APPENDIX C

3000-3500 MARINA BOULEVARD (BRISBANE, CALIFORNIA) SITE PLAN REVIEW

This page intentionally left blank

Hexagon Transportation Consultants, Inc.

Memorandum

Date: Friday, August 24, 2018

To: Ms. Judith Malamut, LSA

From: Gary Black
Rueben Rodriguez

Subject: 3000-3500 Marina Boulevard (Brisbane, California) Site Plan Review

Hexagon Transportation Consultants, Inc. has completed a transportation study for the proposed 3000-3500 Marina Boulevard project in Brisbane, California. The proposed project was first approved in 2008 based on a mitigated negative declaration (MND), for which Hexagon Transportation Consultants, Inc. prepared the traffic analysis. The traffic analysis was updated by Fehr & Peers in December 2016. In the 2016 traffic study, the proposed project was analyzed as 445,500 square feet (s.f.) of general office space and 37,500 s.f. of general retail space. The project is now being proposed as a life sciences campus, which would generate less traffic than the approved office development. In addition, the project would no longer include any retail space.

This report presents a trip generation comparison summary, reviews the proposed project site access, on-site circulation, and parking, and summarizes the impacts and mitigation measures identified in the 2016 traffic study.

Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. Trip generation resulting from new development are typically estimated using the trip rates published in the Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation Manual, 10th Edition* (2017). The rates published for Research and Development Center (Land Use Code 760) were used to estimate the vehicle trips that the proposed life sciences facilities would generate. The ITE rates for Research and Development Center are typically used for projects such as this that include a combination of office and laboratory space. The 2016 traffic study utilized trip generation rates published in the ITE *Trip Generation Manual, 9th Edition (2012)*. The trip generation rates for the general office space and general retail space were estimated using General Office Building (Land Use Code 710) and Shopping Center (Land Use Code 820), respectively.

Based on ITE rates, the proposed life sciences facilities would generate 516 vehicle trips (428 inbound and 88 outbound) during the AM peak hour, and 469 vehicle trips (75 inbound and 394 outbound) during the PM peak hour (see Table 1). The 2016 traffic study estimated 731 vehicle trips during the AM peak hour, and 803 vehicle trips during the PM peak hour for the previous office project.

Since a life sciences campus would generate fewer peak hour trips than a general office building, and the project would no longer include retail space, the proposed project is estimated to generate

4 North Second Street, Suite 400 · San Jose, California 95113 · phone 408.971.6100 · fax 408.971.6102 · www.hextrans.com

215 fewer trips during the AM peak hour and 334 fewer trips during the PM peak hour compared to the trip generation results presented in the 2016 traffic study.

The project trip generation is summarized in Table 1.

Table 1
Project Trip Generation Summary

Land Use	Size	Units	Daily Rate[4]	Daily Trips	AM Peak Hour Rate[4]	AM In	AM Out	AM Total	PM Peak Hour Rate[4]	PM In	PM Out	PM Total
Proposed												
R&D[1]	422,552	s.f.	11.26	4,758	1.22	428	88	516	1.11	75	394	469
2016 TIA[2]												
General Office	445,500	s.f.	11.03	4,914	1.56	612	83	695	1.49	113	551	664
Shopping Center[3]	37,500	s.f.	42.79	1,605	0.96	22	14	36	3.71	67	72	139
		Subtotal				*634*	*97*	*731*		*180*	*623*	*803*
Difference from 2016 TIA						***(206)***	***(9)***	***(215)***		***(105)***	***(229)***	***(334)***

Notes:
s.f.= square feet

[1] Trip generation based on Research & Development Center (Land Use Code 760) average rates published in the ITE *Trip Generation Manual, 10th Edition (2017)*.

[2] Trip Generation presented was published in Table 10 of the *Sierra Point Opus Office Center Transportation Impact Analysis* report, prepared by Fehr & Peers in December 2016.

[3] The 2016 TIA listed 1,601 daily trips for the Shopping Center use. Value was corrected to 1,605 daily trips.

[4] Rates are expressed in trips per 1,000 s.f.

Since the 2016 traffic study prepared by Fehr & Peers is not out of date, and the new project description would generate less traffic, the conclusions presented in the 2016 traffic study are still valid.

Site Access, On-Site Circulation, and Parking

The evaluation of site access, circulation, and parking is based on the plan set prepared by Skidmore, Ownings, & Merrill LLP dated July 13, 2018. Site access and circulation was reviewed in accordance with generally accepted traffic engineering standards. The parking evaluation is based on City of Brisbane parking code requirements.

Site Access and On-Site Circulation

Vehicular access to the project site would be provided via two driveways on Marina Boulevard. The northern driveway is shown to allow all turning movements. This would require the median on Marina Boulevard to be modified to close the existing median break and open a new break at the project driveway. The driveway is shown to be 26 feet wide, measured at the throat. The northern driveway would provide direct access to the podium parking garage and one loading dock. The southern driveway is shown to be 26 feet wide, measured at the throat, and would be limited to right in/out movements by the existing median on Marina Boulevard. The southern driveway would provide direct access to the surface parking lot, podium parking garage, and another loading dock.

Site Plan Review

In general, the project site shows good circulation with limited dead-end aisles, driveway aisle widths of 24 feet, which would allow adequate space for two-way traffic, and adequate parking stall dimensions. However, there are a few issues described below and shown on Figure 1 and Figure 2.

Parking Garage – Ground Level

1. The vehicle exit on the south end of the parking garage is shown to be 10 feet wide. It is recommended that all garage vehicle entrances and exits be a minimum of 11 feet wide.
2. The vehicle parking spaces in the southeast corner of the garage, near plan grid lines O-P and 3-4, would be difficult to navigate into and out of. As shown, there is only 2 feet of clearance between the stalls, thus, these stalls would not be useable at the same time.
3. The east-west drive aisle between plan grid lines O-P and 8-9 is shown to be approximately 22 feet. It is recommended that all two-way drive aisles be a minimum of 24 feet.
4. There is overlapping striping shown between two vehicle parking stalls near plan grid lines H-I and 8-9. As shown, the lines for the two stalls are conflicting.
5. The two parking spaces near plan grid line 1-2 between 1-B and 1-D would be difficult to maneuver into due to the circulation of the garage. Drivers would need to make a U-turn to enter into these spaces.

Parking Garage– Level 2

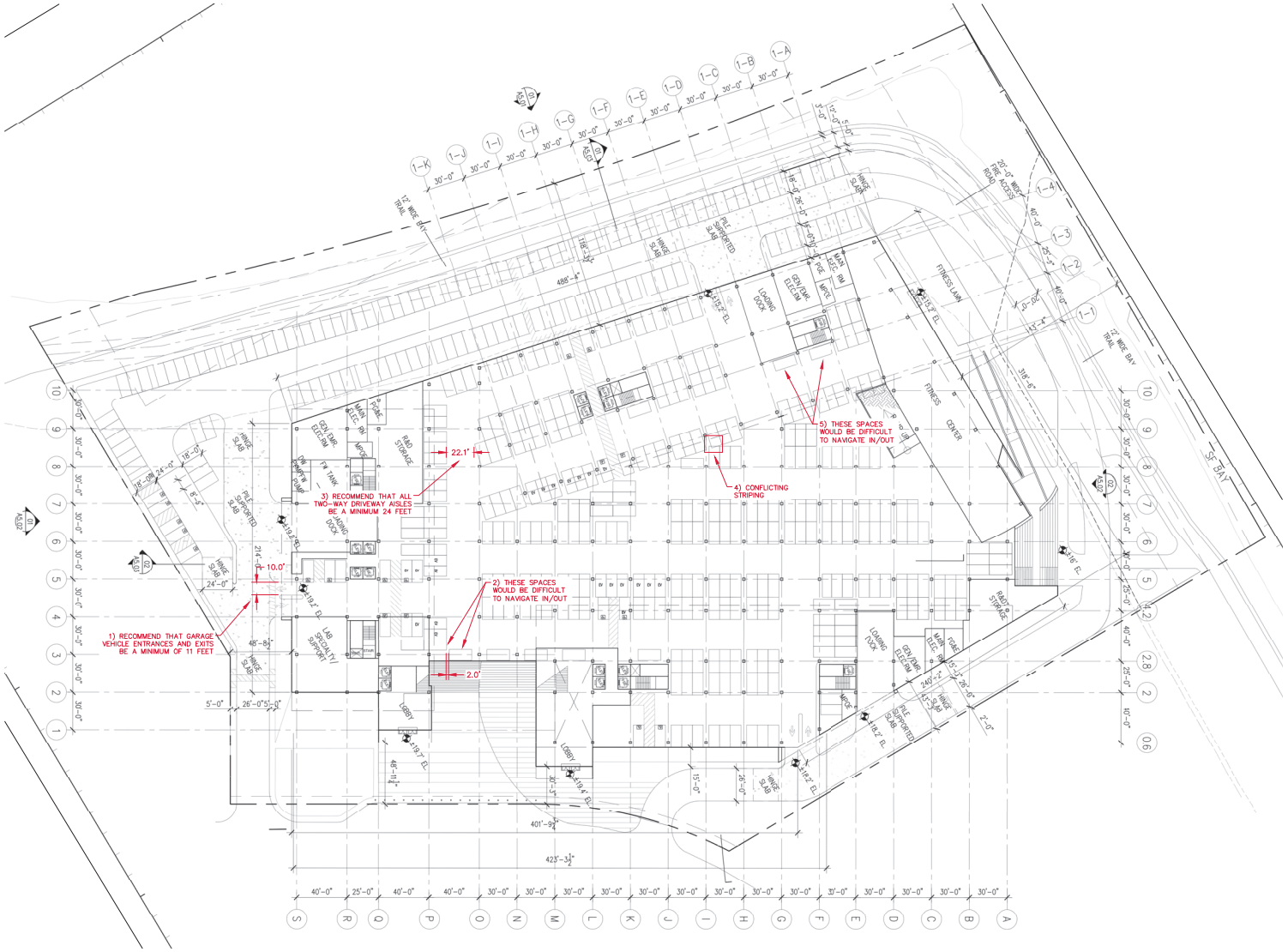
6. The north-south drive aisle between plan grid lines P-Q and 8-9 is shown to be approximately 23 feet. It is recommended that all two-way drive aisles be a minimum of 24 feet.
7. The east-west drive aisle between plan grid lines O-P and 8-9 is shown to be approximately 22 feet. It is recommended that all two-way drive aisles be a minimum of 24 feet.

The site plan indicates 34 tandem parking spaces on the ground level and 37 tandem parking spaces on level 2. The City code does not specify whether or not tandem spaces would be allowed for R&D uses, therefore, it is not clear whether this would be approved. Note that it is uncommon for tandem spaces to be used for commercial uses due to the difficultly in assigning and coordinating these spaces between employees. All of the tandem parking spaces are shown to be 8 feet 6 inches wide by 36 feet long. The Brisbane Municipal Code does not discuss tandem parking for commercial uses, however, according to the City code, tandem spaces for residential garages are required to have a minimum length of 40 feet.

Sight Distance at the Project Driveways

Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is most often considered the Caltrans stopping sight distance. According to the Caltrans Highway Design Manual, the minimum stopping sight distance is the distance required by the user, traveling at a given speed, to bring the vehicle to stop after an object on the road becomes visible. Stopping sight distance for motorists is measured from the driver's eyes, which are assumed to be 3 feet 6 inches above the pavement surface, to an object 6 inches high on the road. The required stopping sight distances that are referenced below can be found in Table 201.1 of the Caltrans *Highway Design Manual*. The sight distance at each of the project driveways is discussed further below.

G:1.504



CONCEPTUAL
AUGUST 2018
NOT FOR CONSTRUCTION

CA: 1-800-227-2600
CALL BEFORE YOU DIG
USA
UNDERGROUND SERVICE ALERT
CA: 1-800-227-2600
CALL TWO WORKING DAYS BEFORE YOU DIG

GRAPHIC SCALE
40 0 20 40 80 160
1 INCH = 40 FEET

DRAWN: R. RODRIGUEZ	DESIGNED	SCALE: 1" = 40'
CHECKED	DATE: 8/24/18	
APPROVED		CONTRACT NO.
ENGINEER	DATE	

PREPARED BY:
HEXAGON TRANSPORTATION CONSULTANTS, INC.
4 North Second Street, Suite 400
San Jose, California 95113
Ph: (408) 971-6100
www.hextrans.com

REVISIONS

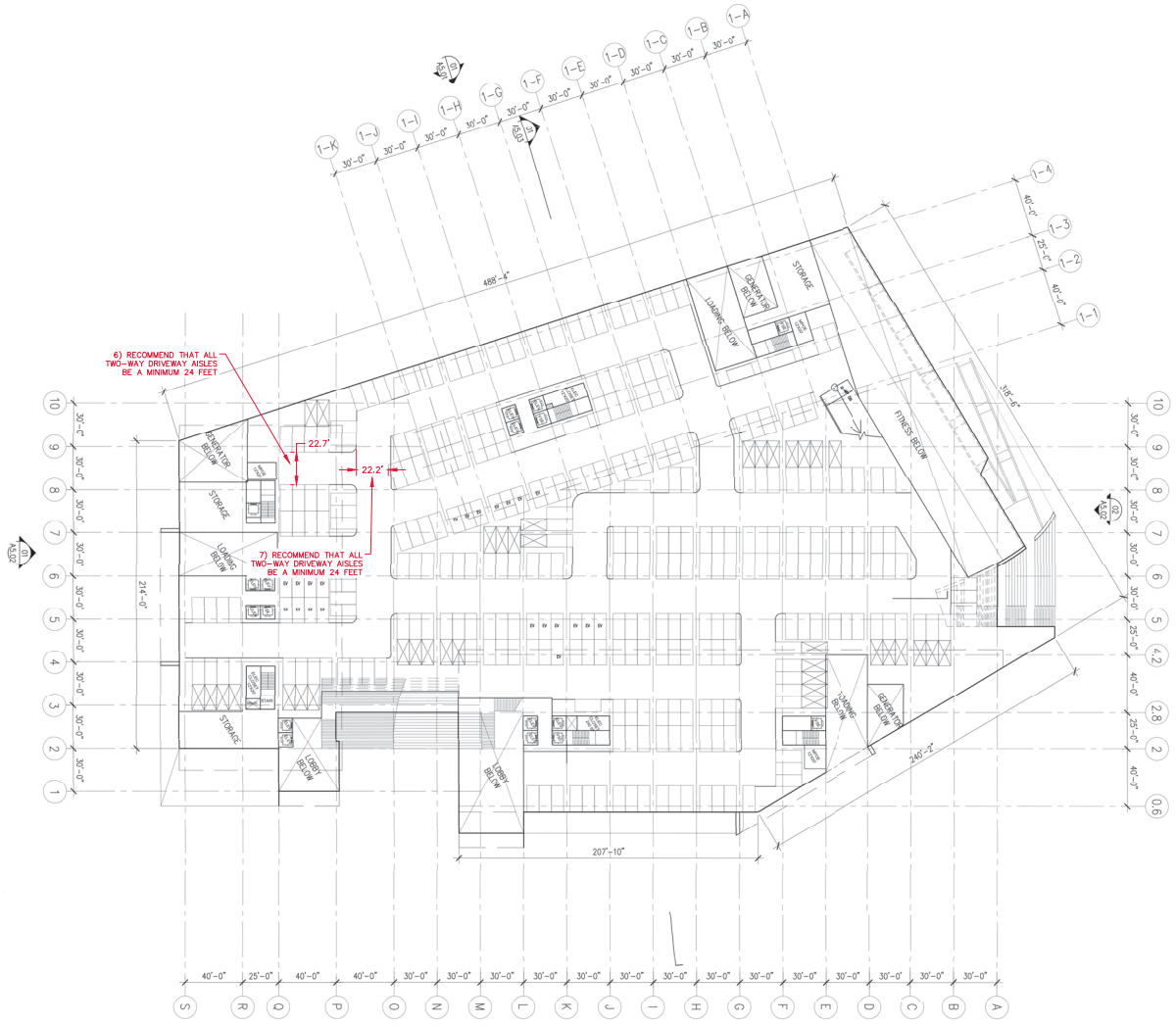
NO.	DATE	BY	DESCRIPTION	APPR.	DATE

CITY OF BRISBANE

3000-3500 MARINA BOULEVARD
SITE PLAN PARKING GARAGE GROUND FLOOR RECOMMENDATIONS

DRAWING NO.
FIGURE 1
SHEET X OF X

G-1.505



CONCEPTUAL
AUGUST 2018
NOT FOR CONSTRUCTION

CA: 1-800-227-2600
CALL BEFORE YOU DIG
USA
UNDERGROUND SERVICE ALERT
CA: 1-800-227-2600
CALL TWO WORKING DAYS BEFORE YOU DIG

GRAPHIC SCALE
40 0 20 40 80 160
1 INCH = 40 FEET

DRAWN: R. RODRIGUEZ	DESIGNED	SCALE: 1" = 40'
CHECKED	DATE: 8/24/18	
APPROVED		CONTRACT NO.
ENGINEER	DATE	

PREPARED BY:
HEXAGON TRANSPORTATION CONSULTANTS, INC.
4 North Second Street, Suite 400
San Jose, California 95113
Ph: (408) 971-6100
www.hextrans.com

REVISIONS

NO.	DATE	BY	DESCRIPTION	APPR.	DATE

CITY OF BRISBANE

3000-3500 MARINA BOULEVARD
SITE PLAN PARKING GARAGE LEVEL 2
RECOMMENDATIONS

DRAWING NO.
FIGURE 2
SHEET X OF X

Northern Driveway

The northern driveway would allow all movements. The project traffic using this driveway would need to have adequate sight distance looking east (i.e. looking at the oncoming westbound Marina Boulevard). Assuming a 35-mph design speed, the recommended Caltrans stopping sight distance is 250 feet. The sight distance from the northern driveways is estimated to be approximately 300 feet. Thus, the northern driveway would have sufficient sight distance.

Southern Driveway

The southern driveway would be right-turn only, thus, the project traffic exiting this driveway would need to have adequate sight distance looking north (i.e. looking at the oncoming southbound Marina Boulevard). Assuming a 35-mph design speed, the recommended Caltrans stopping sight distance is 250 feet. The sight distance from the southern driveway is estimated to be approximately 350 feet. Thus, the southern driveway would have sufficient sight distance.

Truck Access

The proposed project would provide three loading docks for truck deliveries. Loading docks would be provided in the northeast corner, in the northwest corner, and the south end of the project site. The loading dock in the northeast corner would be directly accessible from the northern driveway. The loading docks in the northwest corner and the south end would be directly accessible from the southern driveway. The project plan set includes truck turning templates for WB-40 and WB-67 design vehicles. The turning templates indicate that there would be adequate maneuvering area for a truck to navigate to and from the loading areas. The southern loading dock provides the most amount of maneuvering area, thus, is it recommend that project include signage directing larger delivery trucks to the southern loading dock via the southern driveway.

Emergency Vehicle Access

The project would include an access road that is 20 feet wide along the north side of the project site. This access road would connect the northern driveway drive aisle to the southern driveway drive aisle, and provide a continuous route around the project site for emergency vehicles. Therefore, the project's emergency vehicle access would be sufficient.

Project Driveway Operations

Due to the configuration of the driveways and the circulation pattern of Marina Boulevard, all inbound traffic is expected to enter the site via a northbound left turn at the northern project driveway. It is estimated that half the project traffic would exit the site via a right turn out at the northern project driveway, and the other half would exit the site via a right turn out at the southern project driveway. It is recommended that the existing median on Marina Boulevard be reconfigured to align the northbound left-turn pocket and median break with the northern project driveway.

Parking Analysis

On-site parking was evaluated based on the City of Brisbane parking standards (*Brisbane Municipal Code Chapter 17.34*) and the findings reported in the *3000-3500 Parking and TDM Analysis* prepared by Fehr & Peers and dated July 31, 2018.

Vehicular Parking Requirement

The City parking code does not include a category for R&D uses. For the purpose of this analysis, the requirements for an Administrative Office were applied to the proposed project. Based on the City of Brisbane's off-street parking requirement, Administrative Office uses are required to provide

vehicle parking spaces at a rate of 1 space per 300 square feet of gross floor area. Thus, based on the proposed size of the project, the project would be required to provide 1,408 vehicle parking spaces. However, the *3000-3500 Parking and TDM Analysis* prepared by Fehr & Peers concludes that based on the ITE *Parking Generation Manual* and a review of local parking demand at similar Bay Area sites, the project's maximum demand is expected to be 2.42 spaces per 1,000 square feet. This corresponds to an estimated vehicle parking demand of 1,023 spaces. In addition, the project's parking and TDM analysis report concludes that the project's TDM program should be able to achieve a 28% reduction in parking demand. Therefore, the vehicular parking demand calculated by Fehr & Peers for the project site, based on office usage, is estimated to be 737 parking spaces.

The project plan set provides a total of 781 vehicle parking spaces (127 space in the surface lot, 316 on the ground level of the parking garage, and 338 on level 2 of the parking garage). Although the proposed project parking supply falls below the City requirement, the proposed parking supply would exceed the estimated parking demand outlined in the project's parking and TDM analysis report. However, this assumes that the City approves the 71 tandem parking spaces. Without the tandem parking spaces the project would have 710 parking spaces, which is 17 spaces fewer than the estimated parking demand.

Clean Air Vehicle Parking Requirements

The project would be required to designate 59 parking spaces (8% of the total parking requirement) for clean air vehicles. The site plan shows 41 clean air vehicle parking spaces. It is recommended that the project designate an additional 18 parking spaces for clean air vehicles.

Vehicle Parking Dimensions

The City of Brisbane's off-street parking requirement lists the standard vehicle parking space dimensions as 9 feet by 18 feet and the compact vehicle parking space dimensions as 8 feet by 16 feet. However, the project has a parking modification use permit that allows uniform vehicle parking spaces of 8 feet 6 inches by 18 feet. The project site plans shows that all of the proposed vehicle parking spaces would meet the uniform space requirement.

Bicycle Parking Requirement

The City code requires short-term and long-term bicycle parking spaces be included for new developments. The short-term bicycle parking requirement for office uses is one bike rack space per 150,000 s.f. The long-term bicycle parking requirement for office uses is one space per 6,000 s.f. To meet the City's requirements, 3 short-term bicycle parking spaces and 71 long-term bicycle parking spaces should be provided. Bicycle parking is not shown on the site plan.

Impacts and Mitigation Measures from 2016 Traffic Study

The 2016 traffic study analyzed traffic conditions at the 11 intersections listed below.

1. Bayshore Boulevard and Sister Cities/Oyster Point Boulevard (signal control, South San Francisco)
2. Congdon Street and Alemany Boulevard (signal control, San Francisco)
3. Alemany Boulevard and Geneva Avenue (signal control, San Francisco)
4. Mission Street and Geneva Avenue (signal control, San Francisco)
5. Bayshore Boulevard and Geneva Avenue (signal control, Daly City, CMP)
6. Bayshore Boulevard and Old County Road (signal control, Brisbane)
7. Tunnel Avenue and Lagoon Road (all-way stop control, Brisbane)
8. Sierra Point Parkway and Lagoon Road (all-way stop control, Brisbane)

9. US 101 Northbound Ramps and Sierra Point Parkway (two-way stop control, Brisbane)
10. Sierra Point Parkway and Shoreline Court (all-way stop control, Brisbane)
11. Marina Boulevard and Sierra Point Parkway (all-way stop control, Brisbane)

The project site and study intersections are shown on Figure 3. Impacts at the study intersections were evaluated based on the standards and methodologies set forth by the City of Brisbane, City of San Francisco, City of South San Francisco, the City of Daly City, and the County of San Mateo. Traffic conditions at the study intersections were evaluated under existing, background, and future traffic volume scenarios. The impacts and mitigation measures identified in the 2016 traffic study, as well as the corresponding scenario or scenarios, are described below.

Intersection 6: Bayshore Boulevard and Old County Road

Impact: Future Plus Project

Mitigation: Restripe the eastbound approach to create one additional exclusive through lane. Restripe the southbound approach to create two additional lanes: an additional exclusive left-turn pocket and an additional through lane. Widen eastbound Tunnel Avenue to the east of its existing alignment to accommodate two receiving lanes for southbound left and eastbound through traffic.

Intersection 8: Sierra Point Parkway and Lagoon Road

Impact: Future Plus Project

Mitigation: Widen and restripe the southbound approach to provide two through lanes and one right-turn lane. Widen and restripe the northbound approach to provide one through lane and two left-turn lanes. Widen and restripe the eastbound approach to provide two left-turn lanes and one right-turn lane.

Intersection 9: US 101 Northbound Ramps and Sierra Point Parkway

Impact: Existing Plus Project, Background Plus Project, Future Plus Project

Mitigation: Install a traffic signal, but only when a peak hour signal warrant is met and/or the conditions of the *Second Amendment Concerning Project Documents* require this installation. Convert the northbound shared through/left-turn lane to a shared left-turn/through/right lane. Convert the westbound approach from a shared through/right-turn lane to a through lane and a dedicated right-turn lane.

Intersection 10: Sierra Point Parkway and Shoreline Court

Impact: Existing Plus Project

Mitigation: Install a traffic signal, but only when a peak hour signal warrant is met and/or the conditions of the *Second Amendment Concerning Project Documents* require this installation. Include a second eastbound land northbound left-turn lane. Include of a dedicated right-turn lane.

Since the proposed project would generate fewer trips than the project analyzed in the 2016 traffic study, the results of the 2016 traffic study represent a conservative approach to identifying project impacts at the study intersections. The results of the 2016 traffic study remain valid.

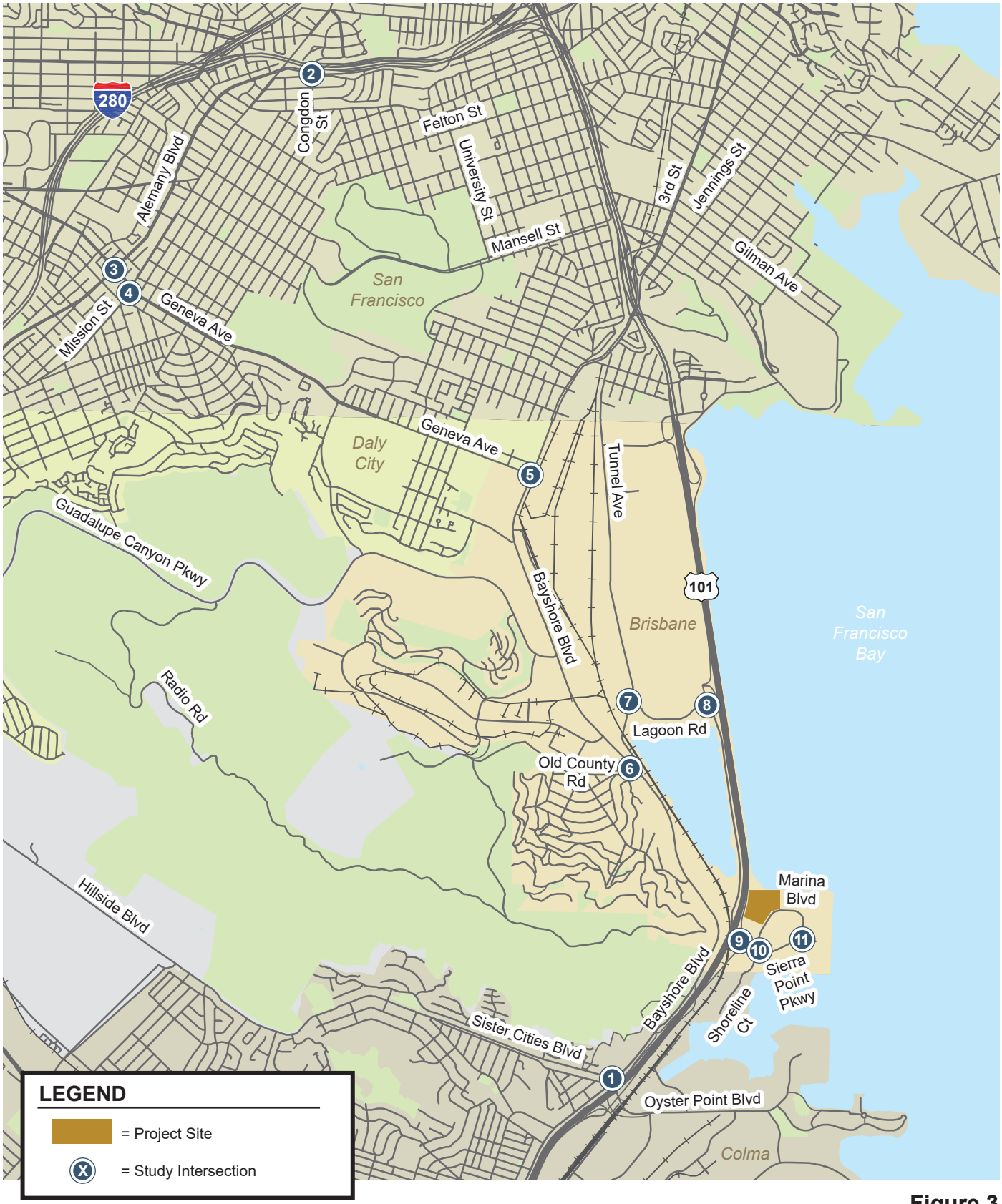


Figure 3
Project Site and Study Intersections

This page intentionally left blank