saratoga Avenue (CMP intersection)
6. Saratoga Avenue and Cox Avenue [City of Saratoga intersection]
7. Saratoga Avenue and SR 85 NB Ramps [City of Saratoga intersection]
8. Saratoga Avenue and SR 85 SB Ramps [City of Saratoga intersection]
9. Johnson Avenue and Prospect Road
10. Lawrence Expressway and Prospect Road (CMP intersection)
11. Mall Entrance and Prospect Road
12. Mall Entrance and Campbell Avenue
13. Campbell Avenue and Hamilton Avenue (CMP intersection)
14. Northlawn Drive/Fallbrook Avenue and Campbell Avenue
15. San Tomas Aquino Road and Hamilton Avenue
16. San Tomas Aquino Road and Campbell Avenue [City of Campbell intersection]
17. Quito Road and Bucknall Road
18. Quito Road and Northlawn Drive (unsignalized)

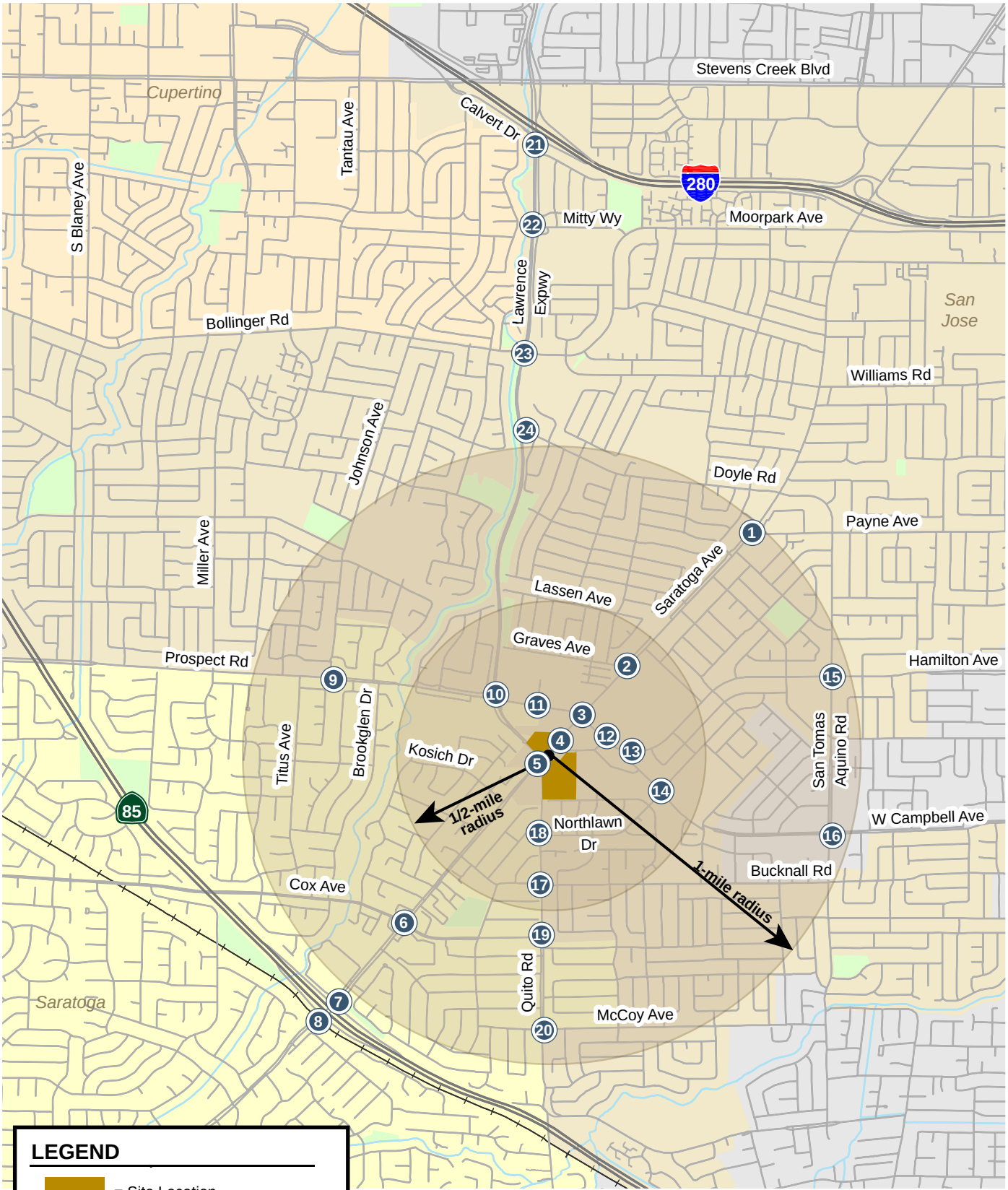


Figure 9
Site Location and Study Intersections

NORTH
Not to Scale

19. Quito Road and Cox Avenue (unsignalized)
20. Quito Road and McCoy Avenue (unsignalized) [City of Saratoga intersection]
21. Lawrence Expressway and Calvert Drive/I-280 Southbound On-Ramp (CMP intersection)
22. Lawrence Expressway and Mitty Way
23. Lawrence Expressway and Bollinger Road/Moorpark Avenue (CMP intersection)
24. Lawrence Expressway and Doyle Road

Six signalized study intersections are designated as CMP intersections, all of which are located in the City of San Jose. The VTA administers the CMP and monitors the PM peak-hour traffic conditions of CMP intersections.

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours. The weekday AM peak hour is generally between 7:00 and 9:00 AM and the weekday PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on roadways.

Traffic conditions typically are evaluated for the following scenarios: Existing, Background, and Background Plus Project conditions, as well as Cumulative conditions for intersections in adjacent jurisdictions. The study includes the study intersections in the Cities of Saratoga and Campbell. However, because pending developments in the Cities of Saratoga and Campbell would not add notable trips to their study intersections, traffic conditions under cumulative conditions would be similar to background conditions. Therefore, a cumulative scenario was not evaluated.

Traffic conditions were evaluated for the following scenarios:

- ***Existing Conditions.*** Existing AM and PM peak-hour traffic volumes were obtained from the City of San Jose, 2018 CMP monitoring report, and previous turning-movement counts. Due to Covid-19 and regional shelter-in-place orders, new traffic counts cannot be collected for the study. Therefore, a growth rate of one percent per year was applied to the traffic counts that are more than two years old to estimate the traffic volumes for existing conditions. Traffic volumes for the study intersections without available count data were estimated from the traffic volumes of the adjacent study intersections.
- ***Background Conditions*.** Background traffic volumes were estimated by adding to existing peak-hour volumes the projected volumes from approved but not yet completed developments. The added traffic from approved but not yet completed developments was provided by the City of San Jose in the form of the Approved Trips Inventory (ATI). The Cities of Saratoga and Campbell provided a list of approved and pending developments. Approved developments in the study area were included under background conditions. Background conditions represent the baseline conditions to which project conditions are compared for the purpose of determining potential adverse operational effects of the project.
- ***Background Plus Project Conditions.*** Background plus project traffic volumes were estimated by adding to background traffic volumes the additional traffic generated by the project. Background plus project conditions were evaluated relative to background conditions to determine potential adverse project effects.

The LTA also includes a freeway segment capacity analysis, a freeway ramp operations analysis, a vehicle queuing analysis at selected intersections, a review of site access and on-site circulation, an evaluation of potential effects to transit, bicycle, and pedestrian facilities, and a parking analysis for the non-education option. A freeway segment capacity analysis, a freeway ramp operations analysis, and a vehicle queuing analysis at selected intersections and the project driveways are also included for the education option.

Intersection Operations Analysis Methodology

This section presents the methods used to determine the traffic conditions at the study intersections and the potential adverse operational effects due to the project. It includes descriptions of the data requirements, the analysis methodologies, the applicable intersection level of service standards, and the criteria used to determine adverse effects on intersection operations.

Data Requirements

The data required for the analysis were obtained from the Cities of San Jose, Saratoga, and Campbell, the 2018 CMP Annual Monitoring Report, previous traffic studies, and Google Earth. The following data were collected from these sources:

- existing traffic volumes
- lane configurations
- signal timing and phasing
- approved project trips
- pending project list

Level of Service Analysis Methodologies and Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The analysis methods are described below.

The signalized study intersections located within the Cities of San Jose, Saratoga, and Campbell were evaluated based on each city's standard. The CMP intersections and intersections on Lawrence Expressway were evaluated based on the CMP and Santa Clara County standard.

Signalized Intersections

The Cities of San Jose, Saratoga, and Campbell evaluate level of service at signalized intersections based on the 2000 *Highway Capacity Manual (HCM)* level of service methodology using TRAFFIX software. Since TRAFFIX is the level of service analysis software for the CMP signalized intersections, the Cities of San Jose, Saratoga, and Campbell employ the CMP defaults values for the analysis parameters. This HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. The correlation between average delay and level of service is shown in Table 3.

Signalized study intersections are subject to the local municipalities' level of service standards. The City of San Jose has established LOS D as the minimum acceptable intersection operations standard for all signalized intersections unless superseded by an Area Development Policy. Six and two of the study intersections in San Jose are CMP intersections and on Lawrence Expressway, respectively, which are subject to the CMP and County standard of LOS E. The Cities of Saratoga and Campbell level of service standards are LOS D for city-controlled signalized intersections.

TRAFFIX software was used to analyze intersection operations and adverse intersection effects based on the increases in critical-movement delay and the volume-to-capacity ratio (v/c) between no-project conditions and project conditions. The thresholds for adverse intersection effects are described under Adverse Intersection Operations Effects below.

Table 3
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B+ B B-	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0
C+ C C-	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0
D+ D D-	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lenghts, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0
E+ E E-	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.
VTA Traffic Level of Service Analysis Guidelines (June 2003), Table 2.

Unsignalized Intersections

The Cities of San Jose, Saratoga, and Campbell have not established a level of service standard for unsignalized intersections. The stop-controlled study intersections were analyzed for potential operational issues.

City of San Jose Definition of Adverse Intersection Operations Effects

According to the City of San Jose's *Transportation Analysis Handbook*, an adverse effect on intersection operations would occur if for either peak hour:

1. The level of service at the intersection degrades from an acceptable level (LOS D or better) under background conditions to an unacceptable level under background plus project conditions, or

2. The level of service at the intersection is an unacceptable level (LOS E or F) under background conditions and the addition of project trips cause both the critical-movement delay at the intersection to increase by four (4) or more seconds *and* the volume-to-capacity ratio (v/c) to increase by one percent (.01) or more.

The exception to criterion 2 above applies when the addition of project traffic reduces the amount of average control delay for critical movements, i.e., the change in average control delay for critical movements are negative. In this case, the threshold is when the project increases the critical v/c value by 0.01 or more.

Adverse effects at signalized intersections can be addressed by one of the following approaches:

- Construct improvements to the subject intersection or other roadway segments of the Citywide transportation system to increase overall capacity, or
- Reduce project-generated vehicle trips (e.g., implement a "trip cap") to eliminate the adverse operational effects and restore intersection operations to background conditions. The extent of trip reduction should be set at a level that is realistically attainable through proven methods of reducing trips.

Cities of Campbell and Saratoga Definition of Adverse Intersection Operations Effects

City of Campbell

According to the City of Campbell level of service standards, the project is said to create an adverse effect on intersection operations at a local signalized intersection if for either peak hour, either of the following conditions occurs:

1. For intersections with an established LOS D standard, the addition of project-generated traffic causes operation of the intersection to deteriorate from an acceptable level of service to an unacceptable level of service (LOS E or F) or
2. For intersections with an established LOS E standard, the addition of project-generated traffic causes operation of the intersection to deteriorate from an acceptable level of service to an unacceptable level of service (LOS F).

A level of service deficiency by the City of Campbell standard is said to be satisfactorily improved when improvements are implemented that would restore intersection level of service to no-project conditions or better.

City of Saratoga

According to the City of Saratoga level of service standard, the project is said to create an adverse effect on intersection operations at a signalized intersection if for either peak hour, either of the following conditions occurs:

1. The level of service at the intersection degrades from an acceptable level (LOS D or better) under existing conditions to an unacceptable LOS E or F under existing plus project conditions, or
2. The level of service at the intersection is an unacceptable level (LOS E or F) under existing conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four (4) or more seconds *and* the volume-to-capacity ratio (v/c) to increase by .01 or more.

An exception to the second rule applies when the addition of project traffic reduces the amount of average delay for critical movements (i.e., the change in average delay for critical movements is

negative). In this case, the threshold of significance is an increase in the critical v/c value by 0.01 or more.

A level of service deficiency by the City of Saratoga standard is said to be satisfactorily improved when improvements are implemented that would restore intersection level of service to no-project conditions or better.

CMP and County Definition of Level of Service Deficiencies

Six of the study intersections in San Jose are CMP-designated intersections. Two of the non-CMP study intersections are on Lawrence Expressway. These intersections are subject to the CMP and County standard. The project is said to create a level of service deficiency on traffic conditions at a CMP signalized intersection or County-controlled expressway intersection if for either peak hour:

1. The level of service at the intersection degrades from an acceptable level (LOS E or better) under no-project conditions to an unacceptable LOS E or F when project generated traffic is added, or
2. The level of service at the intersection is an unacceptable level (LOS F) under no-project conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four (4) or more seconds *and* the volume-to-capacity ratio (v/c) to increase by one percent (0.01) or more.

An exception to criterion 2 above applies when the addition of project traffic reduces the amount of average delay for critical movements (i.e. the change in average delay for critical movements is negative). In this case, the threshold is an increase in the critical v/c value by 0.01 or more.

A level of service deficiency by the CMP/County standard is said to be satisfactorily improved when improvements are implemented that would restore intersection level of service to no project conditions or better.

Intersection Vehicle Queuing Analysis

The analysis of intersection operations is typically supplemented with a vehicle queuing analysis at study intersections where the project would add a substantial number of vehicle trips to the left-turn movements or stop-controlled approaches. The analysis provides a basis for estimating future left-turn pocket storage requirements at the study intersections and is presented for informational purposes only, since the City of San Jose has not defined a policy related to queuing. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
λ = average # of vehicles in the queue per lane (vehicles per hr per lane/signal cycles per hr)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles for a particular left-turn movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the left-turn movement. This analysis thus provides a basis for estimating future turn pocket storage requirements at intersections.

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Thus, turn pocket storage designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time for a signalized movement. Vehicle queuing at unsignalized intersections are evaluated based on the delay experienced at the specific study turn movement.

Freeway Ramp Analysis Methodology

The VTA's *Transportation Impact Analysis (TIA) Guidelines* recommends a TA include a queuing analysis for freeway on-ramps with existing or planned ramp meters, and off-ramps controlled by signals at junctions with local streets. The SR 85/Saratoga Avenue interchange provides access to the freeway system from the project site. Therefore, a freeway ramp traffic operations analysis was conducted for the following ramps:

- SR 85 Southbound Off-Ramp to Saratoga Avenue
- SR 85 Northbound Off-Ramp to Saratoga Avenue

On-ramps were not analyzed as all on-ramps from Saratoga Avenue to SR 85 are not metered during peak commute periods. Thus, vehicles may travel freely onto the freeway without experiencing delay due to a meter.

A freeway ramp operations analysis was performed to identify the effects of project traffic on the vehicle queues at the signal-controlled off-ramps. Ramp operations at the study ramps were based on the 95th percentile queue. It should be noted that the evaluation of freeway ramps is recommended but not required based on the VTA's *TIA Guidelines*, nor are there adopted methodologies and impact criteria for the analysis of freeway ramps.

Freeway Segment Capacity Evaluation

The City is still required to conform to the requirements of the VTA which establishes a uniform program for evaluating the transportation impacts of land use decisions on the designated CMP Roadway System. The VTA's CMP has yet to adopt and implement guidelines and standards for the evaluation of the CMP roadway system using VMT. Therefore, the effects of the proposed project on freeway segments in the vicinity of the project area following the current methodologies as outlined in the *VTA TIA Guidelines*, was completed. However, this analysis is presented for informational purposes only. The freeway segments were evaluated for the following SR 85 segments in the vicinity of the project area.

- S De Anza Boulevard to Saratoga Avenue
- Saratoga Avenue to Winchester Boulevard

Report Organization

This report has a total of six chapters. Chapter 2 describes existing transportation conditions including the existing roadway network, transit services, and bicycle and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including the project VMT impact analysis, mitigation measures to reduce the VMT impact, and cumulative transportation impact assessment. Chapter 4 describes the local transportation analysis for the non-education option including operations of study intersections, the methods used to estimate project-generated traffic, the project's effects on the study intersections, and an analysis of other transportation issues including freeway ramp operations,

freeway segment capacity, intersection vehicle queuing, site access and circulation, parking, and potential project effects on transit services, and bicycle and pedestrian facilities. Chapter 5 describes the limited local transportation analysis for the education option. Chapter 6 presents the conclusions of the transportation analysis.

2. Existing Transportation Conditions

This chapter describes the existing conditions of the transportation system within the study area of the project, including the roadway network, transit service, and pedestrian and bicycle facilities. The analysis of existing intersection operations is included as part of the local transportation analysis (see Chapter 4).

Existing Roadway Network

Regional access to the project site is provided via State Route 85 (SR 85). Direct access to the site is provided via Saratoga Avenue, W. Campbell Avenue, and Quito Road. Other roadways in the project vicinity include Lawrence Expressway, Prospect Road, and Hamilton Avenue. These facilities are described below.

SR 85 is a six-lane freeway (two mixed-flow lanes and one high occupancy vehicle (HOV) lane in each direction) in the vicinity of the site. It extends from its starting point at US 101 in South San Jose westward and northward to Mountain View, where it ends as it again merges with US 101. Access to the project site is provided via its interchange with Saratoga Avenue.

Lawrence Expressway is a six-lane north-south expressway that extends from Quito Road at Saratoga Avenue in the south to Santa Clara in the north. Near the project site, Lawrence Expressway has a raised, landscaped median with left-turn pockets provided at intersections. Lawrence Expressway has a posted speed limit of 50 mph near the project vicinity. Sidewalks are provided for a short segment between Saratoga Avenue and Prospect Road along both sides of the street. On-street parking is prohibited on both sides of the street. Lawrence provides access to both the Saratoga and El Paseo sites via its intersection with Saratoga Avenue.

Saratoga Avenue is a north-south designated Grand Boulevard extending from Fallon Avenue in the north to the City of Saratoga in the south. In the vicinity of the project, Saratoga Avenue has six lanes north of Quito Road and four lanes south of Kosich Drive. It transitions from six lanes to four lanes between Quito Road and Kosich Drive. It has a raised, landscaped median with left-turn pockets provided at intersections. Saratoga Avenue has sidewalks on both sides of the street and has a posted speed limit of 35 miles per hour (mph). On-street parking is permitted on both sides of the street with a two-hour limit from 6 AM to 10 PM in the project vicinity. Saratoga Avenue has bike lanes between Stevens Creek Boulevard and Williams Road and south of Lawrence Expressway/Quito Road. There are no bike lanes on Saratoga Avenue along the project frontage. Saratoga Avenue provides direct access to both the Saratoga and El Paseo sites.

Quito Road is a two-lane city connector street that runs in a north-south direction in the vicinity of the site. There are left-turn pockets provided at intersections and a center turn lane provided between

intersections south of Northlawn Drive. Quito Road has a raised median along the project frontage with left-turn pockets provided at the intersection with Saratoga Avenue. Quito Road transitions into Lawrence Expressway at Saratoga Avenue in the north and extends southward to the City of Saratoga. Quito Road includes sidewalks on both sides of the street and has a posted speed limit of 35 mph. Quito Road has bike lanes on both sides of the street. On-street parking is permitted south of Paseo Cerro on one side of the street. Quito Road provides direct access to the El Paseo site via a right-turn in and out driveway and its intersection with Saratoga Avenue and provides access to the Saratoga site via its intersection with Saratoga Avenue.

Hamilton Avenue is a four-lane city connector street that runs in the east-west direction and continues from W. Campbell Avenue in the west to the City of Campbell in the east. Hamilton Avenue has sidewalks on both sides of the street and has a posted speed limit of 35 mph. On-street parking is permitted along the eastbound of the street west of Duvall Drive and along both sides of the street west of Atherton Avenue. Hamilton Avenue has bike lanes for the entire street between W. Campbell Avenue and the City of Campbell. Hamilton Avenue provides access to both the Saratoga site and El Paseo site via its intersection with W. Campbell Avenue.

W. Campbell Avenue is a four-lane city connector street that runs in the east-west direction and continues from Saratoga Avenue in the west to the City of Campbell in the east. West of Saratoga Avenue, Campbell Avenue becomes Prospect Road. W. Campbell Avenue has sidewalks on both sides of the street and has a posted speed limit of 35 mph. On-street parking is prohibited on both sides of the street in the project vicinity. W. Campbell Avenue has bike lanes between Saratoga Avenue and S. Winchester Boulevard. W. Campbell Avenue provides direct access to the El Paseo site and provides access to the Saratoga site via its intersection with Saratoga Avenue.

Prospect Road is a four-lane east-west city connector street transitioning from W. Campbell Avenue at Saratoga Avenue in the east and continues to Cupertino in the west. It has a raised, landscaped median with left-turn pockets provided at intersections. Prospect Road has sidewalks on both sides of the street. It has a posted speed limit of 35 mph. On-street parking is prohibited on both sides of the street in the project vicinity. Prospect Road has bike lanes between Saratoga Avenue and Cupertino for the entire street. Prospect Road provides access to both the Saratoga and El Paseo site via its intersections with Saratoga Avenue and Lawrence Expressway.

Existing Pedestrian, Bicycle and Transit Facilities

San Jose desires to provide a safe, efficient, economically, and environmentally sensitive transportation system that balances the needs of bicyclists, pedestrians, and public transit riders with those of cars and trucks. The existing bicycle, pedestrian and transit facilities in the study area are described below.

Existing Pedestrian Facilities

A complete network of sidewalks is present along the streets in the vicinity of the project site, including Quito Road, Saratoga Avenue, Hamilton Avenue, W. Campbell Avenue, and Prospect Road. Most of the signalized intersections in the vicinity of the project site have crosswalks. The Saratoga Avenue/Mall Entrance intersection is missing crosswalks across Saratoga Avenue, and the W. Campbell/Hamilton Avenue intersection is missing a crosswalk in the south leg of the intersection. Overall, the existing network of sidewalks and crosswalks has good connectivity and provides pedestrians with safe routes to the project site and transit stops.

Existing Bicycle Facilities

The bicycle facilities that exist within the vicinity of the project site (see Figure 10) include bike paths (Class I bike path) and striped bike lanes (Class II bikeway). Bike paths are shared between pedestrians and bicyclists and separated from motor vehicle traffic. Bike lanes are lanes on roadways

designated for use by bicycles with special lane markings, pavement legends, and signage. In the immediate vicinity of the project site, there are Class II bike lanes on Johnson Avenue, Prospect Road, Quito Road, Saratoga Avenue, W. Campbell Avenue, W. Hamilton Avenue, Cox Avenue, and Doyle Road. Of these bike lanes, the bike lanes on Prospect Road (west of Lawrence Expressway), Hamilton Avenue (west of Atherton Avenue along the north side of the street), and Doyle Road are buffered. Buffered bike lanes separate the bike lane from the vehicle travel lane with a designated buffer space. The San Tomas Aquino/Saratoga Creek Trail is a Class I bike path located along the west side of Lawrence Expressway. Biking is also permitted along both sides of Lawrence Expressway. However, due to high speeds and traffic volumes, it is recommended for use only by bicyclists with advanced skills.

As part of the San Jose Better Bike Plan 2025, existing striped bike lanes on several streets in the project area are proposed to be reconstructed as protected bike lanes (Class IV bikeway). Protected bike lanes are protected by physical barriers such as flexible bollards, raised curb, parking, or planter boxes. The proposed streets include Prospect Road, W. Campbell Avenue, Quito Road, W. Hamilton Avenue, and Saratoga Avenue.

Existing Transit Services

Existing transit service to the study area is provided by the VTA (see Figure 11 and Table 4). One local bus route (Route 56), two frequent bus routes (Routes 26 and 57), and one express bus route (Route 101) serve the vicinity of the project area, as described below. The bus stop closest to the project site is located on Saratoga Avenue along the project frontage and serves Routes 26 and 57.

Table 4
Existing Transit Facilities

Bus Route	Route Description	Closest Stop and Distance to Project Site	Weekday Hours of Operation[1]	Headway (minutes)[1]
Frequent Bus 26	West Valley College - Eastridge	W. Campbell Avenue & Mall Entrance, 520 ft.	5:15 AM - 11:00 PM	15
Local Bus 56	Lockheed Martin - Tamien Station	W. Campbell Avenue & Mall Entrance, 830 ft.	6:00 AM - 10:30 PM	30
Frequent Bus 57	West Valley College - Old Ironsides Station	Saratoga Avenue & Project Frontage, 150 ft.	6:00 AM - 11:00 PM	15
Express Bus 101	Camden & Highway 85 - Stanford Research Park	Prospect Road west of Saratoga Avenue, 1,290 ft.	6:20 AM - 8:30 AM, 4:10 PM - 6:40 PM	60

1. Approximate weekday operation hours and headways during peak commute periods in the project area, as of January 2021.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were determined by the City of San Jose and Google Earth and are shown on Figure 12.

Figure 10
Existing Bicycle Facilties

NORTH
Not to Scale

Figure 11
Existing Transit Services

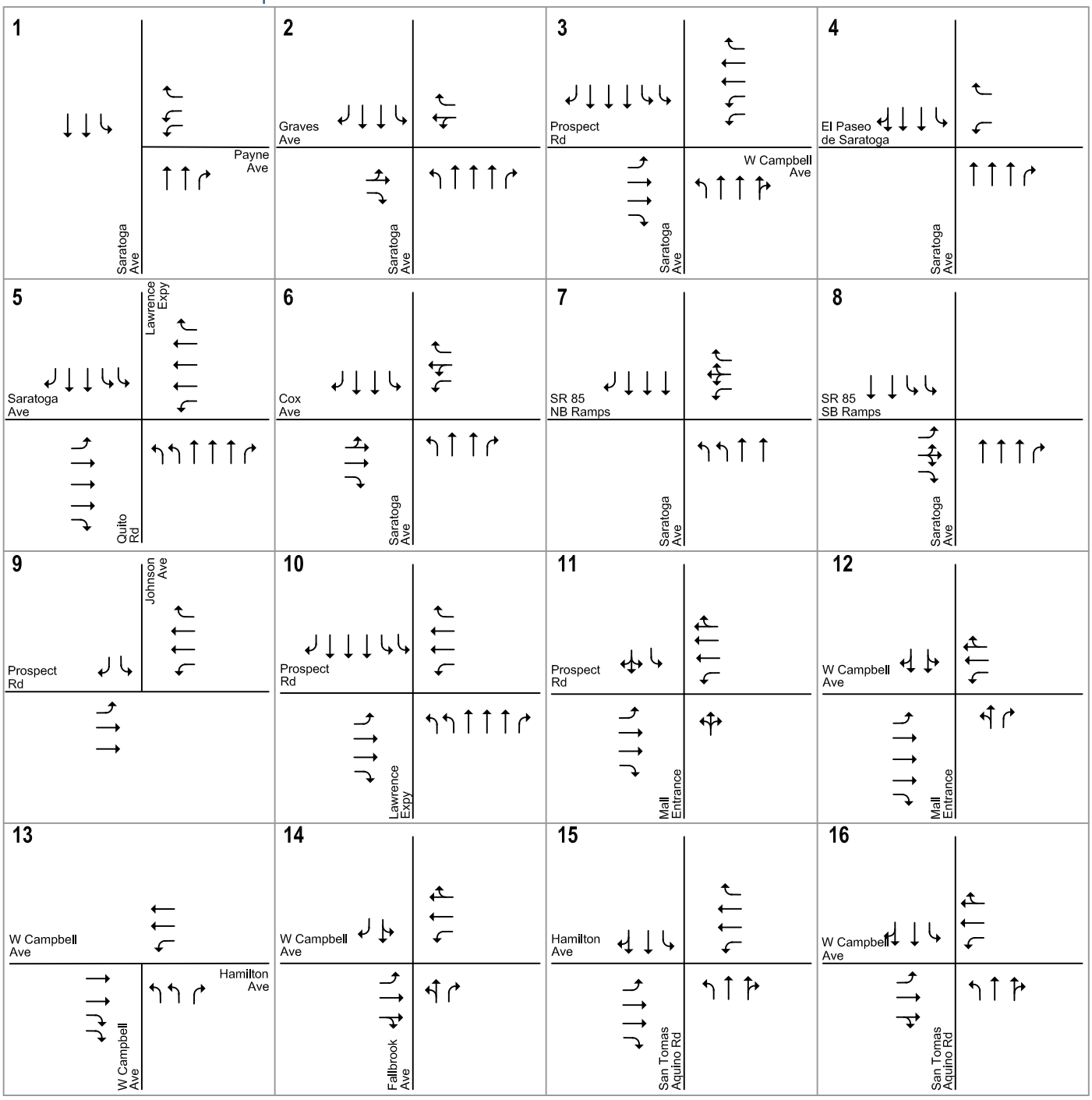


Figure 12
Existing Lane Configurations

NORTH
Not to Scale

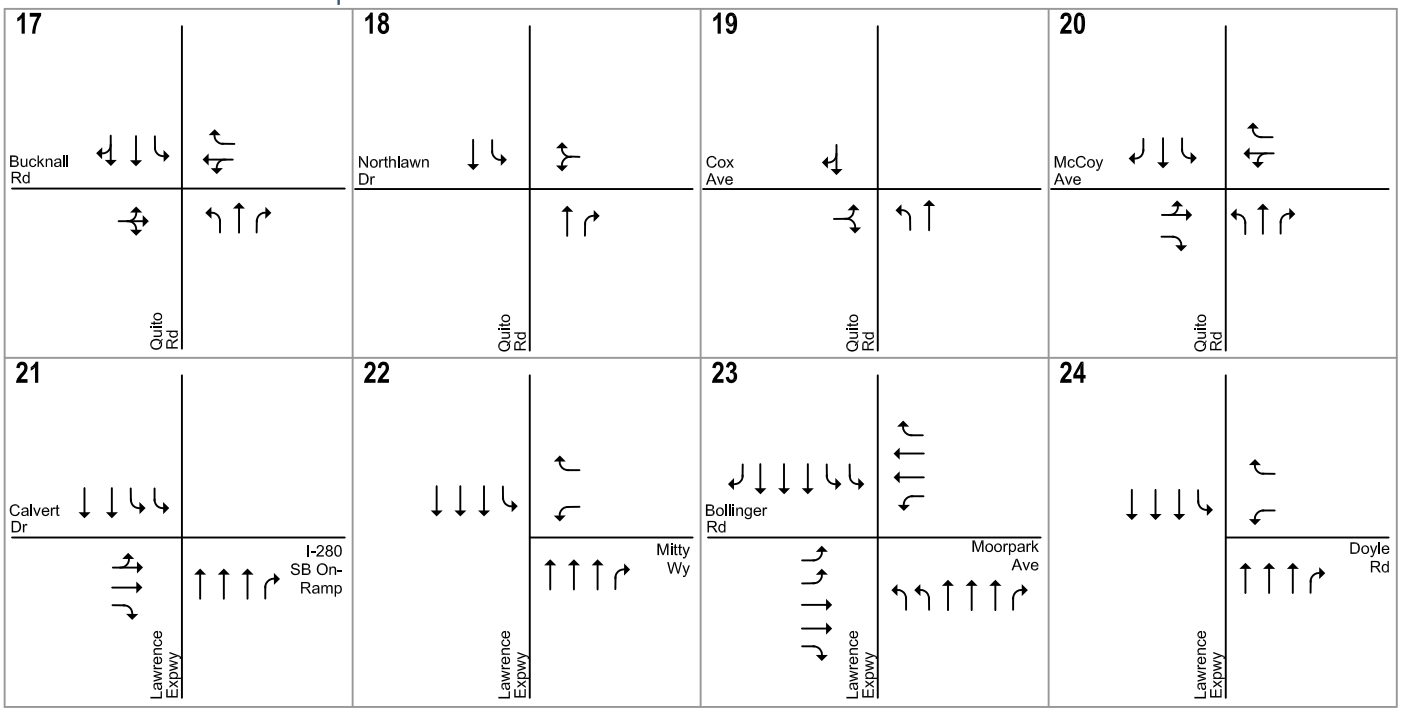


Figure 12
Existing Lane Configurations

3. CEQA Transportation Analysis

This chapter describes the CEQA transportation analysis, including the area VMT, potential project impacts on VMT, mitigation measures recommended to reduce VMT impacts, and a cumulative evaluation of consistency with the City of San Jose's General Plan.

Area VMT

As described in Chapter 1, the current VMT of the project area is greater than the citywide average VMT for residential uses. Based on the San Jose VMT evaluation tool and the project site's assessor parcel number (APN), the existing area VMT for residential uses in the project vicinity is 12.3 daily miles per capita. The average VMT for residential uses is 11.91 per capita (see Table 2). Thus, the existing area VMT for residential uses in the project vicinity is greater than the citywide average VMT level.

Project-Level VMT Impact Analysis

The project-level impact analysis under CEQA uses the VMT metric to evaluate a project's transportation impacts by comparing against the VMT thresholds of significance as established in the Transportation Analysis Policy (Council Policy 5-1). Usually, the VMT evaluation tool is used to estimate the project VMT for typical residential, office, and industrial developments. For larger projects with regional traffic, the City of San Jose's Travel Demand Model (model) may be required for the CEQA transportation analysis. As described in Chapter 1, the VMT evaluation tool was used to evaluate the VMT impact for the residential and office uses of the project, while the City model was used to evaluate the VMT impact for the proposed school.

Non-Education Option

As described below, the proposed residential and office/medical office uses would result in a significant transportation impact on VMT under the non-education option.

Residential Use

Appendix B shows the VMT evaluation summary report generated by the City of San Jose's VMT evaluation tool for the proposed residential use of the project. The project VMT estimated by the evaluation tool is 11.07 per capita, which is lower than the area VMT for residential uses (12.30 per capita) in the project vicinity. This is because the project would result in an increase in development diversity and residential density. However, the VMT is above the threshold of 10.12 VMT per capita. Therefore, the residential use would result in a significant transportation impact on VMT.

Office Use

Appendix B shows the VMT evaluation summary report generated by the City of San Jose's VMT evaluation tool for the proposed office and medial office uses of the project. As previously described, the medical office use cannot be directly evaluated by the City's Evaluation Tool. Thus, based on direction from City staff, the vehicle trips generated by the medical office were converted to an equivalent office square footage, for which the City has established a screening criterion and threshold of significance. The project VMT estimated by the evaluation tool is 13.38 per employee, which is lower than the area VMT for employment uses (13.50 per employee) in the project vicinity. This is because the project would result in an increase in development diversity and employment density. However, the VMT is above the threshold of 12.21 VMT per employee. Therefore, the office uses would result in a significant transportation impact on VMT.

Retail Use

Under the non-education option, the project proposes to demolish 96,440 s.f. of commercial/retail uses and build up to 76,372 s.f. of retail use. It is expected that proposed retail uses would be typical commercial/retail uses that present in the shopping center. Therefore, the proposed retail use would not cause an increase in trips, as the proposed square footage for the retail component is lower than the existing retail square footage to be demolished. Thus, the retail component of the project would result in a zero-net increase in total VMT and would not result in a significant impact.

Education Option

As described below, the proposed residential and school uses would result in a significant transportation impact on VMT under the education option.

Residential Use

The project VMT and the VMT impact of the proposed residential use under this option would be the same as the VMT impact described under the non-education option. Appendix B shows the VMT evaluation summary report for this option. The proposed residential use under this option would result in a significant transportation impact on VMT.

School Use

As described in Chapter 1, the school VMT impact was determined by comparing the project VMT per student to the existing VMT per student (the threshold of significance). The methodology Hexagon used to evaluate project VMT per student and existing VMT per student are discussed in the VMT methodology memorandum included in Appendix A. As discussed in the memorandum, the per-student VMT generated by the proposed school (8.75) would be approximately 10.3% above the existing per-student VMT (7.85), which is considered as a VMT impact. Therefore, the school would be required to provide mitigation measures to reduce the project student VMT by 10.3%.

Retail Use

Similar to the non-education option, the proposed retail use would not cause an increase in trips, as the proposed square footage of 67,500 s.f. for the retail component is lower than the existing retail square footage to be demolished. Thus, the retail component of the project would result in a zero-net increase in total VMT and would not result in a significant impact.

VMT Impacts and Mitigation Measures

Non-Education Option

Residential Use

Project Impact: Because the residential component would generate a VMT level (11.07 per capita) greater than the threshold (10.12 per capita), the project would result in a significant transportation impact on VMT. Therefore, mitigation measures are required to reduce VMT to the threshold.

Mitigation Measures: The VMT evaluation tool was used to identify the possible mitigation measures. Based on the list of selected VMT reduction measures included in the VMT evaluation tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements.
    - Campbell Avenue and Hamilton Avenue: The City has identified the following improvements to remove the pork chop island at the southwest corner of the intersection and improve pedestrian access across W. Campbell Avenue from the south side of Hamilton Avenue (see Figure 13). The scope of the conditioned improvements the project should implement at the intersection will be determined based on final cost estimates.

      Improvement to remove pork chop island at Campbell Avenue and Hamilton Avenue

        - Modify the existing signal to provide a 5-phase signal operation
        - Provide a signalized pedestrian crosswalk for the south leg
        - Provide bike signal heads at near and far sides for eastbound through bicycle movement
        - Install new signal poles with mast arms lengths shadowing opposing left-turn pockets at the northwest and southeast intersection corners; include two new directional ADA curb ramps at the southeast corner and one new directional ADA curb ramp at the northwest corner
        - Install a new signal pole with mast arm at the southwest intersection corner; include new directional ADA curb ramp
        - Replace the existing signal pole at the north leg of the intersection with a signal pole and mast arm for the northbound Campbell Avenue movements
        - Remove the existing signal poles from the raised medians along Campbell Avenue
        - Construct a new ADA directional curb ramp at the northeast corner

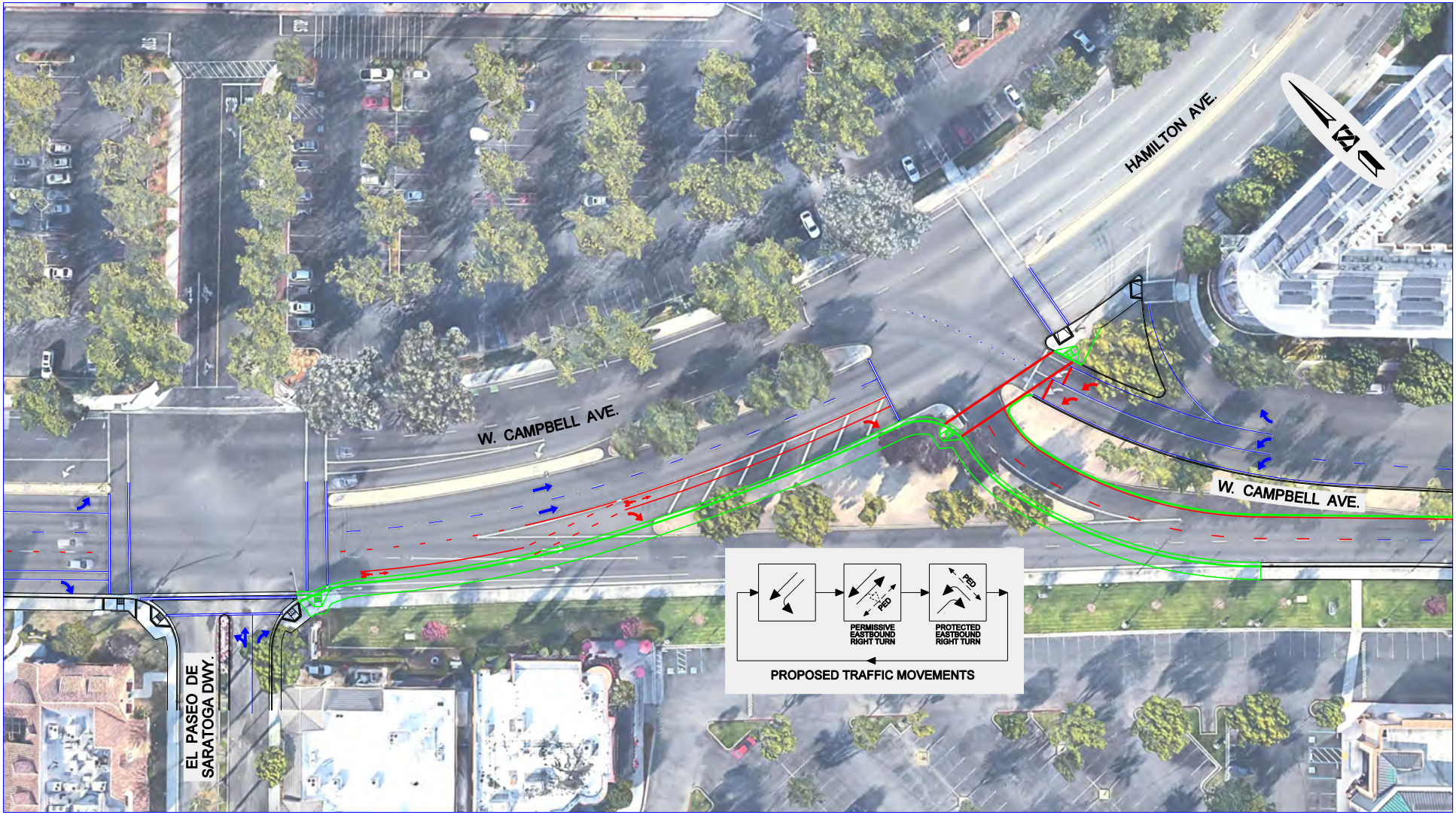


Figure 13
Conceptual Improvement Plan at Campbell Avenue/Hamilton Avenue Intersection

- Retain the existing accessible pedestrian signal (APS) equipment for all pedestrian crosswalks and existing video detection for all intersection approaches
- Provide and install a Point-Zoom (PTZ) camera
- Replace the existing signal cabinet at the northwest corner with a new ATC signal cabinet
- Construct curb/gutter/sidewalk (about 550 feet) along eastbound Campbell Avenue, providing a 10-foot-wide sidewalk with tree wells at 35 feet off-center (O.C.)
- Remove existing asphalt concrete along the portion of Campbell Avenue being abandoned and replace with decomposed granite (DG)

Utility reconstruction due to pork chop island removal

- Retain the existing 30-foot reinforced concrete pipe (RCP) along the portion of Campbell Avenue being abandoned to vehicular movements.
- Relocate one existing drainage inlet (west). Conform to existing drainage inlet (east). Abandon existing drainage inlets in-place for the abandoned portion of Campbell Avenue (mid).

Streetlighting and communications improvement

- Provide a new streetlight every 150 feet along the new 10-foot-wide sidewalk along eastbound Campbell Avenue
- Provide LED lighting for each new signal pole.

- Provide Unbundled On-Site Parking Costs. This would allow residents without cars to rent a unit without having to pay for a parking spot. Unbundling of parking encourages residents to forego a second car or to have no car at all.

The combination of the mitigation measures would reduce the project VMT per capita by 2.21 (or 18%) as compared to the area VMT and would reduce the project VMT per capita to 10.09, which would make the project impact less than significant. Appendix B presents the VMT evaluation tool summary report for the project with the mitigation measures.

Office and Medical Office Uses

Project Impact: Because the office and medical office components would generate a VMT level (13.38 per employee) greater than the threshold (12.21 per employee), the project would result in a significant transportation impact on VMT. Therefore, mitigation measures are required to reduce VMT to the threshold.

Mitigation Measures: The VMT evaluation tool was used to identify the possible mitigation measures. Based on the list of selected VMT reduction measures included in the VMT evaluation tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements. The improvements are described above for the residential use.

- Provide Commute Trip Reduction Marketing and Education. The office would be required to routinely provide a commute trip reduction marketing/educational campaign to employees to promote the use of transit, shared rides, walking, and bicycling, therefore lowering the number of single occupancy vehicle (SOV) trips and VMT.
- Telecommuting and Alternative Work Schedule Program. The office tenants would be required to implement a flexible work schedule to encourage employees telecommuting, commuting outside of peak congestion periods, or working with alternative schedules. This program would allow some employees to work a few days from home, and thus reducing the number of trips and VMT.

The combination of the mitigation measures would reduce the project VMT per employee by 1.35 (or 10%) as compared to the area VMT and would reduce the project VMT per employee to 12.15, which would make the project impact less than significant. Appendix B presents the VMT evaluation tool summary report for the project with the mitigation measures.

Education Option

Residential Use

The VMT impact and mitigation measures of the proposed residential use under this option would be the same as the VMT impact and mitigation measures described under the non-education option. The mitigation measures would reduce the project VMT impact to a less than significant level. Appendix B presents the VMT evaluation tool summary report for the project with the mitigation measures.

School Use

Project Impact: The school generated per-student VMT would exceed the existing per-student VMT by 10.3%. Therefore, the project would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact.

Mitigation Measures: The VMT evaluation tool was used to identify the possible mitigation measures. Because the tool is designed to evaluate a list of selected VMT reduction measures that can be applied to a residential or office development, the project was evaluated as an office development in the tool to identify measures that can be applied to the project to reduce VMT associated with students. The general office square footage equivalent of the school calculates to 493,000 s.f. as shown in Table 5.

Table 5
Equivalent General Office Land Use for Proposed School

Land Use	Size	Daily	
		Trip Rate	Trips
Proposed Land Use			
K-12 Private School[1]	2,500 Students	--[1]	4,802
Equivalent Land Use			
General Office[2]	493,000 s.f.	9.74	4,802

Source: ITE *Trip Generation Manual*, 10th Edition, 2017.
s.f. = square feet
Notes:
1. See School Trip Generation Estimates table in Chapter 4.
2. Average daily trip rate (in trips per 1,000 s.f.) for General Office (ITE Land Use 710) is used.

In order for the project to have a less than significant impact on VMT, the project needs to reduce the VMT by 10.3%, as discussed in the school VMT methodology memorandum. Therefore, the VMT evaluation tool was used to identify mitigation measures that would reduce the VMT by at least 10.3%.

Based on the list of selected VMT reduction measures included in the VMT evaluation tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements. The improvements are described above for the residential use.
- Provide Commute Trip Reduction Marketing and Education. The school would be required to routinely provide commute trip reduction marketing/educational campaign to faculty, staff, student drivers, and parents to promote the use of transit, shared rides, walking, and bicycling, therefore lowering the number of SOV trips and VMT.
- Provide a Rideshare/Carpool Program. The school would be required to implement a rideshare/carpool program to coordinate carpools amongst parents, student drivers, and employees to reduce SOV trips and VMT generated by the school.

The school would be required to prepare a transportation demand management (TDM) plan that that offers the commute trip reduction measures to 95% of the students and employees. The VMT estimate also assumes that 2% of the students and employees would participate in the rideshare/carpool program. The combination of the mitigation measures would reduce the project VMT per student by 10.44% as compared to the area VMT, which would make the project impact less than significant. Appendix B presents the VMT evaluation tool summary report for the project with the mitigation measures.

Cumulative (GP Consistency) Evaluation

Projects must demonstrate consistency with the Envision San Jose 2040 General Plan to address cumulative impacts. Consistency with the City's General Plan is based on the project's density, design, and conformance to the General Plan goals and policies.

The project for either option is consistent with the General Plan for the following reasons:

- The project would be a mixed-use development with higher intensity commercial development.
- The project would increase the equivalent employment density in the project area.
- The project would include ground floor-commercial spaces fronting Saratoga Avenue.
- The project would provide a public plaza at the corner of the Saratoga Avenue/Lawrence Expressway intersection.
- The project would provide 22-foot sidewalks with planters and landscaping on Saratoga Avenue along the Saratoga site project frontage. Wider sidewalks would improve pedestrian access to the transit stop and other destinations.
- The project would provide 15-foot sidewalks with planters along Quito Road and 18-foot sidewalks with landscaping along Lawrence Expressway, which meets typical Urban Village requirements.
- The project would provide a parking garage that it is not attached to a single development but can be shared by land uses on the site.

- The project would provide the minimum amount of parking required to adequately serve the residential, retail, and school parking demand of the project, thereby avoiding excessive parking supply.
- The project would be integrated with the City's transportation system, including transit, roads, and pedestrian facilities.
- The project would not negatively impact existing transit, bicycle, or pedestrian infrastructure, nor would it conflict with any adopted plans or policies for new transit, bicycle, or pedestrian facilities.
- As part of the project-level mitigation measures, the project would implement trip reduction measures to reduce vehicle trips and VMT generated by the residential, office, and school uses.

Therefore, the project would be considered part of the cumulative solution to meet the General Plan's long-range transportation goals and would result in a less-than-significant cumulative impact.

4. Local Transportation Analysis – Non-Education Option

This chapter describes the local transportation analysis (LTA) for the non-education option, including the method by which project traffic is estimated, intersection operations analysis for existing, background, background plus project, and cumulative conditions, any adverse effects to intersection level of service caused by the project, site access and on-site circulation review, effects on bicycle, pedestrian and transit facilities, and parking supply.

Intersection Operations Analysis

The intersection operations analysis is intended to quantify the operations of San Jose intersections and to identify potential negative effects due to the addition of project traffic. Information required for the intersection operations analysis related to project trip generation, trip distribution, and trip assignment are presented in this section. The study intersections are located in the Cities of San Jose, Saratoga, and Campbell and are evaluated based on the respective cities' and CMP's intersection analysis methodologies and standards in determining potential adverse operational effects due to the project, as described in Chapter 1.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel are estimated. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Trip generation rates resulting from new development proposed within the City of San Jose typically are estimated using trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. Trips that would be generated by the proposed mixed-use development were estimated using the ITE trip rates for "Mid-Rise Multifamily Housing" (Land Use 221), "General Office" (Land Use 710), and Medical-Dental Office (Land Use 720), and "Shopping Center" (Land Use 820). The "Mid-Rise Multifamily Housing" category refers to apartments, townhouses, and condominiums located within the same building that have between three and 10 levels. The "Shopping Center" category refers to an integrated group of commercial establishments. This category includes the trip data for a wide scale of retail/commercial uses, from neighborhood centers to regional centers. Since

specific uses of the proposed retail/commercial spaces are unknown, it is reasonable to use the trip rates for shopping centers for the retail/commercial space. Because the project is within an existing shopping center with larger retail/commercial space, the ITE fitted curve equations were used to determine the trip rates for the entire shopping center. The trip rates were than applied to the proposed retail/commercial space of the project to calculate the project retail/commercial trips.

Trip Adjustments and Reductions

Because the project would provide residential, retail, office, and medical office mixed-use on site, some residents would patronize the retail, office, and medical office businesses and some office and medical office employees would patronize the retail businesses, which would result in the internalization of some project trips. Per the VTA TIA Guidelines, internal trip reductions of 15% between retail and residential uses, 3% between residential and office uses, and 3% between retail and office uses were applied to the project. The trip reduction factors were first applied to the smaller trip generator; then the same trips were subtracted from the larger trip generators to account for both trip ends.

In accordance with the *Transportation Analysis Handbook* (Section 4.8, "Intersection Operations Analysis"), the project qualifies for a location-based trip adjustment from the baseline trip generation. The location-based adjustment reflects the project's vehicle mode share based on the "place type" in which the project is located per the San Jose Travel Demand Model. The project's place type was obtained from the San Jose VMT evaluation tool. Based on the VMT evaluation tool, the project site is located within a designated Suburb with Single Family Homes area. Therefore, the baseline project trips were adjusted to reflect the mode share for this area type. Residential, retail, and office developments within Suburb with Single Family Homes areas have a vehicle mode share of 94%, 91%, and 95%, respectively. Thus, a 6%, 9%, and 5% location-based vehicle mode share reduction was applied to the residential, retail, and office uses, respectively, in the trip generation estimates.

Additionally, the VMT reduction resulting from implementing the VMT reduction strategies in the VMT evaluation tool should be included as part of the trip generation estimates for the residential, office, and medical office uses of the project. The VMT reduction strategies include the project characteristics (increase in density and development diversity), pedestrian network/traffic calming improvements, and trip reduction measures. As discussed in Chapter 3, by implementing the VMT reduction strategies, the VMT level for the residential and office development would be reduced by 18% and 10%, respectively, from the existing level. The reduction was applied to the adjusted residential trips (with location-based adjustment).

In addition, trip generation for retail uses are typically adjusted to account for pass-by trips. Pass-by trips are trips that would already be on the adjacent roadways (and are therefore already counted in the existing traffic) but would turn into the site while passing by. Pass-by trips are therefore excluded from the traffic projections (although pass-by traffic is accounted for at the site entrances). An average pass-by trip reduction of 34% was applied to the PM peak-hour trips of the retail component of the project based on the ITE *Trip Generation Handbook*, 3rd Edition.

Existing Trip Credits

The project would demolish existing office buildings at the Saratoga site and existing commercial/retail buildings at the El Paseo site as part of the proposed project. Trips that are generated by existing occupied uses to be removed can be subtracted from the gross project trip generation estimates. On the Saratoga site, the office buildings (25,184 s.f.) are fully occupied and were credited. At the El Paseo site, 72,940 s.f. of the commercial/retail buildings (totaling 96,440 s.f.) were in operation within 2 years and were credited.

Net Project Trips

Based on the ITE trip generation rates and applicable reductions, it is estimated that the proposed project would generate a total of 5,159 new daily trips, with 386 net new trips (147 inbound and 238 outbound) occurring during the AM peak hour and 434 new trips (231 inbound and 207 outbound) occurring during the PM peak hour (see Table 6).

Table 6
Project Trip Generation Estimates – Non-Education Option

		Daily		AM Peak Hour				PM Peak Hour			
		Trip		Trip	Trips			Trip	Trips		
Land Use	Size	Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Uses											
Residential[1]	1,100 du	5.44	5,984	0.36	103	293	396	0.44	295	189	484
Residential/Retail Internal Capture (15%)[5]			-473		-4	-7	-11		-24	-22	-46
Residential/Office Internal Capture (3%)[5]			-53		-4	-2	-5		-1	-1	-6
Location-Based Non-Vehicle Mode Share (6%)[6]			-327		-6	-17	-23		-16	-10	-26
Project-Specific Trip Reduction (18%)[7]			-924		-16	-48	-64		-46	-27	-73
Sub-Total Residential			***4,207***		***73***	***219***	***293***		***208***	***129***	***333***
1777 Saratoga Site Residential	*280 du*		*1,071*		*19*	*56*	*75*		*53*	*32*	*85*
El Paseo Site Residential	*820 du*		*3,136*		*54*	*163*	*218*		*155*	*97*	*248*
El Paseo Shopping Mall with Project[2]	323,132 s.f.	41.31	13,347	0.97	194	119	313	4.00	621	673	1,294
Commercial/Retail on Project Site[2]	76,372 s.f.	41.31	3,155	0.97	46	28	74	4.00	146	159	305
Retail/Residential Internal Capture (15%)[5]			-473		-7	-4	-11		-22	-24	-46
Retail/Office Internal Capture (3%)[5]			-53		-4	-1	-5		-1	-5	-6
Location-Based Non-Vehicle Mode Share (9%)[6]			-237		-3	-2	-5		-11	-12	-23
Pass-By Reduction (17% Daily/0% AM/34% PM)[8]			-407		0	0	0		-38	-40	-78
Sub-Total Commercial/Retail on Project Site			***1,985***		***32***	***21***	***53***		***74***	***78***	***152***
1777 Saratoga Site Commercial/Retail	*6,000 s.f.*		*37*		*3*	*1*	*4*		*6*	*6*	*12*
El Paseo Site Commercial/Retail	*70,372 s.f.*		*1,948*		*29*	*20*	*49*		*68*	*72*	*140*
General Office[3]	52,508 s.f.	9.74	511	1.16	52	9	61	1.15	10	50	60
Office/Retail Internal Capture (3%)[5]			-15		-2	0	-2		0	-2	-2
Office/Residential Internal Capture (3%)[5]			-15		-2	0	-2		0	-2	-2
Location-Based Non-Vehicle Mode Share (5%)[6]			-24		-2	-1	-3		-1	-2	-3
Project-Specific Trip Reduction (10%)[7]			-46		-5	0	-5		-1	-4	-5
Sub-Total Office (El Paseo Site)			***411***		***41***	***8***	***49***		***8***	***40***	***48***
Medical Clinic/Office[4]	36,120 s.f.	34.80	1,257	2.78	78	22	100	3.46	35	90	125
Office/Retail Internal Capture (3%)[5]			-38		-2	-1	-3		-1	-3	-4
Office/Residential Internal Capture (3%)[5]			-38		-2	-1	-3		-1	-3	-4
Location-Based Non-Vehicle Mode Share (5%)[6]			-59		-4	-1	-5		-2	-4	-6
Project-Specific Trip Reduction (10%)[7]			-112		-7	-2	-9		-3	-8	-11
Sub-Total Medical Office (El Paseo Site)			***1,010***		***63***	***17***	***80***		***28***	***72***	***100***
Total Gross Project Trips			***7,613***		***209***	***265***	***475***		***318***	***319***	***633***
1777 Saratoga Site Gross Trips			*1,108*		*22*	*57*	*79*		*59*	*38*	*97*
El Paseo Site Gross Trips			*6,505*		*187*	*208*	*396*		*259*	*281*	*536*
Existing Trip Credit											
1777 Saratoga Site Office[3]	25,184 s.f.	9.74	245	1.16	25	4	29	1.15	5	24	29
Office/Retail Internal Capture (3%)[5]			-7		-1	0	-1		0	-1	-1
Location-Based Non-Vehicle Mode Share (5%)[6]			-12		-1	0	-1		0	-1	-1
Sub-Total 1777 Saratoga Site			***226***		***23***	***4***	***27***		***5***	***22***	***27***
El Paseo Shopping Mall[2]	343,200 s.f.	40.52	13,906	0.94	200	123	323	3.94	649	704	1,353
El Paseo Site Commercial/Retail[2]	72,940 s.f.[9]	40.52	2,956	0.94	43	26	69	3.94	138	149	287
Retail/Office Internal Capture (3%)[5]			-7		0	-1	-1		-1	0	-1
Location-Based Non-Vehicle Mode Share (9%)[6]			-265		-4	-2	-6		-12	-14	-26
Pass-By Reduction (17% Daily/0% AM/34% PM)[8]			-456		0	0	0		-43	-45	-88
Sub-Total El Paseo Site			***2,228***		***39***	***23***	***62***		***82***	***90***	***172***
Net Project Trips			**5,159**		**147**	**238**	**386**		**231**	**207**	**434**
1777 Saratoga Site Net Trips			*882*		*-1*	*53*	*52*		*54*	*16*	*70*
El Paseo Site Net Trips			*4,277*		*148*	*185*	*334*		*177*	*191*	*364*

Notes:
All trip rates are from ITE Trip Generation Manual, 10th Edition, 2017.
1. Mid-Rise Multifamily Housing (ITE Land Use 221): average trip rates in trips per dwelling unit were used.
2. Shopping Center (Land Use 820): fitted curve equation was used to calculate the trips for the entire shopping mall and to derive the average trip rates in trips per 1,000 s.f. The average trip rates were then used to calculate the commercial/retail trips of the project site.
3. General Office (ITE Land Use 710): average trip rates in trips per 1,000 s.f. were used.
4. Medical-Dental Office Building (ITE Land Use 720): average trip rates in trips per 1,000 s.f. were used.
5. Residential/retail, office/retail, and residential/office internal trip reductions were applied to the project per the 2014 Santa Clara VTA TIA Guidelines.
6. A reduction was applied to the project based on the location-based vehicle mode share percentage outputs (Table 6 of TA Handbook) produced from the San Jose Travel Demand Model for the Sub-Urban with Single Family Home area.
7. A reduction was applied because the proposed residential and office uses will be required to reduce VMT through implementing TDM measures. The reduction percentage is obtained from the City's VMT Evaluation Tool.
8. An average 34% pass-by trip reduction was applied to the retail PM inbound and outbound peak-hour trips based the ITE Trip Generation Handbook, 3rd Edition, for Shopping Center.
9. There is a total of 96,440 s.f. of existing commercial square footage on site. However, only 72,856 s.f. have operated within 2 years of the study and credited.

The Saratoga site would generate 882 new daily trips, with 52 new trips (-1 inbound and 53 outbound) occurring during the AM peak hour and 70 new trips (54 inbound and 16 outbound) occurring during the PM peak hour.

The El Paseo site would generate 4,277 new daily trips, with 334 new trips (148 inbound and 185 outbound) occurring during the AM peak hour and 364 new trips (177 inbound and 191 outbound) occurring during the PM peak hour.

Trip Distribution and Assignment

The trip distribution patterns for the components of the project were estimated based on existing travel patterns on the surrounding roadway network that reflect typical weekday AM and PM peak commute patterns for each land use, the locations of complementary land uses, and freeway access points.

The trip distribution patterns for the proposed residential, existing, and proposed retail, and existing office uses are shown on Figures 14, 15, and 16, respectively.

The peak-hour vehicle trips generated by the existing and proposed project uses were assigned to the roadway network in accordance with the trip distribution patterns for each land use and the locations of project driveways (see Figure 17). The trips generated by the existing uses were subtracted from the roadway network prior to assigning project trips.

Note that since there are raised center medians on Quito Road and Saratoga Avenue, at the El Paseo site, left turns from the existing project driveway onto southbound Quito Road and the new project driveway onto southbound Saratoga Avenue are not possible. The trip assignment reflects these turn restrictions. At the Saratoga site, there is no northbound left-turn lane on Saratoga Avenue at the project driveway. However, as part of the project, a new left-turn pocket would be constructed for the inbound trips from northbound Saratoga Avenue.

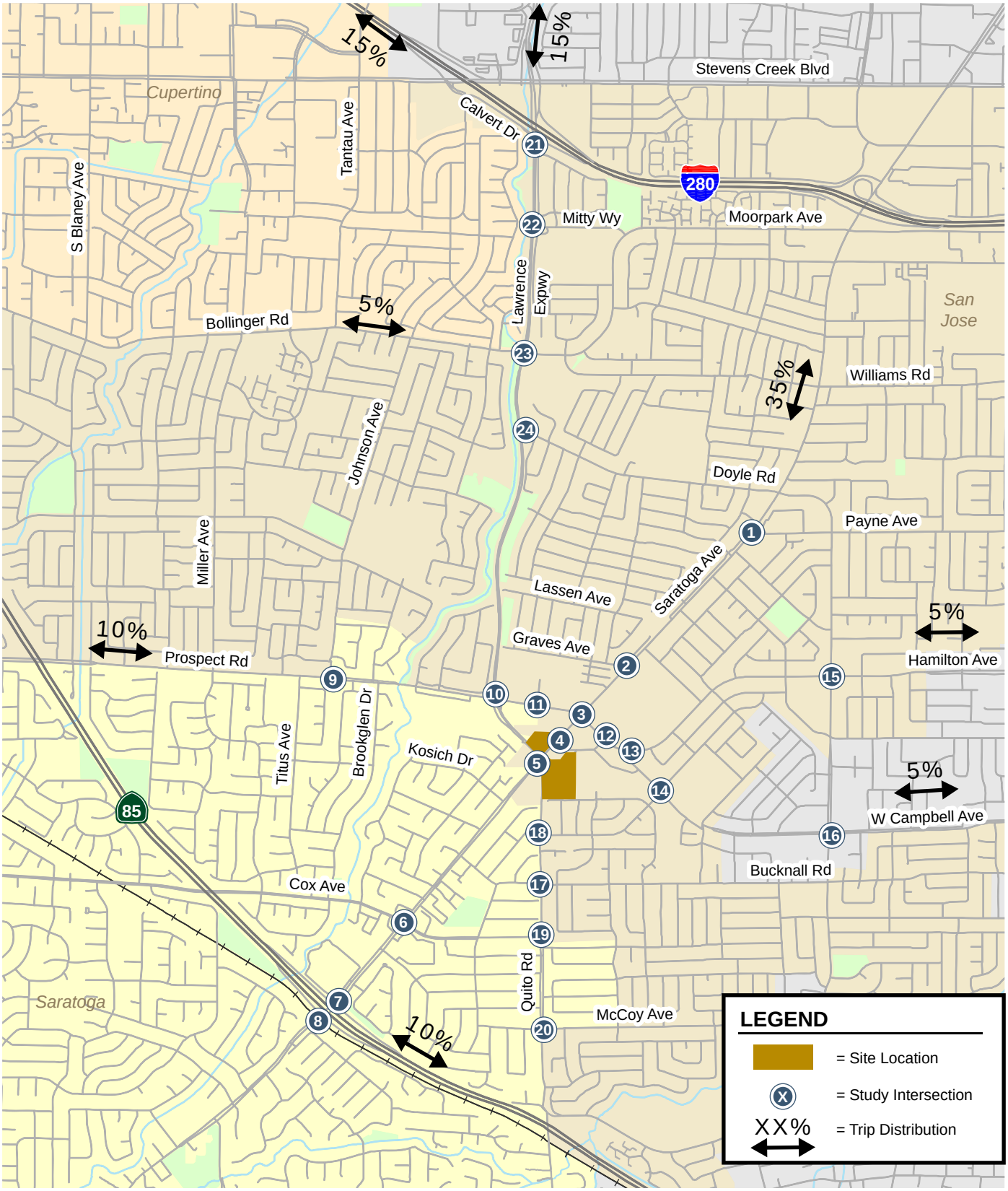


Figure 14
Trip Distribution for Residential

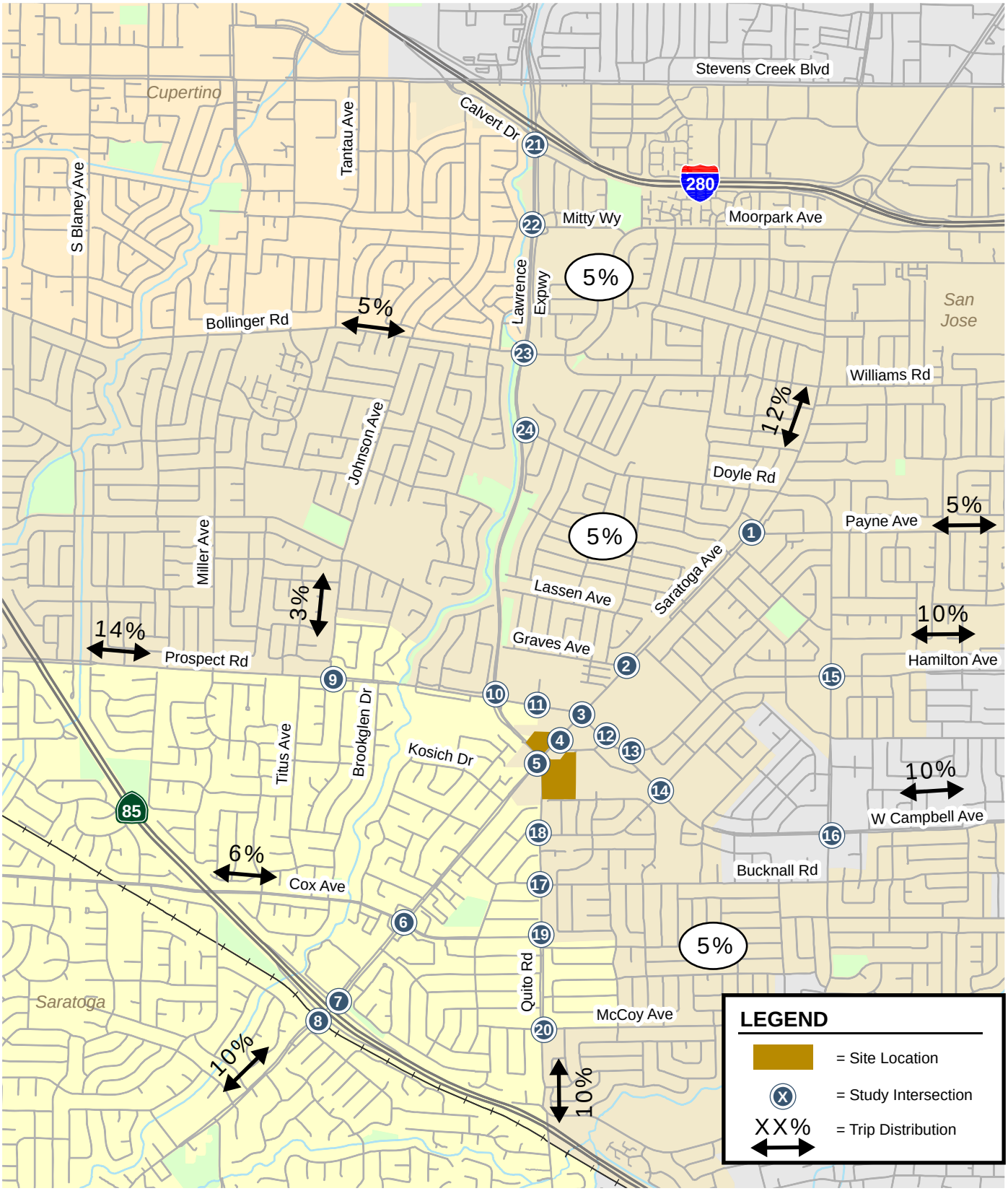


Figure 15
Trip Distribution for Retail

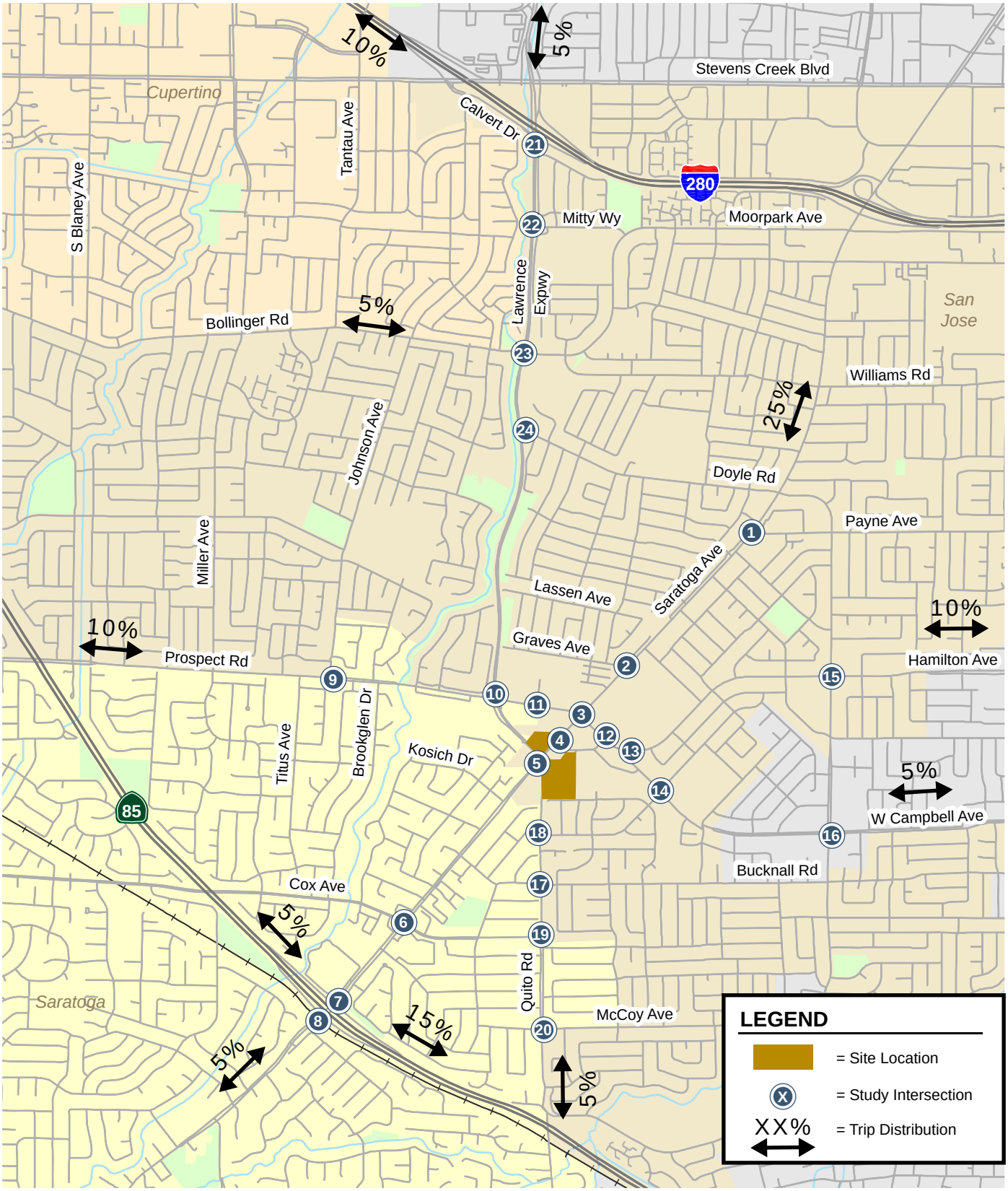
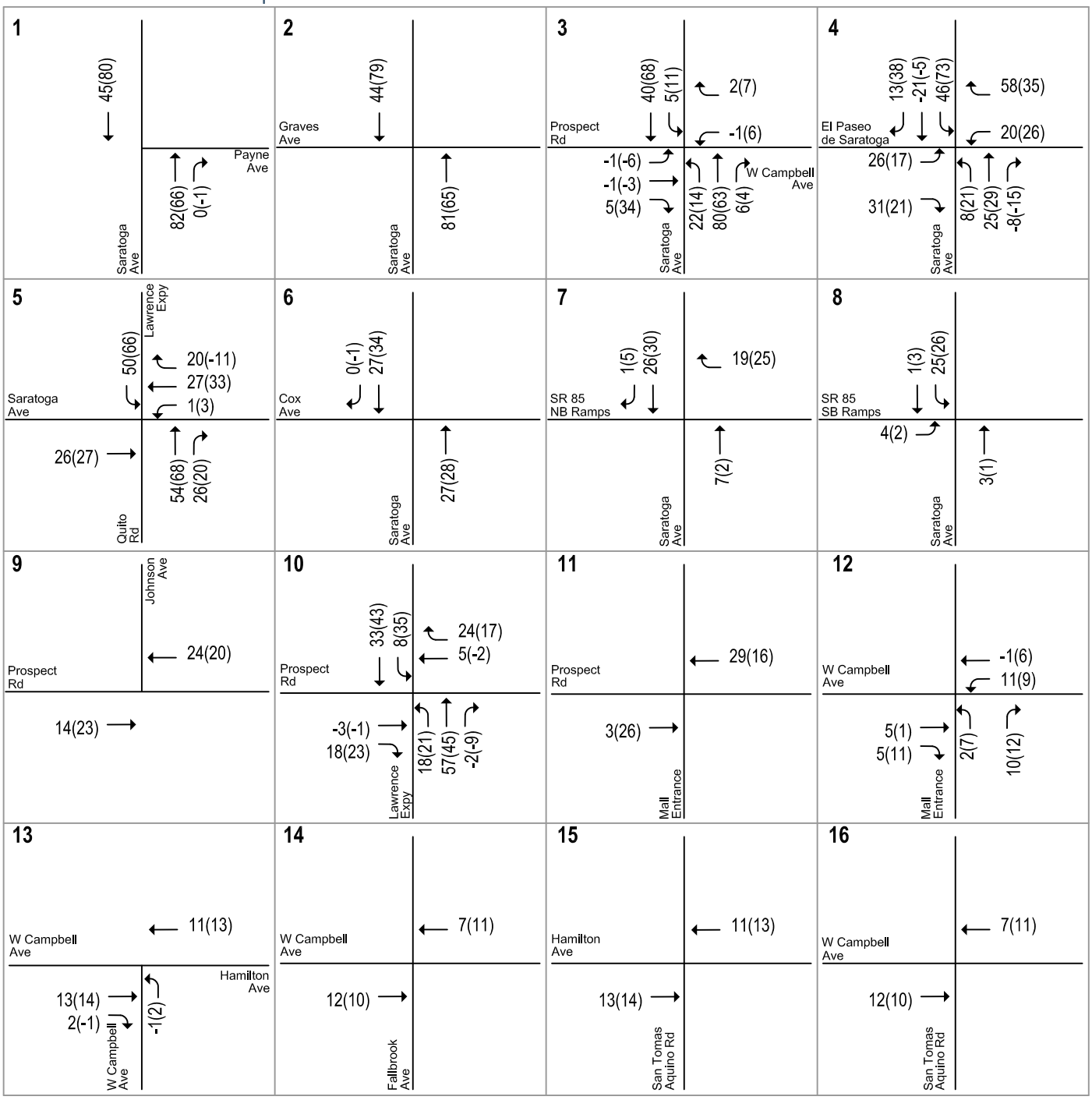


Figure 16
Trip Distribution for Office

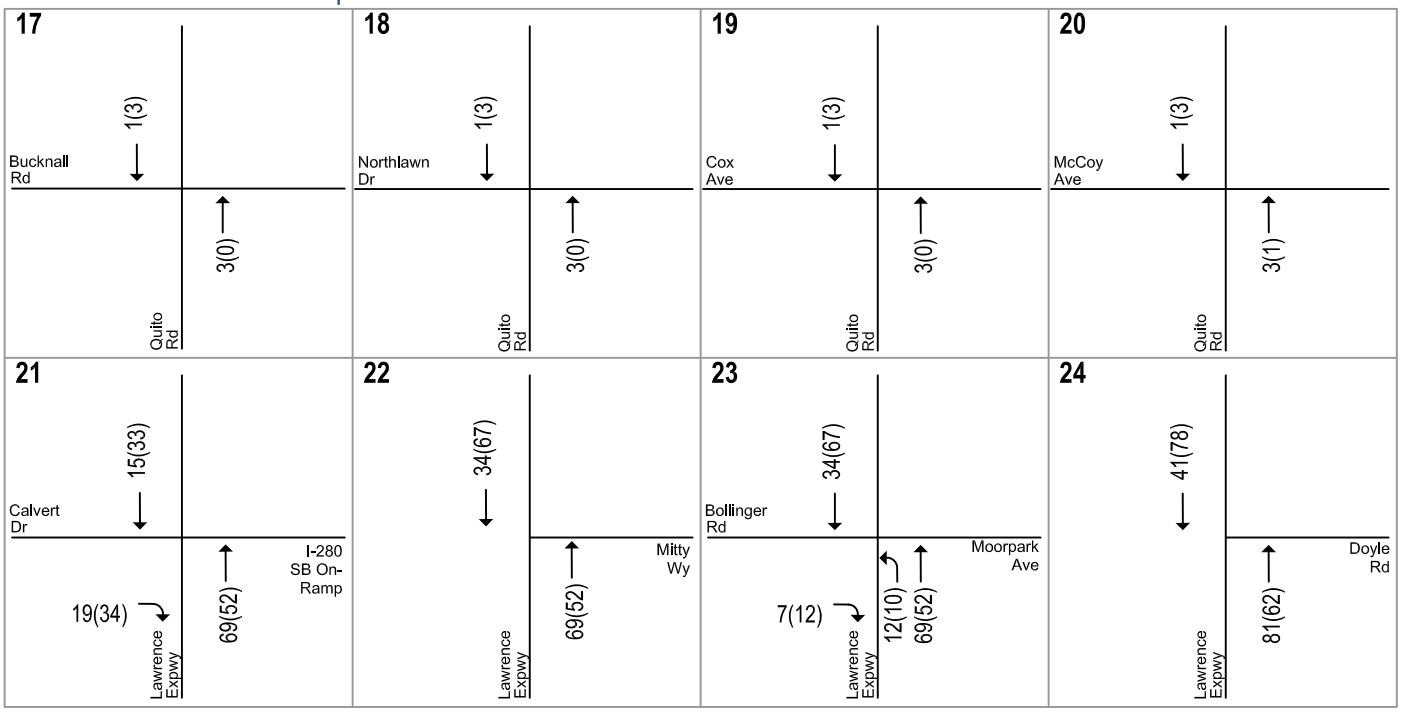


LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 17

Net Project Trip Assignment - Non-Education Option



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 17
Net Project Trip Assignment - Non-Education Option

HEXAGON

NORTH
Not to Scale

Traffic Volumes

Existing Traffic Volumes

Existing AM and PM peak-hour traffic volumes (see Figure 18) were obtained from the Cities of San Jose, Saratoga, and Campbell, 2018 CMP monitoring report, and previous transportation studies. Peak-hour traffic counts for eight study intersections were collected within two years, which are typically considered as recent traffic counts that can be used directly for a traffic study. Fifteen of the study intersections do not have recent traffic counts. Due to Covid-19 and regional shelter-in-place orders, new traffic counts cannot be collected for these intersections. Therefore, a growth rate of one percent per year was applied to these traffic counts older than 2 years to estimate the existing traffic volumes. Turning movement counts for the Quito Road/Northlawn Drive intersection were not available. Thus, existing traffic volumes were estimated based on volumes at Quito Road/Saratoga Avenue and Quito Road/Bucknall Road. Traffic count dates and sources and the adjustment applied to the study intersections are summarized in Appendix C.

Background Traffic Volumes

Background AM and PM peak-hour traffic volumes were estimated by adding to existing traffic volumes the trips generated by nearby approved but not yet completed or occupied projects (see Figure 19). The added traffic from approved but not yet constructed developments in the City of San Jose was obtained from the City's Approved Trip Inventory (ATI). The Cities of Saratoga and Campbell provided a list of approved developments. For developments in Saratoga and Campbell, Hexagon considered both the location and size of the approved developments in order to eliminate those that were too far away or too small to affect traffic conditions at the selected study intersections. The San Jose ATI and the Saratoga and Campbell approved developments considered for the study are listed in Appendix D.

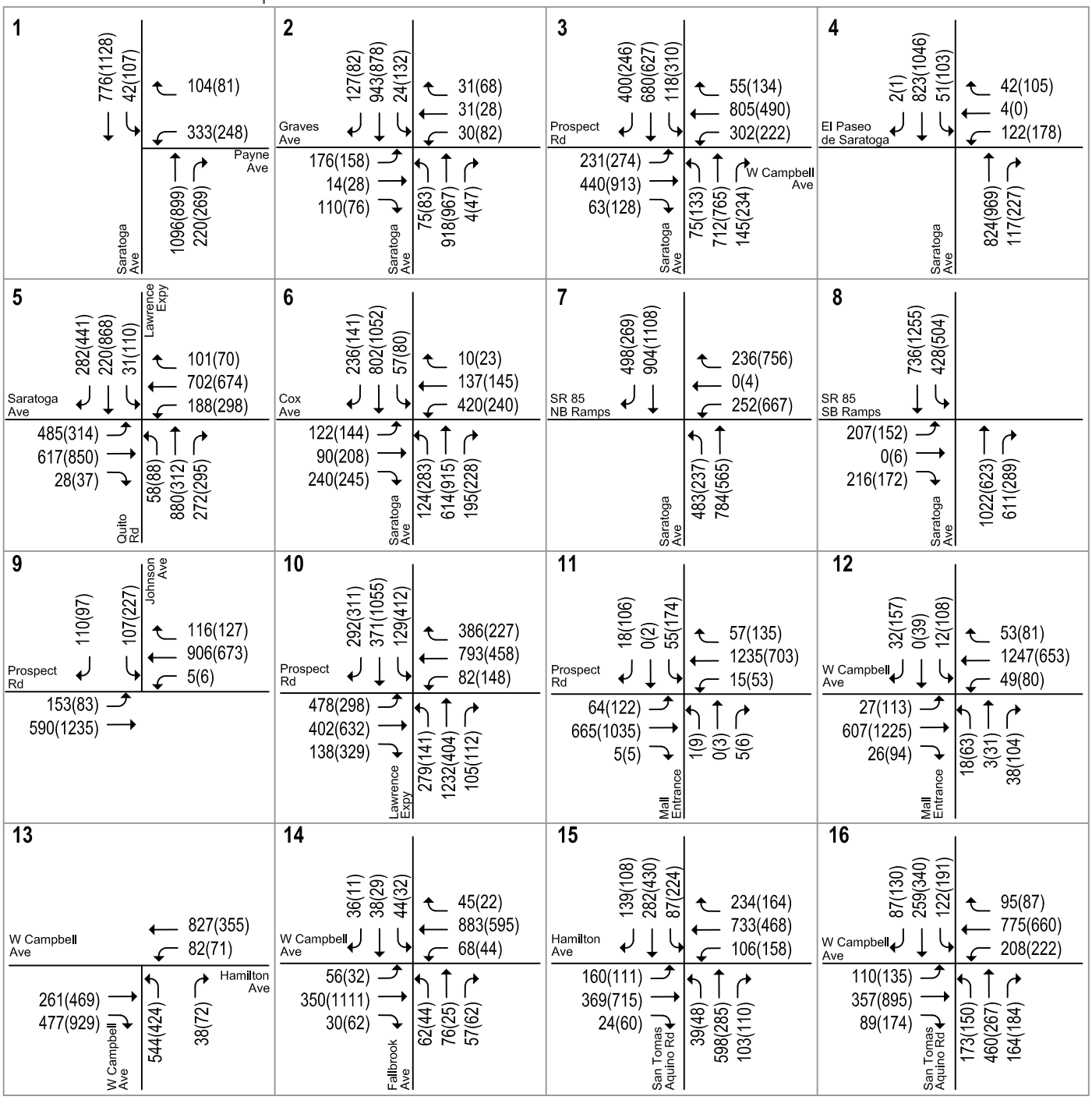
Background Plus Project Traffic Volumes

Project trips were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 20).

Roadway Network

Under existing conditions, the west leg of the Saratoga Avenue/Project Driveway intersection only allows inbound traffic. The roadway network under background conditions would be the same as the existing transportation network.

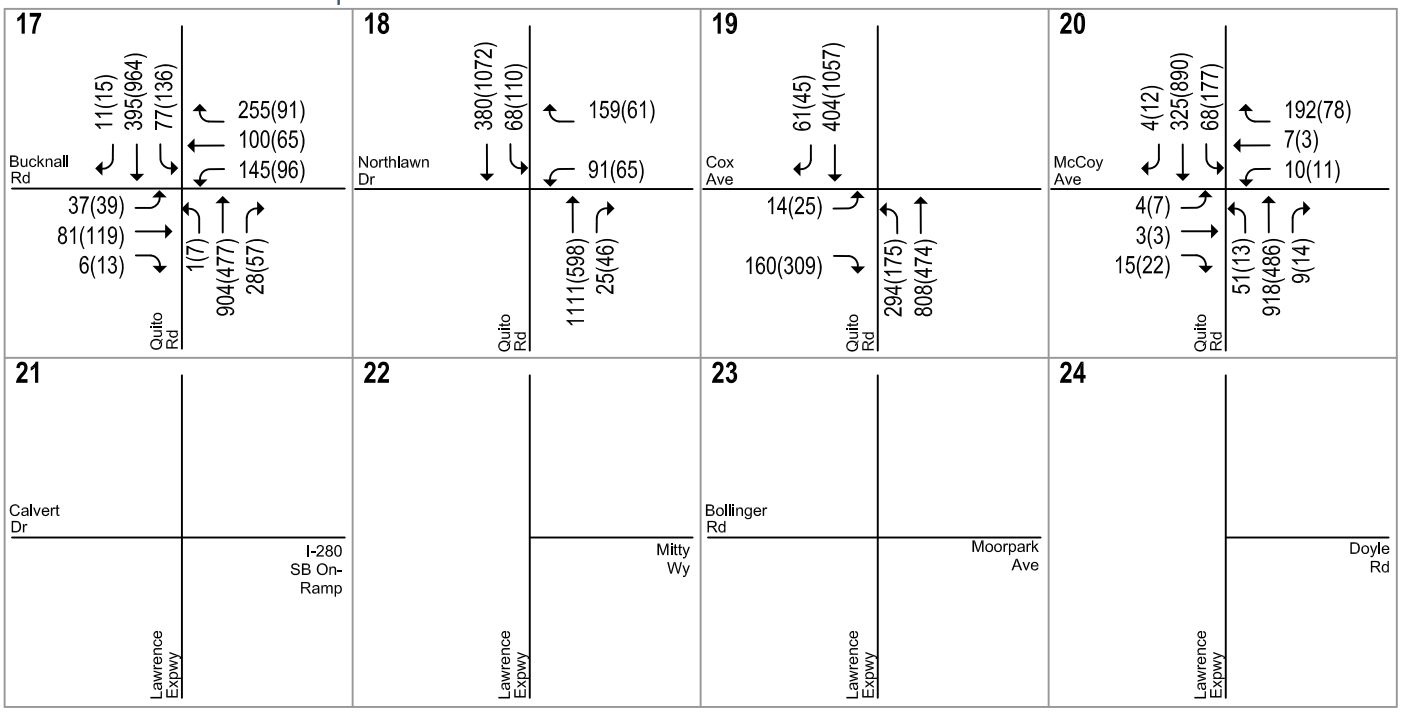
Under project conditions, the intersection would have a full access driveway for the Saratoga site. A northbound left-turn lane into the project driveway from Saratoga Avenue would be constructed. The eastbound and westbound approaches are assumed to be split phases, based on the lane configurations on both approaches.



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

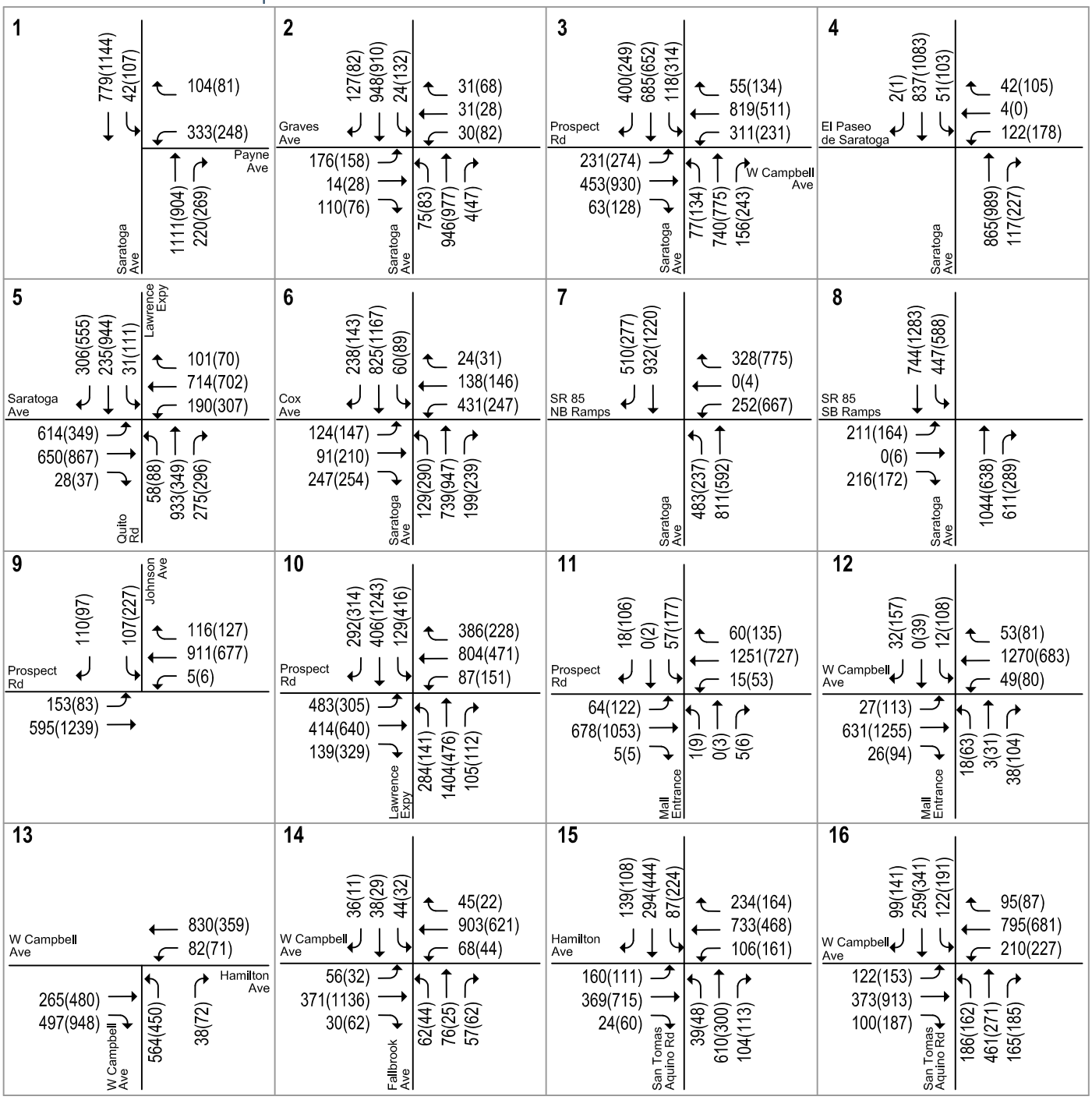
Figure 18
Existing Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

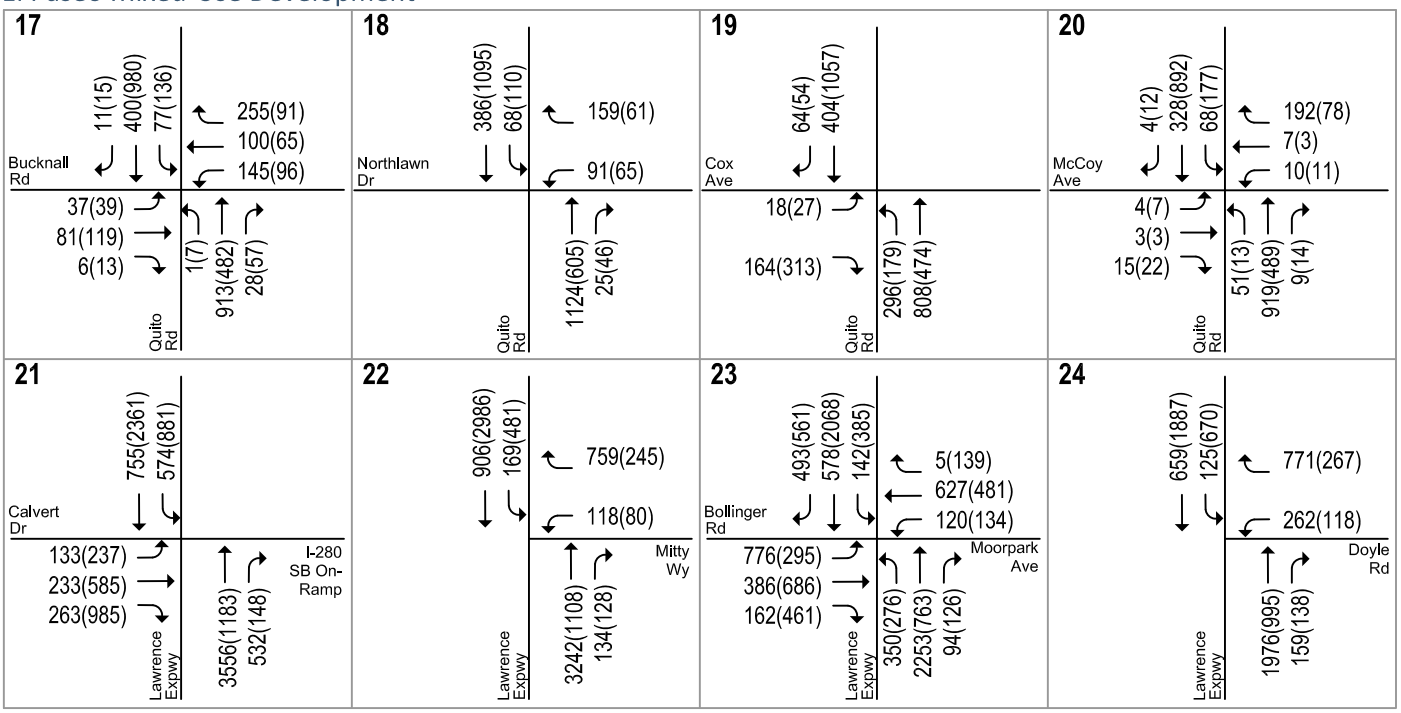
Figure 18
Existing Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

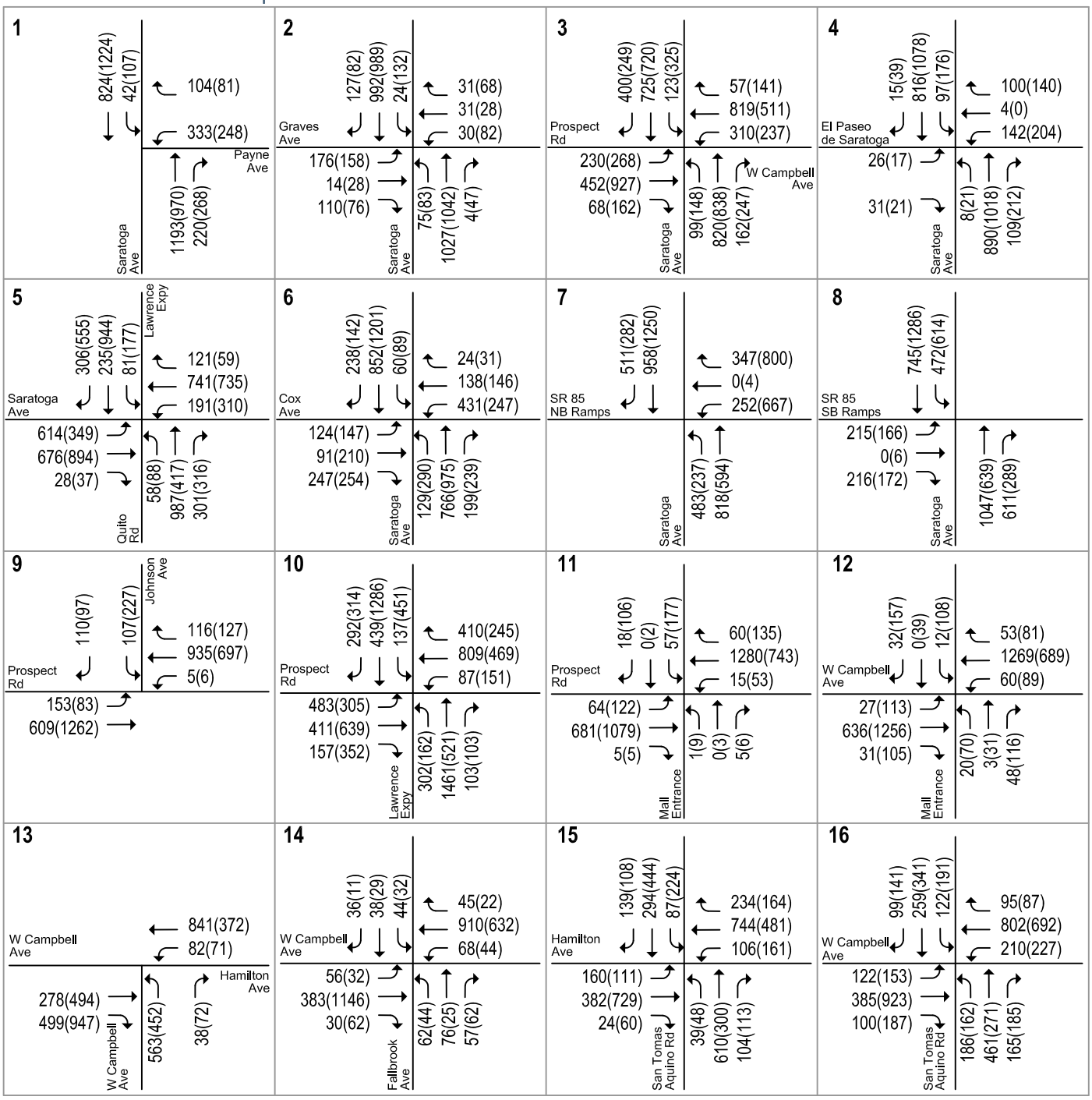
Figure 19
Background Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

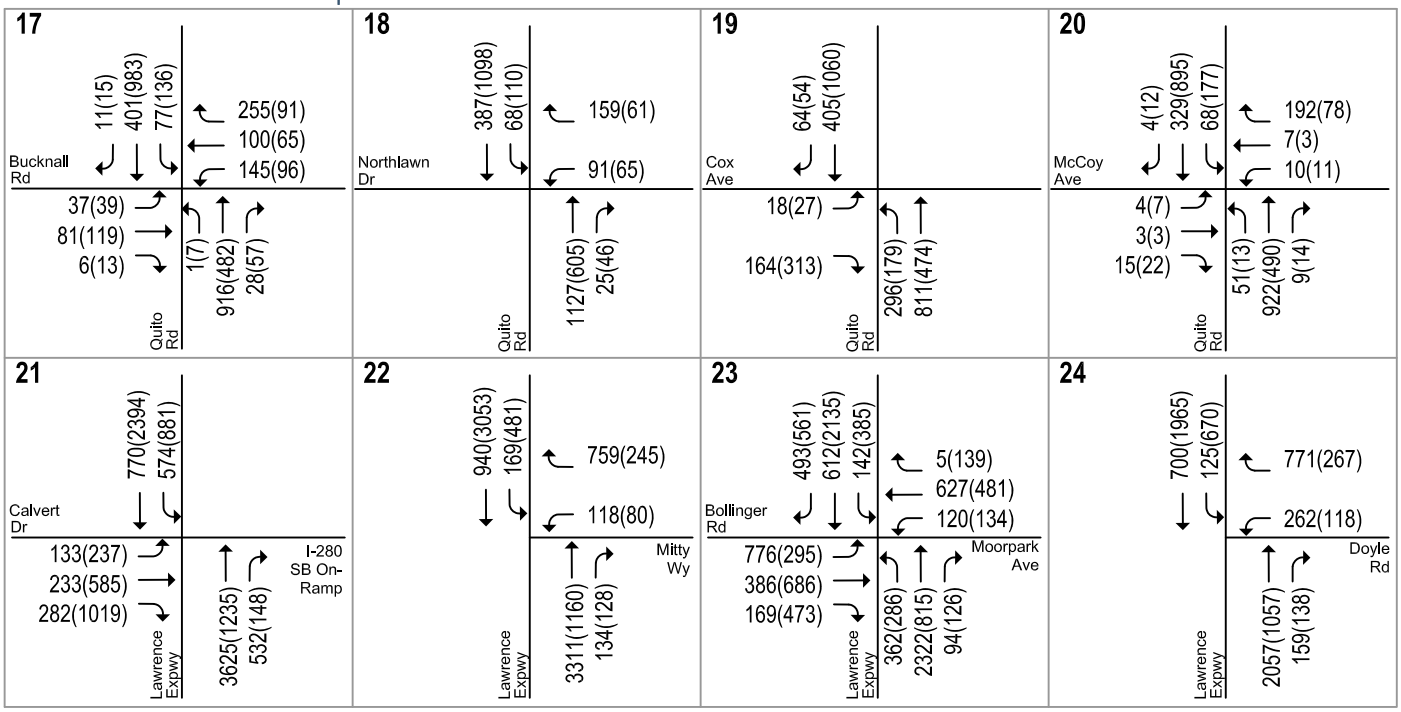
Figure 19
Background Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 20
Background Plus Project Traffic Volumes - Non-Education Option



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 20
Background Plus Project Traffic Volumes - Non-Education Option

Traffic Operations at Signalized Intersections

The results of the intersection level of service analysis are shown in Table 7. The detailed intersection level of service calculation sheets for all study scenarios are included in Appendix E.

Table 7
Intersection Level of Service Summary – Non-Education Option

					Existing		Background					
							No Project		with Project - Non-Education Option			
	Intersection	LOS Standard	Peak Hour	Count Date	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS	Critical Delay (sec)	Incr. in Critical V/C
1	Saratoga Ave and Payne Ave	D	AM	09/26/19	15.5	B	15.4	B	15.1	B	-0.5	0.023
			PM	09/26/19	15.0	B	14.9	B	14.5	B	-0.7	0.019
2	Saratoga Ave and Graves Ave	D	AM	10/26/16	21.2	C	21.0	C	20.5	C	-0.5	0.012
			PM	10/26/16	24.1	C	23.8	C	23.0	C	-0.9	0.022
3	Saratoga Ave and Prospect Rd/Campbell Ave*	E	AM	10/11/16	39.2	D	39.3	D	39.5	D	0.3	0.018
			PM	11/15/18	40.6	D	40.9	D	41.2	D	0.6	0.018
4	Saratoga Ave and Mall Entrance	D	AM	02/28/12	14.2	B	13.8	B	26.9	C	11.2	0.089
			PM	02/28/12	17.5	B	17.4	B	28.5	C	9.6	0.101
5	Lawrence Expwy/Quito Rd and Saratoga Ave*	E	AM	10/03/18	42.8	D	53.5	D	55.8	E	-11.2	0.133
			PM	11/15/18	45.0	D	45.3	D	45.9	D	0.2	0.006
6	Saratoga Ave and Cox Ave	D	AM	05/02/19	37.7	D	38.0	D	37.9	D	0.0	0.008
			PM	05/02/19	40.9	D	41.9	D	42.0	D	0.3	0.010
7	Saratoga Ave and SR 85 NB Ramps	D	AM	05/02/19	19.0	B	20.1	C	20.3	C	0.2	0.007
			PM	05/01/19	26.5	C	26.9	C	27.1	C	0.5	0.014
8	Saratoga Ave and SR 85 SB Ramps	D	AM	05/02/19	17.3	B	17.6	B	18.0	B	0.4	0.010
			PM	05/01/19	18.1	B	18.6	B	18.7	B	-0.1	0.010
9	Johnson Ave and Prospect Rd	D	AM	11/05/14	14.5	B	14.5	B	14.4	B	-0.1	0.007
			PM	11/05/14	15.7	B	15.7	B	15.6	B	0.0	0.007
10	Lawrence Expwy and Prospect Rd*	E	AM	10/03/18	55.3	E	56.6	E	57.4	E	0.6	0.015
			PM	11/15/18	45.3	D	46.0	D	46.4	D	0.3	0.020
11	Mall Entrance and Prospect Rd	D	AM	10/25/16	15.1	B	15.1	B	14.9	B	-0.2	0.006
			PM	10/25/16	27.0	C	26.9	C	26.6	C	-0.2	0.008
12	Mall Entrance and Campbell Ave	D	AM	10/26/16	10.4	B	10.3	B	10.6	B	0.0	0.000
			PM	10/26/16	23.1	C	22.8	C	22.9	C	-0.1	0.002
13	Campbell Ave and Hamilton Ave*	E	AM	11/05/14	24.9	C	25.1	C	25.2	C	0.0	0.003
			With Mitigation						*23.0*	*C*		
			PM	11/15/18	25.1	C	25.3	C	25.2	C	0.0	0.005
			With Mitigation						*23.3*	*C*		
14	Northlawn Dr/Fallbrook Ave and Campbell Ave	D	AM	10/23/14	22.6	C	22.5	C	22.4	C	0.0	0.002
			PM	10/23/14	17.7	B	17.7	B	17.7	B	0.0	0.003
15	San Tomas Aquino Rd and Hamilton Ave	D	AM	03/09/17	39.8	D	39.8	D	39.8	D	0.0	0.003
			PM	03/09/17	41.2	D	41.4	D	41.3	D	0.0	0.004
16	San Tomas Aquino Rd and Campbell Ave	D	AM	12/01/15	32.5	C	32.9	C	32.9	C	0.0	0.002
			PM	12/01/15	34.5	C	35.4	D	35.4	D	0.1	0.003
17	Quito Rd and Bucknall Rd	D	AM	11/06/14	42.6	D	42.7	D	42.7	D	0.1	0.002
			PM	11/06/14	37.0	D	36.9	D	36.8	D	0.0	0.000
21	Lawrence Expressway and Calvert Drive/I-280 SB On-Ramp*	E	AM	01/17/18	44.0	D	54.1	D	58.1	E	5.1	0.013
			PM	11/15/18	31.7	C	34.7	C	35.1	D	0.7	0.009
22	Lawrence Expressway and Mitty Way	E	AM	01/17/18	11.3	B	11.9	B	12.1	B	-0.3	0.006
			PM	01/17/18	14.7	B	14.7	B	14.8	B	0.0	0.012
23	Lawrence Expressway and Bollinger Rd/Moorpark Ave*	E	AM	09/13/18	59.2	E	65.0	E	67.2	E	3.4	0.013
			PM	11/15/18	51.9	D	55.0	E	56.3	E	2.5	0.020
24	Lawrence Expressway and Doyle Rd	E	AM	01/11/18	46.9	D	48.2	D	47.1	D	-3.0	0.008
			PM	01/11/18	13.5	B	13.5	B	13.4	B	-0.1	0.015

* Denotes the CMP designated Intersection

Existing and Background Conditions

Intersection levels of service were evaluated against the standards of the CMP and the Cities of San Jose, Saratoga, and Campbell. The results of the analysis show that all the signalized study intersections are operating at acceptable levels of service during the AM and PM peak hours of traffic under existing and background conditions.

Project Conditions

The results of the analysis show that the added project trips would not cause an adverse operations effect at any of the study intersections.

There are several signalized intersections for which the average delay under project conditions is shown to be less than under no project conditions during at least one peak hour. The decrease in average delay can be less under project conditions because the intersection delay is a weighted average of all intersection movements. The addition of project traffic to movements with delays lower than the average intersection delay can reduce the average delay for the entire intersection.

Campbell Avenue/Hamilton Avenue Intersection with VMT Mitigation

As discussed under VMT mitigation measures, the City is considering making various changes to the intersection to help pedestrian circulation. With the modifications, the intersection would continue to operate at an acceptable LOS C under background plus project conditions during both the AM and PM peak hours.

Traffic Operations at Unsignalized Intersections

The study also evaluated three unsignalized intersections: Quito Road/Northlawn Drive, Quito Road/Cox Avenue, and Quito Road/McCoy Avenue.

Quito Road and Northlawn Drive Intersection

The Quito Road/Northlawn Drive intersection is a T-intersection and is stop controlled on Northlawn Drive. During the AM peak hour, Northlawn Drive is estimated to experience heavy delay (equivalent to LOS F) under existing and background conditions for the westbound approach. During the PM peak hour, the Northlawn Drive is estimated to operate adequately (equivalent to LOS D) under existing and background conditions. The added project trips on Quito Road would slightly increase the delay for the westbound approach during both the AM and PM peak hours but is not expected to cause a noticeable effect on traffic operations at this intersection. The peak-hour volume signal warrant analysis described below indicates that the AM peak-hour volumes at the intersection would meet the peak-hour signal warrant under all scenarios, both with and without the project traffic. It should be noted that due to Covid-19 and regional shelter-in-place orders, new traffic counts cannot be collected, and traffic volumes at the intersection were estimated from the traffic volumes of the adjacent study intersections. Additionally, field observations cannot be conducted to identify whether there are traffic operational issues at the intersection under normal traffic conditions. Therefore, although both AM and PM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project), the need for intersection improvement or modification of traffic control at the intersection should be evaluated further with actual traffic counts and field observations in the future when volumes return to pre-Covid levels. It is recommended that the City evaluate the need for signalization or improvement at the intersection prior to the issuance of the occupancy permit of the project. If the City determined an improvement or signalization is warranted, it would be appropriate for the project applicant to pay a fair share contribution towards the improvement.

Quito Road and Cox Avenue Intersection

The Quito Road/Cox Avenue intersection is also a T-intersection and is stop controlled on the Cox Avenue. During the AM peak hour, Cox Avenue is estimated to operate adequately (equivalent to LOS C) under existing and background conditions, and the added project trips on Quito Road would slightly increase the delay for the eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection. During the PM peak hour, Cox Avenue is estimated to experience heavy delay (equivalent to LOS F) under existing and background conditions, and the added project trips on Quito Road would slightly increase the delay by 2.2 seconds for the eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection. The peak-hour volume signal warrant analysis described below indicates that the PM peak-hour volumes at the intersection would meet the peak-hour signal warrant under all scenarios, both with and without the project traffic. Based on observations conducted at the intersection for the Quito Village project in Saratoga, the upstream and downstream signal-controlled intersections on Quito Road allow the eastbound traffic to easily find gaps in traffic to make a left or right turn from Cox Avenue onto Quito Road. The eastbound traffic also has the option of using the Quito Road/Bucknall Road intersection. Therefore, a signal is not recommended.

Quito Road and McCoy Avenue Intersection

The Quito Road/McCoy Avenue intersection is a City of Saratoga intersection and is stop controlled on McCoy Avenue. During both the AM and PM peak hours, the eastbound approach is estimated to operate adequately (equivalent to LOS E) under all scenarios. The added project trips on Quito Road would slightly increase the delay of the eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection.

Peak-Hour Signal Warrant Analysis

In conjunction with the traffic operations analysis, a signal warrant analysis was performed to determine if the unsignalized intersections of Quito Road/Northlawn Drive and Quito Road/Cox Drive would warrant traffic signals. Unsignalized study intersections are analyzed on the basis of the Peak-Hour Volume Signal Warrant, (Warrant #3 – Part B) described in the California *Manual on Uniform Traffic Control Devices* (MUTCD), 2014 Edition. This method provides an indication whether peak-hour traffic volumes are, or would be, sufficient to justify installation of a traffic signal. Intersections that meet the peak hour warrant are subject to further analysis before determining that a traffic signal is necessary. Additional analysis may include unsignalized intersection level of service analysis and/or operational analysis such as evaluating vehicle queuing and delay. Other options such as traffic control devices, signage, or geometric changes may be preferable based on existing field conditions. The results of the peak-hour signal warrant checks indicate that the AM and PM peak-hour volumes at the unsignalized study intersections of Quito Road/Northlawn Drive and Quito Road/Cox Drive would warrant signalization under existing, background, and background plus project conditions. At the Quito Road/McCoy Avenue intersection, neither AM nor PM peak-hour volumes would warrant signalization under any scenario. The peak-hour signal warrant sheets are contained in Appendix F.

Intersection Queuing Analysis

The analysis of intersection operations was supplemented with a vehicle queuing analysis for intersections where the project would add a substantial number of trips to the left-turn movements. This analysis provides a basis for estimating future storage requirements at the intersections under existing, background, and project conditions. Vehicle queues were estimated using a Poisson probability distribution, described in Chapter 1. The following left-turn movements were evaluated, and the results of the queueing analysis are summarized in Table 8:

- Northbound Saratoga Avenue left turn to westbound Prospect Road
- Southbound Saratoga Avenue left turn to eastbound Campbell Avenue
- Southbound Lawrence Expressway left turn to eastbound Saratoga Avenue
- Southbound/Westbound Saratoga Avenue left turn to southbound Quito Road
- Southbound Saratoga Avenue left turn to SR 85 Southbound On-Ramp
- Northbound Lawrence Expressway left turn to westbound Prospect Road
- Southbound Lawrence Expressway left turn to eastbound Prospect Road
- Northbound Lawrence Expressway left turn to westbound Bollinger Road

The queuing analysis indicates that the following intersection would have queuing deficiencies caused or exacerbated by the project:

- Southbound Lawrence Expressway left turn to eastbound Prospect Road (PM peak hour)

At the Lawrence Expressway/Quito Road and Saratoga Avenue intersection, the estimated left-turn queue from southbound/westbound Saratoga Avenue to southbound Quito Road exceeds the storage length by one vehicle during the AM peak hour and 8 vehicles during the PM peak hour. The queue is expected to increase by one vehicle during the PM peak hour under background conditions. However, the project trips would not cause a noticeable increase in the queue length.

Southbound Left Turn Lawrence Expressway to Prospect Road

The southbound left-turn lane has approximately 350 feet (14 vehicles) of storage per lane within 2 lanes without interfering with other movements. There are estimated to be 14 vehicles in the 95th percentile queue during the PM peak hour, under existing and background conditions. The project would increase the length of the 95th percentile queue by one vehicle during the PM peak hour. Thus, the queue would extend past the storage lane by one vehicle during the PM peak hour. The small increase in queue length would have an insignificant effect on traffic operations at this intersection because the left-turn spillback would last for a short period of time during the PM peak hour.

Table 8
Intersection Queuing Analysis Summary – Non-Education Option

	Saratoga Ave & Prospect Rd/Campbell Ave				Lawrence Expy/Quito Rd & Saratoga Ave				Saratoga Ave & SR 85 SB Ramps		Lawrence Expy & Prospect Rd				Lawrence Expy & Bollinger Rd	
	NBL		SBL		SBL[4, 5]		WBL[5]		SBL[3]		NBL[4]		SBL		NBL	
Analysis Scenario	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing																
Cycle[1] (sec)	130	130	130	130	159	160	159	160	95	100	156	160	156	160	130	130
Volume (vph)	75	133	118	310	31	110	188	298	428	504	279	141	129	412	260	237
Number of lanes	1	1	2	2	2	2	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	75	133	59	155	16	55	188	298	428	504	140	71	65	206	130	119
95th %. Queue (veh/ln)	6	9	5	10	2	5	13	19	17	20	10	6	6	14	8	8
95th %. Queue[2] (ft/ln)	150	225	125	250	50	125	325	475	425	500	250	150	150	350	200	200
Storage (ft/ln)	250	250	300	300	250	250	300	300	700	700	300	300	350	350	400	400
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	Y	Y	Y	Y	Y	Y	Y	Y
Background																
Cycle[1] (sec)	130	130	130	130	159	160	159	160	95	100	156	160	156	160	130	130
Volume (vph)	77	134	118	314	31	111	188	307	447	588	284	141	129	416	350	276
Number of lanes	1	1	2	2	2	2	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	77	134	59	157	16	56	188	307	447	588	142	71	65	208	175	138
95th %. Queue (veh/ln)	6	9	5	10	2	5	13	20	18	23	10	6	6	14	11	9
95th %. Queue[2] (ft/ln)	150	225	125	250	50	125	325	500	450	575	250	150	150	350	275	225
Storage (ft/ln)	250	250	300	300	250	250	300	300	700	700	300	300	350	350	400	400
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	Y	Y	Y	Y	Y	Y	Y	Y
Background Plus Project - Non-Education Option																
Cycle[1] (sec)	130	130	130	130	159	160	159	160	95	100	156	160	156	160	130	130
Volume (vph)	99	148	123	325	81	177	191	310	472	614	302	162	137	451	362	286
Number of lanes	1	1	2	2	2	2	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	99	148	62	163	41	89	191	310	472	614	151	81	69	226	181	143
95th %. Queue (veh/ln)	7	9	5	10	4	7	13	20	19	24	11	7	6	15	11	9
95th %. Queue[2] (ft/ln)	175	225	125	250	100	175	325	500	475	600	275	175	150	375	275	225
Storage (ft/ln)	250	250	300	300	250	250	300	300	700	700	300	300	350	350	400	400
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	Y	Y	Y	Y	Y	**N**	Y	Y

Notes:
WBL = westbound left-turn movement; NBL = northbound left-turn movement; SBL = southbound left-turn movement.
1. Cycle length used.
2. Assumes 25 feet per vehicle queued.
3. Total storage length of movement shown.
4. Average storage length of movement shown.
5. SBL refers to left turns from southbound Lawrence Expy to northbound/eastbound Saratoga Ave. WBL refers to left turns from southbound/westbound Saratoga Ave to southbound Quito Rd.

Freeway Ramp Operations Analysis

An analysis of freeway ramps providing access from SR 85 to the project site was performed to identify the effects of project traffic on the vehicle queues at the off ramps. On-ramps were not analyzed as the SR 85 on-ramps are not metered. Thus, traffic is able to flow freely onto the freeway without the delay of a meter. It should be noted that the evaluation of freeway ramps is not required based on the City's TIA guidelines. Nor are there adopted methodologies and impact criteria for the analysis of freeway ramps.

The SR 85/Saratoga Avenue interchange provides access to SR 85 from the project site. Ramp operations at the interchange were evaluated based on vehicle queue lengths (see Table 9). The 95th percentile queues analyzed the total volume of the movement and compared it to the total capacity of the off-ramps. Because the vehicle queues are well contained on both the SR 85 northbound and southbound off-ramps, the project is not expected to result in a noticeable increase in vehicle queuing or delay at the off-ramps.

Table 9
Freeway Ramp Queuing Analysis – Non-Education Option

	Saratoga Avenue & SR 85 SB Ramp		Saratoga Avenue & SR 85 NB Ramp	
	EBL/EBT/EBR[2]		WBL/WBT/WBR[2]	
Analysis Scenario	AM	PM	AM	PM
Existing				
Cycle (sec)	95	100	95	100
Volume (vph)	423	330	488	1427
95th %. Queue (veh/ln)	17	14	19	50
95th %. Queue[1] (ft/ln)	425	350	475	1250
Storage (ft/ln)	2300	2300	2500	2500
Adequate (Y/N)	Y	Y	Y	Y
Background				
Cycle (sec)	95	100	95	100
Volume (vph)	423	330	488	1427
95th %. Queue (veh/ln.)	17	14	19	50
95th %. Queue[1] (ft/ln)	425	350	475	1250
Storage (ft./ ln.)	2300	2300	2500	2500
Adequate (Y/N)	Y	Y	Y	Y
Background Plus Project - Non-Education Option				
Cycle/Delay[1] (sec)	95	100	95	100
Volume (vph)	431	344	599	1471
95th %. Queue (veh/ln)	17	15	21	51
95th %. Queue[2] (ft/ln)	425	375	525	1275
Storage (ft/ln)	2300	2300	2500	2500
Adequate (Y/N)	Y	Y	Y	Y

Notes:
EBL = eastbound left-turn movement; EBT = eastbound through movement; EBR = eastbound right-turn movement; WBL = westbound left-turn movement; WBT = westbound through movement; WBR = westbound right-turn movement.
[1] Assumes 25 feet per vehicle queued.
[2] Total volume and total length of storage for the approach were analyzed.

Freeway Segment Capacity Analysis

The City is still required to conform to the requirements of the VTA, which establishes a uniform program for evaluating the transportation impacts of land use decisions on the designated CMP Roadway System. The VTA's CMP has yet to adopt and implement guidelines and standards for the evaluation of the CMP roadway system using VMT. Therefore, the effects of the proposed project on freeway segments in the vicinity of the project area following the current methodologies as outlined in the VTA Transportation Impact Analysis Guidelines, was completed. However, this analysis is presented for informational purposes only.

Traffic volumes on the study freeway segments with the project were estimated by adding project trips to the freeway segment volumes obtained from the 2018 CMP Annual Monitoring Report. The results of the freeway segment analysis show that the project trips represent less than one percent of capacity to freeway segments on SR 85 in the project vicinity (See Table 10). Thus, the project would not have an adverse effect on the traffic operations on nearby freeway segments.

Table 10
Freeway Segment Capacity Analysis – Non-Education Option

				Existing Conditions			Non-Education Option - Project Trips	
				Mixed-Flow			Mixed-Flow	
Freeway	Segment	Dir	Peak Hour	# of Lanes[1]	Capacity[2]	LOS[3]	Project Trips	% of Capacity
SR 85	De Anza Blvd to Saratoga Ave	SB	AM	2	4,400	D	4	0.1%
			PM	2	4,400	**F**	2	0.0%
SR 85	Saratoga Ave to Winchester Blvd	SB	AM	2	4,400	D	25	0.6%
			PM	2	4,400	**F**	26	0.6%
SR 85	Winchester Blvd to Saratoga Ave	NB	AM	2	4,400	**F**	19	0.4%
			PM	2	4,400	E	25	0.6%
SR 85	Saratoga Ave to De Anza Blvd	NB	AM	2	4,400	**F**	1	0.0%
			PM	2	4,400	D	5	0.1%

Notes:
HOV = high-occupancy vehicle; LOS = level of service.
1. Number of lanes on each segment are taken from the Google Earth software.
2. Capacity is based on the capacities cited in VTA's *Transportation Impact Analysis Guidelines* (2014).
3. Level of service (LOS) of each segment are taken from VTA's *2018 CMP Monitoring Report*.
Bold indicates a substandard level of service.

Vehicular Site Access and On-Site Circulation

The site access and circulation evaluations are based on the site plan prepared by KTGY, dated March 1, 2021 (see Figures 2, 3, and 4 in Chapter 1). Site access was evaluated to determine the adequacy of the site's driveways with regard to the following: traffic volume, vehicle queues, geometric design, and stopping sight distance. On-site vehicular circulation and parking layout were reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

Site Access

Vehicular access to the project sites would be provided via the existing driveways, one new right-turn only driveway on Saratoga Avenue to the El Paseo site, and one relocated driveway on Quito Road to the El Paseo Site.

For the Saratoga site, access to the parking garage would be provided via a full-access driveway at the Saratoga Avenue/Mall Entrance intersection. The driveway currently provides inbound only access to the site, and the project would widen it to a two-way full-access driveway. A new northbound left-turn lane would be added to the Saratoga Avenue/Mall Entrance intersection (see Figure 3).

For the El Paseo site, access would be provided via the existing driveways for the shopping center, including Mall Entrance driveways on Saratoga and W. Campbell Avenue (both are signalized) and a full access driveway on W. Campbell Avenue south of Hamilton Avenue. The project would close the existing Quito Road driveway and provide a new driveway 120 feet north of the original driveway, which would provide access to the proposed below-grade parking garage. Additionally, the new right-turn only driveway on Saratoga Avenue for the El Paseo site would be located between the Mall Entrance driveway and Lawrence Expressway/Quito Road, to the north side of Building 1. Due to the raised center median on Quito Road, left turns to and from the Quito Road driveway are not possible. Similarly, due to the raised center median on Saratoga Avenue, left turns to and from the new Saratoga Avenue driveway are not possible. The Mall Entrance driveways on Saratoga Avenue and on W. Campbell Avenue to access the El Paseo site have landscaped medians to separate inbound and outbound traffic.

According to the City of San Jose Department of Transportation (DOT) Geometric Design Guidelines (Addendum Drawing No. R-8), the typical width for a two-way two-lane driveway that serves a commercial development is 16 to 32 feet wide. This provides adequate width for vehicular ingress and egress and provides a reasonably short crossing distance for pedestrians. The typical width for a one-way driveway that serves a commercial development is 12 feet wide per lane. The two-way driveways are shown to be 26 feet wide, and the driveways with medians are a total of 50 to 52 feet wide (25 to 26 feet for two inbound lanes and 25 to 26 feet for two outbound lanes), which meet City guidelines.

The City typically requires developments to provide adequate stacking space between the sidewalk and any entry gates or on-site perpendicular parking spaces. This prevents vehicles from queuing onto the street. All of the driveways show at least 50 feet of vehicle stacking space between the sidewalk and the first 90-degree parking stall, which meets the City's requirement. Therefore, adequate stacking space would be provided.

Sight Distance at Project Driveways

The project driveways should be free and clear of any obstructions to provide adequate sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles and bicycles traveling on Saratoga Avenue, Quito Road, and W. Campbell Avenue. Any landscaping and signage should be located in such a way to ensure an unobstructed view for drivers exiting the site. Providing the appropriate sight distance reduces the likelihood of a collision at a driveway and provides drivers with the ability to locate sufficient gaps in traffic and exit a driveway.

The project would not alter the existing driveways on Saratoga Avenue and W. Campbell Avenue that provide access to both sites. According to the site plan, the landscape plan shows street trees would be added along the project frontages on both Quito Road and Saratoga Avenue. There would be no landscaping changes along W. Campbell Avenue. The type and location of the street trees would be determined by the City of San Jose Public Works Department at the implementation stage. Note that street trees have a high canopy and would not obstruct the view of drivers exiting the project driveways. Therefore, sight distance would be adequate for the existing driveways.

The project would add a new right-turn only driveway on Quito Road, approximately 120 feet north of the existing driveway to be removed, and on Saratoga Avenue approximately 170 feet east/north of Quito Road. The minimum acceptable sight distance at the driveway is calculated according to the Caltrans recommended stopping sight distance. Sight distance requirements vary depending on roadway speeds. The Quito Road driveway would require a stopping sight distance of 300 feet, based

on the design speed of 40 mph. Thus, a driver must be able to see 300 feet looking south while existing the driveway. The Quito Road driveway has adequate sight distance. For the Saratoga driveway, a driver must be able to see vehicles turning from northbound Quito Road. The slip right-turn lane from northbound Quito Road to northbound/eastbound Saratoga Avenue makes it easier for vehicles to make turns with a higher speed. Given that vehicles are likely to travel at a speed of 25 mph around the turn, the recommended Caltrans stopping sight distance would be 150 feet. The sight distance for traffic turning from Quito Road/Lawrence Expressway is 170 feet, which is adequate.

Traffic Operations at Project Driveways

The project-generated trips that are estimated to occur at the Saratoga site project driveway and the existing and new driveways to access the El Paseo site are shown in Figure 21. All outbound vehicles at the Quito Road driveway and southern Saratoga Avenue driveway are required to make a right turn out of the driveway due to the raised landscaped median. It should be noted that the evaluation of the driveway traffic operations account for the existing traffic accessing the site at the existing driveways.

Traffic operations at the project driveways were evaluated with a vehicle queuing analysis for left-turn inbound traffic and outbound driveway traffic (see Table 11). The analysis evaluates whether adequate left-turn storage would be provided for the project's inbound traffic and whether there would be long vehicle queues on site for the outbound traffic.

Left-Turn Inbound Traffic at Driveways

Northbound Left Turn from Saratoga Avenue to Saratoga Site

As part of the project, a new northbound left-turn lane from Saratoga Avenue to the Saratoga site would be provided. The new left-turn lane would provide 50 feet (2 vehicles) of storage. There are estimated to be one vehicle in the 95th percentile queue during the AM peak hour and 2 vehicles in the 95th percentile queue during the PM peak hour. Thus, the proposed storage lane would be adequate for the expected 95th percentile queue during both the AM and PM peak hours.

Although the left-turn pocket would provide adequate storage length for the estimated left-turn traffic, the City requires a minimum 120-foot northbound left-turn pocket on Saratoga Avenue to the Saratoga site. Because the left-turn pocket is shown to be back-to-back with the left-turn lane from Saratoga Avenue to Quito Road, extending the storage lane at the project driveway would require further shortening the southbound left-turn pocket to Quito Road. As shown above in Table 8 under the Intersection Queueing Analysis, the left-turn queue from southbound Saratoga Avenue to southbound Quito Road already extends past the left-turn lane under existing and background conditions. Therefore, to further extend the northbound left-turn pocket to the Saratoga site, dual left-turn lanes to Quito Road should be considered.

To accommodate a minimum 120-foot northbound left-turn pocket on Saratoga Avenue to the Saratoga site and a second left-turn lane from Saratoga Avenue to southbound Quito Road, the City recommends a lane reduction along northbound Saratoga Avenue between the Quito Road/Lawrence Expressway intersection and the Mall Entrance intersection, as shown in Figure 22. Although the improvement would reduce the northbound through lanes on Saratoga Avenue at Quito Road/Lawrence Expressway from three to two lanes, it would not degrade the intersection level of service.

In addition to the new northbound left-turn lane, the project proposes to install crosswalks crossing Saratoga Avenue at the driveway intersection. In order to enhance pedestrian crossing, the project should modify the signal to provide an 8-phase operation.

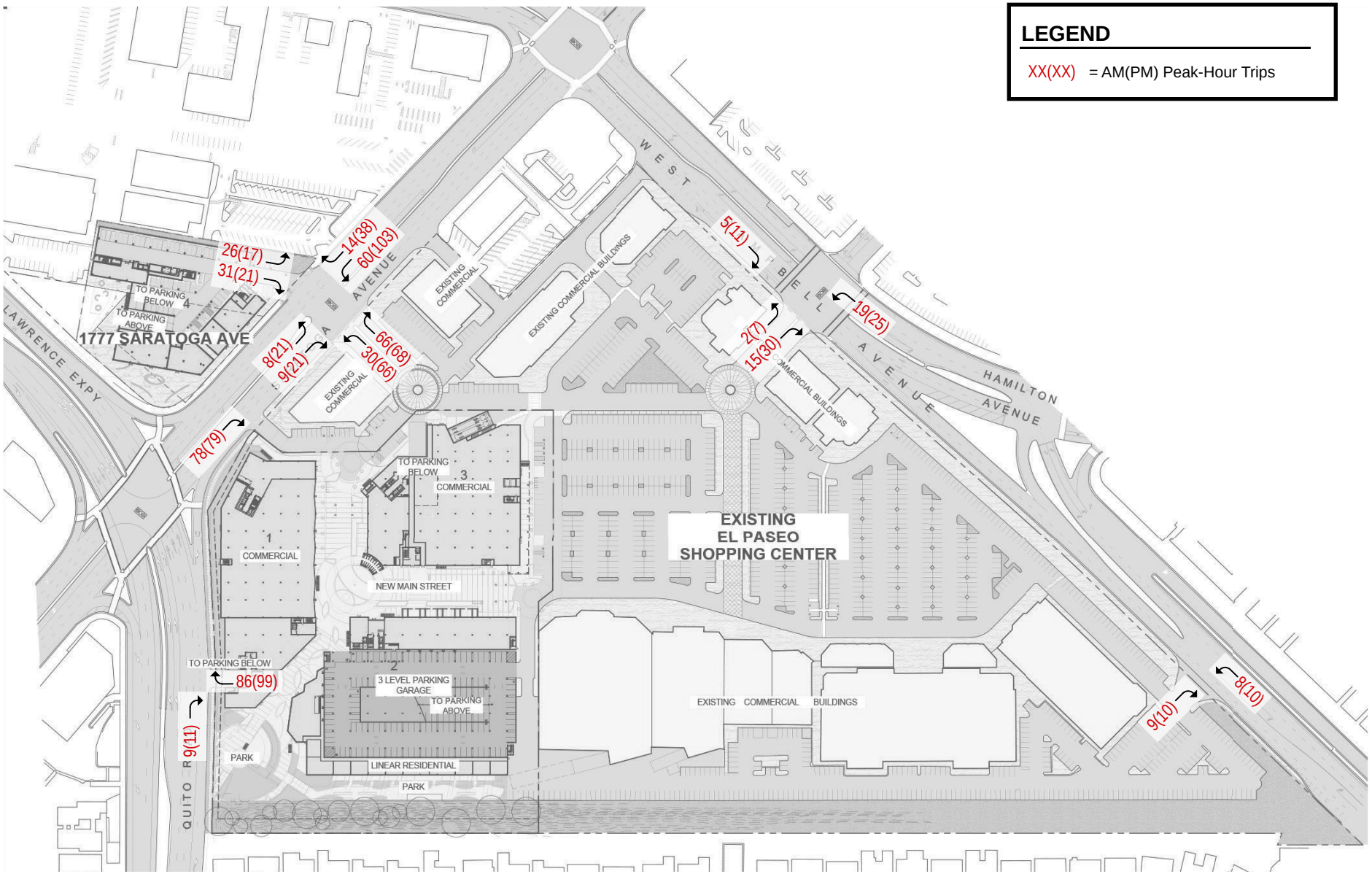


Figure 21
Project Trips at Driveways - Non-Education Option

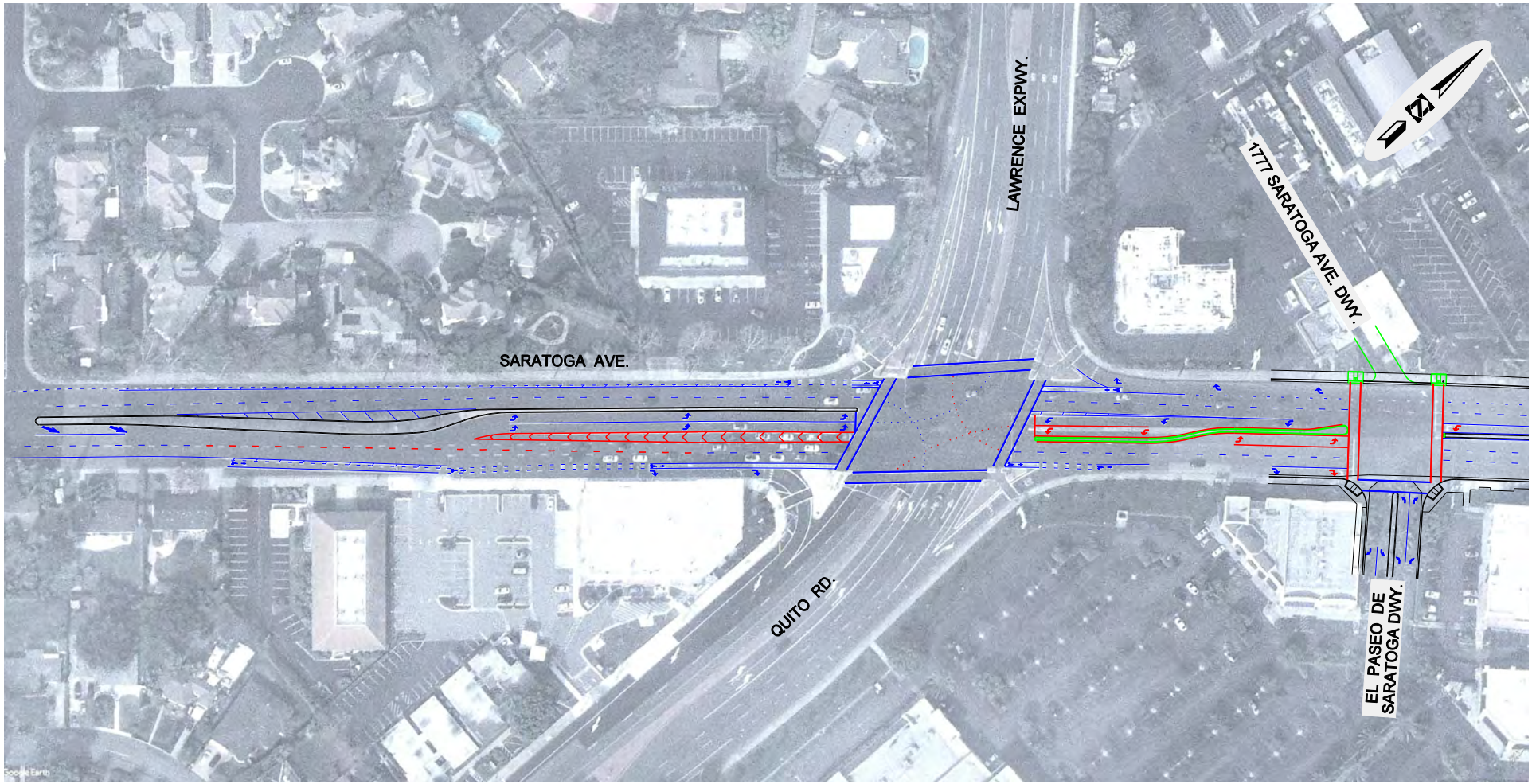


Figure 22
Conceptual Improvement Plan on Saratoga Avenue at Mall Entrance

Table 11
Driveway Queuing Analysis – Non-Education Option

	Saratoga Ave & Entrance								Mall Entrance & Campbell Ave			
	NBL[3]		SBL		EBL/EBT/EBR[4]		WBL[5]		NBL/NBT[5]		WBL	
Analysis Scenario	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing												
Cycle/Delay[1] (sec)	--	--	130	130	--	--	130	130	130	130	130	130
Volume (vph)	--	--	51	103	--	--	122	178	21	94	49	80
Number of lanes	--	--	1	1	--	--	1	1	1	1	1	1
Volume (vphpl)	--	--	51	103	--	--	122	178	21	94	49	80
95th %. Queue (veh/ln)	--	--	4	8	--	--	8	11	2	7	4	6
95th %. Queue[2] (ft/ln)	--	--	100	200	--	--	200	275	50	175	100	150
Storage (ft/ln)	--	--	225	225	--	--	150	150	150	150	150	150
Adequate (Y/N)	--	--	Y	Y	--	--	**N**	**N**	Y	**N**	Y	Y
Project Conditions - Non-Education Option												
Cycle/Delay[1] (sec)	130	130	130	130	130	130	130	130	130	130	130	130
Volume (vph)	8	21	97	176	57	38	142	204	23	101	60	89
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vphpl)	8	21	97	176	57	38	142	204	23	101	60	89
95th %. Queue (veh/ln)	1	2	7	11	5	4	9	12	3	7	5	6
95th %. Queue[2] (ft/ln)	25	50	175	275	125	100	225	300	75	175	125	150
Storage (ft/ln)	120	120	225	225	75	75	125	125	100	100	150	150
Adequate (Y/N)	Y	Y	Y	**N**	**N**	**N**	**N**	**N**	Y	**N**	Y	Y

Notes:
WBL = westbound left-turn movement; NBL = northbound left-turn movement; NBT = northbound through movement; EBL = eastbound left-turn movement; EBT = eastbound through movement; EBR = eastbound right-turn movement.

[1] Cycle length used for signalized intersections. Delay used for unsignalized intersections.

[2] Assumes 25 feet per vehicle queued.

[3] The existing lane configurations do not include northbound left-turn traffic.

[4] The existing lane configurations do not include any eastbound traffic.

[5] The storage length under project conditions is measured from the beginning of the crosswalk to the traffic circle on site.

Southbound Left Turn from Saratoga Avenue to Mall Entrance

The existing storage capacity for the southbound left-turn lane from Saratoga Avenue to the Mall Entrance is up to 9 vehicles (225 feet) without interfering with other movements. There are estimated to be 8 vehicles in the 95th percentile queue during the PM peak hour under existing conditions. The project is expected to add 3 vehicles to the queue, for a total of 11 vehicles. This would cause the queue to extend past the storage lane by 2 vehicles during the PM peak hour. However, the small increase in the 95th percentile queue is not expected to cause a noticeable effect on the southbound traffic operations.

Westbound Left Turn from Campbell Avenue to Mall Entrance

The westbound left-turn lane has approximately 150 feet (6 vehicles) of storage interfering with other movements. The 95th percentile queue is expected to have 6 vehicles during the PM peak hour. The project is not expected to cause the queue to extend past the storage lane.

Right-Turn Inbound Traffic at Driveways

Northbound Right Turn from Saratoga Avenue to Mall Entrance

Under project conditions, there are estimated to be 109 vehicles in the AM peak hour and 212 vehicles in the PM peak hour making a right turn from northbound Saratoga Avenue into the northern driveway to the El Paseo site. Because there is a dedicated right-turn lane for the right-turn traffic, vehicles can make a right-turn most of the time at the red signal, except when the southbound left-turn movement has a green light. The 95th queue length calculated by TRAFFIX was 3 and 8 vehicles (or 75 and 200 feet) during the AM and PM peak hours, respectively, under with project conditions. The driveway would be 200 feet north of the new right-turn only driveway to the El Paseo site. Therefore, the queue is not expected to reach the southern Saratoga Avenue driveway.

Northbound Right Turn at New Saratoga Avenue Driveway

At the new right-turn only driveway on Saratoga Avenue, there would be approximately 80 feet between the driveway and the right-turn lane from Quito Road to Saratoga Avenue. Because of the short distance between the driveway and Quito Road, a vehicle queue of more than two vehicles would block the right-turn traffic from Quito Road to Saratoga Avenue. There are estimated to be 78 vehicles in the AM peak hour and 79 vehicles in the PM peak hour making a right turn from northbound Saratoga Avenue into the El Paseo site under project conditions. This calculates to approximately one vehicle every minute during the AM and PM peak hours. Therefore, the probability of two or more right turn vehicles at this driveway at the same time would likely be low. Thus, the maximum queue is not expected to affect the traffic operations at the Quito Road/Saratoga Avenue intersection.

Northbound Right Turn at the Quito Road Driveway

The northbound right-turn lane from Quito Road into the El Paseo site has approximately 825 feet of storage before reaching the intersection of Quito Road/Northlawn Drive. Vehicles entering the driveway are free to make a right-turn without stopping as there are no conflicting movements. Vehicles would have their own lane to enter the northbound traffic with approximately 230 feet to merge into a northbound through lane. Thus, any queues at the Quito Road driveway are not expected to affect through traffic.

The driveway that leads directly into the underground garage for the shopping mall is not a practical design for retail patrons. Retail motorists should have the option to stay at ground level. Therefore, it is recommended that the driveway not directly lead to the underground garage, but connect to a surface drive aisle so that motorists can stay at ground level and access the surface parking lots.

Outbound Traffic at Driveways

Eastbound Movement from Saratoga Site to Saratoga Avenue

Currently, the west leg at the Mall Entrance/Saratoga Avenue intersection only allows for inbound movements. The project would change the west leg to be a two-way full-access driveway that provides access to the Saratoga site. The driveway is shown to have a sharp angle for the outbound right turn, which makes it difficult for outbound traffic to turn onto southbound Saratoga Avenue. The larger turning radius for inbound right turn makes it easier to turn to the site with a higher speed, which is a safety concern for the sidewalks at the location. The driveway should be aligned perpendicular to Saratoga Avenue.

The driveway would have a distance of 75 feet between the face of the curb and the first 90-degree parking space, which could accommodate a vehicle queue of three vehicles without blocking the access to the parking spaces along the drive aisle. The project is expected to have a maximum vehicle

queue of 5 vehicles during the AM peak hour and 4 vehicles during the PM peak hour. This would occasionally block up to the first 4 parking spaces along the drive aisle west of the loading area. Because this is a signalized driveway, the driveway should have adequate storage length between the face of the curb and the first 90-degree parking space to accommodate the maximum vehicle queue. The project should provide at least 125 feet of clearance before the first parking space. Therefore, the first 4 parking spaces west of the loading area near the entrance should be removed.

The project proposes to install crosswalks crossing Saratoga Avenue at the driveway intersection. In order to enhance pedestrian crossing, the project should modify the signal to provide an 8-phase operation. This would require left-turn lanes and protected left-turn phases to be provided for the outbound approaches from both the Saratoga and El Paseo sites. Therefore, the driveway should include a separate left-turn lane so that the signal could run 8 phases.

Westbound Left Turn from Mall Entrance to Saratoga Avenue

The westbound left-turn lane currently has approximately 150 feet (6 vehicles) of storage within the parking lot before interfering with other movements. The project would shorten the length of storage to approximately 125 feet, due to the installation of a traffic circle. The 95th percentile queue currently has approximately 8 vehicles during the AM peak hour and 11 vehicles during the PM peak hour. The project is expected to increase the queue by one vehicle during the AM and PM peak hours. Thus, the queue would extend past the storage lane by 4 vehicles during the AM peak hour and 7 vehicles during the PM peak hour. It is likely that vehicles would be queued in the traffic circle occasionally during the peak hours, which would hinder all other movements. Because this is a signalized driveway, the driveway should provide adequate storage length to accommodate the maximum vehicle queue before interfering with other movements so that the green light can be fully utilized by the outbound vehicle queue. It is recommended that the project remove the traffic circle and reconfigure the on-site circulation to make the inbound and outbound traffic along the driveway aisle a through movement without stops within the site.

Northbound Movement from Mall Entrance to W. Campbell Avenue

The northbound movement has approximately 150 feet (6 vehicles) of storage within the parking lot before interfering with other movements. The project would shorten the length of storage to approximately 100 feet, due to the installation of a traffic circle. The 95th percentile queue currently has approximately 2 vehicles during the AM peak hour and 7 vehicles during the PM peak hour. The project is expected to increase the queue by one vehicle during the AM peak hour. The queue is expected to exceed the storage lane by 3 vehicles during the PM peak hour. It is likely that vehicles would be queued in the traffic circle occasionally during the PM peak hour, which would hinder all other movements. Because this is a signalized driveway, the driveway should provide adequate storage length to accommodate the maximum vehicle queue before interfering with other movements so that the green light can be fully utilized by the outbound vehicle queue. It is recommended that the project remove the traffic circle and reconfigure the on-site circulation to make the inbound and outbound traffic along the driveway aisle a through movement without stops within the site.

Recommendations for Site Access

- The left-turn pocket on Saratoga Avenue to the Saratoga site should be a minimum of 120 feet long.
- A lane reduction should be considered along northbound Saratoga Avenue between the Quito Road/Lawrence Expressway intersection and the Mall Entrance intersection to accommodate a minimum 120-foot northbound left-turn pocket to the Saratoga site and a second left-turn lane from Saratoga Avenue to southbound Quito Road.

- The project should modify the traffic signal at the Saratoga Avenue/Mall Entrance intersection to provide 8-phase operation in order to enhance pedestrian crossing for the crosswalks crossing Saratoga Avenue. To accommodate the 8-phase signal, the Saratoga site driveway should include a separate left-turn lane.
- The Saratoga site driveway should be aligned perpendicular to Saratoga Avenue.
- At the Saratoga site driveway, the first 5 parking spaces near the entrance should be removed to provide at least 125 feet of clearance between the face of the curb and the first 90-degree parking space.
- At the Quito Road driveway, retail motorists should have the option to stay at ground level. It is recommended that the driveway not directly lead to the underground garage, but connect to a surface drive aisle.
- The mall entrance driveways on Saratoga Avenue and W. Campbell Avenue should provide adequate storage length to accommodate the maximum vehicle queue. It is recommended that the project remove the traffic circles on mall entrance driveways and reconfigure the on-site circulation to make the inbound and outbound traffic along the driveway aisle a through movement without stops within the site.

On-Site Circulation

Saratoga Site

Access to the Saratoga site would be provided by one full access driveway at the signalized intersection of the Mall Entrance and Saratoga Avenue. The driveway would provide access to the four-level parking garage (see Figures 23 and 24). The parking garage would provide 90-degree parking. Parking stalls would be access via a 26-foot two-way drive aisle, which meets the City's standard minimum width for two-way drive aisles where 90-degree parking is provided.

There would be dead-end aisles within all four levels of the parking garage. Dead-end aisles are undesirable because drivers can enter the aisle, and upon discovering that there is no available parking, must back out or conduct three-point turns. The project should provide a turnaround space at all dead-end aisles to provide adequate circulation for drivers or assign specific parking spaces for residents.

Recommendation: The project should provide a turnaround space at all dead-end aisles to provide adequate circulation for drivers or assign specific parking spaces for residents.

El Paseo Site

The El Paseo site would provide a drive aisle that connects from the Saratoga Avenue driveways through buildings within the site to the existing surface lots, east of the proposed Building 3. The site would have two separate garages: one above ground garage in Building 2 (see Figure 25) and one underground garage under Buildings 1 and 3 (see Figure 26) There would be no connection between two garages. The B1 level of the underground garage and ground level (P1) of the above ground garage would be used by commercial/retail use, and remaining levels would be used the residential use.

Building 2 Above Ground Garage

Access to the Building 2 garage (see Figures 4 and 25) would be provided via the garage entrance located in the northeast corner of the garage, which then can connect to the new driveway on Saratoga Avenue and the existing driveways of the shopping center. The above ground garage would be

accessed via one ramp running through the center of the garage. The garage would provide 90-degree parking. Parking stalls would be accessed via a 26-foot two-way drive aisle, which would meet the City's standard minimum width of 26 feet for two-way drive aisles where 90-degree parking is provided.

Buildings 1 and 3 Underground Garage

Direct access to the Buildings 1 and 3 garage (see Figure 26) would be provided via the proposed right-turn in and right-out only driveway on Quito Road, the new proposed right-in and right-out only driveway on Saratoga Avenue, and the existing Saratoga Avenue driveway. Additional access to the garage would be provided via the existing driveways on W. Campbell Avenue and Saratoga Avenue. The underground garage would be accessed via two ramps. The southwest garage ramp would provide direct access to and from Quito Road. The northern garage ramp would provide access to and from the new traffic circle and connect to both driveways on Saratoga Avenue, as well as the other existing driveways of the shopping center. The northern ramp would lead directly into the new traffic circle. As discussed above under Traffic Operations at Driveways, the outbound vehicle queue at the mall entrance driveway would extend from Saratoga Avenue past the traffic circle during red lights. It is likely that vehicles would be queued in the traffic circle during the peak hours, which would hinder all other movements. Therefore, the outbound traffic using the northern ramp would back up into the garage and would not be able to exit the garage efficiently. Therefore, to improve on-site circulation, the northern ramp should be removed or relocated.

The northern garage ramp is not shown to align with the garage drive aisles (see Figure 26). Vehicles traveling from the drive aisle to the northern garage ramp would have to make a quick left turn then right turn while looking for vehicles traveling onto the ramp from the drive aisle on the right. The northern garage ramp should be moved to align with the drive aisles to avoid potential conflicts within the garage.

The parking garage would provide 90-degree parking throughout the garage. Parking stalls would be accessed via a 26-foot two-way drive aisle, which meets the City's standard minimum width for two-way drive aisles where 90-degree parking is provided. There are no dead-end aisles within the El Paseo site garage.

The project proposes tandem spaces along the southern edge of both levels in the garage. Level B1 is proposed as commercial parking. The project should assign the tandem spaces to employees to ensure that all spaces are being used when possible. Level B2 is proposed as residential parking. Each tandem parking space should be assigned to one unit with two- or more bedrooms.

Recommendation: The project should move the location of the northern garage ramp on Level B1 to align with the drive aisles and to avoid potential conflicts at the bottom of the ramps. Ultimately, to improve on-site circulation, the northern ramp should be removed or relocated. The project should assign the tandem spaces to employees and residents to ensure that all spaces are being used when possible.

Parking Stall Dimensions

The City's off-street parking design standard for 90-degree uniform parking stalls is 8.5 feet wide by 17 feet long. The site plan shows all parking stalls conforming to this standard. The handicap stalls are shown to be 9 feet wide by 17 feet long, with some spaces including an overhang, and include access aisles of 9 feet for van accessibility, which meets ADA standards.

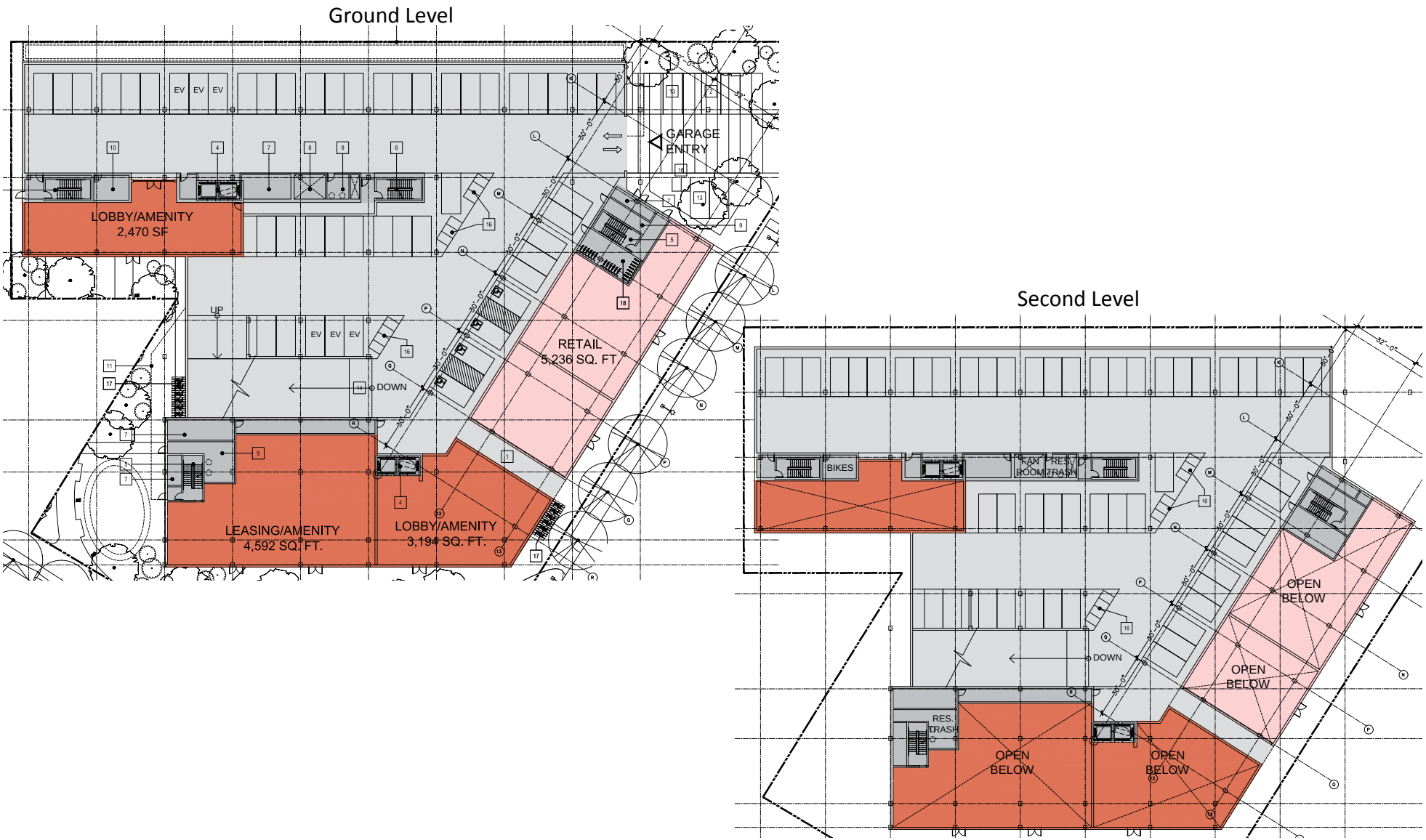


Figure 23
Saratoga Site Parking Garage - Ground and Second Levels

NORTH
Not to Scale

Basement Level 2

Basement Level 1

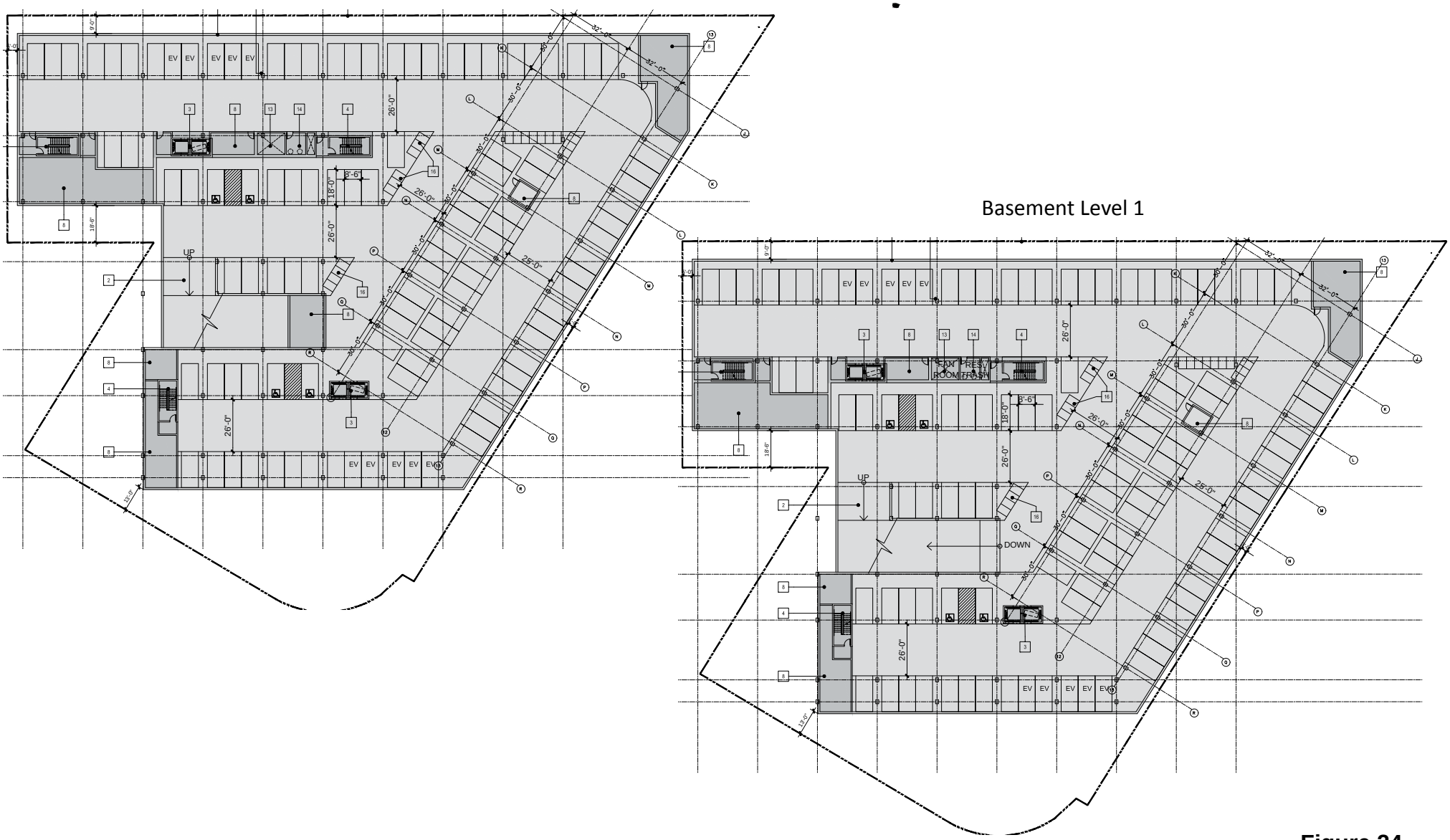


Figure 24
Saratoga Site Parking Garage - Underground Levels

NORTH
Not to Scale

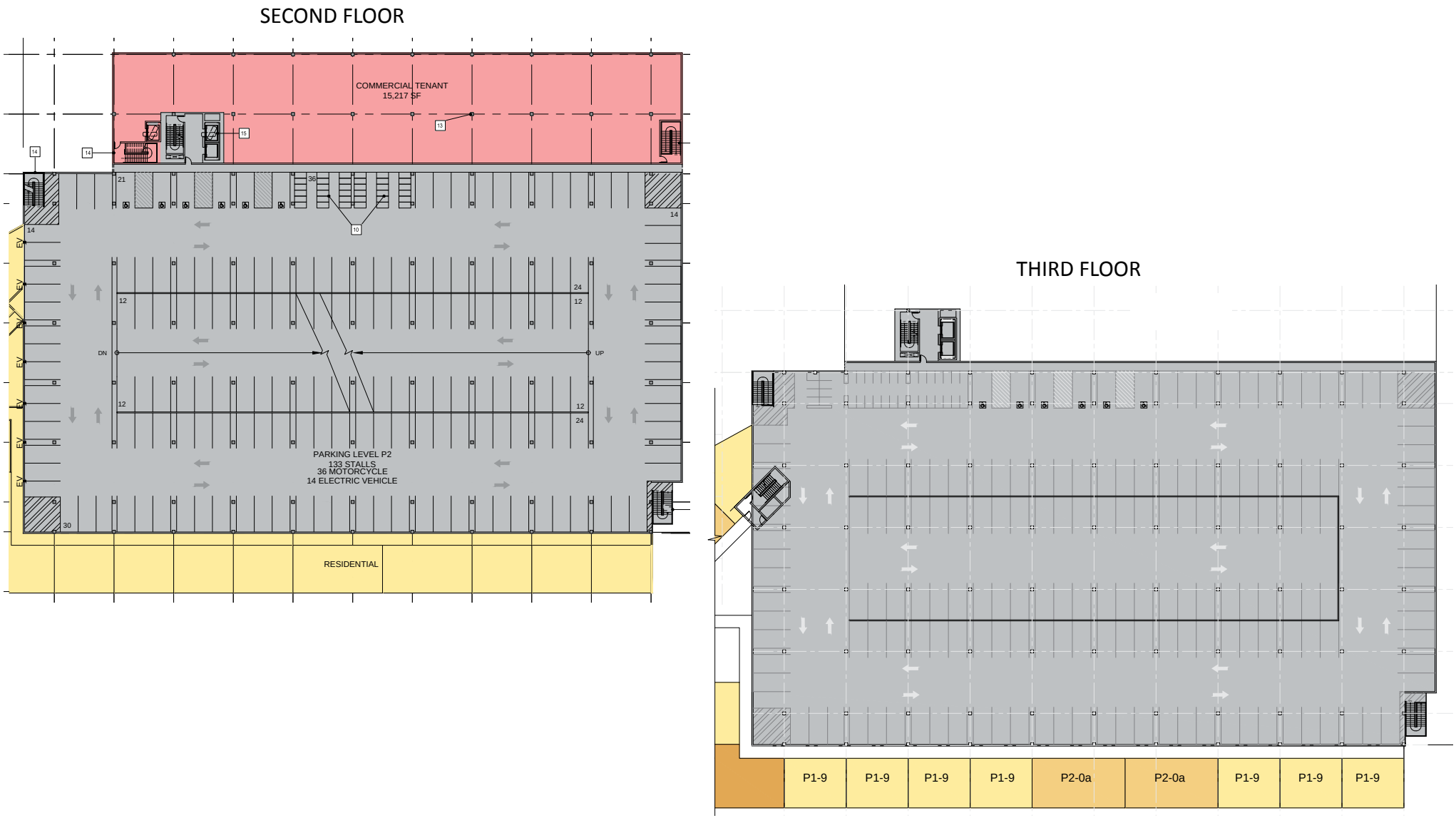
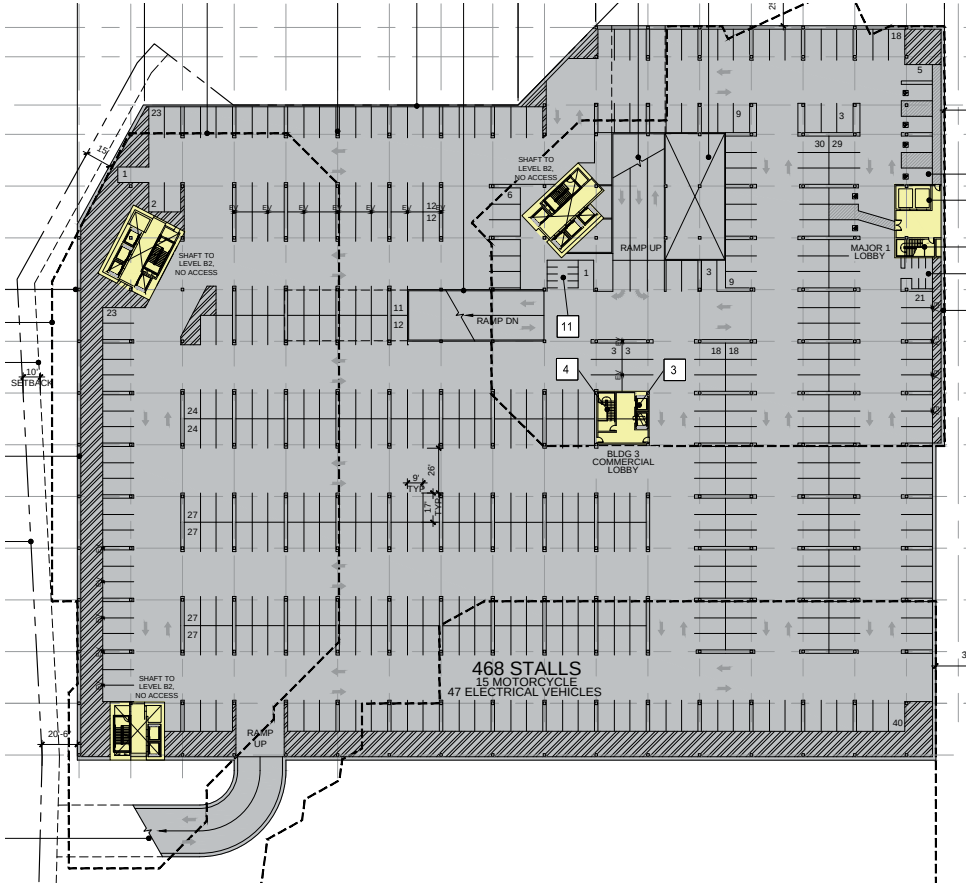


Figure 25
El Paseo Site Building 2 Parking Garage - Non-Education Option

NORTH
Not to Scale

LEVEL B1

LEVEL B2



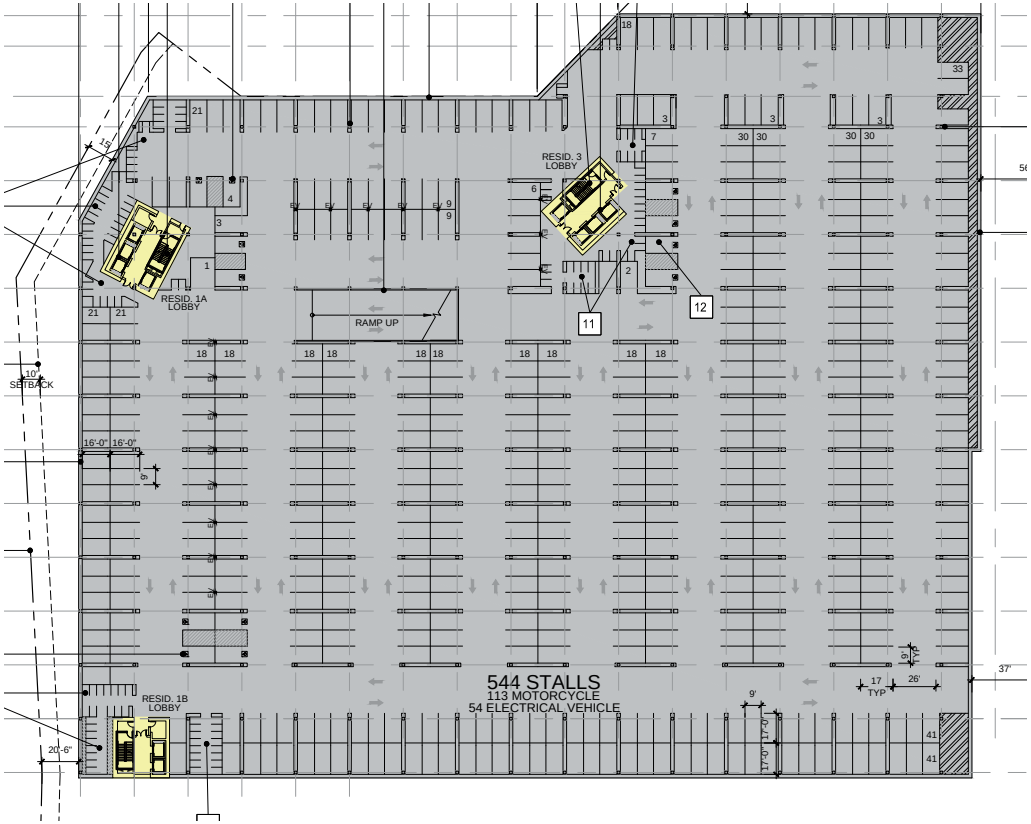


Figure 26
El Paseo Site Buildings 1 & 3 Parking Garage - Non-Education Option

NORTH
Not to Scale

Passenger Loading

At the Saratoga site, the site plan shows a loading area would be provided near the driveway entrance for loading and staging.

At the El Paseo site, the site plan shows a loading area would be provided on the north side of Building 3 (see Figure 4) with access via the northern Saratoga Avenue driveway (Mall entrance intersection).

Truck Access and Circulation

The project site plan was reviewed for truck access using truck turning-movement templates for a SU-30 truck type (single unit trucks), which represents small emergency vehicles, garbage trucks, and small to medium delivery trucks.

Freight Loading Operations

According to the City of San Jose Zoning Code, retail developments having a floor area of 10,000 square feet or more should provide a minimum of one off-street loading space, plus one additional loading space for each 20,000 square feet of floor area.

The Saratoga site proposes less than 10,000 square feet of retail/commercial development. Thus, loading spaces are not required at the Saratoga site.

The site plan shows two covered and one surface loading space to the north side of Building 3 with access via the northern Saratoga Avenue driveway (Mall entrance intersection), which does not meet the requirement for 70,372 s.f. of retail space proposed for the El Paseo site. The El Paseo site requires one additional loading zone.

Freight trucks currently access the loading docks of the retail buildings along the south edge of the El Paseo shopping center through the W. Campbell Avenue driveways and travel westbound to the loading areas located along the southern edge of the El Paseo site. Currently, trucks exit through the Quito Road driveway. With the project, trucks would still access the loading docks through W. Campbell Avenue, but they would exit via the new drive aisle between Building 2 and the existing REI building, which then connects to the surface lot, Saratoga Avenue, and W. Campbell Avenue (see Figure 27). As shown in Figure 27, heavy freight trucks accessing the existing REI loading dock would be able to back into and exit the loading dock without any maneuvering issues.

Recommendation: The project applicant should coordinate with City staff to determine if three loading zones for the El Paseo site would be adequate to serve the proposed commercial/retail uses. Trucks exiting the site through the existing surface parking lot would increase the conflict between trucks and pedestrians/passenger vehicles within the site. It is recommended that the site plan be modified so that trucks can exit directly to Quito Road as they do today.

Garbage Collection

Saratoga Site

The site plan shows three residential trash enclosures for the Saratoga site within the ground floor of the garage, one residential trash enclosure on the first and second subterranean floors of the garage, and two residential trash enclosures on the second floor of the garage. All trash should be brought to the ground floor of the garage during garbage pick-up days. The garbage trucks could use the drop-off plaza near the driveway entrance to perform pick up operations. The recommended turnaround spaces for the dead-end aisles on the ground floor should be wide enough to allow for the garbage trucks to use.

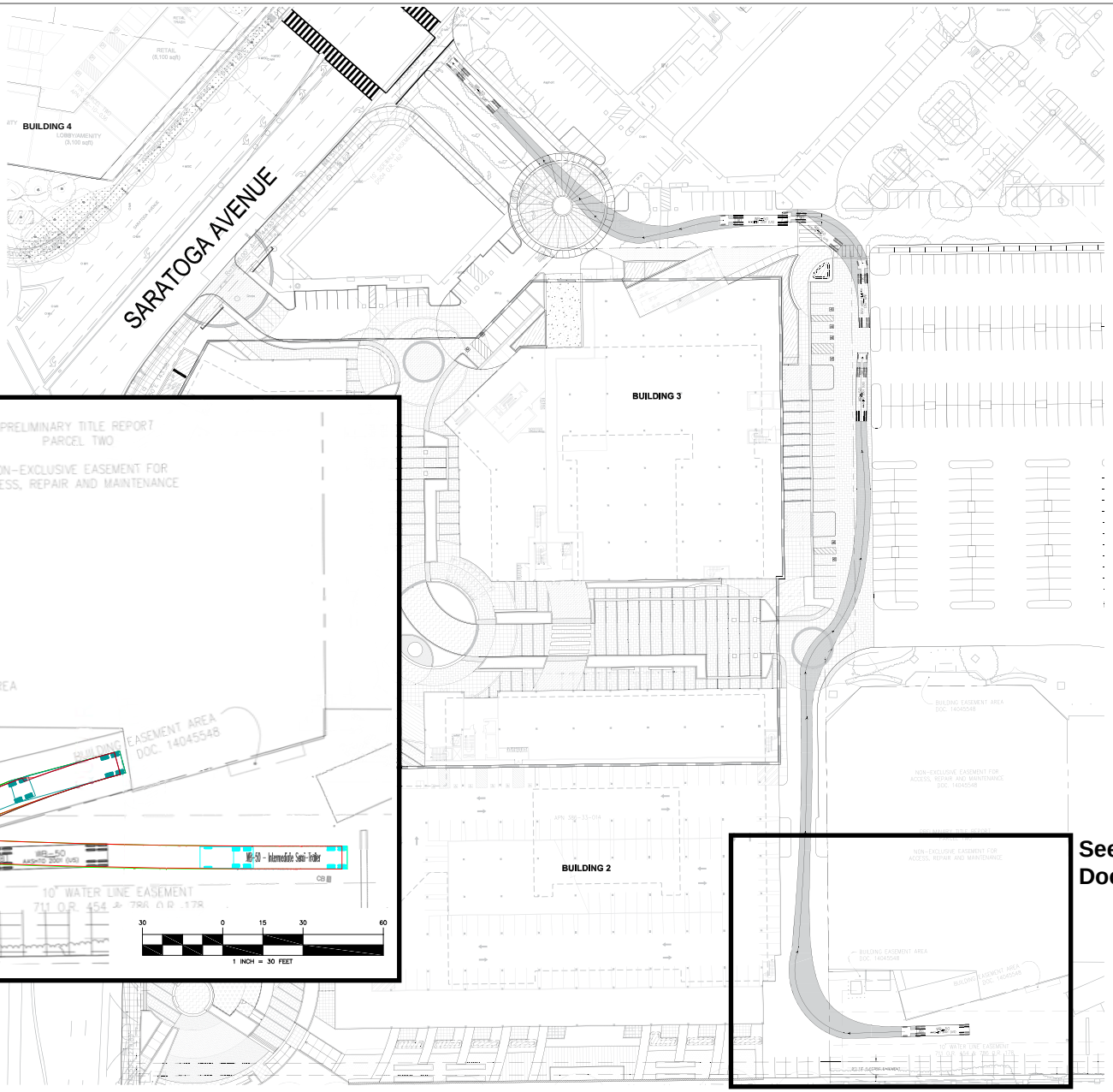


Figure 27
Freight Truck Turning Template for Loading Dock Access

NORTH
Not to Scale

El Paseo Site

The site plan shows trash enclosures on floors three through 11 of Building 1. The site plan does not show trash enclosures for the other buildings on the El Paseo site. Trash enclosures should be provided throughout the site with at least one enclosure for each building. It is presumed that garbage pick-up operations would occur on site, within the surface parking lots.

Emergency Vehicle Access

Quito Road and the emergency vehicle access easement (EVAE) along the edge of the site would provide emergency vehicle access to all sides of the project buildings. The City of San Jose Fire Department requires that all portions of the buildings be within 150 feet of a fire department access road and requires a minimum of 6 feet clearance from the property line to all sides of the buildings. According to the project site plan, the project would meet the 6-foot clearance requirement and the 150-foot fire access requirement.

Effects on Surrounding Neighborhood Streets

Access to project site is via two major arterials (Saratoga Avenue and W. Campbell Avenue) and one connector street (Quito Road). Because of the easy access to the project site from major arterials, the project traffic is not expected to use/cut-through neighborhood residential streets, such as Northlawn Drive, to access the site. It should be noted that Quito Road and Campbell Avenue are already serving commercial uses on the site. As shown in Figure 17, the project would add a small number of new trips to the section of Quito Road (4 AM and 3 PM peak-hour trips) and Campbell Avenue (one AM and one PM peak-hour trips) south of the site, and is not expected use Northlawn Drive to access the site. Therefore, the project is not expected cause an adverse effect or cut-through traffic issue on Northlawn Drive between Quito Road and Campbell Avenue.

To evaluate whether there is an existing cut-through traffic issue on Northlawn Drive, existing daily traffic volumes and 85th percentile vehicle speeds on Northlawn Drive were analyzed based on the traffic count data provided by the City for the segments of Northlawn Drive between Serge Avenue and Ashland Way (east of Quito Road) and between Harmony Way and Elmwood Drive/Mayfield Avenue (west of Campbell Avenue) (see Table 12). For the evaluation, the existing daily traffic volumes on Northlawn Drive were compared to acceptable volume thresholds for a local residential street. Since the City has not established any standards or thresholds regarding neighborhood streets, the evaluation is presented for information only.

A typical average daily traffic (ADT) volume for a local street with a posted speed limit of 25 mph in the City of San Jose ranges from 1,000 to 3,000 vehicles per day. The 24-hour tube counts conducted in December 2015 revealed that Northlawn Drive carried approximately 1,385 to 1,625 vehicles per day. The existing ADT volumes are within the acceptable range for this type of street, and the project would not add any trips to the existing volumes on Northlawn Drive.

Speed surveys conducted on Northlawn Drive revealed that the 85th percentile speeds were 31-34 mph. The posted speed limit along Northlawn Drive is 25 mph. Travel speeds within 7 mph of the posted speed limit are typically considered reasonable. Based on the collected data, the measured 85th percentile speed on westbound Northlawn Drive approaching Quito Road is 9 mph above the speed limit, while the measured 85th percentile speeds for eastbound Northlawn Drive and westbound Northlawn Drive west of Campbell Avenue are within the acceptable limit. The higher speed may be caused by vehicles speeding up after stopping at the upstream intersection at Colusa Way. Because vehicles need to stop again at the Quito Road intersection in 450 feet, and there are no speeding issues for eastbound travel or westbound travel east of Colusa Way, Northlawn Drive would not be

considered for traffic calming measures based on the City of San Jose's definition of an acceptable speed and volume for local streets.

Table 12
Average Daily Traffic on Northlawn Drive

Street Segment	Dir	85th Percentile Speed (mph)	Existing ADT Counts[1]
Northlawn Drive between Harmony Way and Elmwood Drive/Mayfield Avenue	EB	32	666
	WB	31	722
	Total		**1,388**
Northlawn Drive between Serge Avenue and Ashland Way	EB	31	849
	WB	34	772
	Total		**1,621**

Notes:
ADT = Average Daily Traffic.
1. 24-hour tube counts were conducted in December 2015.

Because the volumes on Northlawn Drive are relatively low (within the range for a local street), and there are upstream and downstream signals along Quito Road to allow vehicles to find gaps in traffic on Quito Road to turn to and from Northlawn Drive, a traffic signal at the Quito Road/Northlawn Drive intersection may not provide much benefit for traffic on Northlawn Drive.

Effects on Pedestrian and Bicycle Facilities

The continuous network of sidewalks and crosswalks in the study area exhibits good connectivity and would provide pedestrians with safe routes to transit stops and other points of interest in the project area. Marked crosswalks are provided with pedestrian signal heads at most of the signalized intersections in the surrounding area. The nearby intersections have ADA curb ramps. All corners of the Lawrence Expressway/Quito Road and Saratoga Avenue intersection have ADA curb ramps with truncated domes. Truncated domes are also provided on the southwest and southeast corners of the W. Campbell Avenue and Saratoga Avenue intersection. Truncated domes are the standard design requirement for detectable warnings which enable people with visual disabilities to determine the boundary between the sidewalk and the street.

The Saratoga Avenue/Mall Entrance intersection is missing crosswalks across Saratoga Avenue, and the W. Campbell/Hamilton Avenue intersection is missing a crosswalk in the south leg of the intersection. The site plan shows that the project would provide crosswalks along the north and south legs of the Saratoga Avenue/Mall Entrance intersection (see Figure 3).

Pedestrian Site Access

Saratoga Site

The sidewalks on Saratoga Avenue and Lawrence Expressway would provide pedestrian access to the retail plaza, retail shops, and residential lobby for the Saratoga site. Because Saratoga Avenue is a Grand Boulevard, the sidewalk along the project frontage should be at least 20 feet wide. The site plan shows that the sidewalks along the Saratoga site frontage on Saratoga Avenue would be 22 feet wide. The project is located in the Paseo de Saratoga Urban Village, and therefore, the sidewalk along the project frontage on Lawrence Expressway should be 15 feet wide, based on typical Urban Village

requirements. The site plan shows 18-foot sidewalks with landscaping on Lawrence Expressway along the Saratoga site. A publicly accessible plaza would also be provided at the northeast corner of the Lawrence Expressway/Saratoga Avenue intersection with pedestrian walkways to the retail and the residential buildings at the Saratoga site. The front doors of the retail and residential buildings would face Saratoga Avenue. From the parking garage, pedestrians would be able access these uses via stairways in the northwest section, northeast section, and the southern section of the site. In addition, one elevator would be provided to the lobby/amenity building in the north and one elevator would be provided for the remaining leasing, lobby, amenity, and retail buildings in the south.

El Paseo Site

The sidewalks on Quito Road and Saratoga Avenue would provide pedestrian access to the El Paseo site. The site plan shows that the sidewalk along the El Paseo site frontage on Saratoga Avenue would be 15 feet wide. The sidewalk on Saratoga Avenue along the El Paseo site should be 20 feet wide, based on typical Urban Village requirements. The site plan shows 15-foot sidewalks on Quito Road, which meet typical Urban Village requirements. The project would have a public park/plaza at the southwest corner of the El Paseo site that can be accessed from the sidewalk on Quito Road. The park/pedestrian plaza would connect to the main drive aisle with outdoor open space in the center of the El Paseo site via a pedestrian paseo. The pedestrian paseo and main drive aisle would provide pedestrian access to the buildings and the reconfigured existing surface lot. From the parking garage, Buildings 1, 2, and 3 would be accessed via the lobby through stairways and elevators.

Bicycle Site Access

There are Class II bike lanes on Saratoga Avenue, Prospect Road, Quito Road, W. Campbell Avenue, and W. Hamilton Avenue. The San Tomas Aquino/Saratoga Creek Trail is a Class I bike path located along the west side of Lawrence Expressway. These bicycle facilities would provide access to the project sites.

The San Jose Better Bike Plan 2025 shows proposed Class IV bikeways (protected bike lanes) along Saratoga Avenue and Quito Road. The project should implement or contribute to an in-lieu fee for the construction of a Class IV bike lane along the project frontages on Saratoga Avenue and Quito Road.

Saratoga Site

Long-term bicycle parking storage rooms are shown on the ground floor and second floor of the parking garage. Short-term bicycle racks would be located in front of the lobby/amenity space along Saratoga Avenue and within the public plaza along the west side of the building.

El Paseo Site

Long-term bicycle parking rooms are shown in each building of the El Paseo site. The rooms would be in the residential lobbies/amenity spaces. Short-term bicycle parking racks would be provided in various locations within the site near the building entrances, in the park/public plaza, and along the pedestrian paseo.

Pedestrian and Bicycle Access to Schools

There are four public schools located just under one-mile walking distance from the project site: Prospect High School, Moreland Middle School, Country Lane Elementary School, and Baker Elementary School. Prospect High School is located 0.6 mile west of the project site, Moreland Middle School is located 0.8 mile east of the site, Country Lane Elementary School is located 0.8 mile north of the site, and Baker Elementary School is located 1.0 mile southeast of the site. Safe and direct pedestrian access to all four schools is provided via a continuous network of sidewalks in the surrounding area. Crosswalks are provided at all signalized intersections and at many unsignalized

intersections, and wheelchair ramps are provided at all corners of the intersections, though some do not meet the current ADA design standards.

Students who choose to walk to these nearby schools would use Prospect Road, Lawrence Expressway, Saratoga Avenue, W. Campbell Avenue, and/or W. Hamilton Avenue. These pedestrian routes contain adequate sidewalks, and wheelchair ramps are provided at all corners of the intersections. Crosswalks with push buttons and pedestrian signal heads are provided at all signalized intersections along these routes. Crosswalks are also provided at many unsignalized intersections. Prospect Road, W. Campbell Avenue, and W. Hamilton Avenue have bike lanes and, therefore, would be the best options to access Prospect High School, Moreland Middle School, and Baker Elementary School if traveling by bicycle.

Recommended Improvements for Pedestrian and Bicycle Access

The following improvements are recommended to improve pedestrian safety:

- The project should provide 20-foot sidewalks on Saratoga Avenue along the El Paseo site based on typical Urban Village requirements.
- The project proposes to install crosswalks crossing Saratoga Avenue at the Saratoga Avenue/Mall Entrance intersection. To enhance pedestrian crossing, the signal can be modified to provide 8-phase operation. This would require left-turn lanes and protected left-turn phases to be provided for the eastbound and westbound approaches. Therefore, the Saratoga site driveway should include a separate left-turn lane so that the signal could run 8 phases.
- The project should work with City staff to implement or contribute to the pedestrian access/traffic calming improvements at the Campbell Avenue/Hamilton Avenue intersection, which include removal of two dedicated right-turn lanes on eastbound/southbound Campbell Avenue by closing the triangular area at the intersection, adding a dedicated right-turn lane on the eastbound approach, adding a crosswalk on the south leg across Campbell Avenue and sidewalks on the south side of Campbell Avenue between the Mall Entrance and Hamilton Avenue, adding an eastbound bike lane on Campbell Avenue between the Mall Entrance and Hamilton Avenue, and modifying the traffic signal to create a new signalized pedestrian crosswalk on the south leg and provide a dedicated right-turn lane overlap phase with the northbound left turns from Hamilton Avenue. The improvement is a VMT mitigation measure to improve the pedestrian network.
- The project should implement or contribute to an in-lieu fee for the construction of a Class IV bike lane along the project frontages on Saratoga Avenue and Quito Road.

Effects on Transit Services

The project site is served by Routes 26, 56, and 101 on Prospect Road and W. Campbell Avenue and Route 57 on Quito Road and Saratoga Avenue. The bus stop closest to the project site is located on Saratoga Avenue along the project frontage. The bus stop serves eastbound Route 57. The bus stops for the remaining routes are all within 1,500 feet from the project site (see Figure 8).

Due to the convenient location of the bus stops, it is assumed that some residents and employees of the project would utilize the existing transit services. Based on the trip generation estimates shown in Table 6, it was assumed that 15% of all trip reductions from the non-vehicle mode share and project-specific trip reduction would be made by transit, which equates to approximately 16 new transit riders during the AM peak hour and 18 new transit riders during the PM peak hour. The increase in new riders could be accommodated by the currently available capacity of the bus services in the study area, given that there are two frequent routes with headways of 15 minutes that stop along Saratoga Avenue and

W. Campbell Avenue. Therefore, improvement of the existing transit service would not be necessary with the project.

An evaluation of the effects of project traffic on transit vehicle delay also was completed. The analysis was completed for all transit routes that travel through the study intersections utilizing information presented in the preceding chapter under the intersection level of service analysis. The results of the transit delay analysis are presented in Table 13. The analysis shows that the traffic associated with the project would increase delay to transit vehicles by less than 15 seconds per vehicle traveling in the study area. The VTA has not established policies or significance criteria related to transit vehicle delay. Thus, this data is presented for informational purposes only.

The project would relocate the current bus stop along the project frontage on Saratoga Avenue approximately 300 feet northward to the north side of the Mall Entrance driveway. The project should work with VTA to provide the bus stop that meets the current VTA shelter and bus stop standards at the new location.

Table 13
Transit Vehicle Delay in Study Area – Non-Education Option

Bus Route	Study Area Street(s)	Direction	Projected Change in Transit Vehicle Delay (sec/veh) AM	PM
25	Bollinger Rd	Eastbound	0.5	2.0
		Westbound	0.0	0.0
26	Prospect Rd, W. Campbell Ave, Saratoga Ave	Eastbound	8.2	10.0
		Westbound	1.2	1.7
56	Prospect Rd, Hamilton Ave	Northbound	1.0	0.1
		Southbound	-0.3	0.1
57	Saratoga Ave, Quito Rd	Northbound	8.6	7.9
		Southbound	14.3	13.0
101	Lawrence Expwy, Prospect Rd, Hamilton Ave	Northbound	13.8	1.2
		Southbound	0.7	2.9

Note:
Projected increase in transit delay based on a comparison of background vs. background plus project intersection movement delays calculated by TRAFFIX.

Urban Village and Grand Boulevard Requirements

The project site is located within the Paseo de Saratoga Urban Village Boundary and fronts Saratoga Avenue, which has been designated as a Grand Boulevard by the Envision San José 2040 General Plan. Grand Boulevards are intended to serve as major transportation corridors with priority given to public transit. Sites within an Urban Village and located along a Grand Boulevard must incorporate additional urban design and architectural elements that will facilitate a building with pedestrian orientated design and activate the pedestrian public right-of-way. Although an Urban Village Plan has not yet been developed for the Paseo de Saratoga area, according to the adopted Urban Village Plans, the project might be subject to implement the following Urban Village and Grand Boulevard design features to improve pedestrian and transit facilities:

- Provide a minimum sidewalk width along the frontage on Saratoga Avenue in accordance with the Grand Boulevard design standards. Based typical Urban Village requirements, Grand Boulevard typically required a minimum 20 feet sidewalk width. The project plans to widen

sidewalks along the Saratoga site frontage on Saratoga Avenue to 22 feet. The project should also widen the Saratoga Avenue sidewalks along the El Paseo site frontage to meet the Grand Boulevard standards.

- Provide a minimum sidewalk width along the project frontage on Quito Road and Lawrence Expressway in accordance with typical Urban Village design standards. Projects within an Urban Village are typically required to construct a minimum 15-foot sidewalk along the project frontage for major streets that are not designated as Grand Boulevards. The project plans to widen the sidewalks along Quito Road and Lawrence Expressway to 15 feet and 18 feet, respectively, which meet the Urban Village standards.
- Minimize driveway cuts to minimize conflicts between pedestrians and vehicles and reduce transit delay. Although the project would create a new driveway along the El Paseo site frontage on Saratoga Avenue, it would also remove one existing driveway along the Saratoga site project frontage on Saratoga Avenue. Therefore, the project would not increase the number of driveways within the site.
- Provide enhanced shelters for transit services. The project would relocate the current bus stop along the project frontage on Saratoga Avenue approximately 300 feet northward to the north side of the Mall Entrance driveway. The project should work with VTA to provide the bus stop that meets the current VTA shelter and bus stop standards at the new location.

Saratoga Avenue Vision Zero Corridor

Saratoga Avenue between I-280 and Quito Road is designated as a “Priority Safety Corridor” as part of *Vision Zero San Jose*, January 2020. The goal of Vision Zero San Jose is to create a community culture that prioritizes traffic safety and ensures that mistakes on roadways do not result in severe injury or death. Vision Zero is designed to create policies that focus on roadway safety for all modes, particularly non-automobile modes. Priority Safety Corridors are identified as major street segments that have the highest frequency of fatal and severe injury for people walking, bicycling, motorcycle riding, and driving. Streets with these “Priority Safety Corridor” designations are given priority within the City’s Transportation Capital Improvement Program (CIP) to provide safer transportation systems for all users. Saratoga Avenue was added to the Priority Safety Corridor list in 2017, and the current Vision Zero San Jose has not identified safety improvement plans for the corridor.

Although the current Vision Zero San Jose has not identified safety improvement plans for the corridor, the City has considered the following improvements for the Lawrence Expressway/Saratoga Avenue intersection:

- Remove pork chop islands and tighten the corner radius at the southeast and northeast corners along the project frontages and modify the signal to accommodate pork chop removals. Removal of pork chop islands would improve the multi-modal environment by eliminating unsignalized pedestrian/vehicle conflict points, increasing visibility of pedestrians at the intersection corner, decreasing the crossing distance for pedestrians, providing safer refuge for pedestrians waiting to use the crosswalks, and providing ADA standard curb ramps.

The project applicant should work with City staff to implement the improvements if approved by the County.

Parking

Vehicle and bicycle parking for the project was evaluated for (1) the development size shown on the March 1, 2021 site plan and (2) the maximum development size analyzed for the transportation analysis and traffic operations analysis. The development size shown on the site plan is smaller than

the maximum development size analyzed for traffic operations and is only evaluated for the parking requirements. The proposed land uses under each scheme are shown in Table 14 and summarized below.

Proposed Site Plan

Up to 994 residential dwelling units, up to 74,321 s.f. of retail space, 52,508 s.f. of office space, and 36,120 s.f. of medical office space.

- Saratoga Site – 248 residential dwelling units and 5, 236s.f. of retail space
- El Paseo Site – 746 residential dwelling units, 69,085s.f. of retail space, 52,508 s.f. of office space, and 36,120 s.f. of medical office space

Analyzed Project/Maximum Development

Up to 1,100 residential dwelling units, up to 76,372 s.f. of retail space, 52,508 s.f. of office space, and 36,120 s.f. of medical office space.

- Saratoga Site – 280 residential dwelling units and 6,000 s.f. of retail space
- El Paseo Site – 820 residential dwelling units, 6,372 s.f. of retail space, 52,508 s.f. of office space, and 36,120 s.f. of medical office space

Vehicle Parking

Proposed Site Plan

The project site plan shows 331 vehicle parking spaces at the Saratoga site and 1,613 vehicle parking spaces at the El Paseo site.

For the stated project size on the site plan, the development would require a total of 367 parking spaces at the Saratoga site and 1,362 parking spaces at the El Paseo site (see Table 14), based on the City's Zoning Code (Table 20-190) off-street parking requirements and prior to applying any relevant parking reductions. A parking reduction can be granted for developments within an Urban Village that provide bicycle parking spaces per City requirements. For residential and school uses, a 20 percent reduction can be granted, and for ground floor commercial uses, a 50 percent reduction can be granted. The Urban Village reduction would result in 287 required spaces at the Saratoga site and 1,001 required spaces at the El Paseo site.

At the Saratoga site, the project would provide 21 stalls for retail, and the remaining 310 stalls would be for residential use for a total of 331 spaces. This would exceed the requirements of the proposed site plan with the Urban Village reduction.

At the El Paseo site, the project would reconfigure a portion of the existing surface parking lot to provide 497 parking stalls for retail use, 183 stalls for office use, and 933 stalls for residential use, for a total of 1,613 spaces. The proposed parking spaces would exceed the required 1,001 spaces with the Urban Village reduction. The proposed 183 stalls for office use could be used for both the office and medical office use.

Table 14
Vehicular Parking Requirements – Non-Education Option

Land Use	Required Parking Rate[1]	Proposed Site Plan Size	Proposed Site Plan Required Spaces	Proposed Site Plan With Reduction[4]	Analyzed Project Size[5]	Analyzed Project Required Spaces	Analyzed Project With Reduction[4]
Saratoga Site							
Residential	1.25 spaces per studio and 1-bedroom, 1.7 spaces per 2 bedroom	20 studio units	25	20	17 studio	21	17
		151 1-bedroom units	189	151	128 1-bedroom units	160	128
		77 2-bedroom units	131	105	65 2-bedroom units	111	89
Residential Subtotal		248 units	***345***	***276***	210 units	***292***	***234***
Retail	1 space per 200 s.f. of floor area[2]	5,236 s.f.[3]	22	11	6,000 s.f.[3]	26	13
Saratoga Site Total Required Spaces			**367**	**287**		**318**	**247**
Proposed Saratoga Site Spaces			***331***			***N/A***	
El Paseo Site							
Residential[5]	1.25 spaces per 1-bedroom, 1.7 spaces per 2-bedroom, 2 spaces per 3-bedroom	79 studio units	99	79	87 studio units	109	87
		391 1-bedroom units	489	391	430 1-bedroom units	537	430
		240 2-bedroom units	408	326	264 2-bedroom units	448	358
		36 3-bedroom units	72	58	40 3-bedroom units	79	63
Residential Subtotal		746 units	***1,068***	***854***	820 units	***1,173***	***938***
Retail[6]	1 space per 200 s.f. of floor area[2]	69,085 s.f.[3]	294	147	70,372 s.f.[3]	299	150
Office	1 space per 250 s.f. of floor area[2]	52,508 s.f.[3]	179	90	52,508 s.f.[3]	179	90
Medical Office[6]	1 space per 250 s.f. of floor area[2]	36,120 s.f.[3]	123	62	36,120 s.f.[3]	123	62
El Paseo Site Total Required Spaces			**1,362**	**1,001**		**1,774**	**1,240**
Proposed El Paseo Site Spaces			***1,613***			***N/A***	

Notes:
s.f. = square feet
1. Vehicular parking requirements per Table 20-190 and 20-210 of the San Jose Zoning Code
2. Floor area = 0.85 of gross floor area
3. Gross floor area stated
4. Because the project is located in an Urban Village, it can qualify for a 20 percent reduction in the City's parking requirement for the residential and school uses and a 50 percent reduction for retail uses if it provides bicycle parking spaces per City requirements.
5. The mix of the residential units is assumed the same ratio for bedroom units as the site plan.
6. The medical office is not shown in the March 2021 site plan. The medical office is assumed to be the same as the analyzed project. The retail is assumed to be the difference between the site plan square footage and the assumed medical office square footage.

Analyzed Project/Maximum Development

Based on the City's Zoning Code and prior to applying any relevant parking reductions, the development as analyzed would require a total of 318 parking spaces at the Saratoga site and 1,774 parking spaces at the El Paseo site (see Table 14). With the Urban Village reduction, the project would require a total of 247 parking spaces at the Saratoga site and 1,240 parking spaces at the El Paseo site.

With the Urban Village reduction, the project can reduce the required parking spaces to 13 spaces for retail use and 234 spaces for residential use at the Saratoga site if it provides bicycle parking spaces per City requirements.

With the Urban Village reduction, the project can reduce the required parking spaces to 938 parking spaces for residential use, 150 parking spaces for retail use, 90 parking spaces for office use, and 62 parking spaces for medical office use at the El Paseo site if it provides bicycle parking spaces per City requirements.

Bicycle Parking

Based on the San Jose Zoning Code, the project as described in the proposed site plan would require 52 long-term spaces and 12 short-term spaces at the Saratoga site, and the project would provide 38 long-term spaces and 27 short-term spaces at the Saratoga site (see Table 15). The El Paseo site would require 183 long-term spaces and 44 short-term spaces, and the project would provide 123 long-term spaces and 117 short-term spaces. The proposed parking spaces for the proposed site plan would not meet the City's requirements for long-term spaces for both the Saratoga site and the El Paseo site.

Table 15
Bicycle Parking Requirements – Non-Education Option

		Proposed Site Plan				Analyzed Project			
			Required Spaces[4]				Required Spaces[4]		
Land Use	Required Parking Rate[1]	Size	Long-Term	Short-Term	Total	Size	Long-Term	Short-Term	Total
Saratoga Site									
Residential	1 space per 4 units	248 d.u	50	12	62	280 d.u	56	14	70
Retail	1 space per 3 ksf of floor area[2]	5,236 s.f.[3]	2	0	2	6,000 s.f.[3]	2	0	2
Saratoga Site Total Required Spaces			**52**	**12**	**64**		**58**	**14**	**72**
Proposed Saratoga Site Spaces			***38***	***27***	***65***			***N/A***	
El Paseo Site									
Residential	1 space per 4 units	746 d.u	150	37	187	820 d.u	164	41	205
Retail	1 space per 3 ksf of floor area[2]	69,085 s.f.[3]	16	4	20	70,372 s.f.[3]	16	4	20
Office	1 space per 4 ksf of floor area[2]	52,508 s.f.[3]	10	2	12	52,508 s.f.[3]	10	2	12
Medical Office	1 space per 4 ksf of floor area[2]	36,120 s.f.[3]	7	1	8	36,120 s.f.[3]	7	1	8
El Paseo Site Total Required Spaces			**183**	**44**	**227**		**197**	**48**	**245**
Proposed El Paseo Site Spaces			***123***	***117***	***240***			***N/A***	

Notes:
s.f. = square feet
1. Bicycle parking requirements per Table 20-190 of the San Jose Zoning Code
2. Floor area = 0.85 of gross floor area
3. Gross floor area
4. According to the Zoning Code, at least 80% of the required bicycle parking spaces should be provided in short-term bicycle parking facilities and at most 20% should be provided in long-term bicycle facilities

In order to meet the City's requirement, the project should provide 14 more long-term spaces at the Saratoga site and 59 more long-term spaces at the El Paseo site for the project as described in the proposed site plan.

The project as analyzed requires 58 long-term spaces and 14 short-term spaces at the Saratoga Site and 197 long-term spaces and 48 short-term spaces at the El Paseo site. To meet the requirement of

project as analyzed, the project should provide 20 more long-term spaces at the Saratoga site and 74 more long-term spaces at the El Paseo site.

Recommendation: The project would be required to provide adequate bicycle parking spaces that meet City parking requirements. Additionally, the long-term parking spaces for each building should meet the parking requirements for the proposed uses in each building.

Construction Activities

Typical activities related to the construction of any development could include lane narrowing and/or lane closures, sidewalk and pedestrian crosswalk closures, and bike lane closures. In the event of any type of closure, clear signage (e.g., closure and detour signs) must be provided to ensure vehicles, pedestrians and bicyclists are able to adequately reach their intended destinations safely. Per City standard practice, the project would be required to submit a construction management plan for City approval that addresses the construction schedule, street closures and/or detours, construction staging areas and parking, and the planned truck routes.

5.
Local Transportation Analysis – Education Option

This chapter describes the LTA for the education option. The approach and methodology for the education option are the same as the non-education option, as described in Chapter 4. This chapter describes the traffic operations effects of the education option that would be different from the non-education option, including the project trips estimates, intersection operations analysis, any adverse effects to intersection level of service caused by the education option, intersection queueing analysis, freeway ramp and segment analysis, project driveway operations, and parking requirements. The LTA for the education option is intended to provide a high-level assessment of the traffic operations effects of the education option. A separate supplemental LTA with an updated site plan and discussions concerning on-site circulation and pick-up/drop-off would be needed in the future if the project moves forward with the education option.

Intersection Operations Analysis

Project Trip Estimates

Trip Generation

Trips that would be generated by the proposed mixed-use development under the education option were estimated using the ITE trip rates as described under the non-education option, as well as “K-12 Private School” (Land Use 536).

The K-12 Private School trip rates were used to estimate vehicle trips generated by commuting students and faculty because boarding students and faculty are not expected to generate peak-hour trips on typical school days. Based on the project description, 600 students are expected to board, which results in 1,900 commuting students. Table 16 shows peak-hour trips generated by the 1,900 commuting students, which also includes trips from non-boarding faculty/staff. Although the boarding faculty/staff would not generate peak-hour trips, they may generate trips during the day. Trips generated by the 60-boarding faculty/staff members are included in the daily trips.

Table 16
School Trip Generation Estimates

Land Use	Size		Daily Rate	Daily Trips	AM Peak Hour Rate	AM Peak Hour Trips In	AM Peak Hour Trips Out	AM Peak Hour Trips Total	PM Peak Hour Rate	PM Peak Hour Trips In	PM Peak Hour Trips Out	PM Peak Hour Trips Total
K-12 Private School[1]	1,900	non-boarding students	2.48	4,712	0.80	927	593	1,520	0.17	139	184	323
	600	boarding students[2]	-	-	-	-	-	-	-	-	-	-
	60	boarding faculty[3]	1.50	90	-	-	-	-	-	-	-	-
Total School Trips	***2,500***	***students***		***4,802***		***927***	***593***	***1,520***		***139***	***184***	***323***
Project-Specific Trip Reduction (10%)[4]				*-480*		*-93*	*-59*	*-152*		*-14*	*-18*	*-32*
Total School Trips with TDM Reduction				***4,322***		***834***	***534***	***1,368***		***125***	***166***	***291***
Trips by Students[5]						*90*	*0*	*90*		*0*	*12*	*12*
Trips by Staff[5]						*210*	*0*	*210*		*0*	*29*	*29*
Trips by Non-Working Parents[6]						*160*	*160*	*320*		*38*	*38*	*76*
Trips by Working Parents[6]						*374*	*374*	*748*		*87*	*87*	*174*

Notes:
1. ITE average trip rates (in trips per student) for K-12 Private School (Land Use 536) were used for non-boarding students and faculty. (Source: ITE Trip Generation Manual, 10th Edition)
2. It was assumed that boarding students would not generate vehicle trips on a typical weekday.
3. Boarding faculty was assumed to make 1.5 trips per day and no trips during the peak hours.
4. A reduction was applied because the proposed school will be required to reduce VMT through implementing TDM measures. The reduction percentage is obtained from the results of VMT modeling for the proposed school.
5. It was assumed the difference between inbound and outbound trips are made by student and staff because they only make inbound trips in the morning and outbound trips in the afternoon. It was assumed a quarter of grade 9-12 students would drive to school, which constitutes 30% of these trips. The remaining trips are assumed to be made by staff.
6. It was assumed 30% and 70% of the remaining trips are made by non-working and working parents, respectively.

Based on the ITE trip generation rates and applicable reductions described in Chapter 4, it is estimated that the proposed project would generate a total of 6,410 net new daily trips, with 1,525 new trips (853 inbound and 672 outbound) occurring during the AM peak hour and 447 new trips (239 inbound and 208 outbound) occurring during the PM peak hour (see Table 17).

The Saratoga site would generate 984 new daily trips, with 53 new trips (-1 inbound and 54 outbound) occurring during the AM peak hour and 68 new trips (52 inbound and 16 outbound) occurring during the PM peak hour.

The El Paseo site would generate 5,426 new daily trips, with 1,472 new trips (854 inbound and 618 outbound) occurring during the AM peak hour and 379 new trips (187 inbound and 192 outbound) occurring during the PM peak hour.

Table 17
Project Trip Generation Estimates – Education Option

Land Use	Size	Daily Trip Rate	Daily Trips	AM Peak Hour Trip Rate	AM Peak Hour Trips In	AM Peak Hour Trips Out	AM Peak Hour Trips Total	PM Peak Hour Trip Rate	PM Peak Hour Trips In	PM Peak Hour Trips Out	PM Peak Hour Trips Total
Proposed Land Uses											
Residential[1]	730 du	5.44	3,971	0.36	68	195	263	0.44	196	125	321
Residential/Retail Internal Capture (15%)[3]			-422		-4	-6	-10		-22	-19	-41
Location-Based Non-Vehicle Mode Share (6%)[4]			-213		-4	-11	-15		-10	-7	-17
Project-Specific Trip Reduction (18%)[5]			-600		-11	-32	-43		-30	-17	-47
Sub-Total Residential			***2,736***		***49***	***146***	***195***		***134***	***82***	***216***
1777 Saratoga Site Residential	*280* du		*1,049*		*19*	*56*	*75*		*51*	*32*	*83*
El Paseo Site Residential	*450* du		*1,687*		*30*	*90*	*120*		*83*	*50*	*133*
El Paseo Shopping Mall with Project[2]	314,260 s.f.	41.68	13,097	0.98	192	117	309	4.03	609	659	1,268
Commercial/Retail on Project Site[2]	67,500 s.f.	41.68	2,813	0.98	41	25	66	4.03	131	141	272
Retail/Residential Internal Capture (15%)[3]			-422		-6	-4	-10		-19	-22	-41
Location-Based Non-Vehicle Mode Share (9%)[4]			-215		-3	-2	-5		-10	-11	-21
Pass-By Reduction (17% Daily/0% AM/34% PM)[6]			-370		0	0	0		-35	-36	-71
Sub-Total Commercial/Retail on Project Site			***1,806***		***32***	***19***	***51***		***67***	***72***	***139***
1777 Saratoga Site Retail	*6,000* s.f.		*161*		*3*	*2*	*5*		*6*	*6*	*12*
El Paseo Site Retail	*61,500* s.f.		*1,645*		*29*	*17*	*46*		*61*	*66*	*127*
K-12 Private School[7]	2,500 students	--[7]	4,802	--[7]	927	593	1,520	--[7]	139	184	323
Project-Specific Trip Reduction (10%)[8]			-480		-93	-59	-152		-14	-18	-32
Sub-Total School (El Paseo Site)			***4,322***		***834***	***534***	***1,368***		***125***	***166***	***291***
Total Gross Project Trips			***8,864***		***915***	***699***	***1,614***		***326***	***320***	***646***
1777 Saratoga Site Gross Trips			*1,210*		*22*	*58*	*80*		*57*	*38*	*95*
El Paseo Site Gross Trips			*7,654*		*893*	*641*	*1,534*		*269*	*282*	*551*
Existing Land Uses											
1777 Saratoga Site Office[9]	25,184 s.f.	9.74	245	1.16	25	4	29	1.15	5	24	29
Office/Retail Internal Capture (3%)[3]			-7		-1	0	-1		0	-1	-1
Location-Based Non-Vehicle Mode Share (5%)[4]			-12		-1	0	-1		0	-1	-1
Sub-Total 1777 Saratoga Site			***226***		***23***	***4***	***27***		***5***	***22***	***27***
El Paseo Shopping Mall[2]	343,200 s.f.	40.52	13,906	0.94	200	123	323	3.94	649	704	1,353
El Paseo Site Commercial/Retail[2]	72,940 s.f.[10]	40.52	2,956	0.94	43	26	69	3.94	138	149	287
Retail/Office Internal Capture (3%)[3]			-7		0	-1	-1		-1	0	-1
Location-Based Non-Vehicle Mode Share (9%)[4]			-265		-4	-2	-6		-12	-14	-26
Pass-By Reduction (17% Daily/0% AM/34% PM)[6]			-456		0	0	0		-43	-45	-88
Sub-Total El Paseo Site			***2,228***		***39***	***23***	***62***		***82***	***90***	***172***
Net Project Trips			**6,410**		**853**	**672**	**1,525**		**239**	**208**	**447**
1777 Saratoga Site Net Trips			*984*		*-1*	*54*	*53*		*52*	*16*	*68*
El Paseo Site Net Trips			*5,426*		*854*	*618*	*1,472*		*187*	*192*	*379*

Notes:
All trip rates are from ITE Trip Generation Manual, 10th Edition, 2017.
1. Mid-Rise Multifamily Housing (ITE Land Use 221): average trip rates in trips per dwelling unit were used.
2. Shopping Center (Land Use 820): fitted curve equation was used to calculate the trips for the entire shopping mall and to derive the average trip rates in trips per 1,000 s.f. The average trip rates were then used to calculate the commercial/retail trips of the project site.
3. Residential/retail and office/retail internal trip reductions were applied to the project per the 2014 Santa Clara VTA TIA Guidelines.
4. A reduction was applied to the project based on the location-based vehicle mode share percentage outputs (Table 6 of TA Handbook) produced from the San Jose Travel Demand Model for the Sub-Urban with Single Family Home area.
5. A reduction was applied because the proposed residetial use will be required to reduce VMT through implementing TDM measures. The reduction percentage is obtained from the City's VMT Evaluation Tool.
6. An average 34% pass-by trip reduction was applied to the retail PM peak-hour trips based the ITE Trip Generation Handbook, 3rd Edition, for Shopping Center.
7. See School Trip Generation Estimates table.
8. A reduction was applied because the proposed school will be required to reduce VMT through implementing TDM measures. The reduction percentage is obtained from the results of VMT modeling for the proposed school.
9. General Office (ITE Land Use 710): average trip rates in trips per 1,000 s.f. were used.
10. There is a total of 96,440 s.f. of existing commercial square footage on site. However, only 72,856 s.f. have operated within 2 years of the study and credited.

Trip Distribution and Assignment

Three separate trip distribution patterns were developed for the school component of the project: (1) trips by non-working parents and student-driving, (2) trips by working parents, and (3) trips by faculty and staff trips (see Figures 28, 29, and 30, respectively). It was assumed that the difference in inbound and outbound trips are made by student drivers and faculty/staff during the peak hours because they make inbound trips in the morning and outbound trips in the afternoon. It was assumed 30% of these trips are made by student drivers (about a quarter of grade 9-12 students based on observations at a private high school) and the remaining 70% are made by faculty/staff (see Table 16). For the rest of the inbound/outbound trips, it was assumed that 30% of the students who are driven to school would be dropped off/picked up by a non-working parent and 70% of the students who are driven to school would be dropped off/picked up by a working parent. For non-working parents and student drivers, it was assumed that during both the AM and PM peak hours, the origin of the inbound project trip and the destination of the outbound project trip would be the student's home. For working parents, during the AM peak hour, the origin of the inbound trip would be the student's home and the destination of the outbound trip would be the parent's employment location. The trip distribution pattern would reverse during the PM peak hour for working parents, where the inbound trip would originate at the parent's employment location and the outbound trip would terminate at the student's home.

As described in Chapter 4, the peak-hour vehicle trips generated by the existing and proposed project uses were assigned to the roadway network in accordance with the trip distribution patterns for each land use and the locations of project driveways (see Figure 31).

Traffic Volumes

No Project Traffic Volumes

Existing and background AM and PM peak-hour traffic volumes are the same for the non-education and education options (see Figure 18 and 19 respectively).

Background Plus Project Traffic Volumes

Project trips estimated for the non-education option were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 32).

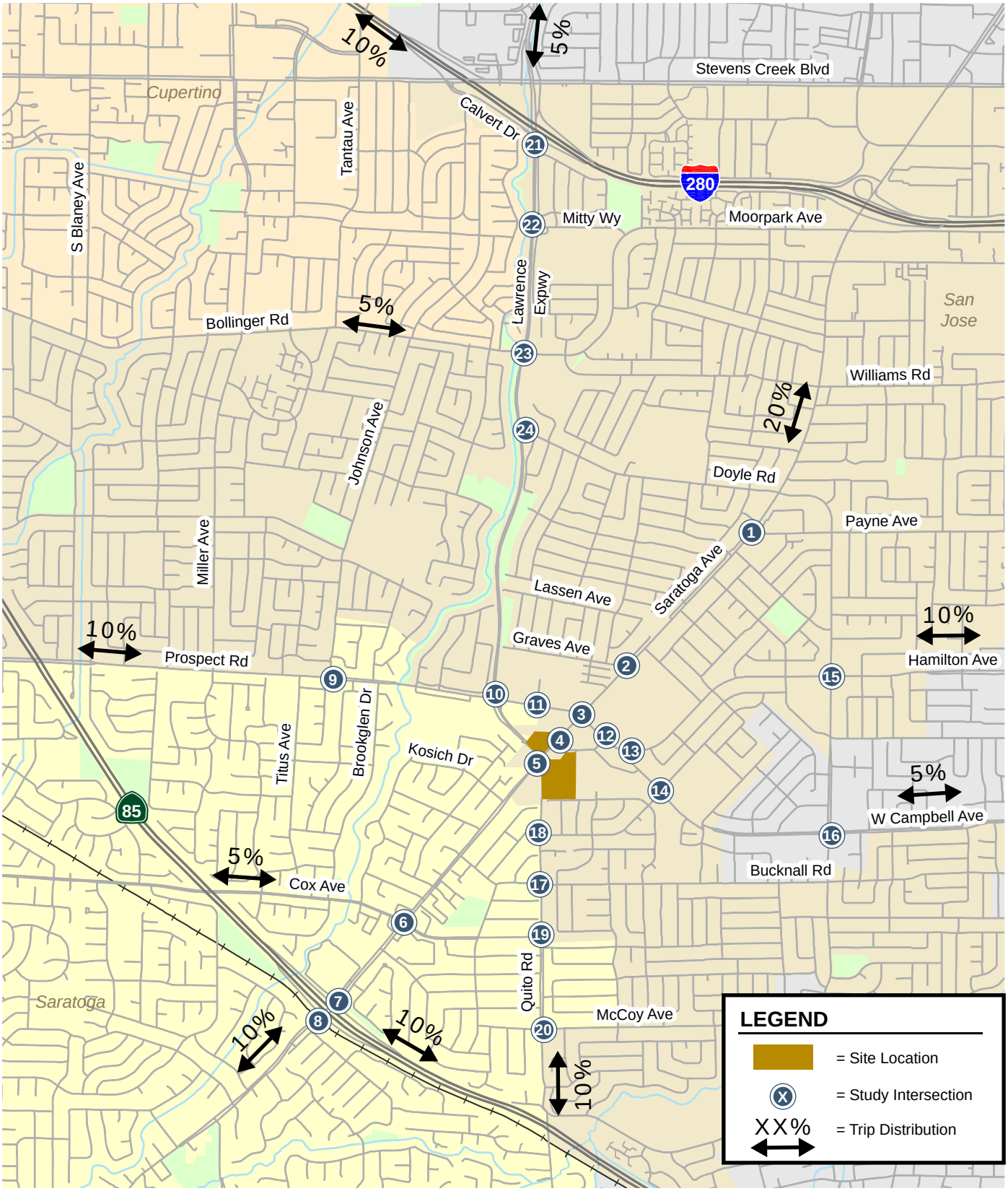


Figure 28
Trip Distribution for School - Non-Working Parents and Student Drivers

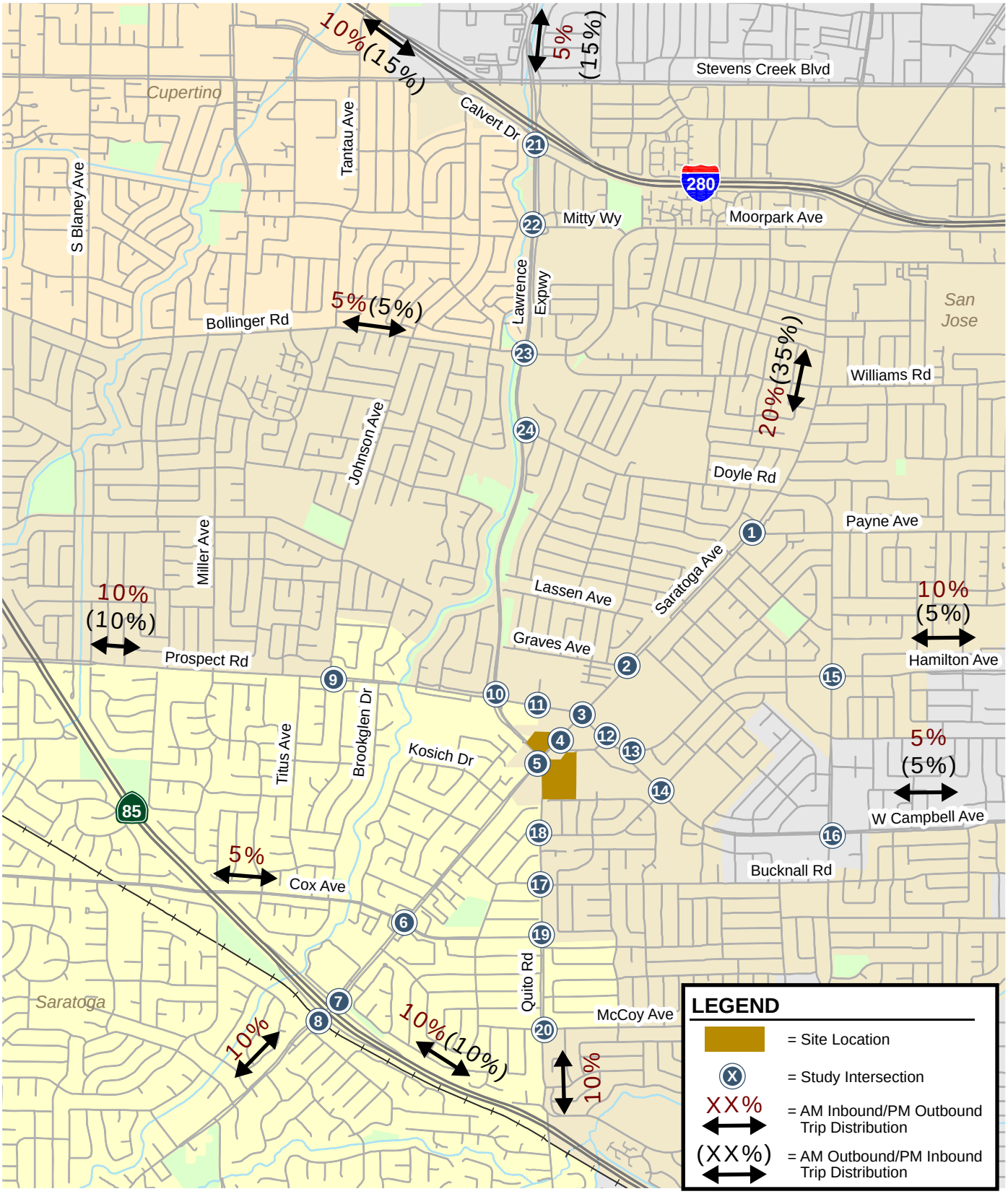


Figure 29
Trip Distribution for School - Working Parents

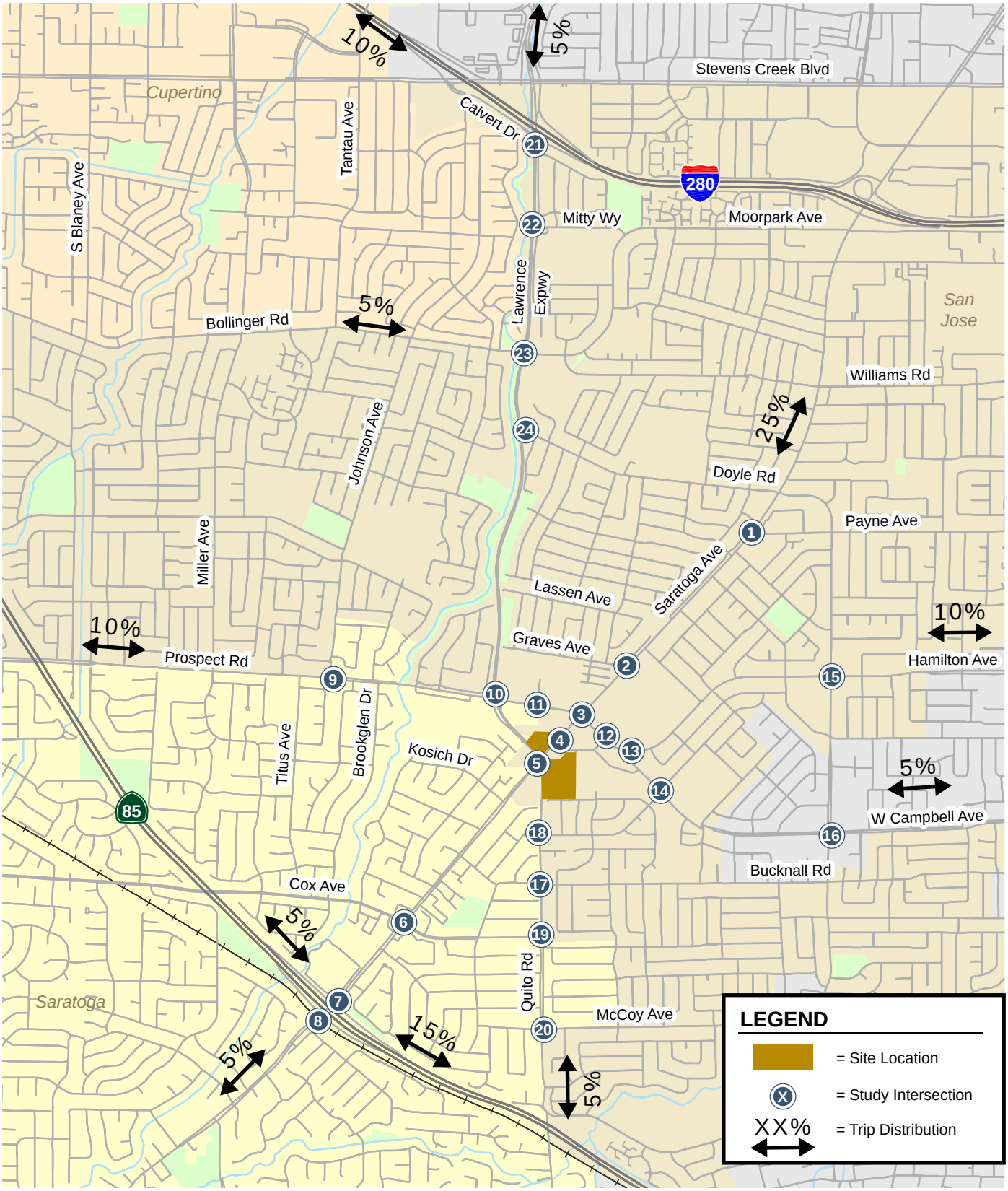
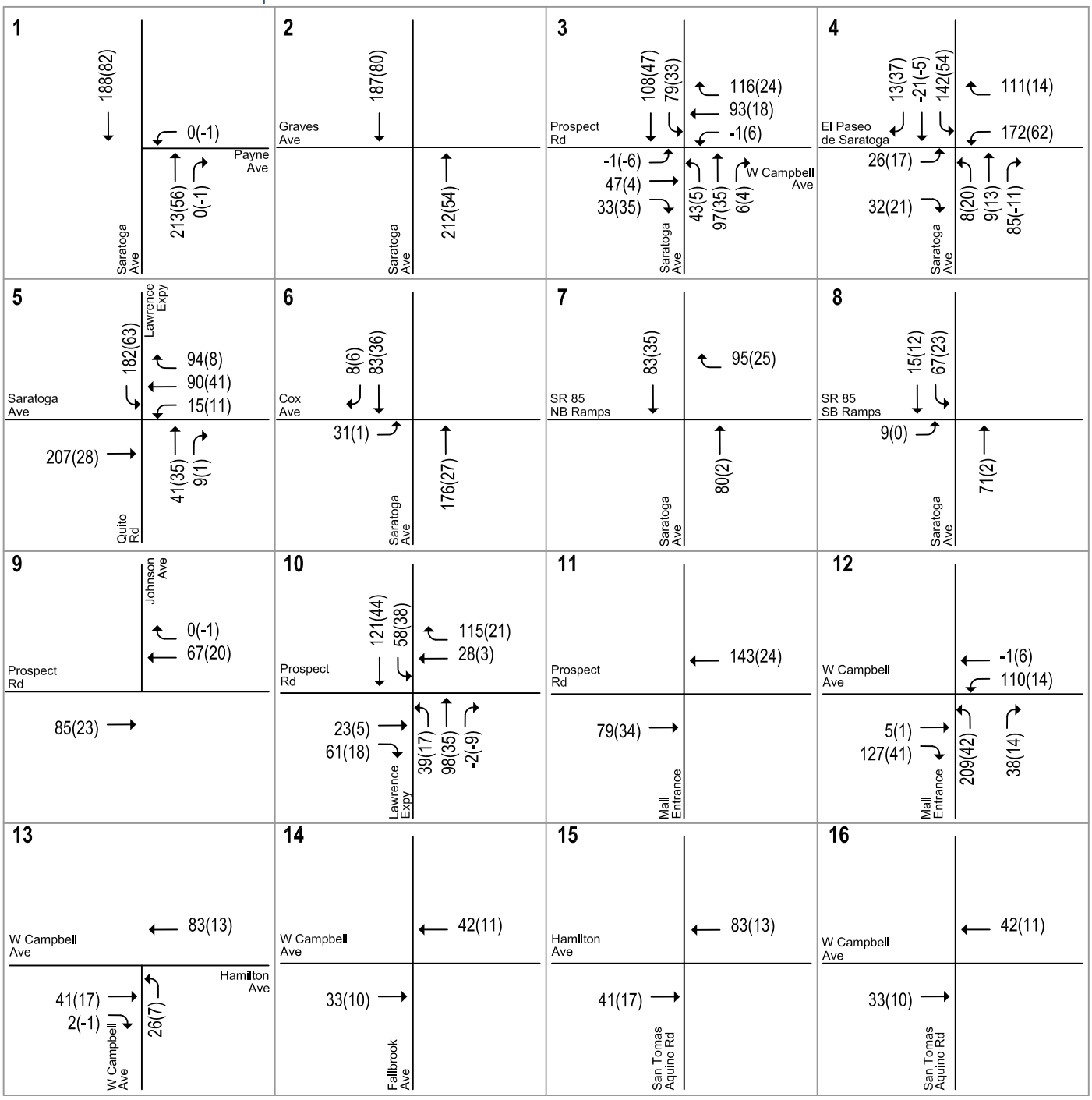


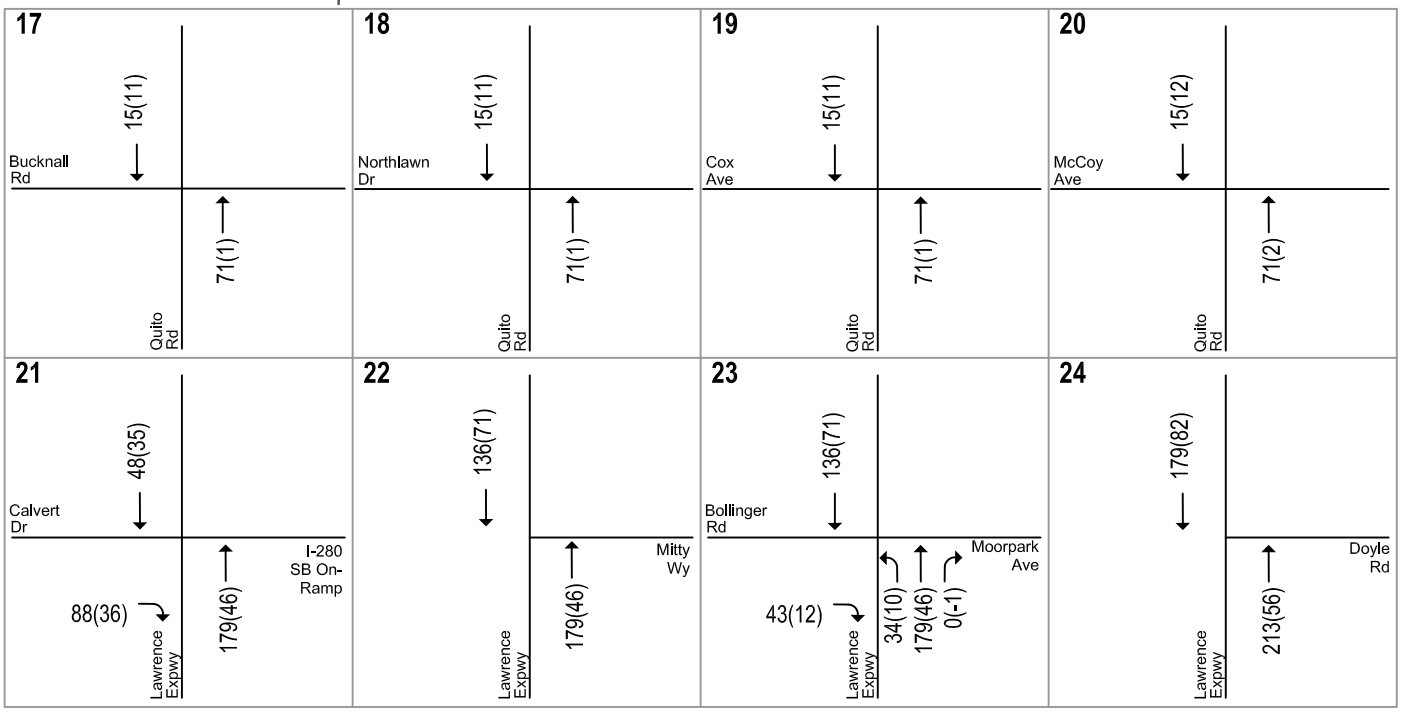
Figure 30
Trip Distribution for School - School Staff



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

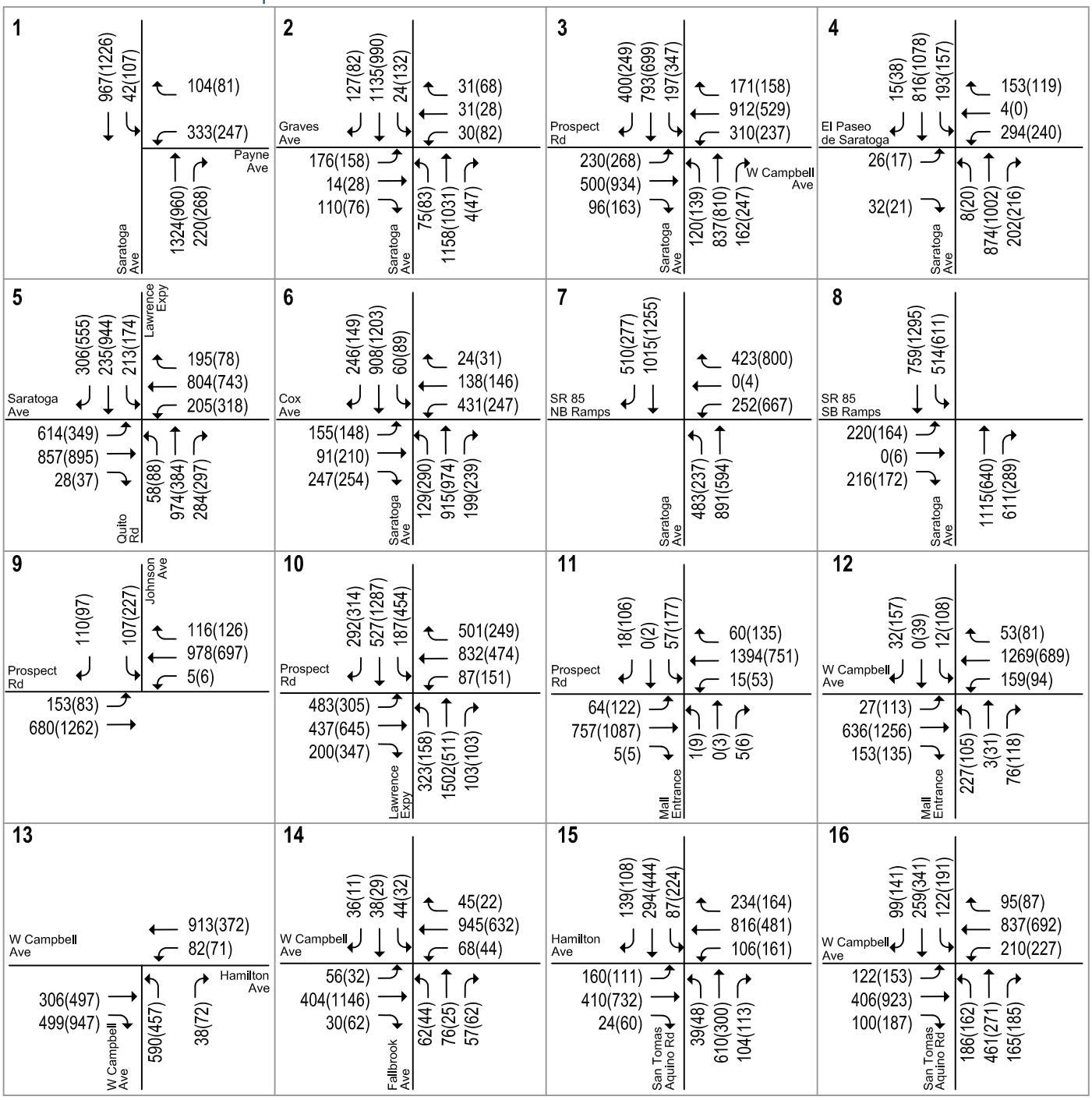
Figure 31
Net Project Trip Assignment - Education Option



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

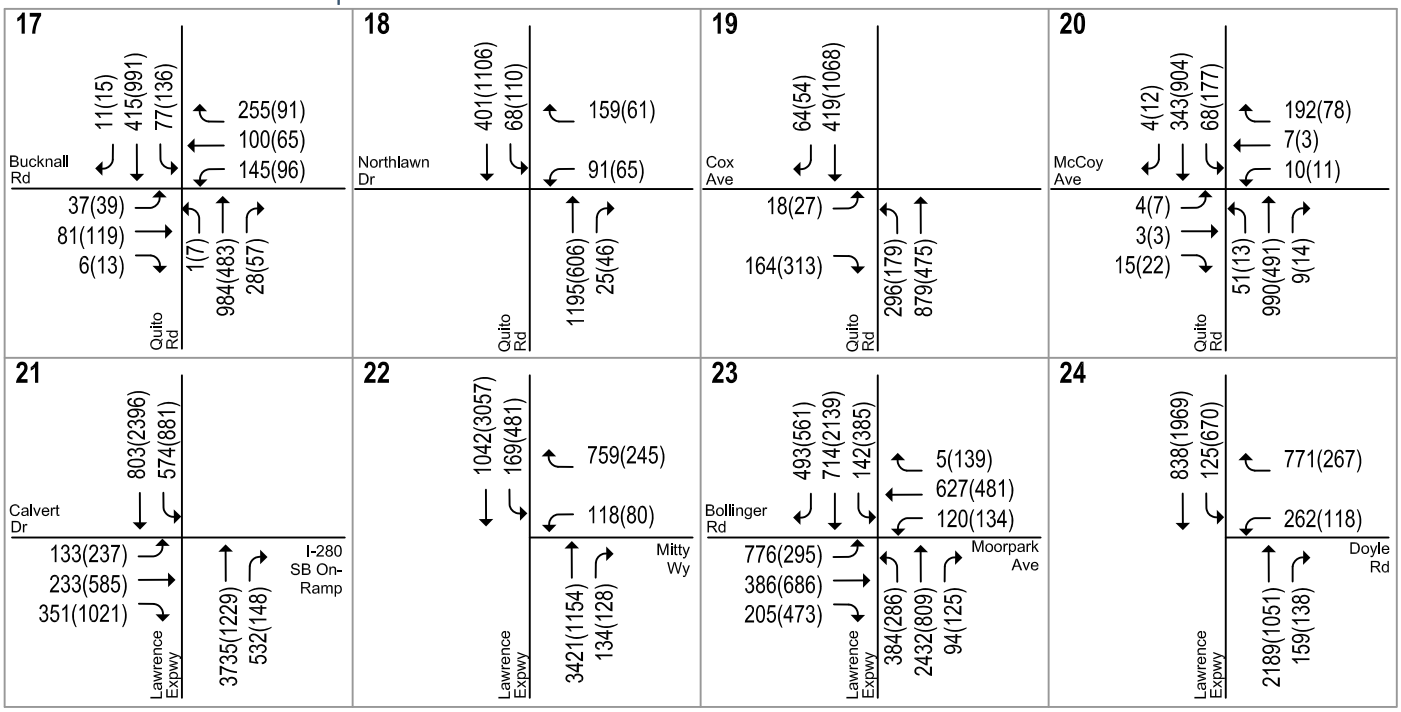
Figure 31
Net Project Trip Assignment - Education Option



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 32
Background Plus Project Traffic Volumes - Education Option



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 32
Background Plus Project Traffic Volumes - Education Option

Roadway Network

Roadway network under all scenarios is the same as the roadway network described in Chapter 4.

Traffic Operations at Signalized Intersections

The results of the intersection level of service analysis show that all of the signalized study intersections are currently operating at an acceptable level of service during the AM and PM peak hours of traffic and would continue to do so under background plus project conditions (see Table 18). The detailed intersection level of service calculation sheets are included in Appendix E.

Traffic Operations at Unsignalized Intersections

As described in Chapter 4, the study also evaluated three unsignalized intersections. The following describes their operations with the education option.

Quito Road and Northlawn Drive Intersection

The Quito Road/Northlawn Drive intersection is a T-intersection and is stop controlled on Northlawn Drive. During the AM peak hour, Northlawn Drive is estimated to experience heavy delay (equivalent to LOS F) under existing and background conditions, and the added project trips on Quito Road would increase the delay by 34.7 seconds for the westbound approach. During the PM peak hour, the Northlawn Drive is estimated to operate adequately (equivalent to LOS D) under existing and background conditions, and the added project trips on Quito Road would slightly increase the delay for the westbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection. The peak-hour volume signal warrant analysis described below indicates that the AM peak-hour volumes at the intersection would meet the peak-hour signal warrant under all scenarios, both with and without the project traffic. As stated in Chapter 4, the need for intersection improvement or modification of traffic control at the intersection should be evaluated further with new traffic counts and field observations in the future when volumes return to pre-Covid levels. It is recommended that the City evaluate the need for signalization or improvement at the intersection prior to the issuance of the occupancy permit of the project. If the City determined an improvement or signalization is warranted, it would be appropriate for the project applicant to pay a fair share contribution towards the improvement.

Quito Road and Cox Avenue Intersection

The eastbound approach on Cox Avenue at the Quito Road/Cox Avenue intersection is estimated to operate adequately (equivalent to LOS C) during the AM peak hour and experience heavy delay (equivalent to LOS F) during the PM peak hour under all scenarios. During the AM peak hour, the added project trips on Quito Road at the intersection would slightly increase the delay for the eastbound approach but is not expected to cause a noticeable effect on traffic operations. During the PM peak hour, the added project trips on Quito Road would increase the delay on the eastbound approach by 8.2 seconds. The peak-hour volume signal warrant analysis described below indicates that the PM peak-hour volumes at the intersection would meet the peak-hour signal warrant under all scenarios, both with and without the project traffic. As stated in Chapter 4, a signal is not recommended because the upstream and downstream signals provide gaps in traffic for the eastbound traffic from Cox Avenue to make turns. Eastbound traffic also has the option of using the Quito Road/Bucknall Road intersection.

Quito Road and McCoy Avenue Intersection

The eastbound approach on McCoy Avenue at the Quito Road/McCoy Avenue intersection is estimated to operate adequately (equivalent to LOS E) during both the AM and PM peak hours under all scenarios. The added project trips on Quito Road at the intersection would increase the delay by 11.2 seconds during the AM peak hour and would slightly increase the delay during the PM peak hour of the

eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection.

Table 18
Intersection Level of Service Summary – Education Option

Intersection		LOS Standard	Peak Hour	Count Date	Existing Avg. Delay (sec)	Existing LOS	Background No Project Avg. Delay (sec)	Background No Project LOS	Background with Project - Education Option Avg. Delay (sec)	Background with Project - Education Option LOS	Critical Delay (sec)	Incr. in Critical V/C
1	Saratoga Ave and Payne Ave	D	AM	09/26/19	15.5	B	15.4	B	14.5	B	-1.1	0.060
			PM	09/26/19	15.0	B	14.9	B	14.4	B	-10.9	0.025
2	Saratoga Ave and Graves Ave	D	AM	10/26/16	21.2	C	21.0	C	19.2	B	-1.8	0.053
			PM	10/26/16	24.1	C	23.8	C	23.0	C	-0.9	0.023
3	Saratoga Ave and Prospect Rd/Campbell Ave*	E	AM	10/11/16	39.2	D	39.3	D	40.7	D	2.6	0.074
			PM	11/15/18	40.6	D	40.9	D	41.3	D	1.0	0.022
4	Saratoga Ave and Mall Entrance	D	AM	02/28/12	14.2	B	13.8	B	33.0	C	19.4	0.240
			PM	02/28/12	17.5	B	17.4	B	29.7	C	10.2	0.109
5	Lawrence Expwy/Quito Rd and Saratoga Ave*	E	AM	10/03/18	42.8	D	53.5	D	68.4	E	9.6	0.188
			PM	11/15/18	45.0	D	45.3	D	46.2	D	0.3	0.008
6	Saratoga Ave and Cox Ave	D	AM	05/02/19	37.7	D	38.0	D	37.8	D	0.1	0.024
			PM	05/02/19	40.9	D	41.9	D	41.9	D	0.3	0.010
7	Saratoga Ave and SR 85 NB Ramps	D	AM	05/02/19	19.0	B	20.1	C	21.1	C	0.8	0.032
			PM	05/01/19	26.5	C	26.9	C	27.1	C	0.5	0.015
8	Saratoga Ave and SR 85 SB Ramps	D	AM	05/02/19	17.3	B	17.6	B	18.5	B	1.0	0.027
			PM	05/01/19	18.1	B	18.6	B	18.6	B	-0.1	0.008
9	Johnson Ave and Prospect Rd	D	AM	11/05/14	14.5	B	14.5	B	14.1	B	-0.2	0.020
			PM	11/05/14	15.7	B	15.7	B	15.6	B	0.0	0.007
10	Lawrence Expwy and Prospect Rd*	E	AM	10/03/18	55.3	E	56.6	E	58.5	E	1.5	0.047
			PM	11/15/18	45.3	D	46.0	D	46.4	D	0.4	0.021
11	Mall Entrance and Prospect Rd	D	AM	10/25/16	15.1	B	15.1	B	14.3	B	-0.7	0.028
			PM	10/25/16	27.0	C	26.9	C	26.6	C	-0.2	0.010
12	Mall Entrance and Campbell Ave	D	AM	10/26/16	10.4	B	10.3	B	22.4	C	11.6	0.118
			PM	10/26/16	23.1	C	22.8	C	23.2	C	-0.1	0.002
13	Campbell Ave and Hamilton Ave*	E	AM	11/05/14	24.9	C	25.1	C	25.3	C	0.2	0.032
			With Mitigation						*23.3*	*C*		
			PM	11/15/18	25.1	C	25.3	C	25.2	C	0.0	0.007
			With Mitigation						*23.4*	*C*		
14	Northlawn Dr/Fallbrook Ave and Campbell Ave	D	AM	10/23/14	22.6	C	22.5	C	22.2	C	-0.2	0.013
			PM	10/23/14	17.7	B	17.7	B	17.7	B	0.0	0.003
15	San Tomas Aquino Rd and Hamilton Ave	D	AM	03/09/17	39.8	D	39.8	D	39.6	D	0.2	0.024
			PM	03/09/17	41.2	D	41.4	D	41.3	D	-0.1	0.005
16	San Tomas Aquino Rd and Campbell Ave	D	AM	12/01/15	32.5	C	32.9	C	32.9	C	0.0	0.013
			PM	12/01/15	34.5	C	35.4	D	35.4	D	0.1	0.003
17	Quito Rd and Bucknall Rd	D	AM	11/06/14	42.6	D	42.7	D	44.3	D	2.3	0.041
			PM	11/06/14	37.0	D	36.9	D	36.8	D	0.0	0.001
21	Lawrence Expressway and Calvert Drive/I-280 SB On-Ramp*	E	AM	01/17/18	44.0	D	54.1	D	65.3	E	14.4	0.033
			PM	11/15/18	31.7	C	34.7	C	35.1	D	0.7	0.010
22	Lawrence Expressway and Mitty Way	E	AM	01/17/18	11.3	B	11.9	B	12.6	B	-1.0	0.025
			PM	01/17/18	14.7	B	14.7	B	14.7	B	0.0	0.013
23	Lawrence Expressway and Bollinger Rd/Moorpark Ave*	E	AM	09/13/18	59.2	E	65.0	E	70.9	E	9.6	0.034
			PM	11/15/18	51.9	D	55.0	E	56.3	E	2.6	0.020
24	Lawrence Expressway and Doyle Rd	E	AM	01/11/18	46.9	D	48.2	D	44.7	D	-12.1	0.035
			PM	01/11/18	13.5	B	13.5	B	13.4	B	-0.1	0.016

* Denotes the CMP designated Intersection

Peak-Hour Signal Warrant Analysis

The results of the peak-hour signal warrant checks indicate that the AM and PM peak-hour volumes at the unsignalized study intersections of Quito Road/Northlawn Drive and Quito Road/Cox Drive would warrant signalization under existing, background, and background plus project conditions. At the Quito Road/McCoy Avenue intersection, the AM peak-hour volumes would warrant signalization under the project scenario. However, the intersection is estimated to operate adequately (equivalent to LOS E) during the AM peak hour under the project scenario. The peak-hour signal warrant sheets are contained in Appendix F.

Intersection Queuing Analysis

Vehicle queues were estimated using a Poisson probability distribution, described in Chapter 1. The analyzed volume reflects the peak arrival pattern of the student trips using a peak hour factor of 0.63, as discussed below. The following left-turn movements were evaluated, and the results of the queueing analysis are summarized in Table 19:

- Northbound Saratoga Avenue left turn to westbound Prospect Road
- Southbound Saratoga Avenue left turn to eastbound Campbell Avenue
- Southbound Lawrence Expressway left turn to eastbound Saratoga Avenue
- Southbound/Westbound Saratoga Avenue left turn to southbound Quito Road
- Southbound Saratoga Avenue left turn to SR 85 Southbound On-Ramp
- Northbound Lawrence Expressway left turn to westbound Prospect Road
- Southbound Lawrence Expressway left turn to eastbound Prospect Road
- Northbound Lawrence Expressway left turn to westbound Bollinger Road

The queuing analysis indicates that the following intersections would have queuing deficiencies caused or exacerbated by the project:

- Southbound Lawrence Expressway left turn to eastbound Saratoga Avenue (AM peak hour)
- Southbound/Westbound Saratoga Avenue left turn to southbound Quito Road (AM and PM peak hours)
- Southbound Lawrence Expressway left turn to eastbound Prospect Road (PM peak hour)

School Traffic Adjustment

School traffic typically peaks for 15-to-30-minute periods, right before and after school, not an entire hour. Therefore, to evaluate the vehicle queuing condition that reflects the peak school traffic patterns, the AM peak-hour school trips were adjusted with a peak hour factor (PHF), which was calculated by dividing the peak-hour volume by four times the peak 15-minute volume. The school estimates that 40% of all students would participate in the early care program. It was assumed that most students participating in the early care program would arrive 20-40 minutes prior to the school start time for different grades. For students not participating in the early care program, arrivals are assumed to begin 20 minutes prior to the school start time. Based on the assumptions, a PHF of 0.63 was determined. The AM peak-hour school trips were adjusted by dividing student and parent trips by the PHF. The adjusted school trips were then added to the residential, retail, and staff trips to derive the AM peak-hour volumes that reflect the peak school traffic patterns for vehicle queuing analysis. The PM peak hour occurs after school hours; thus, the volume was not adjusted.

Table 19
Intersection Queuing Analysis Summary – Education Option

	Saratoga Ave & Prospect Rd/Campbell Ave				Lawrence Expy/Quito Rd & Saratoga Ave				Saratoga Ave & SR 85 SB Ramps		Lawrence Expy & Prospect Rd				Lawrence Expy & Bollinger Rd	
	NBL		SBL		SBL[4, 5]		WBL[5]		SBL[3]		NBL[4]		SBL		NBL	
Analysis Scenario	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing																
Cycle[1] (sec)	130	130	130	130	159	160	159	160	95	100	156	160	156	160	150	160
Volume (vph)	75	133	118	310	31	110	188	298	428	504	279	141	129	412	260	237
Number of lanes	1	1	2	2	2	2	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	75	133	59	155	16	55	188	298	428	504	140	71	65	206	130	119
95th %. Queue (veh/ln)	6	9	5	10	2	5	13	19	17	20	10	6	6	14	9	9
95th %. Queue[2] (ft/ln)	150	225	125	250	50	125	325	475	425	500	250	150	150	350	225	225
Storage (ft/ln)	250	250	275	275	250	250	300	300	700	700	300	300	350	350	400	400
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	Y	Y	Y	Y	Y	Y	Y	Y
Background																
Cycle[1] (sec)	130	130	130	130	159	160	159	160	95	100	156	160	156	160	150	160
Volume (vph)	77	134	118	314	31	111	190	307	447	588	284	141	129	416	350	276
Number of lanes	1	1	2	2	2	2	1	1	1	1	2	2	2	2	2	2
Volume (vphpl)	77	134	59	157	16	56	190	307	447	588	142	71	65	208	175	138
95th %. Queue (veh/ln)	6	9	5	10	2	5	13	20	18	23	10	6	6	14	12	10
95th %. Queue[2] (ft/ln)	150	225	125	250	50	125	325	500	450	575	250	150	150	350	300	250
Storage (ft/ln)	250	250	275	275	250	250	300	300	700	700	300	300	350	350	400	400
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	Y	Y	Y	Y	Y	Y	Y	Y
Background Plus Project - Education Option																
Cycle[1] (sec)	130	130	130	130	159	160	159	160	95	100	156	160	156	160	150	160
Volume (vph)	120	139	197	347	213	174	205	318	514	611	323	158	187	454	384	286
Number of lanes	1	1	2	2	2	2	1	1	1	1	2	2	2	2	2	2
Volume[6] (vphpl)	149	139	121	174	138	87	214	318	545	611	169	79	109	227	192	143
95th %. Queue (veh/ln)	9	9	8	11	10	7	15	21	21	24	12	7	9	16	13	11
95th %. Queue[2] (ft/ln)	225	225	200	275	250	175	375	525	525	600	300	175	225	400	325	275
Storage (ft/ln)	250	250	275	275	250	250	300	300	700	700	300	300	350	350	400	400
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	Y	Y	Y	Y	Y	**N**	Y	Y

Notes:

WBL = westbound left-turn movement; NBL = northbound left-turn movement; NBT = northbound through movement; SBL = southbound left-turn movement; EBL = eastbound left-turn movement; EBT = eastbound through movement; EBR = eastbound right-turn movement.

1. Cycle length used.
2. Assumes 25 feet per vehicle queued.
3. Total storage length of movement shown.
4. Average storage length of movement shown.
5. SBL refers to left turns from southbound Lawrence Expy to northbound/eastbound Saratoga Ave. WBL refers to left turns from southbound/westbound Saratoga Ave to southbound Quito Rd.
6. The volume per hour per lane reflects the peak arrival pattern of the student trips using a peak hour factor of 0.63 for the AM peak hour. The stated volume (vph) was not adjusted for the peak student trips. The PM peak hour occurs after school hours. Thus, the volume was not adjusted.

Southbound Left Turn from Lawrence Expressway to Saratoga Avenue

The southbound left-turn lane has approximately 250 feet (10 vehicles) of storage per lane within 2 lanes. There are estimated to be 2 vehicles per lane in the 95th percentile queue during the AM peak hour under existing and background conditions. The project would increase the length of the 95th percentile queue by 9 vehicles per lane during the AM peak hour. Thus, the queue would extend past the storage lane by one vehicle during the AM peak hour. The extended queue length would have an insignificant effect on traffic operations at this intersection because the left-turn spillback would last for a short period of time.

Southbound Left Turn from Saratoga Avenue to Quito Road

The southbound left-turn lane has approximately 300 feet (12 vehicles) of storage without interfering with other movements. There are estimated to be 13 and 19 vehicles in the 95th percentile queue during the AM and PM peak hours, respectively, under existing conditions. The queue exceeds the storage length by one vehicle during the AM peak hour and 7 vehicles during the PM peak hour. The queue is expected to increase by one vehicle during the PM peak hour under background conditions. The project would increase the length of the 95th percentile queue by 2 vehicles during the AM peak hour and one vehicle during PM peak hour. Thus, the queue would extend past the storage lane by 3 vehicles during the AM peak hour and 9 vehicles during the PM peak hour. Extending the storage lane would not be feasible, as the Mall Entrance and Saratoga Avenue intersection immediately follows the storage lane. Therefore, the addition of a second left-turn lane on the southbound approach would be required to accommodate the existing and projected queue. As discussed in Chapter 4 and shown in Figure 22, the addition of a second southbound left-turn lane at the intersection can be achieved by implementing a lane reduction along northbound Saratoga Avenue between Quito Road and Mall Entrance, which would provide a lane width for the northbound left-turn pocket to the Saratoga site and second left-turn lane from Saratoga Avenue to southbound Quito Road.

Recommendation: At the Saratoga Avenue/Quito Road intersection, the addition of a second left-turn lane from southbound Saratoga Avenue to southbound Quito Road would be required to accommodate the existing and projected queue. The addition of the second southbound left-turn lane can be achieved by implementing a lane reduction along northbound Saratoga Avenue between Quito Road and Mall Entrance. The project applicant should work with City staff to implement or contribute to the improvement.

Southbound Left Turn from Lawrence Expressway to Prospect Road

The southbound left-turn lane has approximately 350 feet (14 vehicles) of storage per lane within 2 lanes without interfering with other movements. There are estimated to be 14 vehicles in the 95th percentile queue during the PM peak hour under existing and background conditions. The project would increase the length of the 95th percentile queue by 2 vehicles during the PM peak hour. Thus, the queue would extend past the storage lane by 2 vehicles during the PM peak hour. The small increase in queue length would have an insignificant effect on traffic operations at this intersection because the left-turn spillback would last for a short period of time during the PM peak hour.

Freeway Ramp Operations Analysis

The freeway ramp analysis showed similar results as the non-education option. Both the SR 85 southbound off-ramp and SR 85 northbound off-ramp provide adequate total storage between the intersection with Saratoga Avenue and the freeway (see Table 20).

Table 20
Freeway Ramp Queuing Analysis – Education Option

Analysis Scenario	Saratoga Avenue & SR 85 SB Ramp EBL/EBT/EBR[2] AM	Saratoga Avenue & SR 85 SB Ramp EBL/EBT/EBR[2] PM	Saratoga Avenue & SR 85 NB Ramp WBL/WBT/WBR[2] AM	Saratoga Avenue & SR 85 NB Ramp WBL/WBT/WBR[2] PM
Existing				
Cycle (sec)	95	100	95	100
Volume (vph)	423	330	488	1427
95th %. Queue (veh/ln)	17	14	19	50
95th %. Queue[1] (ft/ln)	425	350	475	1250
Storage (ft/ln)	2300	2300	2500	2500
Adequate (Y/N)	Y	Y	Y	Y
Background				
Cycle (sec)	95	100	95	100
Volume (vph)	423	330	488	1427
95th %. Queue (veh/ln.)	17	14	19	50
95th %. Queue[1] (ft/ln)	425	350	475	1250
Storage (ft./ ln.)	2300	2300	2500	2500
Adequate (Y/N)	Y	Y	Y	Y
Background Plus Project - Education Option				
Cycle (sec)	95	100	95	100
Volume (vph)	436	342	675	1471
95th %. Queue (veh/ln)	17	15	25	52
95th %. Queue[1](ft/ln)	425	375	625	1300
Storage (ft/ln)	2300	2300	2500	2500
Adequate (Y/N)	Y	Y	Y	Y

Notes:
EBL = eastbound left-turn movement; EBT = eastbound through movement; EBR = eastbound right-turn movement; WBL = westbound left-turn movement; WBT = westbound through movement; WBR = westboudn right-turn movement.
[1] Assumes 25 feet per vehicle queued.
[2] Total volume and total length of storage for the approach were analyzed.

Freeway Segment Capacity Analysis

The results of the freeway segment analysis show that the education option would cause substantial increases in traffic volumes (one percent or more of freeway capacity) on one (1) of the study freeway segments currently operating at LOS F (see Table 21). Therefore, based on CMP freeway impact criteria, one (1) of the study freeway segments would be adversely affected by the project.

Improvements to address the adverse effect on the freeway segment would require either widening the freeway or reducing the project trips. Caltrans has no plans to widen SR 85, and the cost of widening the freeway is beyond the capability of the project. In order to eliminate the adverse effect through TDM, it would be necessary to reduce project trips by 55%. This level of trip reduction is not feasible because the combination of the project's mitigation measures (TDM plan and project improvements) would reduce the school trips by 10 percent and the residential trips by 18 percent. The City has

proposed multimodal improvements surrounding the project site, which the project applicant would facilitate. These multimodal improvements would encourage the use of alternative modes of transportation and minimize the adverse effects to the freeways.

Table 21
Freeway Segment Capacity Analysis – Education Option

Freeway	Segment	Dir	Peak Hour	Existing Conditions Mixed-Flow # of Lanes[1]	Capacity[2]	Volume	Density	LOS[3]	Existing Plus Project Mixed-Flow # of Lanes	Capacity	Volume	Density	LOS	Education Option - Project Trips Mixed-Flow Project Trips	% of Capacity
SR 85	De Anza Blvd to Saratoga Ave	SB	AM	2	4,400	2,754	45	D	2	4,400	2,763	46	D	9	0.2%
			PM	2	4,400	2,801	**221**	**F**	2	4,400	2,801	**221**	**F**	0	0.0%
SR 85	Saratoga Ave to Winchester Blvd	SB	AM	2	4,400	2,570	40	D	2	4,400	2,637	41	D	67	1.5%
			PM	2	4,400	2,899	**151**	**F**	2	4,400	2,922	**152**	**F**	23	0.5%
SR 85	Winchester Blvd to Saratoga Ave	NB	AM	2	4,400	2,291	**201**	**F**	2	4,400	2,386	**209**	**F**	95	**2.2%**
			PM	2	4,400	2,931	**63**	E	2	4,400	2,956	**64**	**F**	25	0.6%
SR 85	Saratoga Ave to De Anza Blvd	NB	AM	2	4,400	1,672	**63**	**F**	2	4,400	1,672	**67**	**F**	0	0.0%
			PM	2	4,400	1,980	38	D	2	4,400	1,980	38	D	0	0.0%

Notes:
HOV = high-occupancy vehicle; LOS = level of service.
1. Number of lanes on each segment are taken from the Google Earth software.
2. Capacity is based on the capacities cited in VTA's *Transportation Impact Analysis Guidelines* (2014).
3. Level of service (LOS) of each segment are taken from VTA's *2018 CMP Monitoring Report*.
Bold indicates a substandard level of service.
Bold indicates an adverse project effect.

Vehicular Site Access

The site access and circulation evaluations are based on the site plan prepared by KTGY, dated July 31, 2020 (see Figures 3, 5, and 6 in Chapter 1).

Site Access

Vehicular access to the project site would be provided via the existing driveways and one new right-turn only driveway on Saratoga Avenue to the El Paseo site. Site access for both the Saratoga site and El Paseo site would not change between the non-education option (see Chapter 4) and education option.

Sight Distance at Project Driveways

The project driveways should be free and clear of any obstructions to provide adequate sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles and bicycles traveling on Saratoga Avenue, Quito Road, and W. Campbell Avenue. As described in Chapter 4, adequate sight distance would be provided at all existing and new driveways.

Traffic Operations at Project Driveways

The project-generated trips that are estimated to occur at the Saratoga site project driveway and the existing and new driveway to access the El Paseo site are shown in Figure 33. All outbound vehicles at the Quito Road driveway and southern Saratoga Avenue driveway are limited to making right turns out of the driveway due to the raised landscaped median.

Traffic operations at the project driveways were evaluated with a vehicle queuing analysis for left-turn inbound traffic and outbound driveway traffic (see Table 22). The analysis evaluates whether adequate left-turn storage would be provided for the project's inbound traffic and whether there would be long vehicle queues on site for the outbound traffic.

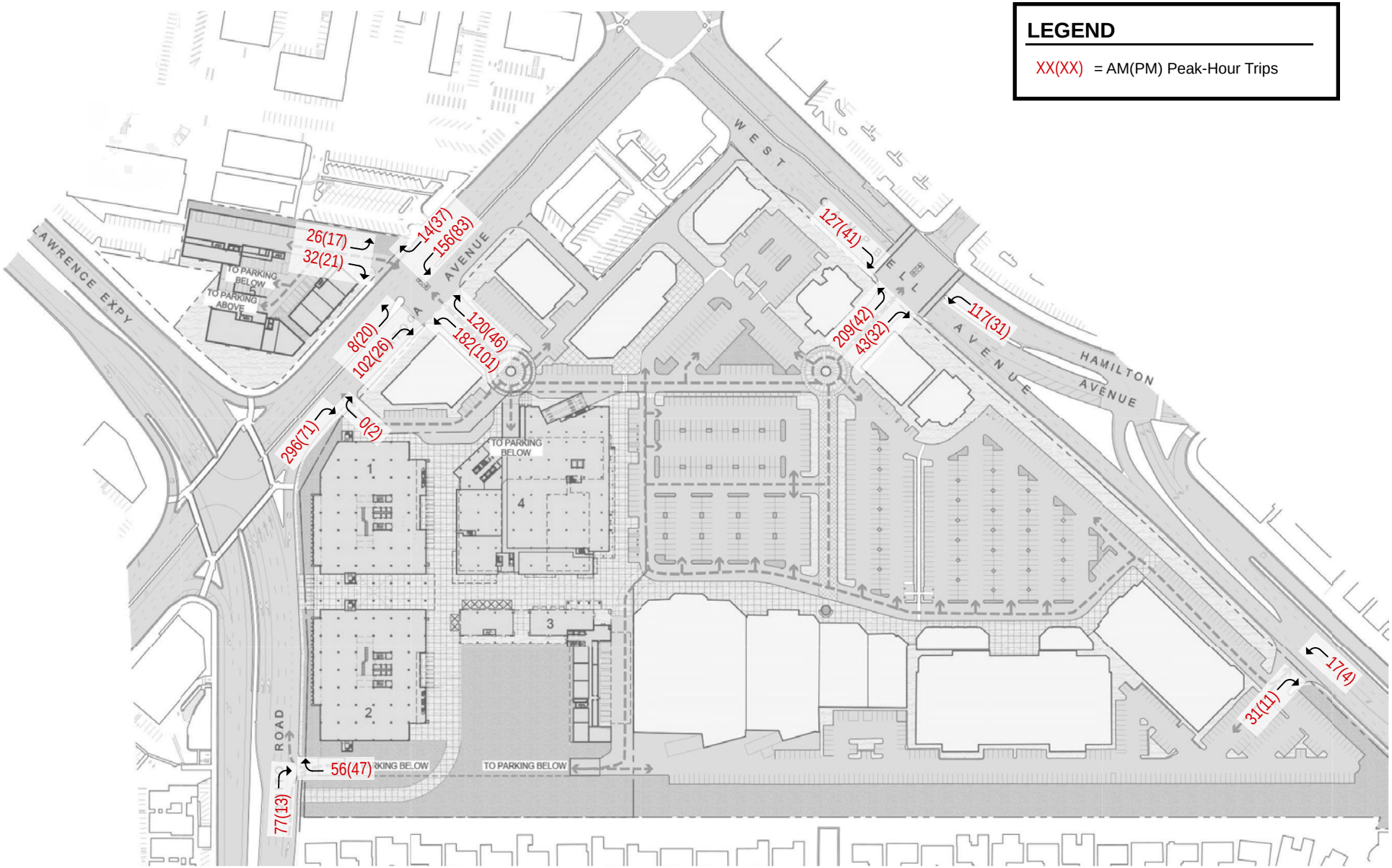


Figure 33
Project Trips at Driveways - Education Option

NORTH
Not to Scale

Table 22
Driveway Queuing Analysis – Education Option

Analysis Scenario	Saratoga Ave & Mall Entrance								Mall Entrance & Campbell Ave			
	NBL[3]		SBL		EBL/EBT/EBR[3]		WBL[5]		NBL/NBT[5]		WBL	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing												
Cycle/Delay[1] (sec)	--	--	130	130	--	--	130	130	130	130	130	130
Volume (vph)	--	--	51	103	--	--	122	178	21	94	49	80
Number of lanes	--	--	1	1	--	--	1	1	1	1	1	1
Volume (vphpl)	--	--	51	103	--	--	122	178	21	94	49	80
95th %. Queue (veh/ln)	--	--	4	8	--	--	8	11	2	7	4	6
95th %. Queue[2] (ft/ln)	--	--	100	200	--	--	200	275	50	175	100	150
Storage (ft/ln)	--	--	225	225	--	--	150	150	150	150	150	150
Adequate (Y/N)	--	--	Y	Y	--	--	**N**	**N**	Y	**N**	Y	Y
Project Conditions - Education Option												
Cycle/Delay[1] (sec)	130	130	130	130	130	130	130	130	130	130	130	130
Volume (vph)	8	20	193	157	58	38	294	240	230	136	159	94
Number of lanes	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vphpl)	8	20	241	157	58	38	391	240	352	136	211	94
95th %. Queue (veh/ln)	1	2	14	10	5	4	21	14	19	9	12	7
95th %. Queue[2] (ft/ln)	25	50	350	250	125	100	525	350	475	225	300	175
Storage (ft/ln)	120	120	225	225	75	75	125	125	100	100	150	150
Adequate (Y/N)	Y	Y	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**

Notes:
WBL = westbound left-turn movement; NBL = northbound left-turn movement; NBT = northbound through movement; EBL = eastbound left-turn movement; EBT = eastbound through movement; EBR = eastbound right-turn movement.

[1] Cycle length used for signalized intersections. Delay used for unsignalized intersections.

[2] Assumes 25 feet per vehicle queued.

[3] The existing lane configurations do not include any northbound left-turn and eastbound traffic.

[4] The volume per hour per lane reflects the peak arrival pattern of the student trips using a peak hour factor of 0.63 for the AM peak hour. The stated volume (vph) was not adjusted for the peak student trips. The PM peak hour occurs after school hours. Thus, the volume was not adjusted.

[5] The storage length under project conditions is measured from the beginning of the crosswalk to the traffic circle on site.

Left-Turn Inbound Traffic at Driveways

Northbound Left Turn from Saratoga Avenue to Saratoga Site

As part of the project, a new northbound left-turn lane from Saratoga Avenue to the Saratoga Site would be provided. The new left turn lane would provide 50 feet (2 vehicles) of storage. There are estimated to be one vehicle in the 95th percentile queue during the AM peak hour and 2 vehicles in the 95th percentile queue during the PM peak hour. Thus, the proposed storage lane would be adequate to serve the expected 95th percentile queue.

Although the left-turn pocket would provide adequate storage length for the left-turn traffic, the City requires a minimum 120-foot northbound left-turn pocket on Saratoga Avenue to the Saratoga site. As previously discussed, extending the storage lane at the project driveway would require further shortening the southbound left-turn pocket length to Quito Road, and dual left turn lanes to southbound Quito Road should be considered. To extend the northbound left-turn lane and add a second southbound left turn pocket, a lane reduction should be implemented along northbound Saratoga Avenue between the Quito Road/Lawrence Expressway intersection and the Mall Entrance intersection,

as shown in Figure 22 and described in Chapter 4. The project applicant should work with City staff to implement or contribute to the improvement.

Southbound Left Turn from Saratoga Avenue to Mall Entrance

The existing storage capacity for the southbound left-turn lane from Saratoga Avenue to the Mall Entrance is up to 9 vehicles (225 feet) without interfering with other movements. There are estimated to be 4 vehicles and 8 vehicles in the 95th percentile queue during the AM and PM peak hours, respectively, under existing conditions. The project is expected to add 10 vehicles during the AM peak hour and 2 vehicles during the PM peak hour. This would cause the queue to extend past the storage lane by 5 vehicles during the AM peak hour and one vehicle during the PM peak hour. During the AM peak hour, the southbound through traffic is light. Therefore, the maximum queue that would briefly block the inside through lane is not expected to cause a noticeable effect on southbound traffic operations. During the PM peak hour, the small increase in the 95th percentile queue is not expected to cause a noticeable effect on the southbound traffic operations because the left-turn spillback would only occur for a short period of time.

Although the queue is not expected to cause a noticeable effect on the southbound traffic operations on Saratoga Avenue during either peak hour, the school should monitor the queue as part of the school's drop-off operations. If queuing is persistent and affects the flow of the southbound through traffic on Saratoga Avenue, the school should ask parents to access the site via the Mall Entrance on W. Campbell Avenue.

Westbound Left Turn from Campbell Avenue to Mall Entrance

The westbound left-turn lane has approximately 150 feet (6 vehicles) of storage interfering with other movements. The 95th percentile queue is expected to have 4 and 6 vehicles during the AM and PM peak hours, respectively. The project is expected to increase the queue by 8 vehicles during the AM peak hour and one vehicle during the PM peak hour. Thus, the queue would extend past the storage lane by 6 vehicles during the AM peak hour and one vehicle during the PM peak hour. The westbound left-turn lane could be extended by approximately 100 feet before interfering with the Campbell Avenue/Hamilton Avenue intersection. However, it would not accommodate all of the additional queue during the AM peak hour.

The school should monitor the queue as part of the school's drop-off operations. If queuing is persistent and affects the flow of the westbound through traffic on W. Campbell Avenue, which is the direction of the peak traffic during the AM peak hour, the school should ask parents traveling northbound on W. Campbell Avenue to access the site via the Mall Entrance on W. Campbell Avenue, south of Hamilton Avenue.

Right-Turn Inbound Traffic at Driveways

Northbound Right Turn from Saratoga Avenue to Mall Entrance

Under existing conditions, there are approximately 117 vehicles and 227 vehicles during the AM and PM peak hours, respectively, making a right turn from northbound Saratoga Avenue into the northern driveway to the El Paseo Site. The project is expected to add 88 right-turn vehicles to the AM peak hour and is not expected to add vehicles to the PM peak hour. Thus, there would be total of 205 and 223 vehicles during the AM and PM peak hours, respectively, under project conditions. Because there is a dedicated right-turn lane for the right-turn traffic, vehicles can make a right-turn most of the time at the red signal, except when the southbound left-turn movement has a green light. The 95th queue length calculated by TRAFFIX was 7 and 8 vehicles (or 175 and 200 feet) during the AM and PM peak hours, respectively, under project conditions. The driveway would be 200 feet north of the new right-turn only

driveway to the El Paseo site. Therefore, the queue is not expected to reach the southern Saratoga Avenue driveway.

Northbound Right Turn at New Saratoga Avenue Driveway

As stated in Chapter 4, the new right-turn only driveway on Saratoga Avenue would be approximately 80 feet east of the right-turn lane from Quito Road to Saratoga Avenue. There are estimated to be 296 vehicles in the AM peak hour and 71 vehicles in the PM peak hour making a right turn from northbound Saratoga Avenue into the El Paseo site under project conditions. This calculates to approximately 5 vehicles every minute during the AM peak hour and approximately one vehicle every minute during the PM peak hour. The right-turn inbound vehicles would not have any conflicting movements to prevent them from entering the driveway without stopping. Therefore, the entering traffic is not expected to have a vehicle queue that would block the right-turn lane from Quito Road to Saratoga Avenue in the PM peak hour. However, in the AM peak hour, the student drop off in the loading area along the driveway could affect the flow of the entering traffic. To ensure that the right-turn volume does not affect traffic at the Saratoga Avenue/Quito Road intersection, the school should designate staff at the driveway entrance and loading area to ensure efficient student loading/unloading and prevent the queue from extending to the Saratoga Avenue/Quito Road intersection. If the vehicle queue were to extend from the loading area to the street, school staff should direct the drop off traffic to enter the site via the Mall Entrance driveway, approximately 200 feet north, or direct the drop-off traffic to use the loading area east of Building 4. Ultimately, to eliminate the conflicts between the right-turn traffic entering the site and the right-turn traffic from northbound Quito Road, the slip right-turn lane from northbound Quito Road to northbound Saratoga Avenue and the pork chop island at the southeast corner of the intersection should be removed. Thus, the right-turn traffic would be controlled by the signal, vehicle turn speeds would be lessened, pedestrian/vehicle conflicts would be eliminated, and further distance from the project's southern-most Saratoga Avenue right-in/right-out driveway to the signalized intersection would be achieved. Therefore, the project applicant should work with City to implement the improvement if approved by the County.

Northbound Right Turn at Quito Road Driveway

As stated in Chapter 4, any queues at the Quito Road driveway are not expected to affect through traffic as vehicles entering the driveway are free to make a right-turn without stopping as there are no conflicting movements.

The driveway that leads directly into the underground garage for the shopping mall is not a practical design for retail patrons. The parking garage would serve both the residential and school uses. Retail motorists could enter the parking garage, find it full, and have to find the way to get to the surface lot. The driveway should be signed clearly so that retail patrons would not use it to access the shopping mall. Ultimately, it is recommended that the driveway not directly lead to the underground garage but connect to a surface drive aisle so that motorists can stay at ground level and access the surface parking lots.

Outbound Traffic at Driveways

Eastbound Movement from Saratoga Site to Saratoga Avenue

The proposed development at the Saratoga site for the education option would be the same as the non-education option. As discussed in Chapter 4, the outbound vehicle queue would occasionally block the first 5 parking spaces near the entrance. The project should provide at least 125 feet of clearance before the first parking space to accommodate the maximum vehicle queue. Therefore, the first 5 parking spaces near the entrance should be removed.

The driveway is shown to have a sharp angle for the outbound right turn, which makes it difficult for outbound traffic to turn onto southbound Saratoga Avenue. The driveway should be aligned perpendicular to Saratoga Avenue.

The driveway should include a separate left-turn lane so that the traffic signal at the Saratoga Avenue and driveway intersection could run 8 phases.

Westbound Left Turn from Mall Entrance to Saratoga Avenue

As described in Chapter 4, because of the short distance between Saratoga Avenue and the proposed traffic circle along the driveway, it is likely that vehicles would be queued in the traffic circle during the peak hours, which would hinder all other movements. Because this is a signalized driveway, the driveway should provide adequate storage length to accommodate the maximum vehicle queue before interfering with other movements so that the green light can be fully utilized by the outbound vehicle queue. It is recommended that the project remove the traffic circle and reconfigure the on-site circulation to make the inbound and outbound traffic along the driveway aisle a through movement without stops within the site.

Northbound Movement from Mall Entrance to W. Campbell Avenue

As described in Chapter 4, because of the short distance between Campbell Avenue and the proposed traffic circle along the driveway, the project would occasionally cause the queue to extend past the storage lane and into the traffic circle during the AM and PM peak hours. Because this is a signalized driveway, the driveway should provide adequate storage length to accommodate the maximum vehicle queue before interfering with other movements so that the green light can be fully utilized by the outbound vehicle queue. It is recommended that the project remove the traffic circle and reconfigure the on-site circulation to make the inbound and outbound traffic along the driveway aisle a through movement without stops within the site.

Recommendations for Site Access

The site access recommendations for the education option are the same as the non-education option mentioned in Chapter 4 with the following additional recommendation.

- The pork chop island at the southeast corner of the Lawrence Expressway/Quito Road/Saratoga Avenue intersection should be removed, so the right-turn traffic from northbound Quito Road to northbound Saratoga Avenue would be controlled by the signal. The project applicant should work with City staff to implement the improvements if approved by the County.

Effects on Pedestrian and Bicycle Facilities

The effects on pedestrian and bicycle facilities would be the same for both options.

Recommended Improvements for Pedestrian and Bicycle Access

The improvements mentioned in Chapter 4 to improve pedestrian and bicycle safety should also be provided for the education option.

Effects on Transit Services

As shown in Table 23, it was assumed that 15% of the non-vehicle mode share for residential and retail trips and 15% of the project-specific reduction for residents would be via transit, which equates to approximately 8 new transit riders during the AM peak hour and 9 new transit riders during the PM peak hour. The increase in new riders could be accommodated by the currently available capacity of the bus

services in the study area, and improvement of the existing transit service would not be necessary with the project.

An evaluation of the effects of project traffic on transit vehicle delay also was completed. The results of the transit delay analysis are presented in Table 23. The analysis shows that the traffic associated with the project would increase delay to transit vehicles by 49 seconds or less per vehicle traveling in the study area. The VTA has not established policies or significance criteria related to transit vehicle delay. Thus, this data is presented for informational purposes only.

Table 23
Transit Vehicle Delay in Study Area – Education Option

Bus Route	Study Area Street(s)	Direction	Projected Change in Transit Vehicle Delay (sec/veh) AM	PM
25	Bollinger Rd	Eastbound	1.2	2.0
		Westbound	0.0	0.0
26	Prospect Rd, W. Campbell Ave, Saratoga Ave	Eastbound	42.7	12.1
		Westbound	11.2	1.4
56	Prospect Rd, Hamilton Ave	Northbound	9.7	-0.1
		Southbound	-0.3	0.9
57	Saratoga Ave, Quito Rd	Northbound	25.0	9.1
		Southbound	37.9	15.8
101	Lawrence Expwy, Prospect Rd, Hamilton Ave	Northbound	49.0	0.6
		Southbound	16.8	3.1

Note:
Projected increase in transit delay based on a comparison of background vs. background plus project intersection movement delays calculated by TRAFFIX.

Urban Village and Grand Boulevard Requirements

As stated in Chapter 4, the project would be required to implement Urban Village and Grand Boulevard design features to improve pedestrian and transit facilities.

Saratoga Avenue Vision Zero Corridor

Although the current Vision Zero San Jose has not identified safety improvement plans for the corridor, the City has considered the improvements for the Lawrence Expressway/Saratoga Avenue intersection as described in Chapter 4.

Parking

Vehicle and bicycle parking for the project was evaluated for (1) the development size shown on the July 31, 2020 site plan and (2) the maximum development size analyzed for the transportation analysis and traffic operations analysis. The development size shown on the site plan is smaller than the maximum development size analyzed for traffic operations and is only evaluated for the parking requirements. The proposed land uses under each scheme are shown in Table 24 and summarized below.

Proposed Site Plan

Up to 547 residential dwelling units, up to 66,665 s.f. of retail space, and a private K-12 school with up to 2,500 students.

- Saratoga Site – 210 residential dwelling units and 5,300 s.f. of retail space
- El Paseo Site – 337 residential dwelling units, 61,365 s.f. of retail space, and a private K-12 school with up to 2,500 students

Analyzed Project/Maximum Development

Up to 730 residential dwelling units, up to 67,500 s.f. of retail space, and a private K-12 school with up to 2,500 students.

- Saratoga Site – 280 residential dwelling units and 6,000 s.f. of retail space
- El Paseo Site – 450 residential dwelling units, 61,500 s.f. of retail space, and a private K-12 school with up to 2,500 students

Vehicle Parking

Proposed Site Plan

The project site plan shows 331 vehicle parking spaces at the Saratoga site and 1,089 vehicle parking spaces at the El Paseo site.

For the stated project size on the site plan, the development would require a total of 306 parking spaces at the Saratoga site and 1,316 parking spaces at the El Paseo site (see Table 24), based on the City's Zoning Code (Table 20-190) off-street parking requirements and prior to applying any relevant parking reductions. A parking reduction can be granted for developments within an Urban Village that provide bicycle parking spaces per City requirements. For residential and school uses, a 20 percent reduction can be granted, and for ground floor commercial uses, a 50 percent reduction can be granted. The Urban Village reduction would result in 238 required spaces at the Saratoga site and 976 required spaces at the El Paseo site.

At the Saratoga site, the project would provide 12 stalls for retail, and the remaining 319 stalls would be for residential use for a total of 331 spaces. This would exceed the requirements of the proposed site plan with the Urban Village reduction.

At the El Paseo site, the project would reconfigure a portion of the existing surface parking lot to provide 260 surface stalls for retail and provide 579 and 250 parking stalls within the garage for residents and the school, respectively, for a total of 1,089 spaces. The proposed parking spaces would exceed the required 976 spaces with the Urban Village reduction. However, the project should allocate 387 parking spaces for residents, 458 parking spaces for the school, and 131 spaces for retail. The project would provide 829 stalls for the school and residents to use in the garage, which would not meet the requirement of 845 parking spaces. The 260 surface stalls for retail would exceed the requirements with the Urban Village reduction.

Analyzed Project/Maximum Development

Based on the City's Zoning Code and prior to applying any relevant parking reductions, the development as analyzed would require a total of 403 parking spaces at the Saratoga site and 1,478 parking spaces at the El Paseo site (see Table 24). With the Urban Village reduction, the project would require a total of 315 parking spaces at the Saratoga site and 1,104 parking spaces at the El Paseo site.

Table 24
Vehicular Parking Requirements – Education Option

Land Use	Required Parking Rate[1]	Proposed Site Plan Size	Proposed Site Plan Required Spaces	Proposed Site Plan With Reduction[4]	Analyzed Project Size[5]	Analyzed Project Required Spaces	Analyzed Project With Reduction[4]
Saratoga Site							
Residential	1.25 spaces per 1-bedroom, 1.7 spaces per 2 bedroom	166 1-bedroom units	208	166	221 1-bedroom units	277	222
		44 2-bedroom units	75	60	59 2-bedroom units	100	80
Residential Subtotal		210 units	***283***	***226***	280 units	***377***	***302***
Retail	1 space per 200 s.f. of floor area[2]	5,300 s.f.[3]	23	12	6,000 s.f.[3]	26	13
Saratoga Site Total Required Spaces			**306**	**238**		**403**	**315**
Proposed Saratoga Site Spaces			***331***			***N/A***	
El Paseo Site							
Residential	1.25 spaces per studio/1-bedroom, 1.7 spaces per 2-bedroom, 2 spaces per 3-bedroom	62 studio units	78	62	83 studio units	103	82
		149 1-bedroom units	186	149	199 1-bedroom units	249	199
		108 2-bedroom units	184	147	144 2-bedroom units	245	196
		18 3-bedroom units	36	29	24 3-bedroom units	48	38
Residential Subtotal		337 units	***484***	***387***	450 units	***645***	***515***
School	1 space per faculty and staff	500 staff	500	400	500 staff	500	400
	1 per 5 students in grades 9-12	360 non-boarding students	72	58	360 non-boarding students	72	58
School Subtotal			***572***	***458***		***572***	***458***
Retail	1 space per 200 s.f. of floor area[2]	61,365 s.f.[3]	261	131	61,500 s.f.[3]	261	131
El Paseo Site Total Required Spaces			**1,317**	**976**		**1,478**	**1,104**
Proposed El Paseo Site Spaces			***1,089***			***N/A***	

Notes:
s.f. = square feet
1. Vehicular parking requirements per Table 20-190 and 20-210 of the San Jose Zoning Code
2. Floor area = 0.85 of gross floor area
3. Gross floor area
4. Because the project is located in an Urban Village, it can qualify for a 20 percent reduction in the City's parking requirement for the residential and school uses and a 50 percent reduction for retail uses if it provides bicycle parking spaces per City requirements.
5. The analyzed project assumes the same ratio for bedroom units as the proposed site plan.

With the Urban Village reduction, the project can reduce the required parking spaces to 13 spaces for retail use and 302 spaces for residential use at the Saratoga site if it provides bicycle parking spaces per City requirements.

With the Urban Village reduction, the project can reduce the required parking spaces to 515 parking spaces for residential use, 458 parking spaces for school use, and 131 parking spaces for retail use at the El Paseo site if it provides bicycle parking spaces per City requirements.

Bicycle Parking

The City requires short-term and long-term bicycle parking based on each specified land use (see Table 25). The bicycle parking requirements shown in the table do not include the required short-term

spaces for the school because it is determined based on the number of classrooms. The project would be required to provide additional short-term bicycle parking spaces at the El Paseo site once the number of classrooms for the school has been determined.

Table 25
Bicycle Parking Requirements – Education Option

		Proposed Site Plan				Analyzed Project			
			Required Spaces[4]				Required Spaces[4]		
Land Use	Required Parking Rate[1]	Size	Long-Term	Short-Term	Total	Size	Long-Term	Short-Term	Total
Saratoga Site									
Residential	1 space per 4 units	210 d.u	43	10	53	280 d.u	56	14	70
Retail	1 space per 3 ksf of floor area[2]	5,300 s.f.[3]	2	0	2	6,000 s.f.[3]	2	0	2
Saratoga Site Total Required Spaces			**45**	**10**	**55**		**58**	**14**	**72**
Proposed Saratoga Site Spaces			***33***	***35***	***68***			***N/A***	
El Paseo Site									
Residential	1 space per 4 units	337 d.u	68	17	85	450 d.u	91	22	113
School	1 space per 10 full time employees, 6 spaces per classroom for grades K-8, 10 spaces per classroom for grades 9-12	500 staff	50	-- [5]	-- [5]	500 staff	50	-- [5]	-- [5]
Retail	1 space per 3 ksf of floor area[2]	61,365 s.f.[3]	14	3	17	61,500 s.f.[3]	14	3	17
El Paseo Site Total Required Spaces			**132**	**N/A[5]**	**N/A[5]**		**155**	**N/A[5]**	**N/A[5]**
Proposed El Paseo Site Spaces			***158***	***1,426***	***1,584***			***N/A***	

Notes:
s.f. = square feet
1. Bicycle parking requirements per Table 20-190 of the San Jose Zoning Code
2. Floor area = 0.85 of gross floor area
3. Gross floor area
4. According to the Zoning Code, at least 80% of the required bicycle parking spaces should be provided in short-term bicycle parking facilities and at most 20% should be provided in long-term bicycle facilities.
5. Grades K-8 requires 6 short-term spaces per classroom and grades 9-12 requires 10 short-term spaces per classroom. When the number of classrooms is determined, the short-term bicycle spaces for the school should meet the requirements.

The project as shown in the proposed site plan would require 45 long-term spaces and 10 short-term spaces at the Saratoga site, and the El Paseo site would require 132 long-term spaces for all uses and at least 20 short-term spaces for residential and retail uses. At the Saratoga site, a total of 33 long-term bicycle parking spaces and 35 short-term bicycle spaces would be provided. At the El Paseo site, a total of 158 long-term bicycle parking spaces and 1,426 short-term bicycle spaces would be provided. The project would be required to provide bicycle parking spaces per City requirements.

The project as analyzed requires 58 long-term spaces and 14 short-term spaces at the Saratoga Site, and the El Paseo site requires 155 long-term spaces for all uses and at least 25 short-term spaces for residential and retail uses.

Recommendation: The project would be required to provide adequate vehicle and bicycle parking spaces that meet City parking requirements.

6. Conclusions

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed development. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's *Transportation Analysis Handbook.* Based on the City of San Jose's Transportation Analysis Policy and *Transportation Analysis Handbook*, the transportation analysis report for the project includes a CEQA transportation analysis and a local transportation analysis (LTA). The CEQA transportation analysis comprises of an evaluation of Vehicle Miles Traveled (VMT) and cumulative impact analysis for the project's consistency with the Envision San Jose 2040 General Plan. The LTA includes an evaluation of weekday AM and PM peak-hour traffic conditions for 21 signalized intersections and three unsignalized intersections, an analysis of freeway segment capacity, freeway ramp operations, site access, on-site circulation, parking, and effects to transit, bicycle, and pedestrian facilities.

CEQA Transportation Analysis

The CEQA transportation impacts of the project was evaluated based on a VMT analysis and a cumulative impact analysis for the project's consistency with the Envision San Jose 2040 General Plan.

Non-Education Option

VMT Impacts

The City of San Jose VMT Evaluation Tool was used to evaluate the VMT impact for the residential and office uses of the project. For the retail/commercial use, because the project would not result in an increase in retail space on the site, the proposed retail/commercial use is not expected to cause an increase in VMT and is expected to result in a less-than-significant VMT impact. Thus, a VMT analysis is not required for the retail use.

According to the VMT tool, the VMT generated by the residential use of the project (11.07 VMT per capita) would exceed the threshold of 10.12 VMT per capita; therefore, the residential use would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact.

To evaluate the medical office VMT using the VMT tool, trips generated by the medical office were converted into equivalent office square footage. According to the VMT tool, the VMT generated by the office and medical office uses of the project (13.38 VMT per employee) would exceed the threshold of 12.21 VMT per employee. Therefore, the office uses would result in a significant transportation impact on VMT, and mitigation measures are required to reduce the VMT impact.

Mitigation Measures – Residential Use

Based on the list of selected VMT reduction measures included in the VMT Evaluation Tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements.
    - Campbell Avenue and Hamilton Avenue: The City has identified the following improvements to remove the pork chop island at the southwest corner of the intersection and improve pedestrian access across W. Campbell Avenue from the south side of Hamilton Avenue. The scope of the conditioned improvements the project should implement at the intersection will be determined based on final cost estimates.

      Improvement to remove pork chop island at Campbell Avenue and Hamilton Avenue

        - Modify the existing signal to provide a 5-phase signal operation
        - Provide a signalized pedestrian crosswalk for the south leg
        - Provide bike signal heads at near and far sides for eastbound through bicycle movement
        - Install new signal poles with mast arms lengths shadowing opposing left-turn pockets at the northwest and southeast intersection corners; include two new directional ADA curb ramps at the southeast corner and one new directional ADA curb ramp at the northwest corner
        - Install a new signal pole with mast arm at the southwest intersection corner; include new directional ADA curb ramp
        - Replace the existing signal pole at the north leg of the intersection with a signal pole and mast arm for the northbound Campbell Avenue movements
        - Remove the existing signal poles from the raised medians along Campbell Avenue
        - Construct a new ADA directional curb ramp at the northeast corner
        - Retain the existing accessible pedestrian signal (APS) equipment for all pedestrian crosswalks and existing video detection for all intersection approaches
        - Provide and install a Point-Zoom (PTZ) camera
        - Replace the existing signal cabinet at the northwest corner with a new ATC signal cabinet
        - Construct curb/gutter/sidewalk (about 550 feet) along eastbound Campbell Avenue, providing a 10-foot-wide sidewalk with tree wells at 35 feet off-center (O.C.)
        - Remove existing asphalt concrete along the portion of Campbell Avenue being abandoned and replace with decomposed granite (DG)

      Utility reconstruction due to pork chop island removal

- Retain the existing 30-foot reinforced concrete pipe (RCP) along the portion of Campbell Avenue being abandoned to vehicular movements.
- Relocate one existing drainage inlet (west). Conform to existing drainage inlet (east). Abandon existing drainage inlets in-place for the abandoned portion of Campbell Avenue (mid).

Streetlighting and communications improvement

- Provide a new streetlight every 150 feet along the new 10-foot-wide sidewalk along eastbound Campbell Avenue
- Provide LED lighting for each new signal pole.

- Provide Unbundled On-Site Parking Costs. This would allow residents without cars to rent a unit without having to pay for a parking spot. Unbundling of parking encourages residents to forego a second car or to have no car at all.

The combination of the mitigation measures would reduce the project VMT per capita by 2.21 (or 18%) as compared to the area VMT and would reduce the project VMT per capita to 10.09, which would make the project impact less than significant.

Mitigation Measures – Office/Medical Office Use

Based on the list of selected VMT reduction measures included in the VMT evaluation tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements. The improvements are described above for the residential use.
- Provide Commute Trip Reduction Marketing and Education. The office would be required to routinely provide commute trip reduction marketing/educational campaign to employees to promote the use of transit, shared rides, walking, and bicycling, therefore lowering the number of single occupancy vehicle (SOV) trips and VMT.
- Telecommuting and Alternative Work Schedule Program. The office tenants would be required to implement a flexible work schedule to encourage employees telecommuting, commuting outside of peak congestion periods, or working with alternative schedules. This program would allow some employees to work a few days from home, and thus reducing the number of trips and VMT.

The combination of the mitigation measures would reduce the project VMT per employee by 1.35 (or 10 %) as compared to the area VMT and would reduce the project VMT per employee to 12.15, which would make the project impact less than significant.

Education Option

Similar to the non-education option, the project would not result in an increase in retail space on the site, and thus, a VMT analysis is not required for the retail use. The project VMT and the VMT impact of the proposed residential use under this option would be the same as the VMT impact and mitigation measures for the residential use under the non-education option.

For the proposed school, the VMT analysis compares the average per-student VMT generated by the project to the regional average per-student VMT for private schools and public schools. The analysis results showed that the per-student VMT generated by the proposed school would be approximately

10.3% above the existing per-student VMT, which is considered as a VMT impact. Therefore, the project would be required to provide mitigation measures to reduce the project student VMT by 10.3%.

Mitigation Measures – School Use

In order for the project to have a less than significant impact on VMT, the project needs to reduce the VMT by 10.3%. Therefore, the VMT evaluation tool was used to identify mitigation measures that would reduce the VMT by at least 10.3%.

Based on the list of selected VMT reduction measures included in the VMT evaluation tool, it is recommended the project implement the following mitigation measures to reduce the significant VMT impact.

- Provide Pedestrian Network/Traffic Calming Improvements. The improvements are described above for the non-education use.
- Provide Commute Trip Reduction Marketing and Education. The school would be required to routinely provide commute trip reduction marketing/educational campaign to faculty, staff, student drivers, and parents to promote the use of transit, shared rides, walking, and bicycling, therefore lowering the number of SOV trips and VMT.
- Provide a Rideshare/Carpool Program. The school would be required to implement a rideshare/carpool program to coordinate carpools amongst parents, student drivers, and employees to reduce SOV trips and VMT generated by the school.

The school would be required to prepare a transportation demand management (TDM) plan that that offers the commute trip reduction measures to 95% of the students and employees. The VMT estimate assumes that 2% of the students and employees would participate in the rideshare/carpool program. The combination of the mitigation measures would reduce the project VMT per student by 10.44% as compared to the area VMT, which would make the project impact less than significant.

Cumulative Impact

The project for either option is consistent with the General Plan for the following reasons:

- The project would be a mixed-use development with higher intensity commercial development.
- The project would increase the equivalent employment density in the project area.
- The project would include ground floor-commercial spaces fronting Saratoga Avenue.
- The project would provide a public plaza at the corner of the Saratoga Avenue/Lawrence Expressway intersection.
- The project would provide 22-foot sidewalks with planters and landscaping on Saratoga Avenue along the Saratoga site project frontage. Wider sidewalks would improve pedestrian access to the transit stop and other destinations.
- The project would provide 15-foot sidewalks with planters along Quito Road and 18-foot sidewalks with landscaping along Lawrence Expressway, which meets typical Urban Village requirements.
- The project would provide a parking garage that it is not attached to a single development but can be shared by land uses on the site.

- The project would provide the minimum amount of parking required to adequately serve the residential, retail, and school parking demand of the project, thereby avoiding excessive parking supply.
- The project would be integrated with the City's transportation system, including transit, roads, and pedestrian facilities.
- The project would not negatively impact existing transit, bicycle, or pedestrian infrastructure, nor would it conflict with any adopted plans or policies for new transit, bicycle, or pedestrian facilities.
- As part of the project-level mitigation measures, the project would implement trip reduction measures to reduce vehicle trips and VMT generated by the residential, office, and school uses.

Therefore, the project would be considered part of the cumulative solution to meet the General Plan's long-range transportation goals and would result in a less-than-significant cumulative impact.

Local Transportation Analysis

Non-Education Option

Intersection Traffic Operations

The results of the intersection level of service analysis show that all of the signalized study intersections are currently operating at an acceptable level of service during the AM and PM peak hours of traffic and would continue to do so under project conditions. Therefore, the added project trips would not cause an adverse operations effect at any of the signalized study intersections.

The study also evaluated three unsignalized intersections: Quito Road/Northlawn Drive, Quito Road/Cox Avenue, and Quito Road/McCoy Avenue.

At the Quito Road/Northlawn Drive intersection, the westbound approach on Northlawn Drive is estimated to experience heavy delay (equivalent to LOS F) during the AM peak hour under existing, background, and project conditions, and AM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project). However, the added delay by the project is not expected to cause a noticeable effect on traffic operations at this intersection. The need for intersection improvement or modification of traffic control at the intersection should be evaluated further with actual traffic counts and field observations in the future when volumes return to pre-Covid levels. It is recommended that the City evaluate the need for signalization or improvement at the intersection prior to the issuance of the occupancy permit of the project. If the City determined an improvement or signalization is warranted, it would be appropriate for the project applicant to pay a fair share contribution towards the improvement.

At the Quito Road/Cox Avenue intersection, the eastbound approach on Cox Avenue is estimated to experience heavy delay (equivalent to LOS F) during the PM peak hour under existing, background, and project conditions. Although PM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project), field observations showed that the upstream and downstream signal-controlled intersections on Quito Road allow the eastbound traffic to easily find gaps in traffic to make a left or right turn from Cox Avenue onto Quito Road. The eastbound traffic also has the option of using the Quito Road/Bucknall Road intersection. Therefore, a signal is not recommended.

At the Quito Road/McCoy Avenue intersection, the eastbound approach on McCoy Avenue is estimated to operate adequately (equivalent to LOS E) during both the AM and PM peak hours under all scenarios. The added project trips on Quito Road at the intersection would slightly increase the delay of

the eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection.

Freeway Segment Capacity Analysis

The results of the freeway segment analysis show that the project is not projected to add traffic volumes representing one percent or more of the freeway capacity. Based on CMP freeway impact criteria, none of the freeway segments would be impacted by the project.

Urban Village/Grand Boulevard Requirements and Vision Zero San Jose Recommendation

The project site is located within the Paseo de Saratoga Urban Village Boundary and fronts Saratoga Avenue, which has been designated as a Grand Boulevard by the Envision San José 2040 General Plan. Although an Urban Village Plan has not yet been developed for the Paseo de Saratoga area, according to the adopted Urban Village Plans in other Urban Villages, the project might be subject to implement the following Urban Village and Grand Boulevard design features to improve pedestrian and transit facilities:

- Provide a minimum 20 feet sidewalk width along the El Paseo and Saratoga site frontage on Saratoga Avenue based on typical Urban Village requirements.
- Provide a minimum 15 feet sidewalk width along the El Paseo site frontage on Quito Road based on typical Urban Village requirements.
- Relocate and improve the current bus stop along the project frontage on Saratoga Avenue. The project should work with VTA to provide the bus stop that meets the current VTA shelter and bus stop standards at the new location.

The Saratoga Avenue and Lawrence Expressway/Quito Road intersection is within the Paseo de Saratoga Urban Village Plan area, and Saratoga Avenue is identified as a “Priority Safety Corridor” as part of *Vision Zero San Jose*. Although the current Vision Zero San Jose has not identified safety improvement plans for the corridor, the City has considered the following improvements for the intersection:

- Remove pork chop islands and tighten the corner radius at the southeast and northeast corners along the project frontages and modify the signal to accommodate pork chop removals. Removal of pork chop islands would improve the multi-modal environment by eliminating unsignalized pedestrian/vehicle conflict points, increasing visibility of pedestrians at the intersection corner, decreasing the crossing distance for pedestrians, providing safer refuge for pedestrians waiting to use the crosswalks, and providing ADA standard curb ramps.

The project applicant should work with City staff to implement the improvements if approved by the County.

Other Transportation Issues

Hexagon has the following recommendations resulting from the pedestrian access, vehicle site access, on-site circulation, and parking evaluations.

Recommendations for Site Access and Project Driveways

- The project should work with City staff to implement or contribute to the pedestrian access/traffic calming improvements at the Campbell Avenue/Hamilton Avenue intersection described above. The improvement is a VMT mitigation measure to improve pedestrian network.

- The left-turn pocket on Saratoga Avenue to the Saratoga site should be a minimum of 120 feet long.
- A lane reduction should be considered along northbound Saratoga Avenue between the Quito Road/Lawrence Expressway intersection and the Mall Entrance intersection to accommodate a minimum 120-foot northbound left-turn pocket to the Saratoga site and a second left-turn lane from Saratoga Avenue to southbound Quito Road.
- The project should modify the traffic signal at the Saratoga Avenue/Mall Entrance intersection to provide 8-phase operation in order to enhance pedestrian crossing for the crosswalks crossing Saratoga Avenue. To accommodate the 8-phase signal, the Saratoga site driveway should include a separate left-turn lane.
- The project should implement or contribute to an in-lieu fee for the construction of a Class IV bike lane along the project frontages on Saratoga Avenue and Quito Road.
- The Saratoga site driveway should be aligned perpendicular to Saratoga Avenue.
- At the Saratoga site driveway, the first 5 parking spaces near the entrance should be removed to provide at least 125 feet of clearance between the face of the curb and the first 90-degree parking space.
- At the Quito Road driveway, retail motorists should have the option to stay at ground level. It is recommended that the driveway not directly lead to the underground garage, but connect to a surface drive aisle.
- The mall entrance driveways on Saratoga Avenue and W. Campbell Avenue should provide adequate storage length to accommodate the maximum vehicle queue. It is recommended that the project remove the traffic circles on mall entrance driveways and reconfigure the on-site circulation to make the inbound and outbound traffic along the driveway aisle a through movement without stops within the site.
- The project would relocate the current bus stop along the project frontage on Saratoga Avenue approximately 300 feet northward to the north side of the Mall Entrance driveway. The project should work with VTA to provide the bus stop that meets the current VTA shelter and bus stop standards at the new location.

Recommendations for On-Site Circulation and Parking

- At the Saratoga site, the project should provide a turnaround space at all dead-end aisles in the parking garage to provide adequate circulation for drivers or designate parking spaces for residents.
- According to the City of San Jose Zoning Code, the project will be required to provide four loading zones at the El Paseo site for the commercial/retail uses. The project applicant should coordinate with City staff to determine if three loading zones would be adequate to serve the proposed commercial/retail uses.
- The site plan for the El Paseo site should be modified so that trucks can exit directly to Quito Road as they do today.
- For the Buildings 1 and 3 underground garage at the El Paseo site, the project should move the location of the northern garage ramp on Level B1 to align with the drive aisle and to avoid potential conflicts at the bottom of the ramp. Ultimately, to improve on-site circulation, the northern ramp should be removed or relocated.

- For the Buildings 1 and 3 underground garage at the El Paseo site, the project should assign the tandem spaces to employees and residents to ensure that all spaces are being used when possible.
- The project would be required to provide adequate bicycle parking spaces that meet City parking requirements. Additionally, the long-term parking spaces for each building should meet the parking requirements for proposed uses in each building.

Education Option

Intersection Traffic Operations

The results of the intersection level of service analysis show that all of the signalized study intersections are currently operating at an acceptable level of service during the AM and PM peak hours of traffic and would continue to do so under project conditions. Therefore, the added project trips would not cause an adverse operations effect at any of the signalized study intersections.

At the Saratoga Avenue/Quito Road intersection, the intersection queuing analysis shows that the southbound left-turn queue on Saratoga Avenue exceeds the storage length under existing and background conditions. The project would increase the length of the 95th percentile queue by 2 vehicles during the AM peak hour and one vehicle during PM peak hour. As described in the non-education option, the City requires a minimum 120-foot northbound left-turn pocket on Saratoga Avenue to the Saratoga site. Extending the storage lane at the project driveway would require further shortening of the southbound left-turn pocket to Quito Road. Therefore, the addition of a second left-turn lane on the southbound approach would be required to accommodate the existing and projected queue.

The addition of a second southbound left-turn lane at the intersection can be achieved by implementing a lane reduction along northbound Saratoga Avenue between Quito Road and Mall Entrance, which would provide a lane width for the northbound left-turn pocket to the Saratoga site and a second left-turn lane from Saratoga Avenue to southbound Quito Road. The project applicant should work with City staff to implement or contribute to the improvement.

The study also evaluated three unsignalized intersections: Quito Road/Northlawn Drive, Quito Road/Cox Avenue, and Quito Road/McCoy Avenue.

At the Quito Road/Northlawn Drive intersection, the westbound approach on Northlawn Drive is estimated to experience heavy delay (equivalent to LOS F) during the AM peak hour under existing, background, and project conditions. Although AM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project), the need for intersection improvement or modification of traffic control at the intersection should be evaluated further with actual traffic counts and field observations in the future when volumes return to pre-Covid levels. It is recommended that the City evaluate the need for signalization or improvement at the intersection prior to the issuance of the occupancy permit of the project. If the City determined an improvement or signalization is warranted, it would be appropriate for the project applicant to pay a fair share contribution towards the improvement.

At the Quito Road/Cox Avenue intersection, the eastbound approach on Cox Avenue is estimated to experience heavy delay (equivalent to LOS F) during the PM peak hour under existing, background, and background plus project conditions. Although PM peak-hour volumes at the intersection meet the peak-hour signal warrant under all conditions (both with and without project), a signal is not recommended as described under the non-education option.

At the Quito Road/McCoy Avenue intersection, the eastbound approach on McCoy Avenue is estimated to operate adequately (equivalent to LOS E) during both the AM and PM peak hours under all scenarios. The added project trips on Quito Road at the intersection would increase the delay of the eastbound approach but is not expected to cause a noticeable effect on traffic operations at this intersection.

Freeway Segment Capacity Analysis

The results of the freeway segment analysis show that the education option would cause substantial increases in traffic volumes (one percent or more of freeway capacity) on one of the study freeway segments (northbound SR 85 from Winchester Boulevard to Saratoga Avenue) currently operating at LOS F during the AM peak hour. Therefore, based on CMP freeway impact criteria, one (1) of the study freeway segments would be adversely affected by the project.

Improvements to address the adverse effect on the freeway segment would require either widening the freeway or reducing the project trips. Caltrans has no plans to widen SR 85, and the cost of widening the freeway is beyond the capability of the project. In order to eliminate the adverse effect through TDM, it would be necessary to reduce project trips by 55%. This level of trip reduction is not feasible. The City has proposed multimodal improvements surrounding the project site, which the project applicant would facilitate. These multimodal improvements would encourage the use of alternative modes of transportation and minimize the adverse effects to the freeways.

Urban Village/Grand Boulevard Requirements and Vision Zero San Jose Recommendation

The improvements mentioned for the non-education option should also be provided for the education option.

Other Transportation Issues

The recommendations for site access and project driveways for the education option are the same as the non-education option. However, a separate supplemental LTA with an updated site plan and discussions concerning on-site circulation and pick-up/drop-off would be needed in the future if the project moves forward with the education option.

In addition to the recommendations for the non-education option, Hexagon has the following recommendation resulting from the parking evaluation.

- The project would be required to provide adequate vehicle and bicycle parking spaces that meet City parking requirements.