Transportation Impact Analysis

Harbor Bay Hotels Project

City of Alameda

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Transportation Impact Analysis

Harbor Bay Hotels Project

in the

City of Alameda

Prepared by
Abrams Associates
September 26, 2018

1) INTRODUCTION

The proposed project involves construction of two hotels, a Hilton Garden Inn and the Harbor Bay Suites. The two hotels would be housed in one five story building and would include a total of 211 hotel rooms. The project would include typical business hotel amenities such a fitness room, a pool, and a food service area where complimentary breakfast and evening happy hours would be provided for hotel guests. The location of the proposed project is shown in **Figure 1.** The project would have its main entrance via an existing driveway on the Harbor Bay Parkway located just west of its intersection with the Harbor Bay Parkway. The project is proposing to provide 162 parking spaces on-site in a surface parking lot and would have access to an additional 102 parking spaces in the existing adjacent parking lots as part of a reciprocal parking agreement with neighboring properties. The site plan for the proposed project is presented in **Figure 2.**

Study Intersections and Impact Analysis Methodology

The traffic analysis evaluated the project potential impacts at 4 existing intersections including the driveway that would serve as the main entrance to the project. The intersection locations are shown on **Figure 1**. Intersections #1, #2, and #3 are controlled with stop signs on the side street approaches and Intersection #4 is controlled with a traffic signal. The study intersections are:

1. Harbor Bay Parkway and Penumbra Place/South Loop Roads
2. Harbor Bay Parkway and C Street
3. Harbor Bay Parkway and the Proposed Project Entrance
4. Harbor Bay Parkway and the Ron Cowan Parkway

The traffic study evaluated the project during AM and PM peak hours, using the Sixth Edition of Highway Capacity Manual Operations Method contained in the standard traffic analysis software Synchro 10. This methodology determines intersection level of service (LOS) based on average control delay per vehicle for the overall intersection during peak-hour operating conditions. Evaluation of the non–signalized intersections was based on the HCM Sixth Edition Unsignalized Methodology, also contained in Synchro 10.

FIGURE 1 | PROJECT LOCATION
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

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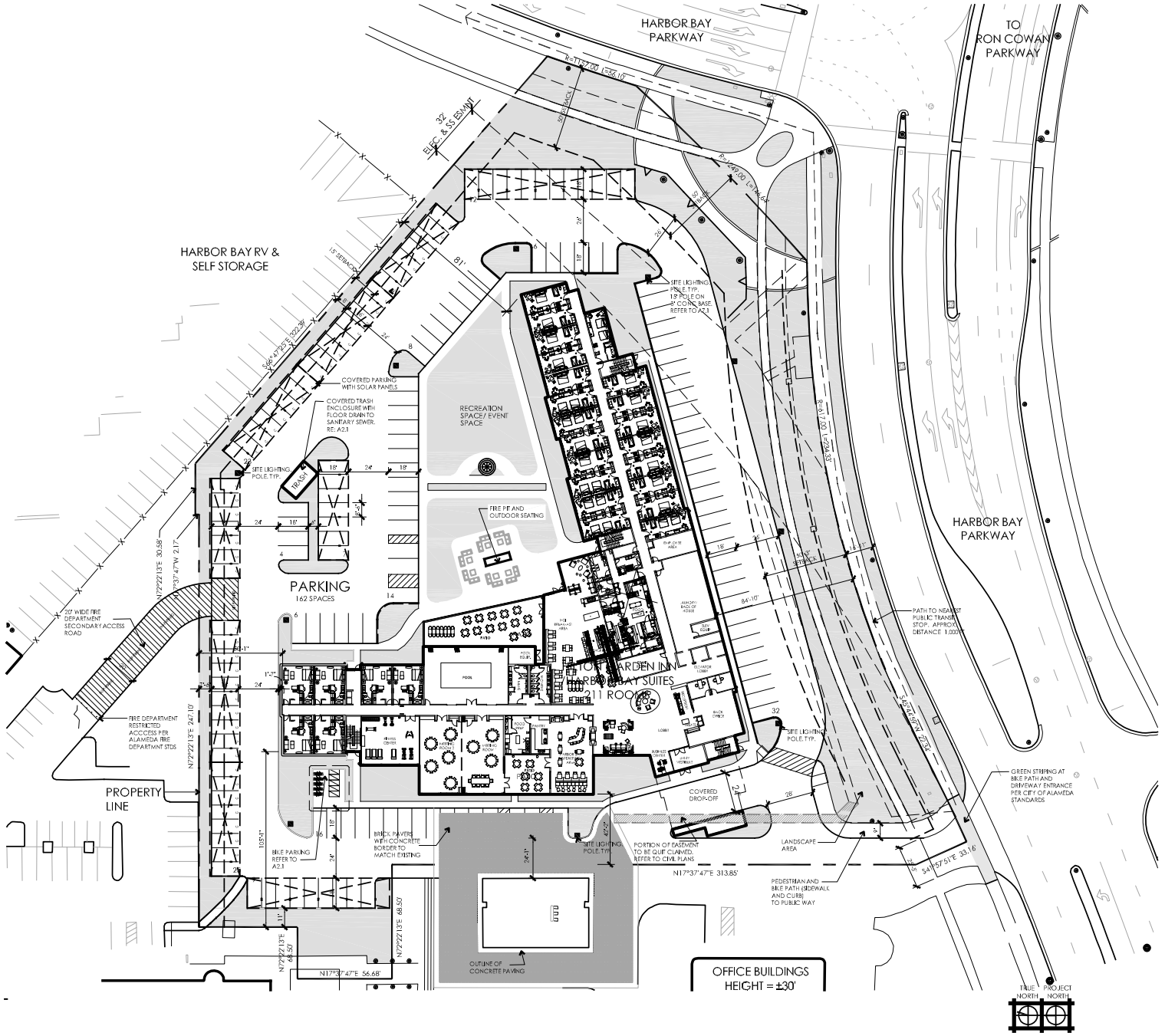

FIGURE 2 | SITE PLAN
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

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Traffic Analysis Scenarios

Six study scenarios or sets of traffic conditions have been addressed in the analysis of these intersections. As required by City standards, each of the four study intersections have been analyzed for the weekday AM peak hour (7:30 – 8:30 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 level-of-service for the intersections during the peak hour using traffic counts conducted in January, 2018.

- Existing Plus Project Conditions - This scenario includes the existing traffic volumes with the addition of the trips generated by the project.

- Baseline Conditions - This scenario includes existing traffic plus traffic from reasonably foreseeable future projects that could affect the volumes at the study intersections.

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

- Cumulative Conditions (2040) – For this scenario data from the Alameda County Traffic Model for the year 2040 was used to develop the future traffic volume forecasts.

- Cumulative (2040) plus project conditions – This scenario includes the estimates of cumulative (2040) traffic with the addition of the trips generated by the proposed project.

2) SETTING

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

Traffic and transportation studies are generally required for all projects that generate over 50 peak hour trips or that add traffic to an existing substandard intersection. The proposed project is consistent with what has been assumed for the site in the future volume forecasts but in the near term the project would generate an increase of more than 50 peak hour trips. The primary basis of the analysis is the peak hour level of service calculations for the key intersections. The hours identified as the “peak” hours are between 7:45 AM and 8:45 AM and 5:00 PM and 6:00 PM for all of the transportation facilities described. Throughout this report, these peak hours will be identified as the AM and PM peak hours, respectively.

Existing Roadway Network

The City of Alameda is an island separated from the City of Oakland by the Oakland Estuary. Access to the City of Alameda is provided by a one-way couplet of under-Estuary tubes at Webster and Posey Streets (State Route 260), and draw bridges at Park Street/29th Avenue, Tilden Way/Fruitvale Avenue, and High Street. Doolittle Drive/Otis Drive (State Route 61) crosses San Leandro Channel, providing access from Bay Farm Island.

The proposed project site is located on the southern side of Alameda on Bay Farm Island within the Harbor Bay Business Park. Regional freeway access to the site is from Interstate 880 via the Ron Cowan Parkway. The street network serving the project site is shown in **Figure 1**. Locally, the project would be accessed via the Harbor Bay Parkway.

Interstate 880 (I-880) is a north/south eight-lane freeway (though oriented east/west in the study area) between I-80 near the Bay Bridge and San Jose. Traffic generated in Alameda uses I-880 to travel to/from eastern Alameda and Contra Costa County, San Francisco (via the Bay Bridge), the Tri-Valley (via State Route 238 and I-580), and also the South Bay. The closest access to/from the project site is provided via circuitous routes to/from the Broadway, Jackson Street, 23rd Avenue, and 29th Avenue/Fruitvale Avenue interchanges.

Harbor Bay Parkway is a north-south four-lane road that is located east of the project location. At the intersection with Ron Cowan Parkway, Harbor Bay Parkway curves to become an east-west roadway. It has a speed limit of 45 mph, and provides the principal access to the Harbor Bay Business Park.

Ron Cowan Parkway is a north-south four-lane road that serves as the principal access to the area from the south side at Oakland International Airport. It has a posted speed limit of 45 mph.

South Loop Road is a two-lane road that provides access to the adjacent commercial land uses and has a speed limit of 25 mph.

Bus Transit Facilities

Bus service in Alameda is provided by the Alameda-Contra Costa Transit District (AC Transit), which serves 13 cities and adjacent areas in Alameda and Contra Costa counties. At the current time the bus transit service in the area is provided by AC Transit and ferry service is provided by the Alameda Harbor Bay Ferry. AC Transit Routes 21 and OX serve Bay Farm Island.

Route OX is a Transbay line that runs from the Bay Farm Island Park-and-Ride to the Temporary Transbay Terminal in San Francisco. It runs westbound from 5:40 AM to 8:47 AM with about 20 minute headways and eastbound from 4:15 PM to 8:38 PM with about 20 minute headways.

Route 21 is a line that is very convenient for commuters because it provides service to the Oakland International Airport, the Ferry terminal, and the Fruitvale BART station. Route 21 runs eastbound approximately every 30 minutes between 6:27 AM and 10:08 PM and runs westbound just as often between 6:20 AM and 10:05 PM.

The Alameda Harbor Bay Ferry is a ferry that mainly transports commuters on weekdays to the Ferry Plaza in San Francisco. It stops at the Harbor Bay Terminal every hour from 6:30 AM to 8:30 AM in the mornings and 5:05 PM to 7:05 PM in the evenings. At the San Francisco Ferry Plaza, the ferry leaves once an hour from 7:00 AM to 8:00 AM in the morning and 4:35 PM to 7:35 PM in the evenings.

The Harbor Bay Business Park also operates a private shuttle service providing employees direct service to BART. The service operates on approximately ½ hour headways from about 6:00 AM to 9:00 AM and from about 3:30 to 6:30 PM.

Pedestrian Facilities

Alameda, and especially Bay Farm Island, are very pedestrian-friendly areas. According to the Alameda Pedestrian Plan, there are approximately 260 miles of sidewalks in Alameda. Within the study area, all the streets are lined with sidewalks. The adjacent intersections of the Harbor Bay Parkway with the Ron Cowan Parkway and also with South Loop Road include crosswalks. Along with the previously mentioned pedestrian facilities, there is also a major trail, the Bay

Trail, which lines the perimeter of Bay Farm Island and provides easy access to the Bay Farm Island Bicycle Bridge adjacent to the Bay Farm Island Bridge.

Bicycle Facilities

There are several major bicycle routes designated in the Project Area vicinity, consisting of both Class I and Class II route types. Class I routes are separate bicycle path that are also multi-use trails. One of these trails runs along Island Drive and Mecartney Road. Class II bicycle routes are separate bicycle lanes adjacent to the curb lane. In the Project Area there is a Class I bicycle path around Bay Farm Island, the Bay Trail, that runs adjacent to the Harbor Bay Parkway for much of its length.

Intersection Level of Service Analysis Methodology

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. For this study traffic operating conditions have been analyzed at 4 key local intersections in the Project area. **Figure 3** illustrates the lane configurations of the study intersections as well as the existing (and planned) traffic control devices for each.

Intersection Analysis Methodology. Existing operational conditions at the 20 study intersections have been evaluated with Synchro 10 software using the Sixth Edition of the *Highway Capacity Manual* (*HCM*) level of service methodology. 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 various movements within the intersection. A combined weighted average delay and LOS are presented for the intersection. **Table 1** summarizes the relationship between LOS and average delay at signalized intersections.

For unsignalized (all-way stop controlled and two-way stop controlled) intersections, the average 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 vehicle delay at unsignalized intersections.

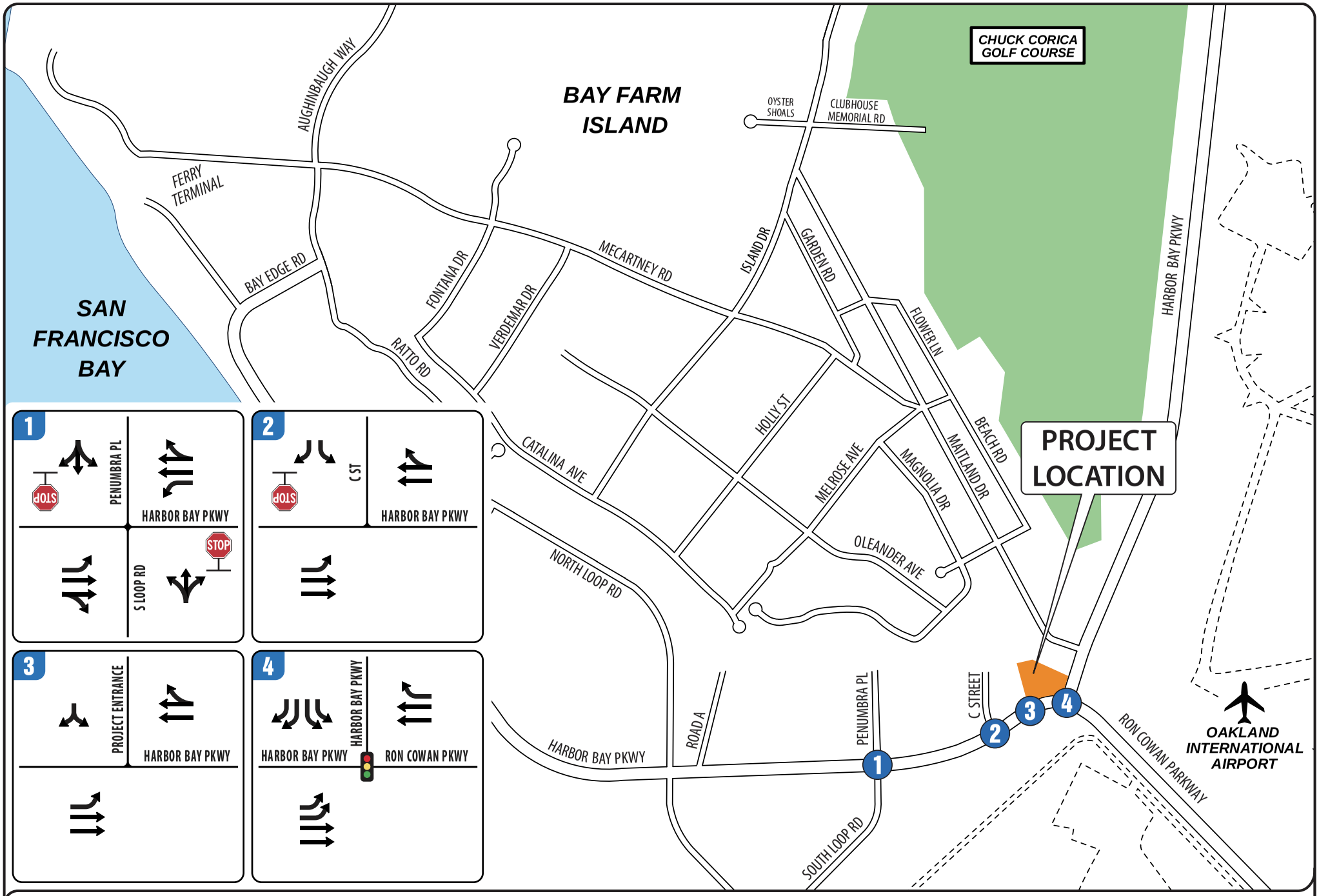

FIGURE 3 | EXISTING LANE CONFIGURATION
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotel
City of Alameda

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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

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, 2016.

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: *Highway Capacity Manual*, Transportation Research Board, 2016.

Existing Intersection Capacity Conditions

Traffic counts for this study were conducted in January, 2018 when schools were in session and the existing volumes at the project study intersection are shown in **Figure 4**. **Table 3** summarizes the associated LOS computation results for the existing weekday AM and PM peak hour conditions at these intersections. As shown in **Table 3**, all of the study intersections currently have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Intersections #1 and #2. These two unsignalized intersections currently exceed the City's LOS standards during both the AM and PM peak hours.

TABLE 3
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK HOUR	EXISTING	
				Delay	LOS
1	PENUMBRA PL & HARBOR BAY PKWY	Two Way Stop	AM	**> 50.0**	**F**
			PM	**> 50.0**	**F**
2	C STREET & HARBOR BAY PKWY	Side Street Stop	AM	**40.4**	**E**
			PM	21.3	C
3	PROJECT ENTRANCE & HABOR BAY PKWY	Side Street Stop	AM	28.9	D
			PM	16.7	C
4	ROW COWAN PKWY & HARBOR BAY PKWY	Signalized	AM	14.7	B
			PM	9.0	A

SOURCE: Abrams Associates, 2018
NOTE: Intersection LOS is based on delay which is presented in terms of seconds per vehicle.

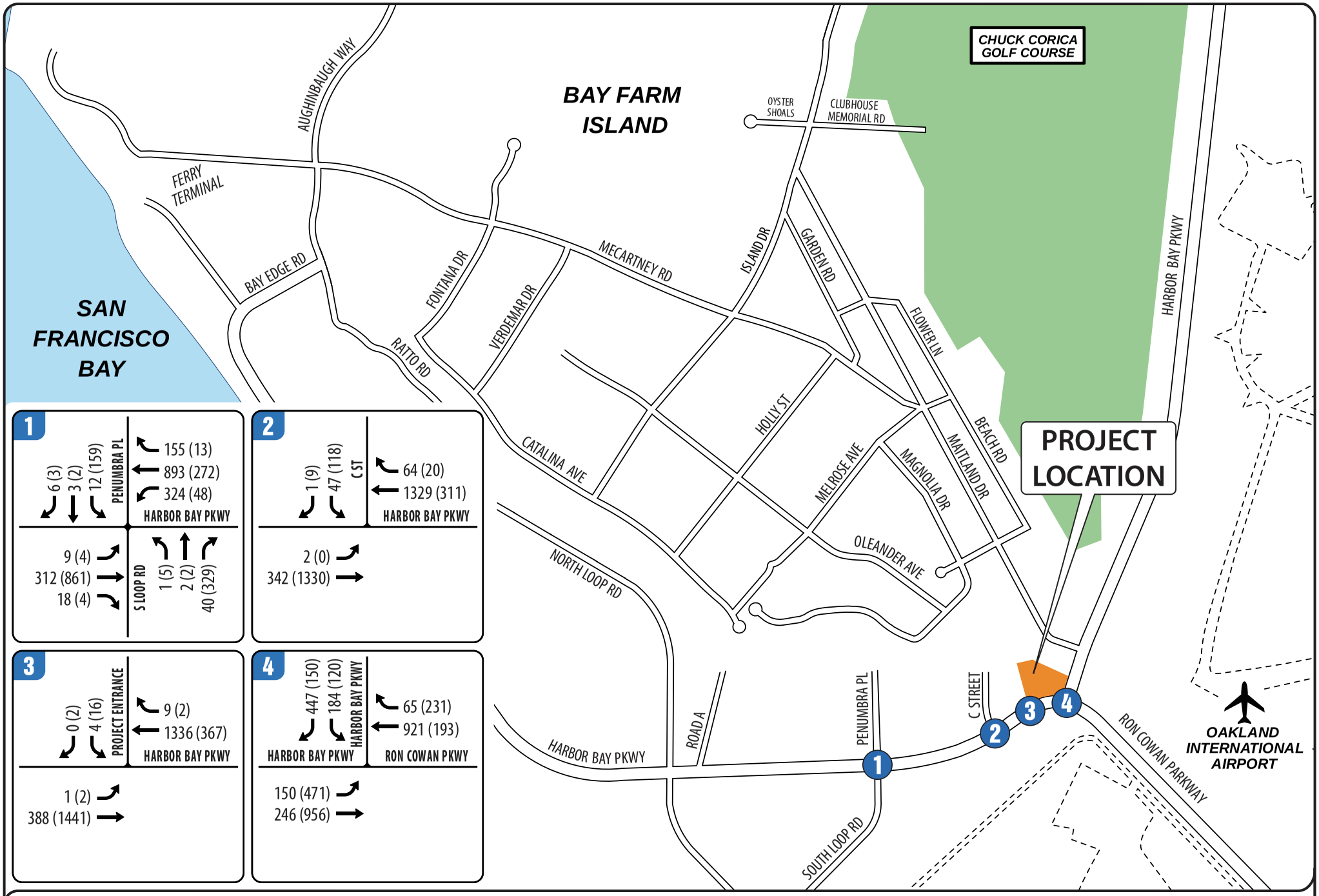

FIGURE 4 | EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

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3) 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 and State Routes in the area including SR 61. 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 Alameda 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 Alameda would have direct entitlement authority for the proposed project, it also serves as the Lead Agency for the project.

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.

According to the City of Alameda[1], a project would have a significant impact if it would:

(a) Signalized Intersections: Project-related operational impacts on signalized intersections would be considered significant if project-related traffic 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 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. In Alameda it is considered a significant impact if a project would increase traffic volumes by more than 3 percent at a signalized intersection operating at LOS E or F. In addition, a project would have a significant adverse effect if it would cause major traffic hazards, or would contribute considerably to the cumulative traffic increases that would cause the deterioration in levels of service to unacceptable levels. For signalized intersections a

[1] Guide for Preparation of Traffic Studies and Reports, City of Alameda Public Works Department, Alameda, CA, November, 28, 2005.

significant impact would occur if project-generated traffic would cause intersection operations to deteriorate from an acceptable level, which is defined as LOS D or better.

(b) Unsignalized Intersections: Project-related operational impacts on unsignalized intersections are considered significant if project-generated traffic would cause the worst-case movement (or average of all movements for all-way stop-controlled intersections and roundabouts) to deteriorate from an acceptable level of service. In addition, a project would be considered to have a significant impact if it would increase traffic volumes by more than 3 percent at an unsignalized intersection operating at LOS E or F.

(d) Parking: Project-related parking impacts on parking would be considered significant if a project would have inadequate parking capacity under City parking standards.

(e) Transit: A project would have a significant effect on the environment if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity.

(f) Pedestrian System: A project would have a significant effect on the environment if it would result in substantial overcrowding on sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.

(g) Bicycle System: A project would have a significant effect on the environment if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.

The City of Alameda Transportation Commission recommends additional criteria in a document entitled *Thresholds of Significance and Procedures for Ranking Modes Where Multiple Priorities are Identified*[2]. According to this document, a project would cause a significant transportation impact if the project has one or more of the following effects:

- Transit – If travel speed degrades by 10 percent or more along a street segment. A segment would be defined as the impacted bus stop location, plus the two previous stops and the two subsequent stops. A segment that crosses a City boundary shall also include five bus stops, but the last stop shall be the first bus stop outside of the City of Alameda (Transit LOS for an arterial segment would be calculated using the Highway Capacity Manual's methodology for Urban Street (arterial) LOS).

- Automobile (intersections) – Causes an intersection to degrade below LOS D. If an intersection were already at LOS E or worse, an impact would be considered significant if there is a 3 percent or greater increase in the traffic volume. (Automobile LOS at intersections is calculated using the Highway Capacity Manual's methodology for determining the average vehicle delay at an intersection.)

- Automobile (arterial segments) – Causes an arterial segment to degrade below LOS D. If an arterial were already at LOS E or worse, an impact would be considered significant if the Average Travel Speed of a segment decreases by 10 percent or more. (Automobile LOS for an arterial segment would be calculated using the Highway Capacity Manual's methodology for Urban Street (arterial) LOS).

[2] *Threshold of Significance and Procedures for Ranking Modes Where Multiple Priorities are Identified*, Attachment I, Item 9-C, Planning Board Meeting, 10/11/10.

- Bicycle – Causes the Bicycle segment LOS to degrade below LOS B. If a street segment were already below LOS B, an impact would be considered significant if the LOS score increases by 10 percent or more in value. If a segment has an existing adjacent Class I facility, and has not been recommended for a future bicycle lane, the degradation of the Bicycle LOS to E would not be considered a significant impact. (Florida Department of Transportation methodology for street segments will be used for the LOS analysis).

- Pedestrian – Causes the Pedestrian LOS to degrade below LOS B at a signalized intersection. If the intersection were already below LOS B, an impact would be considered significant if the delay for a crosswalk increases by 1- percent. (Pedestrian LOS would be determined using the Highway Capacity Manual methodology for determining the average delay for pedestrians at a signalized intersection.)

4) VEHICULAR TRAFFIC IMPACT ANALYSIS

Project Trip Generation

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 in this area, the trips generated by a proposed development are typically estimated between the hours of 7:45 to 8:45 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.

As noted previously, the project involves construction of two hotels that would be located within one building. A Hilton Garden Inn and the Harbor Bay Suites would both be housed in a single five story building which would include a total of 211 hotel rooms. There is no restaurant planned as part of the project but there would be some typical business hotel amenities such as a breakfast area, a fitness room, and a pool. Trip generation for development projects, such as the proposed project, are typically calculated based on rates contained in the ITE publication, *Trip Generation 10th 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 ITE trip generation category of "*Business Hotel*" was used (ITE Land Use Code 312). A summary of the project's trip generation rates and the resulting trips are presented in Table 4. Based on the trip generation forecasts the project would generate about 82 new vehicle trips during the AM peak hour and 68 trips during the PM peak hour. The trips generated by this proposed development are estimated for the peak commute hours which represent the peak of adjacent street traffic.

TABLE 4
PROJECT TRIP GENERATION

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
ITE Business Hotel Rates - Trips per 1,000 Square Feet	312		4.02	0.16	0.23	0.39	0.18	0.14	0.32
Project Trip Generation		**211 rooms**	**848**	**35**	**47**	**82**	**37**	**31**	**68**

SOURCE: Trip Generation, 10th Edition, Institute of Transportation Engineers, Washington D.C., 2018.

Trip Distribution

Trip distribution is a process that determines in what proportion of vehicles would be expected to travel between a project site and various destinations outside the project study area. Trip distribution assumptions for the proposed project were developed based on previous traffic impact studies conducted in the study area vicinity and consultation with City transportation staff. For this project approximately 47 percent of project traffic would be expected to travel to and from the east via the Ron Cowan Parkway. **Figure 5** shows the resulting project trips added at each of the study intersections.

Existing Plus Project Intersection Operations

Figure 6 shows the existing plus project AM and PM peak hour traffic volumes. Using this data, the intersection capacity was calculated for each intersection. **Table 5** summarizes the Level of Service (LOS) computation results for the existing plus project weekday AM and PM peak hour conditions (the corresponding LOS analysis calculation sheets are presented in the *Traffic Analysis Appendix*).

As shown in **Table 5**, all study intersections would continue to operate at acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Intersections #1 and #2. These two unsignalized intersections currently would continue to exceed the City's LOS standards during both the AM and PM peak hours. Based on an analysis of Caltrans signal warrants a traffic signal is not yet warranted at Intersection #2 but the peak hour traffic signal warrants are already met under existing (no project) conditions at Intersection #1, Harbor Bay Parkway at Penumbra Place and South Loop Road. Please note that the project would increase the peak hour volumes at these two intersections by less than 3 percent and a traffic signal to address the future congestion is planned for intersection #1. Therefore, no off-site traffic mitigations would be required under this scenario. The detailed LOS calculations and the signal warrant analysis worksheets for each study intersection are presented in the *Traffic Analysis Technical Appendix*.

TABLE 5
EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	PENUMBRA PLACE & HARBOR BAY PARKWAY	Two Way Stop	AM	**> 50.0**	**F**	**> 50.0**	**F**
			PM	**> 50.0**	**F**	**> 50.0**	**F**
2	C STREET & HARBOR BAY PARKWAY	Side Street Stop	AM	**40.4**	**E**	**48.9**	**E**
			PM	21.3	C	21.8	C
3	PROJECT ENTRANCE & HABOR BAY PARKWAY	Side Street Stop	AM	28.9	D	29.7	D
			PM	16.7	C	17.8	C
4	ROW COWAN PARKWAY & HARBOR BAY PARKWAY	Signalized	AM	14.7	B	15.0	B
			PM	9.0	A	9.1	A

SOURCE: Abrams Associates, 2018
NOTE: Intersection LOS is based on delay which is presented in terms of seconds per vehicle.

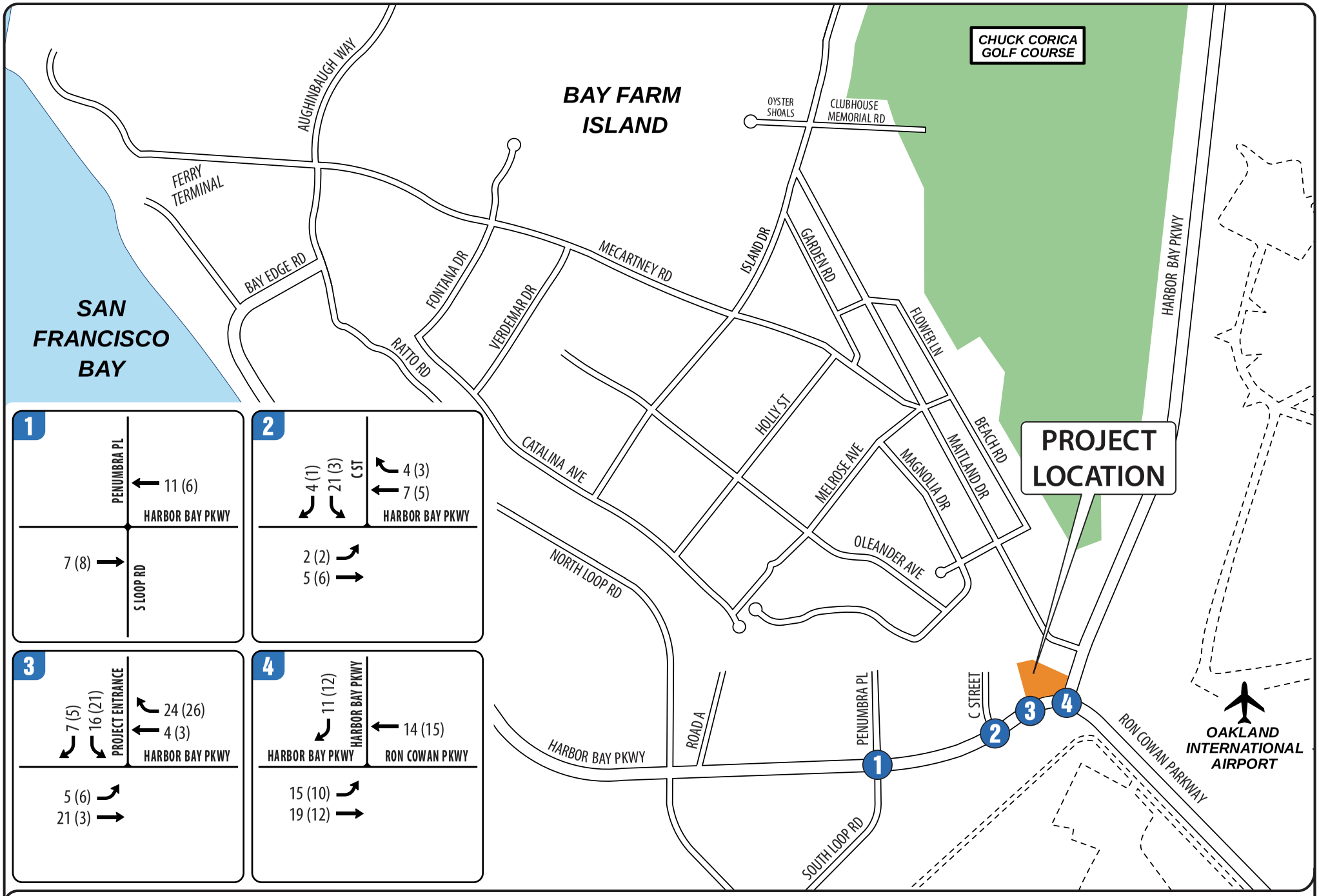

FIGURE 5 | PROJECT AM(PM) PEAK HOUR TRIPS
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

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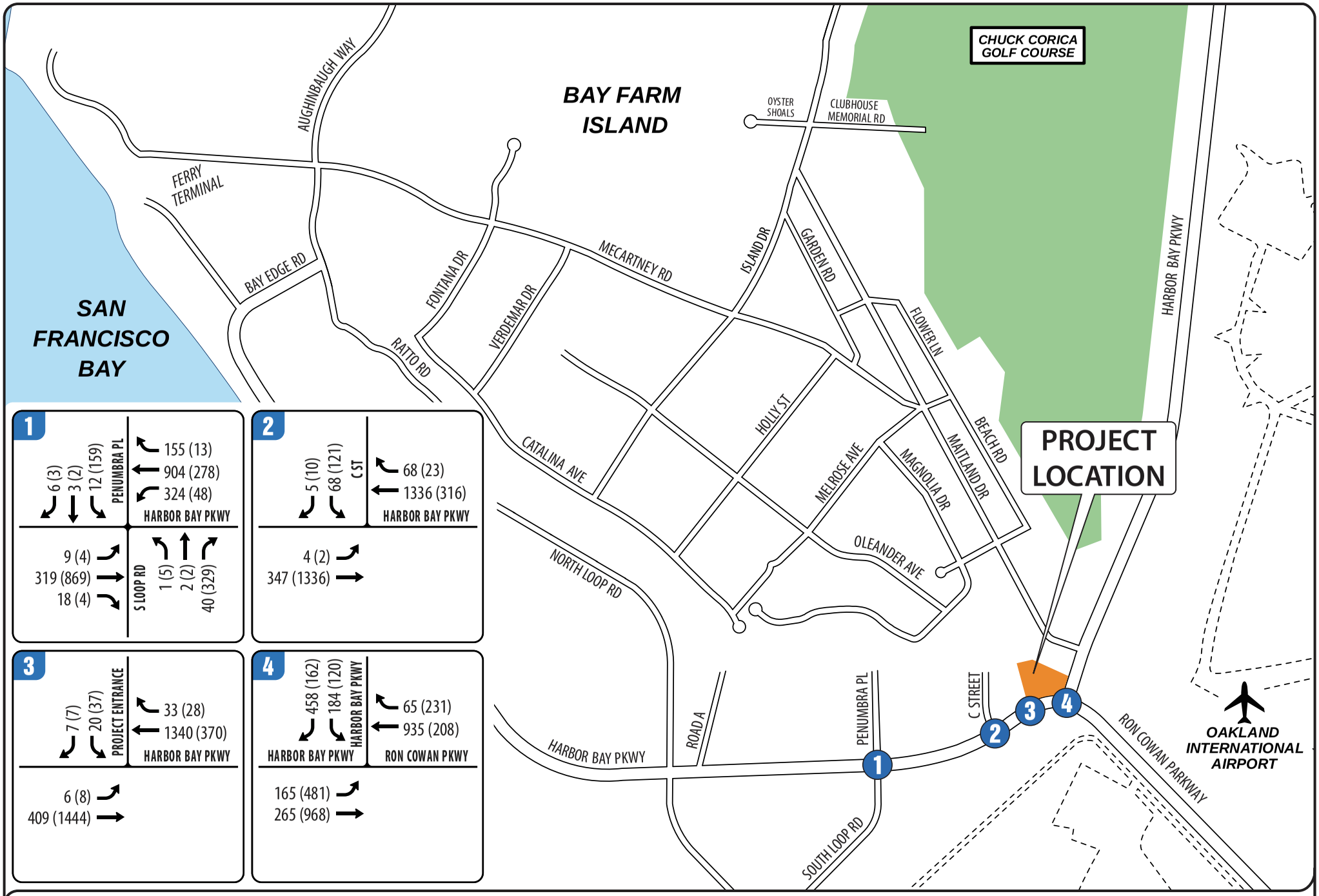

FIGURE 6 | EXISTING PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

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Baseline Traffic Volumes

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. This scenario includes traffic from the development of the approved North Loop Center 3 project, which includes a total of 187,000 square feet of office space which has not yet been constructed and occupied. This scenario also includes background traffic growth of 1 percent per year to the year 2020. Because no other funded transportation network improvements are expected to be completed at the study intersections by 2020, it has been assumed that the roadway network, traffic controls, and lane geometries for Baseline Conditions would be the same as under Existing Conditions. **Figure 7** shows the baseline AM and PM peak hour traffic volumes.

Baseline Intersection Operations

The projected intersection level of service computations for Baseline conditions at the project study intersections (during the weekday AM and PM peak hours) without the proposed project are shown in **Table 6**. All study intersections are forecast to meet the City's standards with the exception of Intersections #1 and #2. These two unsignalized intersections currently would continue to exceed the City's LOS standards during both the AM and PM peak hours. However, it should be noted that a traffic signal to address the future congestion at intersection #1 is already planned. The detailed LOS calculations and the signal warrant analysis worksheets for each study intersection are presented in the *Traffic Analysis Technical Appendix*.

Baseline Plus Project Intersection Operations

The addition of project traffic to the baseline conditions was analyzed in this scenario. The results of the intersection LOS computations for Baseline Plus Project conditions are as presented in **Table 6**. This scenario consists of Baseline (2020) Conditions, with the addition of traffic expected to be generated by the proposed hotel project. The projected intersection turning movement volumes for Baseline Plus Project conditions at the project study intersections are shown in **Figure 8**.

As shown in **Table 6**, all study intersections would continue to operate at acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Intersections #1 and #2. These two unsignalized intersections currently would continue to exceed the City's LOS standards during both the AM and PM peak hours. Based on an analysis of Caltrans signal warrants a traffic signal would not be warranted at Intersection #2 but the peak hour traffic signal warrants are already met at Intersection #1, Harbor Bay Parkway at Penumbra Place and South Loop Road. Please note this traffic signal would be warranted regardless of whether or not the proposed project is implemented. Please note that the project would increase the peak hour volumes at these two intersections by less than 3 percent and a traffic signal to address the future congestion is planned for intersection #1. Therefore, no off-site traffic mitigations would be required under this scenario. The detailed LOS calculations and the signal warrant analysis worksheets for each study intersection are presented in the *Traffic Analysis Technical Appendix*.

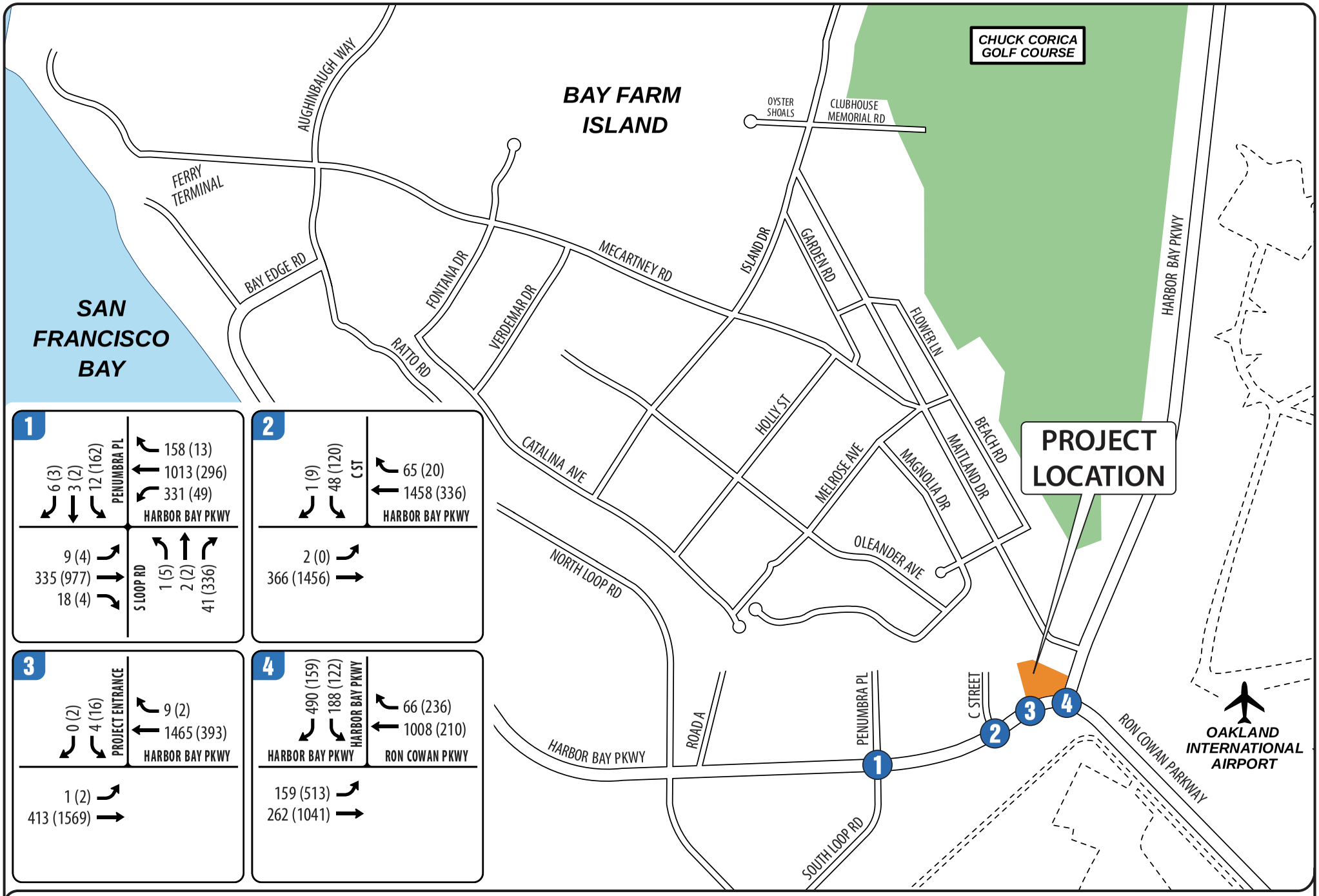

FIGURE 7 | BASELINE AM(PM) PEAK HOUR TRAFFIC VOLUMES
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

Abrams Associates
TRAFFIC ENGINEERING, INC.

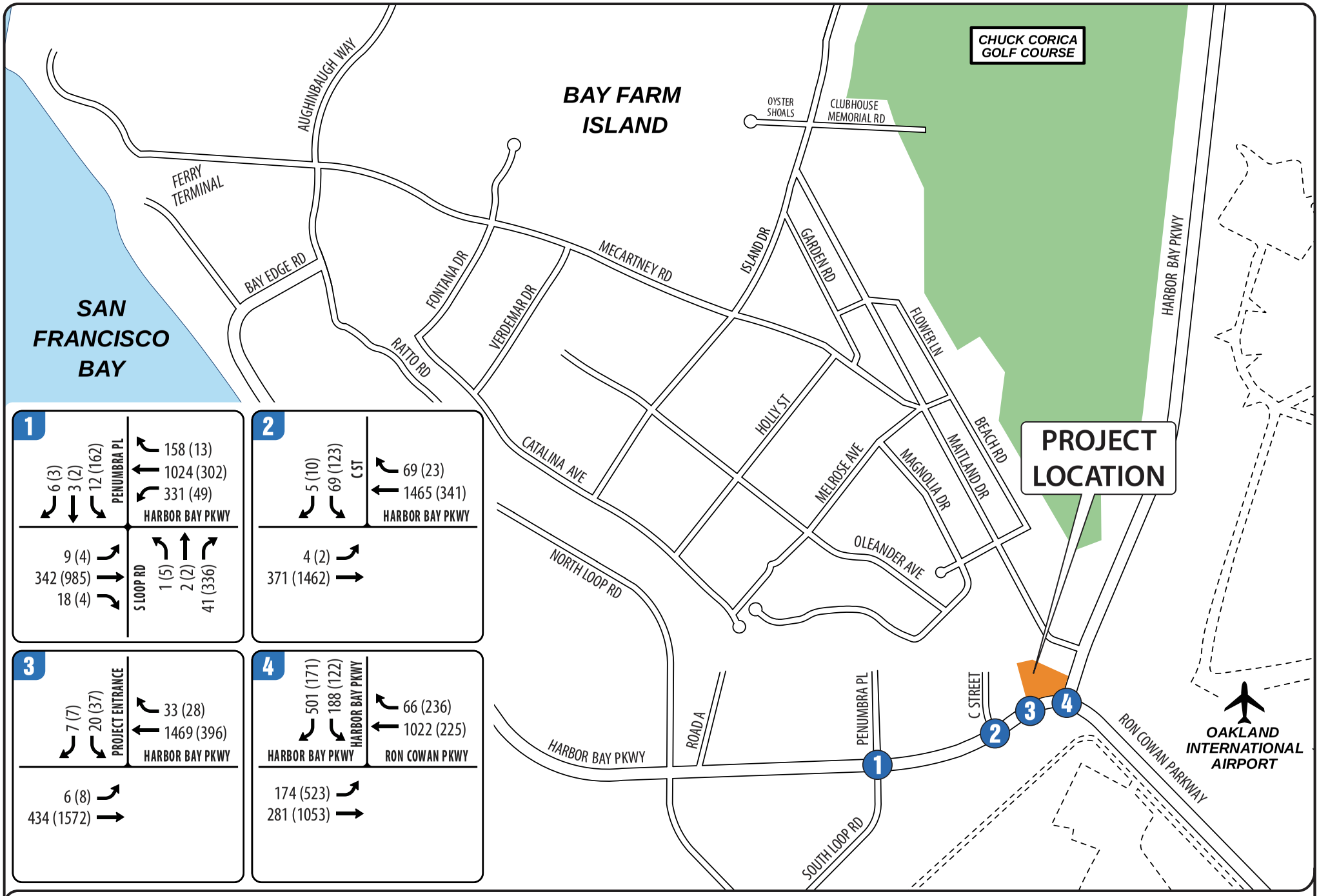

FIGURE 8 | BASELINE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

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TABLE 6
BASELINE INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	PENUMBRA PLACE & HARBOR BAY PARKWAY	Two Way Stop	AM	**> 50.0**	**F**	**> 50.0**	**F**
			PM	**> 50.0**	**F**	**> 50.0**	**F**
2	C STREET & HARBOR BAY PARKWAY	Side Street Stop	AM	**> 50.0**	**F**	**> 50.0**	**F**
			PM	23.9	C	24.6	C
3	PROJECT ENTRANCE & HABOR BAY PARKWAY	Side Street Stop	AM	33.4	D	34.3	D
			PM	17.8	C	19.2	C
4	ROW COWAN PARKWAY & HARBOR BAY PARKWAY	Signalized	AM	16.0	B	16.6	B
			PM	9.2	A	9.4	A

SOURCE: Abrams Associates, 2018
NOTE: Intersection LOS is based on delay which is presented in terms of seconds per vehicle.

Cumulative (2040) Traffic Volumes

The 2040 cumulative traffic volumes were based on the latest travel demand model from the Alameda County Transportation Commission. The only planned transportation network improvements assumed for the area was the installation of traffic signals at the intersections of the Harbor Bay Parkway with North Loop Road and with South Loop Road/Penumbra Place. **Figure 9** shows the cumulative AM and PM peak hour traffic volumes.

Cumulative (2040) Intersection Operations

The projected intersection level of service computations for Cumulative (Year 2040) conditions at the project study intersections (during the weekday AM and PM peak hours) without the proposed project are shown in **Table 7**. Intersection #1 and # 4 are forecast to meet the City's standards but Intersections #2, and #3 are forecast to exceed the City's standards. These two unsignalized intersections would continue to exceed the City's LOS standards during the AM peak hour. The detailed LOS calculations and the signal warrant analysis worksheets for each study intersection are presented in the *Traffic Analysis Technical Appendix*.

Cumulative Plus Project Intersection Operations

The projected intersection turning movement volumes for Cumulative 2040 plus project conditions at the four study intersections (during the weekday AM and PM peak hours) are shown in **Figure 10**. 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 7**. The detailed LOS calculation sheets for each study intersection are presented in the *Traffic Analysis Appendix*. As shown in **Table 6**, all study intersections would continue to operate at acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception of Intersections #2 and #3. Please note these intersections are forecast to continue to exceed the City's LOS standards during the AM peak hour but the project would increase the peak hour volumes the project entrance intersection (intersection #3) by more than 3 percent, which would be considered a ***significant impact*** according the City's established significance criteria. Please note these two intersections are both forecast to exceed the City's standards under cumulative conditions regardless of whether or not the proposed project is implemented.

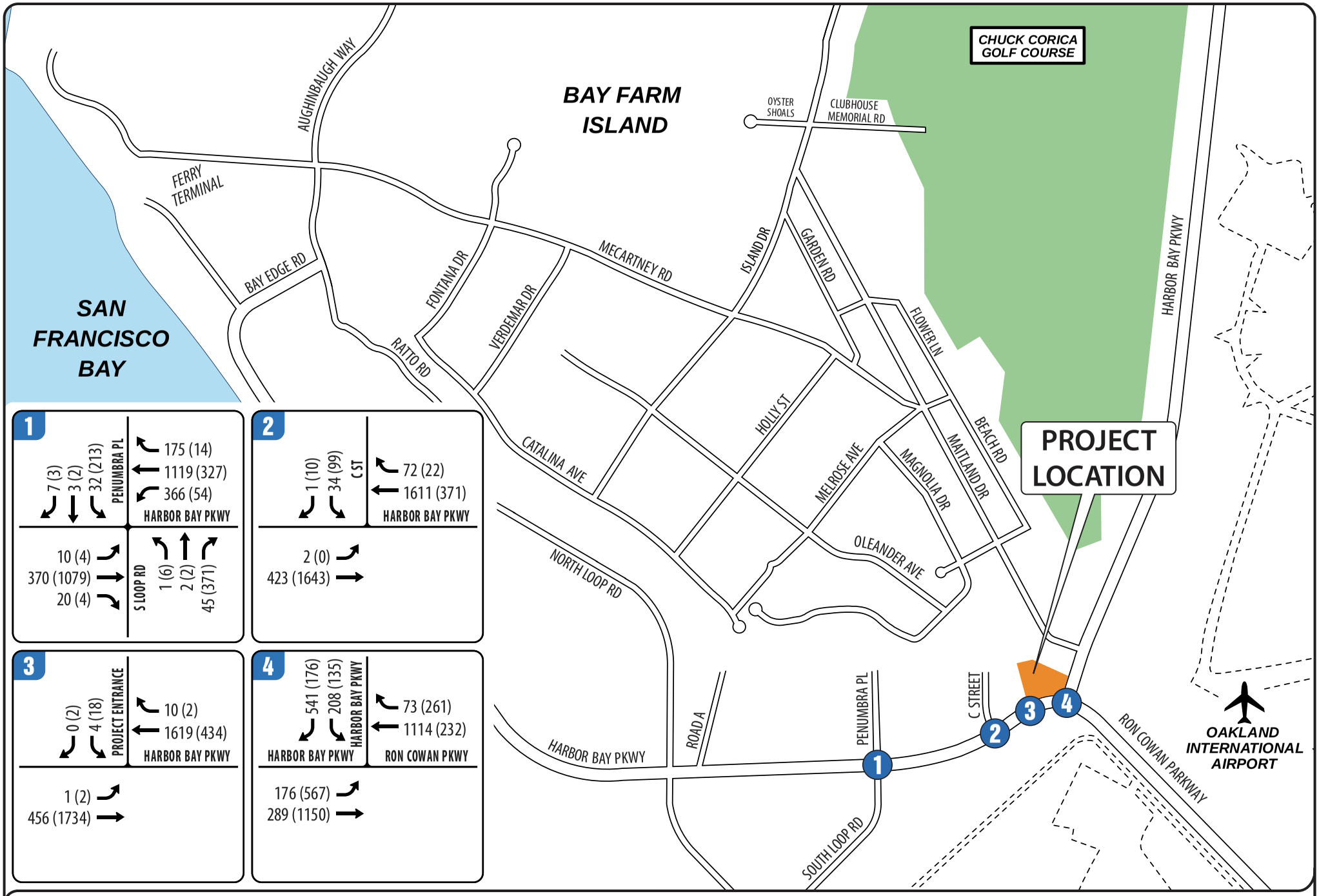

FIGURE 9 | CUMULATIVE AM(PM) PEAK HOUR TRAFFIC VOLUMES
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

Abrams Associates
TRAFFIC ENGINEERING, INC.

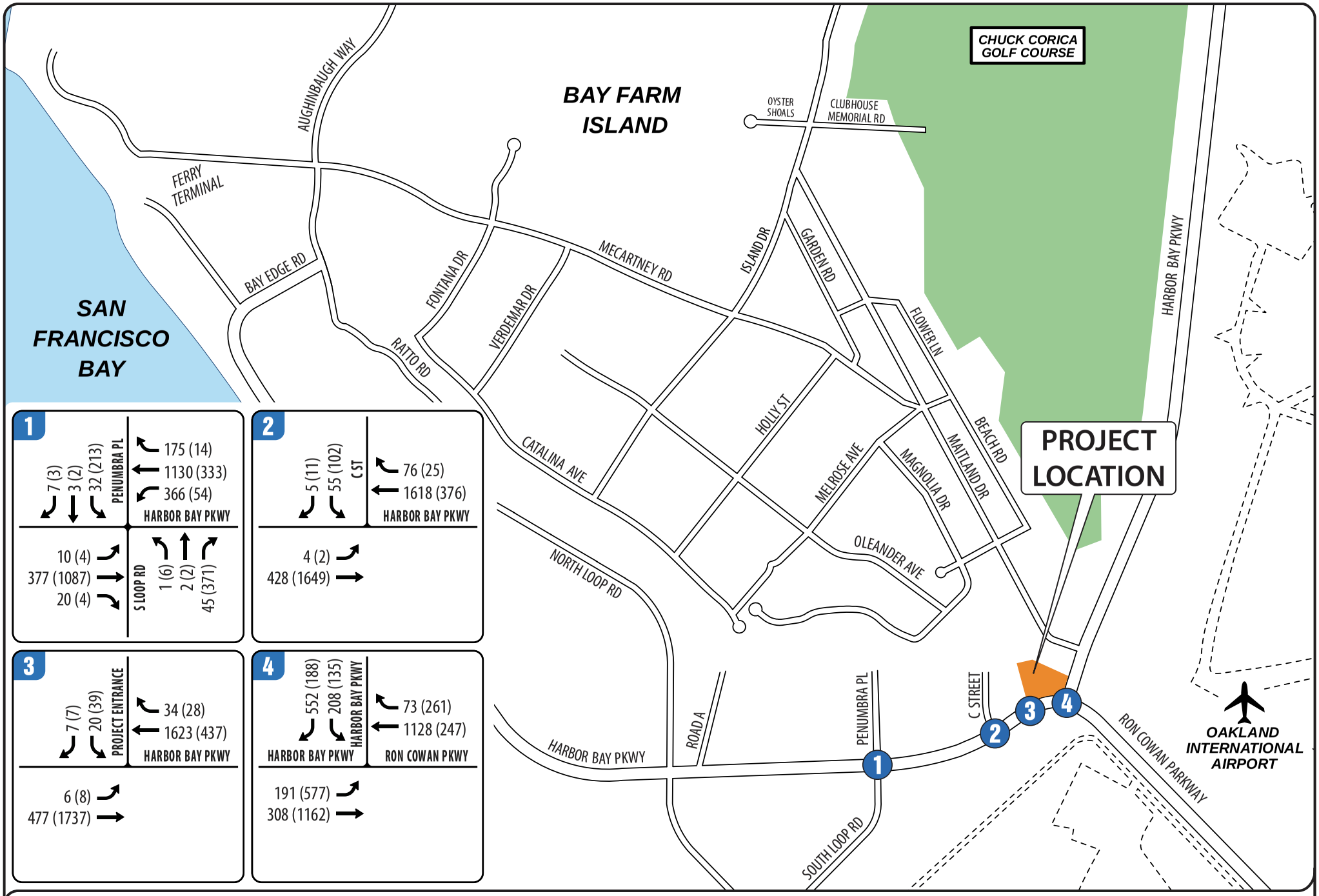

FIGURE 10 | CUMULATIVE PLUS PROJECT AM(PM) PEAK HOUR TRAFFIC VOLUMES
TRANSPORTATION IMPACT ANALYSIS
Harbor Bay Hotels Project
City of Alameda

Abrams Associates
TRAFFIC ENGINEERING, INC.

TABLE 7
CUMULATIVE INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	PENUMBRA PLACE & HARBOR BAY PARKWAY	Signalized	AM	13.0	B	13.1	B
			PM	25.4	C	25.7	C
2	C STREET & HARBOR BAY PARKWAY	Side Street Stop	AM	**> 50.0**	**F**	**> 50.0**	**F**
			PM	25.2	D	25.9	D
3	PROJECT ENTRANCE & HABOR BAY PARKWAY	Side Street Stop	AM	**40.4**	**E**	**44.0**	**E**
			PM	19.7	C	21.4	C
4	ROW COWAN PKWY & HARBOR BAY PARKWAY	Signalized	AM	18.5	B	19.3	B
			PM	9.9	A	10.1	B

SOURCE: Abrams Associates, 2018
NOTE: Intersection LOS is based on delay which is presented in terms of seconds per vehicle.

The project would increase the peak hour volumes at these two intersections by less than 3 percent. Therefore, the addition of project traffic at Intersections #2 and #3 under cumulative conditions would not be considered a significant impact according to the City's established significance criteria for intersections. The detailed LOS calculations and the signal warrant analysis worksheets for each study intersection are presented in the Technical Appendix to this report.

Arterial Analysis of the Ron Cowan Parkway

The projected volumes for Cumulative 2040 cumulative and cumulative plus project conditions were used to evaluate the arterial LOS on the Ron Cowan Parkway adjacent to the proposed project. The results of the arterial LOS computations for Cumulative conditions with and without the addition of project trips are presented in the technical appendix to this report. The analysis indicated that under cumulative plus project conditions the Ron Cowan Parkway would operate at LOS B during the AM peak hour and LOS C during the PM peak hour, with no change in LOS resulting from the addition of project traffic. In general, the analysis confirmed the results of previous studies which indicate the parkway would continue to operate with acceptable conditions (LOS D or better) under all scenarios during the weekday AM and PM peak hours.

Analysis of Accident History

Based on a review of the past five years of accident data on record with the California Highway Patrol there are no unusual accident trends or problems in the project study area. In addition, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in the publication 2014 Collision Data on California State Highways from the California Department of Transportation. All of the study intersections experienced collisions at a rate that is lower than the statewide average for similar facilities. As noted above, the California Highway Patrol accident records summary is included in the technical appendix to this report.

Internal Circulation and Access

The project's preliminary plan for the internal roadway network has been reviewed by licensed traffic engineers and no significant issues have been identified that would cause internal safety problems or any unusual traffic congestion or delay. However, during discussions with City staff it was noted that the sidewalk along the north side of the Ron Cowan Parkway would need to be

realigned to cross the project driveway closer to the curb of the parkway. The current sidewalk configuration at the driveway is not consistent with the goals of the updated City of Alameda General Plan. Please note that one option that was discussed would be to install pedestrian crossing signage and/or flashing beacons to alert motorists of the presence of pedestrians. However, it is our understanding that the applicant has agreed to realign the sidewalk as requested by the City and to meet all applicable standards for the relocated sidewalk under the Americans with Disabilities Act (ADA).

Analysis of Queuing at the Project Driveway on the Harbor Bay Parkway

It was requested that an analysis of queuing be conducted at the project study intersections and particularly the main project driveway on the Harbor Bay Parkway, given the proximity of the entrance to the parking garage which is located about 60 feet from the Harbor Bay Parkway. A table presenting the detailed cumulative and cumulative plus project queuing results at the project study intersections along with the queuing results from Synchro are included in the Technical Appendix to this report. The analysis indicated there would be no queuing problems with the proposed lane configurations or traffic controls (i.e. traffic signals or additional turn lanes would not be warranted or required to accommodate queueing). The results of the queuing analysis are included in the LOS printouts in the technical appendix and no queuing problems were identified. The 95th percentile queue at the driveway was forecast to be no more than two vehicles (i.e. about 50 feet) which would not block access to the proposed garage entrance. Five years of accident data for the driveway was also reviewed using the California Highway Patrol's accident database. Please note that no significant accident problems of patterns of accidents were identified in the project study area.

Parking

This section discusses the City of Alameda's zoning requirements and the estimated parking demand for the project. The City's Municipal Code specifies that the off-street parking for hotels not located within a community commercial district is 1.25 spaces per hotel room. For this proposed 211 room hotel project, this equates to a minimum requirement of 264 off-street parking spaces. Please note that the 162 proposed on-site parking spaces would not be gated and would be available to tenants of the adjacent office buildings as part of the reciprocal parking agreement.

Parking Demand Based on ITE Parking Generation Rates - To provide additional justification for the parking demand analysis, **Table 8** provides a summary of the parking demand results using the average ITE peak parking demand rates for business hotels (ITE Land Use Code 312) from the 4th Edition of the *ITE Parking Generation Manual*. As shown in **Table 8**, the parking demand generated by the project would be forecast to be approximately 127 parking spaces based on the ITE data. However, please note these ITE estimates are based on surveys of parking demand at suburban locations and do not account for the project's urban location with good transit access and private shuttle service to the airport.

Table 8
Residential Off-Street Parking Calculations Using Parking Data from the Institute of Transportation Engineers

Land Use	Size		Parking Ratio	Estimated Demand
Business Hotel *(ITE Code 312)*	211	rooms	0.60	127
Total Unadjusted Peak Parking Demand				*127*

Hotel Parking Demand Based on Surveys of Similar Hotels - To provide additional information on the potential parking demand for hotels in the project area, available parking studies for the area were reviewed and additional parking surveys were conducted at the two other hotels located in the Harbor Bay Business Park. Afternoon and evening surveys of hotel parking occupancy were conducted at the Extended Stay America on South Loop Road and the Hampton Inn and Suites on the Harbor Bay Parkway. The surveys were conducted between 1:00 and 3:00 pm and also between 6:00 and 8:00 PM on Tuesday April 10, 2018 and Friday April 13, 2018.

The Extended Stay America at 1260 South Loop Road has 88 rooms and 112 parking spaces. The peak demand was recorded on Friday night when 68 vehicles were recorded in the hotel parking lot, which equates to a peak parking demand of 0.77 vehicles per room. However, as noted above, based on data on average hotel occupancy per month it is estimated the peak parking demand during the summer months is about 11% higher than the average occupancy during the month of April when the surveys were conducted.[3] Therefore, it is estimated that the peak parking demand during summer months is about 0.86 vehicles per room.

The Hampton Inn and Suites at 1700 Harbor Bay Parkway has 105 rooms and 135 parking spaces. The peak demand there was also recorded on Friday night when there were 76 vehicles recorded in the hotel parking lot, which equates to a peak parking demand of 0.72 vehicles per room. However, based on data on average hotel occupancy per month in the U.S. it is estimated the peak parking demand during the peak month for most hotels (in July) is about 11% higher than the average occupancy during the month of April when the surveys were conducted. Therefore, it is estimated that the peak parking demand during summer months is about 0.80 vehicles per room.

Analysis of the Potential for Shared Parking with Surrounding Office Buildings – Although no definitive information on shared parking agreements was available at the time this study was prepared, it is our understanding that there may be a reciprocal parking agreement among the property owners in this area (subject to verification by the City). Therefore, to provide additional information on the parking demand this section provides information on the potential for shared parking with adjacent land uses. Data on parking occupancy by time of day indicates that office buildings tend to have their peak parking in the early afternoon (typically around 2:00 PM).[4] During this same time period the shared parking data indicates a typical business hotel only reaches about 60% of its peak parking demand in the evening. Data on parking occupancy for hotels indicates they tend to have their peak parking in the late evening and early morning (typically after 10:00 PM and before 7:00 AM). During this same time period the shared parking data indicates a typical office building only has about 10% of its peak parking demand in the late evening and early morning. Therefore, the data on shared parking further supports the contention that even if a parking shortage were ever to occur at the hotel, this would occur in the evening when it would be unlikely to result in impacts to the surrounding office buildings.

Summary of Findings on Parking - Based on these studies, the parking provided would be sufficient to meet the estimated demand of the project based on ITE data and surveys of nearby hotels. The project is currently proposing to provide 162 parking spaces on-site in a surface parking lot and would have access to an additional 102 parking spaces in the existing adjacent parking lots as part of a reciprocal parking agreement with neighboring properties.

Please note the availability of transit has been shown to result in a reduction in the demand for parking. Bus transit service in the area is provided by AC Transit and ferry service is provided

[3] *Redefining Weekday Hotel Business*, STR Analytics, Hendersonville, TN, April 27, 2015.
[4] *Shared Parking, Second Edition*, Urban Land Institute, Washington D.C., 2005.

by the Alameda Harbor Bay Ferry. Local bus routes provide connections to the Oakland International Airport, the Ferry terminal, and the Fruitvale BART station. The Alameda Harbor Bay Ferry is a ferry that mainly transports commuters on weekdays to the Ferry Plaza in San Francisco. However, the Harbor Bay Business Park also operates a private shuttle service providing direct service to BART. In addition, with the rising popularity of ride-sharing services it is expected that some hotel patrons would arrive via Uber and Lyft. Lastly, the hotels are proposing to provide private shuttle service for hotel guests to the Oakland Airport. Therefore, for this project it is anticipated that a higher portion of travel will occur through the use of public transit, ride sharing services, and the hotel shuttle service. In general, it is expected that through self-selection some of the hotel guests would choose other travel modes and would not arrive in private autos or rental vehicles. However, the ITE parking generation rates for hotels are based on surveys of hotels that most likely had some level of transit service available. This site would be forecast to have above average transit access with the proposed shuttle service, when compared to a typical hotel in a suburban location. Therefore, based on ITE data on the effects of transit access, it is forecast that the parking demand for the proposed project would be approximately 7% less than a typical hotel.[5]

Based on the analysis of parking demand and that fact that the peak parking periods for hotel are different from office uses, any impacts related to adequate parking should be less-than-significant and no impacts would be expected to adjacent properties. It should be also noted that parking shortfalls relative to demand are not considered significant environmental impacts in an urban context. Parking deficits are an inconvenience to drivers, but are not necessarily considered a significant physical impact on the environment.[6]

5) RECOMMENDED MITIGATIONS MEASURES

The project would cause the primary project access driveway intersection with the Harbor Bay Parkway to exceed the City standards under cumulative plus project conditions. At this intersection the project would increase the forecast volumes by more than 3 percent at an intersection that is forecast to operate at LOS E. An analysis of Caltrans traffic signal warrants indicates that a traffic signal would not be warranted at this intersection, either now or under cumulative plus project conditions.

Please note that adjacent traffic signals are forecast to continue creating sufficient gaps in traffic to allow safe operations at this intersection and there would be no significant delays or queuing expected on the Harbor Bay Parkway. All queuing and delay would be contained on private property on the side street approach to the Harbor Bay Parkway. A recommended improvement measure for this location is to widen the project approach to the Harbor Bay Parkway allow for separate right and left turn lanes. Beyond this location, the addition of project traffic would not be considered a significant impact at any of the other three intersections (Intersections #1, #2, and #4) according to the City's established significance criteria for intersections.

Project-Specific Impacts and Mitigation Measures

The following is a list of 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.

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[5] *Trip Generation Handbook*, Second Edition, Institute of Transportation Engineers, Washington D.C., June 2004.

[6] *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco (1st Dist. 2002) 102 Cal.App.4th 656, Referenced in the article: Is "parking" really a CEQA impact? Same as it ever was!*, Association of Corporate Counsel, Arthur F Coon, Miller Starr Regalia, Walnut Creek, CA June 25, 2013.

TR-1 Impacts related to pedestrian facilities.

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 City's significance criteria the project's impacts on pedestrian travel would be considered less than significant and no mitigations would be required.

Mitigation Measure(s)
None required.

TR-2 Impacts related to bicycle facilities.

Although the proposed project would increase vehicle and pedestrian traffic in the project vicinity it is not expected to significantly impact or change the design of any existing bicycle facilities or create any new safety problems for bicyclists in the area. The addition of project trips to the peak-hour volumes on the roadways in the study area would not cause the bicycle LOS score to increase by more than 10% which is the threshold considered to result in significant impacts as per the Transportation Element of the City's General Plan.

Although the proposed project would increase vehicle and pedestrian traffic in the project vicinity it is not expected to significantly impact or change the design of any existing bicycle facilities or create any new safety problems for bicyclists in the area.

Mitigation Measure(s)
None required.

TR-3 Impacts related to transit facilities.

The proposed project has the potential to increase patronage on bus lines in the area. However, based on this analysis 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. The project contribution to key roadway segments in the area would not result in any significant changes to travel speeds according to City standards (i.e. a change of 10% or more). As a result, the project would not be expected to result in any significant impacts to transit service in the area.

Mitigation Measure(s)
None required.

TR-4 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 24 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 the freeway, as determined by the City Engineering Department; all site ingress and egress would occur only at the main driveways to the project site and construction activities may require installation of temporary (or ultimate) traffic signals as determined by the City Engineer; 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 roads; 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 4:00 PM. The construction worker arrival peak would occur between 6:30 AM and 7:30 AM, and the departure peak would occur between 4:00 PM and 5:00 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 50 vehicles during the peak construction period. Additionally, deliveries, visits, and other activities may generate peak non-worker parking demand of 10 to 20 trucks and automobiles per day. Therefore, up to 75 vehicle parking spaces may be required during the peak construction period just for the construction employees. Furthermore, the Traffic Control Plan will require construction employee parking be provided on the project site to eliminate conflicts with nearby residential areas. Because the construction of the project can be staggered so that employee parking demand is met by using on-site parking, the impacts of construction-related employee traffic and parking are considered less-than-significant.

Construction Material Import

The project would also require the importation of construction material, including raw materials for the building pads, the buildings, the parking areas, and landscaping. 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.

TR-5 Impacts to freeway operations.

The development of the proposed project would increase the total traffic during both AM and PM peak hours. However, the project site has already been planned to be developed with traffic generating uses (i.e. offices) in the General Plans of the City of Alameda and Alameda County and has already been assumed in all cumulative build-out traffic forecasts that have been used in the design of freeway facilities in the area. Therefore, the proposed project would have a ***less-than-significant*** impact to freeway operations.

Mitigation Measure(s)
None required.

TR-6 Impacts related to site access and circulation.

The proposed project would have one main unsignalized driveway on the Harbor Bay Parkway. Based on a review of the 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. However, the addition of project traffic would contribute to the primary project access driveway intersection with the Harbor Bay Parkway exceeding the City standards under cumulative plus project conditions.

At this intersection the project would increase the forecast volumes by more than 3 percent at an intersection that is forecast to operate at LOS E. An analysis of Caltrans traffic signal warrants (also adopted by the City) indicates that a traffic signal would not be warranted at this intersection, either now or under cumulative plus project conditions. It should be noted that there would be no significant impacts to operations on the Harbor Bay Parkway, all queuing and delay would be contained on private property on the side street approach to the Harbor Bay Parkway. However, since a traffic signal is not warranted and therefore not a potential mitigation the impacts related to the proposed project at the entrance intersection would be considered ***significant and unavoidable***.

Recommended Improvement Measure
It is recommended that the project's driveway approach to the Harbor Bay Parkway be widened to allow for separate right and left turn lanes, assuming staff determines this would be consistent with City plans for improving pedestrian safety at this location.

TR-7 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 have both a primary and secondary entrance onto the Harbor Bay Parkway. All lane widths within the project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal roadways would be adequate. Therefore, the development of the proposed project is expected to have ***less-than-significant*** impacts regarding emergency vehicle access.

Mitigation Measure(s)
None required.

TR-8 Impacts relating to the presence and availability of adequate parking.

The project is proposing to meet or exceed the City's parking requirements, subject to City approval of the reciprocal parking agreement with adjacent properties, and is not expected to result in any significant parking impacts on the surrounding areas. 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.