HEXAGON TRANSPORTATION CONSULTANTS, INC.

# Memorandum

To: Arlyn Villanueva, City of San Jose

Cc: Ms. Shannon George, David J. Powers & Associates, Inc.

From: Robert Del Rio, T.E.

Date: February 1, 2017

Subject: Museum Place Mixed-Use Development Traffic Operations Analysis

## Introduction

Hexagon Transportation Consultants, Inc. has completed a traffic operations analysis for the proposed Museum Place mixed-use development in Downtown San Jose. The project as proposed would consist of 306 residential units, 209,779 square feet (s.f.) of office space, 14,116 s.f. of retail space, 187 hotel rooms, and 60,000 s.f. of Museum space. The site is located at 200 Park Avenue, along the south side of Park Avenue adjacent to the Tech Museum. The proposed project would replace the existing Parkside Hall convention space/theater. The project proposes a three-level valet-only below-grade parking garage. Access to the parking garage will be provided by a single driveway on Park Avenue, which is proposed as a right-in and right/left-out driveway. The parking garage would include two standard parking spaces, 454 mechanical two-space-lifts (908 spaces total), and 90 spaces in aisles, for a total of 1,000 parking stalls. Figure 1 shows the project site location. Figure 2 shows the project site plan.

In addition, the proposed project would have a building footprint requiring an easement into the public right-of-way along the Almaden Avenue Pedestrian Paseo ("paseo"). The City will vacate Almaden Avenue and retain 40 feet from the western property line for a 20-foot paseo for the use of pedestrians and bicycles and 20 feet for an emergency access easement. No vehicular access shall be provided from Park Avenue along the paseo.

Since the project site is located in the Downtown Core area boundary, it is covered by the San Jose Downtown Strategy 2000 EIR. Accordingly, City staff has already concluded that the project is in conformance with the City of San Jose Transportation Level of Service Policy (Council Policy 5-3) and will not require preparation of a comprehensive Transportation Impact Analysis (TIA). The Public Works department has indicated, however, that a traffic operations study is required to identify potential operational issues that could occur as a result of the proposed project. This traffic study is intended to satisfy the City's request.

## Scope of Study

The purpose of the traffic operations study is to identify any potential operational issues that could occur as a result of the proposed project and to recommend the necessary improvements to ensure adequate access to the site is provided. Based on the proposed project size, site-generated traffic was estimated. Vehicular site access was evaluated based on the proposed driveway location. Parking and on-site vehicular circulation, in addition to pedestrian access and safety, also were evaluated.

## Existing Conditions

This section describes the existing conditions for all the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

**Figure 1**
**Site Location, Study Intersections and Project Trip Distributions, and Project Trip Assignments**

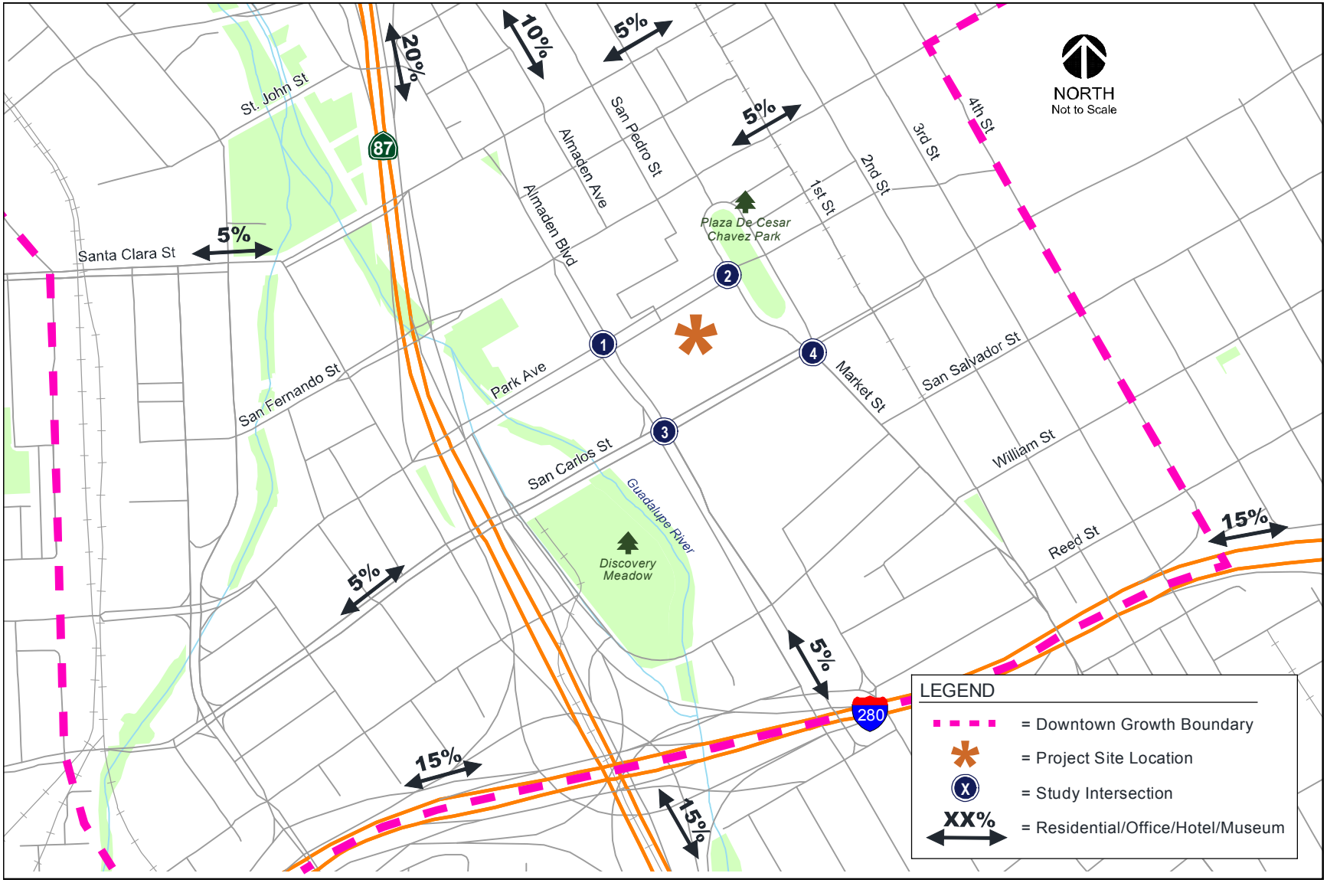
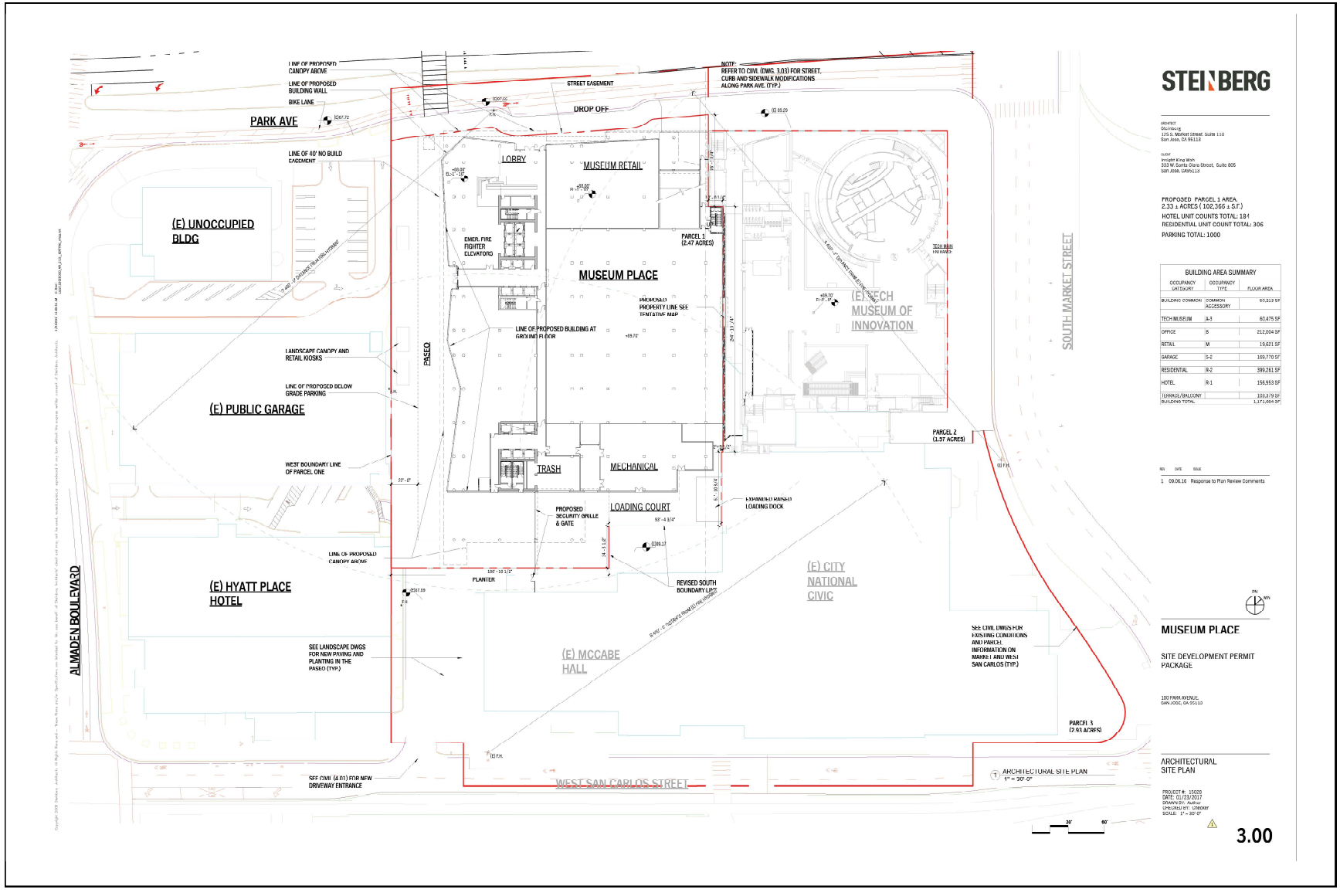


**Figure 2**
**Project Site Plan**



### *Existing Roadway Network*

Regional access to the project site is provided by SR 87 and I-280. Local site access is provided by Park Avenue, San Carlos Street, Almaden Boulevard, and Market Street. The local and regional roadways are described below.

*SR 87* is primarily a six-lane freeway (four mixed-flow lanes and two HOV lanes) that is aligned in a north-south orientation within the project vicinity. SR 87 begins at its interchange with SR 85 and extends northward, terminating at its junction with US 101. SR 87 provides access to US 101 and I-280/I-680. Access to the site to and from SR 87 is provided via ramps at Woz Way/Auzerais Avenue, Park Avenue, and Santa Clara Street.

*Interstate-280* is an eight-lane freeway in the vicinity of the site. It extends northwest to San Francisco and east to King Road in San Jose, at which point it makes a transition into I-680 to Oakland. Access to and from the site is provided via its ramps at Almaden Boulevard/Vine Street, 1st Street, and 7th Street, and via SR 87.

*Park Avenue* is two- to four-lane roadway that extends from Market Street (Plaza de Cesar Chavez) westward to Meridian Avenue then northwestward to The Alameda, just south of Santa Clara University, where it terminates. Park Avenue runs along the project's northern site boundary and consists of one lane plus bicycle lane in each direction of travel. Access to the project site would be provided via a driveway on Park Avenue.

*San Carlos Street* is an east-west four-lane street located south of the project site. It extends as West San Carlos Street from 1st Street westward to Bascom Avenue where it transitions into Stevens Creek Boulevard. East of 1st Street, it extends eastward as East San Carlos Street with a break between 4th and 10th Streets (at San Jose State University) and terminating at 17th Street. In the vicinity of the project site, the VTA light rail tracks run along the middle of the street, separating the eastbound and westbound travel lanes.

*Almaden Boulevard* is a north-south four-lane divided arterial located east of the project site. It extends between St. John Street and Grant Street, just south of I-280, and includes bicycle lanes along both sides of the street. Almaden Boulevard provides access to the project site via Park Avenue.

*Market Street* is a north-south four-lane street located west of the project site. In the vicinity of the project site, the northbound and southbound lanes of Market Street are divided by Plaza de Cesar Chavez, between San Fernando Street and San Carlos Street. Market Street provides access to and from the project site via Park Avenue. Market Street transitions into 1st Street just north of the I-280 overpass, providing access from the project site to WB I-280.

### *Existing Bicycle and Pedestrian Facilities*

Pedestrian facilities in the study area consist mostly of sidewalks along all the surrounding streets, including the project frontages along Park Avenue. Crosswalks and pedestrian signal heads are located at all signalized intersections within the project area, including the intersections of Almaden Boulevard and Market Street with Park Avenue. The majority of the crosswalks at signalized intersection in the vicinity of the project site consist of high visibility crosswalks, enhancing pedestrian visibility and safety while crossing the intersections. Additionally, most downtown signalized intersections include pedestrian push buttons, and countdown signal heads that enhance pedestrian safety at intersections. Sidewalks in the project area are wide and provide an attractive and continuous pedestrian network.

An approximately 50 feet wide pedestrian walkway (paseo) is located along the western edge of the project site. The paseo provides a direct connection between San Carlos Street and Park Avenue. The paseo serves as a cut-through for pedestrians and bicyclist between the Park Center Plaza, the Tech Museum and Civic Center, San Jose Convention Center, and Convention Center LRT Station. A high-visibility mid-block crosswalk, which includes a pedestrian refuge in the center median, is located along Park Avenue connecting the paseo to the north side of Park Avenue and all pedestrian destinations north of the project site.

The paseo terminates at San Carlos Street at its southern end. Access to the Convention Center LRT Station is provided via a signalized crosswalk along San Carlos Street that is located approximately 250 feet east of the paseo.

A second mid-block crossing exists across the northbound side of Market Street, providing access from the Plaza de Cesar Chavez Park to the Paseo de San Antonio Walk. This paseo provides pedestrian only access to shops and business along the Paseo de San Antonio Walk, between Market Street and San Jose State University.

The existing sidewalks and paseos provide good pedestrian connectivity and safe routes to the surrounding pedestrian destinations, including the nearby Plaza de Cesar Chavez Park, as well as various businesses and restaurants surrounding the project site.

Class II bicycle facilities (striped bike lanes) are provided along Park Avenue (the northern project site frontage), between Woz Way and Market Street, and west of Montgomery Street. Additional Class II bicycle facilities are provided along the following roadways within the downtown area:

- San Fernando Street, between 11th Street and Montgomery Street (Designated Class III bike path east of 11th Street, with "sharrow" or shared-lane pavement markings from 11th to 17th Streets)
- Woz Way, between San Carlos Street and Almaden Avenue
- Park Avenue,
- Almaden Boulevard, between Woz Way and Santa Clara Street
- Santa Clara Street, west of Almaden Boulevard
- 2nd Street, between San Salvador Street and Keyes Street
- 3rd Street, between Jackson Street and Humboldt Street
- 4th Street, between Jackson Street and I-280

The existing bicycle facilities are shown on Figure 3.

#### Guadalupe River Park Trail

The Guadalupe River multi-use trail system runs through the City of San Jose along the Guadalupe River and is shared between pedestrians and bicyclists and separated from motor vehicle traffic. The Guadalupe River trail is an 11-mile continuous Class I bikeway from Curtner Avenue in the south to Alviso in the north. This trail system can be accessed via Park Avenue and W. San Carlos Street approximately ¼ mile west of the project site.

#### Bay Area Bike Share

The City of San Jose participates in the Bay Area Bike Share program that allows users to rent and return bicycles at various locations. Bike share bikes can only be rented and returned at designated stations throughout the Downtown area. The nearest bike share station, the Civic Center station, is located less than a quarter mile from the project site at the intersection of Market Street/San Carlos Street.

#### Zipcar

Zipcar provides vehicles to individuals for hourly or daily use. This program places vehicles at designated Zipcar locations throughout the Downtown area for use by individuals who have Zipcar accounts. This car sharing service allows drivers' access to an automobile without the need to own their own. There are two Zipcar stations within walking distance of the project site: in the Adobe Systems Headquarters parking area along Park Avenue, and in the surface parking lot along San Carlos Street between 1st Street and Market Street. Zipcar stations in the project vicinity are shown on Figure 3.

### *Pedestrian and Bicycle Volumes*

Hexagon conducted pedestrian and bicycle volume counts in May 2016 at the existing driveways and midblock crosswalks along Park Avenue and San Carlos Street. The counts are shown graphically on Figure 4 and included in Appendix A. Vehicular counts also were collected at existing driveways along San Carlos Street and Almaden Avenue.

The pedestrian volumes at both the driveway and midblock crossing along San Carlos Street are relatively high with the majority of pedestrians travelling northbound across the midblock crossing during both peak hours, eastbound across the driveway during the AM peak hour, and westbound across the driveway in the PM peak hour. The large pedestrian volumes along San Carlos Street are due to the Convention Center LRT Station that is located between Market Street and Almaden Boulevard. The pedestrian volumes at the Park

**Figure 3**
**Existing Bicycle Facilities and Zip Car Locations**

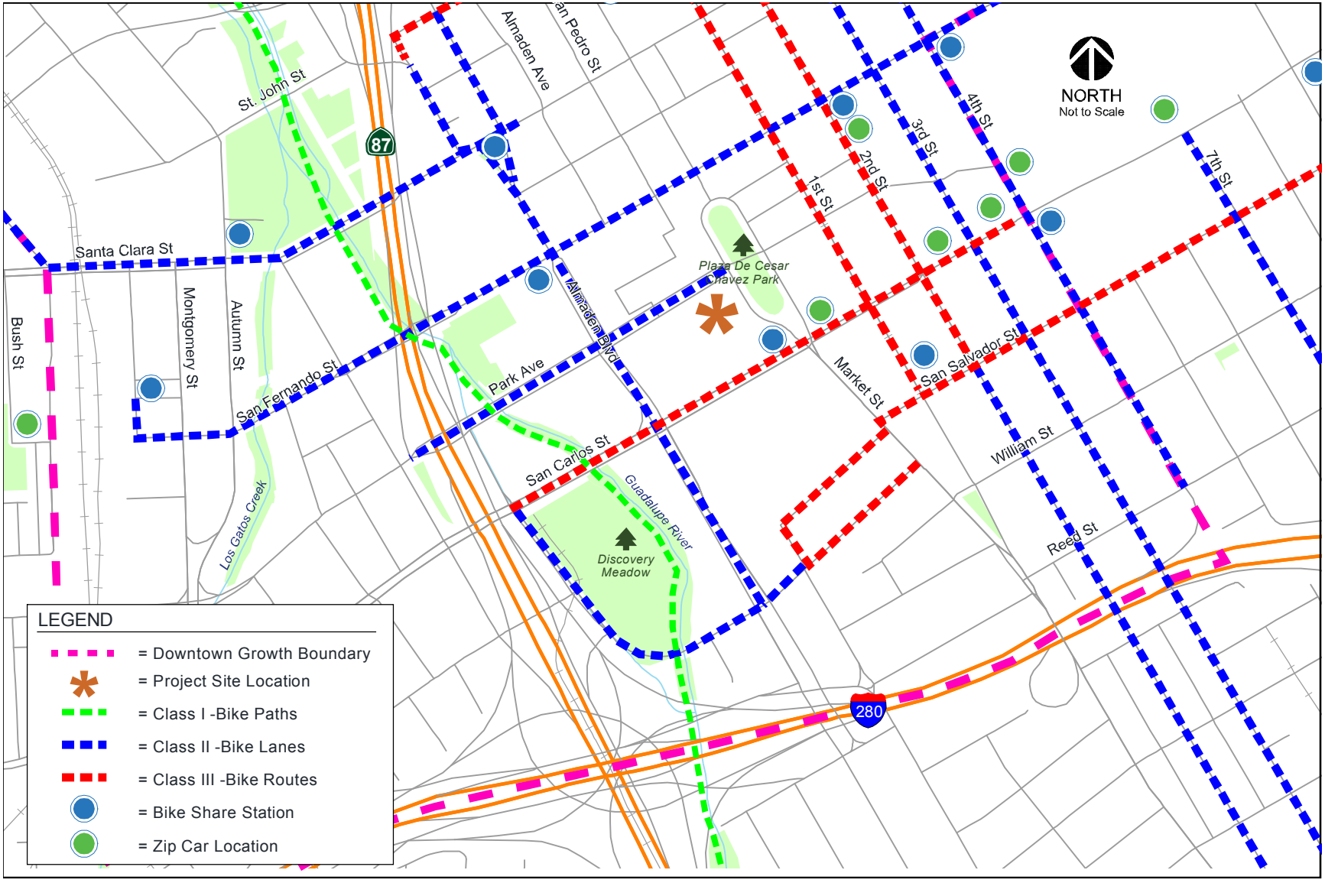
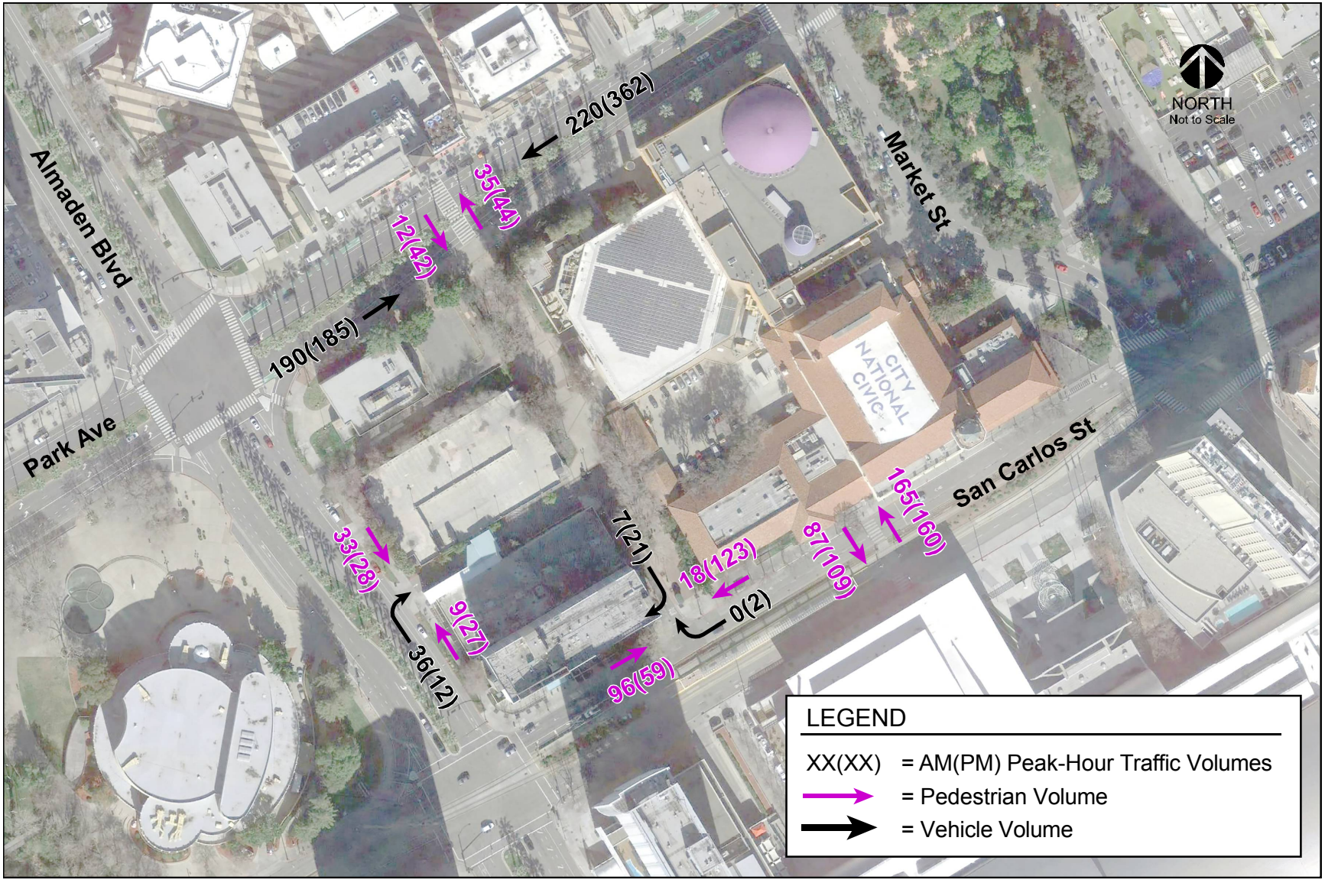


**Figure 4**
**Existing Pedestrian and Bicycle Volumes**



Avenue midblock crossing are not abnormally large. The pedestrian volumes crossing the driveway along Almaden Avenue are less than those observed along Park Avenue and San Carlos Street.

### *Existing Transit Services*

Existing transit services to the study area are provided by the Santa Clara Valley Transportation Authority (VTA), Caltrain, Altamont Commuter Express (ACE), and Amtrak. The transit stations and local VTA bus lines near the project site are shown on Figure 5.

#### Bus Service

The downtown area is served by many local bus lines. The bus lines that operate within ¼ mile walking distance of the project site are listed in Table 1, including their route description and commute hour headways.

The VTA also provides a shuttle service within the downtown area. The downtown area shuttle (DASH) provides shuttle service from the San Jose Diridon Caltrain Station to San Jose State University, and the Paseo De San Antonio and Convention Center LRT Stations via San Fernando and San Carlos Streets.

#### VTA Light Rail Transit (LRT) Service

The Santa Clara Valley Transportation Authority (VTA) currently operates the 42.2-mile VTA light rail line system extending from south San Jose through downtown to the northern areas of San Jose, Santa Clara, Milpitas, Mountain View and Sunnyvale. The service operates nearly 24-hours a day with 15-minute headways during much of the day.

The Mountain View–Winchester and Alum Rock–Santa Teresa LRT lines operate within walking distance of the project site. The Convention Center LRT station is located less than a quarter mile south of the project site on San Carlos Street. The San Jose Diridon Station is located along the Mountain View–Winchester LRT line and is served by Caltrain, ACE, and Amtrak.

#### Caltrain Service

Commuter rail service between San Francisco and Gilroy is provided by Caltrain, which currently operates 92 weekday trains that carry approximately 47,000 riders on an average weekday. The project site is located about one mile from the San Jose Diridon Station. The Diridon Station provides 581 parking spaces, 18 bike racks, and 48 bike lockers, as well as a Bay Area Bike Share station. Trains stop frequently at the Diridon Station between 4:30 AM and 10:30 PM in the northbound direction, and between 6:28 AM and 1:34 AM in the southbound direction. Caltrain provides passenger train service seven days a week, and provides extended service to Morgan Hill and Gilroy during weekday commute hours.

#### Altamont Commuter Express Service

The Altamont Commuter Express (ACE) provides commuter passenger train service between Stockton, Tracy, Pleasanton, and San Jose during commute hours, Monday through Friday. Service is limited to four westbound trips in the morning and four eastbound trips in the afternoon/ evening with headways averaging 60 minutes. ACE trains stop at the Diridon Station between 6:32 AM and 9:17 AM in the westbound direction, and between 3:35 PM and 6:38 PM in the eastbound direction.

#### Amtrak Service

Amtrak provides daily commuter passenger train service along the 170-mile Capitol Corridor between the Sacramento region and the Bay Area, with stops in San Jose, Santa Clara, Fremont, Hayward, Oakland, Emeryville, Berkeley, Richmond, Martinez, Suisun City, Davis, Sacramento, Roseville, Rocklin, and Auburn. The Capitol Corridor trains stop at the San Jose Diridon Station eight times during the weekdays between approximately 7:38 AM and 11:55 PM in the westbound direction. In the eastbound direction, Amtrak stops at the Diridon Station seven times during the weekdays between 6:40 AM and 7:15 PM.

The Coast Starlight trains provide daily passenger train service between Los Angeles and Seattle. The southbound Coast Starlight train stops at the San Jose Diridon Station at 9:55 AM and departs at 10:07 AM. The northbound Coast Starlight train stops at the Diridon Station at 8:11 PM and departs at 8:23 PM.

**Figure 5**
**Existing Transit Facilities**

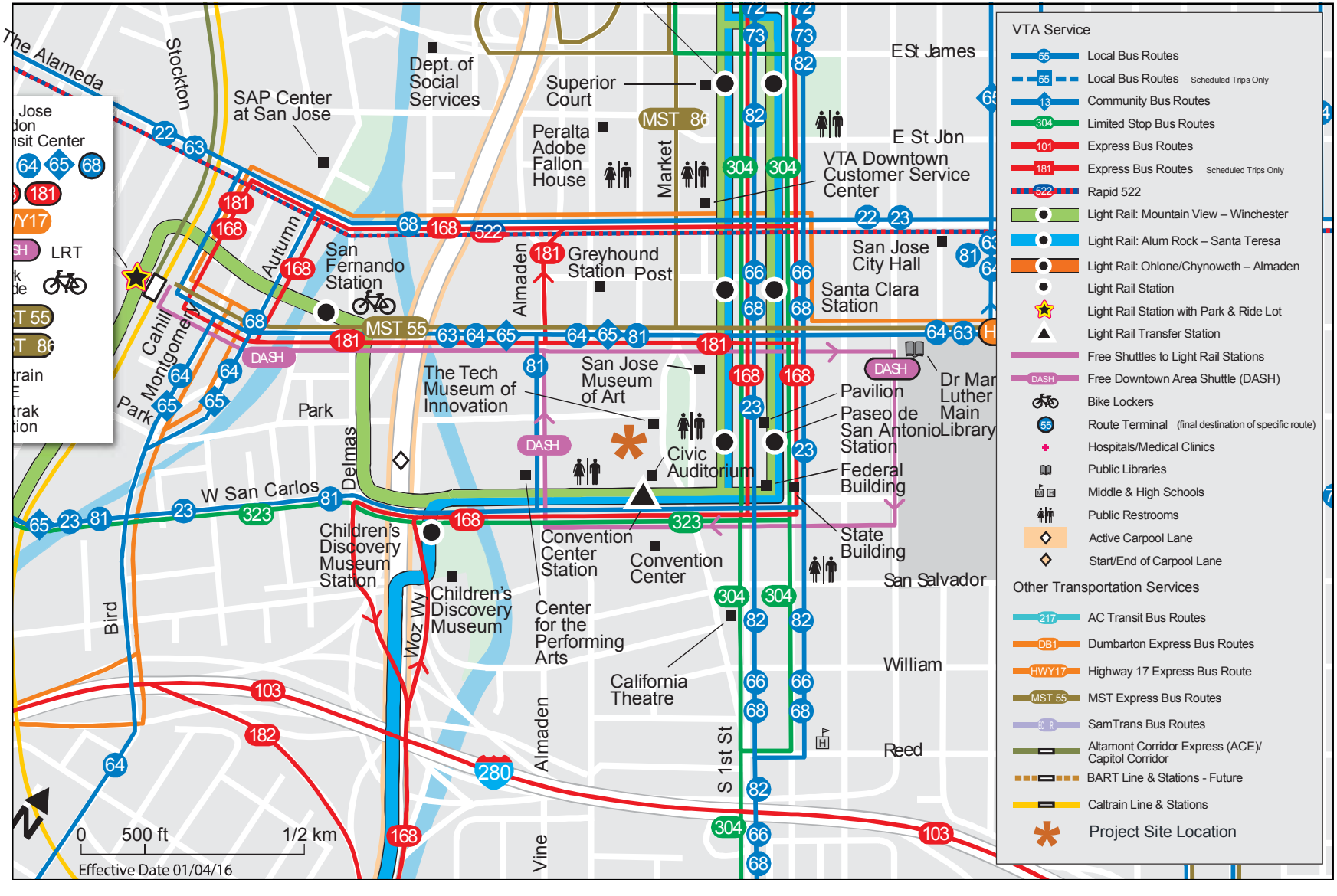


**Table 1**
**Existing Bus Service Near the Project Site**

| Bus Route | Route Description | Headway /a/ |
|---|---|---|
| Local Route 22 | Palo Alto Transit Center to Eastridge Transit Center via El Camino | 12 min |
| Local Route 63 | Almaden Expwy. & Camden to San Jose State University | 30 min |
| Local Route 64 | Almaden LRT Station to McKee & White via Downtown San Jose | 15 min |
| Community Route 65 | Kooser & Blossom Hill to 13th & Hedding | 45 - 50 min |
| Local Route 66 | Kaiser San Jose Medical Center to Dixon Landing Road (Milpitas) | 15 min |
| Local Route 68 | Gilroy Transit Center to San Jose Diridon Station | 15-20 min |
| Local Route 72 | Senter & Monterey to Downtown San Jose | 15 min |
| Local Route 73 | Snell/Capitol to Downtown San Jose | 15 min |
| Local Route 81 | San Jose State University-Moffett Field/Ames Cord | 25-30 min |
| Local Route 82 | Westgate to Downtown San Jose | 30 min |
| Express Route 168 | Gilroy Transit Center to San Jose Diridon Station | 30 min |
| Express Route 181 | Fremont BART Station to San Jose Diridon Station | 15 min |
| Limited Stop Route 304 | Santa Teresa LRT Station to Sunnyvale Transit Center | 30 min |
| Limited Stop Route 323 | Downtown San Jose to De Anza College | 15 min |
| Rapid 522 | Palo Alto Transit Center to Eastridge Transit Center | 15 min |
| Hwy 17 Express (Route 970) | Downtown Santa Cruz / Scotts Valley to Downtown San Jose | 10 - 30 min |

Notes:
/a/ Approximate headways during peak commute periods.

## Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip generation rates contained in the San Jose TIA Handbook, August 2009 were used for this study. Trip reductions associated with the project site's proximity to transit and the mixed-use components of the project were applied and are described below.

### *VTA Trip Reductions*

Since the project site is located within 2,000 feet of an LRT station (Civic Center Station), the total number of trips generated by the proposed project can be reduced by up to 9 and 6 percent for the residential and employment components of the project, respectively, per VTA guidelines.

### *Mixed-Use Trip Internalization*

A mixed-use development with complementary land uses such as residential/retail and residential/employment, will result in a reduction of external site trips. Thus, the number of vehicle trips generated for each use may be reduced, since a portion of the trips would not require entering or exiting the site. Therefore, based on VTA's recommended mixed-use reduction, the following mixed-used trip reductions were applied:

- 3 percent trip reduction for the housing/employment mixed-use, applied based on the smaller housing component
- 15 percent trip reduction for the housing/retail mixed-use, applied based on the smaller retail component
- 10 percent trip reduction for the hotel/retail mixed-use, applied based on the smaller hotel component

The reduction is applied to the smaller of the two complimentary trip generators and the same number of trips is then subtracted from the larger trip generator.

### *Net Project Trips*

After applying the appropriate trip generation rates and trip reductions, the project is projected to generate 594 new trips during the AM peak hour and 626 new trips during the PM peak hour. Using the recommended inbound/outbound splits, the project would produce 410 inbound and 184 outbound trips during the AM peak hour, and 250 inbound and 375 outbound trips during the PM peak hour. The trip generation estimates are summarized in Table 2.

It should be noted that the proposed project would replace the existing Parkside Hall building currently located on site. Various events have taken place at Parkside Hall over the years, including a variety of shows, conventions, trade-shows, exhibits, and corporate events. Although no parking to serve Parkside Hall is provided on site, it generates traffic to the project area that utilize parking facilities in the vicinity of the site. Once the proposed project is implemented, trips generated by the Parkside Hall would be replaced by trips generated by the proposed project.

The project site also is located within the Downtown Growth Area. The Downtown Growth Area land use designation is characterized by mixed land uses and high rise buildings that create opportunities for multi-modal travel and strong transit demand. In addition, the availability of bicycle lanes and sidewalks throughout downtown and the project's close proximity to major transit services will provide for and encourage the use of multi-modal travel options (bicycling and walking), and reduce the use of single-occupant automobile travel. Therefore, the estimates of trips to be generated by the proposed project as presented and evaluated within this study may represent an over-estimation of traffic and impacts associated with the proposed project. It is expected that the auto trips ultimately generated by the project would be less and the identified operational issues reduced with the use of the multi-modal transportation system within the Downtown area.

## Project Trip Distribution and Trip Assignment

With the replacement of the existing Parkside Hall, the proposed project will result in a reduction in trips originating from outside the downtown area, centralization of vehicular trips to the project site, and reduction in off-site parking demand.

The trip distribution pattern for the project was based on previous traffic studies prepared for similar projects in Downtown San Jose. The project trips were assigned to the roadway network based on the proposed project driveway location, existing travel patterns in the area, freeway access, and the relative locations of complementary land uses. The project trip distribution patterns are presented in Figure 1. The project trip assignments are discussed in the following section.

## Vehicular Site Access and Circulation

A review of the project site plan was performed to determine if adequate site access and on-site circulation is provided and to identify any access issues that should be improved. This review is based on the site plan dated September 6, 2016, by Steinberg, and in accordance with generally accepted traffic engineering standards and City of San Jose requirements.

The site plan shows one driveway along Park Avenue providing access to the project's proposed underground parking structure (see Figure 2). The parking structure driveway would be located along the eastern project site boundary, adjacent to the Tech Museum, and is proposed to provide one inbound lane and two outbound (one left-turn and one right-turn) lanes. Left-turns from the project site will require the partial removal of existing center median on Park Avenue, along with one or two palm trees within the center

**Table 2**
**Project Trip Generation Estimates**

| Land Use | Size | | Daily Trip Rate | Daily Trips | AM Peak Hour Pk-Hr Factor | AM Splits In | AM Splits Out | AM Trips In | AM Trips Out | AM Trips Total | PM Peak Hour Pk-Hr Factor | PM Splits In | PM Splits Out | PM Trips In | PM Trips Out | PM Trips Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Residential*** | | | | | | | | | | | | | | | | |
| Apartments[a] | 306 | units | 6.0 | 1,836 | 10% | 35% | 65% | 64 | 120 | 184 | 10% | 65% | 35% | 120 | 64 | 184 |
| Housing and Employment Internalization Reduction (3%)[b] | | | | -55 | | | | -2 | -4 | -6 | | | | -4 | -2 | -6 |
| Housing and Retail Internalization Reduction (15%)[c] | | | | -85 | | | | -1 | -2 | -3 | | | | -4 | -4 | -8 |
| Housing near LRT Station (9%)[d] | | | | -165 | | | | -6 | -11 | -17 | | | | -11 | -6 | -17 |
| Sub-Total Residential | | | | 1,531 | | | | 55 | 103 | 158 | | | | 101 | 52 | 153 |
| ***Office*** | | | | | | | | | | | | | | | | |
| Office[a] | 209,779 | s.f. | 11.0 | 2,308 | 14% | 88% | 12% | 284 | 39 | 323 | 14% | 17% | 83% | 55 | 268 | 323 |
| Housing and Employment Internalization Reduction (3%)[b] | | | | -55 | | | | -4 | -2 | -6 | | | | -2 | -4 | -6 |
| Employment near LRT Station (6%)[e] | | | | -138 | | | | -17 | -2 | -19 | | | | -3 | -16 | -19 |
| Sub-Total Office | | | | 2,114 | | | | 263 | 35 | 298 | | | | 50 | 248 | 298 |
| ***Retail*** | | | | | | | | | | | | | | | | |
| Retail[a] | 14,116 | s.f. | 40.0 | 565 | 3% | 70% | 30% | 12 | 5 | 17 | 9% | 50% | 50% | 26 | 25 | 51 |
| Housing and Retail Internalization Reduction (15%)[c] | | | | -85 | | | | -2 | -1 | -3 | | | | -4 | -4 | -8 |
| Hotel and Retail Internalization Reduction (10%)[f] | | | | -168 | | | | -6 | -8 | -14 | | | | -6 | -9 | -15 |
| Sub-Total Retail | | | | 312 | | | | 4 | -4 | 0 | | | | 16 | 12 | 28 |
| ***Hotel*** | | | | | | | | | | | | | | | | |
| Hotel[a] | 187 | rooms | 9.0 | 1,683 | 8% | 60% | 40% | 81 | 54 | 135 | 9% | 60% | 40% | 91 | 60 | 151 |
| Hotel and Retail Internalization Reduction (10%)[f] | | | | -168 | | | | -8 | -6 | -14 | | | | -9 | -6 | -15 |
| Sub-Total Hotel | | | | 1,515 | | | | 73 | 48 | 121 | | | | 82 | 54 | 136 |
| ***Museum*** | | | | | | | | | | | | | | | | |
| Museum[g] | 60,000 | s.f. | n/a | n/a | 0.28 | 86% | 14% | 15 | 2 | 17 | 0.18 | 16% | 84% | 2 | 9 | 11 |
| **Total Project Trips** | | | | **5,471** | | | | **410** | **184** | **594** | | | | **250** | **375** | **626** |

Notes:
[a]Based on trip rates contained in the City of San Jose TIA Handbook, August 2009.
[b]As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for a mixed-use development project with housing and empoyment is equal to 3% off the smaller housing component.
[c]As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for a mixed-use development project with housing and retail is equal to 15% off the smaller retail component.
[d]As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for housing located within a 2,000-foot walk of an LRT station is equal to 9% (The project will be located within a 2,000-foot walk of the San Carlos and LRT Station).
[e]As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for employment located within a 2,000-foot walk of an LRT station is equal to 6% (The project will be located within a 2,000-foot walk of the San Carlos and LRT Station).
[f]As prescribed by the Transportation Impact Analysis Guidelines from VTA (October 2014), the maximum trip reduction for a mixed-use development project with hotel and retail is equal to 10% off the smaller hotel component.
[g] ITE Trip Generation, 9th Edition 2012 (Land Use: 580 Museum).

median. The City has developed a plan line for the reduction in width of Park Avenue between Market Street and Almaden Boulevard. The City will require that the project remove the landscape median and trees along Park Avenue at its driveway and design frontage improvements that are consistent with the plan line.

## Site Access

The proposed project driveway is located approximately 200 feet west of the S. Market Street/Park Avenue intersection and is shown to be 40 feet in width. The City of San Jose municipal code requires on-site drive aisles and driveways that serve two-way traffic to be a minimum of 26 feet wide. In addition, the City typically requires parking garage entrance gates to be located at least 50 feet from the face of the curb to provide adequate stacking space for at least two inbound vehicles. This requirement, however, may not always be achievable in the downtown area due to the zero setback requirements for buildings located in downtown. It is recommended that the garage entrance gates be located a minimum of two car-lengths back from the sidewalk (within the parking garage) to be able to accommodate two entering vehicles at the garage entrance without blocking the sidewalk on Park Avenue.

Based on the estimated trip generation, a maximum of 391 inbound trips (parking for the retail and museum space would not be provided within the garage) would need to be served at the project entrance in a single hour (AM Peak Hour), or approximately 6-7 vehicles per minute. The number of vehicles that can be served at the garage's entry point will depend on the proposed valet operations within the garage. The project proposes to provide individual drop-off/pick-up areas for the residential, office, and hotel uses within the parking garage. Therefore, queuing at the garage entrance and onto Park Avenue should be minimal with adequate storage provided within the drop-off areas as described below. Therefore, providing a minimum of two car-lengths at the parking garage entrance, should be adequate. The project trip assignment at the proposed project driveway is shown in Figure 6.

The site plan also indicates a drop-off area along the project's frontage on Park Avenue via a duc-out. The drop-off area should be time-restricted and restricted to passenger drop-off/pick-up only and not used for truck loading. The loading area must be located such that a minimum 30 feet of red curb is provided at the existing fire hydrant along Park Avenue or the fire hydrant must be relocated.

## Sight Distance at the Driveway Serving the Project

The driveway serving the project should be free and clear of obstructions, thereby ensuring that all exiting vehicles can see pedestrians on the sidewalk and vehicles travelling on Park Avenue. Adequate sight distance (sight distance triangles) should be provided at the driveway in accordance with Caltrans standards. Sight distance triangles should be measured approximately 10 feet back from the travelled way. Appropriate visible and/or audible warning signals should be provided at the project driveways to alert pedestrians and bicyclists of vehicles exiting the parking garages.

Providing appropriate sight distance reduces the likelihood of a collision at a driveway or intersection and provides drivers with the ability to exit a driveway or locate sufficient gaps in traffic. Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is often considered the Caltrans stopping sight distance. Sight distance requirements vary depending on the roadway speeds. For the project driveways on Park Avenue, which has a speed limit of 30 miles per hour (mph), the Caltrans stopping sight distance is 200 feet. Thus, a driver must be able to see 200 feet down Park Avenue when turning into and out of the project driveways to avoid a collision.

The project garage entrance will be located approximately 200 feet west of the Park Avenue/Market Street intersection and 200 feet east of the pedestrian mid-block crossing on Park Avenue. The available sight distance from the project driveway on Park Avenue will be met if the posted speed limit of 30 mph is in compliance. However, it is recommended that the posted speed limit along Park Avenue be reduced to 25 mph when the planned Park Avenue reduction plan is implemented. The reduction in vehicle speeds will provide for a safer environment for pedestrian and bicyclists and allow for safe egress from driveways along Park Avenue.

## Vehicular On-Site Circulation

On-site vehicle circulation was reviewed for the project in accordance with generally accepted traffic engineering standards the first level circulation plan is shown in Figure 7. As proposed, vehicles bound for

**Figure 6**
**Project Trips at Project Driveway**

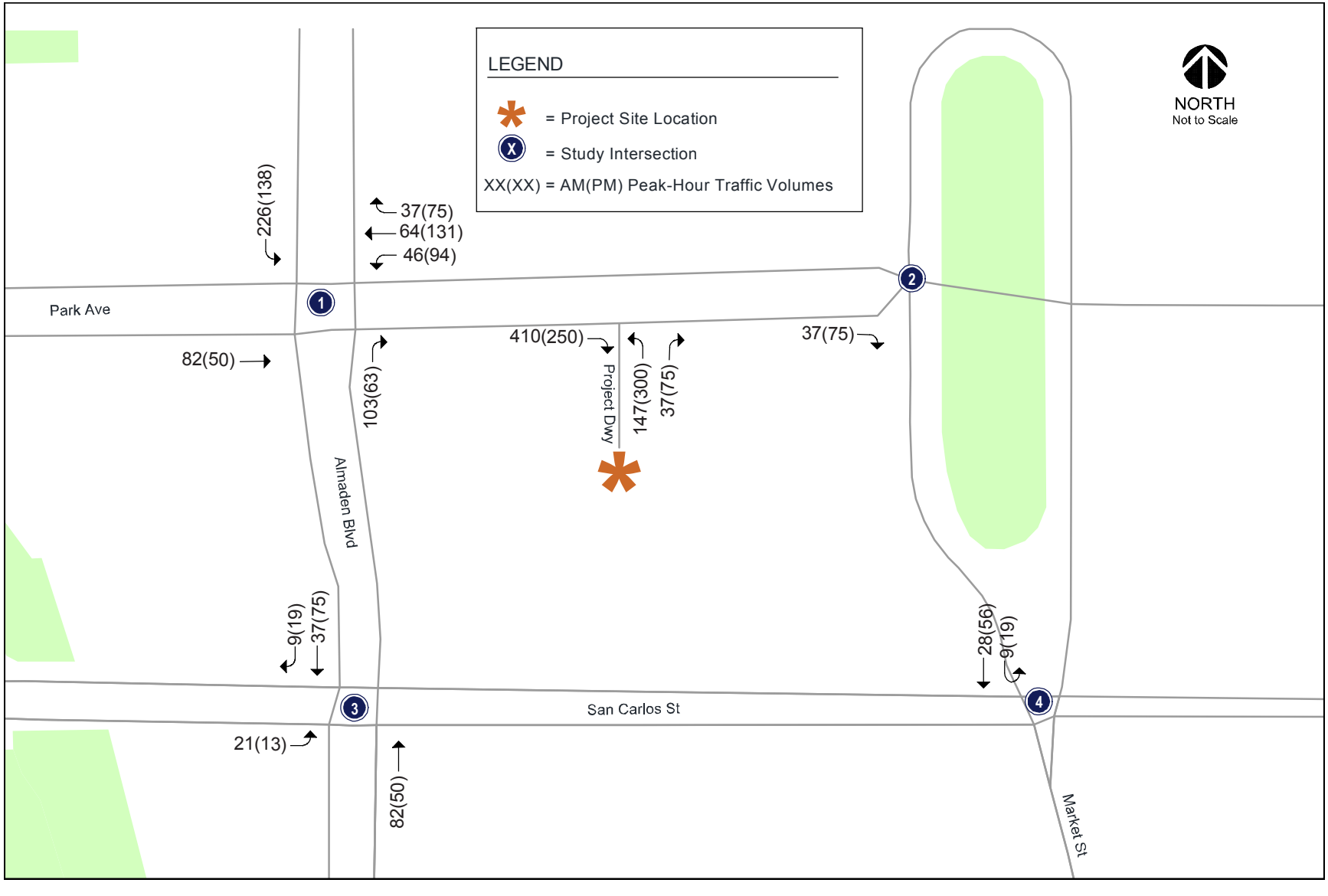
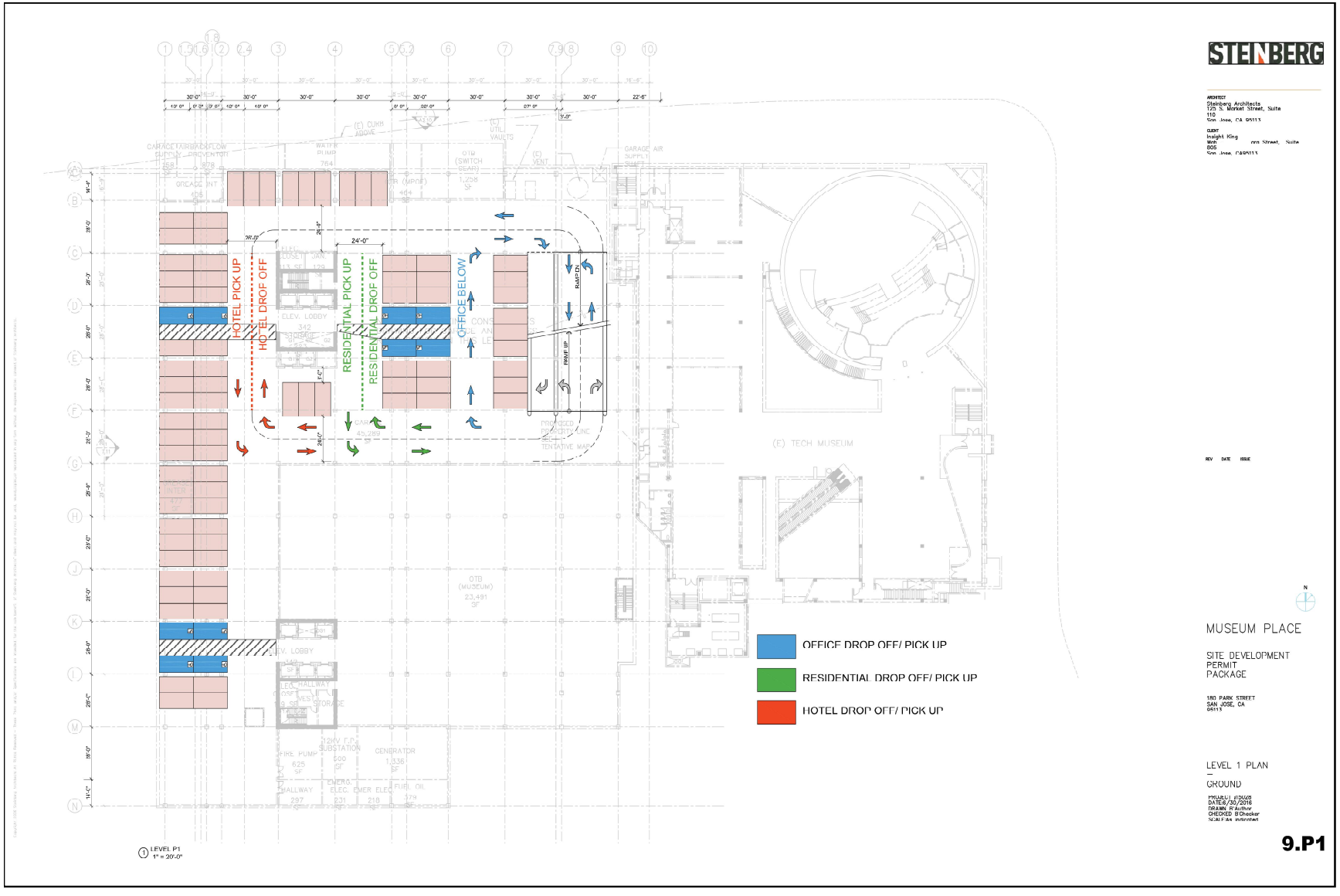


**Figure 7**
**Proposed On-Site Circulation – Level 1**



each of the proposed uses would enter the parking garage via one inbound lane at the Park Avenue entrance. Vehicles bound for the office use would enter the garage and make an immediate right-turn down to the second level drop-off/pick up area. The residential and hotel drop-off/pick-up area will be located on the first level. The third level will not provide drop-off/pick areas and will be utilized by valet services only.

During the AM peak hour, the greatest amount of inbound traffic will be bound for the office drop-off area located on the second level while traffic associated with the residential and hotel land uses will primarily consist of outbound trips. The proposed circulation on the first level of the garage provides for the circulation of the office traffic down to the second level without conflicting without outbound residential/hotel traffic. Thus, conflict of vehicles circulating within the garage will be minimal during the AM peak hour based on peak directionality of the uses.

The directionality of peak directional flow for each of the land uses reverses during the PM peak hour with the office uses peak flow being outbound and residential/hotel flow being inbound. Circulation during the PM peak hour will be problematic due to the outbound office traffic flow. Based on the site plan, outbound office traffic will be required to circulate through either the residential or hotel pick-up drive aisles to exit the parking garage. Given the peaking characteristics of office land use it is likely that any blockage of the pick-up areas will create grid-lock within the garage. It is recommended that an exclusive outbound lane for use by the office traffic be provided on the first level. The lane should be provided west of the hotel pick-up aisles so as to not create circulation conflicts with the inbound residential/hotel traffic.

It also is recommended that vehicle storage based on the maximum estimated inbound peak hour trips be provided at each of the drop-off/pick-up areas. Based on the estimated inbound trips, storage for a minimum of two vehicles should be provided for the residential use (PM Peak Hour), five vehicles for the office use (AM Peak Hour), and two vehicles for the hotel use (PM Peak Hour). Based on the site plan, it appears that storage for approximately 4-5 vehicles will be provided within each of the drop-off/pick-up areas. Additional storage space is provided within the drive aisles. However, the use of the drive aisles for storage will inhibit circulation to each of the drop-off/pick-up areas.

The City's standard width for two-way drive aisles is 26 feet wide where 90-degree parking is provided. This allows sufficient room for vehicles to back out of parking spaces. In addition, circulation within the garage should not require that drivers back-down drive aisles due to dead-end drive aisles. However, the City standard requirements and circulation within the third level of the garage may not be applicable given that the project parking garage will be valet only. The project should work with City staff to ensure that specific requirements for the valet operations and mechanical lifts are met.

## Pedestrian and Bicycle Circulation and Transit Access

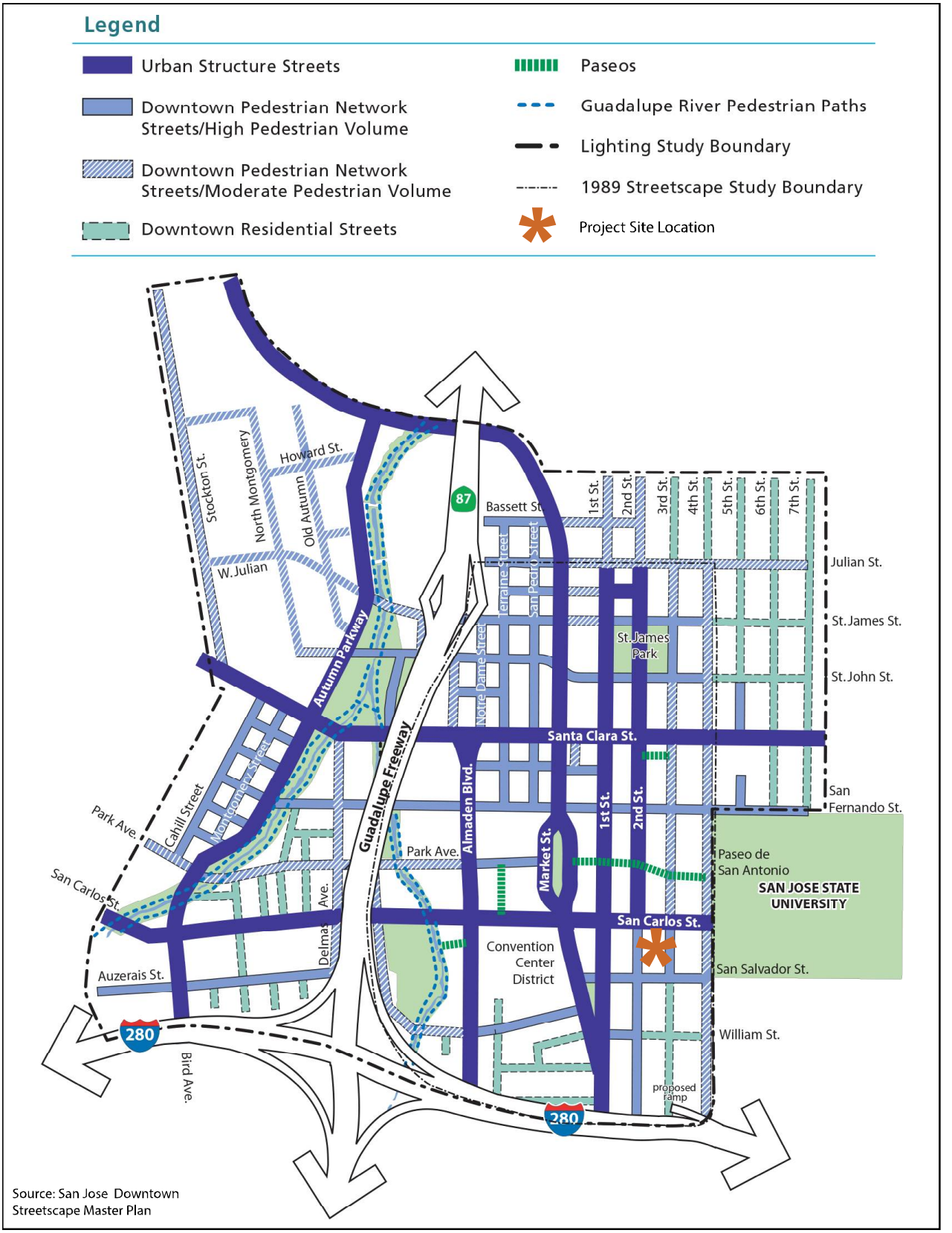
### *Pedestrian Access and Bicycle Circulation*

The project site is located in an area that is predominantly employment/entertainment based. Therefore, it is expected that the introduction of new residents in the area will result in a reduction in vehicular trips and an increase in demand for multi-modal travel options. The availability of bicycle lanes and sidewalks throughout downtown and the project's close proximity to major transit services will encourage the use of multi-modal travel options (bicycling and walking) and reduce the use of single-occupant automobile travel.

The Downtown Streetscape Master Plan (DSMP) provides design guidelines for existing and future development for the purpose of enhancing the pedestrian experience in the Greater Downtown Area. Per the DSMP and shown in Figure 8, Park Avenue is a designated Downtown Pedestrian Network Street (DPNS), which are intended to support a high level of pedestrian activity as well as retail and transit connections. The DPNS streets provide a seamless network throughout the downtown that is safe and comfortable for pedestrians and connects all major downtown destinations. Design features of a DPNS create an attractive and safe pedestrian environment to promote walking as the primary travel mode.

Existing pedestrian and bicycle facilities throughout downtown, and in particular along the project's Park Avenue frontage, provide connections to surrounding downtown destinations. Sidewalks are provided on the project frontage along Park Avenue. Crosswalks are available at the adjacent signalized intersections of Almaden Boulevard and Market Street with Park Avenue. Crosswalks at both of the Park Avenue intersections consist of high visibility (typical continental crosswalk markings) crosswalks. An approximately

**Figure 8**
**Downtown Pedestrian Street Network**




Source: San Jose Downtown Streetscape Master Plan

20-foot wide pedestrian walkway (paseo) will be maintained along the western edge of the project site. The paseo will provide a direct connection between San Carlos Street and Park Avenue. The paseo serves as a cut-through for pedestrians and bicyclist between the Park Center Plaza, the Tech Museum and Civic Center, San Jose Convention Center, and Convention Center LRT Station. Additionally, a high-visibility mid-block crosswalk, which includes a pedestrian refuge in the center median, is located along Park Avenue connecting the paseo to the north side of Park Avenue and all pedestrian destinations north of the project site. A second mid-block crossing exists across the northbound side of Market Street, providing access from the Plaza de Cesar Chavez Park to the Paseo de San Antonio Walk. This paseo provides pedestrian only access to shops and business along the Paseo de San Antonio Walk, between Market Street and San Jose State University. Field observations revealed that these pedestrian crossings along Park Avenue are well respected by motorists and bicyclists travelling east and west along Park Avenue and provide good pedestrian visibility and enhanced safety.

In addition, the project will be required to complete pedestrian facility improvements at the Market Street and Park Avenue intersection that are part of a plan line for the reduction in width of Park Avenue between Market Street and Almaden Boulevard. The plan line improvements include removal of right-turn islands and extension of sidewalks at intersections and the mid-block crosswalk along Park Avenue (see Figure 9). The improvements will reduce the crossing distance for pedestrians at each of the intersections and mid-block crosswalk. The improvements also will include the installation of Rectangular Rapid Flashing Beacons (RRFB) at the mid-block crossing of Park Avenue to improve pedestrian safety and driver compliance in yielding to pedestrians.

The planned improvements will enhance the existing pedestrian network and increase pedestrian safety and comfort along Park Avenue. Overall, the existing pedestrian facilities have good connectivity and provide adequate pedestrian access to surrounding areas and services, and would improve with the implementation of the planned improvements.

The project site is well served by various existing bicycle facilities including Class II bicycle lanes along Park Avenue along the project frontage and Almaden Boulevard west of the project site. Additionally, the Guadalupe River Park Trail, a Class I pedestrian and bicycle trail, is accessible via Park Avenue and San Carlos Street, less than a quarter mile from the project site.

### *Transit Facilities*

The project is in close proximity to major transit services that will provide the opportunity for multi-modal travel to and from the project site. The Convention Center LRT station is located less than a quarter mile south of the project site on San Carlos Street and is directly accessible via the Almaden Paseo located along the projects western boundary. In addition, the San Jose Diridon Station is located along the Mountain View–Winchester LRT line and is served by Caltrain, ACE, and Amtrak. The pedestrian and bicycle facilities located along Park Avenue and adjacent to the project site provide access to major transit stations and provide for a balanced transportation system as outline in the Envision 2040 General Plan goals and policies.

## Effects of Project on Surrounding Uses

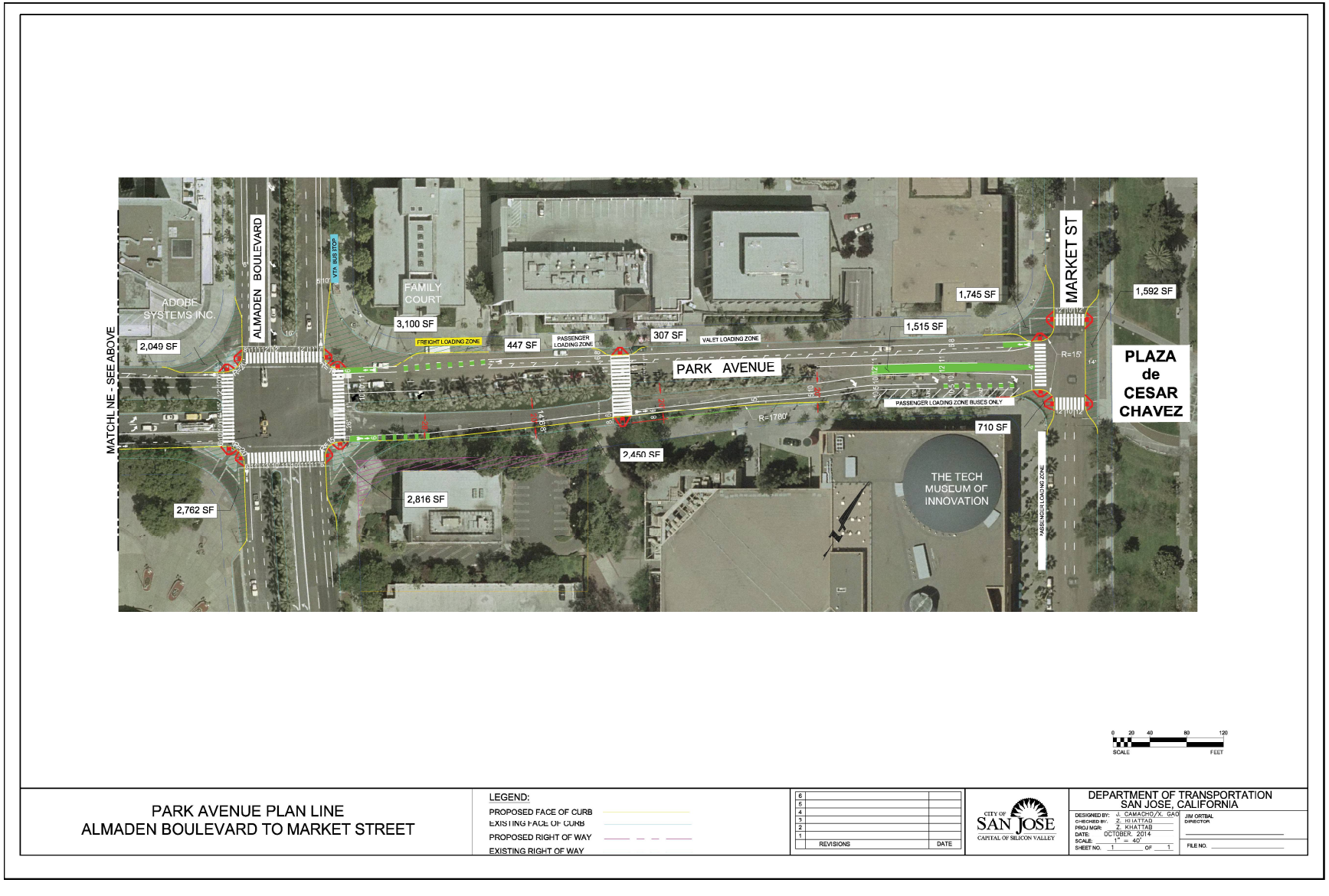
The proposed project is located directly adjacent to the west side of the Tech Museum. In addition, the Montgomery Theater is located along Market Street. Therefore, a review of the current truck delivery and visitor drop-off/pick-up activities and each of the facilities were reviewed to ensure that the proposed project will not result in significant change or disruption of current facility operations.

### *The Tech Museum Operations*

Based on information provided by the Tech Museum, all truck deliveries to the Tech are received at its loading dock located along the south side of the building along Market Street. Various deliveries and trash pick-up occur daily at the dock. There are no truck deliveries taken along Park Avenue.

The Tech operating hours are daily from 10:00 am to 5:00 pm. During weekdays, peak visitor hours are between 10:00 am and 12:00 pm. On weekdays, an average of seven (7) buses drop-off/pick-up Tech

**Figure 9**
**Park Avenue Plan Line**



visitors. The buses usually park along Park Avenue using Market Street and San Carlos Street as needed. Drop-off typically occurs between 9:00-11:00 am with pick-up occurring between 1:00-2:00 pm. There is no dedicated on-site parking for Tech visitors and staff. Therefore, several parking garages surrounding the Tech are used by visitors and staff.

The Tech holds special events that occur outside of standard operating hours throughout the year. An average of 20 events are held each month between 6:00-10:00 pm. In addition, camps are held at the Tech during the summer months between June and September. The camps are held daily during the week with drop-off/pick-up occurring between 8:30-9:00 am, 11:30 am-12:30 pm, and 5:00-5:30 pm. The drop-off/pick-up activities occur along Park Avenue and Market Street. During the drop-off/pick-up periods vehicles queue along Park Avenue, Market Street, and Almaden Boulevard.

### *Montgomery Theater Operations*

Based on information provided by the Montgomery Theater, all truck deliveries to the Theater are received at its loading dock located along Market Street. Various deliveries and trash pick-up occur daily at the dock. There are no truck deliveries taken along Park Avenue.

Weekday operations at the Theater include load-in and rehearsal Monday through Wednesday with performances held Thursday through Sunday. Performances generally have start times of 7:00 pm with occasional Friday morning performances.

Based on the compiled operations information for the Tech Museum and Montgomery Theater, the proposed project will have minimal effect on current operations of each of the facilities. The project will not disrupt truck activities of the facilities given that neither facility utilizes Park Avenue for truck delivery activities. Vehicle queuing along Park Avenue during the summer months when camps are held at the Tech will result in operational issues with ingress and egress from the project's garage entrance. Therefore, it is recommended that the project work with the Tech to develop a drop-off/pick-up traffic management plan when camps are held. The plan will need to focuses drop-off/pick-up activities along Market Street rather than Park Avenue.

## Truck Operations

### *Proposed Project Operations*

Truck loading and unloading for the proposed project will occur within a loading area along the south side of the project site. Trash pick-up also will occur within the loading area in a designated Museum Place loading area. The loading area will be located in approximately the same location as the existing loading dock located between the project site and the City National Civic Center. Trash bins or dumpsters should be placed within the loading area dock for garbage pick-up. As per the City of San Jose Downtown off-street loading requirements, the project should ensure that each enclosed trash area is well ventilated and has adequate drain and wash systems to accommodate anticipated waste.

Based on the City of San Jose off-street loading standard for developments in the Downtown Area, the project is required to provide two off-street loading spaces for the residential component, two off-street loading spaces for the office component, and one off-street loading space for the retail space. The project, site plan does not specify the number of proposed loading spaces. Per section 20.70.450 of the Downtown Zoning Regulations, the Planning Director may authorize the reduction of two on-site loading spaces to one on-site loading space in connection with the issuance of a development permit if the Director finds that sufficient on-street loading space exists to accommodate circulation and manipulation of freight. It is recommended that the project pursue this reduction in off-street loading spaces by providing at least two on-street loading spaces. It is recommended that at least one of these loading spaces be designated for the residential component and be located near the lobby on Park Avenue. The project should work with City Staff to ensure that all loading spaces provided meet City standards for height and width.

Ingress and egress from the truck loading dock area will be taken from an improved existing driveway along San Carlos Street. The project proposes to reconstruct the existing one-way outbound driveway along San Carlos Street to provide one inbound and one outbound lane that meets City of San Jose driveway standards. The City typically requires two-way commercial driveways to be 26 feet wide. The site plan shows that trucks will enter from W. San Carlos Street. When entering from this direction, trucks will be required to

either drive past the loading dock along the pedestrian paseo or turn down the one-way Hyatt Place Hotel driveway, before backing into the loading dock. Trucks will exit using the W. San Carlos Street driveway.

The Hyatt Place Hotel drive aisle provides access from Almaden Boulevard to a parking garage utilized by hotel guests. Access to the garage from San Carlos Street is not permitted given that the existing driveway along San Carlos Street is outbound only. Exit from the garage is provided onto Almaden Boulevard and the one-way drive aisle out to San Carlos Street. It is recommended that that the one-way Hyatt Place Hotel drive aisle be maintained as one-way with the improvement of the San Carlos Street driveway to provide both inbound and outbound lanes to minimize vehicular conflict near the project truck docks and Hyatt drive aisle. Signage directing hotel guests to Almaden Boulevard should be placed near the San Carlos Street driveway.

### *Current Loading Operations*

The review of the proposed circulation also considered current truck loading activities of the surrounding buildings. The existing truck loading area is located off of the paseo that runs between Park Avenue and W San Carlos Street. This loading area is currently accessed by trucks via a driveway cut along Park Avenue. Trucks exit the dock area using the one-way egress road onto W San Carlos Street. This paseo is also used by other, smaller vehicles for loading and unloading. Though there are locations at the entry and exit points for bollards to be put in place to prevent unauthorized vehicles from using the paseo as a through street, it does not appear that these bollards are typically put in place. Two adjacent facilities, the Tech Museum and the Montgomery Theater, require frequent truck loading and unloading. Information regarding truck loading and unloading locations, frequencies, and types were obtained from each facility.

A majority of the truck deliveries at the Tech Museum typically occur at the loading dock located off of Market Street. These deliveries occur throughout the day, mostly during the weekdays. The museum also receives daily deliveries from courier vehicles (i.e. UPS or FedEx vans) that use the Parkside Hall loading area. These courier deliveries are scheduled to occur at 11:00 am daily, but the number of courier vehicles may fluctuate. The museum provides bus loading areas for private busses and has an average of seven bus drop-offs in the AM (between 9:00 and 11:00 am) and pick-ups in the PM (between 1:00 and 2:00 pm) per weekday. These busses use the on-street bus loading zone along Park Avenue. Overflow bus loading is moved to the on-street areas along S. Market Street and W. San Carlos Street.

The Montgomery Theater receives truck deliveries for various shows that are put on at the theater throughout the year. The size of the deliver and the number of trucks required for it can change from show to show. Deliveries occur at the loading dock off of Market Street, which provides direct access to backstage right of the theater. Deliveries occur at the beginning of the week for new shows, typically Monday through Wednesday. While unloading, trucks will remain docked for six to eight hours. A permit only parking area for the theater is located along W. San Carlos Street and is often used for smaller deliveries.

Apart from the daily deliveries from courier vehicles (i.e. UPS or FedEx vans) to the Tech, the proposed project will not disrupt truck activities of the Tech Museum and Montgomery Theater given that neither facility currently utilizes the loading area for truck delivery activities. The daily deliveries from courier vehicles (i.e. UPS or FedEx vans) to the Tech will need to take place along Park Avenue or Market Street if they cannot be accommodated within the loading area.

## Parking

Projects in the downtown area are located in close proximity to offices, recreation, and retail services, allowing individuals to satisfy their daily needs for work or shop near their place of residence. The availability of bicycle lanes and sidewalks throughout the downtown and the project's close proximity to major transit services will provide for and encourage the use of multi-modal travel options (bicycling and walking) and reduce the demand for on-site parking described below.

According to the City of San Jose Downtown Zoning Regulations, the project is required to provide one off-street parking space per residential unit, one space per 250 s.f. of office space, and 0.35 spaces per hotel room. The project is not required to provide parking for the retail use and is not proposing to provide parking for the additional museum space. Based on the City's parking requirements for the residential, office and hotel uses, the project is required to provide a total of 1,210 off-street parking spaces.

In addition, based on City Code 20.70.330.A, the project may receive up to a fifteen percent reduction in the number of spaces required at the discretion of the Planning Director. To receive this fifteen percent reduction the project must:

1. Have developed a TDM program that provides evidence that a TDM program will reduce parking demand and identifies the percentage of parking demand that will be reduced through the TDM program. The TDM program will incorporate one or more elements of TDM including, but not limited to, measures such as Ecopass, parking cash-out, alternate work schedules, ride sharing, transit, carpool/vanpools, shared parking, or any other reasonable measures; and
2. Demonstrate that it can maintain the TDM program for the life of the project and is reasonably certain that the parking shall continue to be provided and maintained at the same location for the services of the building or use for which such parking is required, during the life of the building or use.

The project proposes a total of 408 on-site parking stalls: 86 spaces on level 1, 118 spaces on level 2, and 204 spaces on level 3. The proposed number of parking spaces will not meet the required parking per City requirements. The applicant will be required to coordinate with City Planning staff to determine whether further reductions in off-site parking may be allowed.

Mechanical lift parking is being proposed on each of the parking levels and all parking will be valet only. If assigned, the tandem spaces would not be expected to create any parking related issues. In the City of San Jose, the Planning Director may issue a development permit to allow tandem parking spaces to satisfy up to 50 percent of the off-street parking requirement for a project.

### *Bicycle Parking*

Based on the projects downtown location, it is likely that residents of the proposed residential units will be able to work in close proximity to the site, or will be able to quickly access transit to reach their place of work. Therefore, the project is required to meet the City's Bicycle Parking requirements. The City of San Jose Downtown Zoning Regulations require one bicycle parking space per four living units, one space per 4,000 s.f. of office space, and three spaces (two short-term and one long-term) for the retail space. Based on these requirements, the project is required to provide 77 bicycle parking spaces for the residential, 52 spaces for the office space, and three spaces for the retail space. Bicycle parking spaces shall consist of at least sixty percent long-term and at most forty percent short-term spaces. Thus, the proposed project is required to provide a total of 132 bicycle parking spaces, including at least 79 long-term parking spaces. The site plan does not identify a bicycle storage room nor specify the number of bicycle parking spaces that will be provided on site. The project must meet the required bicycle parking set forth by the City. However, it is recommended that bicycle parking that exceeds the City's requirements be provided on-site to encourage the use of non-auto modes of travel.

## Vehicular Queuing Analysis

A vehicle queuing analysis was completed for high-demand movements at the study intersections. The study locations were selected based on the number of projected project trips at utilizing left-turning lanes at surrounding intersections. The project is expected to generate large left-turn volumes at the intersections of Almaden Boulevard/Park Avenue, Almaden Boulevard/San Carlos Street, and Market Street/San Carlos Street. The vehicle queuing analysis was estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

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

Where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
$\lambda$ = average number of vehicles in the queue per lane (vehicles per hour per lane/signal cycles per hour)

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. The results of the queue analysis are summarized in Table 3.

### *Almaden Boulevard and Park Avenue*

The queuing analysis indicates that the southbound left-turn and westbound left-turn movements at the Almaden Boulevard and Park Avenue intersection are not projected to have adequate queue storage capacity to serve the projected queue lengths during the peak hours with the addition of project traffic.

- The westbound queue is projected to extend back from the intersection approximately 475 feet. The projected queue would extend out of the 150-foot turn-pocket and back to the proposed project garage entrance. The queue will inhibit egress from the project parking garage entrance and block the mid-block pedestrian crossing on Park Avenue.
- The southbound queue is projected to extend back from the intersection approximately 400 feet. The projected queue would extend out of the existing 325-foot turn-pocket.

***Recommendation:*** The extension of turn-pockets to accommodate the projected queues at the Almaden Boulevard and Park Avenue intersection would require the removal of the median and established trees along its north and east approaches. However, the modification of the intersection for the purpose of providing additional vehicular capacity is not consistent with existing and planned pedestrian and bicycle improvements along Park Avenue and Almaden Boulevard. The planned improvements, which include the removal of the exclusive right-turn lanes at the intersection, are intended to encourage the use of multi-modal travel in the project area to meet General Plan goals. Therefore, the extension of turn-pockets at the intersection is not recommended.

### *Market Street and Park Avenue*

The queuing analysis indicates that the eastbound right-turn queue at the Market Street and Park Avenue intersection is projected to extend back from the intersection approximately 250 feet. The projected queue would extend back and beyond the proposed project garage entrance. The queue may inhibit ingress and egress from the garage entrance.

***Recommendation:*** The addition of additional vehicle storage space to accommodate the projected queue at the Market Street and Park Avenue intersection would require the addition of a second right-turn lane. However, the modification of the intersection for the purpose of providing additional vehicular capacity is not consistent with existing and planned pedestrian and bicycle improvements along Park Avenue. The planned improvements, are intended to encourage the use of multi-modal travel in the project area to meet General Plan goals. The implementation of a dual-right turn lane would not be pedestrian friendly. Therefore, the addition of second right-turn lane at the intersection is not recommended.

It is also important to note that the projects close proximity to major transit services along San Carlos Street and pedestrian and bicycle facilities along Park Avenue will provide for and encourage the use of multi-modal travel options and reduce the use of single-occupant automobile travel. It is expected that the auto trips ultimately generated by the project would be less than those estimated within this study and the identified operational deficiencies (queues at intersections) reduced as development and the planned enhancement of the multi-modal transportation system progresses within the downtown area.

## Transportation Demand Management

The project should establish single-occupant auto trip reduction measures, via a travel demand management (TDM) program, that result in the reduction of vehicular trips to the project site and reduce the operational issues identified. The TDM program should encourage multimodal travel and use of the extensive transit system and pedestrian/bicycle facilities in the downtown area to the maximum extent possible. The applicant/property owner should manage the TDM program to ensure residential tenant participation. An effective TDM program that includes several of the measures identified below can easily achieve a 25% percent reduction in vehicle trips that will result in a significant reduction of the projected operational issues.

**Table 3**
**Queuing Analysis Summary**

| Intersection: | Almaden Blvd & Park Ave | | Almaden Blvd & Park Ave | | Almaden Blvd & San Carlos St | | Market St & San Carlos St | | Market St & Park Ave | |
|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | SBL | | WBL | | EBL | | SBL | | EBR | |
| Peak Hour Period: | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| ***Existing*** | | | | | | | | | | |
| Cycle/Delay[1] (sec) | 140 | 140 | 140 | 140 | 130 | 126 | 154 | 154 | 100 | 100 |
| Volume (vphpl) | 42 | 39 | 22 | 195 | 73 | 74 | 35 | 90 | 70 | 145 |
| Avg. Queue (veh/ln) | 1.6 | 1.5 | 0.9 | 7.6 | 2.6 | 2.6 | 1.5 | 3.9 | 1.9 | 4.0 |
| Avg. Queue[2] (ft/ln) | 41 | 38 | 21 | 190 | 66 | 65 | 37 | 96 | 49 | 101 |
| 95th% Queue (veh/ln) | 4 | 4 | 3 | 12 | 6 | 5 | 4 | 7 | 4 | 8 |
| 95th% Queue (ft/ln) | 100 | 100 | 75 | 300 | 150 | 125 | 100 | 175 | 100 | 200 |
| Storage (ft/ ln) | 325 | 325 | 150 | 150 | 175 | 175 | 550 | 550 | 200 | 200 |
| Adequate (Y/N) | Y | Y | Y | ***N*** | Y | Y | Y | Y | Y | Y |
| ***Existing Plus Project*** | | | | | | | | | | |
| Cycle/Delay[1] (sec) | 140 | 140 | 140 | 140 | 130 | 126 | 154 | 154 | 100 | 100 |
| Volume (vphpl) | 266 | 171 | 69 | 288 | 93 | 86 | 44 | 109 | 107 | 219 |
| Avg. Queue (veh/ln) | 10.3 | 6.7 | 2.7 | 11.2 | 3.4 | 3.0 | 1.9 | 4.7 | 3.0 | 6.1 |
| Avg. Queue[2] (ft/ln) | 259 | 166 | 67 | 280 | 84 | 75 | 47 | 117 | 74 | 152 |
| 95th% Queue (veh/ln) | 16 | 11 | 6 | 17 | 7 | 6 | 4 | 8 | 6 | 10 |
| 95th% Queue (ft/ln) | 400 | 275 | 150 | 425 | 175 | 150 | 100 | 200 | 150 | 250 |
| Storage (ft/ ln) | 325 | 325 | 150 | 150 | 175 | 175 | 550 | 550 | 200 | 200 |
| Adequate (Y/N) | ***N*** | Y | Y | ***N*** | Y | Y | Y | Y | Y | ***N*** |
| ***Background*** | | | | | | | | | | |
| Cycle/Delay[1] (sec) | 140 | 140 | 140 | 140 | 130 | 126 | 154 | 154 | 100 | 100 |
| Volume (vphpl) | 49 | 64 | 28 | 241 | 85 | 86 | 39 | 100 | 76 | 148 |
| Avg. Queue (veh/ln) | 1.9 | 2.5 | 1.1 | 9.4 | 3.1 | 3.0 | 1.7 | 4.3 | 2.1 | 4.1 |
| Avg. Queue[2] (ft/ln) | 48 | 62 | 27 | 234 | 77 | 75 | 42 | 107 | 53 | 103 |
| 95th% Queue (veh/ln) | 4 | 5 | 3 | 15 | 6 | 6 | 4 | 8 | 5 | 8 |
| 95th% Queue (ft/ln) | 100 | 125 | 75 | 375 | 150 | 150 | 100 | 200 | 125 | 200 |
| Storage (ft/ ln) | 325 | 325 | 150 | 150 | 175 | 175 | 550 | 550 | 200 | 200 |
| Adequate (Y/N) | Y | Y | Y | ***N*** | Y | Y | Y | Y | Y | Y |
| ***Background Plus Project*** | | | | | | | | | | |
| Cycle/Delay[1] (sec) | 140 | 140 | 140 | 140 | 130 | 126 | 154 | 154 | 100 | 100 |
| Volume (vphpl) | 273 | 196 | 75 | 334 | 105 | 98 | 48 | 119 | 113 | 222 |
| Avg. Queue (veh/ln) | 11 | 7.6 | 3 | 13.0 | 4 | 3.4 | 2 | 5.1 | 3 | 6.2 |
| Avg. Queue[2] (ft/ln) | 265 | 191 | 73 | 325 | 95 | 86 | 51 | 127 | 78 | 154 |
| 95th% Queue (veh/ln) | 16 | 12 | 6 | 19 | 7 | 7 | 5 | 9 | 6 | 10 |
| 95th% Queue (ft/ln) | 400 | 300 | 150 | 475 | 175 | 175 | 125 | 225 | 150 | 250 |
| Storage (ft/ ln) | 325 | 325 | 150 | 150 | 175 | 175 | 550 | 550 | 200 | 200 |
| Adequate (Y/N) | ***N*** | Y | Y | ***N*** | Y | Y | Y | Y | Y | ***N*** |

Notes:
[1] Vehicle queue calculations based on cycle length for signalized intersections.
[2] Assumes 25 feet per vehicle queued.

However, the analysis contained in this report does not include reductions based on TDM measures. Therefore, the estimates of trips to be generated by the proposed project as presented and evaluated within this study may represent an over-estimation of traffic and impacts associated with the proposed project. Implementation of a TDM Program has the potential to greatly reduce project generated traffic and the identified operational issues. The project TDM program may include, but would not be limited to, the following, or alternative equivalent, elements to reduce vehicle trips:

- *Eco Pass or Clipper Card* for all employees, providing free rides on Santa Clara County's local transit agency, the Santa Clara Valley Transportation Authority (VTA)
- *25% Transit Subsidy* for transit agencies other than the VTA, including Caltrain, ACE, Capitol Corridor, BART, MUNI, and other
- *Monthly Vanpool Subsidy*
- *Commuter Tax Benefits* through WageWorks offering pre-tax deduction per month for transit and pre-tax deduction per month for parking
- *Free "Last Mile" Shuttles* to local train systems (e.g. Caltrain, Amtrak, ACE)
- *Free WiFi Commuter Buses* direct from areas like San Francisco and the TriValley area
- *Internal Carpool Matching Program* utilizing zip code matching
- *Regional Carpool Matching Program* through 511
- *Personalized Commute Assistance* offered by a Commute Coordinator
- *Preferred parking for Carpools and Vanpools* located near entrances to every building
- *Bicycle Lockers and/or Bicycle Racks* near entrances to every building
- *Showers* for cyclists and pedestrians, offering clean towel service, complimentary toiletries, hair dryers, and ironing boards
- *Intranet Site* featuring transit, bike, ridesharing and telework information
- *New Hire Orientation* presentations focusing on commute alternatives from Day 1
- *Centrally-Located Kiosks* with transit schedules, bike and transit maps, and other commute alternative information
- *Periodic Events* which connect employees with local transit agencies and transportation organizations (e.g. Spare the Air Fair, Bike to Work Day)
- *Onsite amenities* which allow employees to complete errands without a car, such as bicycle repair, dry cleaning, oil changes, carwash, haircuts, dental services, cafeteria, coffee bars, fitness center, massage services, mail and shipping services, convenience store, ATM, gift store.

## Temporary Construction

A temporary partial closure of Park Avenue may be necessary during the construction of the proposed project. Construction plans and schedule that identify the details or length of time of any roadway closures are not yet available. However, the construction of the project may require the closure of the eastbound lanes along Park Avenue between Almaden Avenue and the proposed project driveway. The closure will result in the use of one of the two westbound travel lanes to accommodate eastbound travel along Park Avenue. The closure would indirectly result in a "road diet" by narrowing travel lanes along Park Avenue on the segment of the closure. However, capacity of the westbound approach at the Almaden Boulevard and Park Avenue intersection would be greatly reduced. The reduction in capacity will likely result in a continuous westbound vehicle queue along Park Avenue that will extend back from Almaden Boulevard and through the mid-block pedestrian crossing. Therefore, there will be a need to implement temporary measures (signage, striping, LED light-bars) to ensure that the pedestrian crossing is not blocked by the vehicle queue. Clear lines of site of pedestrians also should be maintained near the crossing.

## Conclusions

The project as proposed would consist of 306 residential units, 209,779 square feet (s.f.) of office space, 14,116 s.f. of retail space, 187 hotel rooms, and 60,000 s.f. of Museum space. Parking for the proposed project would be provided within a three-level valet-only below-grade parking garage. Access to the parking garage will be provided by a single driveway on Park Avenue. Left-turns from the project site garage entrance will require the partial removal of existing center median on Park Avenue, along with one or two palm trees within the center median. The parking garage would include 408 parking spaces. Access to an off-street loading area at the south side of the project would be provided via an improved existing access point along San Carlos Street.

Since the project site is located in the Downtown Core area boundary, it is covered by the San Jose Downtown Strategy 2000 EIR. Accordingly, City staff has already concluded that the project is in

conformance with the City of San Jose Transportation Level of Service Policy (Council Policy 5-3) and will not require preparation of a comprehensive Transportation Impact Analysis (TIA).

It should be noted that the proposed project would replace the existing Parkside Hall building currently located on site. Although no parking to serve Parkside Hall is provided on site, it generates traffic to the project area that utilizes parking facilities in the vicinity of the site. Once the proposed project is implemented, trips generated by the Parkside Hall would be replaced by trip generated by the proposed project. The proposed project will result in a reduction in trips originating from outside the downtown area, centralization of vehicular trips to the project site, and reduction in off-site parking demand.

The project site is located in an area that is predominantly employment/entertainment based. Therefore, it is expected that the introduction of new residents in the area will result in a reduction in vehicular trips and an increase in demand for multi-modal travel options. The availability of bicycle lanes and sidewalks throughout downtown and the project's close proximity to major transit services will provide for and encourage the use of multi-modal travel options (bicycling and walking) and reduce the use of single-occupant automobile travel.

Therefore, the estimates of trips to be generated by the proposed project as presented and evaluated within this study may represent an over-estimation of traffic and impacts associated with the proposed project. It is expected that the auto trips ultimately generated by the project would be less and the identified operational issues reduced with the use of the multi-modal transportation system within the Downtown area.

A summary of the site access and circulation review along with recommended adjustments is provided below.

### *Recommendations*

- The City has developed a plan line for the reduction in width of Park Avenue between Market Street and Almaden Boulevard. The City will require that the project remove the landscape median and trees along Park Avenue at its driveway and design frontage improvements that are consistent with the plan line.
- Any control gates at the proposed garage entrance should be located a minimum of two car lengths back from the sidewalk (within the parking garage due to the zero setback requirements in the Downtown area) on Park Avenue to be able to accommodate two entering vehicles at the garage entrance without blocking the sidewalk.
- The project will be required to complete pedestrian facility improvements at the Market Street and Park Avenue intersection that are part of a plan line for the reduction in width of Park Avenue between Market Street and Almaden Boulevard.
- It is recommended that the posted speed limit along Park Avenue be reduced to 25 mph when the planned Park Avenue reduction plan is implemented. The reduction in vehicle speeds will provide for a safer environment for pedestrian and bicyclists and allow for safe egress from driveways along Park Avenue.
- Appropriate visible and/or audible warning signs should be provided at the project driveway to alert pedestrians and bicyclists of vehicles exiting the garage.
- The City will vacate Almaden Avenue and retain 40 feet from the western property line for a 20-foot paseo for the use of pedestrians and bicycles and 20 feet for an emergency access easement. No vehicular access shall be provided from Park Avenue along the paseo.
- The proposed passenger drop-off/pick-up area along the project's frontage on Park Avenue should be time-restricted and restricted to passenger drop-off/pick-up only and not used for truck loading. The loading area must be located such that a minimum 30 feet of red curb is provided at the existing fire hydrant along Park Avenue or the fire hydrant must be relocated.
- An exclusive lane for outbound office traffic should be provided on the first level. The lane should be provided west of the hotel pick-up aisles so as to not create circulation conflicts with the inbound residential/hotel traffic.

- Based on the estimated peak hour inbound project trips, storage for a minimum of two vehicles for the residential use, five vehicles for the office use, and two vehicles for the hotel use should be provided within each of the designated drop-off areas. The use of the drive aisles for storage should be avoided as it will inhibit circulation to each of the drop-off/pick-up areas.
- The project should work with City staff to ensure that specific requirements for the valet operations and mechanical lifts within the garage are met.
- The project should work with the Tech to develop a drop-off/pick-up traffic management plan when camps are held. The plan will need to focuses drop-off/pick-up activities along Market Street rather than Park Avenue.
- The project should pursue the reduction in off-street loading spaces (as per section 20.70.450 of the Downtown Zoning Regulations) by providing on-street loading spaces in addition to the proposed off-street loading spaces.
- The project proposes to reconstruct the existing one-way outbound driveway along San Carlos Street to provide one inbound and one outbound lane that meets City of San Jose driveway standards. The City typically requires two-way commercial driveways to be 26 feet wide.
- The project must meet the required bicycle parking set forth by the City. However, it is recommended that bicycle parking that exceeds the City's requirements be provided on-site to encourage the use of non-auto modes of travel.
- The proposed 408 on-site parking stalls will not meet the required off-street parking per City requirements. The project should establish single-occupant auto trip reduction measures, via a travel demand management (TDM) program, that result in the reduction of vehicular trips to the project site and reduce the operational issues. The applicant will be required to coordinate with City Planning staff to determine whether further reductions in off-site parking may be allowed.
- Implement temporary measures (signage, striping, LED light-bars) to ensure that the mid-block pedestrian crossing along Park Avenue is not blocked by the vehicle queues during any temporary construction roadway closures. Clear lines of site of pedestrians also should be maintained near the crossing.