APPENDIX G
Local Transportation Analysis

Milligan Parking Lot Project

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Milligan Parking Lot Development

Local Transportation Analysis

Prepared for:

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Executive Summary

This report presents the results of the local transportation analysis (LTA) conducted for the proposed Milligan Parking Lot development located near the SAP Center at 150 N. Autumn Street in San Jose, California. The project proposes to construct approximately 325 parking spaces on a parcel that now comprises a parking lot with 118 spaces and an automotive repair shop. The project is located within the Diridon Station Area Plan (DSAP) boundary. The DSAP is a 250-acre district surrounding the San Jose Diridon Station on the western edge of downtown. The proposed project would help address the loss of public parking with construction of new developments in the Diridon Station Area. The new developments would remove several parking lots south of the SAP Center. Entrances to the Milligan parking lot would be located on Autumn Street and St. John Street.

A separate proposed project located near the Milligan Lot is the Lot E Parking garage development. It proposes to construct approximately 1,200 parking spaces near the SAP Center along W. St. John Street. The Lot E Parking garage would also help address loss of public parking with construction of new developments in the Diridon Station Area. Entrances to the Lot E parking garage would be located on W. St. John Street, N. Autumn Street, and N. Montgomery Street.

This study was conducted for the purpose of identifying the potential transportation impacts related to the proposed Milligan parking lot and also the Milligan lot and the Lot E parking garage together. 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 TA report for the project includes a CEQA transportation analysis and a local transportation analysis (LTA). A more detailed LTA may be provided once a detailed site plan is available.

Project-Level Vehicle Miles Traveled (VMT) Analysis

The proposed project is a parking lot development. Construction of new developments in the Diridon Station Area would remove several parking lots south of the SAP Center. Since the project would replace parking that already exists today, there would be no added trips to the area. In addition, the West Downtown Mixed-Use project would also provide parking to offset the loss in parking. Therefore, there would be no change to the VMT.

Local Transportation Effects

Project Trip Estimates

The project would not add any trips to the study area because it simply replaces existing parking. However, trips would be reoriented from the parking lots they are now using to the Milligan lot. The effects of the rerouted trips on intersections near the Milligan lot were determined. It should be noted that the West Downtown Mixed-Use project may change the road network so that Cahill Street would connect to N. Montgomery Street, and W. St. John Street would be extended until it connects with Cahill Street perpendicularly. The study did not include this potential change because it is not known if or when it will occur. The reduced traffic at intersections near the existing parking lots south of SAP Center was not studied.

To determine the number of rerouted trips, it was assumed that the 325-space Milligan lot would be full for SAP Center events. Based on past studies of sporting events with a 7:00 PM start time, fans start arriving around 5 PM and continue to arrive until, and even after, the start time of 7:00 PM. Typically, a Sharks game begins at 7:30 PM. Therefore, by assuming a start time of 7:00 PM, the analysis herein provides a conservative (high) estimate of traffic during the 5:00-6:00 PM and 6:00-7:00 PM time periods.

The percentage of vehicles arriving within a specified time period was determined based on the Fehr & Peers memorandum (dated 5/14/2021). Applying the arrival pattern that was observed, it is estimated that 60 percent of attendees would arrive one hour or less before the game start time (6:00 to 7:00 PM). The remaining attendees are expected to arrive more than one hour before the game start time or after the game start time. Based on the percentages of the attendees, there would be 195 vehicles arriving in the busiest hour, which would be 6:00 to 7:00 PM.

Intersection Vehicle Queuing Operations

The Alameda and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the southbound left-turn lane at The Alameda to Julian Street intersection currently exceeds the existing vehicle storage capacity during the 6-7 PM peak hour during events. The existing left-turn lane provides approximately 200 feet of vehicle storage, which can accommodate 8 vehicles. The project and Lot E would increase the 95th percentile vehicle queue by 1 vehicle. There is no room in the median to lengthen the left turn pocket.

Autumn Street and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the westbound left-turn lane at the Julian Street to Autumn Street intersection would exceed the vehicle storage capacity during the 6-7 PM peak hour during events with the addition of project traffic. The existing left-turn lane provides approximately 125 feet of vehicle storage, which can accommodate 5 vehicles. The project and Lot E would increase the 95th percentile vehicle queue by 3 vehicles. There is no room in the median to lengthen the left turn pocket.

SR 87 Northbound Ramps and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the freeway off-ramp left-turn lanes on the SR 87 northbound off-ramp at Julian Street currently exceeds the existing vehicle storage capacity during the peak hours of traffic during events. Each of the two left-turn lanes provides approximately 300 feet of vehicle storage, which can accommodate 12 vehicles. The project and Lot E

would increase the 95th percentile vehicle queues by 1 vehicle during the game time peak hour during events. While the queue would extend beyond the striped lanes, it would not back up onto the freeway mainline.

Montgomery Street and Julian Street

The queuing analysis indicates that the 95th percentile queue for the westbound left-turn lane at the Montgomery Street and Julian Street intersection currently exceeds the vehicle storage capacity during the 6-7 PM peak hour during events. The existing left-turn lane provides approximately 125 feet of vehicle storage, which can accommodate 5 vehicles. The project and Lot E would decrease the 95th percentile vehicle queue by 10 vehicles, but the queue would still exceed the vehicle storage capacity by 1 vehicle. There is no room in the median to lengthen the left turn pocket.

Other Transportation Issues

The proposed site plan shows adequate site access and on-site circulation. The project provides adequate pedestrian circulation by providing sidewalks along its frontage and an accessible path between the parking lot and the SAP Center.

Hexagon has the following recommendations resulting from the parking, site access, and circulation analysis.

Driveway Operations After Events

- It is anticipated that at the end of a game or event, all fans would exit the Arena at the same time and seek to exit the parking lots. The Lot E garage would have 1,200 parking spaces and could exit to Montgomery Street, St. John Street, or Autumn Street. The Milligan lot would have 325 parking spaces and could exit to Autumn Street or to St. John Street. Added together, the amount of traffic that could exit toward Julian Street is 1,525 (1,200+325) vehicles, which is beyond the hourly capacity of the intersections along Julian Street. The capacity of the intersections along Julian Street can be assumed to be about 1,500 vehicles per hour with police control. Police would help direct the traffic flow out of the parking structures in order to maintain a steady flow of traffic out of the area. In order to account for any ambient traffic on Julian Street after events, it is prudent to assume that 1,000 vehicles per hour of Arena traffic could be accommodated at each intersection. It is also assumed that ambient traffic on Julian Street is no more than 500 vehicles per hour after events (10 pm). Thus, it is recommended that a portion of the Lot E garage traffic be assigned to Montgomery Street and required to turn left at Julian Street (400 vehicles). It is recommended that the remainder of traffic from the Lot E garage be assigned to Autumn Street and required to turn right on Julian Street (800 vehicles). With a driveway for Lot E along St. John Street, 400 out of the 800 remaining vehicles would utilize St. John Street first, then turn left onto Autumn Street to join the Autumn Street driveway traffic. It is recommended that a portion of traffic from the Milligan lot be required to exit to St. John Street toward the east (165 vehicles). It is recommended that the remainder of traffic from the Milligan Lot be required to exit to Autumn Street and required to turn right on Julian Street (160 vehicles).

1. Introduction

This report presents the results of the local transportation analysis conducted for the proposed Milligan Parking Lot development located near the SAP Center at 150 N. Autumn Street in San Jose, California (see Figure 1). The project proposes to construct approximately 325 parking spaces on a parcel that now comprises a parking lot with 118 spaces and an automotive repair shop. The project is located within the Diridon Station Area Plan (DSAP) boundary. The DSAP is a 250-acre district surrounding the San Jose Diridon Station on the western edge of downtown. The proposed project would help address the loss of public parking with construction of new developments in the Diridon Station Area. The new developments would remove several parking lots south of the SAP Center (see Figure 2). Entrances to the Milligan parking lot would be located on Autumn Street and St. John Street.

A separate proposed project located near the Milligan Parking Lot is the Lot E Parking garage development. It proposes to construct approximately 1,200 parking spaces near the SAP Center along W. St. John Street. The Lot E Parking garage would also help address loss of public parking with construction of new developments in the Diridon Station Area. Entrances to the Lot E parking garage would be located on W. St. John Street, N. Autumn Street, and N. Montgomery Street.

This study identifies the potential transportation impacts related to the proposed Milligan parking lot and also the Milligan lot and the Lot E parking garage together. The transportation impacts of the project were evaluated following the standards and methodologies established in the City of San Jose's Transportation Analysis Handbook, adopted in April 2018. Based on the City of San Jose's Transportation Analysis Policy (Policy 5-1) and the Transportation Analysis Handbook, the TA report for the project includes a California Environmental Quality Act (CEQA) transportation analysis and a local transportation analysis (LTA). A more detailed LTA may be provided once a detailed site plan is available.

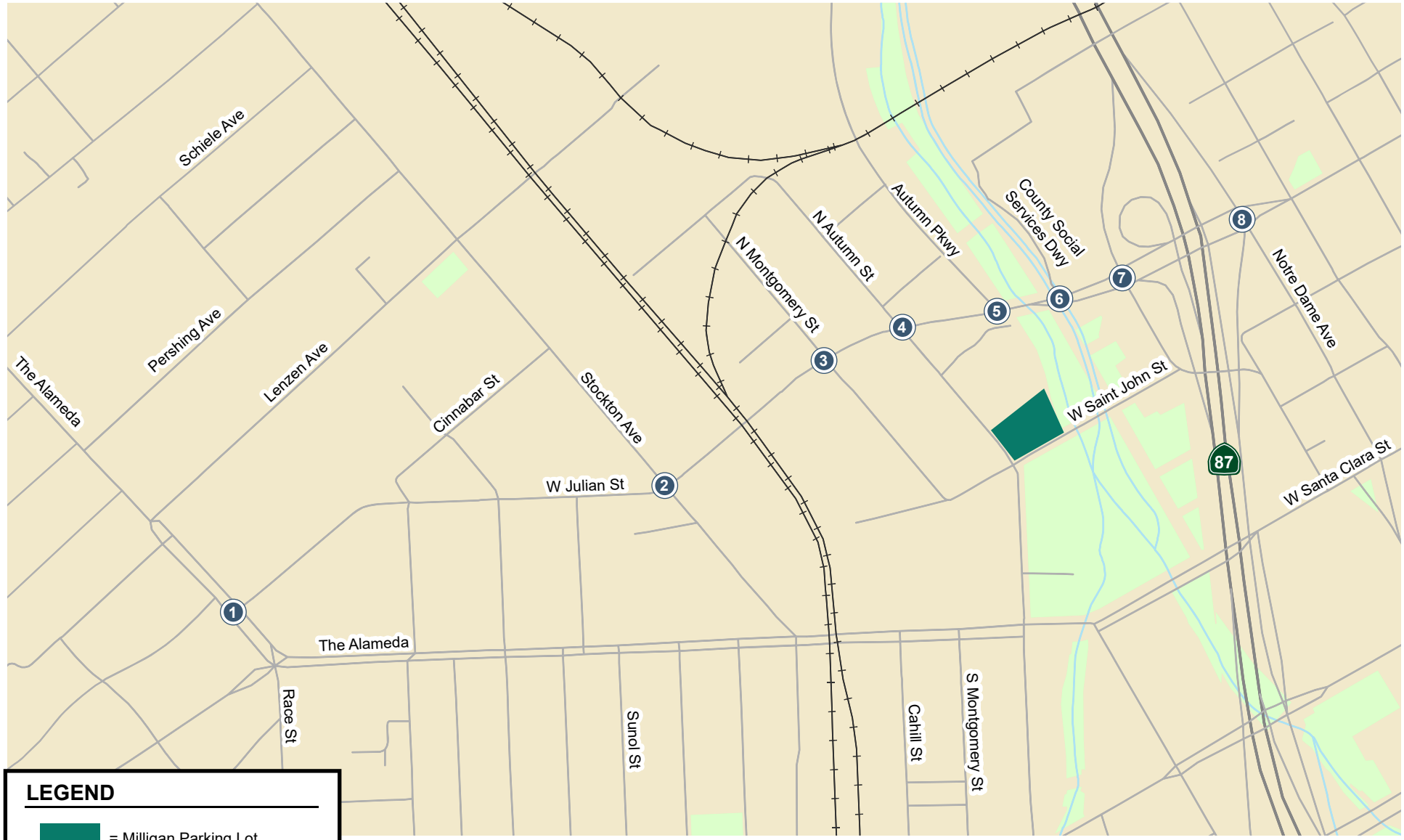


Figure 1
Site Location and Study Intersections

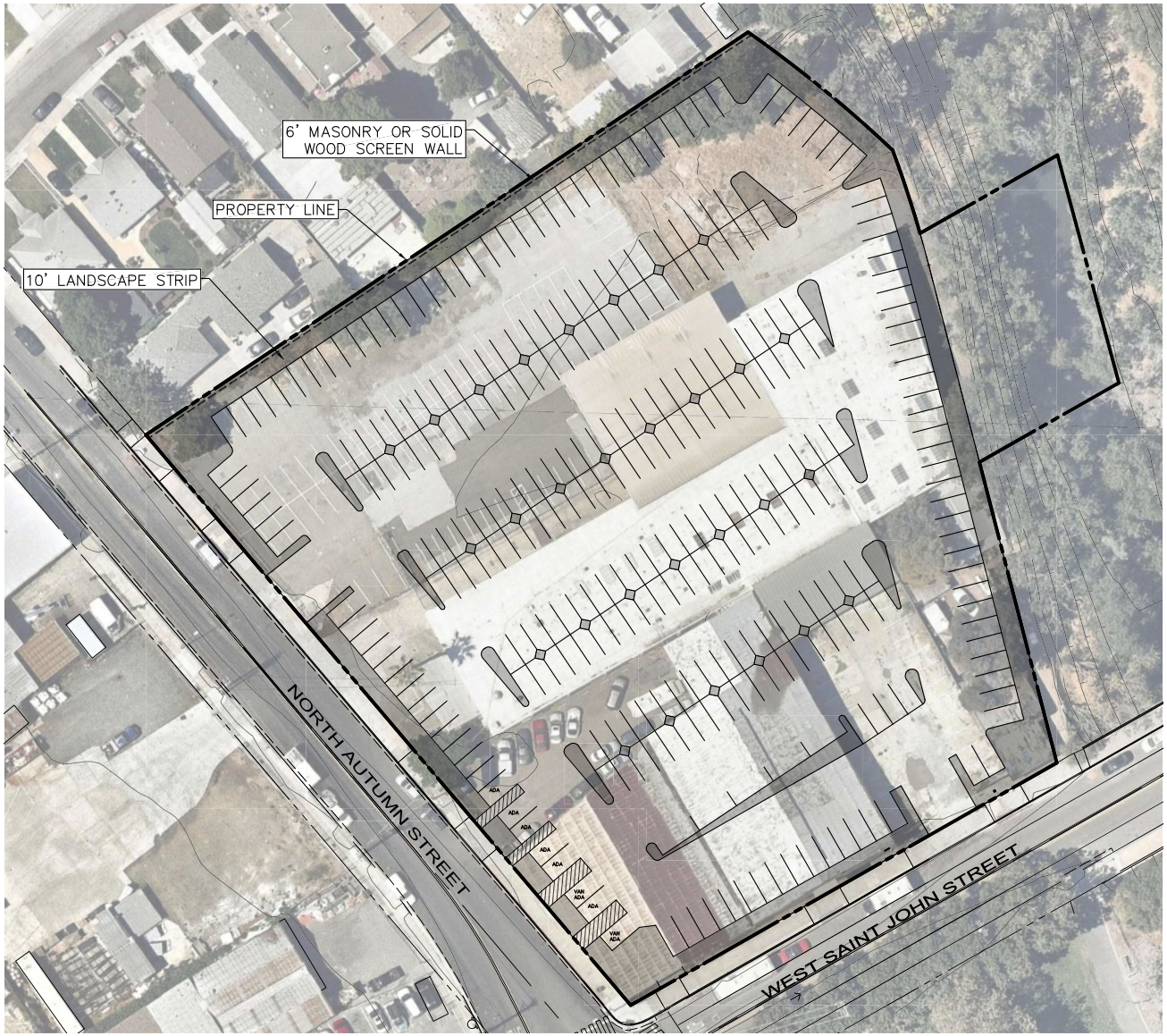


Figure 2
Site Plan

NORTH
Not to Scale

Transportation Policies

To align the City of San Jose's transportation analysis guidelines with State of California Senate Bill 743 (SB 743) and the City's goals as set forth in the Envision San Jose 2040 General Plan, the City of San Jose adopted Transportation Analysis Policy 5-1. The policy establishes the thresholds for transportation impacts under the California Environmental Quality Act (CEQA) based on vehicle miles traveled (VMT) instead of intersection level of service (LOS).

The Transportation Analysis Policy aligns with the Envision San Jose 2040 General Plan which seeks to focus new development growth within Planned Growth Areas, bringing together office, residential, and service land uses to internalize trips and reduce VMT. VMT-based policies support dense, mixed-use, infill projects as established in the General Plan's Planned Growth Areas. The Envision San Jose 2040 General Plan contains the following policies to encourage the use of non-automobile transportation modes to minimize vehicle trip generation and reduce VMT:

- 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 biking, 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. In addition, require that new development is designed to accommodate and to provide direct access to transit facilities (TR-3.3);
- 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 Villages and Corridors and other growth areas (TR-8.6);
- Encourage private property owners to share their underutilized parking supplies with the general public and/or other adjacent private developments (TR-8.7);
- 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);

- Encourage all developers to install and maintain trails when new development occurs adjacent to a designated trail location. Use the City's Parkland Dedication Ordinance and Park Impact Ordinance to have residential developers build trails when new residential development occurs adjacent to a designated trail location, consistent with other parkland priorities. Encourage developers or property owners to enter into formal agreements with the City to maintain trails adjacent to their properties (PR-8.5).

CEQA Transportation Analysis Scope

The CEQA Transportation Analysis includes an evaluation of VMT.

VMT Analysis

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. The City of San Jose defines VMT as the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT is calculated for residential, office, and industrial projects using the Origin-Destination VMT method, which measures the full distance of personal motorized vehicle-trips with one end within the project.

The proposed project would replace public parking that would be lost due to new development in the Diridon Station Area. The Diridon Station Area development would remove several parking lots of the SAP Center (see Figure 3). The parking facilities that would be replaced are the following:

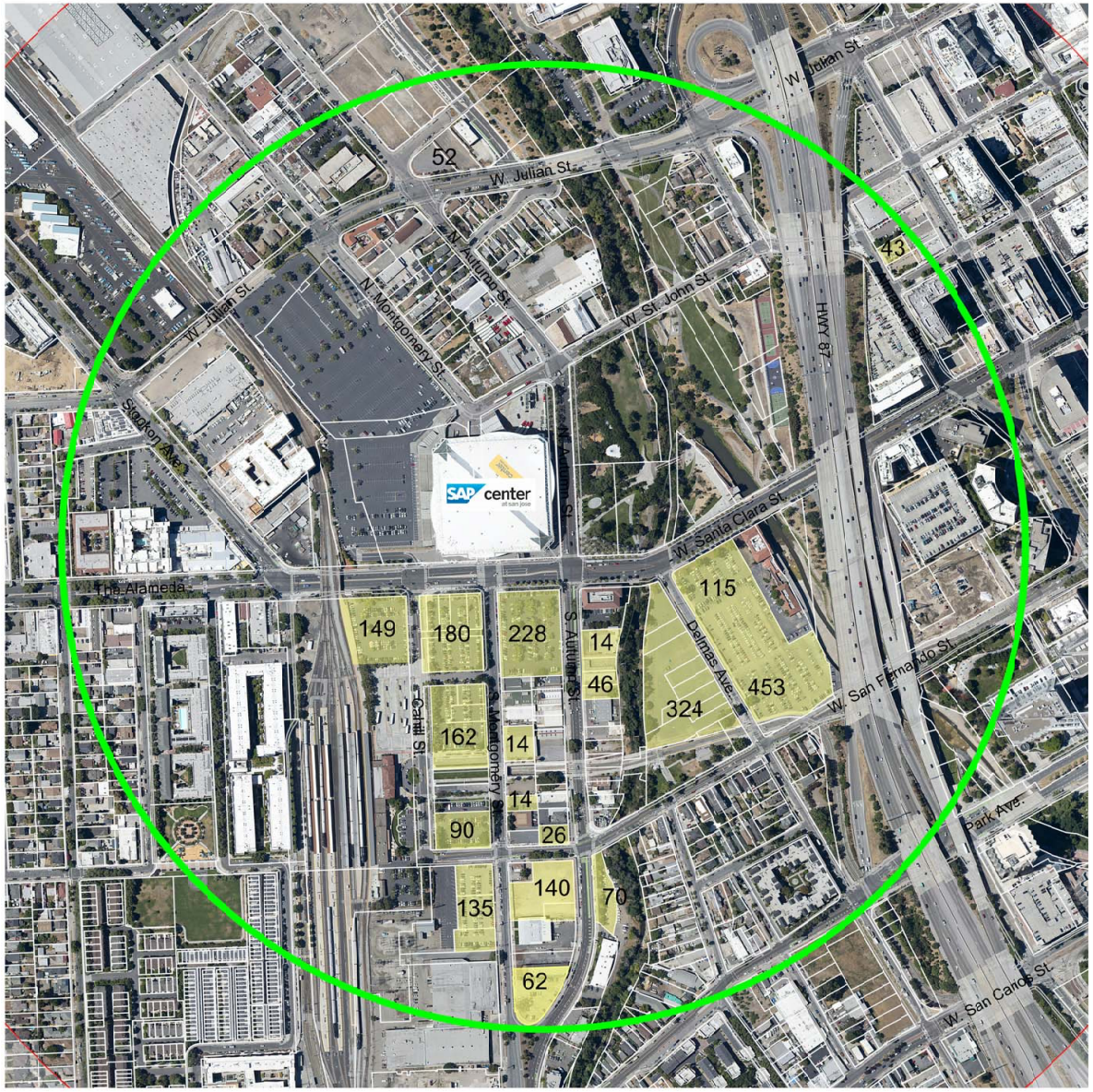
- 150 S. Montgomery
- 34 S. Autumn
- 510 W. San Fernando
- 65 North Almaden Boulevard
- 80 S. Montgomery
- Delmas East
- Delmas West
- Delmas Management Lot
- Borschs
- Cahill 1
- Cahill 2
- Cahill 3
- Cahill 4
- CSC Security
- NW San Fernando/Autumn (Palmero)
- Templo la Hermosa
- Montgomery/San Fernando (Patty's)
- Lot D

The existing Arena Lot A, B, and C, located west of the SAP Center, would also be replaced. Since the project would simply replace public parking that already exists, it is expected that no new trips would be added to the area. Table 1 shows a comparison between the Milligan and Lot E parking spaces with

that of the existing Lot A, B, and C. In addition, the West Downtown Mixed-Use project would also provide parking to offset the loss in parking. Therefore, this project would have a less-than significant VMT impact and does not require a detailed CEQA transportation analysis.

Table 1
Parking Space Comparison between Milligan and Lot E and existing Lot A, B, C

Land Use	Number of Parking Spaces
Proposed Uses	
Milligan Lot	325 Spaces
Lot E	1,200 Spaces
Total	1,525 Spaces
Existing Uses	
Lot A, B, C	1,420 Spaces



Facility	Total Spaces
150 S. Montgomery	62
34 S. Autumn	46
510 W. San Fernando	135
65 North Almaden Bl	43
80 S Montgomery	14
Delmas East	453
Delmas West	324
Delmas Management Lot	115
Borschs	14
Cahill 1	180
Cahill 2	162
Cahill 3	90
Cahill 4	149
CSC Security (Water District)	70
NW San Fernando/Autumn (Palmero)	26
Templo la Hermosa	14
Montgomery/San Fernando (Patty's)	140
Lot D	228
Total	**2,265**

Lost Parking within 1/3 mile

SAP center at san jose

09/23/2019

Figure 3
Lost Parking with 1/3 Mile of SAP Center

Local Transportation Analysis Scope

A local transportation analysis (LTA) identifies transportation operational issues that may arise due to a development project, evaluates the effects of the project on transportation, access, circulation, and related safety elements in the proximate area of the project.

As part of the LTA, a project is required to conduct an intersection operations analysis for any signalized intersections within a half mile of the project and at any signalized intersections currently operating at LOS D or worse within one mile of the project. Therefore, the LTA analysis evaluates the PM peak-hour traffic operations conditions during events for the following intersections.

1. The Alameda and Julian Street
2. Stockton Avenue and Julian Street
3. Montgomery Street and Julian Street
4. Autumn Street and Julian Street
5. Autumn Street Parkway and Julian Street
6. County Social Services Driveway and Julian Street
7. SR 87 Southbound Ramps and Julian Street (CMP)
8. SR 87 Northbound Ramps and Julian Street (CMP)

Traffic conditions at the study intersections were analyzed for 6-7 PM on a weekday game night because that is when the combination of ambient traffic plus Arena traffic will be highest. Traffic conditions were not analyzed after a game because ambient traffic levels are low at that time.

Intersection operations conditions were evaluated for the following scenarios:

- ***No Event Conditions.*** Existing traffic volumes at the study intersections were obtained from previous traffic counts. The counts for the intersections were conducted between October 2013 and December 2018. Since the counts conducted are older than two years, a one percent growth rate was applied per year until year 2020 to account for growth in traffic volumes. The counts are factored to 6-7 PM using a factor of 0.92 developed from prior counts.
- ***Event Conditions*.** Existing traffic volumes plus parking lot trips for the existing Arena Lots A, B, and C. This lot is located adjacent to the Arena and has access to Julian Street. Therefore, it will add traffic to the study intersections.
- ***Project Conditions.*** Event conditions plus the parking lot trips from the proposed Milligan lot (without Arena Lots A, B, and C).
- ***Cumulative Conditions.*** Event conditions plus the added parking lot trips from both the Milligan lot and the Lot E garage (without Arena Lots A, B, and C).

The LTA also includes a vehicle queuing analysis and a review of site access and on-site circulation. Since the project proposes to replace public parking that already exists, no new trips would be added to the area. Therefore, no freeway analysis was conducted.

Intersection Operations Analysis Methodology

This section presents the methods used to determine the traffic operations conditions at the study intersections and the impacts of the project on intersection operations. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards for identifying deficiencies.

Data Requirements

The data required for the analysis were obtained from the previous traffic studies and City of San Jose. The following data were collected from these sources:

- existing traffic volumes
- existing lane configurations
- signal timing and phasing

Intersection Vehicle Queuing Analysis

For selected high-demand movements at the study intersections, the estimated maximum vehicle queues were compared to the existing or planned storage capacity. The queuing analysis is presented for informational purposes only, since the City of San Jose has not defined a policy related to queuing. Vehicle queues were calculated 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 per signal cycle for a particular 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 movement.

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). Therefore, left-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.

Report Organization

This report has a total of four chapters. Chapter 2 describes the existing roadway network and pedestrian facilities. Chapter 3 describes the local transportation analysis including the method by which project traffic is estimated, intersection operations analysis for all proposed project scenarios, any adverse intersection traffic effects caused by the project, intersection vehicle queuing analysis, site access and on-site circulation review, and effects on pedestrian facilities. Chapter 4 presents the conclusions of the transportation analysis.

2. Existing Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the site, including the roadway network, transit service, pedestrian and bicycle facilities, and the existing levels of service of the key intersections in the study area.

Existing Roadway Network

Regional access to the project site is provided via SR 87. Local access to the project site is provided via Julian Street, The Alameda, Stockton Avenue, Montgomery Street, Autumn Street, Autumn Parkway, and St. John Street. These facilities are described below.

SR 87 is a six to eight lane freeway that extends from US 101 to SR 85 in San Jose. SR 87 provides access to the project site via an interchange at Julian Street.

Julian Street is a two to four lane roadway that runs in an east-west direction. Julian Street extends eastward to State Route 87, where it transitions into St James Street, and westward to The Alameda. Julian Street includes sidewalks on both sides of the street and has a posted speed limit of 30 mph near the project site. On-street parking is permitted on both sides of the street west of Stockton Avenue and on the north side of the street between Montgomery Street and Autumn Street. Bike lanes are provided on Julian Street between The Alameda and Stockton Avenue. Julian Street provides access to the project site via Autumn Street.

The Alameda/Santa Clara Street. The Alameda is a four-lane roadway that runs in a generally east-west direction in San Jose from its interchange with Interstate 880 in the west to Stockton Avenue in the east, where it transitions into Santa Clara Street. The Alameda/Santa Clara Street includes sidewalks on both sides of the street and has a posted speed limit of 35 mph near the project site. On-street parking is permitted on both sides of the street. The Alameda/Santa Clara Street provides access to the project site via Barack Obama Boulevard.

Stockton Avenue is a two-lane roadway that runs in a north-south direction. Stockton Avenue extends northward, where it transitions to Emory Street and southward to The Alameda, where it transitions to White Street. Stockton Avenue has sidewalks on both sides of the street and has a posted speed limit of 30 mph. On-street parking is permitted on both sides of the street. Bike lanes are provided along both sides of Stockton Avenue. Stockton Avenue provides access to the project site via Julian Street.

North Montgomery Street is a two-lane roadway that runs in a north-south direction. North Montgomery Street extends northward to its end at Cinnabar Street, and southward, where it transitions

to St John Street. North Montgomery Street has sidewalks on both sides of the street and has a prima facie speed limit of 25 mph. On-street parking is permitted on both sides of the street. North Montgomery Street provides access to the project site via Julian Street.

Barack Obama Boulevard (previously N. Autumn Street) is a north-south roadway that extends from W. St. John Street in the north to Interstate 280 in the south. There are two lanes of traffic between Santa Clara Street and W. St. John Street and four lanes south of Santa Clara Street. There are sidewalks on both sides of the street, which has a posted speed limit of 25 mph.

N. Autumn Street is a two-lane street between W. St. John Street and north of Julian Street with sidewalks on both sides of the street and a posted speed limit of 25 mph. On-street parking is permitted on both sides of the street near the project site. N. Autumn Street provides access to the project site via a full-access driveway.

Autumn Parkway is a four-lane roadway that runs in a north-south direction between W. Julian Street in the south and Coleman Avenue in the north. Autumn Parkway has sidewalks on both sides of the street and has a prima facie speed limit of 25 mph. On-street parking is prohibited on both sides of the street. Bike lanes are provided along both sides of Autumn Parkway. Autumn Parkway provides access to the project site via Julian Street.

St. John Street is a two-lane roadway that runs in an east-west direction. St. John Street extends eastward to 18th Street and westward to North Montgomery Street, where it transitions to North Montgomery Street. St. John Street includes sidewalks on both sides of the street and has a prima facie speed limit of 25 mph near the project site. On-street parking is permitted on both sides of the street. Bike sharrows are provided on St. John Street. St. John Street provides access to the project site via a full-access driveway.

Existing Pedestrian Facilities

A complete network of sidewalks is present along the streets in the vicinity of the project site, including Julian Street, The Alameda, Stockton Avenue Montgomery Street, Autumn Street, Autumn Parkway, and St. John Street. Marked crosswalks with pedestrian signal heads and push buttons are located at all signalized intersections. Overall, the existing network of sidewalks and crosswalks has good connectivity and provides pedestrians with safe routes from the project site to the SAP Center.

Existing Bicycle Facilities

There are several bicycle facilities in the vicinity of the project site. Bicycle facilities are divided into the following three classes of relative significance:

Class I Bikeway (Bike Path). Class I bikeways are bike paths that are physically separated from motor vehicles and offer two-way bicycle travel on a separate path. The Guadalupe River Trail is located in the project area and is a continuous multi-purpose pathway for pedestrians and bicycles that is separated from motor vehicles. It begins at Camden Avenue in the south and continues to Alviso in the north. A connection to the Guadalupe River Trail system is located along St John Street east of Autumn Street.

The Los Gatos Creek Trail is also located in the project area and also provides a multi-purpose pathway for pedestrians and bicycles. The trail expands between St John Street and Santa Clara Street and connections to the Los Gatos Creek Trail is located along St John Street east of Autumn Street and along Santa Clara Street near Delmas Avenue.

Class II Bikeway (Bike Lane). Class II bikeways are striped bike lanes on roadways that are marked by signage and pavement markings. Within the vicinity of the project site, striped bike lanes are present on the following roadway segments.

- Santa Clara Street, between The Alameda and Almaden Boulevard
- Autumn Street, between Santa Clara Street and San Carlos Street
- Stockton Avenue, between Emory Street and Santa Clara Street
- Autumn Parkway, between Coleman Avenue and Julian Street

Class III Bikeway (Bike Route). Class II bikeways are bike routes on roadways that share the road with bicycles and motor vehicles and are marked with shared roadway bicycle markings (sharrows). Within the vicinity of the project site, bike routes are present on the following roadway segments:

- St John Street, between Montgomery Street and Almaden Boulevard
- Montgomery Street, between Julian Street and St John Street

Class IV Bikeway (Separated Bikeway). Class IV bikeways are separated bikeways on roadways that are protected bikeways with a physical barrier between bicycles and motor vehicles. Within the vicinity of the project site, bike routes are present on the following roadway segments:

- Autumn Street, between St John Street and Santa Clara Street
- Cahill Street, between Santa Clara Street and San Fernando Street

The existing bicycle facilities are shown in Figure 4.

Existing Transit Services

Existing transit services in the study area are provided by the VTA and are shown on Figure 5.

VTA Bus Service

The project site is primarily served by seven VTA bus routes (Local Routes 22, 64A, 64B, 68, 500, 522, 568) and light rail. The nearest bus stops to the project site serve routes 22, 64A, 64B, and 522 and are located along both sides of Santa Clara Street, approximately 800 feet west of the project site. Table 2 provides the headways and hours of operation for the local bus routes and light rail by the VTA. The San Jose Diridon Station is located approximately ¼ mile from the project site, which provides connections to Caltrain, Amtrak, Altamont Corridor Express (ACE), Santa Cruz Metro, and Monterey-Salinas Transit.

Table 2
Existing VTA Services

Bus Route	Route Description	Closest Stop & Distance to Project Site	Weekday Hours of Operation[1]	Headway[1]
		VTA		
22	Palo Alto Transit Center - Eastridge	Montgomery Street and Santa Clara Street, 850 feet	4:45 am - 3:00 am	30 min
64A	McKee & White - Ohlone - Chynoweth Station	Montgomery Street and Santa Clara Street, 850 feet	5:30 am - 11:30 pm	30 min
64B	McKee & White - Almaden Expressway & Camden	Montgomery Street and Santa Clara Street, 850 feet	6:00 am - 9:05 pm	30 min
68	San Jose Diridon Station - Gilroy Transit Center	San Jose Diridon Station, 0.25 mi	4:45 am - 11:35 pm	15 min
500	San Jose Diridon Station - Berryessa BART	San Jose Diridon Station, 0.25 mi	4:35 am - 11:40 pm	15 min
522	Palo Alto Transit Center - Eastridge	Montgomery Street and Santa Clara Street, 850 feet	5:20 am - 11:15 pm	15 min
568	Gilroy Transit Center to San Jose Diridon	San Jose Diridon Station, 0.25 mi	5:25 am - 7:40 pm	30 min
Green Line	Old Ironsides - Winchester	San Jose Diridon Station, 0.25 mi	5:45 am - 12:35 am	20 min
SCVMC Shuttle	San Jose Diridon Station to Santa Clara Valley Medical Center	San Jose Diridon Station, 0.25 mi	6:45 am - 8:35 am; 2:40 pm - 5:40 pm	20 - 30 min

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

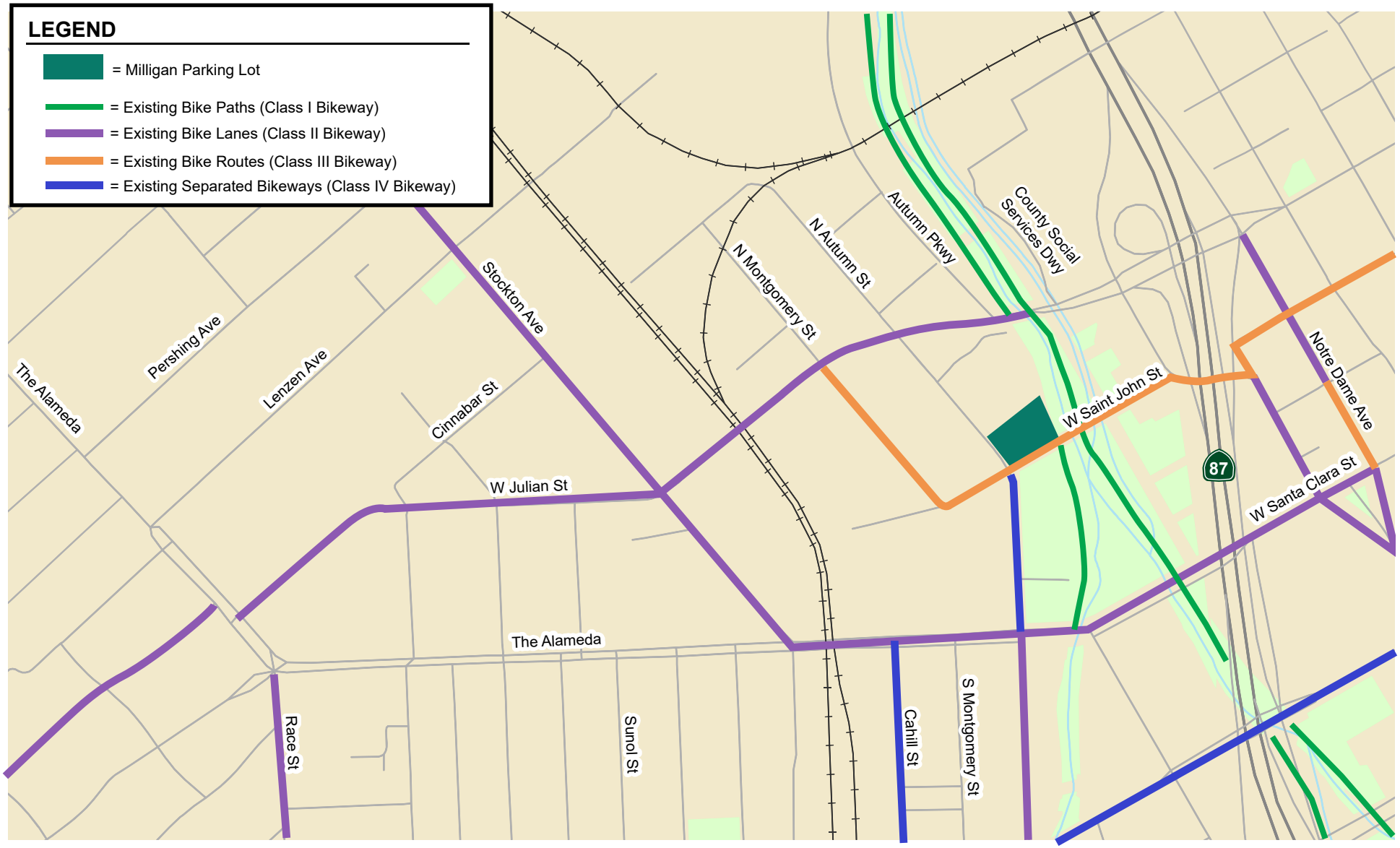


Figure 4
Existing Bicycle Facilities

NORTH
Not to Scale

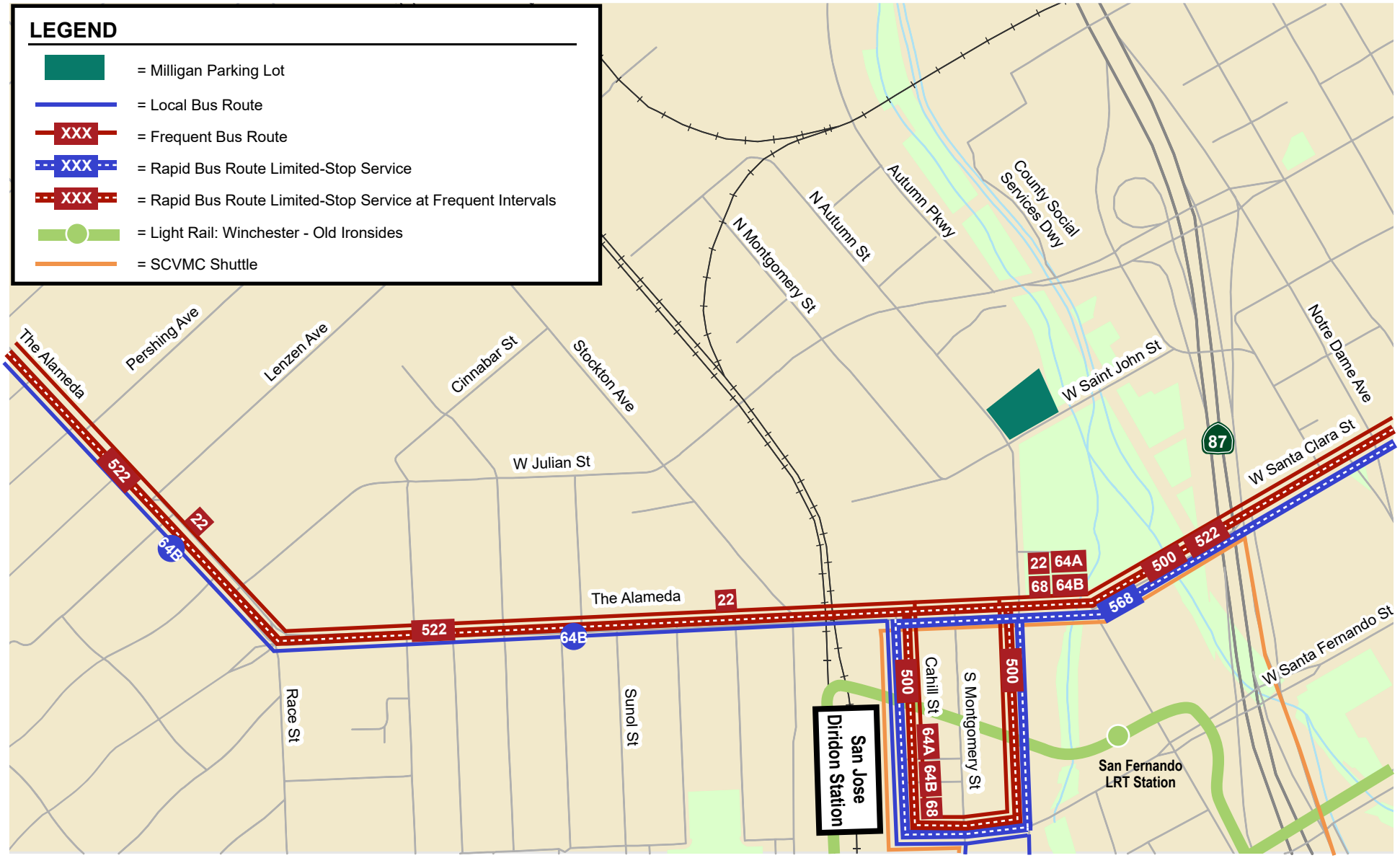


Figure 5
Existing Transit Services

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections are shown on Figure 6.

Existing Traffic Volumes

Existing PM peak hour traffic volumes for the study intersections were obtained from previous traffic studies and the City of San Jose, conducted between October 2013 and December 2018. A growth factor of 1% was applied per year from the previous count date to estimate the new count data. The counts were factored to 6-7 PM using a factor of 0.92 developed from prior counts. The existing peak-hour intersection volumes are shown in Figure 7. Intersection turning-movement counts conducted for this analysis are presented in Appendix A.

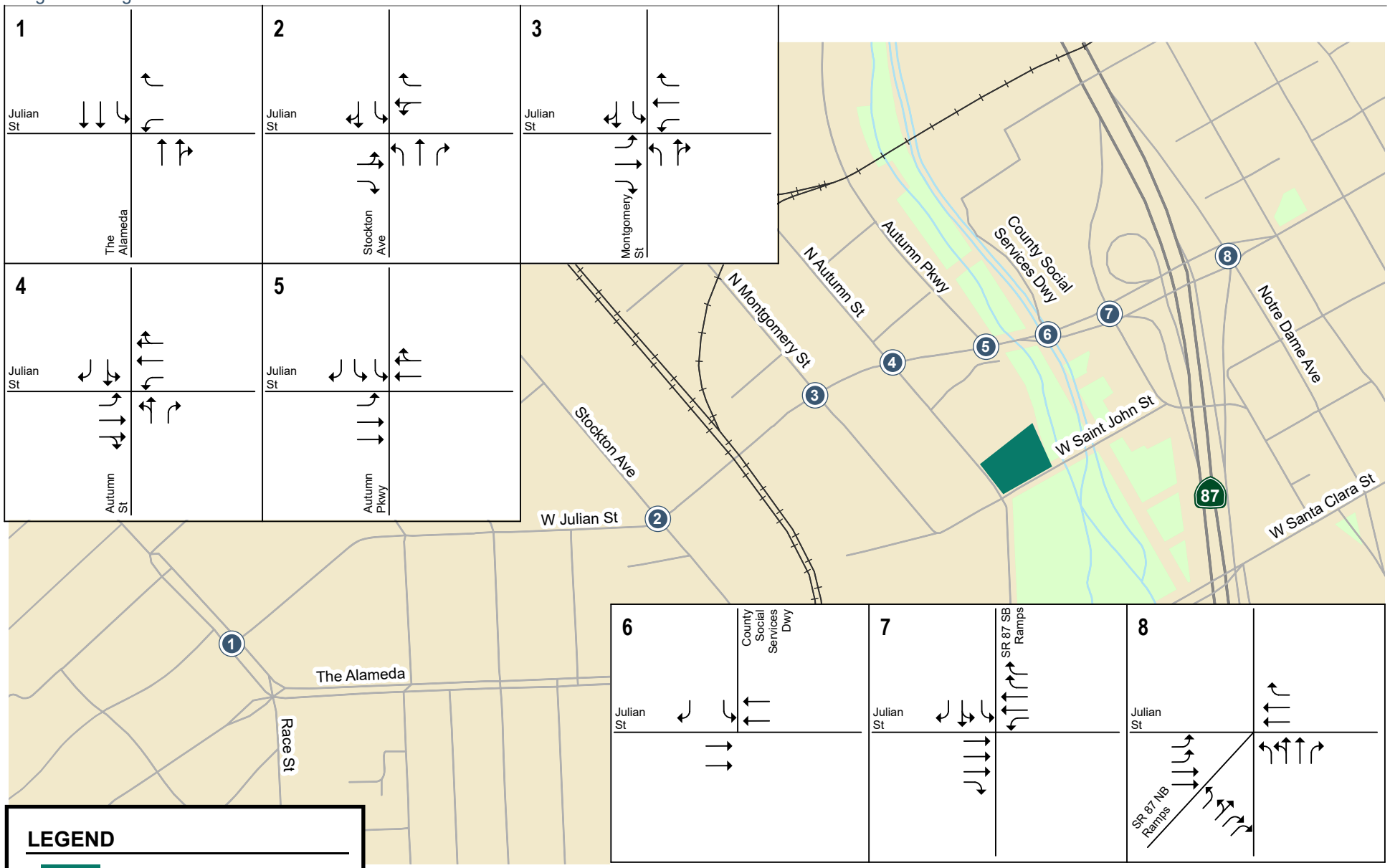


Figure 6
Existing Lane Configurations

HEXAGON

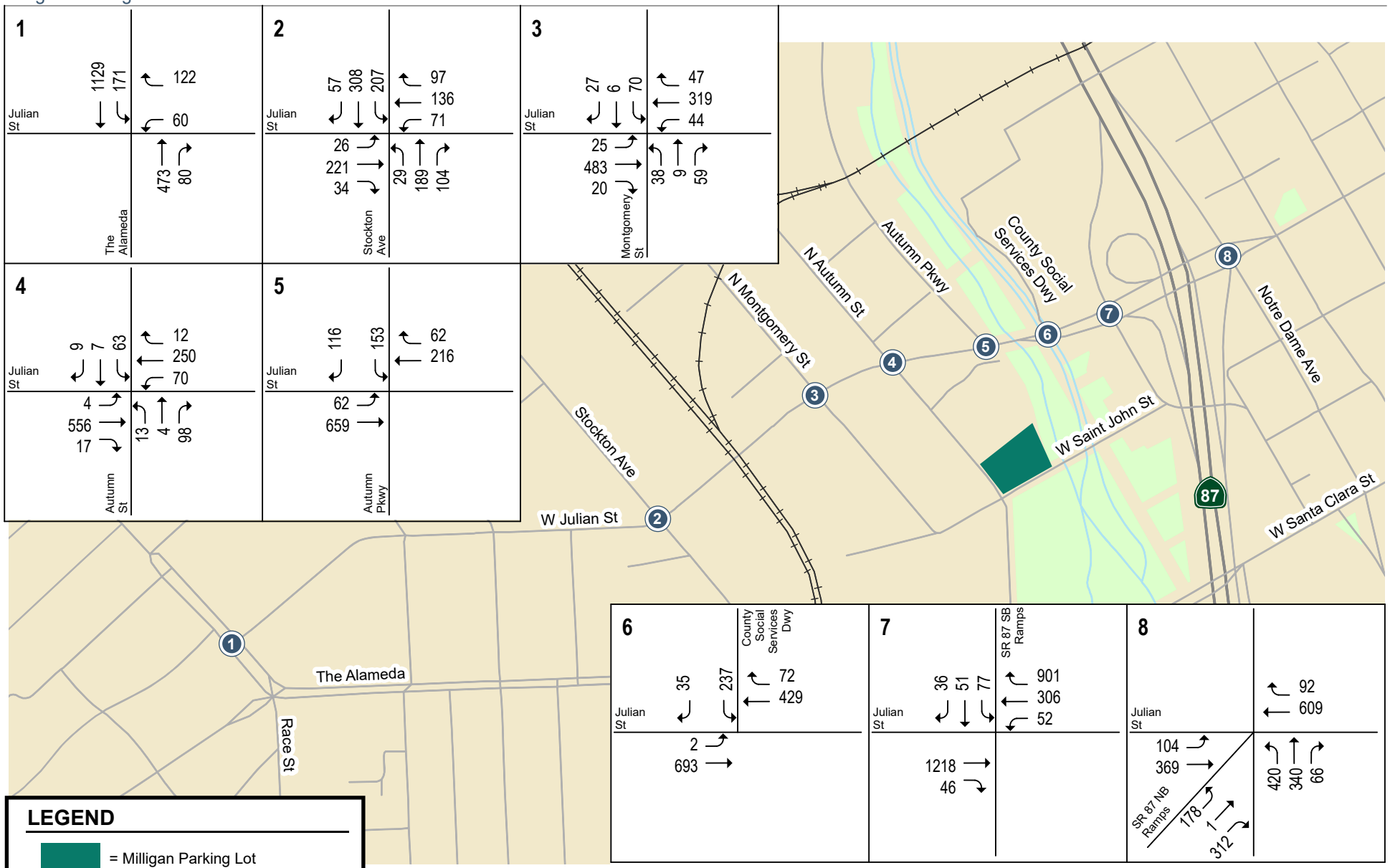


Figure 7
Existing Traffic Volumes

3. Local Transportation Analysis

This chapter describes the local transportation analysis including the method by which project traffic is estimated, intersection operations analysis for all proposed project scenarios, any adverse intersection traffic effects caused by the project, intersection vehicle queuing analysis, site access and on-site circulation review.

Intersection Operations Analysis

The San Jose intersection analysis methodology and standards are 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. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described further in the following sections.

Trip Generation

Currently, there are 118 parking spaces at the existing parking lot, which is currently not being utilized. The project proposes to construct 325 parking spaces on a parcel comprising of the existing 118 parking space lot and an automotive repair shop. The project would not add any trips to the study area because it simply replaces existing parking. However, trips would be reoriented from the parking lots they are now using to the Milligan lot. The effects of the rerouted trips on intersections near the Milligan lot were determined. It should be noted that the West Downtown Mixed-Use project may change the road network so that Cahill Street would connect to N. Montgomery Street, and W. St. John Street would be extended until it connects with Cahill Street perpendicularly. This potential change was not studied because it is not known if or when it will occur. The reduced traffic at intersections near the existing parking lots south of SAP Center was not studied.

To determine the number of rerouted trips, it was assumed that the 325-space Milligan lot would be full for SAP Center events. Based on past studies of sporting events with a 7:00 PM start time, fans start arriving around 5 PM and continue to arrive until, and even after, the start time of 7:00 PM. Typically, a Sharks game begins at 7:30 PM. Therefore, by assuming a start time of 7:00 PM, the analysis herein

provides a conservative (high) estimate of traffic during the 5:00-6:00 PM and 6:00-7:00 PM time periods.

The percentage of vehicles arriving within a specified time period was determined based on the Fehr & Peers memorandum (dated 5/14/2021). Applying the arrival pattern that was observed, it is estimated that 60 percent of attendees would arrive one hour or less before the game start time (6:00 to 7:00 PM). The remaining attendees are expected to arrive more than one hour before the game start time or after the game start time. Based on the percentages of the attendees, there would be 195 vehicles arriving in the busiest hour, which would be 6:00 to 7:00 PM. Table 3 shows the Milligan trip generation estimates according to the anticipated arrival rates.

Table 3
Project Trip Generation Estimates

Land Use	Size		Arrival Adjustment[1]	PM Peak Hour In	PM Peak Hour Out
Proposed and Existing Uses					
Proposed Milligan Parking Lot	325	Spaces			
Existing Parking Spaces	118	Spaces			
Net Project Spaces	**207**	**Spaces**			
Time Period Scenario					
Attendees arriving 1 hour or less before a Game at Milligan Lot	325	Spaces	60%	195	*

Note:
* = It is expected that a small amount of vehicles may be leaving the lots during the peak hour prior to a game since the lots will be open to the public. However, businesses and homes in the area have their own separate parking. Therefore, the number of non-event parked vehicles is expected to be minor.

1. SAP Center, time period adjustment based on previous traffic memorandum, *Supplement Analysis for the Downtown West Mixed-Use Project - SAP Center Access Analysis, 2021*.

Trip Distribution and Assignment

The trip distribution pattern for the project was estimated based on the location of access points to the SAP Center area. The peak-hour vehicle trips associated with the project were added to the roadway network in accordance with the trip distribution pattern, the roadway network connections, and the locations of the project driveway. All project trips would enter and exit the project site via the full-access driveways on Autumn Street and St. John Street. The majority of trips are expected to arrive and depart via the freeways serving the immediate vicinity (approximately 60 percent via SR 87). Trip distribution is shown in Figure 8 and trip assignment is shown in Figure 9.

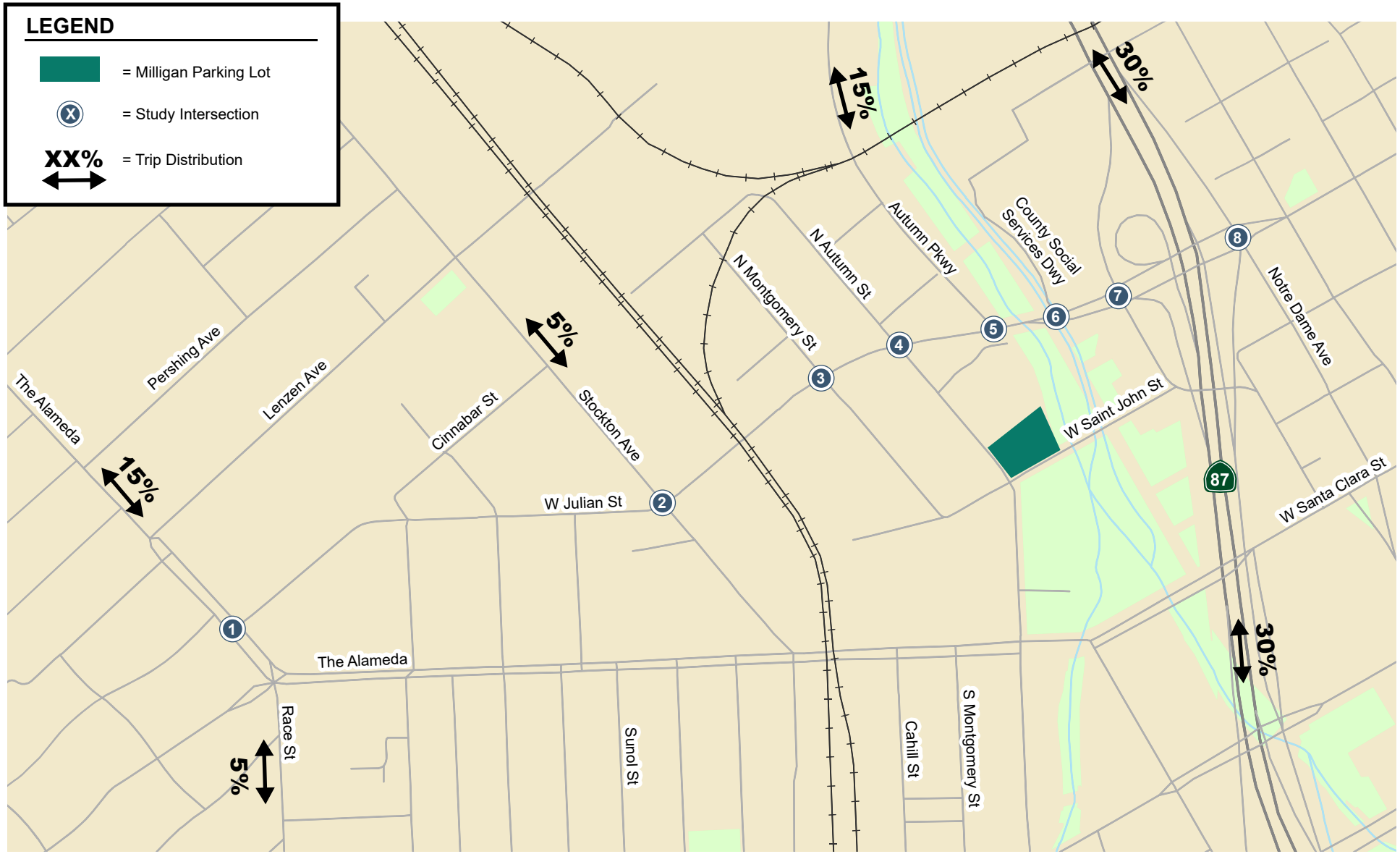


Figure 8
Project Trip Distibution

NORTH
Not to Scale

Milligan Parking Lot

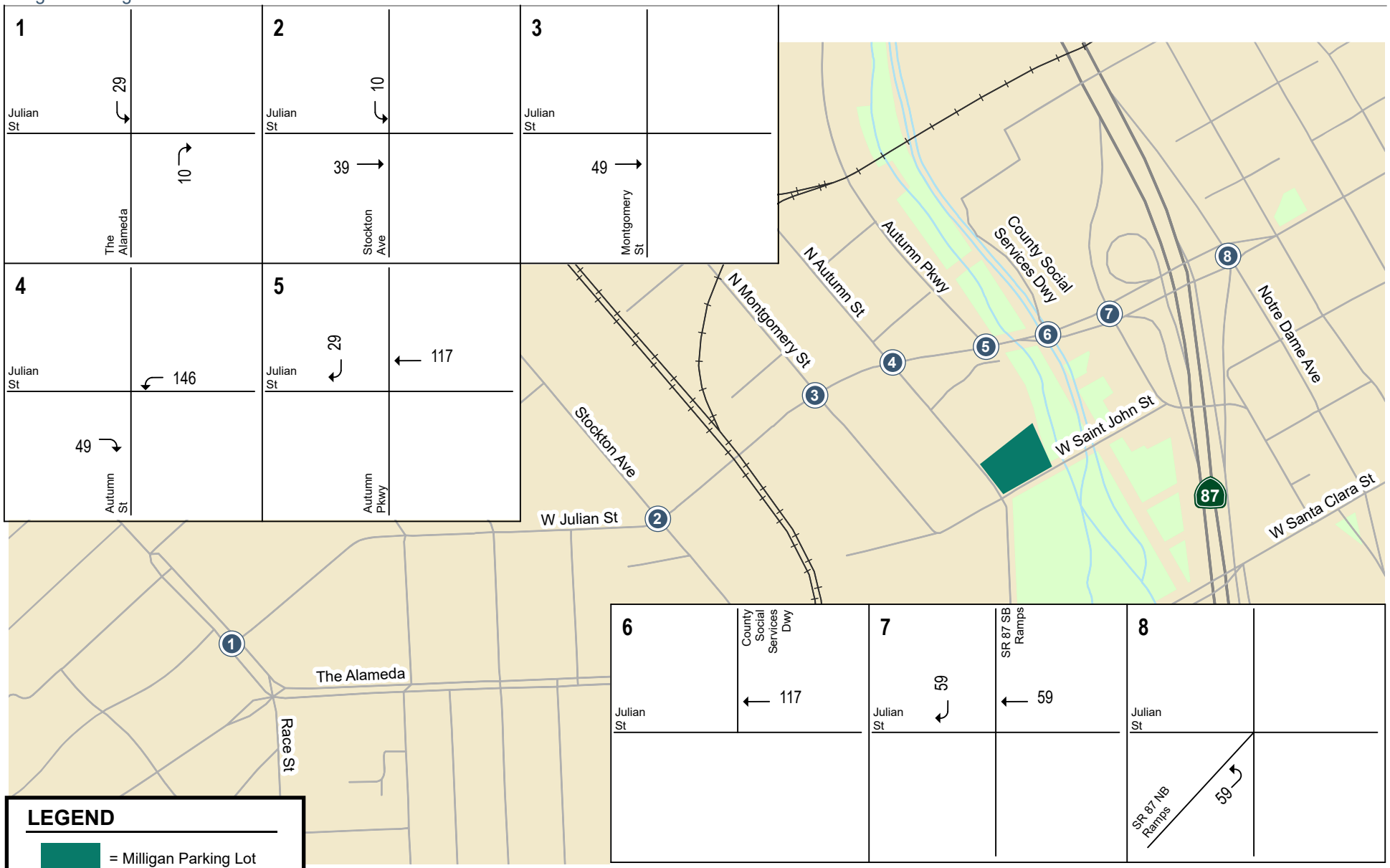


Figure 9
Project Trip Assignment

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Traffic Volumes under Event and Project Conditions

Traffic operations were evaluated for three event scenarios: existing event conditions (no project), event conditions with the Milligan parking lot, and event conditions with the Milligan lot plus the Lot E parking garage. Existing event conditions without the project include traffic using existing parking lots A, B, and C that are adjacent to the SAP Center and have access off of Julian Street. Event conditions with the project include using the Lot E and exclude Lots A, B, and C. Table 4 shows the added traffic from the proposed Milligan Lot and the proposed Lot E Parking garage. Event (no project) traffic volumes are shown on Figure 10. Event (with the Milligan Lot Only) traffic volumes are shown on Figure 11.

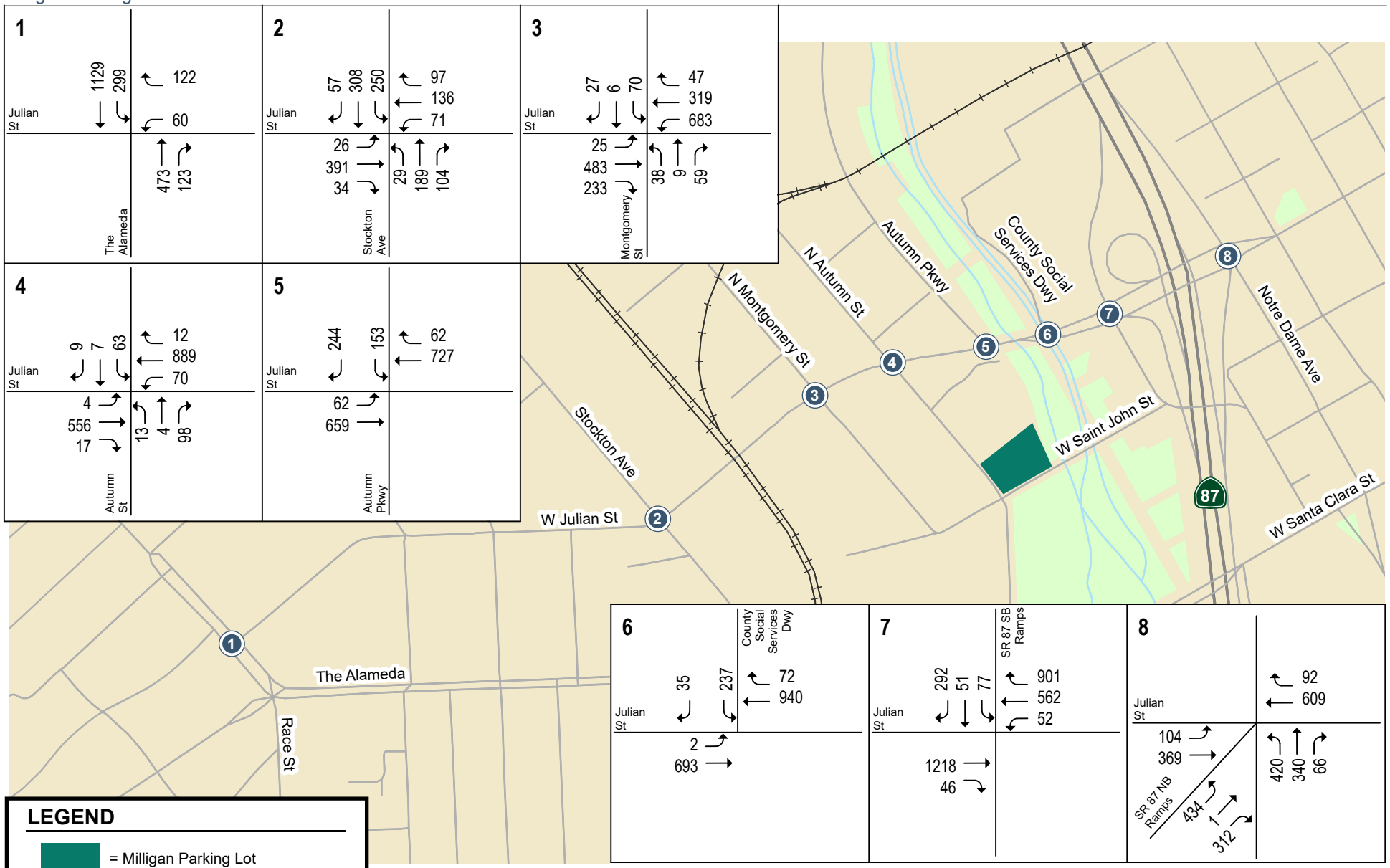
Figure 12 shows the traffic volumes for both event scenarios with the Milligan lot and with the Lot E garage.

Table 4
Added Traffic from Milligan Lot and Lot E

Parking Uses	Size	Arrival Adjustment[1]	PM Peak Hour[2] In	PM Peak Hour[2] Out
Milligan Parking Lot	325 Spaces	60%	195	*
Lot E Parking Garage	1,200 Spaces		720	*

Note:
* = It is expected that a small amount of vehicles may be leaving the lots during the peak hour prior to a game since the lots will be open to the public. However, businesses and homes in the area have their own separate parking. Therefore, the number of non-event parked vehicles is expected to be minor.

1. SAP Center, time period adjustment based on previous traffic memorandum, *Supplement Analysis for the Downtown West Mixed-Use Project - SAP Center Access Analysis, 2021*.
2. Number of vehicles arriving 1 hour or less before a game.



LEGEND

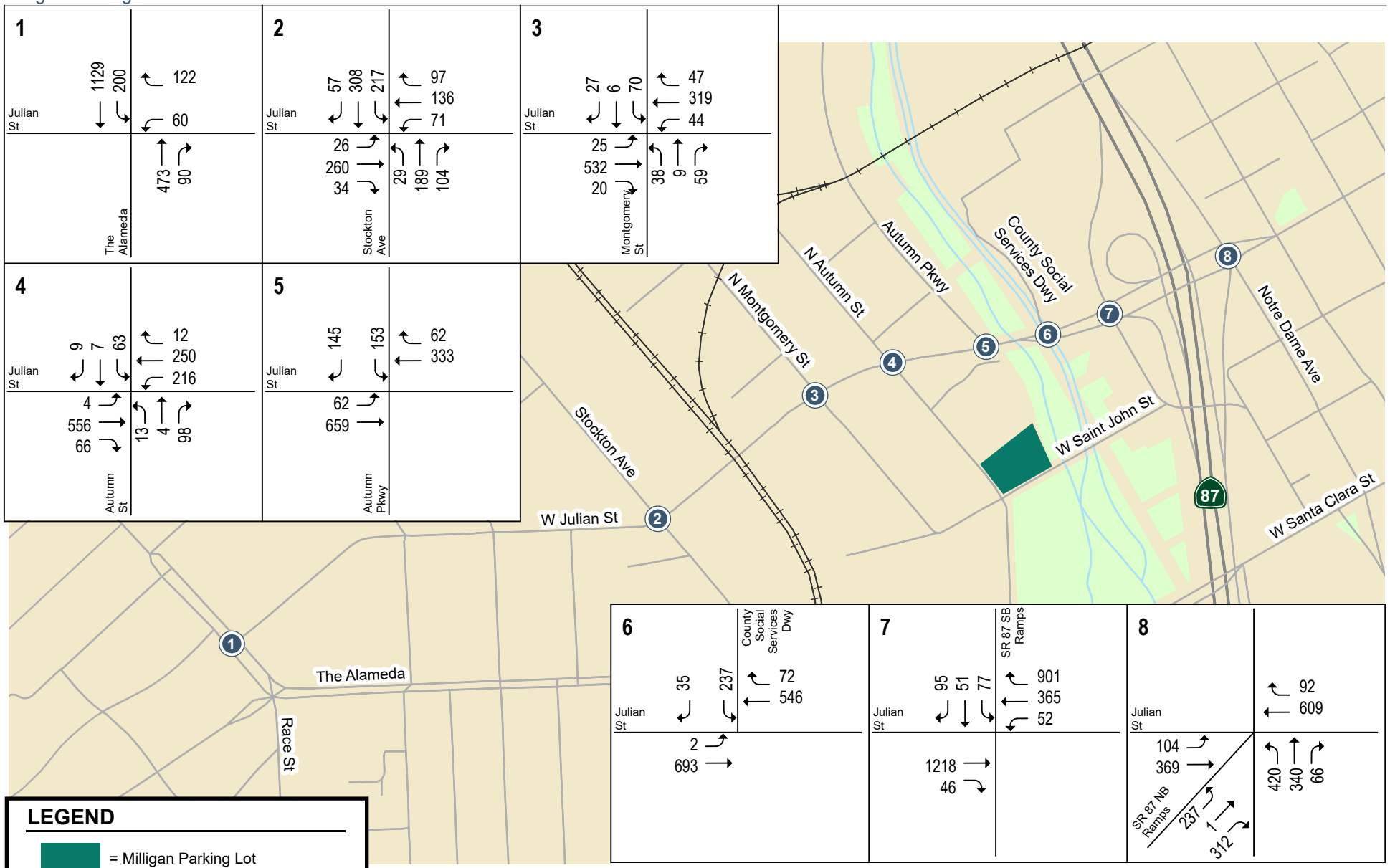
- = Milligan Parking Lot
- X = Study Intersection
- XX = PM Peak-Hour Traffic Volumes

Figure 10
Event (No Project) Traffic Volumes

HEXAGON

NORTH
Not to Scale

Milligan Parking Lot



LEGEND

= Milligan Parking Lot

= Study Intersection

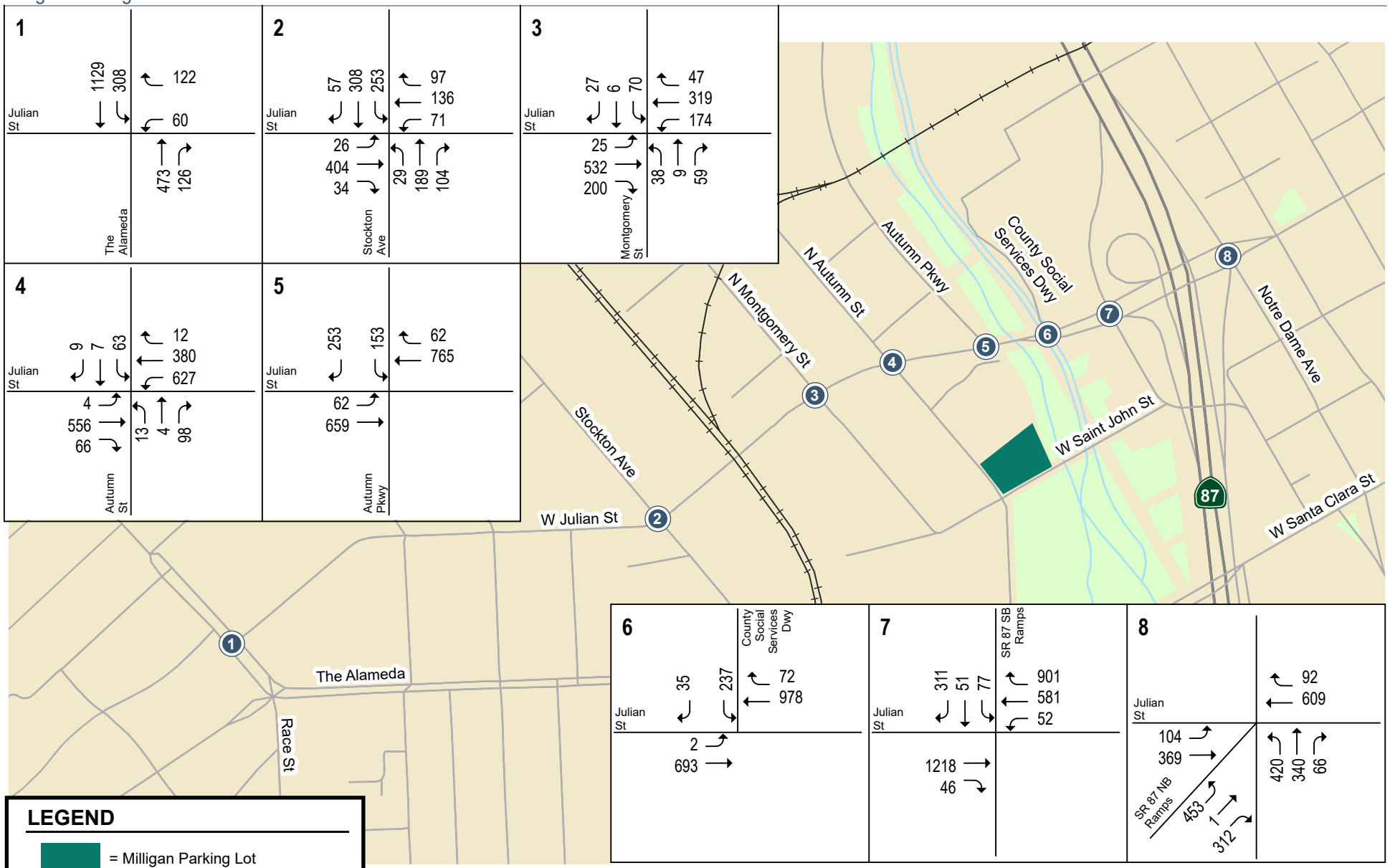
XX = PM Peak-Hour Traffic Volumes

Figure 11
Event (with Milligan Lot Only)

HEXAGON

NORTH
Not to Scale

Milligan Parking Lot



LEGEND

= Milligan Parking Lot

X = Study Intersection

XX = PM Peak-Hour Traffic Volumes

Figure 12
Cumulative Traffic Volumes

HEXAGON

NORTH
Not to Scale

Intersection Queuing Analysis

The operations analysis is based on vehicle queuing for high-demand movements at intersections (see Table 5). The following left-turn movements were examined as part of the queuing analysis for the project:

- Southbound left-turn from The Alameda to Julian Street
- Southbound left-turn from Stockton Avenue to Julian Street
- Westbound left-turn from Julian Street to Autumn Street
- Left-turn from the SR 87 northbound off-ramp to Julian Street
- Westbound left-turn from Julian Street to Montgomery Street

The estimated queue lengths based on the Poisson numerical calculations show queuing deficiencies for three of the four studied turn pockets. Locations where the vehicular queues would be deficient are discussed below.

Table 5
Intersection Vehicle Queuing Analysis Results

Measurement	The Alameda and Julian SBL PM	Stockton Avenue and Julian Street SBL PM	Autumn Street and Julian Street WBL PM	SR 87 NB Ramps and Julian Street NWBL PM	Montgomery Street and Julian Street WBL PM
Existing (No Event)					
Cycle/Delay [1] (sec)	138	95	56	152	56
Volume (vphpl)	171	207	70	89	44
Total 95th %. Queue (veh.)	11	10	3	7	2
Total 95th %. Queue (ft.) [2]	275	250	75	175	50
Total Storage	200	750	125	300	125
Adequate (Y/N)	**N**	Y	Y	Y	Y
Event w/ Lot A ,B, C					
Cycle/Delay [1] (sec)	138	95	56	152	56
Volume (vphpl)	299	250	70	217	683
Total 95th %. Queue (veh.)	17	11	3	14	16
Total 95th %. Queue (ft.) [2]	425	275	75	350	400
Total Storage	200	750	125	300	125
Adequate (Y/N)	**N**	Y	Y	**N**	**N**
Event w/ Project (no Lot A, B, C)					
Cycle/Delay [1] (sec)	138	95	56	152	56
Volume (vphpl)	200	217	216	119	44
Total 95th %. Queue (veh.)	12	10	7	9	2
Total 95th %. Queue (ft.) [2]	300	250	175	225	50
Total Storage	200	750	125	300	125
Adequate (Y/N)	**N**	Y	**N**	Y	Y
Event w/ Project and Lot E (no Lot A, B, C)					
Cycle/Delay [1] (sec)	138	95	56	152	56
Volume (vphpl)	308	253	626	227	174
Total 95th %. Queue (veh.)	18	11	15	15	6
Total 95th %. Queue (ft.) [2]	450	275	375	375	150
Total Storage	200	750	125	300	125
Adequate (Y/N)	**N**	Y	**N**	**N**	**N**

Notes:
WBL = westbound left movement; NWBL = northwestbound left movement; SBL = southbound left movement
[1] Vehicle queue calculations based on cycle length for signalized intersections and worst approach delay for unsignalized intersections.
[2] Assumes 25 Feet Per Vehicle Queued.

The Alameda and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the southbound left-turn lane at The Alameda to Julian Street intersection currently exceeds the existing vehicle storage capacity during the 6-7 PM peak hour during events. The existing left-turn lane provides approximately 200 feet of vehicle storage, which can accommodate 8 vehicles. The project and Lot E would increase the 95th percentile vehicle queue by 1 vehicle. There is no room in the median to lengthen the left turn pocket.

Autumn Street and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the westbound left-turn lane at the Julian Street to Autumn Street intersection would exceed the vehicle storage capacity during the 6-7 PM peak hour during events with the addition of project traffic. The existing left-turn lane provides

approximately 125 feet of vehicle storage, which can accommodate 5 vehicles. The project and Lot E would increase the 95th percentile vehicle queue by 3 vehicles. There is no room in the median to lengthen the left turn pocket.

SR 87 Northbound Ramps and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the freeway off-ramp left-turn lanes on the SR 87 northbound off-ramp at Julian Street currently exceeds the existing vehicle storage capacity during the peak hours of traffic during events. Each of the two left-turn lanes provides approximately 300 feet of vehicle storage, which can accommodate 12 vehicles. The project and Milligan Lot would increase the 95th percentile vehicle queues by 1 vehicle during the game time peak hour during events. While the queue would extend beyond the striped lanes, it would not back up onto the freeway mainline.

Montgomery Street and Julian Street

The queuing analysis indicates that the 95th percentile queue for the westbound left-turn lane at the Montgomery Street and Julian Street intersection currently exceeds the vehicle storage capacity during the 6-7 PM peak hour during events. The existing left-turn lane provides approximately 125 feet of vehicle storage, which can accommodate 5 vehicles. The project and Lot E would decrease the 95th percentile vehicle queue by 10 vehicles, but the queue would still exceed the vehicle storage capacity by 1 vehicle. There is no room in the median to lengthen the left turn pocket.

Vehicular Access and Circulation

The site access and circulation evaluation is based on the February 18, 2020 site plan prepared by Kimley Horn Consulting Group, Inc. Site access and on-site vehicular circulation were reviewed in accordance with generally accepted traffic engineering standards.

Site Access

The project generated traffic would access the site via two full-access driveways: one driveway on St. John Street and one driveway on Autumn Street. As currently proposed the full-access driveway on Autumn Street would be located approximately 240 feet north of St. John Street, and the full-access driveway on St. John Street would be located approximately 160 feet east of Autumn Street. As shown in Table 3, there would be 195 inbound vehicles entering the project driveways during the peak hour before events.

According to the City of San Jose Department of Transportation (DOT) Geometric Design Guidelines, the typical width for a driveway shall not be less than 12 feet wide for ingress and egress. The typical width for a two-way driveway is 20 or 26 feet. Based on the site plan, the full-access driveways on St. John Street and Autumn Street are shown to be at least 26 feet wide, which would meet the City requirement.

Driveway Operations Before Events

The driveway along Autumn Street would be busiest an hour before game time. It is expected that the project trips would use the Autumn Street driveway since it provides access from SR 87 Ramp via Julian Street. Project trips at this driveway equates to an average of approximately 3 vehicles per minute entering the driveway. During the game time peak hour, the inbound vehicles turning left from southbound Autumn Street may need to pause momentarily if there is an on-coming vehicle on northbound Autumn Street. The delays and queues resulting from the inbound left turns are expected to be minimal given the low traffic volumes on this segment of Autumn Street. It was assumed that the St.

John Street driveway would not be used before games, but if it were, that would reduce the volume entering the other driveways.

Driveway Operations After Events

It is anticipated that at the end of a game or event, all fans would exit the Arena at the same time and seek to exit the parking lots. The Lot E garage would have 1,200 parking spaces and could exit to Montgomery Street, St. John Street, or Autumn Street. The Milligan lot would have 325 parking spaces and could exit to Autumn Street or to St. John Street. Added together, the amount of traffic that could exit toward Julian Street is 1,525 (1,200+325) vehicles, which is beyond the hourly capacity of the intersections along Julian Street. The capacity of the intersections along Julian Street can be assumed to be about 1,500 vehicles per hour with police control. Police would help direct the traffic flow out of the parking structures in order to maintain a steady flow of traffic out of the area. In order to account for any ambient traffic on Julian Street after events, it is prudent to assume that 1,000 vehicles per hour of Arena traffic could be accommodated at each intersection. It is also assumed that ambient traffic on Julian Street is no more than 500 vehicles per hour after events (10pm). Thus, it is recommended that a portion of the Lot E garage traffic be assigned to Montgomery Street and required to turn left at Julian Street (400 vehicles). It is recommended that the remainder of traffic from the Lot E garage be assigned to Autumn Street and required to turn right on Julian Street (800 vehicles). With a driveway for Lot E along St. John Street, 400 out of the 800 remaining vehicles would utilize St. John Street first, then turn left onto Autumn Street to join the Autumn Street driveway traffic. It is recommended that a portion of traffic from the Milligan lot be required to exit to St. John Street toward the east (165 vehicles). It is recommended that the remainder of traffic from the Milligan Lot be required to exit to Autumn Street and required to turn right on Julian Street (160 vehicles).

The recommended driveway operations plan after events is shown in Figure 13.

On-Site Circulation

On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards. The project would have a full-access driveway on Autumn Street and a full-access driveway on St. John Street that connect the parking lot. In the parking lot, there would be a drive aisle that leads to the parking spaces. The parking lot would have 90-degree perpendicular parking spaces. The drive aisle width on-site would be approximately 26 feet. Each driveway width is approximately 26 feet. The City of San Jose Off-Street Parking Design Standards for Uniform-size Car Spaces at a 90-degree angle require that the width of a two-way aisle be a minimum of 26 feet. Therefore, the width of the drive aisle would provide sufficient space for vehicles to back out of the of the parking stalls.

Parking Stall Dimensions

The City of San Jose Off-Street Parking Design Standards for Uniform-size Car Spaces require that standard 90-degree parking stalls be a minimum of 8.5 feet wide by 17 feet long. The site plan shows the parking stalls would be 8.5 feet wide and 17 feet long, which complies with City parking design standards.

Pedestrian Facilities

Pedestrian facilities consist of crosswalks and sidewalks in the immediate vicinity of the project site. Crosswalks with pedestrian signal heads and push buttons are located at all signalized intersections in the study area. Sidewalks are present between the parking lot and the SAP Center. Pedestrians would exit the parking lot and walk along St. John Street to the north side of the SAP Center. In general, the broader existing network of sidewalks exhibits good connectivity.

Construction Activities

Typical activities related to the construction of any development could include lane narrowing and/or lane closures and sidewalk closures. In the event of any type of street 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. The project would be required to submit a construction management plan for City approval that addresses schedule, closures/detours, staging, parking, and truck routes.

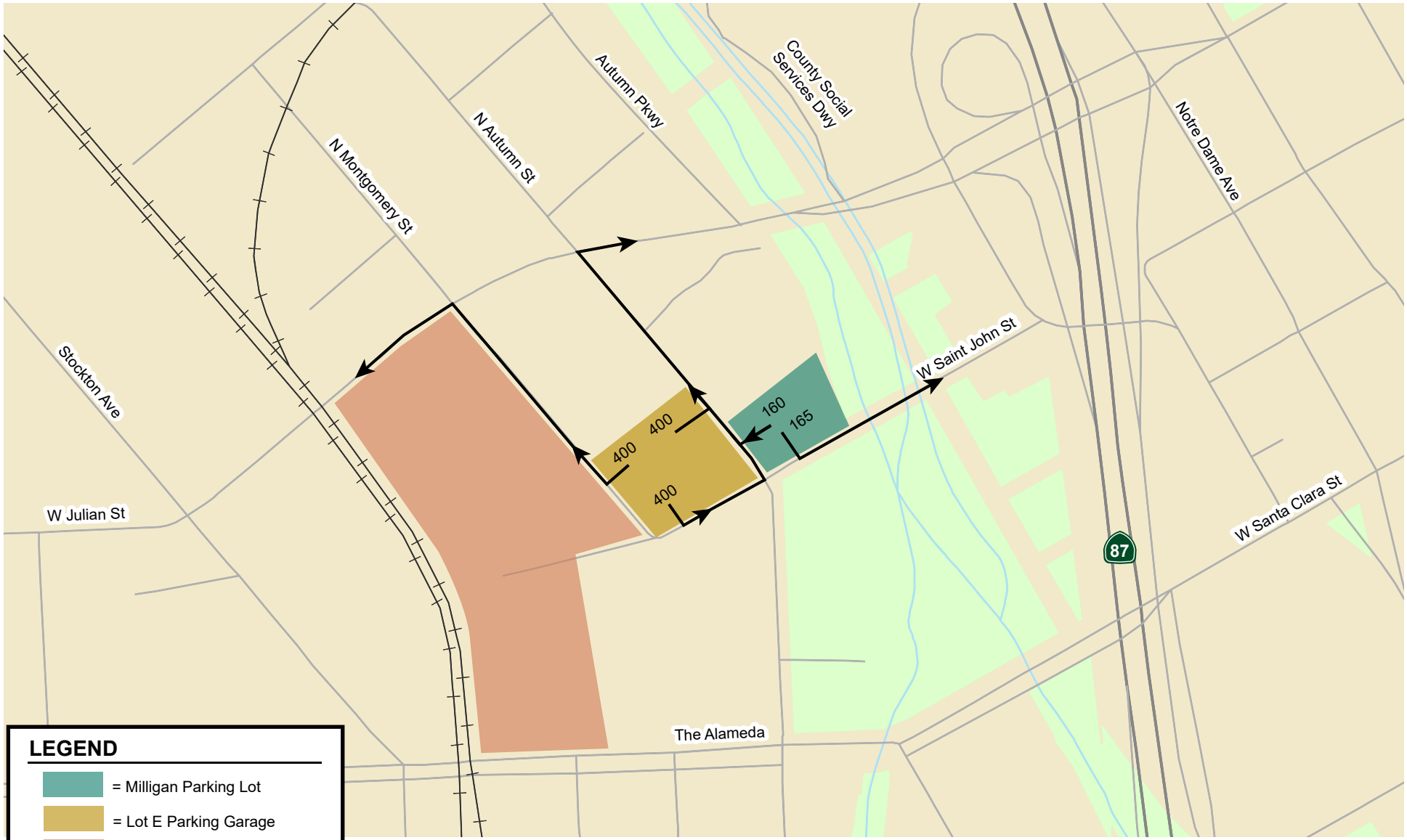


Figure 13
Driveway Operations after Events

NORTH
Not to Scale

4. 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 TA report for the project includes a CEQA transportation analysis and a local transportation analysis (LTA). A more detailed LTA may be provided once a detailed site plan is available.

Project-Level Vehicle Miles Traveled (VMT) Analysis

The proposed project is a parking lot development. Construction of new developments in the Diridon Station Area would remove several parking lots south of the SAP Center. Since the project would replace parking that already exists today, there would be no added trips to the area. In addition, the West Downtown Mixed-Use project would also provide parking to offset the loss in parking. Therefore, there would be no change to the VMT.

Local Transportation Effects

Project Trip Estimates

The project would not add any trips to the study area because it simply replaces existing parking. However, trips would be reoriented from the parking lots they are now using to the Milligan lot. The effects of the rerouted trips on intersections near the Milligan lot were determined. It should be noted that the West Downtown Mixed-Use project may change the road network so that Cahill Street would connect to N. Montgomery Street and W. St. John Street would be extended until it connects with Cahill Street perpendicularly. The study did not include this potential change because it is not known if or when it will occur. The reduced traffic at intersections near the existing parking lots south of SAP Center was not studied.

To determine the number of rerouted trips, it was assumed that the 325-space Milligan lot would be full for SAP Center events. Based on past studies of sporting events with a 7:00 PM start time, fans start arriving around 5 PM and continue to arrive until, and even after, the start time of 7:00 PM. Typically, a Sharks game begins at 7:30 PM. Therefore, by assuming a start time of 7:00 PM, the analysis herein provides a conservative (high) estimate of traffic during the 5:00-6:00 PM and 6:00-7:00 PM time periods.

The percentage of vehicles arriving within a specified time period was determined based on the Fehr & Peers memorandum (dated 5/14/2021). Applying the arrival pattern that was observed, it is estimated that 60 percent of attendees would arrive one hour or less before the game start time (6:00 to 7:00 PM). The remaining attendees are expected to arrive more than one hour before the game start time or after the game start time. Based on the percentages of the attendees, there would be 195 vehicles arriving in the busiest hour, which would be 6:00 to 7:00 PM.

Intersection Vehicle Queuing Operations

The Alameda and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the southbound left-turn lane at The Alameda to Julian Street intersection currently exceeds the existing vehicle storage capacity during the 6-7 PM peak hour during events. The existing left-turn lane provides approximately 200 feet of vehicle storage, which can accommodate 8 vehicles. The project and Lot E would increase the 95th percentile vehicle queue by 1 vehicle. There is no room in the median to lengthen the left turn pocket.

Autumn Street and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the westbound left-turn lane at the Julian Street to Autumn Street intersection would exceed the vehicle storage capacity during the 6-7 PM peak hour during events with the addition of project traffic. The existing left-turn lane provides approximately 125 feet of vehicle storage, which can accommodate 5 vehicles. The project and Lot E would increase the 95th percentile vehicle queue by 3 vehicles. There is no room in the median to lengthen the left turn pocket.

SR 87 Northbound Ramps and Julian Street

The queuing analysis indicates that the 95th percentile vehicle queue for the freeway off-ramp left-turn lanes on the SR 87 northbound off-ramp at Julian Street currently exceeds the existing vehicle storage capacity during the peak hours of traffic during events. Each of the two left-turn lanes provides approximately 300 feet of vehicle storage, which can accommodate 12 vehicles. The project and Milligan Lot would increase the 95th percentile vehicle queues by 1 vehicle during the game time peak hour during events. While the queue would extend beyond the striped lanes, it would not back up onto the freeway mainline.

Montgomery Street and Julian Street

The queuing analysis indicates that the 95th percentile queue for the westbound left-turn lane at the Montgomery Street and Julian Street intersection currently exceeds the vehicle storage capacity during the 6-7 PM peak hour during events. The existing left-turn lane provides approximately 125 feet of vehicle storage, which can accommodate 5 vehicles. The project and Lot E would decrease the 95th percentile vehicle queue by 10 vehicles, but the queue would still exceed the vehicle storage capacity by 1 vehicle. There is no room in the median to lengthen the left turn pocket.

Other Transportation Issues

The proposed site plan shows adequate site access and on-site circulation. The project provides adequate pedestrian circulation by providing sidewalks along its frontage and an accessible path between the parking lot and the SAP Center.

Hexagon has the following recommendations resulting from the parking, site access, and circulation analysis.

Driveway Operations After Events

- It is anticipated that at the end of a game or event, all fans would exit the Arena at the same time and seek to exit the parking lots. The Lot E garage would have 1,200 parking spaces and could exit to Montgomery Street, St. John Street, or Autumn Street. The Milligan lot would have 325 parking spaces and could exit to Autumn Street or to St. John Street. Added together, the amount of traffic that could exit toward Julian Street is 1,525 (1,200+325) vehicles, which is beyond the hourly capacity of the intersections along Julian Street. The capacity of the intersections along Julian Street can be assumed to be about 1,500 vehicles per hour with police control. Police would help direct the traffic flow out of the parking structures in order to maintain a steady flow of traffic out of the area. In order to account for any ambient traffic on Julian Street after events, it is prudent to assume that 1,000 vehicles per hour of Arena traffic could be accommodated at each intersection. It is also assumed that ambient traffic on Julian Street is no more than 500 vehicles per hour after events (10 pm). Thus, it is recommended that a portion of the Lot E garage traffic be assigned to Montgomery Street and required to turn left at Julian Street (400 vehicles). It is recommended that the remainder of traffic from the Lot E garage be assigned to Autumn Street and required to turn right on Julian Street (800 vehicles). With a driveway for Lot E along St. John Street, 400 out of the 800 remaining vehicles would utilize St. John Street first, then turn left onto Autumn Street to join the Autumn Street driveway traffic. It is recommended that a portion of traffic from the Milligan lot be required to exit to St. John Street toward the east (165 vehicles). It is recommended that the remainder of traffic from the Milligan Lot be required to exit to Autumn Street and required to turn right on Julian Street (160 vehicles).

Milligan Parking Lot Development
Technical Appendices

December 2021

Appendix A
Traffic Counts

TRAFFIC COUNTS CONVERTED TO 6-7 PM PEAK HOUR

	The Alameda and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		4:30-5:30	1/26/2017
1	3227	Base Volume		0	499	84	181	1191	0	0	0	0	63	0	129	2147		3 years
		Annual Growth Rate	1%	0	514	87	186	1227	0	0	0	0	65	0	133			
		6-7 PM Factor Rate	92%	0	473	80	171	1129	0	0	0	0	60	0	122			

	Stockton Avenue and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		5:00-6:00	2/7/2018
2	3608	Base Volume		31	201	111	221	328	61	27	235	36	75	145	103	1574		2 years
		Annual Growth Rate	1%	32	205	113	225	335	62	28	240	37	77	148	105			
		6-7 PM Factor Rate	92%	29	189	104	207	308	57	26	221	34	71	136	97			

	Montgomery Street and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		4:50-5:50	10/14/2014
3	3606	Base Volume		39	9	60	72	6	27	25	495	21	45	327	48	1174		6 years
		Annual Growth Rate	1%	41	10	64	76	6	29	27	525	22	48	347	51			
		6-7 PM Factor Rate	92%	38	9	59	70	6	27	25	483	20	44	319	47			

	Autumn Street and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		4:45-5:45	10/5/2017
4	3263	Base Volume		14	4	104	66	8	10	4	586	18	74	264	13	1165		3 years
		Annual Growth Rate	1%	14	4	107	68	8	10	4	604	19	76	272	13			
		6-7 PM Factor Rate	92%	13	4	98	63	7	9	4	556	17	70	250	12			

	Autumn Parkway and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		4:45-5:45	10/5/2017
5	4132	Base Volume		0	0	0	161	0	122	65	695	0	0	228	65	1336		3 years
		Annual Growth Rate	1%	0	0	0	166	0	126	67	716	0	0	235	67			
		6-7 PM Factor Rate	92%	0	0	0	153	0	116	62	659	0	0	216	62			

	County Social Services Driveway and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		4:30-5:30	10/15/2013
6	4006	Base Volume		0	0	0	241	0	35	2	702	0	0	435	73	1488		7 years
		Annual Growth Rate	1%	0	0	0	258	0	38	2	753	0	0	466	78			
		6-7 PM Factor Rate	92%	0	0	0	237	0	35	2	693	0	0	429	72			

	SR 87 SB Ramps and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		4:45-5:45	12/11/2018
7	3014	Base Volume		0	0	0	82	54	38	0	1298	49	56	326	960	2863		2 years
		Annual Growth Rate	1%	0	0	0	84	55	39	0	1324	50	57	333	979			
		6-7 PM Factor Rate	92%	0	0	0	77	51	36	0	1218	46	52	306	901			

	SR 87 NB Ramps and Julian Street														Total	Time	Date
	Int #			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR		5:00-6:00	12/11/2018
8	3013	Base Volume		448	363	71	190	1	332	111	393	0	0	649	98	2656		2 years
		Annual Growth Rate	1%	457	370	72	194	1	339	113	401	0	0	662	100			
		6-7 PM Factor Rate	92%	420	340	66	178	1	312	104	369	0	0	609	92			

* = Base Traffic Counts taken from CSJ Traffix