TRAFFIC IMPACT STUDY

Albany Auto Dealership

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Traffic Impact Study
Proposed Auto Dealership

in the
City of Albany

Prepared by
Abrams Associates
March 5, 2012

The proposed project consists of a proposed auto dealership to be constructed on a pad in the parking lot of the Target Store located at 1035 Eastshore Highway in the City of Albany. The project would include an 8,304 square foot building and 63 surface parking spaces. The location of the project and the surrounding roadway network is shown in **Figure 1** and a preliminary site plan for the project is shown in **Figure 2**. The purpose of this study is to evaluate the potential traffic and transportation impacts the project.

Introduction

The access to the site would all be via the existing signalized intersection where the entrance to the Target Store intersects with the Eastshore Highway. Based on the trip generation analysis the project is forecast to generate approximately 17 trips during the AM peak hour and 22 trips during the PM peak hour. Given the low peak hour trip generation of the project no other study intersections were included in the analysis.

Six study scenarios or sets of traffic conditions have been addressed in the analysis of these intersections. The study intersection was analyzed for the weekday AM peak hour (8:00 – 9:00 AM) and the weekday PM commute peak hour (5:00 to 6:00 PM). The six scenarios are as follows:

Existing Conditions - This scenario evaluates the existing level-of-service for the intersections based on traffic counts conducted during February of 2012.

Existing Plus Project – The existing plus project scenario evaluates the level-of-service for the study intersections using the existing volumes, but also includes the trips forecast to be generated by the proposed project.

Baseline Conditions - This scenario includes existing traffic, and any traffic from already-approved future projects. This scenario is assumed to reflect traffic conditions that would likely exist in 2013.

Baseline Plus Project Conditions - This scenario includes the baseline traffic described above with the addition of the trips generated by the project.

FIGURE 1 | PROJECT LOCATION
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Proposed Commercial Building @ Target Pad
City of Albany

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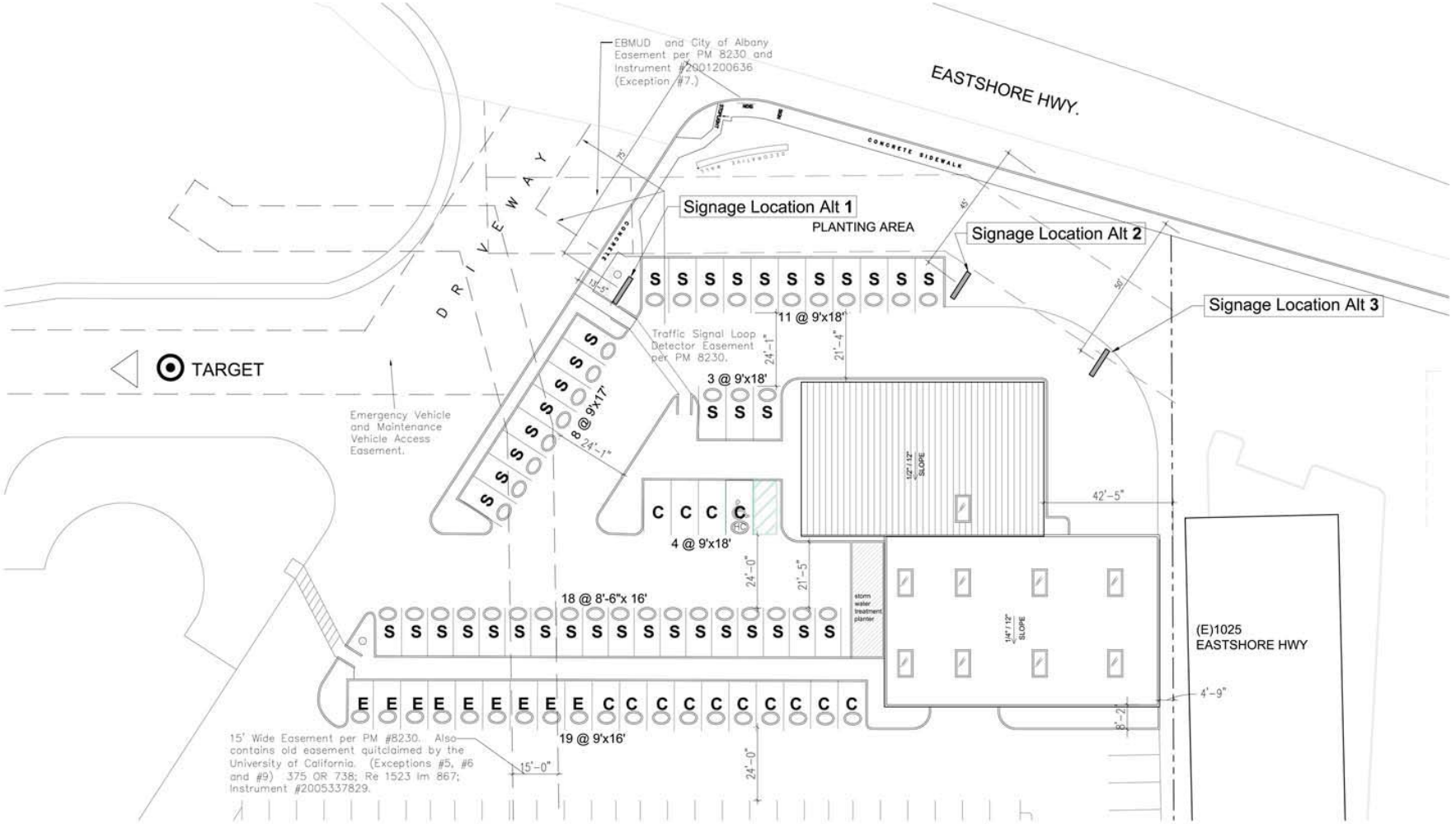

Parking Summary		
S	sales	41 spaces
C	customers	13 spaces
E	employers	9 spaces
	Total	63 spaces

SC: 1/16"=1'-0"

N

PHILIP BANTA & ASSOCIATES ARCHITECTURE
6050 HOLLIS ST EMERYVILLE, CA 95608 510-654-3255

Proposed Commercial Bldg.
@ Target Pad Albany, CA.

6 | SITE PLAN

January, 2012

FIGURE 2 | SITE PLAN
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Cumulative Conditions (2030) – For this scenario, the data from the Alameda County Traffic Model for the year 2035 was used to develop future traffic volume forecasts.

Cumulative (2030) plus project conditions – This scenario includes the estimates of cumulative (2030) traffic with the addition of the trips generated by the project.

1. SETTING

The setting for the transportation and circulation issues and the scope of the analysis documented in this section are described below. This section also presents the analysis methodologies and a discussion of the existing conditions and future background conditions.

Traffic and transportation studies are generally required for all projects that generate over 50 peak hour trips or adds a significant amount of traffic to an existing substandard intersection. The proposed project does not meet these criteria so a more focused analysis has been prepared.

1.1 Existing Roadway Network

(a) **Area Roadways.** Regional access to the project site is provided by I-80 and I-580 (see **Figure 1**). Local access to the project site is provided by several arterial roads and local streets. A description of key roadways follows:

Interstate 80 (I-80) is a major east-west freeway that begins in San Francisco County at Highway 101 and extends cross-country to New Jersey in the east. In Alameda County, I-80 is a major commute route connecting residents in the northeast Bay Area to employment centers in the region. Through Albany, I-80 provides between three to six mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction. Access to the project site from I-80 is provided via interchanges at Buchanan Street and Gilman Street. I-80 has an average daily traffic (ADT) volume of 277,000 vehicles per day between the Buchanan Street and Gilman Street interchanges.

Interstate 580 (I-580) is a major east-west freeway that begins in Marin County at Highway 101 and traverses east to Interstate 5. West of its junction with I-80, I-580 provides three westbound and two eastbound mixed-flow lanes. Access to the project site from I-580 is provided via ramps at Buchanan Street. I-580 has an ADT of 88,000 vehicles per day west of the junction with I-80.

Eastshore Highway is a two-lane north-south collector that runs parallel to and east of I-80/580 and extends between University Avenue to the south and Buchanan Street to the north. On street parking is provided on some segments in the northbound direction. The posted speed limit on Eastshore Highway is 25 miles per hour.

Buchanan Street is a two to four-lane east-west arterial that extends west of I-80/580 to San Pablo Avenue in the east in Albany. On-street parking is allowed on some segments of the westbound direction. There is a posted speed limit of 25 miles per hour. Trucks are prohibited on Marin Avenue

Gilman Street is a two-lane east-west arterial that extends from Frontage Road in the west to Hopkins Street in the east. On-street parking is provided on both sides of the street. Bicycle lanes are provided west of San Pablo Avenue and sharrows5 are provided east of San Pablo Avenue. An at-grade railroad crossing exists on Gilman Street west of 4th Street. Gilman Street

has a posted speed limit of 35 miles per hour. Trucks are prohibited on Gilman Street east of San Pablo Avenue.

(b) **Roadway Network Analysis Methodology.** To provide a baseline for identification of impacts on the local roadway network, existing traffic operating conditions have been determined for twelve (12) key local intersections in the Project Area vicinity. **Figure 3** illustrates the lane configuration and the existing traffic volumes at the study intersection.

(1) Study Intersections. Intersections, rather than midblock roadway segments, are typically the critical capacity-controlling locations for vehicular travel on urban roadway networks and are the primary basis for determining traffic impacts.

(2) Intersection Analysis Methodology. Existing operational conditions at the twelve (12) study intersections have been evaluated using the 2000 *Highway Capacity Manual* (*HCM*) "Level of Service" methodology.[1] Intersection Level of Service (LOS) is a qualitative description of the performance of an intersection based on the average delay per vehicle. The LOS rating ranges from LOS A, which indicates free flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays.

For signalized intersections, the *HCM* methodology determines the capacity of each lane group approaching the intersection. The LOS is then based on average delay (in seconds per vehicle) for the intersection. **Table 1** summarizes the relationship between LOS and average delay at signalized intersections.

TABLE 1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (sec/veh)
A	Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication.	≤ 10
B	Minimal Delays: An occasional approach phase is fully used. Drivers begin to feel restricted.	> 10 to 20
C	Acceptable Delays: Major approach phase may become fully used. Most drivers feel somewhat restricted.	> 20 to 35
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
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80

[1]As part of the *HCM methodology*, adjustments are typically made for various factors that reduce the ability of the streets to accommodate vehicles (such as the downtown nature of the area, number of pedestrians, vehicle types, lane widths, grades, on-street parking and queues). These adjustments are performed to ensure that the LOS analysis results reflect the operating conditions that are observed in the field. The capacity calculation methodology and the LOS definitions are different than signalized intersections.

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

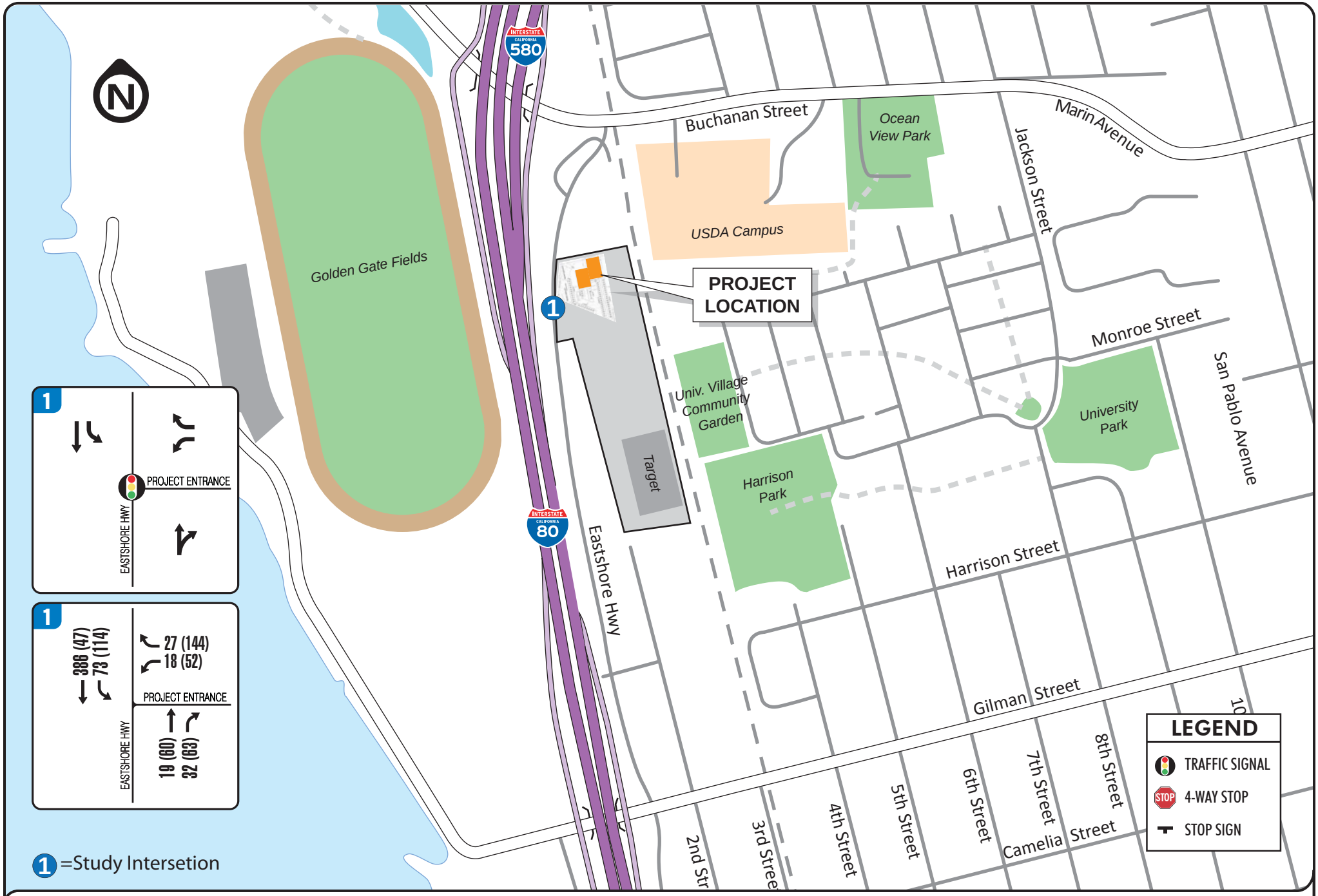

FIGURE 3 | EXISTING LANE CONFIGURATIONS AND PEAK HOUR AM (PM) TRAFFIC VOLUMES

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(c) **Intersection Capacity Conditions. Table 2** summarizes the LOS computation results for the existing weekday AM and PM peak hour conditions (the corresponding LOS analysis calculation sheets are presented in the appendix). As shown in this table, the entrance intersection currently operates at acceptable conditions (LOS D or better) during the weekday AM and PM peak hours according to City standards.

TABLE 2
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
				DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS
1	EASTSHORE HIGHWAY & TARGET ENTRANCE	Traffic Signal	AM	9.0	A	9.4	A
			PM	21.5	C	21.7	C

SOURCE: Abrams Associates, 2012
NOTES: Intersection Delay is presented in terms of seconds per vehicle.

1.2 Transit Service

AC Transit. AC Transit provides bus service in 13 cities and adjacent unincorporated areas in Alameda County and Contra Costa County, with Transbay service to destinations in San Francisco, San Mateo and Santa Clara Counties. Five AC Transit bus routes operate within a few blocks of the project site. On average, these lines have excess capacity, with average daily load factors of 41 percent or less, and maximum daily load factors of 75 percent or less.[2]

1.3 Pedestrian and Bicycle Conditions

Eastshore Highway has sidewalk on the east side of the road and bicycle lanes are provided for a portion of the road (north of the Target Store). All intersections in the area, except for the Buchanan Street/Eastshore Highway intersection, provide striped crosswalks on at least one approach.

2. REGULATORY FRAMEWORK

Responsible Agencies

The management of transportation systems in the study area is the responsibility of several different agencies. The California Department of Transportation (Caltrans) is responsible for freeways in the area. The Alameda County Congestion Management Agency is responsible for verifying compliance with the County's growth management policies and maintains the County's traffic model. The City of Albany is responsible for ensuring there are no significant traffic impacts from the proposed project, particularly on roadways within the City limits. These agencies have statutory authority and are Responsible Agencies under CEQA. Further, since the City of Albany would have direct entitlement authority for the proposed project, it also serves as the Lead Agency for the project.

[2] *University Village at San Pablo Avenue EIR*, LSA Associates, Oakland, July, 2009.

3. IMPACTS AND MITIGATION MEASURES

3.1 Significance Criteria

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 the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency 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.

City of Albany Criteria - Currently the City of Albany does not have established guidelines governing thresholds for when impacts on the transportation network would be considered "significant" and require mitigation. Since the project is on the southern edge of the City near the City of Berkeley, the significance criteria established by the City of Berkeley in Guidelines for Development of Transportation Impact Reports have been used to identify impacts. For signalized intersections a significant impact would occur if a project would cause the LOS rating to deteriorate from LOS D or better to LOS E or F, or from LOS E to LOS F. In addition, a project would result in significant adverse impacts at signalized intersections that operate at LOS E or F under existing conditions, depending upon the magnitude of the project's contribution to the worsening of delay. It would be considered a significant impact if a project increases the average delay by more than 3 seconds at a signalized intersection operating at LOS E. It would be also considered a significant impact if a project increases the volume to capacity ratio by more than 0.01 at a signalized intersection operating at LOS F.

Metropolitan Transportation System Roadways - A significant traffic-related impact would occur on a roadway segment on the Metropolitan Transportation System if the addition of project-related traffic causes:

- Roadway segment to degrade from LOS E or better to LOS F and increase the volume-to capacity ratio by more than 5 percent; or
- Increase the volume-to-capacity ratio by more than 5 percent for a roadway segment that would operate at LOS F without the project.

Bicycle/Pedestrian Facilities. The project would have a significant impact if it would:

- Hinder or eliminate an existing or designated bikeway, or interfere with implementation of a proposed bikeway; or
- Result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/ motor vehicle conflicts; or
- Adversely affect an existing pedestrian facility or result in unsafe conditions for pedestrians, including unsafe pedestrian/bicycle or pedestrian motor vehicle conflicts.

Transit. The project would have a significant impact if it would:

- Cause a substantial delay in transit service or increase demand for transit beyond existing or planned service capacity.

Additional Significance Criteria. The project will also be judged to have a significant impact if it would:

- Result in inadequate emergency access; or
- Result in inadequate parking capacity.

3.2 Project Trip Generation

Trip generation for development projects, such as the proposed project, are typically calculated based on rates contained in the Institute of Transportation Engineer's (ITE) publication, *Trip Generation 8th Edition*. *Trip Generation* is a standard reference used by jurisdictions throughout the country for the estimation of potential vehicular trips from proposed new developments. For this project the New Car Sales category was used (ITE land use code 841). A summary of the project's trip generation characteristics is presented in **Table 3**. As seen in this table the project is forecast to generate approximately 17 trips during the AM peak hour and 22 trips during the PM peak hour.

TABLE 3
ITE TRIP GENERATION ASSUMPTIONS

LAND USE	SIZE	DAILY	AM PEAK HOUR			PM PEAK HOUR		
			IN	OUT	TOTAL	IN	OUT	TOTAL
TRIP RATES – NEW CAR SALES (ITE LAND USE CODE 841)		33.34	1.50	0.53	2.03	1.01	1.58	2.59
AUTO DEALERSHIP	8,304 sq. ft.	277	12	5	17	8	13	22

SOURCE: Abrams Associates, 2012

A "trip" is defined in ITE's *Trip Generation* publication as a single or one-directional vehicular movement with either the origin or destination at the project site. As a result, a trip can be either "to" or "from" the site. Consequently, a single visit to a site is counted as two trips (i.e., one to and one from the site). For purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network from a proposed project, the trips generated by a proposed development are typically estimated between the hours of 8:00 to 9:00 a.m. and 5:00 to 6:00

p.m. While the project itself may generate more traffic during some other times of the day, such as around noon, the peak of "adjacent street traffic" represents the time period when the uses generally contribute to the greatest amount of congestion due to commute traffic.

3.3 Trip Distribution

For the proposed project, the trip distribution assumptions were based on the project's proximity to freeway interchanges, existing traffic volumes, and the land use patterns in the area. **Figure 4** shows the new AM and PM peak hour trips generated by the proposed project the study intersection.

3.4 Existing Plus Project Intersection Operations

Table 2 summarizes the Level of Service (LOS) computation results for the existing weekday AM and PM peak hour conditions (the corresponding LOS analysis calculation sheets are presented in the appendix).

3.6 Baseline Traffic Characteristics

The baseline scenario evaluates the background level-of-service at the studied intersections for the existing conditions with the addition of traffic from reasonably foreseeable projects in the area plus some growth in background traffic and is based on the assumption that the completion date for the project would be in 2013.

3.7 Baseline Intersection Operations

The results of the associated intersection LOS computations are presented in **Table 4** (the detailed LOS calculation sheets for the study intersection are presented in the appendix). As seen in this table the intersection would have acceptable operations (LOS D or better) under this scenario.

3.8 Baseline Plus Project Intersection Operations

The results of the intersection LOS computations for Baseline Plus Project conditions are as presented in **Table 4**. As seen in this table, with the addition of project traffic the intersection would continue to have acceptable operations (LOS D or better).

TABLE 4
BASELINE INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
				DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS
1	EASTSHORE HIGHWAY & TARGET ENTRANCE	Traffic Signal	AM	9.3	A	9.6	A
			PM	21.7	C	21.9	C

SOURCE: Abrams Associates, 2012
NOTES: Intersection Delay is presented in terms of seconds per vehicle.

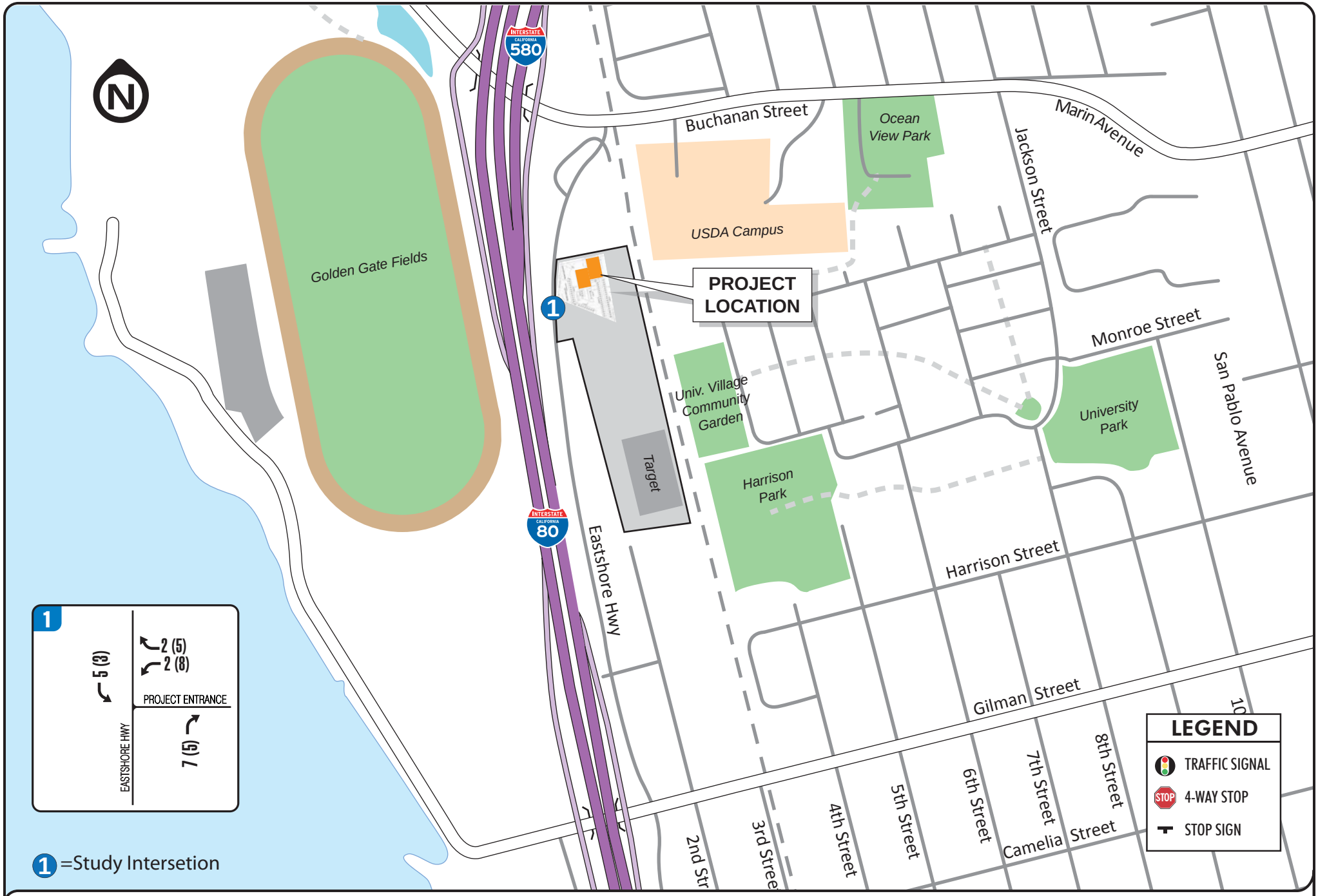

FIGURE 4 | PROJECT AM (PM) TRIP GENERATION

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3.9 Cumulative (2030) Traffic Characteristics

The Cumulative Scenario, which represents a 2030 condition, corresponds to the build-out of the City of Albany and County of Alameda General Plans which include several significant land use changes. The Alameda County Transportation Commission (ACTC) travel demand model was selected as the most appropriate tool to provide future traffic projections.

3.10 Cumulative (2030) Intersection Operations

The results of the intersection LOS computations for Cumulative intersection operations, as well as Cumulative operations with the addition of project traffic are shown in **Table 5**. The detailed LOS calculation sheets for each study intersection are presented in the appendix. Based on the analysis of traffic operations with the addition of project generated traffic, the project entrance intersection would continue to meet the levels-of-service standards with the

3.11 Cumulative Plus Project Intersection Operations

The projected intersection turning movement volumes for Cumulative Plus Project conditions at the main project entrance intersection with the Eastshore Highway (during the weekday AM and PM peak hours) are shown in **Figure 5**. The results of the associated intersection LOS computations for Cumulative intersection operations, as well as Cumulative operations with the addition of project traffic are shown in **Table 5**. The detailed LOS calculation sheets the detailed LOS calculation sheets the study intersection are presented in the *appendix*.

3.12 Cumulative and Cumulative Plus Project Segment Analysis

An analysis of the baseline and baseline plus project operational conditions at three key roadway segments was prepared using the *2000 Highway Capacity Manual* (*HCM*) "Level of Service" methodology. **Table 12** shows the results of that analysis. As shown in this table, Island Drive (during the AM and PM peak hours) and Doolittle Drive (during the AM peak hour) would be the only segments forecasted to operate at an acceptable level of service according to City standards (LOS D or better). Both the Bay Farm Island Bridge and Doolittle Drive (east of Island Drive) segments would operate at LOS E during the PM peak hour and the Bay Farm Island bridge would also operate at LOS F during the AM peak hour. These conditions would occur regardless of whether or not the proposed project is implemented.

TABLE 5
CUMULATIVE INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PROJECT	
				DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS
1	EASTSHORE HIGHWAY & TARGET ENTRANCE	Traffic Signal	AM	10.0	A	10.2	A
			PM	22.8	C	23.0	C

SOURCE: Abrams Associates, 2012
NOTES: Intersection Delay is presented in terms of seconds per vehicle.

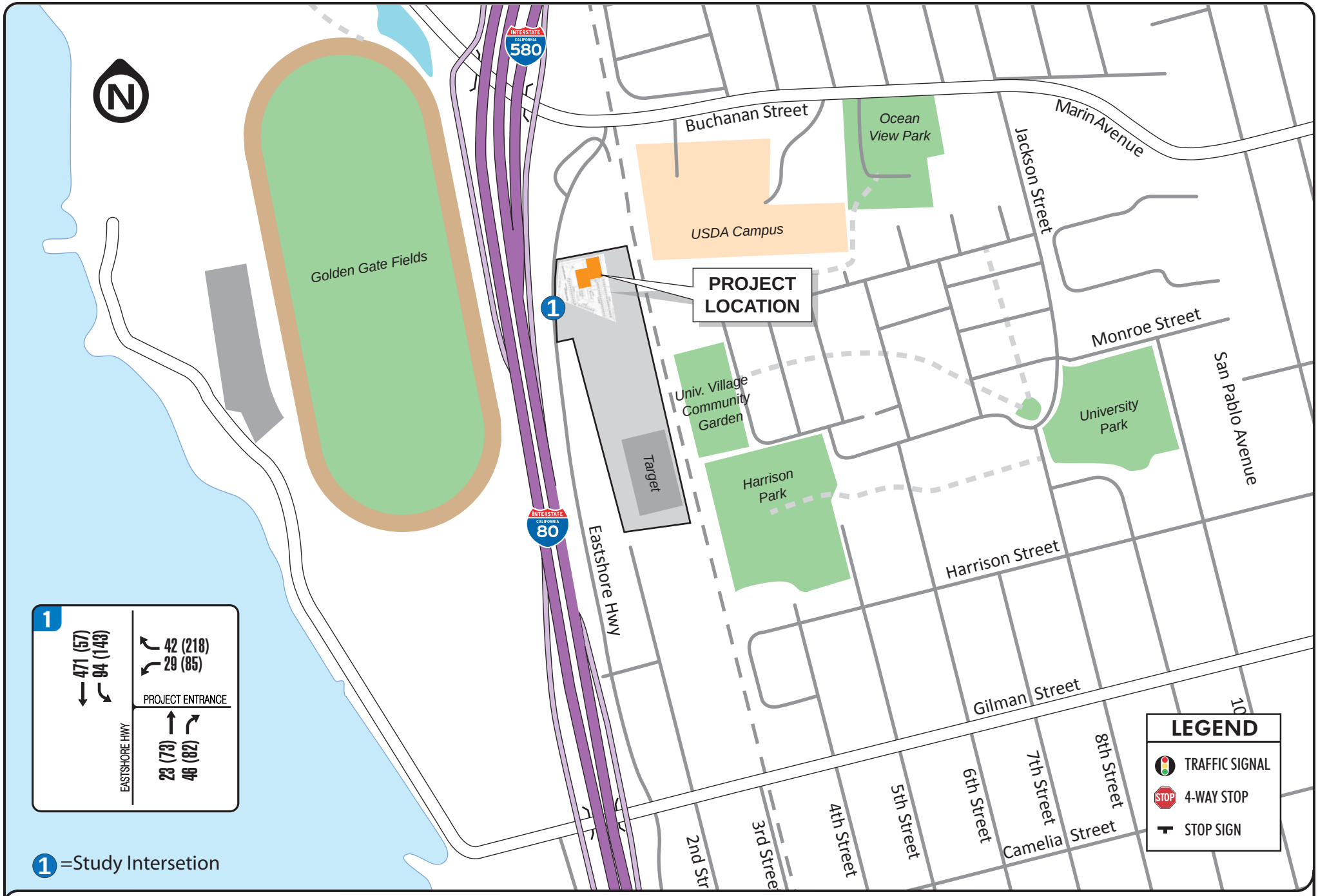

FIGURE 5 | CUMULATIVE PLUS PROJECT AM (PM) PEAK HOUR TRAFFIC VOLUMES

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3.13 Pedestrian/Bicycle Impacts

The proposed project would not generate a significant increase in pedestrian or bicycle traffic in the area (in comparison to the existing volumes). In addition, the proposed project would not significantly impact or change the design of any existing pedestrian or bicycle facilities or create any new safety problems in the area.

3.14 Transit Impacts

Based on the size of the project, it is not forecast to cause any of the bus transit routes to exceed capacity. In addition, the project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and, as such, no significant impacts to transit are expected.

3.15 Circulation, Access and Parking Impacts

The project's internal roadway network has been carefully reviewed by licensed traffic engineers and no significant issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. The project is proposing to meet or exceed the City's parking requirements and, as such, no significant impacts to the surrounding properties are expected.