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TRANSPORTATION IMPACT ANALYSIS

BAHIA RESORT HOTEL
CITY LEASE AMENDMENT

San Diego, California
October 16, 2017

LLG Ref. 3-14-2375

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EXECUTIVE SUMMARY

The project proposes an Amendment to the City Lease for the Bahia Resort Hotel to demolish and redevelop 171 of the existing 315 rooms, and add 285 rooms to result in a 600-total room resort hotel. Ancillary uses commensurate with a resort hotel use will be developed as well. Up to 710 parking spaces would be provided to serve the renovated and expanded Bahia Resort Hotel. Parking would be located in a new parking garage located in the southern portion of the project site, along West Mission Bay Drive, with three levels of parking above grade and one-half level of parking below grade. Public parking would be reconfigured and would result in an increase in public parking spaces from the existing 270 to 273.

The project is located north of W. Mission Bay Drive at Gleason Road in the City of San Diego. The expansion of the Bahia Resort Hotel to a maximum of 600 guest rooms was included in the 1994 Mission Bay Park Master Plan Update (MBPMP) and approved by the Coastal Commission as part of the LCP Amendment in 1997. The project applicant (Evans Hotels) is proposing the renovation and expansion of the resort hotel at this time to accommodate the additional guest rooms anticipated by the MBPMP.

LLG coordinated with the City of San Diego to determine the project study area, data collection details, preferred trip generation rates, cumulative projects and traffic model. LLG conducted weekday and Saturday traffic counts in spring 2017, which is considered "off-peak" season. In conjunction with City staff, LLG obtained and utilized traffic counts in the vicinity to factor up the off-peak season counts to represent "peak" or summer-season conditions.

The project is conservatively calculated to generate 2,850 ADT with 103 inbound/ 68 outbound trips during the AM peak hour and 137 inbound/ 91 outbound trips during the PM peak hour. The trip generation is based upon the City's published guidelines for "Hotel". Project trips were assigned to the street system based on existing traffic counts observed at the W. Mission Bay Drive/ Gleason Road intersection.

The near-term analysis considers the effects of the 285-room resort hotel expansion on four (4) signalized intersections and four (4) street segments during both the weekday and Saturday peak periods. The cumulative effects of two (2) cumulative residential development projects in Mission Beach were also considered.

The weekday long-term analysis was conducted using the SANDAG Series 12 traffic model. The model undercounted the number of constructed units, and was adjusted accordingly. No new network improvements were assumed in the long-term model.

The project effects on queuing at the signalized intersections was reviewed. While queuing exceeds storage for some movements under some conditions, the change due to the project was calculated at 2 vehicles or less.

Based on the analysis results, no significant direct or cumulative impacts would be calculated.

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BAHIA RESORT HOTEL EXPANSION

San Diego, California
October 16, 2017

1.0 INTRODUCTION

The following traffic study has been prepared to determine and evaluate the transportation impacts on the local circulation system due to the development of the proposed Bahia Resort Hotel expansion ("project"). The project consists of the redevelopment of the site and many of the existing rooms, and the ultimate expansion by 285 rooms to a total of 600 rooms. The resort is located north of W. Mission Bay Drive at Gleason Road in the City of San Diego. ***Figure 1–1*** shows the project vicinity and ***Figure 1–2*** is a more detailed project area map.

This report includes the following sections:

- Project Description
- Existing Conditions Discussion
- Analysis Approach and Methodology
- Significance Criteria
- Analysis of Existing Conditions (Weekday & Saturday)
- Trip Generation, Distribution, & Assignment
- Analysis of Existing + Project Scenario (Weekday & Saturday)
- Cumulative Projects Discussion
- Analysis of Near-Term Scenarios (Weekday & Saturday)
- Long-Term (Year 2035) Conditions
- Analysis of Long-Term (Year 2035) Scenarios (Weekday only)

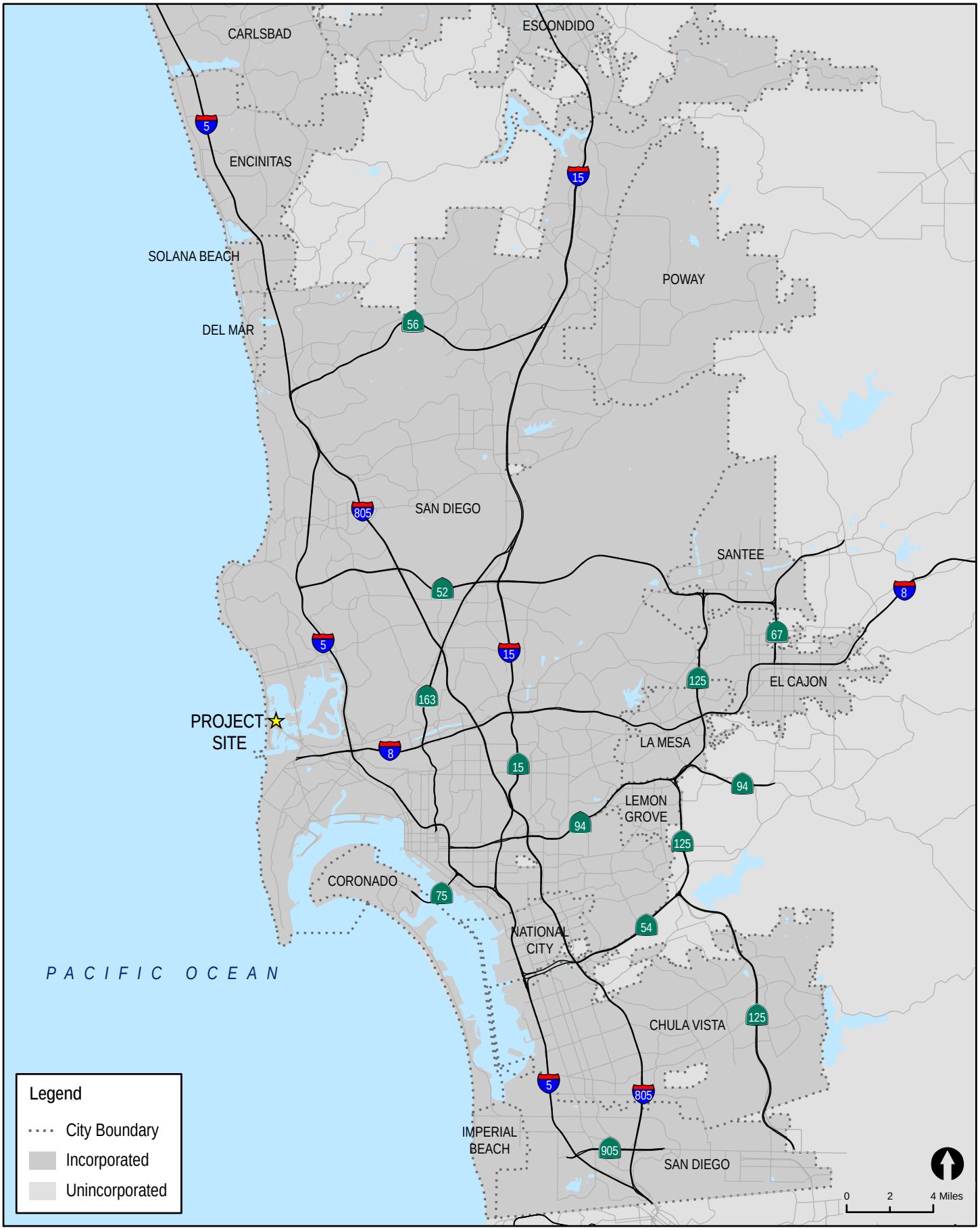

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Figure 1-1

Vicinity Map

Bahia Hotel Expansion

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Figure 1-2

Project Area Map

BAHIA HOTEL EXPANSION

2.0 PROJECT DESCRIPTION

2.1 Project Location

The Bahia Resort Hotel is located at 998 W. Mission Bay Drive in the City of San Diego. The existing site is served by Gleason Road, via a signalized intersection at W. Mission Bay Drive. The Bahia is marketed as a "resort" hotel, with beach access along Bahia Point.

2.2 Project Description

The proposed project involves the demolition of all existing buildings, with the exception of the two tower hotel elements. The north tower, which houses 68 hotel rooms, and the south tower, which houses 76 hotel rooms, would remain. The project would develop up to 456 new hotel rooms within ten new buildings, resulting in a total of 600 hotel rooms, the maximum number of hotel rooms permitted by the Mission Bay Park Master Plan for Bahia Point. The number of new rooms in addition to the existing 315 rooms is therefore 285. It is the effects of these 285 additional rooms that are evaluated in this study. Additional new facilities within the resort hotel would include a reception area, conference space, restaurants and retail space, and fitness amenities, commensurate with a typical resort hotel. The exact square footage is yet to be determined.

The proposed project would include increasing the amount of grass areas on the west side of Bahia Point accessible to the public, providing a continuous ten-foot wide pedestrian and bicycle access path around Bahia Point, relocation and expansion of restroom facilities to the southeast portion of the peninsula, and expansion of the existing boat dock to accommodate additional watercraft. As with the conference space, restaurants, and retail, the boat dock is considered to be ancillary use that will not generate additional trips separate from the hotel. There are no proposed boat launching facilities, bait/tackle/equipment sales, or other "marina" type uses that would generate trips independently of the hotel. The slips would be for lease as with the current slips, and based on current use, visited infrequently by lessees, many of whom live out of the area. Trip generation for this use and others is discussed in greater detail in *Section 7.1 – Trip Generation*.

Currently, there are 270 public parking spaces on Bahia Point. The proposed Bahia Resort Hotel Renovation and Expansion project would result in providing 273 public parking spaces. Some public parking currently located along the east and north sides of the peninsula would be displaced by the proposed project. Those spaces would be replaced by reconfiguring, expanding, and creating new areas for public parking in accordance with the Master Plan Update. Three public parking lots would be provided outside the Bahia Hotel leasehold area. An off-site lot would be provided at Bonita Cove as a western extension of the existing public parking lot and would provide 86 spaces. The Ventura Cove eastern parking area, would be reconfigured for more efficient parking, providing 87 net spaces. Adjacent to the Bahia Resort Hotel leasehold area, public parking would be provided in a new parking lot at the northern terminus of Gleason Road, providing 100 parking spaces as shown in ***Figure 2–1***. As a result, the proposed project would provide a total of 273 public parking spaces – a gain of three public parking spaces more than currently exists.

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Figure 2-1

Site Plan

BAHIA HOTEL EXPANSION

3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the project requires an understanding of the existing transportation system within the project area. ***Figure 3–1*** shows an existing conditions diagram, including signalized intersections and lane configurations.

3.1 Project Study Area

The study area for this project encompasses areas of anticipated impact related to the project. The scope of the study area was developed with the City of San Diego staff per the *City of San Diego Traffic Impact Study Manual* guidelines for intersections, segments and freeway segments and the "50 directional peak-hour trips" standard per the City's guidelines, except for ramp meters, which are based on 20-peak hour trips. The development of the study area also took into account a review of approved traffic studies in the project area, and a working knowledge of the local transportation system.

Based on the above guidelines, this study analyzes four (4) intersections and four (4) street segments.

Intersections:

1. W. Mission Bay Drive / Mission Boulevard
2. W. Mission Bay Drive / Bayside Walk
3. W. Mission Bay Drive / Gleason Road
4. W. Mission Bay Drive / Quivira Road

Street Segments:

W. Mission Bay Drive

1. Mission Boulevard to Bayside Walk
2. Bayside Walk to Gleason Road
3. Gleason Road to Quivira Road
4. Quivira Road to Ingraham Street

3.2 Existing Street Network

The following is a description of the existing street network in the study area.

W. Mission Bay Drive functions as a 4-lane major arterial from Mission Boulevard to Gleason Road. Between Mission Boulevard and Mariners Way/Gleason Road the posted speed limit is 40 MPH in the westbound direction and 35 MPH in the eastbound direction. East of Mariners Way/Gleason Road the posted speed limit is 45 MPH. On-street parking is provided intermittently in the project vicinity. Per the Mission Bay Park Master Plan, there are no recommended improvements on W. Mission Bay Drive, therefore it is assumed to be built to its ultimate planned capacity.

Mission Boulevard in the project vicinity between Santa Barbara Place and W. Mission Bay Drive is built as a three-lane divided roadway (two lanes southbound, one lane northbound). Between W.

Mission Bay Drive and San Fernando Place it currently provides two vehicular travel lanes in each direction with a center raised median. The posted speed limit is 30 MPH throughout the segments of Mission Boulevard described. Per the Mission Bay Park Master Plan, there are no recommended improvements on Mission Boulevard, therefore it is assumed to be built to its ultimate planned capacity.

Gleason Road is a two-lane loop roadway along Bahia Point that provides primary access to the project site, as well as to the Bahia Point and Ventura Point public beaches. There is no posted speed limit on the roadway, and head-in angled parking is provided both on-site and off-site.

Quivira Road/Dana Landing Road are two-lane frontage roads on the south and north sides of W. Mission Bay Drive, respectively. These roadways intersect with W. Mission Bay Drive at a signalized intersection. Dana Landing Road serves as primary access to the Dana Hotel and Marina, including a boat ramp at Dana Landing. Quivira Road provides primary access to the Seaforth Marina and Sport fishing complex, as well as to the Marina Village Conference Center and associated businesses. Head-in angled parking is provided on Quivira Road in the WB direction, while parallel parking is generally permitted in the EB direction. Parallel parking is allowed in both directions of Dana Landing Road. The posted speed limits are 25 MPH.

3.3 Existing Bicycle Network

Currently, there are Class II bike lanes in both directions on W. Mission Bay Dive beginning at Mission Boulevard and continuing eastward through the study area. The Mission Bay bike path is a bicycle/pedestrian path within Mission Bay Park in the vicinity of the project. The path generally consists of separated, Class I facilities, though there are some on-street portions including the facilities described on W. Mission Bay Drive. In the project area, the path continues to the north via the Bayside Walk Class I path and to the southeast via the Class II bike lanes on W. Mission Bay Drive.

3.4 Existing Pedestrian Conditions

Contiguous sidewalks are provided along both sides of W. Mission Bay Drive and Quivira Road/ Dana Landing Road in the study area. Pedestrians also use the separated pathways which comprise the Mission Bay bicycle/pedestrian path, discussed in greater detail in the paragraph above.

3.5 Existing Transit Conditions

W. Mission Bay Drive is served by MTS Route 8 (Old Town – Pacific Beach) which serves the Old Town Transit Center and Mission Boulevard/Garnet Avenue via W. Mission Bay Drive and Mission Boulevard. Service is approximately every 30 minutes and operates Monday-Saturday between 6 am and midnight and Sunday between 6 am and 10 pm. The closest stops to the Bahia Hotel are located immediately adjacent to the project at the intersection of W. Mission Bay Drive & Gleason Road/Mariners Way.

3.6 Existing Traffic Volumes

The City requires that "peak season" traffic counts be used in analyses in the beach areas, since these areas are substantively affected by seasonal variation. Work on this study began in the fall of 2016, and will complete in the spring of 2017, before summer peak season counts can be collected. Therefore, at study area intersections and street segments where summer peak season traffic counts were not available, LLG estimated these volumes. That process is described below.

LLG obtained recent peak season weekday average daily traffic (ADT) volumes at two of four study area street segments, as well as weekday peak hour intersection volumes at two of four study area intersections. These counts were conducted by Pacific Technical Data (PTD) during August 2016 and are used in the analysis presented in this report.

To develop peak season traffic volumes for the remaining two (2) intersections and two (2) street segments, LLG commissioned weekday and Saturday street segment ADT and peak hour intersection counts for all locations during March 2017 (off-peak season). ***Table 3–1*** summarizes the weekday and Saturday, off-peak ADT volumes counted for LLG by Accurate Video Counts in March 2017. These counts were used to inform estimates of peak season traffic at locations where peak season counts were not available, but were not used in the analysis presented in this report.

At locations where LLG had both peak season and off-peak season data, the two sets of numbers were compared to establish the growth in traffic volumes attributable to summer-season peaking in the local study area.

For street segments, the observed increase at both street segments with comparable peak/off-peak season data (segments #1 and #3) was 27%. Therefore, the off-peak (March 2017) weekday ADT on the remaining segments (#2 and #4) was increased by 27% to establish existing weekday peak season volumes. The same percentage increase was applied to the Saturday off-peak (March 2017) ADT, in the absence of Saturday peak season ADT.

Table 3–1 also shows the peak season weekday and Saturday ADT used for analysis. For street segments #1 and #3 these ADT come directly from August 2016 counts conducted by PTD. For street segments #2 and #4, LLG-adjusted volumes based on the established peak/off-peak season relationships at adjacent segments are used.

The increase to off-peak (March 2017) peak hour intersection volumes at two of four intersections was more complex but followed the same principles, while also taking into account land use, traffic patterns, and traffic volume balance between intersections. Again, similar increases were applied to the Saturday intersection volumes, as there were no existing Saturday peak season counts with which to compare.

Figure 3–2a shows the Existing Weekday Traffic Volumes. ***Figure 3–2b*** shows the Existing Saturday Traffic Volumes. These are peak season (summer) volumes based on either actual counts or LLG adjustments to off-peak data as described above.

Appendix A-1 contains the manual count sheets, including both the off-peak season (March 2017) and peak summer season (August 2016) counts described above.

TABLE 3–1
EXISTING WEEKDAY TRAFFIC VOLUMES

Street Segment	Non-Summer (not used for analysis)			Summer (used for analysis)		
	ADT[a]	Date	Source	ADT	Date	Source
Weekday						
Mission Bay Drive						
1. Mission Boulevard to Bayside Walk	24,290	March 2017	LLG	30,730	August 2016	PTD
2. Bayside Walk to Gleason Road	24,220	March 2017	LLG	30,640	—	*LLG-adjusted*[b]
3. Gleason Road to Quivira Road	25,660	March 2017	LLG	32,700	August 2016	PTD
4. Quivira Road to Ingraham Street	29,990	March 2017	LLG	38,210	—	*LLG-adjusted*[b]
Saturday						
Mission Bay Drive						
1. Mission Boulevard to Bayside Walk	34,400	March 2017	LLG	43,520	—	*LLG-adjusted*[b]
2. Bayside Walk to Gleason Road	35,220	March 2017	LLG	44,560	—	*LLG-adjusted*[b]
3. Gleason Road to Quivira Road	38,760	March 2017	LLG	49,390	—	*LLG-adjusted*[b]
4. Quivira Road to Ingraham Street	44,690	March 2017	LLG	56,940	—	*LLG-adjusted*[b]

Footnotes:

a. Average Daily Traffic Volumes.
b. Non-summer (off-peak) counts adjusted upward to peak season equivalent.

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Figure 3-1

Existing Conditions Diagram

BAHIA HOTEL EXPANSION

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Figure 3-2a

Existing Weekday Traffic Volumes

Adjusted To Summer Peak

BAHIA HOTEL EXPANSION

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Figure 3-2b

Existing Saturday Traffic Volumes

Adjusted To Summer Peak

BAHIA HOTEL EXPANSION

4.0 ANALYSIS APPROACH AND METHODOLOGY

4.1 Analysis Approach

Table 4–1 shows the analyses performed in each of the scenarios to determine the potential impacts to the road network.

TABLE 4–1
ANALYSIS SCENARIOS

Scenario	Analysis Performed		
Existing & Near-Term Conditions		***Weekday***	***Saturday***
Existing Existing + Project Near-Term Without Project Near-Term + Project	Peak Hour Intersection Analysis	✓	✓
	Daily Street Segment Analysis	✓	✓
	HCM Arterial Analysis	✓	✓
Long-Term Condition			
Year 2035 Without Project Year 2035 With Project	Peak Hour Intersection Analysis	✓	—
	Daily Street Segment Analysis	✓	—
	HCM Arterial Analysis	✓	—

General Notes:

- All analyses are conducted using summer volumes.

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

4.2 Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions using the City of San Diego's signal timing plans, which can be found in ***Appendix A-2***. Elements of signalized intersection operations such as cycle lengths, splits, offsets and actuation and coordination (if present) are all utilized per the City's plans. Weekday AM/PM peak hours are the highest four consecutive 15-minute periods between 7AM-9AM and 4PM-6PM based on typical commuter hours. Saturday PM peak hours are the highest four consecutive 15-minute periods between 2-4PM based on local conditions as observed in daily traffic counts.

Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 10) computer

software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). A more detailed explanation of the methodology is attached in ***Appendix B***.

The 95th (worst-case) percentile queues were included by lane/approach for the highest peak hour. These values are derived from the Synchro analysis described above. These operational characteristics are included for informational purposes, as queuing is not a measure of effectiveness for deriving significance of impacts based on local and regional guidelines. The Level of Service concept described above that is used for determining significance of impacts (see *Table 5–1* below) does implicitly account for queuing. Where ambient congestion is noticeable, queuing can be a useful supplemental indicator of the relative effect of a project on peak hour operations. This project effect is presented as an increase in queue (in feet). A typical vehicle length in a queue is considered 25 feet.

4.3 Street Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of San Diego's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of San Diego's *Roadway Classification, Level of Service, and ADT Table* is attached in ***Appendix C***.

The street system including the roadway segments in the Project area are assumed to be built to their ultimate classification. The City has an alternative supplemental arterial analysis of LOS E/F-operating roadway segments that can be applied when intersections along the segments are operating at acceptable LOS D at buildout and the street segment is built to its ultimate classification. The analysis determines whether:

1) The intersections at the ends of the segment are calculated to operate an acceptable LOS with the project, and;

2) A peak hour Highway Capacity Manual (HCM) arterial analysis for the same segment(s) shows that the segment operates at an acceptable LOS with the project

If both intersections at the end of the segment operate acceptably, and the peak hour HCM arterial analysis for the same segment shows the segment operates acceptably then the project impacts are determined to be less than significant and no mitigation is required.

5.0 SIGNIFICANCE CRITERIA

According to the City of San Diego's *Significance Determination Thresholds* dated January 2011, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. For projects deemed complete on or after January 1, 2011, the City defined thresholds are shown in ***Table 5–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds*,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."
>
> It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."
>
> For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 5–1*, then the project is considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

TABLE 5–1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project[b]	Allowable Increase Due to Project Impacts[a]					
	Freeways		Roadway Segments		Intersections	Ramp Metering[c]
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	1.0	2.0	2.0
F	0.005	0.5	0.01	0.5	1.0	1.0

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.

General Notes:

- Delay = Average control delay per vehicle measured in seconds for intersections or minutes for ramp meters
- LOS = Level of Service
- V/C = Volume to Capacity ratio
- Speed = Arterial speed measured in miles per hour

Also, according to the City of San Diego's *Significance Determination Thresholds*, other possible significant impacts that are not accounted for in *Table 5–1* include the following:

- If a project would increase traffic hazards to motor vehicles, bicyclists or pedestrians due to proposed non-standard design features (e.g., poor sight distance, proposed driveway onto an access-restricted roadway), the impact would be significant.

- If a project would result in the construction of a roadway which is inconsistent with the General Plan and/or a community plan, the impact would be significant if the proposed roadway would not properly align with other existing or planned roadways.

- If a project would result in a substantial restriction in access to publicly or privately owned land, the impact would be significant.

The City does not maintain significance thresholds for changes in queuing. Therefore, the 95th (worst-case) percentile queuing provided is informational, and accordingly no determinations of significance of impacts are made using this measure of effectiveness. Instead, the effects of project queuing are considered in conjunction with the intersection LOS described above. If an intersection is operating at an acceptable LOS and the project contribution to queuing is not excessive, then no queuing issues due to the project are identified.

6.0 ANALYSIS OF EXISTING (SUMMER) CONDITIONS

The analysis of existing (adjusted for summer) conditions includes the assessment of the study area intersections and street segments.

6.1 Existing Weekday Conditions (Summer)

6.1.1 *Peak Hour Intersection Operations*

Table 6–1 summarizes the Existing Weekday intersection operations adjusted for summer conditions. As seen in *Table 6–1*, the study area intersections are calculated to currently operate at LOS D or better under Existing Weekday conditions, with three of four intersections operating at LOS C or better.

Appendix D contains the Existing Weekday intersection analysis worksheets.

TABLE 6–1
EXISTING WEEKDAY INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
1. W. Mission Bay Drive / Mission Boulevard	Signal	AM PM	20.8 40.3	C D
2. W. Mission Bay Drive / Bayside Walk	Signal	AM PM	2.1 2.0	A A
3. W. Mission Bay Drive / Gleason Road	Signal	AM PM	8.3 12.8	A B
4. W. Mission Bay Drive / Quivira Road	Signal	AM PM	11.6 26.3	B C

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.

General Notes:
– Volumes are adjusted to reflect summer conditions.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

6.1.2 *Daily Street Segment Levels of Service*

Table 6–2 summarizes the Existing Weekday roadway segment operations. As seen in *Table 6–2*, all of the study area segments are calculated to currently operate at LOS D or better under Existing conditions except the following:

- W. Mission Bay Drive from Quivira Road to Ingraham Street – LOS E

TABLE 6–2
EXISTING WEEKDAY STREET SEGMENT OPERATIONS

Street Segment	Functional Classification	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
W. Mission Bay Drive					
1. Mission Boulevard to Bayside Walk	4-Lane Major Arterial	40,000	30,730	D	0.768
2. Bayside Walk to Gleason Road	4-Lane Major Arterial	40,000	30,640	D	0.766
3. Gleason Road to Quivira Road	4-Lane Major Arterial	40,000	32,700	D	0.818
4. Quivira Road to Ingraham Street	4-Lane Major Arterial	40,000	**38,210**	**E**	**0.955**

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.
d. Volume to Capacity.

General Notes:

– **Bold** typeface indicates segments operating at LOS E or worse.
– Volumes are adjusted to reflect summer conditions.

6.1.3 *Highway Capacity Manual (HCM) Arterial Analysis*

Table 6–3 shows the results of the Existing Weekday HCM arterial analysis. As shown in *Table 6–3*, the overall W. Mission Bay Drive arterial corridor operates at LOS C in both directions under Existing Weekday AM/PM peak hour conditions.

TABLE 6–3
EXISTING WEEKDAY ARTERIAL OPERATIONS

Street Segment	Dir.	Existing			
		AM		PM	
		Speed[a]	LOS[b]	Speed	LOS
W. Mission Bay Drive					
1. Mission Blvd to Bayside Walk	EB	18.5	D	15.3	E
	WB	7.9	F	7.2	F
2. Bayside Walk to Gleason Road	EB	19.4	D	15.5	E
	WB	23.8	C	20.9	D
3. Gleason Road to Quivira Road	EB	33.3	B	30.7	B
	WB	38.2	A	35.7	A
Entire Corridor Operations:	***EB***	***27.6***	***C***	***24.1***	***C***
	WB	***25.2***	***C***	***23.1***	***C***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

6.1.4 *Queueing Analysis*

Table 6–4 shows the 95th percentile queues at all study area intersections for the higher of the Weekday AM/PM peak hours.

TABLE 6–4
EXISTING WEEKDAY
95TH PERCENTILE QUEUES

Intersection	Dir.	Available Storage (ft)			Queues (ft) 95th Percentile		
		Left	Thru	Right	Left	Thru	Right
1. W. Mission Bay Drive / Mission Boulevard	EB	60	375	90	**66**	119	0
	WB	410	445	445	#404	#405	55
	NB	300	700	700	27	157	43
	SB	210	725	60	**253**	163	1
2. W. Mission Bay Drive / Bayside Walk	EB	[a]	445	[b]	[a]	268	[b]
	WB	70	805	[a]	12	247	[a]
3. W. Mission Bay Drive / Gleason Road	EB	260	805	170	41	352	0
	WB	240	>1,000	90	83	377	48
	NB	[c]	110	[c]	[c]	38	[c]
	SB	[c]	>1,000	[c]	[c]	104	[c]
4. W. Mission Bay Drive / Quivira Road	EB	140	>1,000	[b]	33	#562	[b]
	WB	240	>1,000	[b]	126	436	[b]
	NB	75	75	[b]	64	**202**	[b]
	SB	60	60	[b]	49	35	[b]

Footnotes:
a. Movement not permitted
b. Shared through / right lane
c. Shared left / through / right lane

General Notes:
- Queues shown are the higher of the weekday AM or PM peak hours.
- Queue length reported is the one for the lane with the highest queue in the lane group.
- **Highlight** indicates calculated queue exceeds measured storage length.
- Volumes are adjusted to reflect summer conditions.
- # indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. If the reported v/c <1 for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.

6.2 Existing Saturday Conditions (Summer)

6.2.1 *Peak Hour Intersection Operations*

Table 6–5 summarizes the Existing Saturday intersection operations. As seen in *Table 6–5*, the study area intersections are calculated to currently operate at LOS D or better under Existing Saturday conditions, with three of four intersections operating at LOS C or better.

Appendix D also contains the Existing Saturday intersection analysis worksheets.

TABLE 6–5
EXISTING SATURDAY INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
1. W. Mission Bay Drive / Mission Boulevard	Signal	PM	38.8	D
2. W. Mission Bay Drive / Bayside Walk	Signal	PM	2.3	A
3. W. Mission Bay Drive / Gleason Road	Signal	PM	25.2	C
4. W. Mission Bay Drive / Quivira Road	Signal	PM	25.1	C

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.

General Notes:
– Volumes are adjusted to reflect summer conditions.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

6.2.2 *Daily Street Segment Operations*

Table 6–6 summarizes Existing Saturday daily street segment operations. As shown in *Table 6–6*, all four study area street segments along W. Mission Bay Drive are calculated to exceed capacity and operate at LOS F under Existing Saturday conditions.

TABLE 6–6
EXISTING SATURDAY STREET SEGMENT OPERATIONS

Street Segment	Functional Classification	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
W. Mission Bay Drive					
1. Mission Boulevard to Bayside Walk	4-Lane Major Arterial	40,000	**43,520**	**F**	**1.088**
2. Bayside Walk to Gleason Road	4-Lane Major Arterial	40,000	**44,560**	**F**	**1.114**
3. Gleason Road to Quivira Road	4-Lane Major Arterial	40,000	**49,390**	**F**	**1.235**
4. Quivira Road to Ingraham Street	4-Lane Major Arterial	40,000	**56,940**	**F**	**1.424**

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.
d. Volume to Capacity.

General Notes:

- **Bold** typeface indicates segments operating at LOS E or worse.
- Volumes are adjusted to reflect summer conditions.

6.2.3 *Highway Capacity Manual (HCM) Arterial Analysis*

Table 6–7 shows the results of the Existing Saturday HCM arterial analysis. As shown in *Table 6–7*, the overall W. Mission Bay Drive arterial corridor operates at LOS C in both directions under Existing Saturday PM peak hour conditions.

TABLE 6–7
EXISTING SATURDAY ARTERIAL OPERATIONS

Street Segment	Dir.	Existing	
		PM	
		Speed[a]	LOS[b]
W. Mission Bay Drive			
1. Mission Blvd to Bayside Walk	EB	12.6	F
	WB	7.4	F
2. Bayside Walk to Gleason Road	EB	13.4	E
	WB	19.4	D
3. Gleason Road to Quivira Road	EB	32.9	B
	WB	33.4	B
Entire Corridor Operations:	***EB***	***23.2***	***C***
	WB	***22.3***	***C***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

6.2.4 *Queueing Analysis*

Table 6–8 shows the 95th percentile queues at all study area intersections for the Saturday PM peak hour under Existing conditions.

TABLE 6–8
EXISTING SATURDAY
95TH PERCENTILE QUEUES

Intersection	Dir.	Available Storage (ft)			Queues (ft) 95th Percentile		
		Left	Thru	Right	Left	Thru	Right
1. W. Mission Bay Drive / Mission Boulevard	EB	60	375	90	**77**	73	0
	WB	410	445	445	**#492**	**#491**	52
	NB	300	700	700	49	#222	49
	SB	210	725	60	188	253	14
2. W. Mission Bay Drive / Bayside Walk	EB	[a]	445	[b]	[a]	280	[b]
	WB	70	805	[a]	37	311	[a]
3. W. Mission Bay Drive / Gleason Road	EB	260	805	170	#64	361	0
	WB	240	>1,000	90	**#371**	#581	73
	NB	[c]	110	[c]	[c]	**125**	[c]
	SB	[c]	>1,000	[c]	[c]	83	[c]
4. W. Mission Bay Drive / Quivira Road	EB	140	>1,000	[b]	32	#611	[b]
	WB	240	>1,000	[b]	#160	#790	[b]
	NB	75	75	[b]	44	**85**	[b]
	SB	60	60	[b]	50	33	[b]

Footnotes:
a. Movement not permitted
b. Shared through / right lane
c. Shared left / through / right lane

General Notes:
- Queues shown are for the Saturday PM peak hour.
- Queue length reported is the one for the lane with the highest queue in the lane group.
- **Highlight** indicates calculated queue exceeds measured storage length.
- Volumes are adjusted to reflect summer conditions.
- # indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. If the reported v/c <1 for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The project's weekday daily (24-hour) and peak-hour trip generation is calculated using the City of San Diego's published rates for "Hotel (w/convention facilities/restaurant)" land uses with a rate of 10 daily trips/room. The Bahia Resort Hotel is marketed as a "resort hotel". The Bahia lease calls for the operation of a "resort hotel" including hotel rooms, restaurants, convention and conference rooms, banquet rooms and catering facilities, cocktail lounges, coffee shops, gift shops, spa and fitness facilities, personal services and sales of clothing, jewelry and novelties. In addition, the Mission Bay Park Master Plan describes the Bahia as a resort hotel. The project's prime location along Mission Bay, within walking distance to various parks and amenities, as well as to Mission Beach and the Pacific Ocean indicate that it is operating as a resort hotel. The City's published "resort hotel" land use is 8 daily trips/room.

"Hotel" land use descriptions (resort or other) include ancillary uses, such as restaurant/banquet facilities, conference rooms, retail and service amenities such as boutique shops, spas and salons. These amenities are open to the public, but are largely (if not exclusively) used by patrons of the hotel. In the case of the Bahia Hotel, a number of ancillary uses commensurate with a resort hotel are proposed as described above, including an expansion of the existing boat docks, replacing the existing restaurant with new restaurant space, small visitor-oriented retail space, and conference room/special event space

The existing boat docks would be expanded to add a new dock that would accommodate additional slips. These will be open to the public, although it is important to note that there are no boat launching facilities, bait/tackle/fuel/equipment sales, or other "marina" uses proposed with the additional slips. Based on the utilization of the existing docks, these additional slips will likely be leased long-term to private owners who only occasional use their boats, and therefore do not make regular trips to the facility because of the docks. The applicant has indicated that it is not uncommon for slips' lessees to live outside of San Diego County altogether. Thus, the additional slips, are not anticipated to generate regular traffic in-and-of themselves.

The Bahia Resort Hotel currently includes a restaurant, visitor retail sales, and conference meeting rooms/space. The proposed renovation project would expand these services commensurate with the increase in guest rooms. The ancillary uses would continue to primarily serve guests at the hotel; and the conference/meeting space would be available to serve group meetings, special events (such as weddings), and conferences – as is the case today. As such, they would be an integral component of the resort hotel and would not create unique destinations that would attract substantial off-property customers.

7.1 Trip Generation

Table 7–1 tabulates the project traffic generation. The project is calculated to generate approximately 2,850 ADT with 103 inbound/ 68 outbound trips during the AM peak hour and 137 inbound/ 91 outbound trips during the PM peak hour. This trip generation summary is used in both the weekday and Saturday analyses.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate[a]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total
Hotel	285 Rooms	10/DU	2,850	6%	60:40	103	68	171	8%	60:40	137	91	228

Footnotes:

a. Rate is based on City of San Diego's *Trip Generation Manual* (May 2003).

7.2 Trip Distribution/Assignment

The project trips were distributed to the local street system based on the existing traffic volume splits observed at the W. Mission Bay Drive/ Gleason Road intersection.

Figure 7–1 depicts the project traffic distribution. ***Figure 7–2*** shows the assigned project traffic volumes. The assignment shown on *Figure 7–2* is used in both the weekday and Saturday analyses.

Figure 7–3a shows the Existing Weekday plus Project traffic volumes and ***Figure 7–3b*** shows the Existing Saturday plus Project traffic.

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Figure 7-1

Project Traffic Distribution

BAHIA HOTEL EXPANSION

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Figure 7-2

Project Traffic Volumes

BAHIA HOTEL EXPANSION

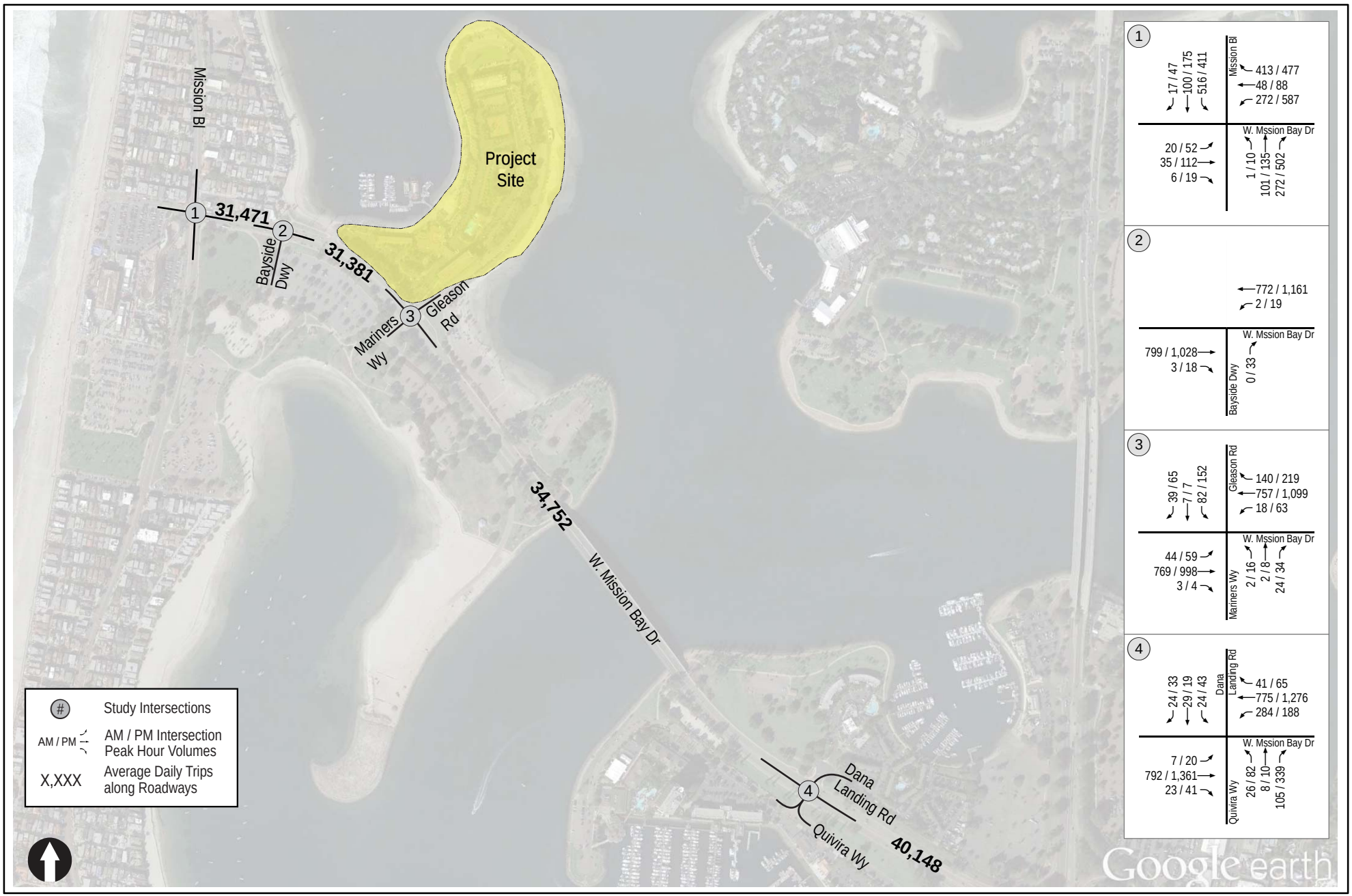

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Figure 7-3a

Existing Weekday + Project Traffic Volumes

BAHIA HOTEL EXPANSION

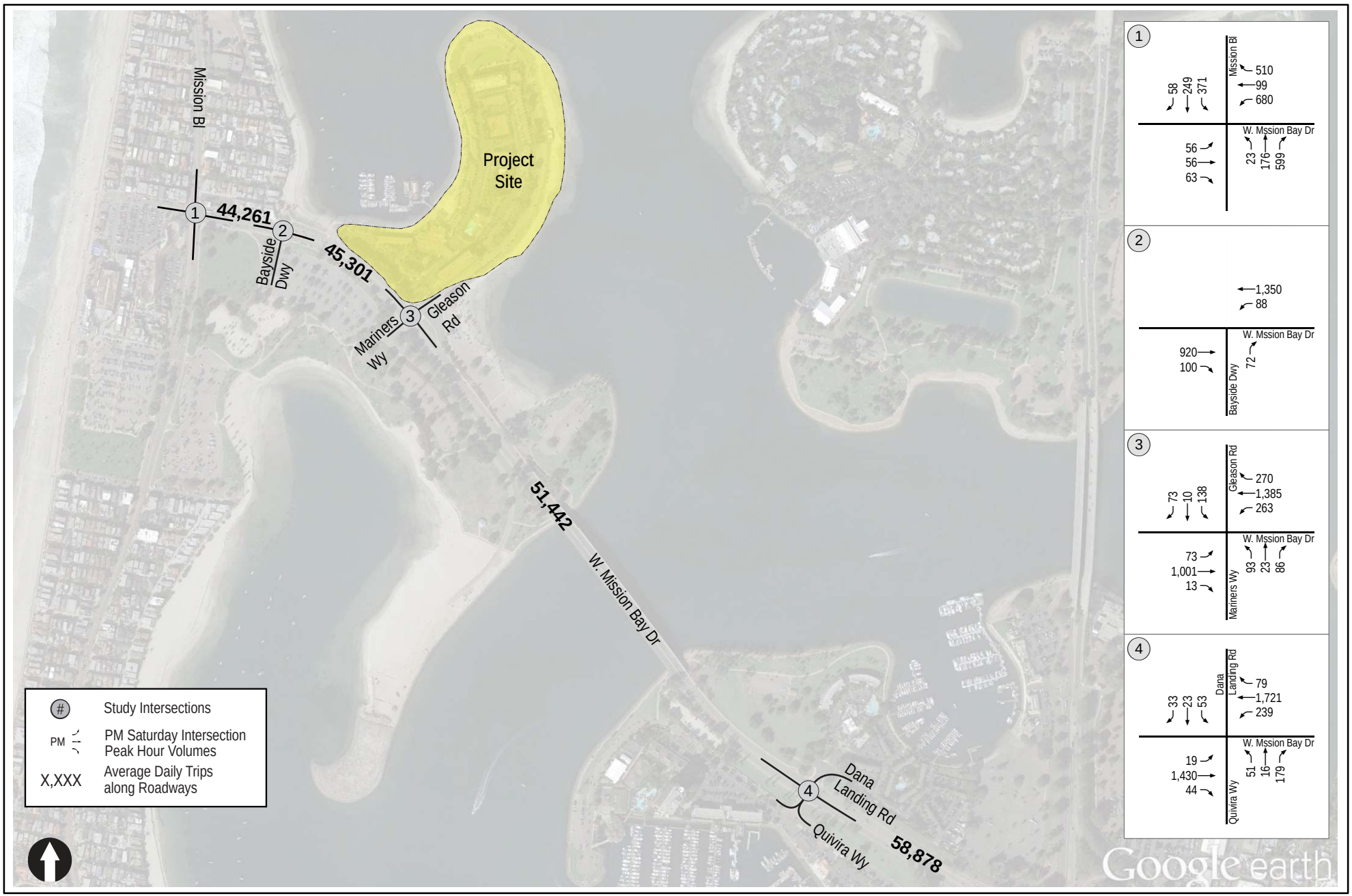

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Figure 7-3b

Existing Saturday + Project Traffic Volumes

BAHIA HOTEL EXPANSION

8.0 ANALYSIS OF EXISTING + PROJECT SCENARIO (SUMMER)

This section summarizes the analysis of study area intersections and street segments under Existing + Project (adjusted for summer) conditions.

8.1 Existing Weekday + Project Conditions (Summer)

8.1.1 *Peak Hour Intersection Analysis*

Table 8–1 summarizes the Existing Weekday + Project intersections operations. As seen in *Table 8–1*, with the addition of project traffic, all study area intersections are calculated to continue to operate at LOS D or better during AM and PM peak hours.

Based on City of San Diego significance criteria, **no significant direct intersection impacts** were identified with the addition of project traffic to study area intersections.

Appendix E contains the Existing Weekday + Project intersection analysis worksheets.

TABLE 8–1
EXISTING WEEKDAY + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
			Delay[a]	LOS[b]	Delay	LOS		
1. W. Mission Bay Drive/ Mission Boulevard	Signal	AM	20.8	C	21.2	C	0.4	No
		PM	40.3	D	42.0	D	1.7	No
2. W. Mission Bay Drive/ Bayside Walk	Signal	AM	2.1	A	2.1	A	0.0	No
		PM	2.0	A	2.0	A	0.0	No
3. W. Mission Bay Drive/ Gleason Road	Signal	AM	8.3	A	10.1	A	1.8	No
		PM	12.8	B	16.1	B	3.3	No
4. W. Mission Bay Drive/ Quivira Road	Signal	AM	11.6	B	11.8	B	0.2	No
		PM	26.3	C	28.9	C	2.6	No

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.

General Notes:
– Volumes are adjusted to reflect summer conditions.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

8.1.2 *Daily Street Segment Analysis*

Table 8–2 summarizes the Existing Weekday + Project street segment operations. As seen in *Table 8–2*, with the addition of project traffic, all study area street segments continue to operate at LOS D or better, except the following:

- W. Mission Bay Drive: Quivira Road to Ingraham Street – LOS F

The increase in V/C ratio on the segment listed above exceeds the 0.01 increase allowed by City of San Diego significance criteria for LOS F-operating segments. As the subject segment is constructed to its ultimate General Plan classification, an HCM arterial analysis is conducted (*Section 8.1.3*) to determine if this constitutes a significant impact.

TABLE 8–2
EXISTING WEEKDAY + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Existing			Existing + Project			Δ [e]	Sig?
		ADT[b]	LOS[c]	V/C[d]	ADT[b]	LOS[c]	V/C[d]		
W. Mission Bay Drive									
1. Mission Boulevard to Bayside Walk	40,000	30,730	D	0.768	31,471	D	0.787	0.019	No
2. Bayside Walk to Gleason Road	40,000	30,640	D	0.766	31,381	D	0.785	0.019	No
3. Gleason Road to Quivira Road	40,000	32,700	D	0.818	34,752	D	0.869	0.051	No
4. Quivira Road to Ingraham Street	40,000	38,210	E	0.955	40,148	F	1.004	0.049	Yes[f]

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity
e. "Δ" denotes the project-induced increase in V/C ratio.
f. Exceeds V/C significance threshold, however, based on HCM arterial analysis no significant impact is calculated. See *Section 8.1.3*.

General Notes:

– Volumes are adjusted to reflect summer conditions.

8.1.3 *Highway Capacity Manual (HCM) Arterial Analysis*

As seen in *Table 8–2*, segment No. 4 (Quivira Road to Ingraham Street) is shown to operate at LOS E on a daily basis. The project contribution in V/C exceeds the allowable threshold, representing a potentially significant impact.

Table 8–3a shows the AM arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. One individual segment is calculated to operate at LOS F, with a change in running speed of 0.1 MPH due to the project, which is less than the 0.5 MPH allowable for LOS F-operating segments. As this is less than the allowable decrease, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant direct impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 8–3A
EXISTING WEEKDAY + PROJECT ARTERIAL OPERATIONS (AM PEAK)

Street Segment	Dir.	Existing		Existing + Project		Change in Speed With Project		
		AM		AM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	18.5	D	18.5	D	0.0	D	No
	WB	7.9	F	7.8	F	(0.1)	F	No
2. Bayside Walk to Gleason Road	EB	19.4	D	18.5	D	(0.9)	D	No
	WB	23.8	C	23.8	C	0.0	C	No
3. Gleason Road to Quivira Road	EB	33.3	B	33.2	B	(0.1)	B	No
	WB	38.2	A	36.4	A	(1.8)	A	No
Entire Corridor Operations:	***EB***	***27.6***	***C***	***27.3***	***C***	***(0.3)***	***C***	***No***
	WB	***25.2***	***C***	***24.5***	***C***	***(0.7)***	***C***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

Table 8–3b shows the PM arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. Two individual segments are calculated to operate at LOS E or F, with a change in running speed of less than 1.0 MPH (LOS E) and less than 0.5 MPH (LOS F) due to the project. As this is less than the allowable decreases, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant direct impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 8–3B
EXISTING WEEKDAY + PROJECT ARTERIAL OPERATIONS (PM PEAK)

Street Segment	Dir.	Existing		Existing + Project		Change in Speed With Project		
		PM		PM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	15.3	E	15.3	E	0.0	E	No
	WB	7.2	F	7.1	F	(0.1)	F	No
2. Bayside Walk to Gleason Road	EB	15.5	E	15.3	E	(0.2)	E	No
	WB	20.9	D	20.9	D	0.0	D	No
3. Gleason Road to Quivira Road	EB	30.7	B	30.2	B	(0.5)	B	No
	WB	35.7	A	32.9	B	(2.8)	B	No
Entire Corridor Operations:	***EB***	***24.1***	***C***	***23.9***	***C***	***(0.2)***	***C***	***No***
	WB	***23.1***	***C***	***22.1***	***C***	***(1.0)***	***C***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

8.1.4 *Queueing Analysis*

Table 8–4 shows the 95th percentile queues at all study area intersections for the higher of the weekday AM/PM peak hours under Existing + Project conditions. This table shows that with the project, the eastbound, westbound and southbound left-turn movements at the W. Mission Bay Drive/Mission Boulevard intersection are calculated to exceed the available storage 5% of the time. The northbound thru-movement at the W. Mission Bay Drive/Quivira Road intersection is also calculated to exceed the available storage 5% of the time, without or with the project. The calculated increase in queue due to the project ranges from 1 to 8 feet (less than one car-length). *Table 8–1* above shows LOS D or better operations at these intersections with the project; therefore, no queuing issues due to the project are identified.

TABLE 8–4
EXISTING WEEKDAY
95TH PERCENTILE QUEUES

Intersection	Dir.	Available Storage (ft)			95th Percentile Queues (ft)						Δ (ft)		
					Existing			Existing + Project					
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1. W. Mission Bay Drive / Mission Boulevard	EB	60	375	90	**66**	119	0	**66**	122	0	0	3	0
	WB	410	445	445	#404	#405	55	**#411**	#418	56	7	13	1
	NB	300	700	700	27	157	43	27	157	47	0	0	4
	SB	210	725	60	**253**	163	1	**261**	163	1	8	0	0
2. W. Mission Bay Drive / Bayside Walk	EB	a	445	b	a	268	b	a	280	b	a	12	b
	WB	70	805	a	12	247	a	12	253	a	0	6	a
3. W. Mission Bay Drive / Gleason Road	EB	260	805	170	39	337	0	80	317	0	41	(20)	0
	WB	240	>1,000	90	#85	376	49	#120	401	85	35	25	36
	NB	c	110	c	c	33	c	c	40	c	c	7	c
	SB	c	>1,000	c	c	88	c	c	184	c	c	96	c
4. W. Mission Bay Drive / Quivira Road	EB	140	>1,000	b	33	#562	b	36	#605	b	3	43	b
	WB	240	>1,000	b	126	436	b	126	#536	b	0	100	b
	NB	75	75	b	64	**202**	b	66	**203**	b	2	1	b
	SB	60	60	b	49	35	b	49	36	b	0	1	b

Footnotes:
a. Movement not permitted
b. Shared through / right lane
c. Shared left / through / right lane

General Notes:
- "Δ (ft)" = Project-attributable change in queue, in feet. One vehicle is approximately 25-feet.
- Queues shown are the higher of the weekday Am or PM peak hours.
- Queue length reported is the one for the lane with the highest queue in the lane group.
- **Highlight** indicates calculated queue exceeds measured storage length.
- # indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. If the reported v/c <1 for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.
- Volumes are adjusted to reflect summer conditions.

8.2 Existing Saturday + Project Conditions (Summer)

8.2.1 *Peak Hour Intersection Analysis*

Table 8–5 summarizes the Existing Saturday + Project intersections operations. As seen in *Table 8–5*, with the addition of project traffic, all study area intersections are calculated to continue to operate at LOS D or better during the PM peak hour.

Based on City of San Diego significance criteria, **no significant direct intersection impacts** were identified with the addition of project traffic to study area intersections.

Appendix E also contains the Existing Saturday + Project intersection analysis worksheets.

TABLE 8–5
EXISTING SATURDAY + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
			Delay[a]	LOS[b]	Delay	LOS		
1. W. Mission Bay Drive/ Mission Boulevard	Signal	PM	38.8	D	39.8	D	1.0	No
2. W. Mission Bay Drive/ Bayside Walk	Signal	PM	2.3	A	2.3	A	0.0	No
3. W. Mission Bay Drive/ Gleason Road	Signal	PM	25.2	C	31.0	C	5.8	No
4. W. Mission Bay Drive/ Quivira Road	Signal	PM	25.1	C	29.3	C	4.2	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.

General Notes:

– Volumes are adjusted to reflect summer conditions.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

8.2.2 *Daily Street Segment Analysis*

Table 8–6 summarizes the Existing Saturday + Project street segment operations. As seen in *Table 8–6*, with the addition of project traffic, all study area street segments continue to operate at LOS F. The increase in V/C ratio exceeds the 0.01 increase allowed by City of San Diego significance criteria for all four (4) LOS F-operating segments.

As the segments listed above are constructed to their ultimate General Plan classification, an HCM arterial analysis is conducted (*Section 8.2.3*) to determine if this constitutes a significant impact.

TABLE 8–6
EXISTING SATURDAY + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Existing			Existing + Project			Δ [e]	Sig?
		ADT[b]	LOS[c]	V/C[d]	ADT[b]	LOS[c]	V/C[d]		
W. Mission Bay Drive									
1. Mission Boulevard to Bayside Walk	40,000	43,520	F	1.088	44,261	F	1.107	0.019	Yes [f]
2. Bayside Walk to Gleason Road	40,000	44,560	F	1.114	45,301	F	1.133	0.019	Yes [f]
3. Gleason Road to Quivira Road	40,000	49,390	F	1.235	51,442	F	1.286	0.051	Yes [f]
4. Quivira Road to Ingraham Street	40,000	56,940	F	1.424	58,878	F	1.472	0.048	Yes [f]

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity
e. "Δ" denotes the project-induced increase in V/C ratio.
f. Exceeds V/C significance threshold, however, based on HCM arterial analysis no significant impact is calculated See *Section 8.2.3*.

General Notes:

– Volumes are adjusted to reflect summer conditions.

8.2.3 *Highway Capacity Manual (HCM) Arterial Analysis*

As seen in *Table 8–6* all study area segments area calculated to operate at LOS F on a daily basis. The project contribution in V/C exceeds the allowable threshold on all four (4) segments, representing potentially significant impacts.

Table 8–7 shows the PM arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. Two individual segments are calculated to operate at LOS E or F, with a change in running speed of less than 1.0 MPH (LOS E) and less than 0.5 MPH (LOS F) due to the project. As this is less than the allowable decreases, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant direct impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 8–7
EXISTING SATURDAY + PROJECT ARTERIAL OPERATIONS (PM PEAK HOUR)

Street Segment	Dir.	Existing		Existing + Project		Change in Speed With Project		
		PM		PM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	12.6	F	12.6	F	0.0	F	No
	WB	7.4	F	7.3	F	0.1	F	No
2. Bayside Walk to Gleason Road	EB	13.4	E	13.2	E	0.2	E	No
	WB	19.5	D	19.5	D	0.0	D	No
3. Gleason Road to Quivira Road	EB	32.9	B	32.3	B	0.6	B	No
	WB	33.4	B	31.0	B	2.4	B	No
Entire Corridor Operations:	***EB***	***23.2***	***C***	***22.9***	***C***	***0.3***	***C***	***No***
	WB	***22.3***	***C***	***21.4***	***D***	***0.9***	***D***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

8.2.4 *Queueing Analysis*

Table 8–8 shows the 95th percentile queues at all study area intersections for the Saturday PM peak hour under Existing + Project conditions. This table shows that with the project, the eastbound and westbound left-turn movement as well as the westbound thru-movement at the W. Mission Bay Drive/Mission Boulevard intersection are calculated to exceed the available storage 5% of the time. The westbound left and right-turn movements along with the northbound thru movement at the W. Mission Bay Drive/Gleason Road intersection are also calculated to exceed the available storage 5% of the time with the project. Finally, the northbound thru movement at the W. Mission Bay Drive/Quivira Road intersection is also calculated to exceed the available storage 5% of the time with the project. The maximum calculated increase in queue due to the project is 37 feet, calculated for the westbound right-turn to Gleason Road. *Table 8–5* above shows LOS D or better operations at these intersections with the project; therefore, no queuing issues due to the project are identified.

TABLE 8–8
EXISTING SATURDAY + PROJECT 95TH PERCENTILE QUEUES

Intersection	Dir.	Available Storage (ft)			95th Percentile Queues (ft)						Δ (ft)		
					Existing			Existing + Project					
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1. W. Mission Bay Drive / Mission Boulevard	EB	60	375	90	**77**	73	0	**77**	77	0	0	4	0
	WB	410	445	445	**#492**	**#491**	52	**#502**	**#505**	52	10	14	0
	NB	300	700	700	49	#222	49	49	#222	54	0	0	5
	SB	210	725	60	188	253	14	197	253	14	9	0	0
2. W. Mission Bay Drive / Bayside Walk	EB	a	445	b	a	280	b	a	293	b	a	13	b
	WB	70	805	a	37	311	a	37	318	a	0	7	a
3. W. Mission Bay Drive / Gleason Road	EB	260	805	170	#64	361	0	#132	361	0	68	0	0
	WB	240	>1,000	90	**#371**	#581	73	**#371**	#581	**110**	0	0	37
	NB	c	110	c	c	**125**	c	c	**130**	c	c	5	c
	SB	c	>1,000	c	c	83	c	c	160	c	c	77	c
4. W. Mission Bay Drive / Quivira Road	EB	140	>1,000	b	32	#611	b	35	#655	b	3	44	b
	WB	240	>1,000	b	#160	#790	b	#160	#853	b	0	63	b
	NB	75	75	b	44	**85**	b	45	**86**	b	1	1	b
	SB	60	60	b	50	33	b	50	34	b	0	1	b

Footnotes:
a. Movement not permitted
b. Shared through / right lane
c. Shared left / through / right lane

General Notes:
- "Δ (ft)" = Project-attributable change in queue, in feet. One vehicle is approximately 25-feet.
- Queues shown are for the Saturday PM peak hour.
- Queue length reported is the one for the lane with the highest queue in the lane group.
- **Highlight** indicates calculated queue exceeds measured storage length.
- # indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. If the reported v/c <1 for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.
- Volumes are adjusted to reflect summer conditions.

9.0 CUMULATIVE PROJECTS

Cumulative projects are other projects in the study area that are expected to be constructed and occupied between the date of existing data collection and the time of the project's expected opening. The Mission Bay community is largely built out, with nominal infill development occurring. Therefore, cumulative traffic from nearby development is minimal. However, two cumulative projects were identified in consultation with City staff to be included in the analysis of the Near-Term (Existing + Cumulative Projects) scenarios.

9.1 Description of Cumulative Projects

1. The ***Mission Beach Residences*** project is located north of W. Mission Bay Drive, east of Mission Boulevard. This cumulative project proposes to develop 51 total units comprised of one (1) single family unit, four (4) duplex, 30 triplex, and 16 four-plex units. The total project is calculated to generate 318 ADT with 26 total AM peak hour trips (6 inbound /20 outbound) and 32 total PM peak hour trips (22 inbound/ 10 outbound). A traffic study was completed for the project by Urban Systems Associates in 2016.

2. The ***Santa Barbara Place Residences*** project is also located north of W. Mission Bay Drive, east of Mission Boulevard. This cumulative project proposes to develop 12 four-plex units, which are calculated to generate 72 ADT with 6 total AM peak hour trips (1 inbound/ 5 outbound) and 7 total PM peak hour trips (5 inbound/ 2 outbound). A traffic study was completed for the project by Urban Systems Associates in 2016.

9.2 Summary of Cumulative Projects Trips

The cumulative projects described above generate a total of 390 daily trips. ***Figure 9–1*** shows the assignment of cumulative projects in the project study area. LLG assumed that the daily and PM peak hour volumes depicted in *Figure 9–1* are the same for both Weekday and Saturday scenarios.

Figure 9–2a shows Near-Term Weekday traffic volumes. ***Figure 9–2b*** shows Near-Term Saturday traffic volumes. ***Figure 9–3a*** Near-Term Weekday + Project traffic volumes. ***Figure 9–3b*** shows Near-Term Saturday + Project traffic volumes.

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Figure 9-1

Cumulative Projects Traffic Volumes

BAHIA HOTEL EXPANSION

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Figure 9-2a

Near-Term Traffic Volumes

BAHIA HOTEL EXPANSION

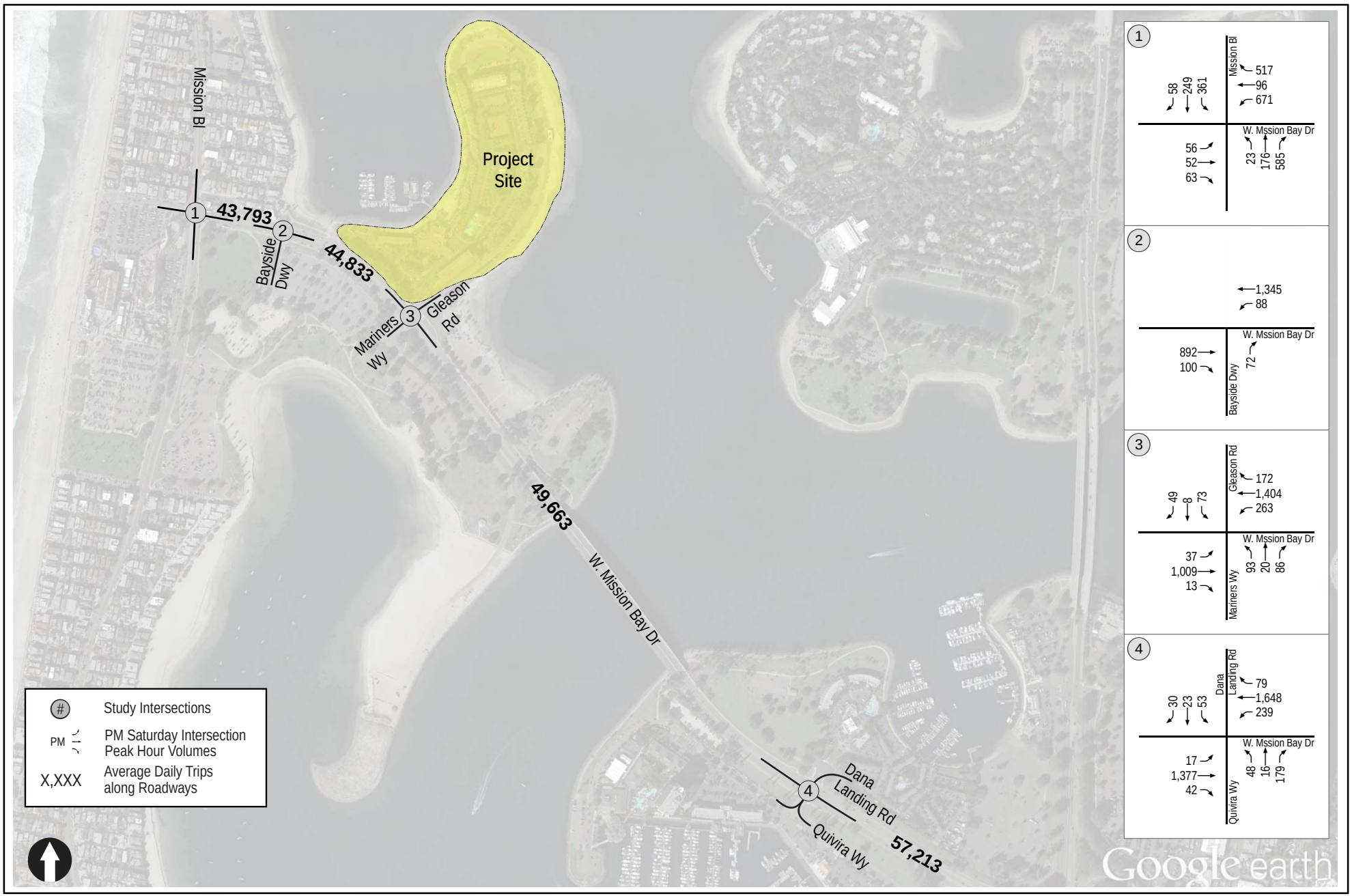

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Figure 9-2b

Near-Term Saturday Traffic Volumes

BAHIA HOTEL EXPANSION

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Figure 9-3a

Near-Term Weekday + Project Traffic Volumes

BAHIA HOTEL EXPANSION

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Figure 9-3b

Near-Term Saturday + Project Traffic Volumes

BAHIA HOTEL EXPANSION

10.0 ANALYSIS OF NEAR-TERM SCENARIOS (SUMMER)

The following is a discussion of the near-term (adjusted for summer) analysis results.

10.1 Near-Term Weekday Conditions (Summer)

10.1.1 *Peak Hour Intersection Analysis*

Table 10–1 summarizes the operations of study area intersections with the addition of cumulative projects traffic to Existing Weekday traffic. As seen in *Table 10–1*, all intersections are calculated to operate at acceptable LOS D or better during AM and PM peak hours.

Appendix F contains Near-Term Weekday intersection analysis worksheets.

10.1.2 *Daily Street Segment Analysis*

Table 10–2 summarizes the daily street segment operations with the addition of cumulative projects traffic to Existing Weekday traffic. As seen in *Table 10–2*, all street segments are calculated to operate at acceptable LOS D, except the following:

- No. 4, W. Mission Bay Drive: Quivira Road to Ingraham Street – LOS E

10.2 Near-Term Weekday + Project Conditions (Summer)

10.2.1 *Peak Hour Intersection Analysis*

Table 10–1 summarizes study area intersection operations under Near-Term Weekday + Project conditions. As seen in *Table 10–1*, with the addition of project traffic, all study area intersections continue to operate at acceptable LOS D or better during AM and PM peak hours.

Appendix G contains the Near-Term Weekday + Project intersection analysis worksheets.

10.2.2 *Daily Street Segment Analysis*

Table 10–2 summarizes daily street segment operations under Near-Term Weekday + Project conditions. As seen in *Table 10–2*, with the addition of project traffic, all study area street segments operate at acceptable LOS D, except the following:

- No. 3, W. Mission Bay Drive Gleason Road to Quivira Road – LOS E
- No. 4, W. Mission Bay Drive: Quivira Road to Ingraham Street – LOS F

The project-related increase in v/c ratio on the segments listed above exceeds the increase allowed by City of San Diego significance criteria. As the subject segments are constructed to their ultimate General Plan classification, an HCM arterial analysis is conducted to determine if this constitutes a significant impact.

TABLE 10–1
NEAR-TERM WEEKDAY INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ^c	Significant Impact?
			Delay[a]	LOS[b]	Delay	LOS		
1. W. Mission Bay Drive/ Mission Boulevard	Signal	AM	21.0	C	21.5	C	0.5	No
		PM	41.0	D	42.8	D	1.8	No
2. W. Mission Bay Drive/ Bayside Walk	Signal	AM	2.1	A	2.1	A	0.0	No
		PM	2.0	A	2.0	A	0.0	No
3. W. Mission Bay Drive/ Gleason Road	Signal	AM	8.3	A	10.2	B	1.9	No
		PM	12.9	B	16.2	B	3.3	No
4. W. Mission Bay Drive/ Quivira Road	Signal	AM	11.7	B	11.8	B	0.1	No
		PM	26.7	C	29.4	C	2.7	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.

General Notes:

– Volumes are adjusted to reflect summer conditions.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 10–2
NEAR-TERM WEEKDAY STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Near-Term			Near-Term + Project			Δ[e]	Sig?
		ADT[b]	LOS[c]	V/C[d]	ADT[b]	LOS[c]	V/C[d]		
W. Mission Bay Drive									
1. Mission Boulevard to Bayside Walk	40,000	31,003	D	0.775	31,744	D	0.794	0.019	No
2. Bayside Walk to Gleason Road	40,000	30,913	D	0.773	31,654	D	0.791	0.018	No
3. Gleason Road to Quivira Road	40,000	32,973	D	0.824	35,025	E	0.876	0.052	Yes[f]
4. Quivira Road to Ingraham Street	40,000	38,483	E	0.962	40,421	F	1.011	0.049	Yes[f]

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity
e. Δ" denotes the project-induced increase in V/C ratio.
f. Exceeds V/C significance threshold, however, based on HCM arterial analysis no significant impact is calculated. See *Section 10.3*.

General Notes:

– Volumes are adjusted to reflect summer conditions.

10.3 Weekday Highway Capacity Manual (HCM) Arterial Analysis (Summer)

As seen in *Table 10–2*, segment Nos. 3 & 4 (Gleason Road to Quivira Road, and Quivira Road to Ingraham Street) are calculated at LOS E/F on a daily basis, respectively. The project contribution in V/C exceeds the allowable threshold, representing a potentially significant impact.

Table 10–3a shows the AM arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. One individual segment is calculated to operate at LOS F, with a change in running speed of 0.0 MPH due to the project, which is less than the 0.5 MPH allowable for LOS F-operating segments. As this is less than the allowable decrease, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant direct impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 10–3A
NEAR-TERM WEEKDAY ARTERIAL OPERATIONS (AM PEAK HOUR)

Street Segment	Dir.	Near-Term		Near-Term with Project		Change in Speed With Project		
		AM		AM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	18.5	D	18.4	D	(0.1)	D	No
	WB	7.8	F	7.8	F	0.0	F	No
2. Bayside Walk to Gleason Road	EB	19.4	D	18.5	D	(0.9)	D	No
	WB	23.8	C	23.8	C	0.0	C	No
3. Gleason Road to Quivira Road	EB	33.3	B	33.1	B	(0.2)	B	No
	WB	38.2	A	36.4	A	(1.8)	A	No
Entire Corridor Operations:	***EB***	***27.6***	***C***	***27.2***	***C***	***(0.4)***	***C***	***No***
	WB	***25.1***	***C***	***24.4***	***C***	***(0.7)***	***C***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

Table 10–3b shows the PM arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. Two individual segments are calculated to operate at LOS E or F, with a change in running speed of less than 1.0 MPH (LOS E) and less than 0.5 MPH (LOS F) due to the project. As this is less than the allowable decreases, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant direct impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 10–3B
NEAR-TERM WEEKDAY ARTERIAL OPERATIONS (PM PEAK HOUR)

Street Segment	Dir.	Near-Term		Near-Term with Project		Change in Speed With Project		
		PM		PM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	15.3	E	15.3	E	0.0	E	No
	WB	7.2	F	7.1	F	(0.1)	F	No
2. Bayside Walk to Gleason Road	EB	15.5	E	15.3	E	(0.2)	E	No
	WB	20.9	D	20.9	D	0.0	D	No
3. Gleason Road to Quivira Road	EB	30.6	B	30.2	B	(0.4)	B	No
	WB	35.7	A	32.9	B	(2.8)	B	No
Entire Corridor Operations:	***EB***	***24.1***	***C***	***23.9***	***C***	***(0.2)***	***C***	***No***
	WB	***23.1***	***C***	***22.1***	***C***	***(1.0)***	***C***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

10.4 Weekday Queueing Analysis (Summer)

Table 10–4 shows the 95th percentile queues at all study area intersections for the higher of the weekday AM/PM peak hours under Near-Term and Near-Term + Project conditions. This table shows that with the project, the southbound left-turn movement at the W. Mission Bay Drive/Mission Boulevard intersection is calculated to exceed the available storage 5% of the time. The northbound thru-movement at the W. Mission Bay Drive/Quivira Road intersection is also calculated to exceed the available storage 5% of the time. The calculated increase in queue due to the project ranges from 1 to 8 feet (less than one car-length). *Table 10–1* above shows LOS D or better operations at these intersections with the project; therefore, no queuing issues due to the project are identified.

TABLE 10–4
NEAR-TERM WEEKDAY
95TH PERCENTILE QUEUES

Intersection	Dir.	Available Storage (ft)			95th Percentile Queues (ft)						Δ (ft)		
					Near-Term			Near-Term + Project					
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1. W. Mission Bay Drive / Mission Boulevard	EB	60	375	90	66	120	0	66	122	0	0	2	0
	WB	410	445	445	#395	#396	55	#403	#410	56	8	14	1
	NB	300	700	700	28	158	40	28	158	44	0	0	4
	SB	210	725	60	**263**	166	1	**271**	166	1	8	0	0
2. W. Mission Bay Drive / Bayside Walk	EB	a	445	b	a	271	b	a	283	b	a	12	b
	WB	70	805	a	12	253	a	12	260	a	0	7	a
3. W. Mission Bay Drive / Gleason Road	EB	260	805	170	41	356	0	80	321	0	39	(35)	0
	WB	240	>1,000	90	83	386	49	#120	410	87	37	24	38
	NB	c	110	c	c	38	c	c	40	c	c	2	c
	SB	c	>1,000	c	c	104	c	c	184	c	c	80	c
4. W. Mission Bay Drive / Quivira Road	EB	140	>1,000	b	33	#567	b	36	#611	b	3	44	b
	WB	240	>1,000	b	126	#453	b	126	#550	b	0	97	b
	NB	75	75	b	64	**202**	b	66	**203**	b	2	1	b
	SB	60	60	b	49	35	b	49	36	b	0	1	b

Footnotes:
a. Movement not permitted
b. Shared through / right lane
c. Shared left / through / right lane

General Notes:
- "Δ (ft)" = Project-attributable change in queue, in feet. One vehicle is approximately 25-feet.
- Queues shown are the higher of the weekday AM or PM peak hours.
- Queue length reported is the one for the lane with the highest queue in the lane group.
- **Highlight** indicates calculated queue exceeds measured storage length.
- # indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. If the reported v/c <1 for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.
- Volumes are adjusted to reflect summer conditions.

10.5 Near-Term Saturday Conditions (Summer)

10.5.1 *Peak Hour Intersection Analysis*

Table 10–5 summarizes the operations of study area intersections with the addition of cumulative projects traffic to Existing Saturday traffic. As seen in *Table 10–5*, all intersections are calculated to operate at acceptable LOS D or better during the PM peak hour.

Appendix F also contains the Near-Term Saturday intersection analysis worksheets.

10.5.2 *Daily Street Segment Analysis*

Table 10–6 summarizes the daily street segment operations with the addition of cumulative projects traffic to Existing Saturday traffic. As seen in *Table 10–6*, all street segments are calculated to operate at LOS F.

10.6 Near-Term Saturday + Project Conditions (Summer)

10.6.1 *Peak Hour Intersection Analysis*

Table 10–5 summarizes study area intersection operations under Near-Term Saturday + Project conditions. As seen in *Table 10–5*, with the addition of project traffic, all study area intersections continue to operate at acceptable LOS D or better during the PM peak hour.

Appendix G also contains the Near-Term Saturday + Project intersection analysis worksheets.

10.6.2 *Daily Street Segment Analysis*

Table 10–6 summarizes daily street segment operations under Near-Term Saturday + Project conditions. As seen in *Table 10–6*, with the addition of project traffic, all study area street segments continue to operate at LOS F. with the Project-related increase in v/c ratio exceeding the 0.01 increase allowed at each location.

As these segments are constructed to their ultimate General Plan classification, an HCM arterial analysis is conducted to determine if this constitutes a significant impact.

TABLE 10–5
NEAR-TERM SATURDAY INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ^c	Significant Impact?
			Delay[a]	LOS[b]	Delay	LOS		
1. W. Mission Bay Drive/ Mission Boulevard	Signal	PM	40.7	D	41.7	D	1.0	No
2. W. Mission Bay Drive/ Bayside Walk	Signal	PM	2.3	A	2.3	A	0.1	No
3. W. Mission Bay Drive/ Gleason Road	Signal	PM	25.6	C	31.4	C	5.8	No
4. W. Mission Bay Drive/ Quivira Road	Signal	PM	25.7	C	30.2	C	4.5	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.

General Notes:

– Volumes are adjusted to reflect summer conditions.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 10–6
NEAR-TERM SATURDAY STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Near-Term			Near-Term + Project			Δ[e]	Sig?
		ADT[b]	LOS[c]	V/C[d]	ADT[b]	LOS[c]	V/C[d]		
W. Mission Bay Drive									
1. Mission Boulevard to Bayside Walk	40,000	43,793	F	1.095	44,534	F	1.113	0.018	Yes [f]
2. Bayside Walk to Gleason Road	40,000	44,833	F	1.121	45,574	F	1.139	0.018	Yes [f]
3. Gleason Road to Quivira Road	40,000	49,663	F	1.242	51,715	F	1.293	0.051	Yes [f]
4. Quivira Road to Ingraham Street	40,000	57,213	F	1.430	59,151	F	1.479	0.049	Yes [f]

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity
e. Δ" denotes the project-induced increase in V/C ratio.
f. Exceeds V/C significance threshold, however, based on HCM arterial analysis no significant impact is calculated. See *Section 10.6.*

General Notes:

– Volumes are adjusted to reflect summer conditions.

10.7 Saturday Highway Capacity Manual (HCM) Arterial Analysis (Summer)

As seen in *Table 10–6*, all study area street segments area calculated at LOS F on a daily basis. The project contribution in V/C exceeds the allowable threshold for all four (4) segments representing potentially significant impacts.

Table 10–7 shows the Near-Term Saturday PM peak hour arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. Two individual segments are calculated to operate at LOS E or F, with a change in running speed of less than 1.0 MPH (LOS E) and less than 0.5 MPH (LOS F) due to the project. As this is less than the allowable decreases, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant direct impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 10–7
NEAR-TERM SATURDAY ARTERIAL OPERATIONS (PM PEAK HOUR)

Street Segment	Dir.	Near-Term		Near-Term with Project		Change in Speed With Project		
		PM		PM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	12.6	F	12.6	F	0.0	F	No
	WB	7.4	F	7.3	F	0.1	F	No
2. Bayside Walk to Gleason Road	EB	13.4	E	13.2	E	0.2	E	No
	WB	19.4	D	19.4	D	0.0	D	No
3. Gleason Road to Quivira Road	EB	32.8	B	32.2	B	0.6	B	No
	WB	33.3	B	31.0	B	2.0	B	No
Entire Corridor Operations:	***EB***	***23.2***	***C***	***22.9***	***C***	***0.3***	***C***	***No***
	WB	***22.3***	***C***	***21.4***	***D***	***0.9***	***D***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

10.8 Saturday Queueing Analysis (Summer)

Table 10–8 shows the 95th percentile queues at all study area intersections for the Saturday PM peak hour under Near-Term and Near-Term + Project conditions. This table shows that with the project, the eastbound and westbound left-turn movement as well as the westbound thru-movement at the W. Mission Bay Drive/Mission Boulevard intersection are calculated to exceed the available storage 5% of the time. The westbound left and right-turn movements along with the northbound thru movement at the W. Mission Bay Drive/Gleason Road intersection are also calculated to exceed the available storage 5% of the time with the project. Finally, the northbound thru movement at the W. Mission Bay Drive/Quivira Road intersection is also calculated to exceed the available storage 5% of the time with the project. The maximum calculated increase in queue due to the project is 38 feet (less than two car-lengths), calculated for the westbound left-turn to Gleason Road. *Table 10–5* above shows LOS D or better operations at these intersections with the project; therefore, no queuing issues due to the project are identified.

TABLE 10–8
NEAR-TERM SATURDAY
95TH PERCENTILE QUEUES

Intersection	Dir.	Available Storage (ft)			95th Percentile Queues (ft)						Δ (ft)		
					Near-Term			Near-Term + Project					
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1. W. Mission Bay Drive / Mission Boulevard	EB	60	375	90	**77**	73	0	**77**	77	0	0	4	0
	WB	410	445	445	**#492**	**#491**	53	**#502**	**#505**	58	10	14	5
	NB	300	700	700	49	#222	50	49	#222	54	0	0	4
	SB	210	725	60	192	253	14	202	253	14	10	0	0
2. W. Mission Bay Drive / Bayside Walk	EB	a	445	b	a	283	b	a	296	b	a	13	b
	WB	70	805	a	37	317	a	37	326	a	0	9	a
3. W. Mission Bay Drive / Gleason Road	EB	260	805	170	#64	364	0	#132	364	0	68	0	0
	WB	240	>1,000	90	**#371**	#594	73	**#371**	#594	**111**	0	0	38
	NB	c	110	c	c	**125**	c	c	**130**	c	c	5	c
	SB	c	>1,000	c	c	83	c	c	160	c	c	77	c
4. W. Mission Bay Drive / Quivira Road	EB	140	>1,000	b	32	#617	b	35	#661	b	3	44	b
	WB	240	>1,000	b	#160	#803	b	#160	#866	b	0	63	b
	NB	75	75	b	44	**85**	b	45	**86**	b	1	1	b
	SB	60	60	b	50	33	b	50	34	b	0	1	b

Footnotes:

a. Movement not permitted
b. Shared through / right lane
c. Shared left / through / right lane

General Notes:

- "Δ (ft)" = Project-attributable change in queue, in feet. One vehicle is approximately 25-feet.
- Queues shown are for the Saturday PM peak hour.
- Queue length reported is the one for the lane with the highest queue in the lane group.
- **Highlight** indicates calculated queue exceeds measured storage length.
- # indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. If the reported v/c <1 for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.
- Volumes are adjusted to reflect summer conditions.

11.0 LONG-TERM (YEAR 2035) CONDITIONS

The City of San Diego utilizes the Series 12 regional traffic model prepared by SANDAG for the Long-Term (Year 2035) analysis.

11.1 Year 2035 Conditions

Year 2035 roadway conditions are assumed to be identical to Existing conditions as presented in *Figure 3–1*. The study area roadways are currently built to their Ultimate Community Plan classifications.

11.2 Year 2035 Traffic Volumes

The project lies in the SANDAG Model's Traffic Analysis Zone (TAZ) number 3,038. TAZs are geographic areas for which land uses are identified and summarized. The traffic model only produces weekday volumes; therefore all long-term analyses are for weekday-only time periods.

For the Year 2035, Zone 3,038 identified 14.6 acres of "Resort" land use resulting in 1,965 ADT, as shown in ***Appendix H***. At the City's rate of 10 trips/room, this equates to 197 rooms. There are currently 480 rooms constructed, with 120 rooms left to be developed (the project). Therefore, the SANDAG model volumes understate the "pre-project" condition by 283 rooms (480 constructed minus 197 modeled = 283 missing). LLG increased the SANDAG model volumes by 2,830 ADT (283 rooms × 10 trips/room = 2,830 ADT), and assigned this traffic to the street system using the same distribution described in *Section 7*. It is upon this baseline that the project assignment shown on *Figure 7–2* is added. For both without and with project conditions, LLG derived peak hour turning volumes based on a comparison with existing ADT and existing turn volumes.

Figure 11–1 shows the Year 2035 traffic volumes, adjusted to include the total existing hotel units. ***Figure 11–2*** shows the Year 2035 + Project volumes.

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Figure 11-1

Year 2035 Traffic Volumes

BAHIA HOTEL EXPANSION

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Date: 09/05/17

Figure 11-2

Year 2035 + Project Traffic Volumes

BAHIA HOTEL EXPANSION

12.0 ANALYSIS OF LONG-TERM (YEAR 2035) SCENARIOS

The following is a summary of Year 2035 operations both without and with the project.

12.1 Year 2035 without Project Conditions

12.1.1 *Peak Hour Intersection Analysis*

Table 12–1 summarizes the Year 2035 without Project peak hour intersection operations. As seen in *Table 12–1*, all study area intersections are calculated to operate at LOS D or better during AM and PM peak hours.

Appendix I contains the Year 2035 without Project intersection analysis worksheets.

12.1.2 *Daily Street Segment Analysis*

Table 12–2 summarizes the Year 2035 without Project daily street segment operations. As seen in *Table 12–2*, two of the study area street segments operate at acceptable LOS D, while the following two do not:

- No. 4, W. Mission Bay Drive: Gleason Road to Quivira Road – LOS E
- No. 4, W. Mission Bay Drive: Quivira Road to Ingraham Street – LOS F

12.2 Year 2035 with Project Conditions

12.2.1 *Peak Hour Intersection Analysis*

Table 12–1 summarizes the Year 2035 with Project peak hour intersection operations. As seen in *Table 12–1*, all study area intersections are calculated to continue to operate at LOS D or better during AM and PM peak hours.

Appendix J contains the Year 2035 with Project intersection analysis worksheets.

12.2.2 *Daily Street Segment Analysis*

Table 12–2 summarizes the Year 2035 with Project daily street segment operations. As seen in *Table 12–2*, two of the study area street segments continue to operate at acceptable LOS D, while the following two continue operate at worse than LOS D:

- No. 4, W. Mission Bay Drive: Gleason Road to Quivira Road – LOS E
- No. 4, W. Mission Bay Drive: Quivira Road to Ingraham Street – LOS F

The project-related increase in v/c ratio on the segments listed above exceeds the 0.02 increase allowed by City of San Diego significance criteria. As the subject segment is constructed to its ultimate classification, an HCM arterial analysis is conducted to determine if this constitutes a significant impact.

TABLE 12–1
YEAR 2035 (HORIZON YEAR) INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035		Year 2035 + Project		Δ[c]	Significant Impact?
			Delay[a]	LOS[b]	Delay	LOS		
1. W. Mission Bay Drive / Mission Boulevard	Signal	AM	24.7	C	25.2	C	0.5	No
		PM	45.1	D	46.8	D	1.7	No
2. W. Mission Bay Drive / Bayside Walk	Signal	AM	2.1	A	2.1	A	0.0	No
		PM	2.0	A	2.0	A	0.0	No
3. W. Mission Bay Drive / Gleason Road	Signal	AM	8.6	A	10.5	B	1.9	No
		PM	13.4	B	17.3	B	3.9	No
4. W. Mission Bay Drive / Quivira Road	Signal	AM	13.9	B	14.1	B	0.2	No
		PM	40.4	D	43.6	D	3.2	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 12–2
YEAR 2035 (HORIZON YEAR) STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Year 2035 (Horizon Year)			Year 2035 (Horizon Year) + Project			Δ[e]	Sig?
		ADT[b]	LOS[c]	V/C[d]	ADT	LOS	V/C		
W. Mission Bay Drive									
1. Mission Boulevard to Bayside Walk	40,000	32,107	D	0.803	32,848	D	0.821	0.018	No
2. Bayside Walk to Gleason Road	40,000	32,107	D	0.803	32,848	D	0.821	0.018	No
3. Gleason Road to Quivira Access	40,000	34,850	D	0.871	36,902	E	0.923	0.052	Yes [f]
4. Quivira Access to Ingraham Street	40,000	43,603	F	1.090	45,540	F	1.139	0.049	Yes [f]

Footnotes:

a. Capacities based on City of San Diego Roadway Classification Table
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity
e. Δ" denotes the project-induced increase in V/C ratio.
f. Exceeds V/C significance threshold, however, based on HCM arterial analysis no significant impact is calculated. See *Section 12.3*.

General Notes:

– Volumes are adjusted to reflect summer conditions.

12.3 Highway Capacity Manual (HCM) Arterial Analysis

As seen in *Table 12–2*, segment No. 3 (Gleason Road to Quivira Access) and No. 4 (Quivira Road to Ingraham Street) are calculated to operate at LOS E and LOS F, respectively on a daily basis. The project contribution exceeds the allowable thresholds, which represents potentially significant impacts.

Table 12–3a shows the AM arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. One individual segment is calculated to operate at LOS F, with no calculated decrease in running speed due to the project, while a decrease of 0.5 MPH is allowable for LOS F-operating segments. As this is less than the allowable decrease, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant cumulative impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 12–3A
YEAR 2035 ARTERIAL OPERATIONS (AM PEAK HOUR)

Street Segment	Dir.	Year 2035		Year 2035 with Project		Change in Speed With Project		
		AM		AM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	18.5	D	18.5	D	0.0	D	No
	WB	7.4	F	7.4	F	0.0	F	No
2. Bayside Walk to Gleason Road	EB	19.4	D	18.5	D	(0.9)	D	No
	WB	23.8	C	23.8	C	0.0	C	No
3. Gleason Road to Quivira Road	EB	32.1	B	32.0	B	(0.1)	B	No
	WB	38.2	A	35.6	A	(2.6)	A	No
Entire Corridor Operations:	***EB***	***27.0***	***C***	***26.7***	***C***	***(0.3)***	***C***	***No***
	WB	***24.6***	***C***	***23.8***	***C***	***(0.8)***	***C***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

Table 12–3b shows the PM arterial operations. This table shows LOS D or better operations along the overall W. Mission Bay Drive corridor. Two individual segments are calculated to operate at LOS E or F, with a change in running speed of less than 1.0 MPH (LOS E) and less than 0.5 MPH (LOS F) due to the project. As this is less than the allowable decreases, and the overall arterial and adjacent intersections operate at LOS D or better during peak hours, and W. Mission Bay Drive is built to its ultimate classification as a 4-Lane Major Arterial, **no significant cumulative impacts** were calculated with the addition of project traffic to study area street segments.

TABLE 12–3B
YEAR 2035 ARTERIAL OPERATIONS (PM PEAK HOUR)

Street Segment	Dir.	Year 2035		Year 2035 with Project		Change in Speed With Project		
		PM		PM				
		Speed[a]	LOS[b]	Speed	LOS	Speed	LOS	Sig?
W. Mission Bay Drive								
1. Mission Blvd to Bayside Walk	EB	15.2	E	15.2	E	0.0	E	No
	WB	6.7	F	6.6	F	(0.1)	F	No
2. Bayside Walk to Gleason Road	EB	15.3	E	14.7	E	(0.6)	E	No
	WB	20.9	D	20.9	D	0.0	D	No
3. Gleason Road to Quivira Road	EB	27.1	C	26.2	C	(0.9)	C	No
	WB	35.4	A	32.7	B	(2.7)	B	No
Entire Corridor Operations:	***EB***	***22.4***	***C***	***21.7***	***D***	***(0.7)***	***D***	***No***
	WB	***22.4***	***C***	***21.5***	***D***	***(0.9)***	***D***	***No***

Footnotes:

a. Speed in miles per hour.
b. Level of Service

General Notes:

– Volumes are adjusted to reflect summer conditions.

12.4 Queueing Analysis

Table 12–4 shows the 95th percentile queues at all study area intersections for the higher of the weekday AM/PM peak hours under Year 2035 and Year 2035 + Project conditions. This table shows that with the project, the southbound left-turn movement at the W. Mission Bay Drive/Mission Boulevard intersection is calculated to exceed the available storage 5% of the time. The northbound and southbound left-turns, as well as the northbound thru-movement at the W. Mission Bay Drive/Quivira Road intersection are also calculated to exceed the available storage 5% of the time. The calculated increase in queue due to the project ranges from 1 to 13 feet (less than one car-length). *Table 12–1* above shows LOS D or better operations at these intersections with the project; therefore, no queuing issues due to the project are identified.

TABLE 12–4
YEAR 2035 WEEKDAY
95TH PERCENTILE QUEUES

Intersection	Dir.	Available Storage (ft)			95th Percentile Queues (ft)						Δ (ft)		
					Year 2035			Year 2035 + Project					
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1. W. Mission Bay Drive / Mission Boulevard	EB	60	375	90	82	134	0	82	138	0	0	4	0
	WB	410	445	445	396	404	82	#406	#416	100	10	12	18
	NB	300	700	700	30	203	56	30	203	59	0	0	3
	SB	210	725	60	**#359**	209	7	**#372**	209	7	13	0	0
2. W. Mission Bay Drive / Bayside Walk	EB	[a]	445	[b]	a	293	[b]	a	305	[b]	[a]	12	[b]
	WB	70	805	[a]	12	268	[a]	12	275	[a]	0	7	[a]
3. W. Mission Bay Drive / Gleason Road	EB	260	805	170	43	377	0	#109	347	0	66	(30)	0
	WB	240	>1,000	90	85	408	52	#112	403	81	27	(5)	29
	NB	[c]	110	[c]	c	45	[c]	c	41	[c]	[c]	(4)	[c]
	SB	[c]	>1,000	[c]	c	115	[c]	c	168	[c]	[c]	53	[c]
4. W. Mission Bay Drive / Quivira Road	EB	140	>1,000	[b]	42	#684	[b]	44	#737	[b]	2	53	[b]
	WB	240	>1,000	[b]	#180	513	[b]	#180	573	[b]	0	60	[b]
	NB	75	75	[b]	**102**	**#439**	[b]	**105**	**#442**	[b]	3	3	[b]
	SB	60	60	[b]	**#126**	51	[b]	**#127**	51	[b]	1	0	[b]

Footnotes:
a. Movement not permitted
b. Shared through / right lane
c. Shared left / through / right lane

General Notes:
- "Δ (ft)" = Project-attributable change in queue, in feet. One vehicle is approximately 25-feet.
- Queues shown are for the Saturday PM peak hour.
- Queue length reported is the one for the lane with the highest queue in the lane group.
- **Highlight** indicates calculated queue exceeds measured storage length.
- # indicates that the volume for the 95th percentile cycle exceeds capacity. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. If the reported v/c <1 for this movement, the methods used represent a valid method for estimating the 95th percentile queue. In practice, 95th percentile queue shown will rarely be exceeded and the queues shown with the # footnote are acceptable for the design of storage bays.

13.0 CONCLUSIONS

The project is calculated to add 2,850 ADT to the local circulation system, with 103 inbound/ 68 outbound trips during the AM peak hour and 137 inbound/ 91 outbound trips during the PM peak hour.

The study area intersection are calculated to operate at LOS D or better without or with the project in all conditions analyzed. The supplemental queuing analysis shows that queues are calculated to exceed available storage for some movements under some conditions; however the maximum project contribution to any change in queue is 2 vehicles or less. This is not considered to be a project issue.

The project's V/C contribution does exceed the allowable thresholds for several segments of W. Mission Bay Drive in the near-term and long-term conditions for LOS E or worse operations. As W. Mission Bay Drive is fully built to its ultimate classification as a 4-lane major arterial, and the intersections along the corridor are calculated to operate at acceptable LOS D or better operations with project traffic, the City allows for an alternative HCM Arterial analysis to be applied to the segments to confirm if in fact a segment impact occurs.

Based on the results of the alternative HCM Arterial analysis, no direct or cumulative impacts are identified.

End of Report