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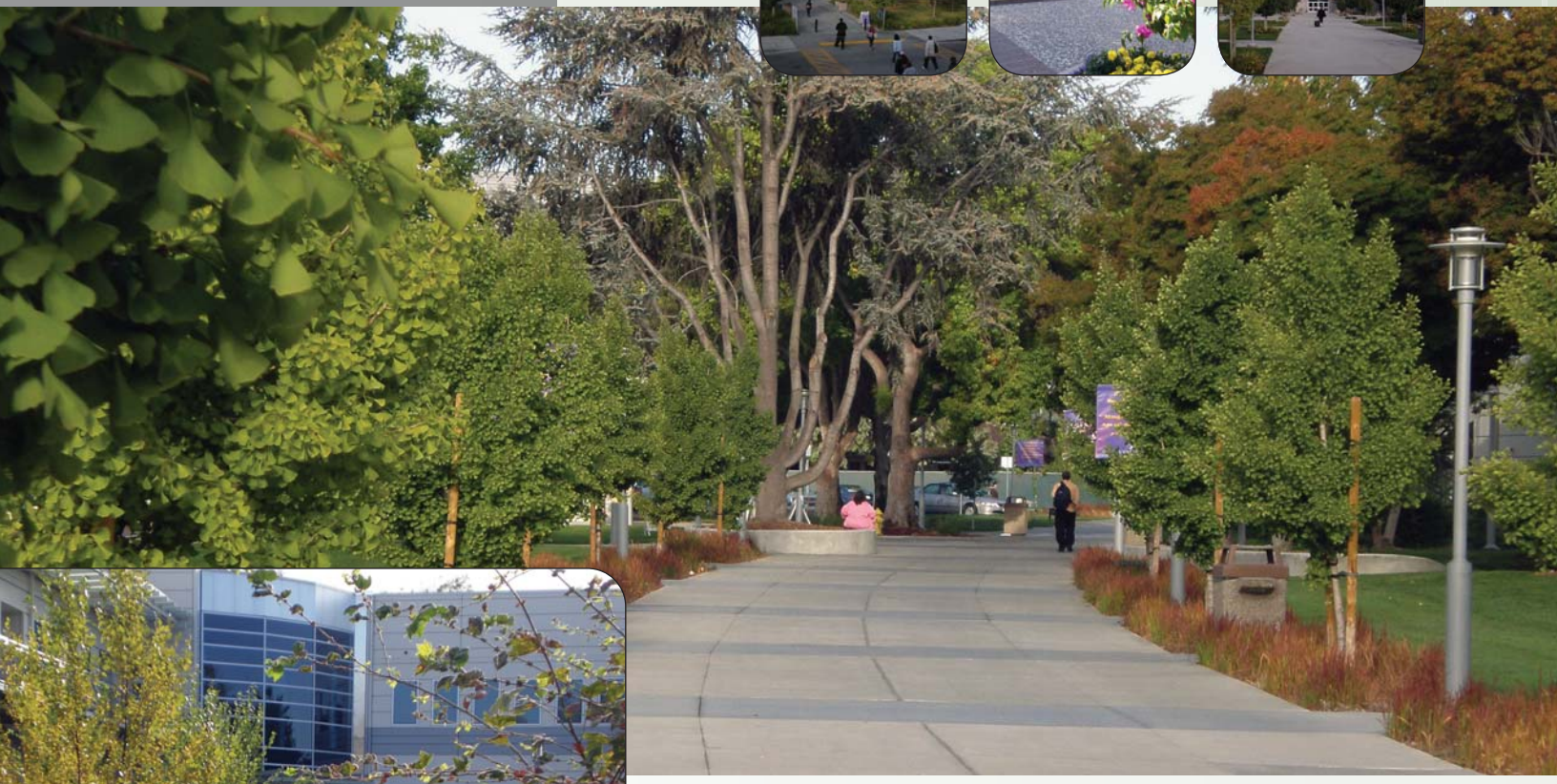
San Jose, CA 95113




February 2009

San Jose City College Facilities Master Plan:

Transportation Impact Analysis

San Jose City College Facilities Master Plan TIA

Prepared for:

San Jose/Evergreen Community College District

Prepared by:

Fehr & Peers

February 2009

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EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis (TIA) for the Facilities Master Plan of the San Jose City College located in Santa Clara County, California. The proposed project is a refinement of the 2000 Facilities Master Plan and will involve a reorganization of campus facilities as well as the reconfiguration of campus access and circulation. It includes a reduction of Campus facilities from the previous plan but still includes an enrollment increase of 2,000 students. Note that this enrollment increase of 2,000 students is less than the projected enrollment increase of 5,000 students under the prior Facilities Master Plan. The project is bounded by Moorpark Avenue to the north, Bascom Avenue to the west, Leigh Avenue to the east, and residential development to the south.

The analysis was conducted to identify potential transportation impacts of the proposed project on the surrounding roadway system and to recommend appropriate improvements to mitigate any significant impacts. The roadway system was evaluated under Existing, Background, Project, Cumulative without Project, and Cumulative with Project Conditions.

PROJECT TRAFFIC ESTIMATES

The amount of traffic generated by the proposed project was estimated by applying rates based on data collected at the San Jose City College driveways. Community college trip generation rates per student were determined for the AM and PM peak hours. The proposed project is estimated to generate 2,781 net new daily trips, 220 new AM peak-hour trips (175 inbound and 45 outbound) and 266 new PM peak-hour trips (174 inbound and 92 outbound).

INTERSECTION IMPACTS

The Bascom Avenue/San Carlos Street intersection operates unacceptably under Background, Project, and Cumulative Conditions but is not considered a significant impact because the increase in critical V/C and delay did not exceed the VTA one percent and four second thresholds. Therefore, the impact to this intersection would be considered **less-than-significant**.

The proposed project causes a significant impact at the Bascom Avenue/Kingman Avenue intersection under both Project Conditions and Cumulative with Project Conditions. A complete set of signal warrants should be investigated based on a thorough study of traffic and roadway conditions to determine if a signal should be installed at this location. There are two options to mitigate this impact. Option 1 includes restricting westbound left-turns on Kingman Avenue. Option 2 includes signalizing the Bascom Avenue/Kingman Avenue intersection. Implementation of a signal at this location would likely require coordination with the adjacent signal at the Bascom Avenue/Renova Drive intersection. San Jose City College would be responsible for 100% of the cost of mitigation. The intersection of Bascom Avenue and Kingman Avenue is controlled and operated by the City of San Jose. While either mitigation option would reduce the impact to a less-than-significant level, San Jose City College has no authority to ensure that the proposed mitigation can be in place to mitigate the project's impacts. If an agreement is reached between the college and the City for mitigation, then this impact could be considered mitigated and less than significant. Until the time that an agreement is in place the impact at the Bascom Avenue/Kingman Avenue intersection would be considered **significant and unavoidable**.

The project also causes a significant impact at the Bascom Avenue/Moorpark Avenue intersection under Cumulative with Project Conditions because the intersection exceeds City of San Jose impact thresholds. A second southbound left-turn lane mitigates the impact to less-than-significant levels. San Jose City College

would be responsible for 14.2% of the cost of the mitigation. The intersection of Bascom Avenue/Moorpark Avenue is controlled and operated by the City of San Jose. While the mitigation of would reduce the impact to a less-than-significant level, San Jose City College has no authority to ensure that the proposed mitigation can be in place to mitigate the project's impacts. If an agreement is reached between the college and the City for mitigation, then this impact could be considered mitigated and less than significant. Until the time that an agreement is in place the impact at the Bascom Avenue/Kingman Avenue intersection would be considered **significant and unavoidable**.

There is a significant impact at the Bascom Avenue/Fruitdale Avenue intersection under Cumulative with Project Conditions because the intersection exceeds City of San Jose impact thresholds. Reconfiguring the east- and west-bound approaches with protected phasing to one left-turn, one through, and one right-turn lane mitigates the impact to less-than-significant levels. San Jose City College would be responsible for 38.2% of the cost of the mitigation. The intersection of Bascom Avenue/Fruitdale Avenue is controlled and operated by the City of San Jose. While the mitigation would reduce the impact to a less-than-significant level, San Jose City College has no authority to ensure that the proposed mitigation can be in place to mitigate the project's impacts. If an agreement is reached between the college and the City for mitigation, then this impact could be considered mitigated and less than significant. Until the time that an agreement is in place the impact at the Bascom Avenue/Kingman Avenue intersection would be considered **significant and unavoidable**.

FREEWAY SEGMENT IMPACTS

The proposed project will not significantly impact any study freeway segments in the study area. The previous San Jose City College Facilities Master Plan EIR indicated that there would be impacts to segments on the surrounding freeway system. However, since this project is proposing to add fewer additional students, this Facilities Master Plan update is expected to have fewer impacts than the previous update.

PEDESTRIAN, BICYCLE, AND TRANSIT FACILITY IMPACTS

The proposed project will not significantly impact pedestrian, bicycle, or transit facilities in the study area because the proposed project does not conflict with any existing or proposed pedestrian, bicycle, or transit facilities and the proposed project does not create hazardous conditions for pedestrians, bicyclists, or transit riders.

SITE ACCESS, ON-SITE CIRCULATION, AND PARKING

The San Jose City College campus can be accessed from several points along Bascom Avenue, Moorpark Avenue, Leigh Avenue, and Kingman Avenue. Site access is considered adequate.

While there is no existing internal vehicular connection between the western side of campus with the eastern side, a connection is proposed in the Facilities Master Plan, which will improve on-site circulation.

With the addition of 2,000 students, the current parking supply would be significantly lower than the demand. The parking supply should be increased by approximately 360 spaces and be located on the western side of the campus where the majority of new buildings will be located. San Jose City College should also create a special event parking management plan to mitigate the effects of parking intrusion on the surrounding neighborhoods.

1. INTRODUCTION

This report presents the results of the transportation impact analysis (TIA) for the Facilities Master Plan of the San Jose City College located in Santa Clara County, California. The proposed project is a refinement of the 2000 Facilities Master Plan and will involve a reorganization of campus facilities as well as the reconfiguration of campus access and circulation. It includes a reduction of Campus facilities from the previous plan but still includes an enrollment increase of 2,000 students from the current enrollment of approximately 10,000 students. Note that this enrollment increase of 2,000 students is less than the projected enrollment increase of 5,000 students under the prior Facilities Master Plan. The project is bounded by Moorpark Avenue to the north, Bascom Avenue to the west, Leigh Avenue to the east, and residential development to the south.

The analysis was conducted to identify the potential transportation impacts of the proposed project on the surrounding roadway system and to recommend appropriate improvements to mitigate any significant impacts. Figure 1 presents the project location, surrounding roadway system, study intersections, and freeway study segments. The proposed San Jose City College Facilities Master Plan is shown on Figure 2.

Project impacts were estimated following the guidelines of the City of San Jose, the Santa Clara Valley Transportation Authority (VTA), which is the congestion management agency for Santa Clara County, and the California Department of Transportation (Caltrans). The analysis evaluated the operations of the following key intersections:

1. Bascom Avenue and San Carlos Street
2. Leigh Avenue and San Carlos Street
3. Leigh Avenue and Scott Street
4. Bascom Avenue and Parkmoor Avenue
5. Leland Avenue and Parkmoor Avenue
6. Leigh Avenue and Parkmoor Avenue
7. Bascom Avenue and Moorpark Avenue*
8. Leland Avenue and Moorpark Avenue
9. Leigh Avenue and Moorpark Avenue
10. Bascom Avenue and Renova Drive
11. Bascom Avenue and Kingman Avenue (San Jose City College driveway)
12. Bascom Avenue and Fruitdale Avenue*
13. Sherman Oaks Way and Fruitdale Avenue
14. Leigh Avenue and Fruitdale Avenue
15. Southwest Expressway and Fruitdale Avenue

* Designated CMP intersection.

The analysis also evaluated the operations of the following key freeway segments:

1. SR 17, between Hamilton Avenue and I-280
2. I-280, between Winchester Boulevard and I-880
3. I-280, between I-880 and Meridian Avenue
4. I-280, between Meridian Avenue and Bird Avenue
5. I-880, between I-280 and West San Carlos Street/Stevens Creek Boulevard
6. I-880, between West San Carlos Street/Stevens Creek Boulevard and Bascom Avenue

The operations of the key intersections were evaluated during the weekday morning (AM) and afternoon (PM) peak hours for the following four scenarios:

Scenario 1: *Existing Conditions* – Existing volumes obtained from counts.

Scenario 2: *Background Conditions* – Existing volumes plus traffic from approved but not yet constructed developments in the area.

Scenario 3: *Project Conditions* – Background volumes plus traffic generated with the proposed Master Plan Conditions

Scenario 4: *Cumulative Conditions* – Background volumes plus Project volumes plus traffic generated from pending developments in the area

Freeway segments were evaluated under existing and project conditions following VTA and Caltrans guidelines.

The remainder of this report is divided into four chapters. The existing transportation system serving the property and the current operating conditions of the key intersections and freeway segments are described in Chapter 2. Chapter 3 discusses operations with traffic from approved but not yet constructed developments under Background Conditions. Chapter 4 describes Project Conditions, including the methodology used to estimate the amount of traffic added to the surrounding roadways by the proposed project and its impacts on the transportation system. This chapter also includes a discussion of site access, on-site circulation, and parking. Cumulative Conditions are described in Chapter 5.

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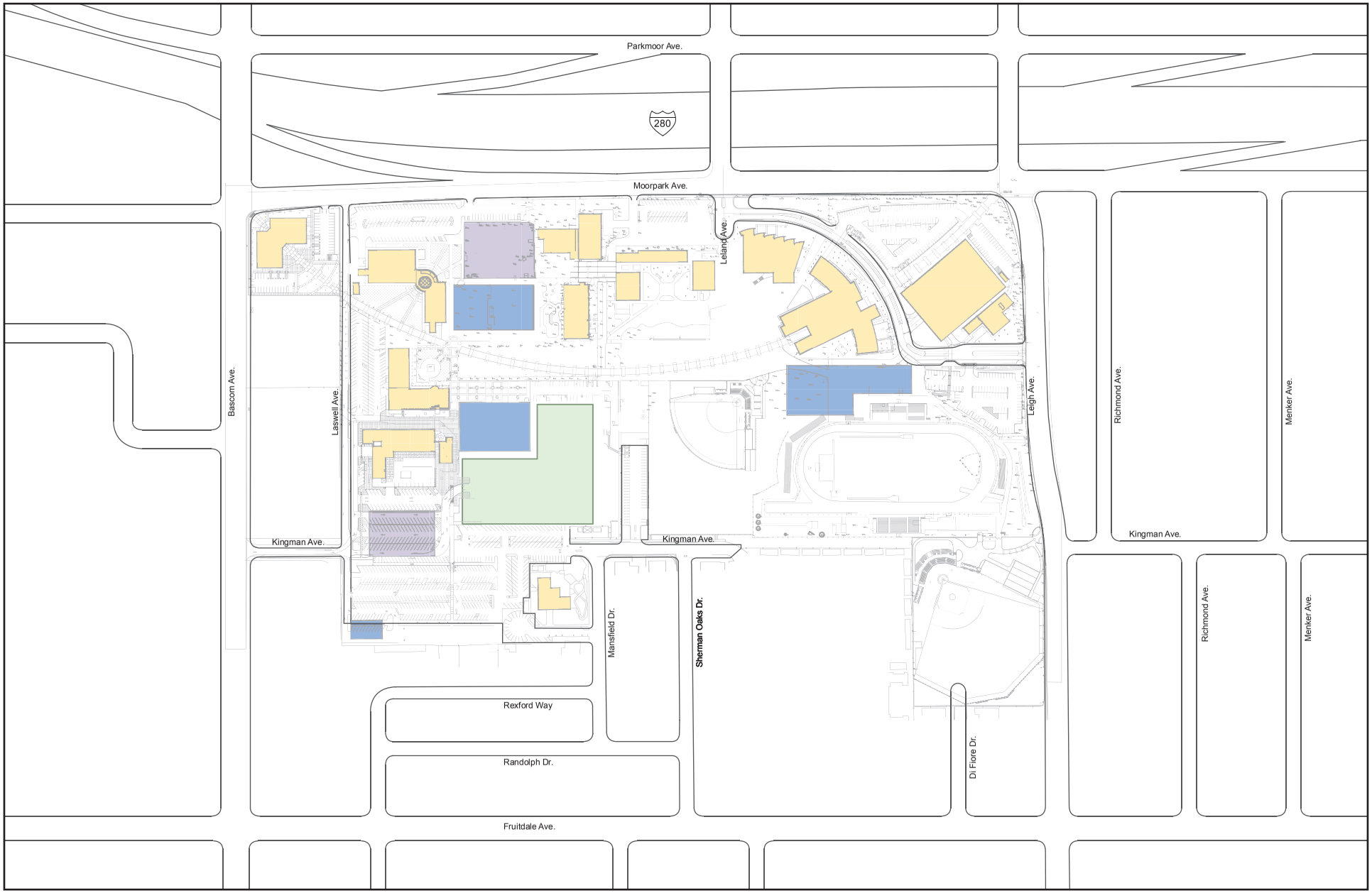
PROJECT LOCATION, STUDY INTERSECTIONS, AND FREEWAY STUDY SEGMENTS

FIGURE 1



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PROPOSED MANTER PLAN

FIGURE 2

2. EXISTING CONDITIONS

This chapter describes the existing conditions of the roadway facilities, pedestrian and bicycle facilities, transit service, traffic volumes, and intersection operations. This chapter also includes a discussion of the methodology used to calculate intersection levels of service and the corresponding results.

EXISTING ROADWAY NETWORK

This section describes the existing roadway network near the San Jose City College campus, which is illustrated on Figure 1.

Regional Access

Interstate 280 (I-280) is a north-south freeway north of the San Jose City College campus extending east to downtown San Jose and northwest to San Francisco. The freeway runs east-west with four mixed-flow lanes and one carpool lane in each direction near the San Jose City College campus. The carpool lane is open to mixed-flow traffic outside of the peak periods. The campus is accessible via ramps at Moorpark Avenue and Parkmoor Avenue east of Bascom Avenue. In the vicinity of San Jose City College, I-280 is oriented in an east-west direction.

Interstate 880 (I-880) is a north-south freeway northwest of the San Jose City College campus extending from the I-280 interchange north to the City of Oakland. The freeway includes three mixed-flow lanes in each direction near the San Jose City College campus. I-880 continues south of I-280 as State Route 17.

State Route 17 (SR 17) is a north-south freeway west of the San Jose City College campus extending from the I-280 interchange south to Santa Cruz. The freeway includes three mixed-flow lanes in each direction near the San Jose City College campus. Additional auxiliary lanes exist between I-280 and Hamilton Avenue. The campus is accessible via a connection at I-280 and ramps at Hamilton Avenue. SR 17 continues north of I-280 as I-880.

Bascom Avenue is a north-south, six-lane arterial roadway bordering the western edge of the San Jose City College campus. It extends north to Santa Clara and south to Campbell and Los Gatos. Bascom Avenue is designated as Washington Street and Lafayette Street in Santa Clara and Los Gatos Boulevard in Los Gatos.

Moorpark Avenue is an east-west arterial roadway bordering the northern edge of the San Jose City College campus. It extends east to I-280 and west to Cupertino where it becomes Bollinger Avenue. Moorpark Avenue is a one-way roadway and provides three eastbound travel lanes east of Bascom Avenue. West of Bascom Avenue Moorpark Avenue is a two-way roadway and provides two travel lanes in each direction.

Parkmoor Avenue is an east-west arterial roadway extending between Lincoln Avenue and I-880. In the vicinity of the San Jose City College campus, Parkmoor Avenue has two westbound travel lanes east of Bascom Avenue and one travel lane in each direction west of Bascom Avenue.

Southwest Expressway is a northeast-southwest arterial roadway southeast of the San Jose City College campus. The roadway runs parallel to the Vasona light-rail line. In the vicinity of the San Jose City College campus, Southwest Expressway has four travel lanes north of Stokes Street and two travel lanes south of Stokes Street. The roadway terminates as at I-280 in the north and at Bascom Avenue in the south.

West San Carlos Street is an east-west, four-lane arterial roadway extending east to downtown San Jose and west to Cupertino. West San Carlos Street is designated as Stevens Creek Boulevard west of I-880.

Local Access

Fruitdale Avenue is an east-west, four-lane collector roadway extending from south of the San Jose City College campus east to San Jose's Willow Glen neighborhood. The portion of Fruitdale Avenue located west of Bascom Avenue is called Enborg Lane and is a two-lane residential street.

Kingman Avenue is a discontinuous east-west, two-lane local roadway that is divided into two segments. The western segment terminates at Bascom Avenue in the west and serves as a driveway into the San Jose City College campus. The eastern segment terminates in the east into an apartment complex near Sherman Oaks Way and in the west at Mansfield Drive. The two segments both serve the western parking lots on campus.

Laswell Avenue is a north-south, two-lane local roadway that extends between Moorpark Avenue and the southern side of campus. The roadway serves as a driveway into the San Jose City College campus.

Leigh Avenue is a north-south, two- to four-lane arterial roadway bordering the eastern edge of the San Jose City College campus. Leigh Avenue provides four lanes south of Parkmoor Avenue and narrows to two lanes north of Parkmoor Avenue.

Leland Avenue is a north-south, two-lane local roadway that extends between Moorpark Avenue and San Carlos Street. At the signalized intersection of Leland Avenue and Moorpark Avenue, access to campus is provided only to vehicles on Moorpark Avenue as a right-in, right-out driveway. No through movements may be made to or from Leland Avenue from San Jose City College.

Internal circulation on the San Jose City College campus is facilitated by Kingman Avenue and Laswell Avenue and within campus parking lots. There are no roadways that extend from the west side of campus to the east side of campus.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian Facilities

Pedestrian facilities are comprised of sidewalks, crosswalks, pedestrian signals, and off-street paths. Sidewalks are consistent and continuous along all surrounding roadways on both sides of the street with the exception of Moorpark Avenue and Parkmoor Avenue. However, some sidewalks are provided near on-street parking spaces on the north side of Moorpark Avenue. Also, no sidewalks exist on the south side of Parkmoor Avenue in the study area. Crosswalks and pedestrian signals are located at all of the signalized intersections within the study area. A pedestrian bridge is located one-quarter mile east of the campus that spans the I-280 freeway from Moorpark Avenue and College Drive to Parkmoor Avenue. This bridge connects the neighborhood on the south side of the freeway with a shopping center and a post office on the north side of the freeway. Existing pedestrian facilities are shown on Figure 3.

On-campus pedestrian facilities consist of paths connecting buildings to each other and to parking lots. Typically these paths on a campus provide for pedestrian connectivity and require bicyclists to walk their bicycles. A major pedestrian paseo arcs from the corner of Moorpark Avenue and Bascom Avenue through the Technology Center, across the center of campus, through the Student Center, and then to the corner of Moorpark Avenue and Leigh Avenue. This 20-foot wide pedestrian walkway serves as the central connection to most of the campus. However, the existing pedestrian paseo is currently discontinuous due to the existing gyms and pool. All other on-campus pedestrian circulation is provided by the use of pedestrian walkways/paths.

Bicycle Facilities

Bicycle facilities are comprised of paths (Class I), lanes (Class II), and routes (Class III). Bicycle paths are paved trails that are separate from roadways. Bicycle lanes are lanes on roadways designated for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only. Figure 3 presents existing bicycle facilities in the study area.

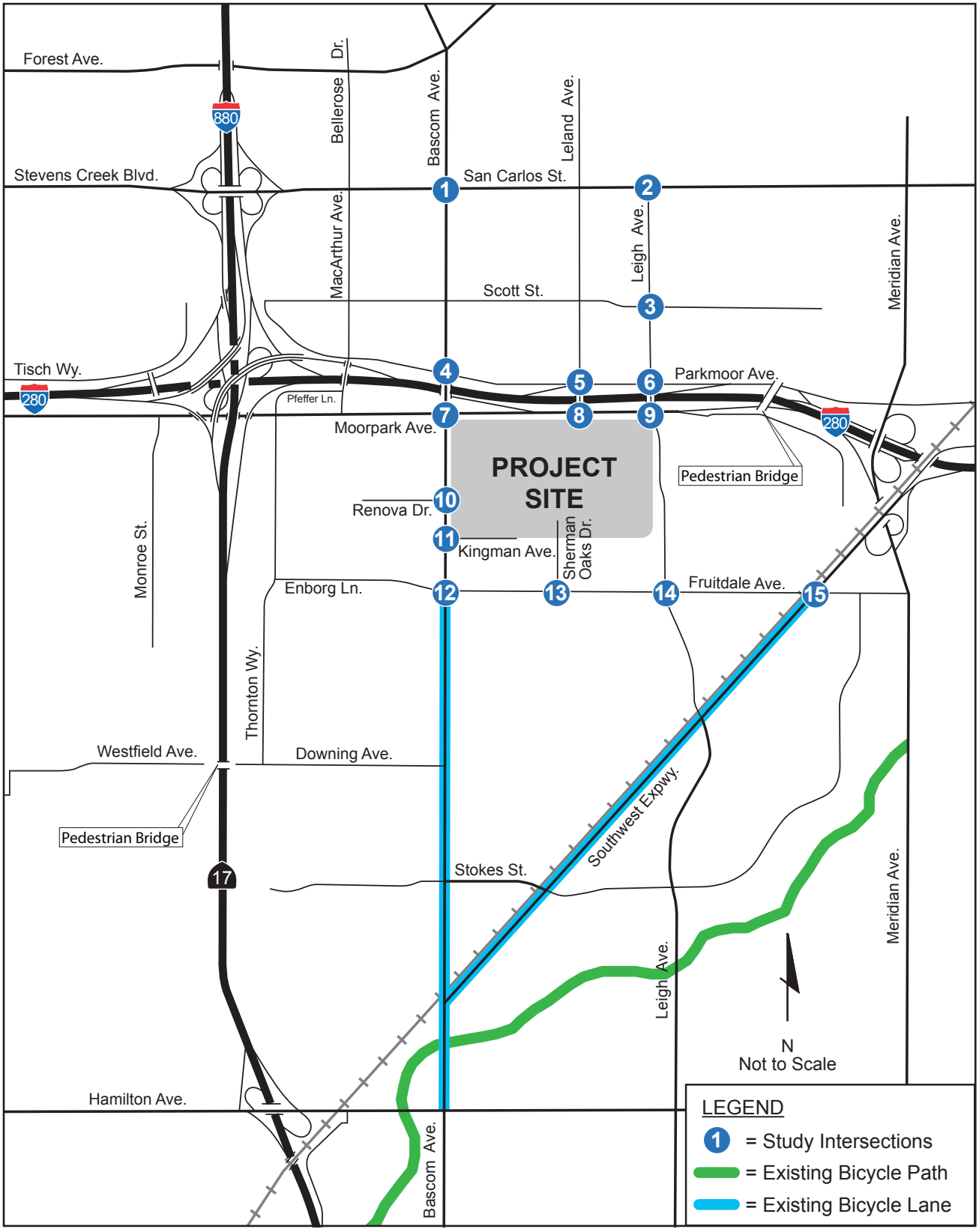
A Class I bicycle path is located along Los Gatos Creek. Access to the trail is provided on the east side of Bascom Avenue and on both sides of Leigh Avenue. Class II bicycle lanes are located in both directions of Bascom Avenue south of Fruitdale Avenue, which is approximately 1,000 feet south of the Kingman Avenue entrance to campus. Bicycle lanes are also provided on Southwest Expressway south of Fruitdale Avenue.

The City of San Jose Bicycle Plan identifies future bike lanes on Moorpark Avenue from beyond Winchester Boulevard to College Drive at the pedestrian bridge. Other bike lanes are proposed on Bascom Avenue from the existing bike lanes south of Fruitdale Avenue northward to the city of Santa Clara, on Parkmoor Avenue from Meridian Avenue to Bascom Avenue, on Fruitdale Avenue from Bascom Avenue to beyond Meridian Avenue, and on Leigh Avenue from beyond Southwest Expressway to beyond San Carlos Street. Class III bike routes are also proposed for Kingman Avenue from Leigh Avenue to College Drive, Scott Street from Leigh Avenue to Willard Avenue, College Drive from Kingman Avenue to Moorpark Avenue, and Enborg Lane from Bascom Avenue to Thornton Way

No bicycle facilities such as bike paths or lanes exist on campus. Typical to other college and university campuses, bicycle use is prohibited in the center of campus where “bicycles… may not be ridden on campus sidewalks.”[1] Bicycle parking is provided at a variety of locations on the San Jose City College campus via bike racks. Most of these locations are located near newer high-use buildings such as the Technology Center and Student Center. Most bike racks are “post and loop” style. Two other styles of racks are located on campus and are usually not recommended for bicycle parking[2]: “wave” racks and “comb” racks. There are no bike lockers on campus.

[1] San Jose/Evergreen Community College District Parking and traffic Regulations Section 3.00 (http://www.sjeccd.org/HTML/District/DistPolice/PoliceDownloads/Regulations.pdf)

[2] Recommendations are based on Bicycle Parking Guidelines published by the Association of Pedestrian and Bicycle Professionals.



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EXISTING PEDESTRIAN AND BICYCLE FACILITIES
FIGURE 3

EXISTING TRANSIT SERVICE

Santa Clara Valley Transportation Authority (VTA) provides fixed-route bus service on 72 local routes in Santa Clara County including within the city of San Jose. VTA also operates light rail service in Santa Clara County. Figure 4 shows the existing transit facilities in the study area.

VTA bus stops for routes 25, 61, 62, and 65 provide transit service adjacent to San Jose City College. The campus is easily accessible to transit at its northwest and northeast corners that are served by routes 61, 62, and 65. Route 25 is not as accessible due to its bus stop locations along Fruitdale Avenue and along Bascom Avenue south of the school.

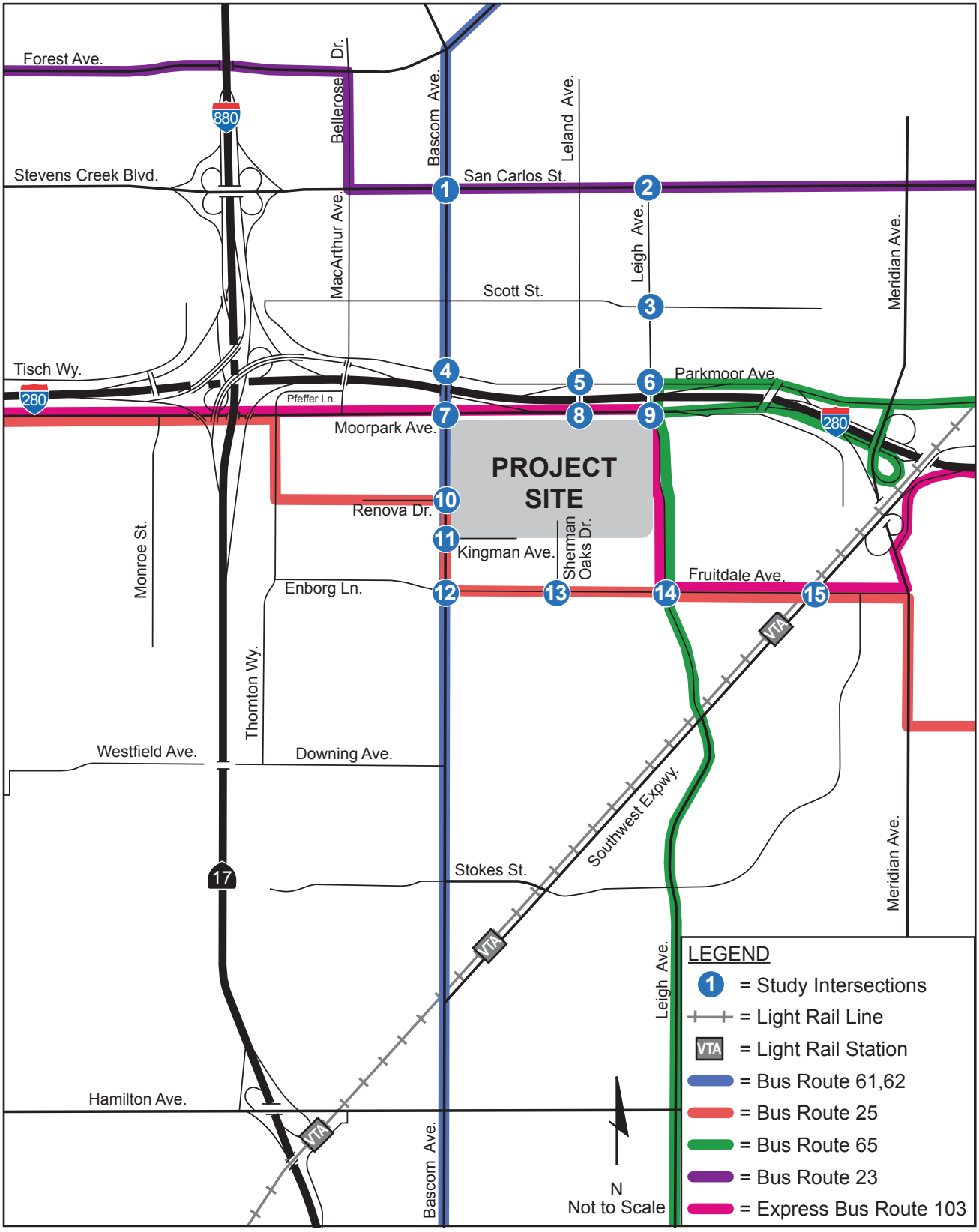
Route 25 provides service between east San Jose at the Alum Rock Transit Center and the city of Cupertino near De Anza College. Service is provided weekdays between 4:30 am and 1:00 am on 10 to 20-minute headways during the peak commute hours and 30 to 60-minute headways during other times of the day. Weekend service is provided on both Saturday and Sunday between 5:30 am and 12:00 am on 15 to 60-minute headways.

Routes 61and 62 provide service between east San Jose near Piedmont Hills High School to south San Jose near Good Samaritan Hospital. Both routes use the same streets from the route terminus in east San Jose to the intersection of Bascom Avenue and Union Avenue in south San Jose. Route 61 continues to south San Jose near Good Samaritan Hospital via Bascom Avenue whereas Route 62 continues via Union Avenue. Service is provided weekdays between 5:30 am and 11:00 pm on 25 to 40-minute headways for Route 61 and on 25 to 60-minute headways for Route 62. Weekend service is provided on both Saturday and Sunday between 6:30 am and 11:00 pm on 30 to 60-minute headways.

Route 65 is a community bus route and it provides service between south San Jose near Princeton Plaza and the northern edge of downtown San Jose. Service is provided weekdays between 6:00 am and 8:00 pm on 60-minute headways. There is no weekend service.

Other bus routes provide service within the study area but do not have stops adjacent to the campus. Express Routes 103 and 182 and the Highway 17 Express operate along I-280 but do not have stops near the San Jose City College campus. Route 103 also operates along Moorpark Avenue in the eastbound direction but does not have stops near San Jose City College. The nearest Route 103 stop to the campus is located at the Southwest Expressway/Fruitdale Avenue intersection, which is over a half-mile away from the nearest campus entrance. The Fruitdale light rail transit station is also located at this intersection. Route 23 serves the San Carlos Street corridor.

Route 25 connects the San Jose City College campus to the Winchester-Mountain View light-rail line and Routes 65 and 103 at the Fruitdale Station on Southwest Expressway. Routes 61 and 62 connect with route 23 at West San Carlos Street



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EXISTING TRANSIT SERVICE
FIGURE 4

EXISTING VOLUMES AND LANE CONFIGURATIONS

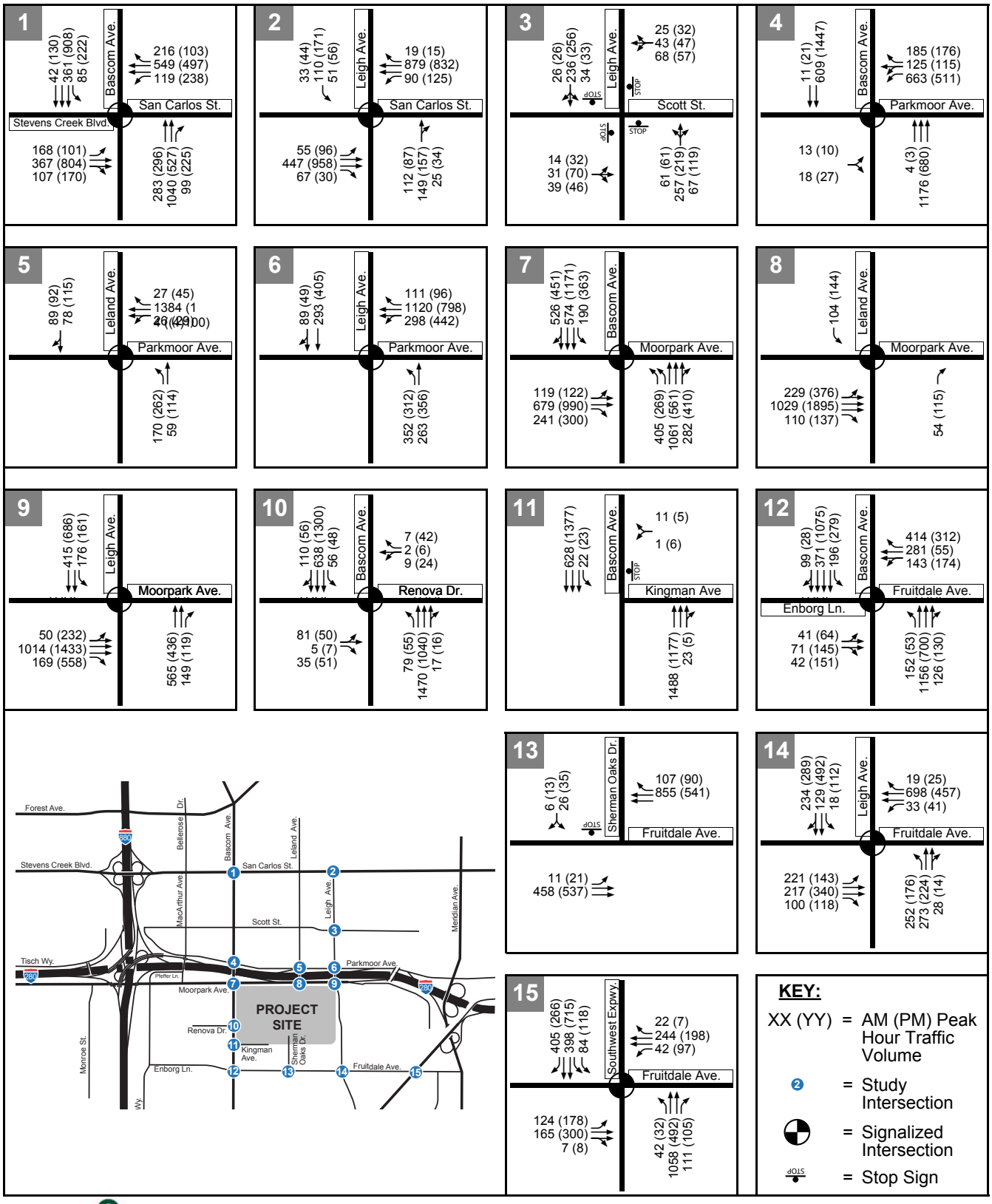
The operations of the key intersections were evaluated during the weekday AM and PM peak hours. Intersection operations were evaluated for the highest one-hour volume counted between 7:00 and 9:00 AM and between 4:00 and 6:00 PM. Available intersection counts from May and September 2007 were used for six of the fifteen study intersections. New intersection turning movement counts were conducted in December 2008 at the remaining locations to supplement this information. Traffic counts were taken when classes at San Jose City College were in session. The traffic counts taken during May and September 2007 were compared to the counts taken during December 2008. The traffic counts were generally consistent between both time periods. The traffic counts are included in Appendix A.

Figure 5 presents the existing AM and PM peak-hour turning movement volumes at the study intersections. Figure 5 also presents the existing intersection lane configurations and traffic control devices.

LEVEL OF SERVICE METHODOLOGY

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the best operating conditions, to LOS F, with the worst operating conditions. LOS E represents “at-capacity” operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

The City of San Jose has established a minimum acceptable operating level of LOS D for all intersections including Congestion Management Program (CMP) designated intersections. The minimum acceptable level for CMP-monitored intersections is LOS E.



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EXISTING INTERSECTION PEAK-HOUR VOLUMES AND LANE GEOMETRIES

FIGURE 5

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Signalized Intersections

The level of service methodology approved by the City of San Jose, VTA, and Caltrans analyzes a signalized intersection's operation based on average control vehicular delay using the method described in Chapter 16 of the *2000 Highway Capacity Manual* (*HCM*) by the Transportation Research Board, with adjusted saturation flow rates to reflect Santa Clara County conditions. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using TRAFFIX analysis software and correlated to a LOS designation as shown in Table 1.

TABLE 1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS
USING AVERAGE CONTROL VEHICULAR DELAY

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B+	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 12.0
B		12.1 to 18.0
B-		18.1 to 20.0
C+	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 23.0
C		23.1 to 32.0
C-		32.1 to 35.0
D+	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0
D		39.1 to 51.0
D-		51.1 to 55.0
E+	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	55.1 to 60.0
E		60.1 to 75.0
E-		75.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Traffic Level of Service Analysis Guidelines*, VTA Congestion Management Program, June 2003; *Highway Capacity Manual*, Transportation Research Board, 2000.

Unsignalized Intersections

Operations of the unsignalized study intersections are evaluated using the method contained in Chapter 17 of the *2000 HCM* and calculated using TRAFFIX analysis software. LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At two-way or side-street stop-controlled intersections, control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, control delay is computed as the average of all movements in that lane. For all-way stop-controlled locations, a weighted average delay for the entire intersection is presented. Table 2 summarizes the relationship between delay and LOS for unsignalized intersections.

TABLE 2
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay.	≤ 10.0
B	Short traffic delays.	10.1 to 15.0
C	Average traffic delays.	15.1 to 25.0
D	Long traffic delays.	25.1 to 35.0
E	Very long traffic delays.	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded.	> 50.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Freeway Segments

Freeway segments are evaluated using VTA's analysis procedure, which is based on the density of the traffic flow using methods described in the *2000 HCM*. Density is expressed in passenger cars per mile per lane. The Congestion Management Program range of densities for freeway segment level of service is shown in Table 3. The LOS standard for the freeway segments is LOS E.

TABLE 3
FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

Level of Service	Density (passenger cars per mile per lane)
A	≤ 11
B	11.1 to 18.0
C	18.1 to 26.0
D	26.1 to 46.0
E	46.1 to 58.0
F	> 58.0

Sources: *Traffic Level of Service Analysis Guidelines*, VTA Congestion Management Program, June 2003; *Highway Capacity Manual*, Transportation Research Board, 2000.

EXISTING INTERSECTION LEVELS OF SERVICE

Existing intersection lane configurations, signal timings, and peak-hour turning movement volumes were used as inputs for the levels of service calculations. The results of the LOS analysis for Existing Conditions are presented in Table 4. All study intersections currently operate at acceptable levels of service according to the standards set forth by the City of San Jose, VTA, and Caltrans. Appendix B contains the corresponding calculation sheets.

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TABLE 4
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Stop Contol	Peak Hour	Count Date	Delay[1]	LOS[2]
1. Bascom Avenue and San Carlos Street	Signal	AM PM	12/08 12/08	42.6 54.2	D D-
2. Leigh Avenue and San Carlos Street	Signal	AM PM	12/08 12/08	22.7 27.8	C+ C
3. Leigh Avenue and Scott Street	4-Way Stop	AM PM	12/08 12/08	11.6 12.5	B B
4. Bascom Avenue and Parkmoor Avenue	Signal	AM PM	05/07 05/07	32.7 29.8	C- C
5. Leland Avenue and Parkmoor Avenue	Signal	AM PM	05/07 05/07	20.5 25.5	C+ C
6. Leigh Avenue and Parkmoor Avenue	Signal	AM PM	12/08 12/08	32.6 31.0	C- C
7. Bascom Avenue and Moorpark Avenue*	Signal	AM PM	05/07 05/07	37.0 43.5	D+ D
8. Leland Avenue and Moorpark Avenue	Signal	AM PM	09/07 09/07	7.1 6.7	A A
9. Leigh Avenue and Moorpark Avenue	Signal	AM PM	09/07 09/07	25.5 21.4	C C+
10. Bascom Avenue and Renova Drive	Signal	AM PM	12/08 12/08	14.5 13.6	B B
11. Bascom Avenue and Kingman Avenue	Side-Street Stop	AM PM	05/07 05/07	15.8 33.2	C D
12. Bascom Avenue and Fruitdale Avenue*	Signal	AM PM	12/08 12/08	43.6 46.8	D D
13. Sherman Oaks Way and Fruitdale Avenue	Side-Street Stop	AM PM	12/08 12/08	22.8 16.7	C C
14. Leigh Avenue and Fruitdale Avenue	Signal	AM PM	12/08 12/08	36.4 34.0	D+ C-
15. Southwest Expressway and Fruitdale Avenue	Signal	AM PM	12/08 12/08	21.6 27.9	C+ C

Notes:

1 Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 HCM*, with adjusted saturation flow rates to reflect Santa Clara County Conditions. Total control delay for the worst movement is presented for side-street stop-controlled intersections. Delay for the worst approach is reported for Unsignalized intersections.

2 LOS = Level of service. LOS calculations conducted using the TRAFFIX level of service analysis software package.

* CMP intersection.

EXISTING SIGNAL WARRANT ANALYSIS

The peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD) was evaluated for the unsignalized Bascom Avenue/Kingman Avenue and Sherman Oaks Way/Fruitdale Avenue intersections to determine if a traffic signal is warranted. This initial analysis is performed to determine if a signal should be considered to be implemented at a given location. The result of the peak-hour warrant analysis indicated that both intersections do not exceed the signal warrant thresholds during either peak hours (see Appendix C).

The peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

EXISTING FREEWAY SEGMENT LEVELS OF SERVICE

Freeway segment densities reported in VTA's *2007 Monitoring and Conformance Report* were used to calculate the levels of service for the key freeway segments during the AM and PM peak hours. The results of the LOS analysis for Existing Conditions are presented in Table 5.

The following segments of mixed-flow lanes are operating at unacceptable levels (LOS F) according to VTA and Caltrans standards:

- Northbound SR-17, Hamilton Avenue to I-280 (AM peak)
- Eastbound I-280, Winchester Boulevard to I-880 (PM peak)
- Eastbound I-280, I-880 to Meridian Avenue (PM peak)
- Eastbound I-280, Meridian Avenue to Bird Avenue (PM peak)
- Westbound I-280, Bird Avenue to Meridian Avenue (AM Peak)
- Westbound I-280, Meridian Avenue to I-880 (AM peak)
- Westbound I-280, I-880 to Winchester Boulevard (both peaks)
- Northbound I-880, I-280 to Stevens Creek Boulevard (AM peak)
- Northbound I-880, Stevens Creek Boulevard to Bascom Avenue (AM peak)

The following segments of high-occupancy lanes are operating at unacceptable levels (LOS F):

- Westbound I-280, Meridian Avenue to I-880 (AM peak)
- Westbound I-280, I-880 to Winchester Boulevard (AM peak)

TABLE 5
EXISTING FREEWAY SEGMENT LEVELS OF SERVICE

Freeway	From	To	Number of Lanes		Peak Hour[1]	Density[1]		Level of Service	
			Mixed	HOV		Mixed	HOV	Mixed	HOV
SR 17 Northbound	Hamilton Avenue	I-280	3	0	AM PM	100 41	N/A N/A	F D	N/A N/A
SR 17 Southbound	I-280	Hamilton Avenue	3	0	AM PM	28 38	N/A N/A	D D	N/A N/A
I-280 Eastbound	Winchester Boulevard	I-880	3	1	AM PM	27 104	23 49	D F	C E
	I-880	Meridian Avenue	4	1	AM PM	23 111	15 48	C F	B E
	Meridian Avenue	Bird Avenue	4	0	AM PM	44 92	N/A N/A	D F	N/A N/A
I-280 Westbound	Bird Avenue	Meridian Avenue	4	0	AM PM	86 55	N/A N/A	F E	N/A N/A
	Meridian Avenue	I-880	4	1	AM PM	119 29	70 9	F D	F A
	I-880	Winchester Boulevard	3	1	AM PM	94 73	67 20	F F	F C
I-880 Northbound	I-280	Stevens Creek Boulevard	3	0	AM PM	96 16	N/A N/A	F B	N/A N/A
	Stevens Creek Boulevard	Bascom Avenue	3	0	AM PM	99 27	N/A N/A	F D	N/A N/A
I-880 Southbound	Bascom Avenue	Stevens Creek Boulevard	3	0	AM PM	49 49	N/A N/A	E E	N/A N/A
	Stevens Creek Boulevard	I-280	3	0	AM PM	21 34	N/A N/A	C D	N/A N/A

Note:
1 Measured in passenger cars per mile per lane.
Source: *2007 Monitoring and Conformance Report*, VTA, May 2008.

FIELD OBSERVATIONS

Field observations were conducted in September and December 2008 to verify the calculated operations of the study intersections. The study intersections appeared to operate at or near the calculated levels of service.

Heavy queuing was noted at these locations:

- Bascom Avenue and San Carlos Avenue in all four directions (PM peak hour)
- Bascom Avenue, northbound from San Carlos Avenue (AM peak hour)
- Bascom Avenue, northbound from Moorpark Avenue to Renova Drive (AM peak hour)
- Bascom Avenue, southbound left turn lane at Moorpark Avenue to Parkmoor Avenue (PM peak hour)
- Bascom Avenue, northbound from Fruitdale Avenue to Maywood Avenue (AM and PM peak hours)
- Bascom Avenue, southbound from Fruitdale Avenue (PM peak hour)
- Moorpark Avenue, eastbound from Bascom Avenue to Turner Drive (AM and PM peak hours)
- Moorpark Avenue, eastbound from Leigh Avenue to Leland Avenue (PM peak hour)
- Parkmoor Avenue, westbound from Bascom Avenue to Raymond Avenue (AM peak hour)
- Parkmoor Avenue, westbound from Leland Avenue to Leigh Avenue (PM peak hour)

At the Bascom Avenue/Parkmoor Avenue intersection, the westbound queues did not regularly clear in one signal cycle during both peak hours.At the Bascom Avenue/San Carlos Avenue intersection, occasionally the northbound and southbound queues did not clear in one signal cycle during the PM Peak hour.

At the Southwest Expressway/Fruitdale Avenue intersection, heavy queing was noted only during light rail vehicle preemption. During this preemption, both directions of Fruitdale experienced heavy queuing and the southbound right-turn lane also experienced heavy queuing during both peak hours. These queues regularly cleared within a few signal cycles after the preemption.

SPECIAL EVENT PARKING

Field observations were conducted on December 5, 2008 during a special event and again on December 18, 2008 on a typical night to address possible parking intrusions into the neighborhoods surrounding San Jose City College. The observations on December 5 were taken during a high school football championship game for the Central Coast Section open Division between Bellarmine College Preparatory and Valley Christian High School. The crowd at the game was estimated to be just over 8,000 people.

On a typical night, parking in the neighborhoods surround San Jose City College is light. Most streets have few cars parked on them except those with higher density residential fronting the street such as on Richmond Avenue. The neighborhood south of San Jose City College near Sherman Oaks Way is a residential parking permit area. Similar to other neighborhoods, few cars are parked on the street on a typical night.

During the special event, parking on the San Jose City College campus was mostly full by game time, but approximately 150 empty spaces were seen in the western lots. Spectators were seen parking in the surrounding neighborhood north of Parkmoor Avenue and the neighborhood east of Leigh Avenue. No spectators were seen parking in the neighborhood south of the San Jose City College campus since it is a residential parking permit area except on Kingman Avenue where parking is not by permit. The neighborhood east of Leigh Avenue had the most significant parking intrusion. All parking spaces on streets between Leigh Avenue and College Avenue were taken. A few vehicles were seen parking in front of fire hydrants and on corners at the intersection of two streets. Streets east of College Avenue did not experience significant spectator parking.

3. BACKGROUND CONDITIONS

This chapter discusses the operations of the key intersections with existing traffic volumes plus traffic generated from nearby projects that have been approved but not yet constructed or occupied. Background Conditions serve as the basis for identifying project impacts. No analysis was performed for freeway segments because VTA guidelines do not require an analysis of freeway operations under Background Conditions.

BACKGROUND TRAFFIC ESTIMATES

Traffic volumes for Background Conditions were estimated by adding traffic generated by developments approved but not yet constructed or occupied to existing traffic volumes. San Jose City staff provided an approved trip inventory (ATI) that accounts for projects adding traffic to the study intersections. The ATI is included in Appendix D. Traffic associated with the Valley Specialty Center (VSC), which is under construction on the Valley Medical Center campus, also was included. Figure 6 illustrates the traffic volumes at the key intersections under Background Conditions.

BACKGROUND ROADWAY IMPROVEMENTS

No roadway improvements were identified for inclusion under Background Conditions.

BACKGROUND INTERSECTION LEVELS OF SERVICE

Level-of-service calculations were conducted for the key intersections to evaluate their operations under Background Conditions. The results of the LOS analysis are presented in Table 6. Appendix B contains the corresponding calculation sheets.

All study intersections will continue to operate at acceptable levels except the Bascom Avenue/San Carlos Avenue and the Bascom Avenue/Kingman Avenue intersections, which both operate at LOS E during the PM peak hour.

TABLE 6
BACKGROUND INTERSECTION LEVELS OF SERVICE

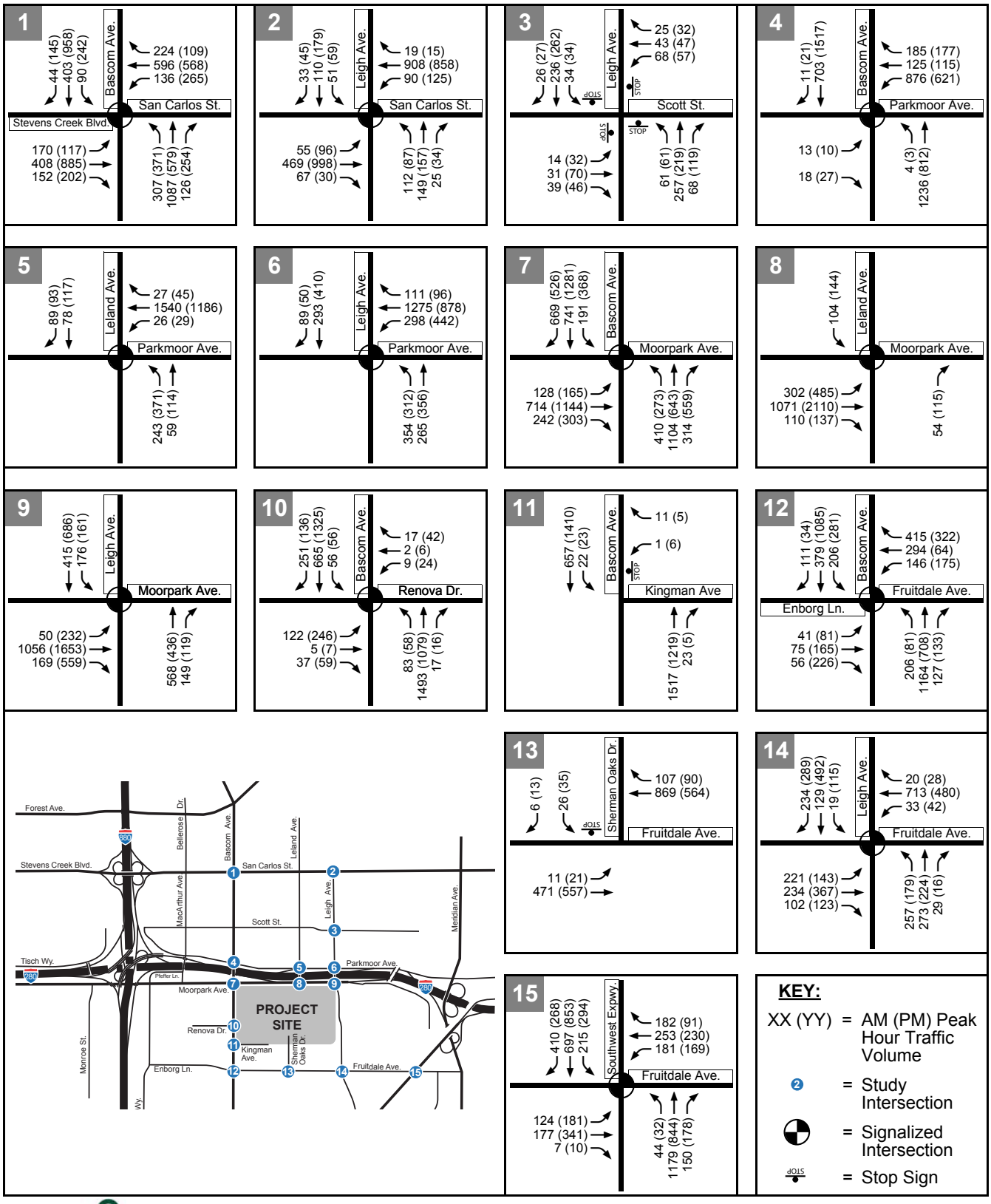
Intersection	Peak Hour	Delay[1]	LOS[2]
1. Bascom Avenue and San Carlos Street	AM PM	43.5 60.3	D E
2. Leigh Avenue and San Carlos Street	AM PM	22.4 27.7	C+ C
3. Leigh Avenue and Scott Street	AM PM	11.6 12.7	B B
4. Bascom Avenue and Parkmoor Avenue	AM PM	34.6 31.4	C- C
5. Leland Avenue and Parkmoor Avenue	AM PM	23.9 29.2	C C
6. Leigh Avenue and Parkmoor Avenue	AM PM	34.5 32.1	C- C-
7. Bascom Avenue and Moorpark Avenue*	AM PM	37.3 49.7	D+ D
8. Leland Avenue and Moorpark Avenue	AM PM	6.7 6.4	A A
9. Leigh Avenue and Moorpark Avenue	AM PM	25.5 21.3	C C+
10. Bascom Avenue and Renova Drive	AM PM	17.1 24.8	B C
11. Bascom Avenue and Kingman Avenue	AM PM	16.1 35.7	C E
12. Bascom Avenue and Fruitdale Avenue*	AM PM	44.8 49.1	D D
13. Sherman Oaks Way and Fruitdale Avenue	AM PM	23.4 17.4	C C
14. Leigh Avenue and Fruitdale Avenue	AM PM	36.5 34.2	D+ C-
15. Southwest Expressway and Fruitdale Avenue	AM PM	25.5 30.8	C C

Notes:

1 Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 HCM*, with adjusted saturation flow rates to reflect Santa Clara County Conditions. Total control delay for the worst movement is presented for side-street stop-controlled intersections. Delay for the worst approach is reported for Unsignalized intersections.

2 LOS = Level of service. LOS calculations conducted using the TRAFFIX level of service analysis software package.

* CMP intersection.



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BACKGROUND INTERSECTION PEAK HOUR VOLUMES

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FIGURE 6

4. PROJECT CONDITIONS

The impacts of the proposed project on the surrounding roadway system are discussed in this chapter. First, the methodology used to estimate the amount of traffic generated by the project is described. Then, the results of the level of service calculations for Project Conditions are presented. Project Conditions are defined as Background Conditions plus traffic generated by the proposed project. A comparison of intersection operations under Background and Project Conditions are presented and the impacts of the project on the study intersections are discussed. Site access, on-site circulation, and parking are addressed in this chapter.

PROJECT TRAFFIC ESTIMATES

The amount of traffic added to the roadway system by the proposed San Jose City College Facilities Master Plan is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of added traffic to the roadway network. The second step estimates the direction of travel to and from the San Jose City College campus. The trips are assigned to specific street segments and intersection turning movements during the third step. The results of the process for the proposed project are described in the following sections.

Trip Generation

The amount of traffic generated by the proposed project was estimated by applying rates derived from driveway counts of the existing campus that were conducted in October 2008. The surveyed rates were derived based on the existing student enrollment of approximately 10,000 students. Based on the data collected, trip generation rates per student were determined for the AM and PM peak hours, as shown in Table 7. The proposed project of an additional 2,000 students is estimated to generate 2,781 net new daily trips, 220 new AM peak-hour trips (175 inbound and 45 outbound) and 266 new PM peak-hour trips (174 inbound and 92 outbound). Note that this enrollment increase of 2,000 students is less than the projected enrollment increase of 5,000 students under the prior Facilities Master Plan.

Comparison of Trip Generation Rates to ITE Rates

The Institute of Transportation Engineers Trip Generation, 7th Edition has trip generation rates of 0.12 trips per student for both the AM and PM peak hours. These are about 10 percent different than the rates observed in the surveys of the SJCC campus. However, the rates are based on a limited number of studies (5 trip generation surveys) and may not reflect a similar environment of the San Jose area. Two of the five studies identified transit centers within close proximity of the studied campuses. Transit use could affect the trip generation rates at those locations. The SJCC-specific trip generation rates were used in analyzing the traffic generation of the new students to reflect the actual operations of the school.

TABLE 7
PROJECT TRIP GENERATION RATES AND ESTIMATES

Land Use	Size	Daily	AM			PM		
			In	Out	Total	In	Out	Total
Trip Rates[1]								
San Jose City College		1.39	80%	20%	0.11	65%	35%	0.13
Trip Estimates								
San Jose City College	Additional 2,000 Students	2,781	175	45	220	174	92	266

Note:
1 Rates used based on data collected at San Jose City College driveways.
Source: *Fehr & Peers*, 2009.

Trip Distribution

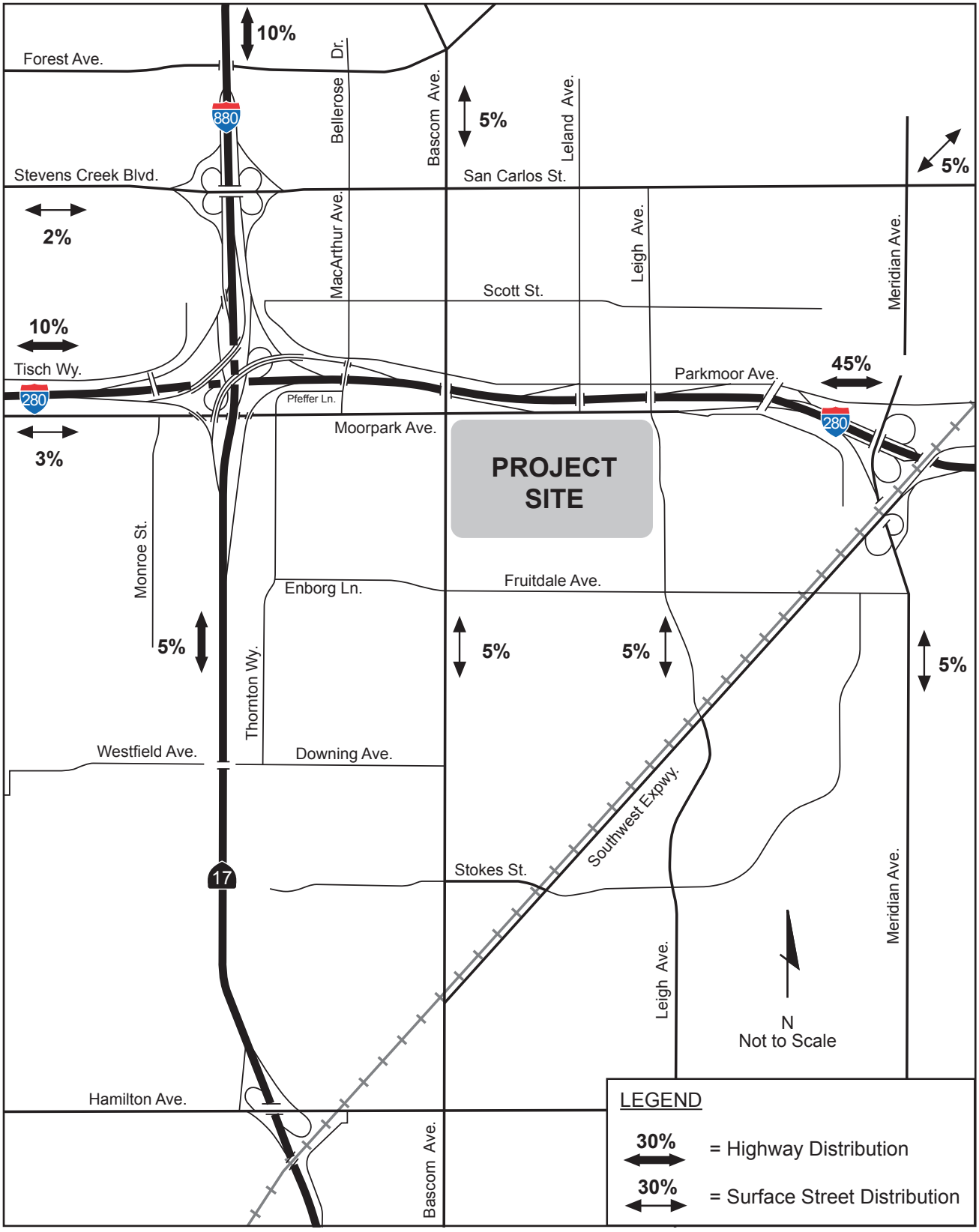
The directions of approach and departure for the project traffic were estimated based on the existing travel patterns in the area and the relative locations of complementary land uses including residential and commercial land uses. In addition, population density data from the 2000 Census Transportation Planning Packet (CTPP) was used to help determine the trip distribution. The major directions of approach and departure form the trip distribution pattern for the project, and are illustrated on Figure 7. The trip distribution is generally consistent with the previous San Jose City College Facilities Master Plan EIR performed in May 2000.

Trip Assignment

The trips generated by the project were assigned to the roadway system based on the directions of approach and departure discussed above. Figure 8 shows the AM and PM peak-hour project trips assigned to each turning movement at the study intersections. Project trips were added to Background Conditions traffic volumes to establish intersection volumes for Project Conditions, as shown on Figure 9.

PROJECT ROADWAY MODIFICATIONS

No roadway improvements were identified for inclusion under Project Conditions. However, access to campus is proposed to be altered under the San Jose City College Facilities Master Plan. The existing southern access from the eastern Kingman Avenue segment (via Fruitdale Avenue) will be closed. Access to the western side of campus would still be available from the western segment of Kingman Avenue and from Laswell Avenue.



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PROJECT TRIP DISTRIBUTION

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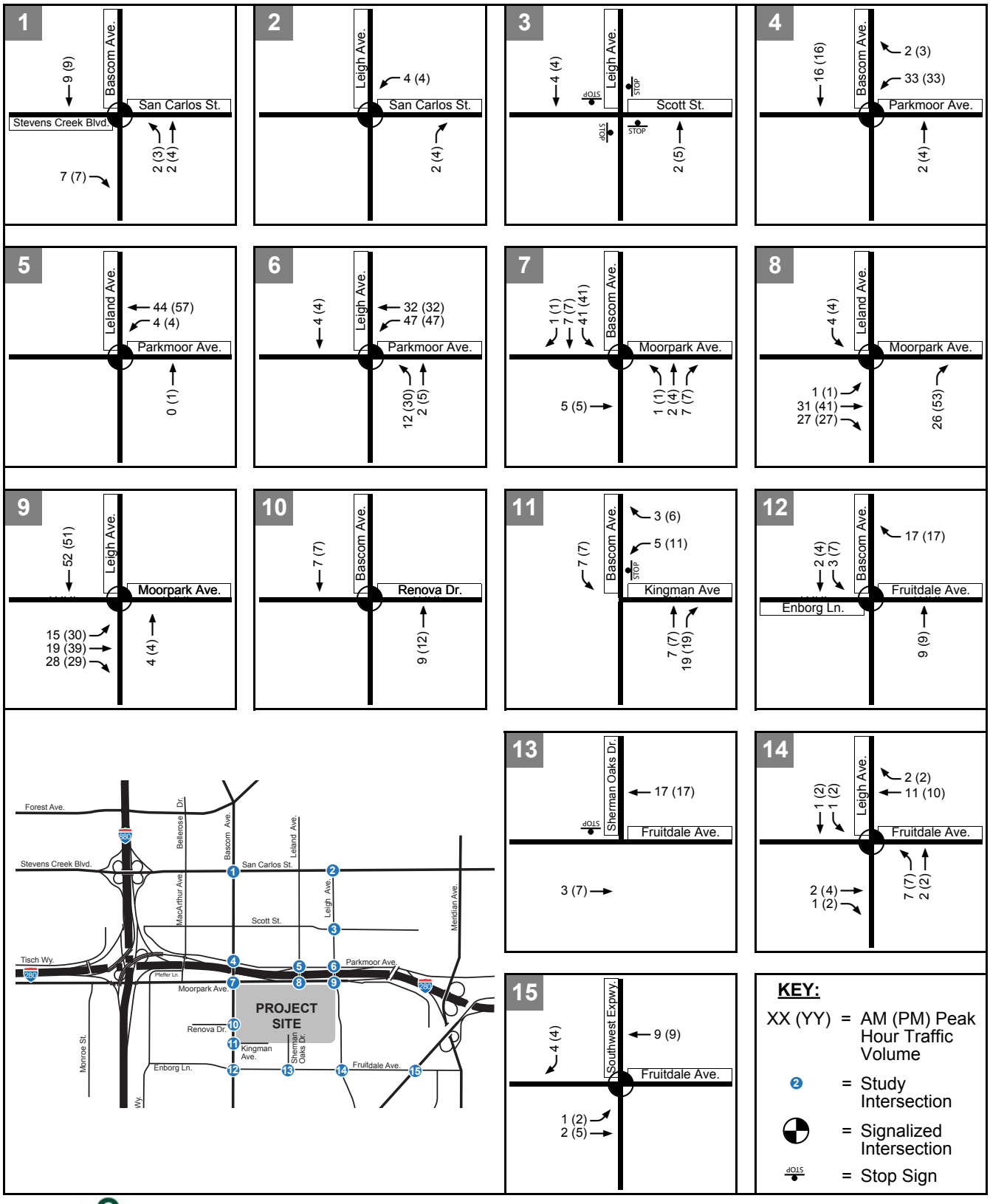
FIGURE 7



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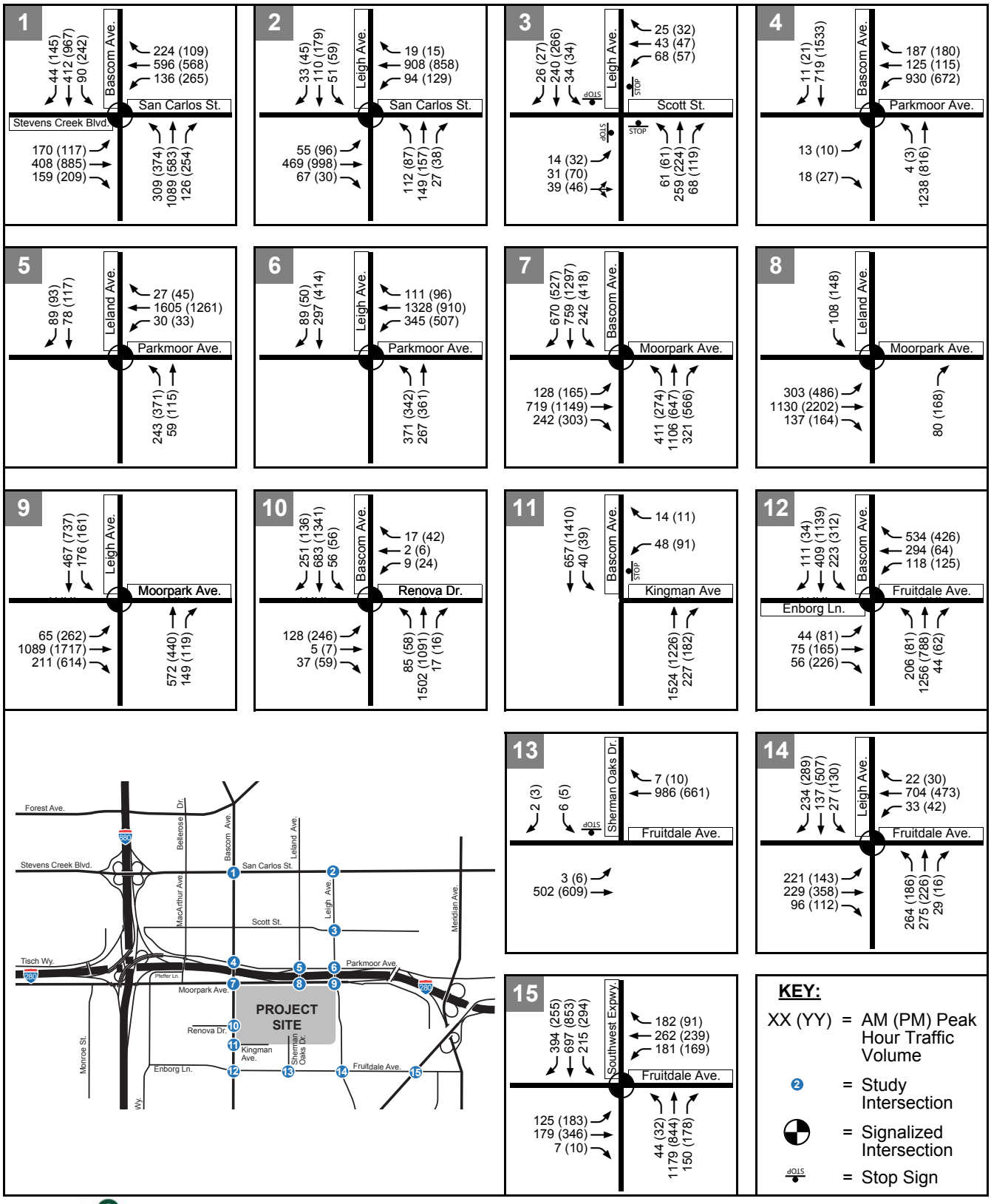
PROJECT TRIP ASSIGNMENT
FIGURE 8



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PROJECT INTERSECTION PEAK-HOUR VOLUMES

FIGURE 9

PROJECT INTERSECTION LEVELS OF SERVICE

The results of the intersection level of service calculations for Project Conditions are presented in Table 8. Appendix B contains the corresponding calculation sheets. The results for Background Conditions are included for comparison purposes, along with the projected increases in critical delay and critical volume-to-capacity (V/C) ratios. Critical delay represents the delay associated with the critical movements of the intersection, or the movements that require the most "green time" and have the greatest effect on overall intersection operations. The changes in critical delay and critical V/C ratio between Background and Project Conditions are used to identify significant impacts.

All intersections continue to operate acceptably in both peak periods under City of San Jose, VTA, and Caltrans standards except for the Bascom Avenue/San Carlos Avenue intersection, which operates at LOS E in the PM peak hour, and the Bascom Avenue/Kingman Avenue intersection, which operates at LOS F for both the AM and PM peak hours.

TABLE 8
PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour	Background		Project			
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Δ in Crit. V/C[3]	Δ in Crit. Delay[4]
1. Bascom Avenue and San Carlos Street	AM	43.5	D	43.6	D	0.001	0
	PM	60.3	E	60.7	E	0.006	0.7
2. Leigh Avenue and San Carlos Street	AM	22.4	C+	22.5	C+	0.001	0.1
	PM	27.7	C	27.8	C	0.002	0.2
3. Leigh Avenue and Scott Street	AM	11.6	B	11.7	B	0.003	0.1
	PM	12.7	B	12.8	B	0.008	0.2
4. Bascom Avenue and Parkmoor Avenue	AM	34.6	C-	35.0	C-	0.017	0.4
	PM	31.4	C	32.3	C	0.019	0.9
5. Leland Avenue and Parkmoor Avenue	AM	23.9	C	24.1	C	0.020	0.1
	PM	29.2	C	29.4	C	0.023	0.2
6. Leigh Avenue and Parkmoor Avenue	AM	34.5	C-	37.6	D+	0.042	3.5
	PM	32.1	C-	35.4	D+	0.050	3.8
7. Bascom Avenue and Moorpark Avenue*	AM	37.3	D+	38.5	D+	0.002	0.1
	PM	49.7	D	53.1	D-	0.036	8.3
8. Leland Avenue and Moorpark Avenue	AM	6.7	A	6.7	A	0.014	0
	PM	6.4	A	6.6	A	0.020	0.1
9. Leigh Avenue and Moorpark Avenue	AM	25.5	C	25.3	C	0.010	-0.2
	PM	21.3	C+	21.5	C+	0.020	-0.1
10. Bascom Avenue and Renova Drive	AM	17.1	B	17.0	B	0.002	-0.1
	PM	24.8	C	24.7	C	0.003	-0.1

TABLE 8
PROJECT INTERSECTION LEVELS OF SERVICE

11. Bascom Avenue and Kingman Avenue	AM PM	16.1 35.7	C E	>150 **>150**	F **F**	NA NA	NA NA
12. Bascom Avenue and Fruitdale Avenue*	AM PM	44.8 49.1	D D	48.0 52.3	D D-	0.087 0.086	4.6 4.0
13. Sherman Oaks Way and Fruitdale Avenue	AM PM	23.4 17.4	C C	23.4 16.3	C C	NA NA	NA NA
14. Leigh Avenue and Fruitdale Avenue	AM PM	36.5 34.2	D+ C-	36.6 34.4	D+ C-	0.002 0.007	0.2 0.1
15. Southwest Expressway and Fruitdale Avenue	AM PM	25.5 30.8	C C	25.7 30.9	C C	0.002 0.001	0.1 0.1

Notes:

1 Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 HCM*, with adjusted saturation flow rates to reflect Santa Clara County Conditions. Total control delay for the worst movement is presented for side-street stop-controlled intersections. Delay for the worst approach is reported for Unsignalized intersections.

2 LOS = Level of service. LOS calculations conducted using the TRAFFIX level of service analysis software package.

3 Change in the critical volume-to-capacity ratio (V/C) between Background and Project Conditions.

4 Change in critical movement delay between Background and Project Conditions.

* CMP intersection.

NA = not applicable

Bold type indicates a project impact as defined by City standards.

Source: *Fehr & Peers*, 2009.

INTERSECTION IMPACT CRITERIA

The impacts of the project were evaluated by comparing the results of the level of service calculations under Project Conditions to the results under Background Conditions.

City of San Jose

Significant impacts at signalized San Jose intersections occur when project traffic causes one of the following:

- Operations degrade from an acceptable level (LOS D or better) under Background Conditions to an unacceptable level (LOS E or F) under Project Conditions.
- Unacceptable operations (LOS E or F) are exacerbated by increasing the critical delay by more than 4 seconds and increasing the volume-to-capacity (V/C) ratio by 0.01 or more.
- The V/C ratio increases by 0.01 or more at an intersection with unacceptable operations (LOS E or F) when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

Significant impacts at unsignalized intersections occur when project traffic causes one of the following:

- Operations degrade from an acceptable level (LOS D or better) under Background Conditions to an unacceptable level (LOS E or F) under Project Conditions, and the peak-hour signal warrant from the Manual on Uniform Traffic Control Devices (MUTCD) is met.
- Unacceptable operations (LOS E or F) are exacerbated by adding any traffic, and the MUTCD peak-hour signal warrant is met.

Valley Transportation Authority

Significant impacts at CMP intersections occur when project traffic causes one of the following:

- Operations degrade from an acceptable level (LOS E or better) under Background Conditions to an unacceptable level (LOS F) under Project Conditions.
- LOS F operations are exacerbated by increasing the critical delay by more than 4 seconds and increasing the volume-to-capacity (V/C) ratio by 0.01 or more.
- The V/C ratio increases by 0.01 or more at an intersection with LOS F operations when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

PROJECT SIGNAL WARRANT ANALYSIS

The peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD) was evaluated for the unsignalized Bascom Avenue/Kingman Avenue and Sherman Oaks Way/Fruitdale Avenue intersections to determine if a traffic signal is warranted. The peak-hour warrant analysis indicated that the Bascom Avenue/Kingman Avenue intersection satisfies the PM peak hour signal warrant. It should be noted that without the closure of the southern access to campus, the Bascom Avenue/Kingman Avenue intersection would not meet the peak-hour signal warrant. The Sherman Oaks Way/Fruitdale Avenue intersection does not satisfy the signal warrant thresholds for either peak hour (see Appendix C).

The peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

INTERSECTION IMPACTS AND MITIGATION MEASURES

Bascom Avenue/San Carlos Street

The Bascom Avenue/San Carlos Street intersection operates unacceptably under Background and Project Conditions but is not considered a significant impact because the increase in critical V/C and delay did not exceed the one percent and four second threshold. Therefore, the impact to this intersection would be considered **less-than-significant**.

Bascom Avenue/Kingman Avenue

The proposed project will have a ***significant impact*** at the Bascom Avenue/Kingman Avenue intersection because the unsignalized intersection satisfies the PM peak hour signal warrant and it operates unaceptably. However, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants to prioritize and program intersections for signalization should be conducted.

Two mitigation options for the Bascom Avenue/Kingman Avenue intersection are presented below to mitigate the impact at this location.

Option 1: Restrict westbound left-turns on Kingman Avenue. This configuration would increase the amount of vehicles making right-turns onto Bascom Avenue and would also increase the number of northbound left-turns (U-turns) at the Bascom Avenue/Renova Drive intersection. The increase in U-turns is due to traffic that previously turned left that is now forced to turn right and make a U-turn at Renova Drive in order to head southbound on Bascom Avenue. Even with the additional U-turn volume, the Bascom Avenue/Renova Drive intersection would operate acceptably at LOS B in the AM peak hour and at LOS C in the PM peak hour. This option will result in LOS B operations at the Bascom Avenue/Kingman Avenue intersection during both the AM and PM peak hours (see Appendix E).

Option 2: Signalize the Bascom Avenue/Kingman Avenue intersection. This option would maintain the existing lane geometry at the intersection. The southbound left-turn would operate under permitted phasing. Implementation of a signal at this location would likely require coordination with the adjacent signal at the Bascom Avenue/Renova Drive intersection. It is possible that further signal coordination may be required at the Bascom Avenue/Fruitdale Avenue intersection as well. This option would result in LOS B operations at the Bascom Avenue/Kingman Avenue intersection during the AM peak hour and LOS A operations during the PM peak hour (see Appendix E).

The intersection of Bascom Avenue and Kingman Avenue is controlled and operated by the City of San Jose. While either mitigation option would reduce the impact to a less-than-significant level, San Jose City College has no authority to ensure that the proposed mitigation can be in place to mitigate the project's impacts. If an agreement is reached between the college and the City for mitigation, then this impact could be considered mitigated and less than significant. Until the time that an agreement is in place the impact at the Bascom Avenue/Kingman Avenue intersection would be considered **significant and unavoidable**.

PROJECT FREEWAY SEGMENT LEVELS OF SERVICE

Project-generated traffic volumes were added to existing traffic volumes for each freeway mainline segment. These volumes were then used to estimate density for each segment under Project Conditions. The resulting mixed-flow and HOV freeway segment operations are presented in Table 9.

TABLE 9
PROJECT FREEWAY SEGMENT LEVELS OF SERVICE

Freeway	From	To	Peak Hour	Mixed Flow				HOV			
				Trips	Density[1]	LOS[2]	% Impact[3]	Trips	Density[1]	LOS[2]	% Impact[3]
SR 17 Northbound	Hamilton Avenue	I-280	AM	9	88	F	0.12	N/A	N/A	N/A	N/A
			PM	9	36	D	0.12				
SR 17 Southbound	I-280	Hamilton Avenue	AM	2	28	D	0.03	N/A	N/A	N/A	N/A
			PM	5	38	D	0.07				
I-280 Eastbound	Winchester Boulevard	I-880	AM	15	27	D	0.22	3	23	F	0.15
			PM	14	105	F	0.21	3	49	E	0.14
	I-880	Meridian Avenue	AM	40	17	B	0.43	0	15	B	0.00
			PM	40	84	F	0.43	0	48	E	0.00
	Meridian Avenue	Bird Avenue	AM	20	44	D	0.22	N/A	N/A	N/A	N/A
			PM	41	93	F	0.45				
I-280 Westbound	Bird Avenue	Meridian Avenue	AM	79	87	F	0.86	N/A	N/A	N/A	N/A
			PM	78	56	E	0.85				
	Meridian Avenue	I-880	AM	67	111	F	0.79	0	70	B	0.00
			PM	67	27	D	0.79	0	9	A	0.00
	I-880	Winchester Boulevard	AM	4	94	F	0.06	1	67	F	0.04
			PM	8	73	F	0.11	1	20	C	0.08
I-880 Northbound	I-280	Stevens Creek Boulevard	AM	4	96	F	0.06	N/A	N/A	N/A	N/A
			PM	7	16	B	0.10				
	Stevens Creek Boulevard	Bascom Avenue	AM	5	99	F	0.07	N/A	N/A	N/A	N/A
			PM	9	27	D	0.13				
I-880 Southbound	Bascom Avenue	Stevens Creek Boulevard	AM	18	49	E	0.26	N/A	N/A	N/A	N/A
			PM	17	49	E	0.25				
	Stevens Creek Boulevard	I-280	AM	14	21	C	0.20	N/A	N/A	N/A	N/A
			PM	14	34	D	0.20				

Note:

1 Measured in passenger cars per mile per lane.

2 LOS = level of service.

3 Percent impact determined by dividing the number of project trips by the freeway segment's capacity.

Bold type indicates a project impact.

Source: *2007 Monitoring and Conformance Report*, VTA May 2008.

FREEWAY IMPACTS AND MITIGATION MEASURES

The impacts of the project were evaluated by comparing the results of the level of service calculations under Project Conditions to the results under Existing Conditions. Significant impacts to freeway segments occur when the addition of project traffic causes one of the following:

- A segment drops below its acceptable CMP operating standard (LOS E).
- Unacceptable operations (LOS F) are exacerbated by adding traffic equal to more than one percent of a segment's capacity.

Based on the impact criteria listed above, the proposed project will have a ***less-than-significant impact*** on all freeway segments during both the AM and PM peak hours.

According to the *Valley Transportation Plan 2030* (VTA, February 2005), improvements to the I-280/I-880/Stevens Creek Boulevard interchange are planned; however, these improvements are not yet funded. No additional freeway improvements have been identified in the project area.

The previous San Jose City College Facilities Master Plan EIR indicated that there would be impacts to segments on the surrounding freeway system. However, since this project is proposing to add fewer additional students, this Facilities Master Plan update is expected to have fewer impacts than the previous update.

PEDESTRIAN, BICYCLE, AND TRANSIT FACILITY IMPACTS

The project causes a significant impact to pedestrian, bicycle, and transit facilities and services if one of the following occurs:

- An element of the proposed project conflicts with existing or planned pedestrian, bicycle, and transit facilities.
- The proposed project creates hazardous conditions for pedestrians or bicyclists that currently do not exist.

The project may generate additional demand for pedestrian facilities. Existing sidewalks are provided adjacent to and in the vicinity of the site. Sidewalks and pedestrian bridges link the San Jose City College campus to adjacent neighborhoods. The existing pedestrian facilities are expected to accommodate the increased demand. The proposed project does not conflict with any existing or proposed pedestrian facilities and the proposed project does not create hazardous conditions for pedestrians. Therefore, a ***less-than-significant impact*** is expected for pedestrian facilities.

The project may generate additional demand for bicycle facilities. The proposed project does not conflict with any existing or proposed facilities and the proposed project does not create hazardous conditions for bicyclists. Therefore, a ***less-than-significant impact*** is expected for bicycle facilities.

The project may generate additional demand for transit service. The San Jose City College campus is served by four bus routes, and several stops are located adjacent to the campus. Approximately ten buses serve San Jose City College during each peak hour. The existing transit service is expected to accommodate the possible increased demand and the proposed project does not conflict with any existing or proposed transit facilities. Therefore, a ***less-than-significant impact*** is anticipated for transit service.

SITE ACCESS, ON-SITE CIRCULATION, AND PARKING

Site Access

The San Jose City College campus can be accessed from several points along Bascom Avenue, Moorpark Avenue, Leigh Avenue, and Kingman Avenue within the Sherman Oaks neighborhood. Site access is considered adequate for the volume of traffic projected for the site.

On-Site Circulation

On-site circulation is provided by internal roadways and driveways. These facilities connect various parking lots to each other. While there is no existing internal vehicular connection between the parking lots on the western side of campus with those on the eastern side, a connection is proposed in the Facilities Master Plan. This will improve on-site circulation and will allow greater flexibility in circulating through the campus.

Parking

The existing parking facilities on the San Jose City College campus consist of several paved surface lots and a four-story garage. The parking facilities are designated for specific uses (student, staff, etc.). Parking is available on the public roadways surrounding the campus.

Based on the parking surveys performed on the campus in a previous study completed by Fehr and Peers in October 2008 on the SJCC campus, a parking demand rate of 0.18 spaces per student is currently being generated. According to that study, the current number of parking spaces available is estimated to be 1,880 spaces, which is adequate for existing uses. Furthermore, in order to maintain the existing parking ratio while accommodating the addition of 2,000 students in the future, approximately 360 more spaces will be needed at buildout.

Two notable parking occupancy peaks occur during a regular school day. The two peaks are approximately between 9:30 AM and 12:00 PM in the morning and between 6:00 PM and 7:00 PM in the evening. The morning peak is typically 10 – 20 percent higher than the evening peak.

During the morning peak, an average parking occupancy is estimated to be 92% and thus, the number of vacant parking on campus is approximately 150 spaces. Although this un-used supply would potentially meet some of the additional parking demand of 360 spaces, the overall parking occupancy would be over capacity. On-street parking is currently available around the campus area; however, with various levels of activity in and around the neighborhood, only a small amount of parking supply would likely remain for student use.

During the evening peak, an average parking occupancy is estimated to be 81% and hence, the number of available parking on campus is approximately 357 spaces. Although this un-used supply would potentially meet the additional parking demand of 360 spaces, the overall parking occupancy would be at capacity.

With the addition of 2,000 students, the current parking supply may be deficient. The parking supply should be increased by approximately 360 spaces and be located on the western side of the campus where the majority of new buildings will be located.

SPECIAL EVENT PARKING

The additional parking supply of 360 spaces, mentioned in the *Parking* section above, plus the empty spaces seen in the western lots as noted in the *Existing Conditions* section may relieve some of the parking demand

in the neighborhoods. However, since empty spaces were seen in the western lots, this indicates that spectators may have parked in the neighborhood in order to park closer to the stadium. Therefore, this additional parking may not affect parking intrusion into the surrounding neighborhoods.

San Jose City College should create a special event parking management plan in conjunction with the San Jose Police Department to mitigate the effects of parking intrusion on the surrounding neighborhoods. This parking plan should guide spectators to open parking spaces in the western parking lots on campus.

ALTERNATIVE CAMPUS ACCESS ON LELAND AVENUE

The existing access to the campus at the Moorpark Avenue/Leland Avenue intersection is restricted to right turn only access. An alternative configuration is to provide a full access intersection which would allow northbound and southbound through movements. The following section provides an analysis of the intersections and roadways that would be affected by the reconfiguration of the Moorpark Avenue/Leland Avenue intersection.

Daily roadway segment counts were performed at select locations near the campus before and after school was in session in August and September 2007, respectively. These counts were performed for a 72-hour period on a Tuesday through Thursday. The average of the three days was calculated based on these counts and used to represent the daily volume in both directions for each segment. Table 10 presents the daily count information.

The volumes on Leland Avenue reflect a moderate increase in traffic volumes between the two time periods which is likely due to school being in session. Based on historical counts throughout the greater San Jose area, traffic volumes on arterials and freeways are generally higher while schools are in session. This usually occurs even on roadways where there are no schools present or nearby. The increases on Leland Avenue of 6% and 11% are also approximately within the range of a typical day-to-day fluctuation in traffic volume. However, it is possible that SJCC generates approximately 200 vehicles per day on Leland Avenue north of Parkmoor Avenue. In comparison it is likely that SJCC generates all of the increases on Mansfield Drive and Sherman Oaks Drive. Because these two roadways are primarily used for local residential traffic it is assumed that the large increase would be attributed to SJCC.

TABLE 10
EXISTING DAILY ROADWAY VOLUMES

Segment	Daily Volume[1]		Daily Volume Change	% Change
	Before School is in Session[2]	After School is in Session[3]		
Leland Ave, north of Parkmoor	3,650	3,868	+219	+6%
Leland Ave, between Parkmoor and Moorpark	5,807	6,448	+641	+11%
Mansfield Drive, north of Rexford Wy	233	787	+554	238%
Sherman Oaks Drive, north of Randolph Dr	521	2,012	+1,491	286%

Notes:

1 Daily roadway counts performed for three consecutive 24 hour periods (Tuesday – Thursday) and averages of these three days was used to determine the daily roadway volume.

2 Counts performed in August 2007 before school was in session.

3 Counts performed in September 2007 after school began.

Access patterns to San Jose City College are projected to change minimally with the full access intersection. For example, vehicles destined to the parking garage from northbound Interstate 280 would most likely follow the same travel pattern and continue to turn left at Leigh Avenue. However, a few other patterns may change on Leigh and Leland Avenues. For example, vehicles exiting the parking garage and heading for northbound Interstate 280 will no longer turn right out of the San Jose City College driveway at Leland Avenue, then make a left at Leigh Avenue, and then make another left at Parkmoor Avenue. Instead, they would continue through the Moorpark Avenue/Leland Avenue intersection and make a left at Parkmoor Avenue to access the northbound I-280 on-ramp.

The levels of service at the study intersections were also calculated to determine the effect that an alternate access at Moorpark Avenue and Leland Avenue would have on the roadway system. Table 11 presents the level of service calculations with the alternate configuration.

The results of the level of service analysis indicate that the study intersections would operate at the same levels of service as Project Conditions with slight changes to the delays compared to the existing configuration. Therefore, it is expected that this alternate access option would not create any new significant impact at the study intersections. It should also be noted that the Mansfield Drive and Sherman Oaks Drive roadways are expected to have substantially less traffic during times when school is in session with the closure of the southern access point.

The buildout of the campus is expected to generate additional trips on Leland Avenue. Based on the trip generation and distribution, the proposed project is estimated to add approximately 20 daily trips to Leland Avenue north or Parkmoor Avenue with the existing access option. It is likely that additional vehicles (more than the 20 daily trips estimated) would use Leland Avenue to access the school if this alternate configuration is adopted. Although this is not the primary route for most vehicles, creating this type of intersection would likely increase the volume on Leland Avenue by providing a more convenient access option. Additional studies may be needed after the opening of this access point to monitor the potential impact to this roadway.

TABLE 11
ALTERNATE ACCESS PROJECT INTERSECTION LOS

Intersection	Peak Hour	Delay[1]	LOS[2]
1. Bascom Avenue and San Carlos Street	AM PM	43.6 60.7	D E
2. Leigh Avenue and San Carlos Street	AM PM	22.5 27.8	C+ C
3. Leigh Avenue and Scott Street	AM PM	11.7 12.8	B B
4. Bascom Avenue and Parkmoor Avenue	AM PM	35.0 32.3	C- C
5. Leland Avenue and Parkmoor Avenue	AM PM	24.7 31.3	C C
6. Leigh Avenue and Parkmoor Avenue	AM PM	36.7 35.8	D+ D+
7. Bascom Avenue and Moorpark Avenue*	AM PM	38.5 53.1	D+ D-
8. Leland Avenue and Moorpark Avenue	AM PM	7.6 7.9	A A
9. Leigh Avenue and Moorpark Avenue	AM PM	25.3 23.2	C C+
10. Bascom Avenue and Renova Drive	AM PM	17.0 24.7	B C
11. Bascom Avenue and Kingman Avenue	AM PM	>150 >150	F F
12. Bascom Avenue and Fruitdale Avenue*	AM PM	48.0 52.3	D D-
13. Sherman Oaks Way and Fruitdale Avenue	AM PM	23.4 16.3	C C
14. Leigh Avenue and Fruitdale Avenue	AM PM	36.6 34.4	D+ C-
15. Southwest Expressway and Fruitdale Avenue	AM PM	25.7 30.9	C C

Notes:

1 Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 HCM*, with adjusted saturation flow rates to reflect Santa Clara County Conditions. Total control delay for the worst movement is presented for side-street stop-controlled intersections. Delay for the worst approach is reported for Unsignalized intersections.

2 LOS = Level of service. LOS calculations conducted using the TRAFFIX level of service analysis software package.

* CMP intersection.

5. CUMULATIVE CONDITIONS

This chapter presents the intersection operations under Cumulative Conditions with and without the project. Cumulative without Project Conditions are defined as existing volumes plus traffic generated by approved and pending developments in the study area. Cumulative with Project Conditions are defined as Cumulative without Project Conditions plus traffic generated by the proposed project.

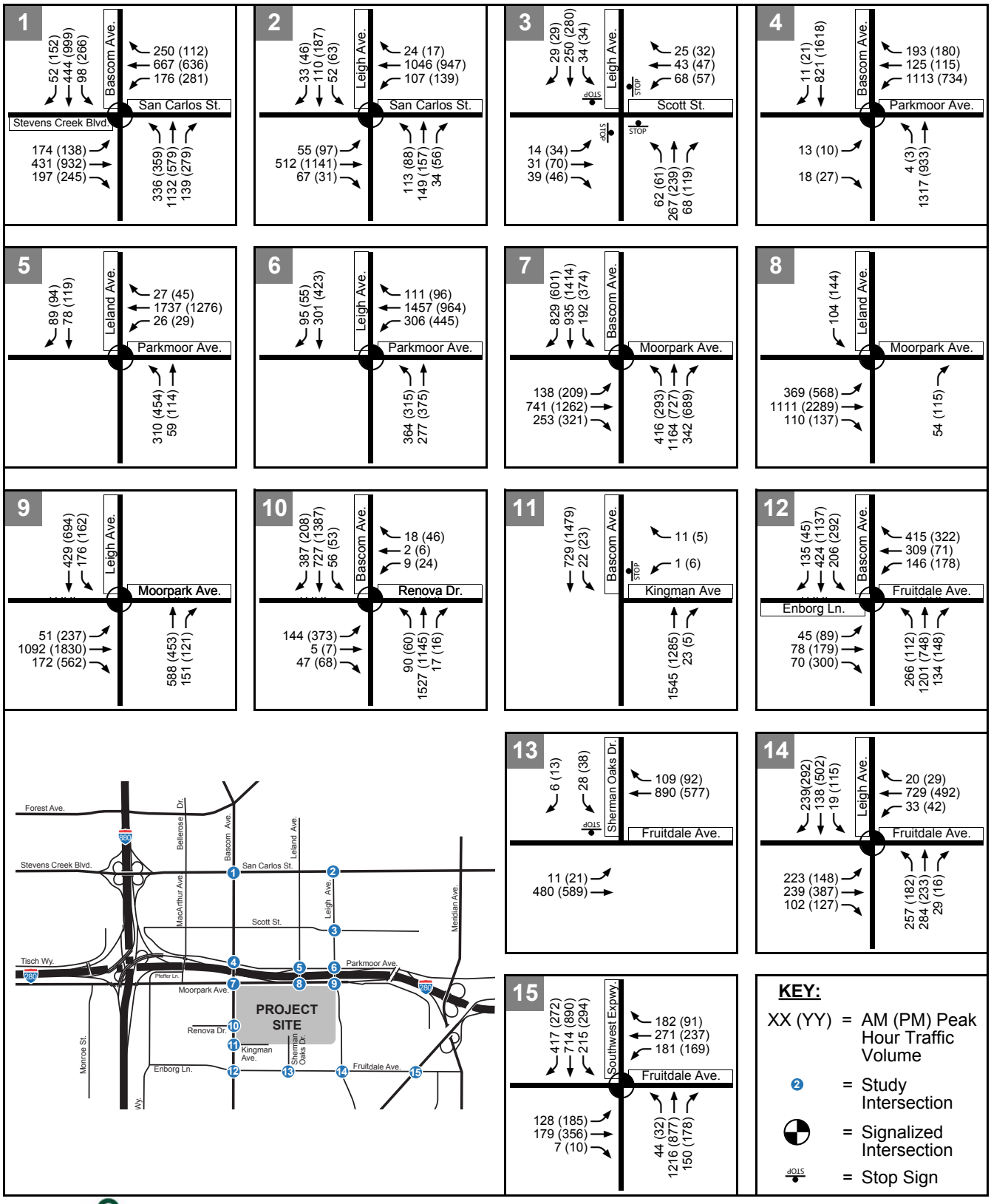
CUMULATIVE TRAFFIC ESTIMATES

Traffic from pending projects plus other long-term projects are included in the cumulative analysis. These projects were obtained from the Cities of San Jose and Campbell. Appendix D contains the full list of projects. Notable nearby pending projects include expansion of Valley Medical Center and the Bascom Branch Library and Community Center.

Trips from the pending projects were added to Background Condition volumes to represent Cumulative without Project Conditions, as shown on Figure 10. Traffic associated with the proposed project was added to Cumulative without Project volumes to represent Cumulative with Project volumes, as shown on Figure 11.

CUMULATIVE ROADWAY IMPROVEMENTS

No roadway improvements were identified for inclusion under both Cumulative scenarios.



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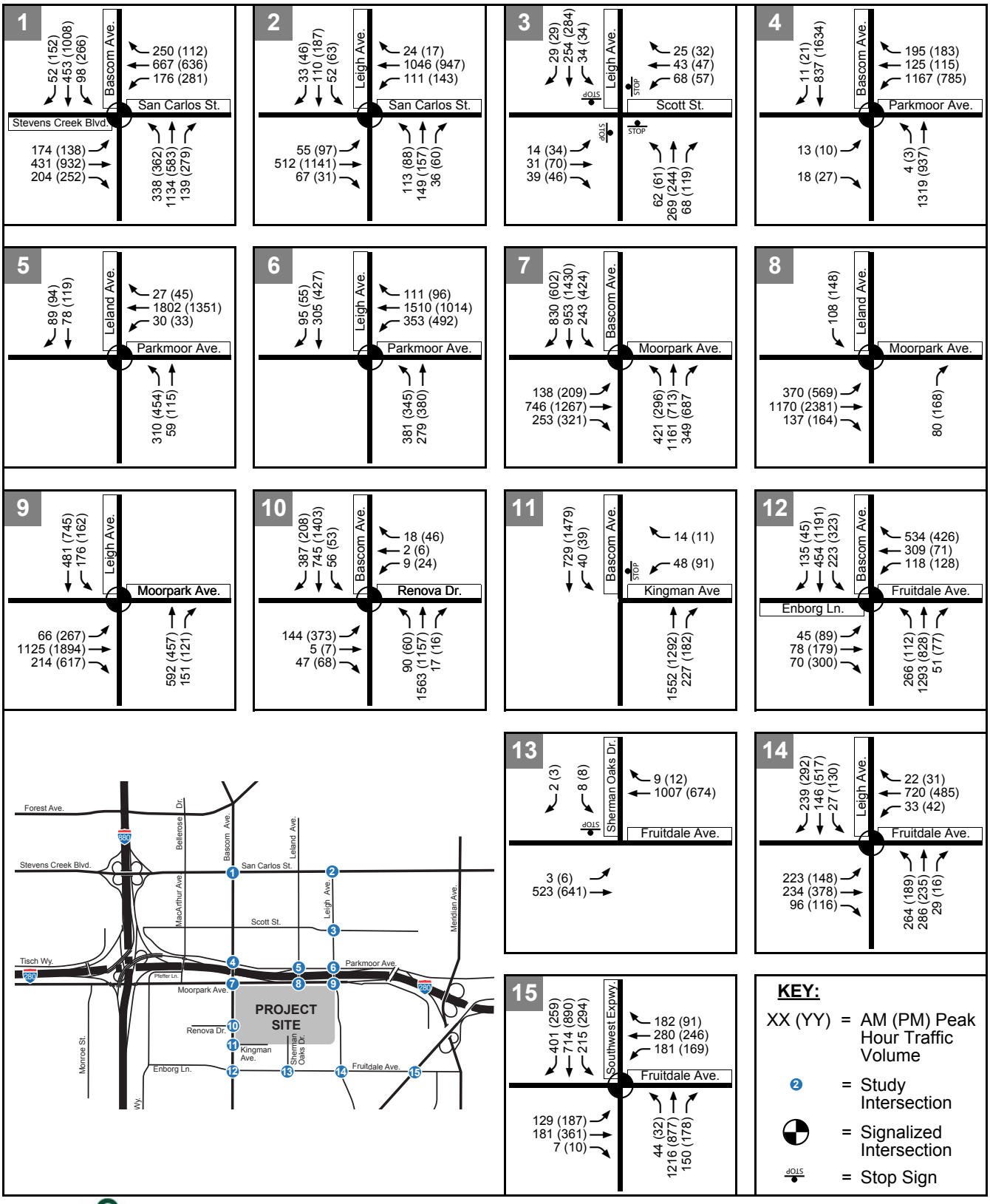
CUMULATIVE WITHOUT PROJECT PEAK-HOUR VOLUME

February 2009
SJ08-1080

FIGURE 10



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CUMULATIVE WITH PROJECT PEAK-HOUR VOLUMES

February 2009
SJ08-1080

FIGURE 11

CUMULATIVE INTERSECTION LEVELS OF SERVICE

The results of the intersection level of service calculations for Cumulative with Project Conditions are presented in Table 12. Appendix B contains the corresponding calculation sheets. The results for Cumulative without Project Conditions are included for comparison purposes, along with the projected increases in critical delay and critical volume-to-capacity (V/C) ratios. Critical delay represents the delay associated with the critical movements of the intersection, or the movements that require the most "green time" and have the greatest effect on overall intersection operations. The changes in critical delay and critical V/C ratio between Cumulative without Project Conditions and Cumulative with Project Conditions are used to identify cumulatively considerable impacts.

All intersections operate acceptably under City of San Jose, VTA, and Caltrans standards except the Bascom Avenue/San Carlos Street, Bascom Avenue/Moorpark Avenue, Bascom Avenue/Kingman Avenue, and Bascom Avenue/Fruitdale Avenue intersections.

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TABLE 12
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour	Cumulative without Project		Cumulative with Project			
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Δ in Crit. V/C[3]	Δ in Crit. Delay[4]
1. Bascom Avenue and San Carlos Street	AM	45.4	D	45.4	D	0.001	0.0
	PM	64.0	E	64.5	E	0.006	1.0
2. Leigh Avenue and San Carlos Street	AM	21.7	C+	21.9	C+	0.001	0.1
	PM	27.5	C	27.7	C	0.002	0.2
3. Leigh Avenue and Scott Street	AM	11.9	B	12.0	B	0.004	0.1
	PM	13.4	B	13.6	B	0.008	0.2
4. Bascom Avenue and Parkmoor Avenue	AM	36.7	D+	37.2	D+	0.017	0.4
	PM	33.1	C-	34.0	C-	0.019	0.9
5. Leland Avenue and Parkmoor Avenue	AM	28.3	C	29.0	C	0.020	0.7
	PM	32.9	C-	33.7	C-	0.023	0.8
6. Leigh Avenue and Parkmoor Avenue	AM	39.5	D	45.2	D	0.042	6.6
	PM	34.1	C-	38.4	D+	0.050	5.1
7. Bascom Avenue and Moorpark Avenue*	AM	39.6	D	40.8	D	0.002	0.2
	PM	64.4	E	**70.4**	**E**	**0.036**	**13.9**
8. Leland Avenue and Moorpark Avenue	AM	6.3	A	6.4	A	0.014	0.1
	PM	6.4	A	6.6	A	0.020	0.2
9. Leigh Avenue and Moorpark Avenue	AM	25.5	C	25.4	C	0.010	-0.1
	PM	21.4	C+	21.6	C+	0.020	-0.1
10. Bascom Avenue and Renova Drive	AM	17.4	B	17.3	B	0.002	-0.1
	PM	29.5	C	29.4	C	0.003	-0.1
11. Bascom Avenue and Kingman Avenue	AM	16.6	C	>150	F	N/A	N/A
	PM	40.3	E	**>150**	**F**	N/A	N/A
12. Bascom Avenue and Fruitdale Avenue*	AM	45.6	D	48.9	D	0.087	4.9
	PM	51.9	D-	**55.8**	**E+**	**0.086**	**5.6**
13. Sherman Oaks Way and Fruitdale Avenue	AM	24.6	C	25.4	D	N/A	N/A
	PM	18.2	C	17.9	C	N/A	N/A
14. Leigh Avenue and Fruitdale Avenue	AM	36.7	D+	36.8	D+	0.002	0.2
	PM	34.4	C-	34.6	C-	0.007	0.1
15. Southwest Expressway and Fruitdale Avenue	AM	25.6	C	25.8	C	0.001	0
	PM	30.7	C	30.8	C	0.001	0.1

TABLE 12
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Notes:

1 Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the *2000 HCM*, with adjusted saturation flow rates to reflect Santa Clara County Conditions. Total control delay for the worst movement is presented for side-street stop-controlled intersections.

2 LOS = Level of service. LOS calculations conducted using the TRAFFIX level of service analysis software package.

3 Change in the critical volume-to-capacity ratio (V/C) between Cumulative without Project and Cumulative with Project Conditions.

4 Change in critical movement delay between Cumulative without Project and Cumulative with Project Conditions.

5 Unsignalized intersection under Cumulative without Project Conditions. Delay and LOS for southbound left-turn movement reported.

* CMP intersection.

Bold type indicates a cumulative impact as defined by CMP and/or City standards.

CUMULATIVE SIGNAL WARRANT ANALYSIS

The peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD) was evaluated for the unsignalized Bascom Avenue/Kingman Avenue and Sherman Oaks Way/Fruitdale Avenue intersections to determine if a traffic signal is warranted. The peak-hour warrant analysis indicated that the Bascom Avenue/Kingman Avenue intersection satisfies the PM peak hour signal warrant under Cumulative Conditions. It should be noted that without the closure of the southern access to campus, the Bascom Avenue/Kingman Avenue intersection would not meet the peak-hour signal warrant. The Sherman Oaks Way/Fruitdale Avenue intersection does not satisfy the signal warrant thresholds for either peak hour (see Appendix C).

INTERSECTION IMPACTS AND MITIGATION MEASURES

Bascom Avenue/San Carlos Street

The Bascom Avenue/San Carlos Street intersection operates unacceptably under Cumulative Conditions during the PM peak hour. Although the intersection exceeds the critical V/C and delay thresholds when comparing Cumulative with Project to Background Conditions, the intersection did not exceed the one percent and four second thresholds in critical V/C and delay between Cumulative with Project and Cumulative without Project Conditions. Therefore, the impact to this intersection is not cumulatively considerable and would be considered **less-than-significant**.

Bascom Avenue/Moorpark Avenue

The proposed project will have ***significant impact*** at the Bascom Avenue/Moorpark Avenue study intersection during the PM peak hour. This intersection meets City of San Jose impact thresholds with LOS E operations (70.4 seconds of average delay) that are exacerbated by increasing the critical delay by more than 4 seconds and increasing the volume-to-capacity (V/C) ratio by 0.01 or more during the PM peak hour.

However, as identified in the Valley Medical Center Master Plan Draft Transportation Impact Analysis (Fehr & Peers, 2007), adding a second southbound left-turn lane mitigates the cumulative impact, resulting in LOS E+ operations with 55.1 seconds of average delay during the PM peak hour (see Appendix E). While operations do not improve to acceptable levels as defined by the City, this mitigation measure reduces the project impact

to a less-than-significant level. The new lane can be accommodated within the existing roadway width by shortening the northbound left-turn lane to Parkmoor Avenue, which currently has excess storage capacity. Other improvements to this intersection require additional roadway width through existing buildings, so they are considered infeasible. A fair-share contribution payment would be an appropriate solution to mitigate the project's impact at this intersection. Fair-share contributions are determined by dividing the added project trips by the total number of added trips to an intersection. Under the fair-share contribution calculation methodology, San Jose City College would be responsible for 14.2% of the cost of the mitigation.

The intersection of Bascom Avenue/Moorpark Avenue is controlled and operated by the City of San Jose. While the mitigation would reduce the impact to a less-than-significant level, San Jose City College has no authority to ensure that the proposed mitigation can be in place to mitigate the project's impacts. If an agreement is reached between the college and the City for mitigation, then this impact could be considered mitigated and less than significant. Until the time that an agreement is in place the impact at the Bascom Avenue/Kingman Avenue intersection would be considered **significant and unavoidable**.

Bascom Avenue/Kingman Avenue

The proposed project will have ***significant impact*** at the Bascom Avenue/Kingman Avenue intersection because the unsignalized intersection satisfies the PM peak hour signal warrant.

However, two mitigation options for the Bascom Avenue/Kingman Avenue intersection are presented below to mitigate the impact at this location.

Option 1: Restrict westbound left-turns on Kingman Avenue. This configuration would increase the amount of vehicles making right-turns onto Bascom Avenue and would also increase the number of northbound left-turns (U-turns) at the Bascom Avenue/Renova Drive intersection. The increase in U-turns is due to traffic that previously turned left that is now forced to turn right and make a U-turn at Renova Drive in order to head southbound on Bascom Avenue. Even with the additional U-turn volume, the Bascom Avenue/Renova Drive intersection would operate acceptably at LOS C during both peak hours. This option will result in LOS B operations at the Bascom Avenue/Kingman Avenue intersection during the both peak hours (see Appendix E).

Option 2: Signalize the Bascom Avenue/Kingman Avenue intersection. This option would maintain the existing lane geometry at the intersection. The southbound left-turn would operate under permitted phasing. Implementation of a signal at this location would likely require coordination with the adjacent signal at the Bascom Avenue/Renova Drive intersection. It is possible that further signal coordination may be required at the Bascom Avenue/Fruitdale Avenue intersection as well. This option would result in LOS B operations at the Bascom Avenue/Kingman Avenue intersection during the AM peak hour and LOS A operations during the PM peak hour (see Appendix E).

The intersection of Bascom Avenue and Kingman Avenue is controlled and operated by the City of San Jose. While either mitigation option would reduce the impact to a less-than-significant level, San Jose City College has no authority to ensure that the proposed mitigation can be in place to mitigate the project's impacts. If an agreement is reached between the college and the City for mitigation, then this impact could be considered mitigated and less than significant. Until the time that an agreement is in place the impact at the Bascom Avenue/Kingman Avenue intersection would be considered **significant and unavoidable**..

Bascom Avenue/Fruitdale Avenue

The proposed project will have ***significant impact*** at the Bascom Avenue/Fruitdale Avenue study intersection during the PM peak hour. This intersection meets City of San Jose impact thresholds when operations

degrade from an acceptable level to an unacceptable level with LOS E operations (55.8 seconds of average delay) with an increase in critical V/C and delay that exceeds the thresholds.

However, as identified in the Valley Medical Center Master Plan Draft Transportation Impact Analysis (Fehr & Peers, 2007), reconfiguring the eastbound and westbound approaches with protected phasing and modifying the same two approaches to accommodate one left-turn, one through, and one right-turn lane mitigates the cumulative impact (LOS D, 47.2 seconds of average delay). The lane reconfigurations can be accommodated within the existing roadway width with removal of the second westbound receiving lane, which is not be necessary with the new lane geometry. This proposed mitigation reduces the project impact to a less-than-significant level. A fair-share contribution payment would be an appropriate solution to mitigate the project's impact at this intersection. Fair-share contributions are determined by dividing the added project trips by the total number of added trips to an intersection. Under the fair-share contribution calculation methodology, San Jose City College would be responsible for 38.2% of the cost of the mitigation.

The intersection of Bascom Avenue/Fruitdale Avenue is controlled and operated by the City of San Jose. While the mitigation would reduce the impact to a less-than-significant level, San Jose City College has no authority to ensure that the proposed mitigation can be in place to mitigate the project's impacts. If an agreement is reached between the college and the City for mitigation, then this impact could be considered mitigated and less than significant. Until the time that an agreement is in place the impact at the Bascom Avenue/Kingman Avenue intersection would be considered **significant and unavoidable**.

Appendix E contains the calculation sheets for the mitigation measures.