# APPENDIX H

# TRANSPORTATION IMPACT ANALYSIS

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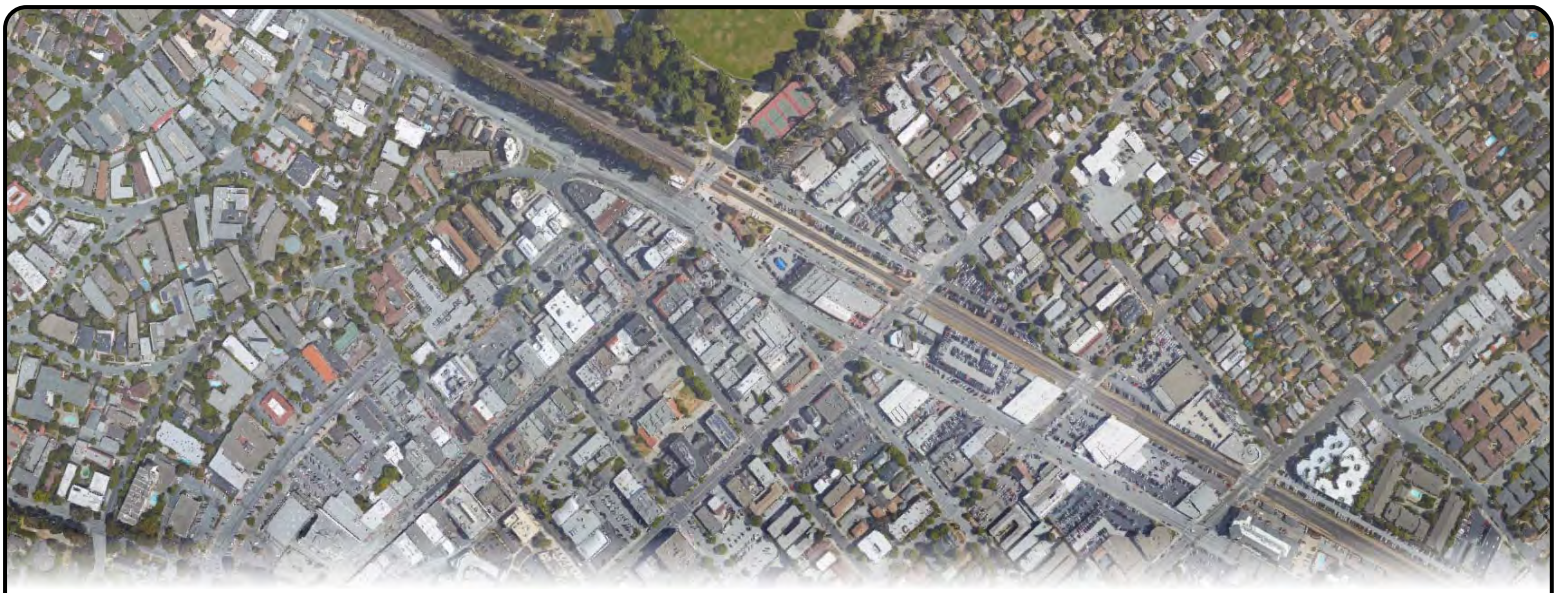

Transportation Impact Analysis

# 225 CALIFORNIA DRIVE OFFICE PROJECT

City of Burlingame


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Abrams Associates
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Bcac k `cp 2, 2015

# 225 California Drive Office Project

## *City of Burlingame*

## TRANSPORTATION AND CIRCULATION

## 1) EXECUTIVE SUMMARY

This traffic impact study describes the existing and future conditions for transportation with and without the proposed office development with an underground garage which is proposed to include 43,140 square feet of office space and 1,820 square feet of ground floor retail space. The study presents information on the regional and local roadway networks, pedestrian and transit conditions, and provides an analysis of the effects on transportation facilities associated with the project.

This study also describes the regulatory setting; the criterion used for determining the significance of environmental impacts; and summarizes potential environmental impacts and appropriate mitigation measures. This study has been conducted in accordance with the requirements and methodologies set forth by the City of Burlingame, San Mateo County, Caltrans, and the applicable provisions of CEQA[1].

Based on this analysis and subject to verification by the City, this study has concluded that the proposed project would not result in any significant impacts to traffic or transportation in the project study area nor the existing parking capacity within the project study area. Please note that the project study area and scope were defined in coordination with City of Burlingame staff.

Although not a consideration under CEQA the City also requested that the parking supply for the proposed project be reviewed. Based on the standard Institute of Transportation Engineers parking generation rates the proposed project is estimated to have an average peak parking demand of about 94 parking spaces. The proposed project would provide 130 parking spaces with a car sharing facility. Based on this analysis it is our recommendation that the City consider making the findings that the proposed 130 space parking garage for the project is reasonable and appropriate.

The justification is as follows:

1) The project is proposing to include a car share facility on-site with recorded easements that cannot be modified without the City's consent (as per the Downtown Specific Plan).

2) The project is proposing to meet or exceed the requirements for bicycle parking by providing a secure bicycle parking area for employees. In addition to the large secure

[1] *Guide for the Preparation of Traffic Impact Studies*, Caltrans, Sacramento, CA, December, 2002.

bicycle parking area, the proposed project would include adjacent restrooms and showers.

3) There would be numerous opportunities for the office employees with respect to shopping and the many quick service and full service restaurants located within easy walking distance of the project site.

4) There are existing opportunities for car sharing nearby. Please note there is a Zipcar location at 888 San Mateo Drive at Peninsula Avenue as well as a couple more locations about a mile away in San Mateo.

5) There are numerous public parking garages and parking lots in the immediate area, including eight public lots within about two blocks of the project. However, based on the calculated demand none would be expected to be used.

6) There is extensive public transportation available in the project area including the Caltrain station at Burlingame Avenue almost directly across the street. There are also bus stops less than a block from the site that provides access to the Burlingame Trolley as well as two different SamTrans bus routes.

# 2) PROJECT DESCRIPTION

The proposed project includes 43,140 square feet of office space and 1,820 square feet of ground floor retail space as well as an underground garage with 3 levels of underground parking. The project is located at the intersection of California Avenue with Highland Avenue in the City of Burlingame. All access to the site is proposed to be from an entrance to the garage on Highland Avenue, which is a one-way southbound roadway in the segment immediately adjacent to the project site. Please note that due to the designation of Highland Avenue as one-way street, the exit driveway shall need to be restricted to right turns only. **Figure 1** shows the location of the project and the surrounding roadway network. **Figure 2** shows the proposed site plan for the project. The project site is improved with a 13,720 square foot retail/commercial building, of which about 8,700 square feet is occupied retail space. The surrounding land uses include mostly retail, restaurant, and other commercial land uses.

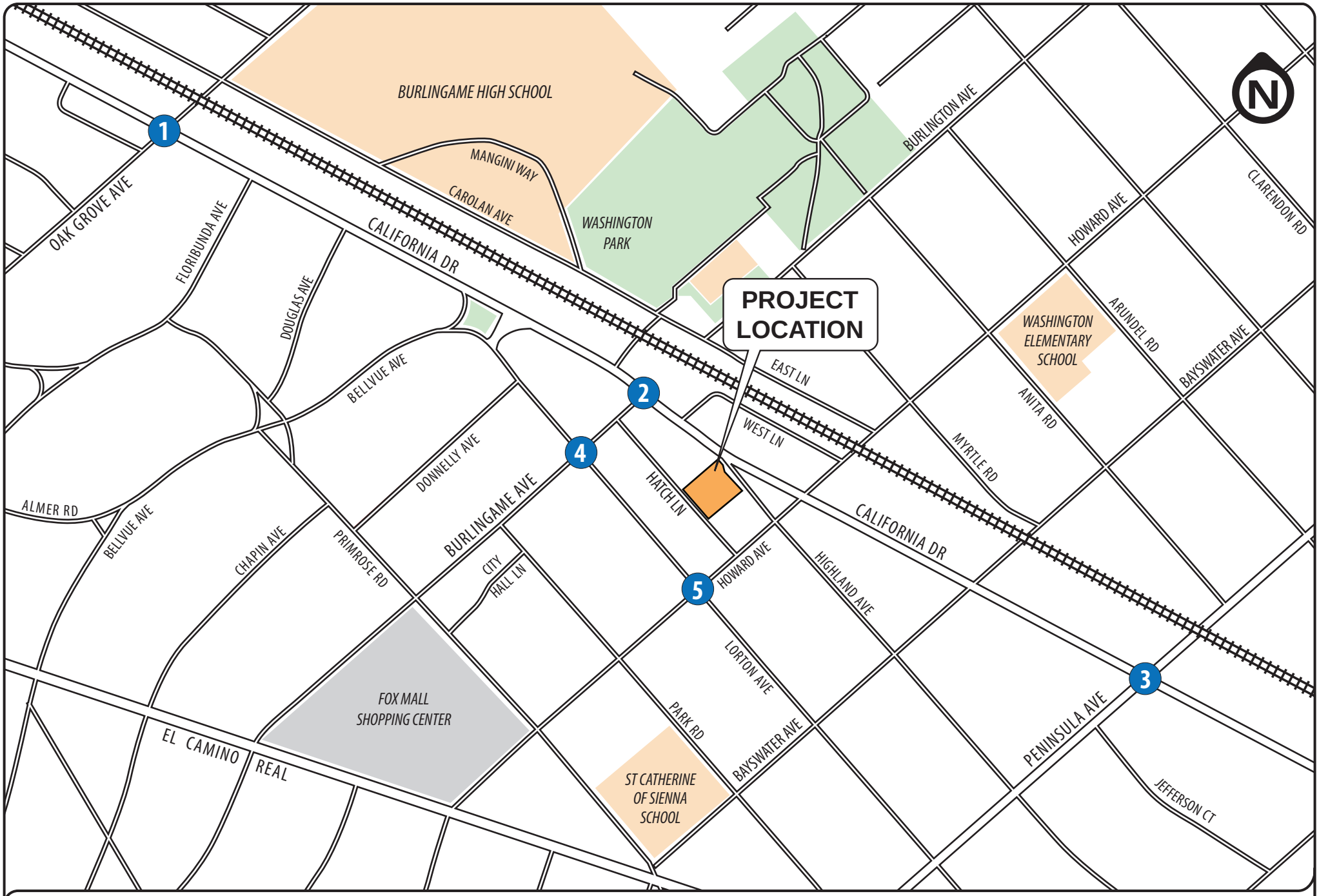


**FIGURE 1 | PROJECT LOCATION**
**TRANSPORTATION IMPACT ANALYSIS**
215 California Drive Office Project
**City of Burlingame**

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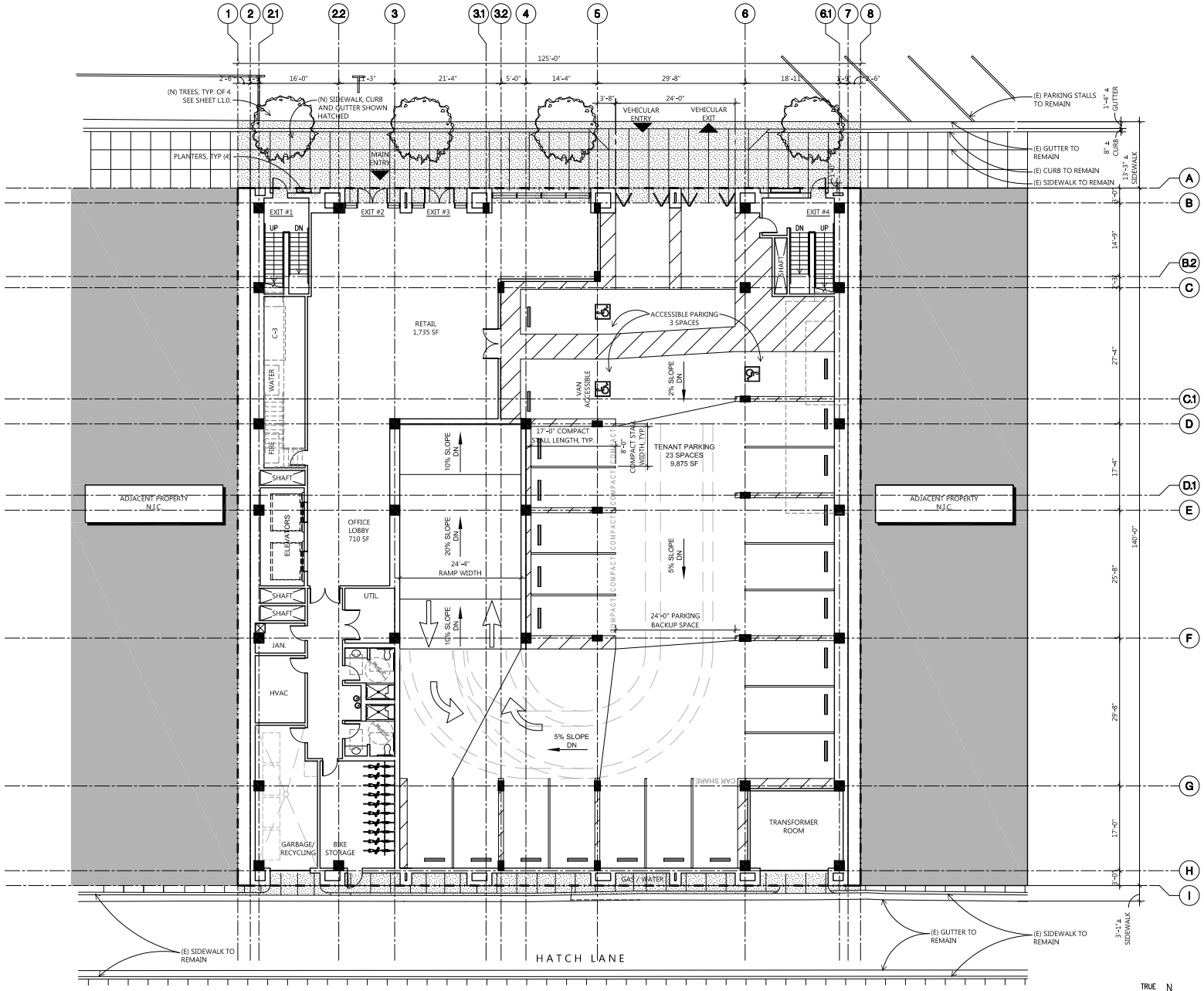


## LEGEND

- AREA OF ADJACENT PROPERTY, N.I.C.
- NEW SIDEWALK CURB AND GUTTER
- PROPERTY LINE
- ACCESSIBLE EXIT PATH OF TRAVEL

## NOTES

1. THE ACCESSIBLE PARKING MUST COMPLY WITH THE ACCESSIBILITY REQUIREMENTS OF THE 2013 CBC. SPECIFICALLY:
   a. ALL ENTRANCES TO AND VERTICAL CLEARANCES WITHIN THE PARKING STRUCTURE MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 8'-2" WHERE REQUIRED FOR ACCESSIBILITY TO ACCESSIBLE SPACES.
   b. AT G1 GARAGE, THE CLEAR HEIGHT TO THE LOWEST SUSPENDED FIXTURE MUST BE ≥ 8'-2".
2. (N) ELEVATORS WITH 7'-5 9/16" W x 5'-5 9/16" D CAB INTERIOR.
3. AN AUDIBLE WARNING SYSTEM SHALL BE INSTALLED AT EXIT DRIVEWAYS.

## PARKING

RETAIL: NO RETAIL PARKING REQUIRED
OFFICE: 1 SPACE FOR EACH 300 SF FLOOR AREA

43,070 SF / 300 = 144 PARKING SPACES REQUIRED
CAR SHARE 10% CREDIT = 144 X 10% = 14
TOTAL PARKING SPACES REQUIRED = 130 SPACES

**TOTAL PARKING SPACES PROVIDED: 130 SPACES**

**PARKING SPACE BREAKDOWN:**

**G3 LEVEL GARAGE:**

| | |
|---|---|
| STANDARD SPACES | 31 SPACES |
| COMPACT SPACES | 5 SPACES |
| TOTAL | 36 SPACES |

**G2 LEVEL GARAGE:**

| | |
|---|---|
| STANDARD SPACES | 31 SPACES |
| COMPACT SPACES | 5 SPACES |
| TOTAL | 36 SPACES |

**G1 LEVEL GARAGE:**

| | |
|---|---|
| ACCESSIBILITY SPACES | 2 SPACES |
| STANDARD SPACES | 28 SPACES |
| COMPACT SPACES | 5 SPACES |
| TOTAL | 35 SPACES |

**GROUND LEVEL:**

| | |
|---|---|
| ACCESSIBILITY SPACES | 3 SPACES |
| STANDARD SPACES | 14 SPACES |
| COMPACT SPACES | 5 SPACES |
| CAR SHARE SPACE | 1 SPACE |
| TOTAL | 23 SPACES |

PROPOSED GROUND FLOOR PLAN

A2.3

**FIGURE 2 | SITE PLAN**
**TRANSPORTATION IMPACT ANALYSIS**
215 California Drive Office Project
**City of Burlingame**

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# 3) ENVIRONMENTAL SETTING

This section of the report describes the roadways, traffic conditions and other existing transportation characteristics in the vicinity of the project. The primary basis of the analysis is the peak hour level of service for the key intersections. The hours identified as the "peak" hours are generally between 7:30 AM and 8:30 AM and 4:30 PM and 5:30 PM. for all of the transportation facilities described. However, please note that two hour peak period traffic counts were conducted at each intersection in the morning and afternoon and then the highest single one hour period recorded for each was used in the analysis. Throughout this report, these peak hours will be identified as the AM and PM peak hours, respectively.

## 3.1 Project Study Intersections

Based on the project's trip generation and the potential for traffic impacts, a list of project study intersections was prepared in coordination with the City of Burlingame staff based on Caltrans standards and the potential for project impacts. **Figure 1** shows the location of the project study intersections. Five (5) existing study intersections and the two proposed project driveway intersections were included in the analysis. All of the existing study intersections are signalized with the exception of intersections #4 and #5 (Lorton Avenue at Burlingame Avenue and Howard Avenue) which both have all-way stop control.

*Project Study Intersections*

1. California Drive at Peninsula Avenue
2. California Drive at Burlingame Avenue
3. California Avenue at Oak Grove
4. Burlingame Avenue and Lorton Avenue
5. Lorton Avenue at Howard Avenue

## 3.2 Traffic Analysis Scenarios

The study intersections were evaluated for the following four scenarios:

- Scenario 1: *Existing Conditions* – Level of Service (LOS) based on existing peak hour volumes and existing intersection configurations.
- Scenario 2: *Existing Plus Project* – Existing traffic volumes plus trips from the proposed project.
- Scenario 3: *Cumulative Conditions* – This scenario includes year 2040 cumulative volumes based on planned and approved projects and the most recent release of the Countywide Travel Demand Model.
- Scenario 4: *Cumulative Plus Project Conditions* – This scenario includes year 2040 cumulative volumes based on the most recent release of the Countywide Travel Demand Model plus the trips from the proposed project.

## 3.3 Existing Roadway Network

As discussed previously, the project location and the surrounding roadway network are illustrated in **Figure 1**. The following is a more detailed description of the roadways that could be affected by the project:

- **California Avenue –** is a four-lane road that extends south from Millbrae Avenue in the City of Millbrae down to Peninsula Avenue in San Mateo where it changes names to become North San Mateo Drive. California Avenue runs parallel to the Caltrain tracks on their west side. The speed limit on California Avenue is 25 mph in the project study area but it becomes 35 mph to the north of Douglas Avenue.

- **Burlingame Avenue –** Burlingame Avenue is a discontinuous two lane east-west roadway that extends west from Rollins Lane to East Lane. It then starts again, extending west from California Avenue through the commercial district across El Camino Real to terminate at Occidental Avenue. Burlingame Avenue has a speed limit of 25 mph.

- **Peninsula Avenue –** is a major east-west four-lane arterial that extends west from Airport Boulevard through an interchange with the U.S. 101 freeway to terminate on the west at El Camino Real. East of the Caltrans tracks Peninsula Avenue has a speed limit of 35 mph. The speed limit then drops to 30 mph in the project study area (west of the Caltrans tracks).

- **Highland Avenue –** Highland Avenue is a two lane commercial and residential roadway that extends south from Calfornia Avenue into San Mateo to terminate at East Santa Inez Avenue. Highland Avenue is a two-way roadway except in the block adjacent to the proposed project (between California Avenue and Howard Avenue) where is it one-way southbound with a single travel lane. Highland Avenue has a speed limit of 25 mph.

- **Lorton Avenue –** Lorton Avenue is a two lane commercial and residential roadway that extends southeast from Belleview Avenue to terminate at Peninsula Avenue. Lorton Avenue is a two-way roadway with a speed limit of 25 mph.

## 3.4 Intersection Analysis Methodology

Existing operational conditions at the five (5) study intersections have been evaluated according to the requirements set forth by the Caltrans using the methodology set forth in their technical procedures. The analysis of traffic operations was conducted using the 2010 *Highway Capacity Manual* (*HCM*) Level of Service (LOS) methodology with Synchro software.[2] Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection (or roadway segment) to accommodate the volume of traffic moving through it at any given time. The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams.

As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled level of service (LOS) E. At LOS F, the intersection or roadway segment capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it.

For signalized intersections, The *HCM* methodology determines the capacity of each lane group approaching the intersection. The LOS is then based on average control delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average control delay and LOS are presented for the intersection. A summary of the HCM results and copies of the detailed HCM LOS calculations are included in the appendix to this report. **Table 1** summarizes the relationship between LOS, average control delay, and the volume to capacity ratio at signalized intersections.

For unsignalized (all-way stop controlled and two-way stop controlled) intersections, the average control delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn) for those movements that are subject to delay. In general, the operating conditions for unsignalized intersections are presented for the worst approach. **Table 2** summarizes the relationship between LOS and average control delay at unsignalized intersections.

[2] *2010 Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2011

**TABLE 1**
**SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS**

| Level of Service | Description of Operations | Average Delay (sec/veh) | Volume to Capacity Ratio |
|---|---|---|---|
| A | Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication. | ≤ 10 | < 0.60 |
| B | Minimal Delays: An occasional approach phase is fully used. Drivers begin to feel restricted. | > 10 to 20 | > 0.61 to 0.70 |
| C | Acceptable Delays: Major approach phase may become fully used. Most drivers feel somewhat restricted. | > 20 to 35 | > 0.71 to 0.80 |
| D | Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly without excessive delays. | > 35 to 55 | > 0.81 to 0.90 |
| E | Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream. | > 55 to 80 | > 0.91 to 1.00 |
| F | Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections. | > 80 | > 1.00 |

**SOURCES:** 2010 *Highway Capacity Manual*, Transportation Research Board, 2011.

**TABLE 2**
**UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS**

| Level of Service | Description of Operations | Average Delay (seconds/vehicle) |
|---|---|---|
| A | No delay for stop-controlled approaches. | 0 to 10 |
| B | Operations with minor delays. | > 10 to 15 |
| C | Operations with moderate delays. | > 15 to 25 |
| D | Operations with some delays. | > 25 to 35 |
| E | Operations with high delays and long queues. | > 35 to 50 |
| F | Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers. | > 50 |

**SOURCE:** 2010 *Highway Capacity Manual*, Transportation Research Board, 2011.

## 3.5 Existing Intersection Capacity Conditions (Scenario 1)

The existing intersection geometry at each of the project study intersections can be seen in **Figure 3.** The existing traffic volumes at the study intersections for weekday AM and PM peak hours are presented in **Figure 4**. Traffic counts were conducted at all of the project study intersections in February of 2015 at times when local schools were in session. **Table 3** summarizes the associated LOS computation results for the existing weekday AM and PM peak hour conditions. Please note that the corresponding LOS analysis calculation sheets are presented in the *Traffic Analysis Appendix*. As shown in **Table 3**, all of the study intersections currently have acceptable conditions (LOS C or better) during the weekday AM and PM peak hours.

**TABLE 3**
**EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS**

| INTERSECTION | | CONTROL | PEAK HOUR | EXISTING | |
|---|---|---|---|---|---|
| | | | | Delay | LOS |
| 1 | OAK GROVE AVE & CALIFORNIA DR | Signalized | AM | 22.0 | C |
| | | | PM | 20.9 | C |
| 2 | BURLINGAME AVE & CALIFORNIA DR | Signalized | AM | 6.7 | A |
| | | | PM | 6.4 | A |
| 3 | PENINSULA AVE & CALIFORNIA DR | Signalized | AM | 21.1 | C |
| | | | PM | 33.4 | C |
| 4 | BURLINGAME AVE & LORTON AVE | All Way Stop | AM | 8.5 | A |
| | | | PM | 9.1 | A |
| 5 | HOWARD AVE & LORTON AVE | All Way Stop | AM | 9.1 | A |
| | | | PM | 10.4 | B |

**SOURCE:** Abrams Associates, 2015

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented with the overall intersection delay shown in parentheses.

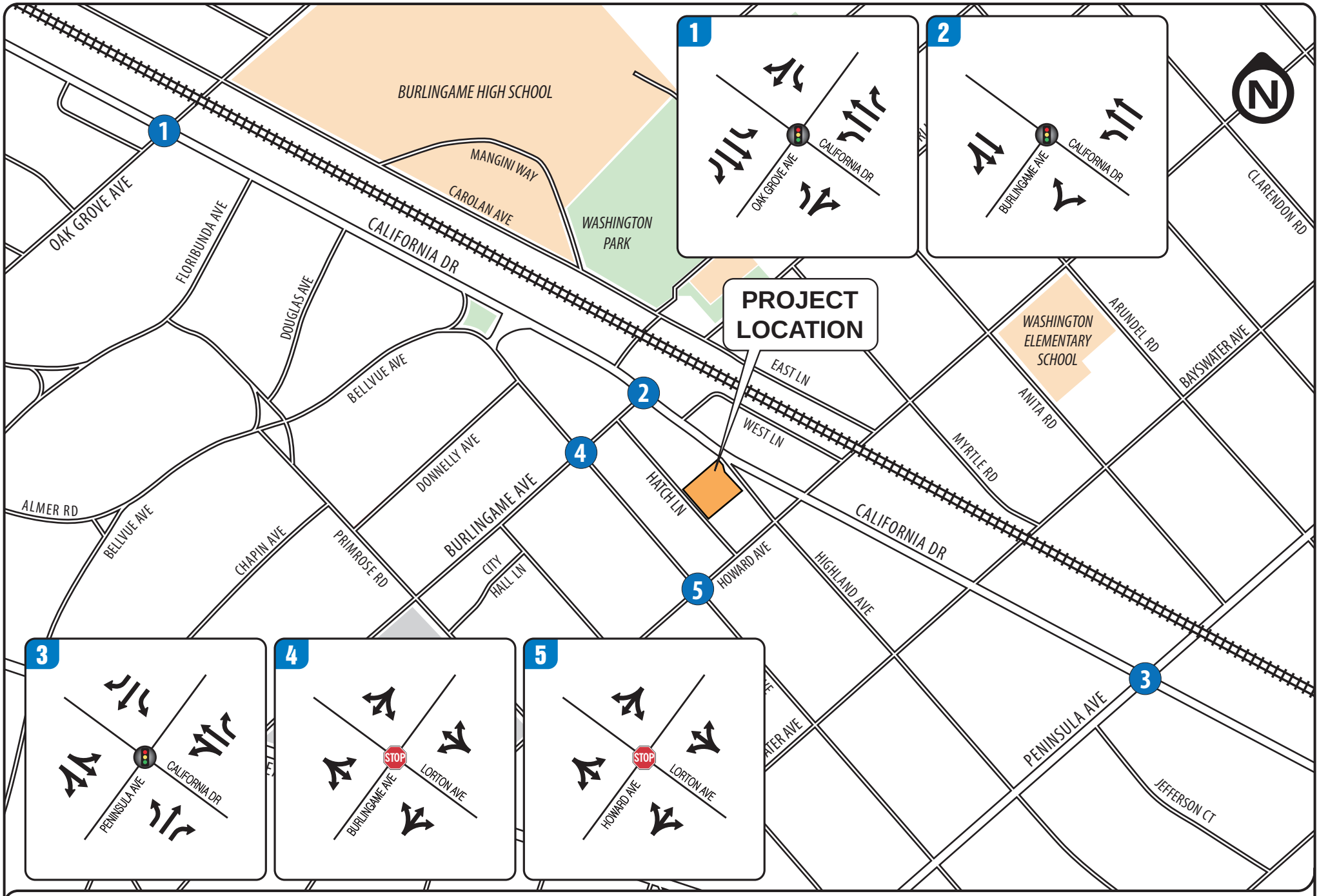


**FIGURE 3 | EXISTING LANE CONFIGURATIONS**

**TRANSPORTATION IMPACT ANALYSIS**

215 California Drive Office Project

**City of Burlingame**

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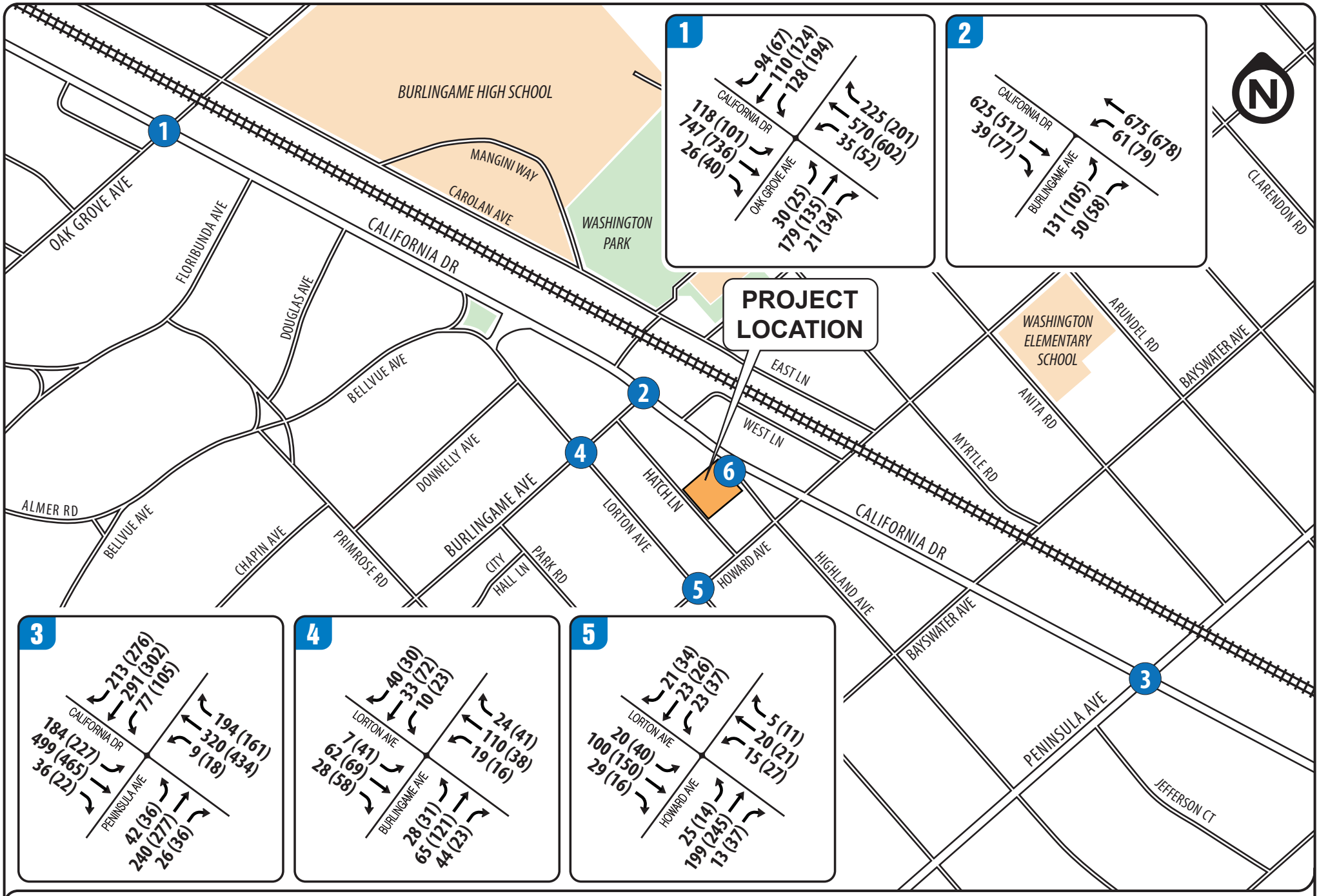


**FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES**

**TRANSPORTATION IMPACT ANALYSIS**

215 California Drive Office Project

**City of Burlingame**

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## 3.6 Planned Roadway Improvements

The most significant planned roadway improvement in the area is reconfiguration of the U.S. 101/Broadway interchange. Although this project is not within the immediate study area it does have the potential to affect circulation patterns in the project area. The California Department of Transportation (Caltrans), in cooperation with San Mateo County Transportation Authority (SMCTA), is reconfiguring the US 101/Broadway interchange to improve traffic movement and access around the interchange. The interchange improvements shall accommodate future traffic increases at adjacent intersections and improve operations at the 101 southbound ramps in addition to improving bicycle and pedestrian access. The interchange reconfiguration consists of a new seven-lane Broadway overcrossing. Broadway will be realigned to extend straight across US 101 from the Broadway/Rollins Road intersection on the west to Bayshore Highway on the east, and the northern terminus of Airport Boulevard will be moved approximately 100 feet to the north to meet the new overcrossing. In addition, the existing on- and off-ramps will be replaced, and ramp metering equipment are being installed. This work is currently underway.

## 3.7 Pedestrian and Bicycle Facilities

Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following three classes:

*Class I* – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.

*Class II* – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

*Class III* – Provides a route designated by signs or permanent markings and shared with pedestrians and motorists.

Please note there are sidewalks on most streets in the project study area and there are existing Class II bicycle lanes on Howard Avenue east of the Caltrain tracks. In addition, the Burlingame Bicycle Route Map (City of Burlingame 2008) identifies California Drive, Highland Avenue, and Howard Avenue official bike routes.

## 3.8 Transit Service

Three major public mass transit operators provide service within or adjacent to the study area. These include BART, the Eastern San Mateo Transit Authority (or Tri Delta Transit), and the County Connection. These operators are described below.

**Caltrain –** Commuter rail service between San Francisco and Gilroy is provided by Caltrain. The project is located directly across California Drive from the Burlingame Caltrain station. Caltrain generally provides service with 20- to 30-minute headways during the weekday AM and PM commute hours. With the proposed Peninsula Corridor Electrification Project (PCEP), which is a key component of the Caltrain Modernization program, the frequency of stops at the Burlingame stations could be increased. This is slated to be completed in 2021 according to the CalTrain website.

**BART -** Commuter rail service in the project vicinity is provided by BART from the Millbrae Station. The BART system connects Millbrae to the Peninsula, San Francisco, and the East Bay. The Millbrae BART station is located less than three miles north of the site and is accessible via the free shuttle service connecting with the Broadway Caltrain station. The Broadway station is about a mile from the project site and can be accessed via SamTrans Routes 292 and 46 which are described in more detail below. BART trains operate on 15-minute headways during the commute periods. Please note that BART also operates a free shuttle that runs between the Millbrae Intermodal BART & Caltrain Station, Mills-Peninsula Health Services, Sisters of Mercy and the Easton-Burlingame neighborhood during commute hours, Monday through Friday.

**SamTrans Bus Service Caltrain Shuttle, Burlingame Trolley** - The project area is served directly by two local SamTrans buses, the Broadway Millbrae shuttle, and the Burlingame Trolley. The SamTrans bus lines that operate within the project study area are Route 46 and Route 292 which both operate along California Drive with stops at the adjacent Burlingame Caltrain station. The Broadway Millbrae shuttle operates every day and provides a connection between the Broadway Caltrain station and the Millbrae Caltrain station. The Burlingame Trolley is a free service that operates every day and connects the hotels east of US 101 to Broadway, downtown Burlingame, and the Burlingame Caltrain station.

# 4) REGULATORY CONTEXT

Existing policies, laws and regulations that apply to the proposed project are summarized below.

## 4.1 State

The California Department of Transportation (Caltrans) has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, such as SR 4. Any improvements to these roadways would require Caltrans' approval. The Guide for the Preparation of Traffic Impact Studies provides consistent guidance for Caltrans staff who review local development and land use change proposals. The Guide also informs local agencies about the information needed for Caltrans to analyze the traffic impacts to state highway facilities which include freeway segments, on- or off-ramps, and signalized intersections.

## 4.2 Local

**City of Burlingame General Plan -** The Transportation and Circulation Element included in the City of Burlingame General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the City will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the City.

## 4.3 Significance Criteria

The City of Burlingame does not have any Council-adopted definitions of significant traffic impacts. Previous studies have specified a goal of maintaining a Level of Service (LOS) D at all intersections during the peak hours. The following standards typically have been used in traffic studies and EIRs.

*Signalized Intersections* - Project-related operational impacts on the signalized study intersections in the City of Burlingame are considered significant if project-related traffic causes the Level of Service (LOS) rating to deteriorate from LOS D or better to LOS E or F, or from LOS E to LOS F. Based on previous traffic studies in the City it is also considered a significant impact if the level of service at an intersection is an unacceptable LOS E or F without the project and the addition of project trips causes the average delay at the intersection to increase by five (5) or more seconds.[3]

*Unsignalized Intersections* - Project-related operational impacts on unsignalized intersections are considered significant if project generated traffic causes the worst-case movement (or average of all movements for all-way stop-controlled intersections and roundabouts) to deteriorate from LOS D or better to LOS E or F. Previous traffic studies completed in the City of Burlingame have stated that a project would have a significant adverse impact on traffic conditions at an unsignalized intersection with an unacceptable level of service (LOS E or LOS F) if the project adds at least 10 trips during any peak-hour.

According to CEQA guidelines, a project would have a significant impact if it would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards, and travel demand measures, or other standards established by a county congestion management agency for designated roadways.
- Result in inadequate emergency vehicle access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
- Result in a projected future over-capacity freeway condition where current long-range planning studies show an under-capacity condition.
- Result in an internal circulation system design that does not meet City standards.

[3] *Traffic Impact Analysis Report for the Carolan Avenue and Rollins Road Residential Development*, Hexagon Transportation Consultants, Inc. , San Jose, CA, August 21, 2014.

# 5) IMPACTS AND MITIGATION MEASURES

## 5.1 Project Trip Generation

The proposed project will consist of include 43,140 square feet of office space and 1,820 square feet of ground floor retail space and would replace a 13,720 square foot retail/commercial building. It was confirmed that a little less than two thirds of the space (about 8,700 square feet) was occupied retail space at the time the traffic counts were conducted. The trip generation calculations are shown in **Table 4**.

**TABLE 4**
**TRIP GENERATION CALCULATIONS**

| ***Land Use*** | ***Size*** | ***ADT*** | ***AM Peak Hour*** | | | ***PM Peak Hour*** | | |
|---|---|---|---|---|---|---|---|---|
| | | | ***In*** | ***Out*** | ***Total*** | ***In*** | ***Out*** | ***Total*** |
| General Office Space | 43,140 sq. ft. | 476 | 59 | 8 | 67 | 11 | 53 | 64 |
| Transit / Shared Trips Reduction 10% (Office Only) | | 48 | 6 | 1 | 7 | 1 | 5 | 6 |
| *Traffic Generated by the Proposed Office Space* | | *428* | *53* | *7* | *60* | *10* | *48* | *58* |
| General Commercial/Retail | 1,820 sq. ft. | 78 | 1 | 1 | 2 | 3 | 4 | 7 |
| Pass-By Traffic Reduction 34% | | 27 | 0 | 1 | 1 | 1 | 1 | 2 |
| *Traffic Generated by the Proposed Retail Space* | | *51* | *1* | *0* | *1* | *2* | *3* | *5* |
| *Totals for New Construction* | *44,960 sq. ft.* | *479* | *54* | *8* | *61* | *12* | *51* | *63* |
| Existing Occupied Retail | 8,700 sq. ft. | 371 | 5 | 3 | 8 | 15 | 17 | 32 |
| Pass-By Traffic Reduction 34% (Retail Only) | | 126 | 2 | 1 | 3 | 5 | 6 | 11 |
| *Traffic Generated by the Existing Retail/Commercial* | | *245* | *3* | *2* | *5* | *10* | *11* | *21* |
| **Net New Project Trips** | | **234** | **51** | **6** | **56** | **2** | **40** | **42** |

The trip generation calculations were based on the rates for a general office building (ITE Land Use Code 710 from the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 9th Edition. Please note the trip generation for the existing space was also calculated using ITE rates. The total project trip generation reflects all vehicle trips that would be counted at the project driveway, both inbound and outbound. For this analysis, a 10% reduction was taken (for the office uses only) to account for the close proximity to public transit as well as shared trips with other commercial uses in the business district (i.e. retail and restaurants). Please note that the peak hour reduction that was applied only to the retail uses was 34%. As per discussions with the City, this is to account for pass-by trips because of the fact that the project is located in

a downtown retail area where some of the retail trips would already be part of the existing traffic stream adjacent to the project site. These are standard adjustments based on information derived from commonly accepted references including the ITE Trip Generation Handbook.[4]

The project is forecast to generate approximately 56 vehicle trips during the AM peak hour and 42 trips during the PM peak hour. For purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network from a proposed project, the trips generated by this proposed development are estimated for the peak commute hours of 7:30 AM and 8:30 AM and 4:30 PM and 5:30 PM, which represent the peak of "*adjacent street traffic*". This is the time period when the project traffic would generally contribute to the greatest amount of congestion.

## 5.2 Project Trip Distribution

The trip distribution assumptions have been based on the project's proximity to freeway interchanges, the existing directional split at nearby residential neighborhoods and local intersections, and the overall land use patterns in the area as determined from the most recent update to the Countywide Travel Demand Model. **Table 5** shows the percentage of project traffic assigned to various study roadways in both the AM and PM peak hours. **Figure 5** shows the project traffic that would be added at each of the study intersections.

**TABLE 5**
**PROJECT TRIP DISTRIBUTION ASSUMPTIONS**

| ***Origin / Destination*** | ***Peak Hour Trip Percentages*** |
|---|---|
| East on Howard Avenue | 3% |
| East on Peninsula Avenue | 32% |
| South on San Mateo Drive | 10% |
| South on Highland Avenue | 3% |
| South on Lorton Avenue | 7% |
| West on Howard Avenue | 8% |
| West on Burlingame Avenue | 10% |
| North on California Drive | 27% |

## 5.3 Existing Plus Project Traffic Capacity Conditions (Scenario 2)

This scenario evaluates the existing conditions with the addition of traffic from the proposed project. The capacity calculations for the Existing Plus Project scenario are shown in **Table 6**. Please note that the corresponding LOS analysis calculation sheets are presented in the Traffic Analysis Appendix. **Figure 6** shows the existing plus project traffic volumes at each of the study intersections. As shown in **Table 6**, all of the signalized study intersections would continue to have acceptable conditions (LOS C or better) according to City standards during the weekday AM and PM peak hours.

[4] *ITE Trip Generation Handbook, 2nd Edition, Appendix B*, Institute of Transportation Engineers, Washington D.C., 2012.

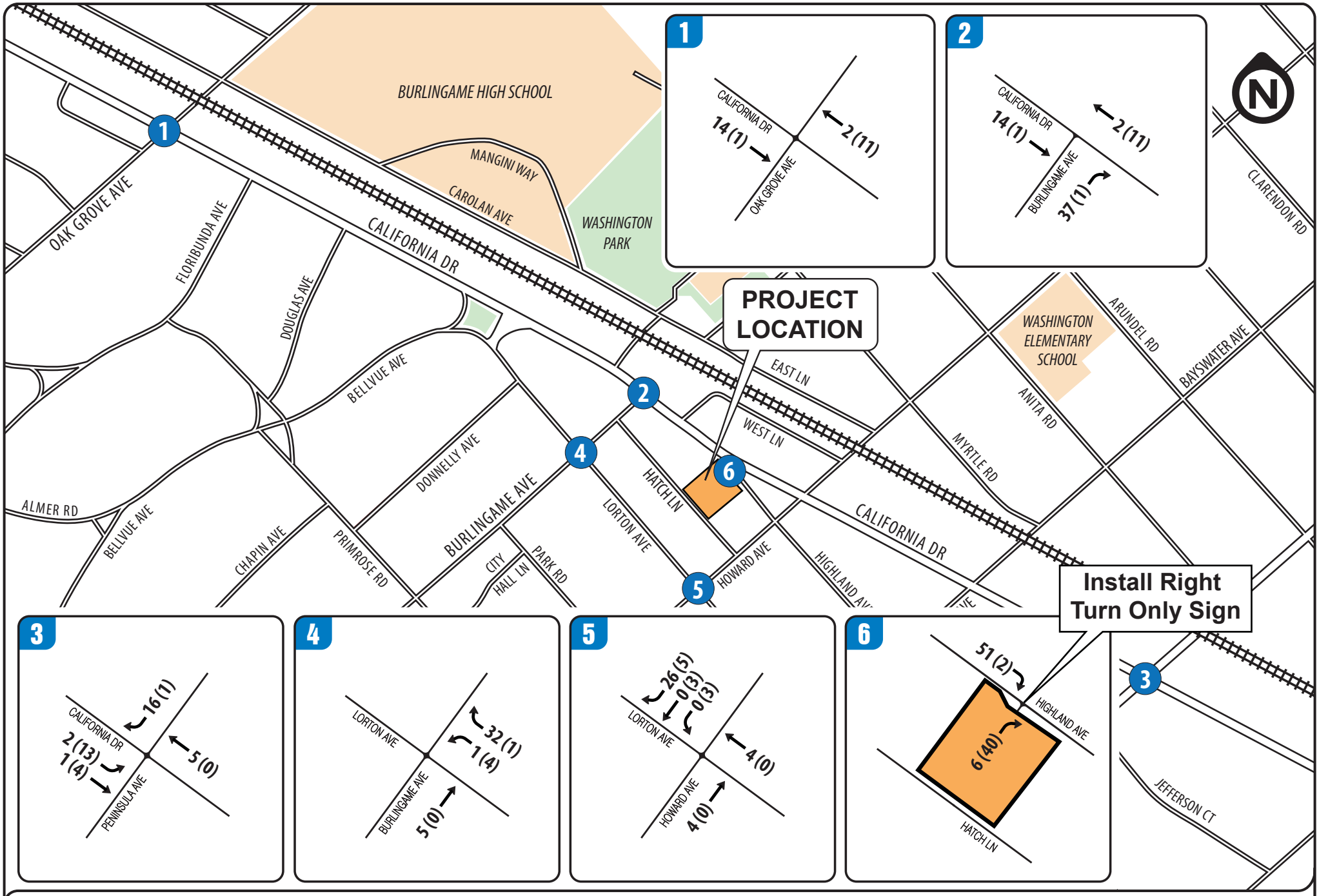


**FIGURE 5 | PROJECT AM(PM) PEAK HOUR TRIPS**
**TRANSPORTATION IMPACT ANALYSIS**
215 California Drive Office Project
**City of Burlingame**

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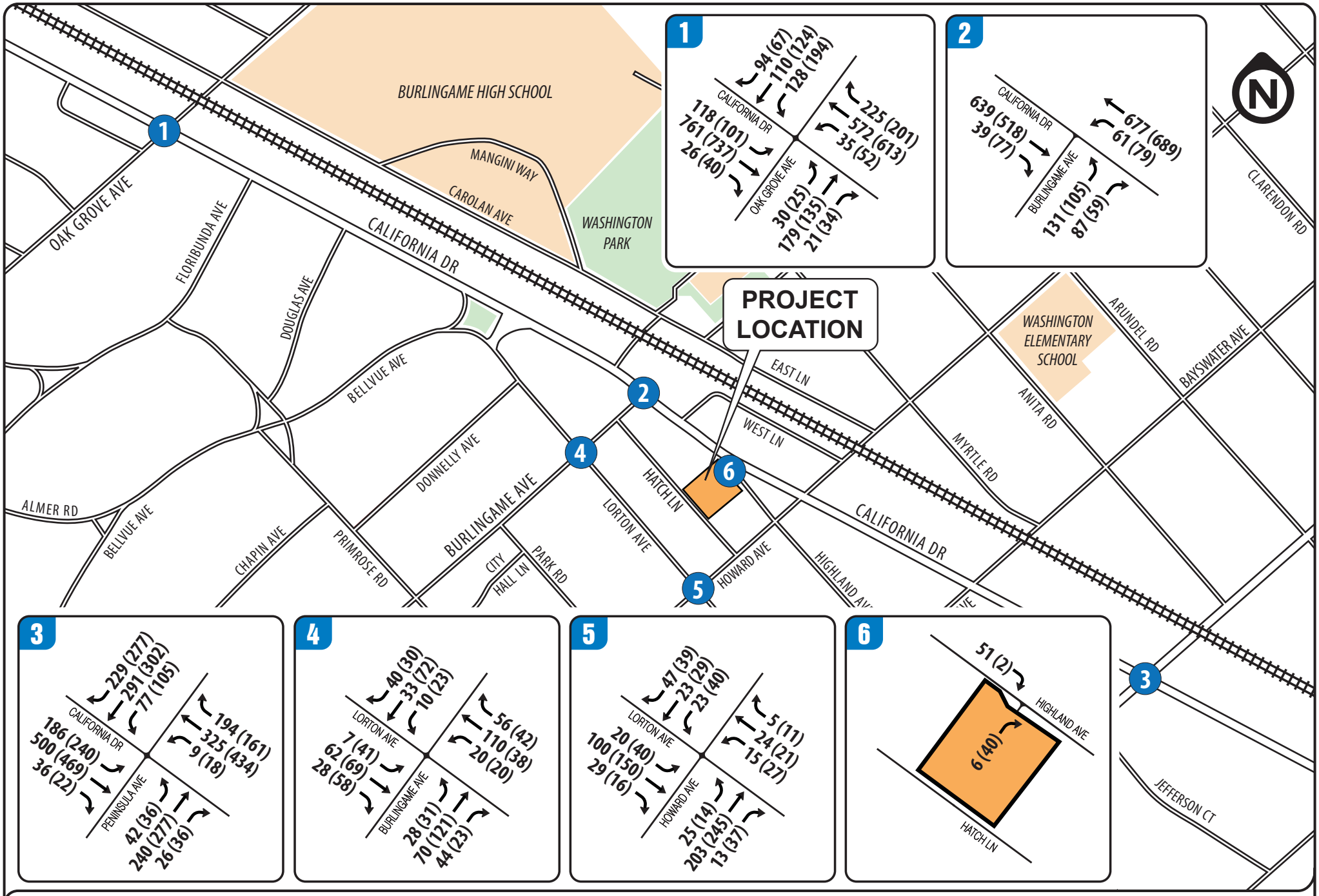


**FIGURE 6 | EXISTING PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES**

**TRANSPORTATION IMPACT ANALYSIS**

215 California Drive Office Project

**City of Burlingame**

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## 5.4 Internal Circulation and Access

No internal site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. The volumes on the internal garage aisles would be light enough so that no significant conflicts would be expected with through traffic and vehicles backing out of the parking spaces within the garage. The parking spaces within the garage will be reserved for the use of the tenants and each space shall be designated for a certain use.

**TABLE 6**
**EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS**

| INTERSECTION | | CONTROL | PEAK HOUR | EXISTING | | EXISTING PLUS PROJECT | |
|---|---|---|---|---|---|---|---|
| | | | | Delay | LOS | Delay | LOS |
| 1 | OAK GROVE AVE & CALIFORNIA DR | Signalized | AM | 22.0 | C | 22.1 | C |
| | | | PM | 20.9 | C | 21.0 | C |
| 2 | BURLINGAME AVE & CALIFORNIA DR | Signalized | AM | 6.7 | A | 7.3 | A |
| | | | PM | 6.4 | A | 6.4 | A |
| 3 | PENINSULA AVE & CALIFORNIA DR | Signalized | AM | 21.1 | C | 22.2 | C |
| | | | PM | 33.4 | C | 34.6 | C |
| 4 | BURLINGAME AVE & LORTON AVE | All Way Stop | AM | 8.5 | A | 8.7 | A |
| | | | PM | 9.1 | A | 9.1 | A |
| 5 | HOWARD AVE & LORTON AVE | All Way Stop | AM | 9.1 | A | 9.2 | A |
| | | | PM | 10.4 | B | 10.5 | B |

**SOURCE:** Abrams Associates, 2015

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented with the overall intersection delay shown in parentheses.

## 5.5 Parking Impacts

The proposed project would provide an adequate supply of off-street parking based on the City's requirements. The project proposes to provide the parking required according to the City's Municipal Code and the Downtown Specific Plan by providing 130 off-street parking spaces with a car share facility. Based on a review pf the project parking demand and given the location near Caltrain and numerous nearby public parking lots and on-street parking spaces there would be no significant parking impacts expected to the surrounding properties. Please note that the proposed parking garage would be secure and not be available to the public. The entire garage would be private and gated near the main entrance. Only designated owners, employees, and authorized visitors would have access to the parking garage. All other visitors would have to park on-street or in local public parking garages. In summary, there would be no public parking available in the on-site parking garage.

**Parking Demand Based on ITE Parking Generation Rates -** To provide additional justification for the parking demand analysis, **Table 7** also provides a summary of the parking demand results using the average ITE parking generation rates for office buildings in a urban area taken from the 4th Edition of the *ITE Parking Generation Manual*. As shown in **Table 7**, the maximum parking demand generated by the project would be forecast to be approximately 111 parking spaces based on the ITE data.

**Table 7**
**Off-Street Parking Calculations Using Parking Demand Data from the Institute of Transportation Engineers**

| No. | Scenario | Data Source | Land Use | Size | | Parking Demand | Required Spaces |
|---|---|---|---|---|---|---|---|
| 1 | Proposed Project | ITE Parking Demand Rates | Office | 43,140 | square feet | 2.47 per ksf | 106 |
| 2 | Proposed Project | ITE Parking Demand Rates | Retail | 1,820 | square feet | 2.55 per ksf | 5 |

**Parking Demand in Downtown Burlingame -** For this location in a central business district with excellent transit access, the parking demand could be less than the typical ITE rate in the Parking Generation Manual. This is based on some of the same characteristics that are discussed in the trip generation section. The availability of transit (i.e. the close proximity to the Burlingame Caltrain stop), the use of bicycles, carpooling, and the attractiveness of walking in the mixed-use downtown environment can result in reduced vehicle trip generation and an associated reduction in the need for parking. In summary, since this area of Burlingame has numerous opportunities for public transportation, the office workers are not all expected to have personal vehicles and it is anticipated that a reduced parking supply could help encourage more travel by alternative transportation modes. However, for the purposes of this analysis no reductions have been applied to the demand estimates account for these factors.

**Summary of Findings on Parking -** Based on these studies, it is our recommendation that the City consider making the findings that the proposed 130 space parking garage with a car share facility is reasonable and appropriate. The justification is as follows:

1) The project is proposing to include a car share facility on-site with recorded easements that cannot be modified without the City's consent (as per the Downtown Specific Plan).

2) The project is proposing to meet or exceed the requirements for bicycle parking by providing a secure bicycle parking area for employees. In addition to the large secure bicycle parking area, the proposed project would include adjacent restrooms and showers.

3) There would be numerous opportunities for the office employees with respect to shopping and the many quick service and full service restaurants located within easy walking distance of the project site.

4) There are existing opportunities for car sharing nearby. Please note there is a Zipcar location at 888 San Mateo Drive at Peninsula Avenue as well as a couple more locations about a mile away in San Mateo.

5) There are numerous public parking garages and parking lots in the immediate area, including eight public lots within about two blocks of the project. However, based on the calculated demand none would be expected to be used.

6) There is extensive public transportation available in the project area including the Caltrain station at Burlingame Avenue almost directly across the street. There are also bus stops less than a block from the site that provides access to the Burlingame Trolley as well as two different SamTrans bus routes.

## 5.6 Pedestrian and Bicycle Impacts

Due to its proximity to bicycle routes, shopping, and public transit, the proposed project would generate additional pedestrian and bicycle traffic in the area, thereby potentially increasing conflicts between vehicles, bicycles, and pedestrians. However, based on the CEQA significance criteria the project's impacts on pedestrian and bicycle travel would be considered less than significant and no mitigations would be required.

## 5.7 Transit Impacts

The proposed project would not interfere with any existing bus routes and would not remove or relocate any existing bus stops. The proposed project could also help support existing bus and train services with additional transit ridership and would not conflict with any transit plans or goals of the City of Burlingame or the San Mateo County Transportation Authority. Therefore, the impact of the proposed Project on existing transit operations (or adopted plans related to transit) would be less than significant.

## 5.8 Cumulative Traffic Capacity Conditions (Scenario 3)

For the cumulative conditions, the intersection traffic volumes were based on the existing turning movements with the addition of traffic from all planned and approved projects plus the addition of incremental growth in background traffic estimated by the County's traffic model, estimated to be 0.5% per year in this part of the City of Burlingame.[5] **Figure 7** presents the cumulative build-out traffic volumes at each of the project study intersections.

**Table 8** summarizes the LOS results for the Cumulative (Year 2040) traffic conditions at each of the project study intersections. As shown on this table, all of the study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours except for the intersection of Peninsula Avenue with California Avenue which is forecast to operate at LOS D in the PM peak hour under cumulative (build-out) conditions. Please note this intersection is forecast to exceed the established standards in the future regardless of whether or not the proposed project is approved and constructed.

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*Draft Traffic Impact Analysis of the Carolan Avenue and Rollins Road Residential Development*, Hexagon Transportation Consultants, San Jose, CA, August 21, 2014.

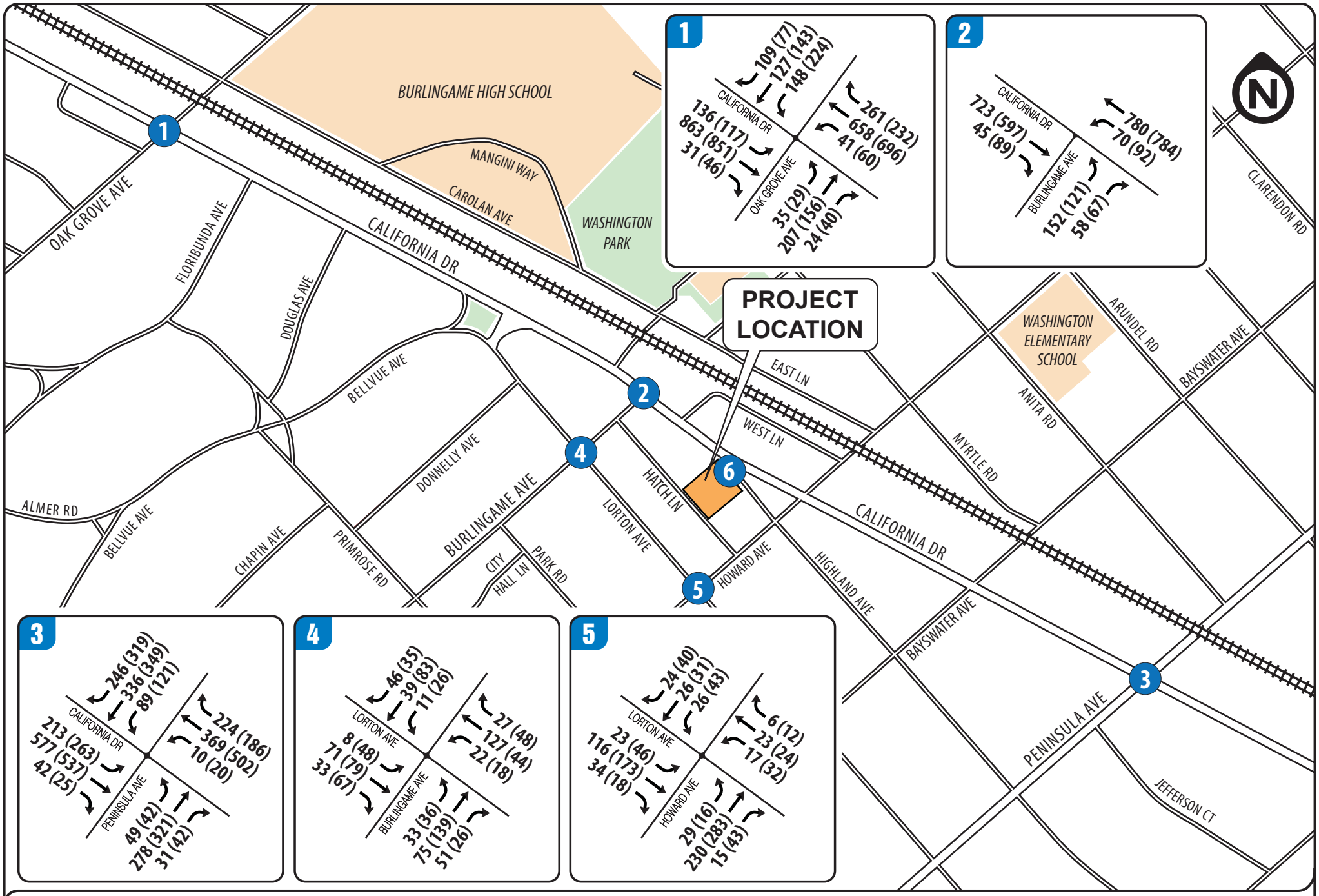


**FIGURE 7 | CUMULATIVE AM(PM) PEAK HOUR TRAFFIC VOLUMES**

**TRANSPORTATION IMPACT ANALYSIS**

215 California Drive Office Project

**City of Burlingame**

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**TABLE 8**
**CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS**

| INTERSECTION | | CONTROL | PEAK HOUR | CUMULATIVE | | CUMULATIVE PLUS PROJECT | |
|---|---|---|---|---|---|---|---|
| | | | | Delay | LOS | Delay | LOS |
| 1 | OAK GROVE AVE & CALIFORNIA DR | Signalized | AM | 26.4 | C | 26.5 | C |
| | | | PM | 25.0 | C | 25.1 | C |
| 2 | BURLINGAME AVE & CALIFORNIA DR | Signalized | AM | 7.2 | A | 7.9 | A |
| | | | PM | 6.9 | A | 7.0 | A |
| 3 | PENINSULA AVE & CALIFORNIA DR | Signalized | AM | 31.8 | C | 34.4 | C |
| | | | PM | 62.4 | E | 63.5 | E |
| 4 | BURLINGAME AVE & LORTON AVE | All Way Stop | AM | 8.9 | A | 9.1 | A |
| | | | PM | 9.6 | A | 9.7 | A |
| 5 | HOWARD AVE & LORTON AVE | All Way Stop | AM | 9.8 | A | 9.9 | A |
| | | | PM | 11.7 | B | 11.9 | B |

**SOURCE:** Abrams Associates, 2015

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented with the overall intersection delay shown in parentheses.

## 5.9 Cumulative Plus Project Traffic Capacity Conditions (Scenario 4)

**Table 8** (shown previously on Page 20) also summarizes the LOS results for the Cumulative Plus Project (Year 2040) traffic conditions at each of the project study intersections. As shown on this table, all of the signalized study intersections would continue to have acceptable conditions during the weekday AM and PM peak commute hours except for the intersection of Peninsula Avenue with California Avenue which is forecast to operate at LOS E in the AM peak hour under cumulative (build-out) conditions**.**

However, this intersection would operate at LOS E in the future regardless of whether or not the proposed project is constructed and the project would not increase the average delay by more than 5 seconds. Please note the forecast project increase to the average delay at this intersection in the PM peak hour is 1.1 seconds per vehicle. Therefore the project's contribution to the future traffic volumes would not be considered a significant impact at this intersection according to established standards. **Figure 8** presents the cumulative build-out traffic volumes at each of the project study intersections.

## 5.10 Analysis of Caltrans Traffic Signal Warrants at the Intersection of Howard Avenue and Lorton Avenue

Traffic signals are used to provide for an orderly flow of traffic through an intersection. Many times they are needed to provide side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. Traffic signals do not, however, necessarily increase the capacity of an intersection (i.e., increase the intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at improper locations.

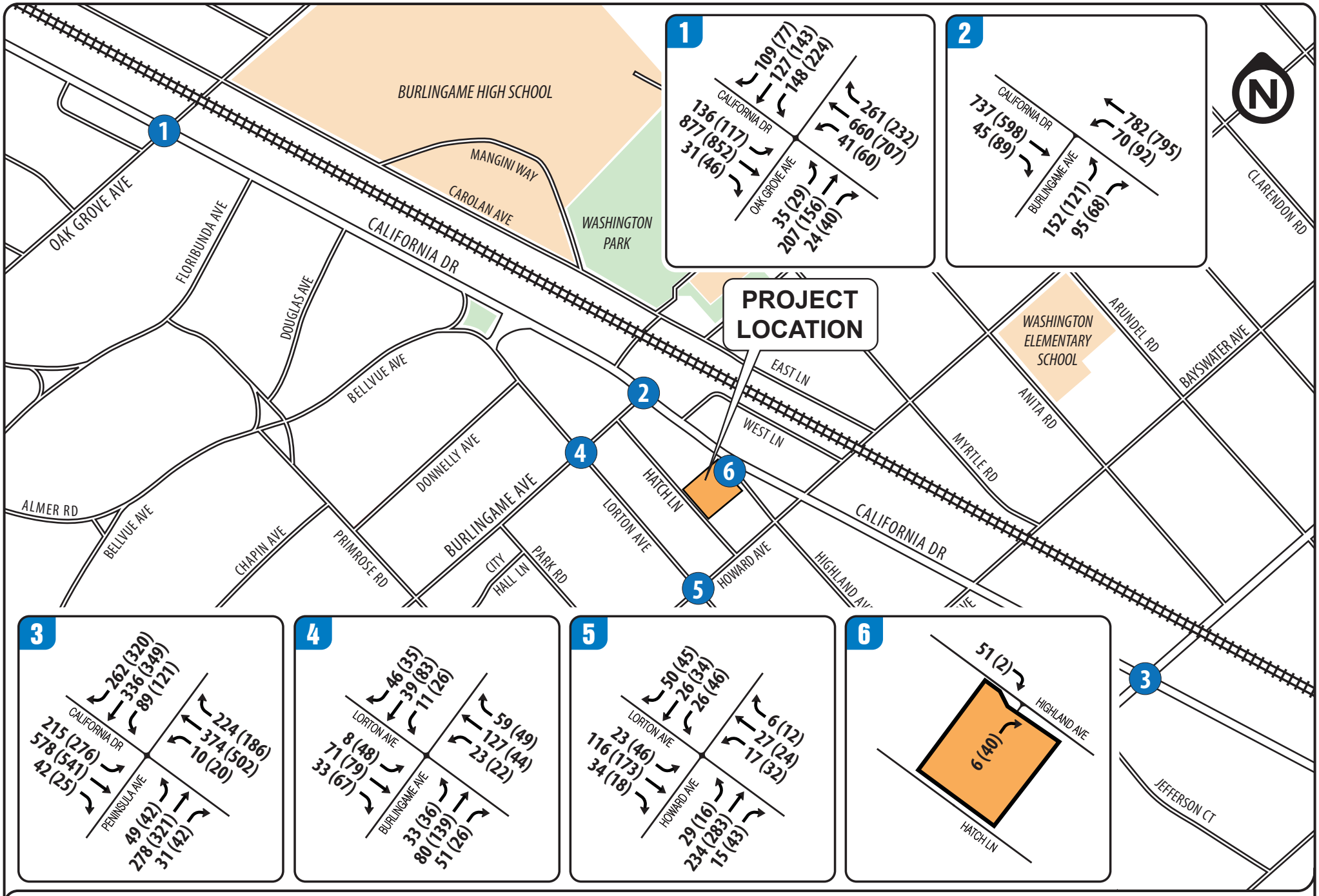


**FIGURE 8 | CUMULATIVE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES**

**TRANSPORTATION IMPACT ANALYSIS**

215 California Drive Office Project

**City of Burlingame**

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For this reason there are eleven possible tests (called "warrants") that are set forth in the California Manual of Uniform Traffic Control Devices for determining whether a traffic signal should be considered for installation. The tests consider criteria such as traffic volumes and delay, pedestrian volumes, presence of school children, and accident history. Usually, two or more warrants must be met before a signal is installed. If the Peak Hour Volume Warrant (Warrant #3) is met at an intersection that is usually a strong indication that a more detailed signal warrant analysis covering all possible warrants is appropriate.

At the two unsignalized project study intersections (and the project's garage exit) the warrant analysis indicated that none would meet any of the warrants for a traffic signal under the scenarios that were analyzed.

## 5.11 Project-Specific Impacts and Mitigation Measures

The following section includes a list of project impacts and proposed mitigation measures to address the transportation impacts of the project. With the implementation of the mitigation measures described in this section, all project transportation impacts would be reduced to a less than significant level.

**Impact #1 The project would contribute to LOS operations exceeding the established standards at the following intersection:**

**California Drive at Peninsula Avenue (Intersection #3)**

As discussed previously in Section 5.5, the addition of traffic from the proposed project in the cumulative plus project scenario (Scenario 4) would contribute to this intersection exceeding the established LOS standard (LOS D).

Beyond these five intersections, the analysis indicates the project would not contribute to any other unacceptable traffic operations in the area. At the intersection of California Drive with Peninsula Avenue (Intersection #3) the proposed project would <u>not</u> increase the average delay on any approach by more than 5 seconds. Therefore the project's contribution to the future traffic volumes would not be considered a significant impact at this intersection according to established standards.

<u>Mitigation Measure(s)</u>
*None required.*

**Impact #2 Impacts to traffic at the project study intersections.**

As noted previously, traffic signals are used to provide for an orderly flow of traffic through an intersection. Eleven possible tests (called "warrants") have been set forth by Caltrans (and the Manual of Uniform Traffic Control Devices) for determining whether a traffic signal should be considered for installation. The tests consider criteria such as traffic volumes and delay, pedestrian volumes, presence of school children, and accident history. Usually, two or more warrants must be met before a signal is installed. If the Peak Hour Volume Warrant (Warrant #11) is met at an intersection that is usually a strong indication that a more detailed signal warrant analysis covering all possible warrants is appropriate.

At the unsignalized project study intersections the analysis indicated that none would meet any of the warrants for a traffic signal under the scenarios that were analyzed and therefore the addition of project traffic at the unsignalized intersections would result in a ***less than significant*** impact.

Mitigation Measure(s)
*None required.*

**Impact #3 Demolition and construction activities associated with the proposed project would result in an increase in traffic to and from the site and could lead to unsafe conditions near the project site.**

The increase in traffic as a result of demolition and construction activities associated with the proposed project has been quantified assuming a worst-case single phase construction period of approximately 12 to 14 months.

*Heavy Equipment*

Approximately four pieces of heavy equipment are estimated to be transported on and off the site each month throughout the demolition and construction of the proposed project. Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site during construction. However, each load would be required to obtain all necessary permits, which would include conditions. Prior to issuance of grading and building permits, the project applicant would be required to submit a Traffic Control Plan.

The requirements within the Traffic Control Plan include, but are not limited to, the following: truck drivers would be notified of and required to use the most direct route between the site and U.S. 101, as determined by the City Engineering Department; all site ingress and egress would occur only at the main driveways to the project site; specifically designated travel routes for large vehicles would be monitored and controlled by flaggers for large construction vehicle ingress and egress; warning signs indicating frequent truck entry and exit would be posted on adjacent roadways if requested; and any debris and mud on nearby streets caused by trucks would be monitored daily and may require instituting a street cleaning program. In addition, eight loads of heavy equipment being hauled to and from the site each month would be short-term and temporary.

*Employees*

The weekday work is expected to begin around 7:00 AM and end around 3:30 PM. The construction worker arrival peak would occur between 6:30 AM and 7:30 AM, and the departure peak would occur between 3:00 PM and 4:00 PM. These peak hours are slightly before the citywide commute peaks. It should be noted that the number of trips generated during construction would not only be temporary, but would also be substantially less than the proposed project at buildout. Based on past construction of similar projects, construction workers could require parking for up to 40 vehicles during the peak construction period. Additionally, deliveries, visits, and other activities may generate peak non-worker parking demand of 10 to 15 trucks and automobiles per day. Therefore, although some workers would likely

use the available public transit in the area, as a worst case scenario it is assumed that up to 55 additional vehicles may be parked in the area during the peak construction period. Because the construction of the project can be staggered so that employee parking demand is met by using the surrounding available parking, the impacts of construction-related employee traffic and parking are considered less-than-significant.

*Construction Material Import*

Under the provisions of the Traffic Control Plan, if importation and exportation of material becomes a traffic nuisance, then the City Engineer may limit the hours the activities can take place.

*Traffic Control Plan*

The Traffic Control Plan would indicate how parking for construction workers would be provided during construction and ensure a safe flow of traffic in the project area during construction. This analysis assumed construction of the entire project in one phase to identify the potential worst-case traffic effects. If the project is built in phases over time, the effects of each phase will be the same or less. Each phase will be subject to a Traffic Control Plan and oversight by the City Engineer. The last phase may require added worker parking measures, depending on the circumstances, as there will not be any remaining vacant land for parking. Therefore, the demolition and construction activities associated with the proposed project or its individual phases would not lead to noticeable congestion in the vicinity of the site or the perception of decreased traffic safety resulting in a ***less-than-significant*** impact.

Mitigation Measure(s)
*None required.*

**Impact #4 Impacts related to site access and circulation.**

The proposed project has its entrance and exit driveway on Highland Avenue. Based on a review of the planned access and proposed site plan, it was determined that the site circulation should function well and would not cause any safety or operational problems. The project site design has been required to conform to City design standards and the plan is not expected to create any significant impacts to pedestrians, bicyclists or traffic operations. No internal site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. Based on this review the impacts related to site access and circulation to the proposed project would be less-than-significant.

Mitigation Measure(s)
*None required.*

**Impact #5 Impacts regarding emergency vehicle access on and surrounding the proposed project site.**

Sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The land use plan for the proposed project would include a driveway on both sides of the building. All lane widths within the project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal parking aisles would be adequate. Therefore, subject to approval from the Fire Department, the development of the proposed project is expected to have ***less-than-significant*** impacts regarding emergency vehicle access.

Mitigation Measure(s)
*None required.*

**Impact #6 Impacts relating to the presence and availability of adequate parking.**

The proposed project would provide an adequate supply of off-street parking based on the City's requirements. The project is currently proposing to meet the City's parking requirements through provision of 130 off-street parking spaces with a car share facility. Subject to final City approval of the proposed parking plan there would be no significant parking impacts expected to the surrounding properties. Therefore, the proposed project is not expected to create parking impacts on the surrounding areas, and impacts related to adequate parking would be ***less-than-significant***.

Mitigation Measure(s)
*None required.*