

Fiesta Island / Mission Bay Park Master Plan Amendment

# Mobility Assessment



*Prepared for:*

**City of San Diego**

*November 2018*

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## 1.0 Introduction

### Background & Purpose

The Fiesta Island - Mission Bay Park Master Plan Amendment evaluates two park use plan options. Option A was approved by City Council in 2007 after an extensive community outreach process. Option B proposes modified land uses in the southwestern portion of the island focusing on the off-leash dog area. Both options propose changes to the roadway configuration, modifications to parking, integrated pedestrian and bicycle paths, and increased pedestrian access through the interior of the island. The information regarding land use and circulation are further described in the Project Description.

This study focuses on evaluating the existing and future mobility conditions on the roadways, pathways, and bicycle facilities providing access to Fiesta Island. A detailed field inspection of the existing conditions, coupled with data collection established the baseline conditions, including the level of pedestrian and bicycle activity within the study area. Existing mobility challenges and opportunities to improve connectivity, walkability and biking conditions accessing the site are identified in this report.

This study also discusses modifications to access and circulation within Fiesta Island. Pedestrian and bicycle paths, grade separated crossings and buffered bicycle lanes are discussed in detail in the report. Automobile circulation modifications for both options include a roundabout at the entrance to the island and reversing the direction of auto travel from a counter clockwise to clockwise circulation. Changes in access and intersection control are detailed later in the report.

### Report Organization

The report is organized as follows:

**Section 1.0 Introduction** – This section focuses on the general information regarding the project and project study area.

**Section 2.0 Methodology** – This section describes the technical analysis methodology used in this report to evaluate the existing and future conditions for all modes.

**Section 3.0 Existing Environment and Mobility Assessment** – This section includes the technical analysis for each mode along with a detailed description of the existing facilities and condition of those facilities within the study area.

**Section 4.0 Project Description and Forecast Project Trips** – This section includes an evaluation of the proposed land use and the forecast project trips distributed within the study area.

**Section 5.0 Analysis of Traffic Operating Conditions with the Proposed Master Plan Amendment** – This section includes the technical analysis along with a detailed description of the existing roadways and intersections within the study area.

**Section 6.0 Recommendations to Improve Off-Site Pedestrian, Bicycle and Transit Access to Fiesta Island** – This section focuses on recommendations to improve pedestrian and bicycle connectivity to the island as well as improved linkages to planned transit facilities within the study area.

**Section 7.0 On-Site Multimodal Circulation with Master Plan Amendment** – This section describes the proposed changes in transportation circulation on Fiesta Island with the proposed improvements included in both Option A and Option B.

**Section 8.0 Project Impacts and Mitigation Measures** – This section summarizes the project impacts to all modes and recommended mitigation measures. Off-site project improvements to pedestrian and bicycle connectivity are also included in this section.

### Project Description

The proposed project is an amendment to the Mission Bay Park Master Plan to update the Fiesta Island Concept Plan. The Fiesta Island Concept Plan includes several diagrams, and supporting Master Plan policies, that will guide future recreational improvements on the approximately 448.9-acre island. No private development is proposed for Fiesta Island in either the Mission Bay Master Plan or the Fiesta Island Concept Plan.

For purposes of analysis, Fiesta Island is divided into four subareas illustrated in **Figure 1-1**. Details of the planned land uses is included in Section 4.0 of this report. In general, the Master Plan Amendment includes the integration of new camping, picnic areas, trails and beach area to the largely undeveloped Fiesta Island Park. Three subareas are identical in both options. The southwest subarea is being evaluated for two land use and mobility options. The key differences between Option A and Option B for the southwest subareas are described below:

**Option A:** Proposes a roadway extension into the area currently designated as an off-leash park area and the development of a parking area, supervised swimming beach, boat storage, and park at the southern beach of the subarea. The development of these amenities would be constructed on a small portion (approximately 6 acres) of the land currently designated as existing fenced off leash park area.

**Option B:** Proposes trails and a pavilion but would not include a public roadway extension, or the development of a parking area, supervised swimming area, or boat storage as described in Option A. All the land in the subarea would remain designated as an existing fenced off leash park area.

From a mobility perspective, the Mission Bay Park Master Plan Amendment will improve connectivity throughout the island. The following describes the general road, trails, parking, and wayfinding improvements, which will be discussed in greater detail later in the report:

- Approximately 8 miles of paved multi-use path with a marked centerline is proposed throughout the island to accommodate pedestrians and bicyclists. In addition to the multi-use path, a compacted soil or decomposed granite side trail on each side of the concrete trail is proposed for use by runners and hikers. The multi-use paths will be designed consistent with the Mission Bay Park Master Plan Design Guidelines and/or the *City of San Diego Street Design Manual* (March 2017).
- Approximately 10 miles of soft surface trails are proposed in the southeast and southwest subareas. These trails are oriented towards hikers and joggers and those who walk their dogs and want to observe nature. The trails will be developed to be consistent with trail policies and standards provided in Appendix K of the City of San Diego's *Consultant's Guide to Park Design & Development* (November 2011).



- Directional signage is proposed both leading to and within the island. A tower entry monument, directional signage at key path and roadway decision points, informational signage, and consolidated entry signage is proposed.

Fiesta Island/Mission Bay Park Master Plan Amendment



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Figure 1-1  
Fiesta Island Subareas

- The existing roadway will be reconstructed so that storm water will flow into the island rather than over the beach and into Mission Bay. Reconstructing the roadway will allow for the construction of a buffered bicycle lane along the one-way, one-lane circulation roadway around the island.
- The existing one-lane, one-way circulation around the island will remain; however, the direction of flow will be reversed from counterclockwise to clockwise. Both physical and operational modifications will be made at key intersections or 'return' roads to help with traffic flow during special events or heavy usage.

The proposed project includes four improved parking areas located in both the southeastern and southwestern areas. Within the southeastern area, parking areas are proposed adjacent to both the large turfed area near the entrance to the park and the playfield. Within the southwestern area, parking is provided adjacent to the playfield and near the off-leash area (Option A only). Visitors who desire parking in closer proximity to the shore may continue to park along the shoulder of the Loop Road. Approximately 900 vehicles can park along the sand parallel to the roadway edges.

### Study Scenarios

This mobility assessment evaluates the traffic operating conditions for the following study scenarios:

- Existing Conditions
- Existing Plus Option A and Existing Plus Option B
- Year 2050 Baseline (No Master Plan Amendment)
- Year 2050 Plus Option A and Year 2050 Plus Option B

The traffic operational analysis considers the weekday AM, weekday PM, and weekend midday peak conditions for intersections as well as the weekday and weekend conditions for roadway segments.

Pedestrian and bicycle conditions are evaluated under existing conditions for connectivity and accessibility using the analysis methodologies described in Section 2.0 of this report.

## 2.0 Methodology

### Pedestrian Environmental Quality Evaluation (PEQE)

The quality of the pedestrian facilities (roadway segments and intersections) within the study area was evaluated using the PEQE methodology outlined in the City's *Active Transportation Assessments: Integrating Bicycle and Pedestrian Evaluation in Long Range Planning (DRAFT White Paper, December 2015)*. Scoring was conducted through a detailed walk audit and includes data collection on a variety of attributes of the roadway, intersection and edge space of the roadway.

**Table 2-1** displays the attributes influencing roadway segment and intersection PEQE scores. Though the PEQE Midblock Crossing evaluation criteria are shown in the table, there were no midblock crossing locations within the study area. The weights of each attribute are provided in **Appendix A**.

**Table 2-1: Attributes Included in PEQE Analysis**

PEQE Intersection Analysis Data (up to 8 points)			
Physical Features (2 pts)	Operational Features (2pts)	ADA Curb Ramps (2pts)	Traffic Control (2pts)
<ul style="list-style-type: none"> <li>• Crosswalks</li> <li>• Raised Crosswalks</li> <li>• Advanced Stop Bar</li> <li>• Bulbout /Curb Extension</li> </ul>	<ul style="list-style-type: none"> <li>• Pedestrian Countdown Signal</li> <li>• Pedestrian Lead Interval</li> <li>• No-Turn on Red-Signal</li> <li>• Additional Signage</li> </ul>	<ul style="list-style-type: none"> <li>• Meets Standard Requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic Signal</li> <li>• Roundabout</li> <li>• Stop Sign</li> </ul>
PEQE Roadway Segment Analysis Data (up to 8 points)			
Horizontal Buffer (2pt)	Lighting (2pt)	Clear Pedestrian Zone (2pt)	Posted Speed Limit (2pt)
<ul style="list-style-type: none"> <li>• Distance from edge of travel way to edge of pedestrian walkway/clear pedestrian zone</li> </ul>	<ul style="list-style-type: none"> <li>• Meets Standard Requirements</li> </ul>	<ul style="list-style-type: none"> <li>• 5' minimum</li> <li>• Without or With Obstructions</li> </ul>	<ul style="list-style-type: none"> <li>• Ideal is less than 30 mph (miles per hour)</li> </ul>
PEQE Midblock Crossing (up to 8 points)			
Visibility (2pt)	Crossing Distance (2pt)	ADA (2pt)	Traffic Control (2pt)
<ul style="list-style-type: none"> <li>• High Visibility Crosswalk</li> </ul>	<ul style="list-style-type: none"> <li>• Bulbout / No Bulbout</li> </ul>	<ul style="list-style-type: none"> <li>• Meets Standard Requirement</li> </ul>	<ul style="list-style-type: none"> <li>• Flashing Beacon (RRFB)</li> <li>• Hawk Signal</li> </ul>
Final Pedestrian Ranking Scores			
<p>&lt;4 points = Low 4-6 points = Medium &gt;6 points = High</p>			



### Level of Traffic Stress (LTS)

The bicycle environment within the study area was assessed using the Bicycle Level of Traffic Stress (LTS) methodology for characterizing cycling environments as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low Stress Bicycle and Network Connectivity*. LTS classifies a street network into several categories based upon the level of stress it causes cyclists. An LTS score is calculated using roadway characteristics and vehicular activity and is a measurement of how facility improvements could make biking more comfortable and accessible for people of all ages and abilities. LTS scores range from 1 (lowest stress) to 4 (highest stress) and correspond to roadways that different cycling populations find suitable for riding on considering their stress tolerance. **Appendix B** describes conditions and traffic stress descriptions for each LTS score.

### Traffic Operational Analysis

The *2000 Highway Capacity Manual (HCM)* methodology was used to evaluate the peak hour operating conditions of the study area intersections. The HCM methodology calculates delay, which corresponds to a LOS, to describe the overall operation of an intersection. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time.

The LOS for signalized intersections is defined in terms of average intersection delay. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay.

The LOS for unsignalized intersections is determined by the computed or measured control delay and is defined for each movement controlled by a stop sign. At a one-way or two-way stop control intersection, the delay reported represents the worst movement, which typically occurs on the stop controlled minor street approach. The criteria for the LOS grade designations are provided in **Table 2-2**.

Within the City of San Diego, the threshold for acceptable operating conditions for signalized and unsignalized intersections is LOS D or better. Signalized and unsignalized intersection operations were analyzed with Synchro 9 software.

For the existing conditions assessment, a total of five signalized intersections are analyzed using the aforementioned methodology. Parameters used in the analysis are turning movement volumes (TMCs), peak hour factors, conflicting pedestrian/bicycle calls per hour and existing signal timing. Signal timing sheets provided by the City of San Diego and Caltrans are included in **Appendix C**.

A roadway segment analysis is typically performed for planning purposes and compares the daily traffic volume along a road segment to its theoretical capacity based on its classification. **Table 2-3** presents the City of San Diego roadway segment daily capacity and level of service thresholds. By taking the measured ADT volume and dividing by the LOS E defined capacity, a v/c (volume-to-capacity) ratio is calculated. Based on the v/c ratio, each road segment is classified into one of four categories:

- |                                       |                                  |
|---------------------------------------|----------------------------------|
| • <i>Acceptable</i>                   | <i>v/c between 0.00 and 0.79</i> |
| • <i>Approaching Capacity</i>         | <i>v/c between 0.80 and 1.00</i> |
| • <i>Potentially Exceeds Capacity</i> | <i>v/c between 1.01 and 1.25</i> |
| • <i>Exceeds Capacity</i>             | <i>v/c greater than 1.26</i>     |



**Table 2-2: HCM Intersection Level of Service Thresholds**

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections	Unsignalized Intersections	
<b>A</b>	≤10	≤10	Operations with very low delay and most vehicles do not stop.
<b>B</b>	>10 and ≤20	>10 and ≤15	Operations with good progression but with some restricted movements.
<b>C</b>	>20 and ≤35	>15 and ≤25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
<b>D</b>	>35 and ≤55	>25 and ≤35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
<b>E</b>	>55 and ≤80	>35 and ≤50	Operations where there is significant delay, extensive queuing, and poor progression.
<b>F</b>	>80	>50	Operations that are unacceptable to most drivers when the arrival rates exceed the capacity of the intersection.

*Source: Highway Capacity Manual, Transportation Research Board (2000)*

**Table 2-3: City of San Diego Roadway Segment Capacity Level of Service Thresholds**

Roadway Functional Classification	Level of Service <sup>1</sup>				
	A	B	C	D	E
Expressway (6-Lane)	< 30,000	< 42,000	< 60,000	<b>&lt; 70,000</b>	< 80,000
Prime Arterial (6 Lane)	< 25,000	< 35,000	< 50,000	<b>&lt; 55,000</b>	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	<b>&lt; 45,000</b>	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	<b>&lt; 35,000</b>	< 40,000
Collector (4-Lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	<b>&lt; 25,000</b>	< 30,000
Collector (3-Lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	<b>&lt; 18,750</b>	< 22,500
Collector (4-Lane w/o center lane)	< 5,000	< 7,000	< 10,000	<b>&lt; 13,000</b>	< 15,000
Collector (2-Lane w/ center left-turn lane)					
Collector (2-Lane no fronting property)	< 4,000	< 5,500	< 7,500	<b>&lt; 9,000</b>	< 10,000
Collector (2-Lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	<b>&lt; 6,500</b>	< 8,000
Sub-Collector (2-lane multi-family)	-	-	< 2,200	-	-

*Source: City of San Diego Traffic Impact Study Manual, Table 2, Page 8, July 1998. City of San Diego Mobility Planning Staff (2017)*

**Bold** numbers indicate the ADT thresholds for acceptable LOS (LOS D or better)

<sup>1</sup>The volumes and the average daily LOS listed above are only intended as a general planning guideline.

## Significance Thresholds

According to the City of San Diego's *CEQA Significance Determination Thresholds* document (January 2011), a project is considered to have a significant impact if the addition of project related traffic results in conditions that exceed the thresholds summarized in **Table 2-4**. These significance thresholds apply only when the type of facility already operates at LOS E or LOS F. For intersections and roadway segments affected by the project, LOS D or better is considered acceptable under both direct and cumulative conditions. Therefore, if a project causes an intersection or roadway segment that was operating at an acceptable LOS (LOS A through D) prior to project implementation to operate at either LOS E or LOS F with the project in place, then the project is considered to cause a significant impact.

**Table 2-4: Summary of Significance Thresholds**

LOS	Allowable Increase Due to Project		
	Roadway and Freeway Segments		Intersection Delay (sec)
	V/C ratio	Speed (mph)	
E	0.02	1.0	2.0
F	0.01	0.5	1.0

*Source: CEQA Significance Determination Thresholds, City of San Diego (January 2011)*

## 3.0 Existing Environment and Mobility Assessment

### Existing Off-Site Roadway and Intersection Operating Conditions

A field assessment of existing roadways that provide access to Fiesta Island was conducted and recorded. Access to Mission Bay Park, and more specifically Fiesta Island, is provided along E. Mission Bay Drive with the closest major intersection located at Sea World Drive/E. Mission Bay Drive-Pacific Highway. The following is a detailed segment by segment description of existing vehicle facilities for the Fiesta Island study area. **Figure 3-1** illustrates the project study area including the existing roadway segment functional classifications, intersection geometry, and intersection traffic control. Pedestrian and bicycle facilities within the study area are briefly described below and discussed in greater detail in the following sections.

#### **E. Mission Bay Drive: Sea World Drive to Fiesta Island Road (Entrance to Fiesta Island)**

The segment of E. Mission Bay Drive from Fiesta Island Road to Sea World Drive has two lanes of travel, one northbound and one southbound. The two directions of travel are separated by a striped center turn lane, with a left turn lane to access to Fiesta Island Road. This segment functions as a two-lane Collector and has a posted speed limit of 30 mph. On-street parking is not permitted. A bike share station is located approximately midway between Sea World Drive and Fiesta Island Road on the bay side of the street. A wide sidewalk is also provided on the bay side of the street, with no pedestrian facilities provided on the east (freeway) side of E. Mission Bay Drive. The wide sidewalk serves as a multi-use trail that connects with the multi-use path that circles Mission Bay. Sharrows are marked on the pavement in both directions of travel along this segment of E. Mission Bay Drive.



*E. Mission Bay Drive between  
Fiesta Island and Sea World Drive*

#### **Sea World Drive: E. Mission Bay Drive to I-5 Interchange**

Sea World Drive is the primary connection from the I-5 freeway to Fiesta Island and Mission Bay Park. Connecting with Sea World Drive, it is the most direct connection for pedestrians and bicycles from the surrounding residential community to the east and businesses along the Morena Boulevard corridor.

The roadway segment has a total of four lanes of travel, two northbound and two southbound, separated by a striped center median. This roadway segment functions as a 4-Lane Major since no access points are provided on either side of the roadway. On-street parking is not permitted. Sidewalks are provided on the east side of the street. Although full access for pedestrians is provided at the Sea World Drive/E. Mission Bay Drive intersection, limited access is permitted at the Sea World Drive/I-5 freeway intersection. Pedestrians are not permitted to cross north-south across Sea World Drive-Tecolote Road at the freeway ramp intersections. A striped shoulder provided on the east side of Sea World drive is commonly used by bicyclists; however, the shoulder tapers off approaching the northbound right turn lane that serves the southbound I-5 on-ramp. No bicycle lanes are provided on the west side of the street.

**Legend**

- 4-Lane Major
- 2-Lane Collector
- 1-Lane Collector, 1 Way
- # Study Intersection
- Existing Lane Geometries
- Signalized Intersection
- Stop Control
- Yield Control

**Map Details:**

- Scale:** 0 to 0.8 Miles
- Intersections:**
  - East Mission Bay Drive & Fiesta Island Road
  - Sea World Drive & E. Mission Bay Drive
  - Sea World Drive & Interstate 5 SB On-ramp and Off-ramp
  - Sea World Drive & Interstate 5 NB On-ramp and Off-ramp
  - Sea World Drive & Friars Road
- Other Roads:** East Mission Bay Drive, Tecolote Road, Pacific Highway, Friars Road, Sea World Drive, Fiesta Island Road.

**Intersection Diagrams:**

- East Mission Bay Drive & Fiesta Island Road:** Shows a 4-way intersection with a stop sign on East Mission Bay Drive.
- Sea World Drive & E. Mission Bay Drive:** Shows a 4-way intersection with a signalized intersection on Sea World Drive.
- Sea World Drive & Interstate 5 SB On-ramp and Off-ramp:** Shows a 4-way intersection with a signalized intersection on Sea World Drive.
- Sea World Drive & Interstate 5 NB On-ramp and Off-ramp:** Shows a 4-way intersection with a signalized intersection on Sea World Drive.
- Sea World Drive & Friars Road:** Shows a 4-way intersection with a signalized intersection on Sea World Drive.

**Sea World Drive: E. Mission Bay Drive/Pacific Highway to Friars Road**

The segment of Sea World Drive between E. Mission Bay Drive and Friars Road has a total of four lanes of travel, with two lanes eastbound and two lanes westbound, divided by a center striped median. This roadway segment functions as a 4-Lane Major since no access points are provided on either side of the roadway. The posted speed limit is 40 mph and on-street parking is not permitted on either side of the street. Class II bicycle lanes are provided on both sides of the street. The Class I multi-use trail continues to circle the bay to the north of Sea World Drive. Sidewalks are not present on either side of the street.

**Sea World Drive: Friars Road to South Shores Parkway**

The segment of Sea World Drive from Friars Road to South Shores Parkway has four lanes of travel, with two eastbound and two westbound lanes, separated by a landscaped median. This roadway segment functions as a 4-Lane Major since no access points are provided on either side of the roadway. The road has a posted speed limit of 50 mph. On-street parking is not permitted and turn lanes are provided at most major intersections. There are bike lanes present along both sides of this segment. On the north side of this segment, the Class II bicycle lane transitions to a Class I facility approximately 2,000 feet west of South Shores Park.

**Friars Road: East of Sea World Drive**

Friars Road east of Sea World Drive has a total of four lanes of travel with two eastbound and two westbound lanes. This roadway segment functions as a 4-Lane Major since there are no access points on either side of the roadway, the road is separated by a wide striped center median, and the posted speed limit is 45 mph. A two-way cycle track exists on the south side of Friars Road and a Class II bicycle lane is provided on the north side of the street. There are no sidewalks on either side of Friars Road for approximately 600 feet and 700 feet south of Sea World Drive, on the north and south sides of the street, respectively. Beyond 600 and 700 feet, sidewalks are provided on both sides with the sidewalk on the south side connecting with the San Diego River Trail.

**Fiesta Island Road**

Fiesta Island Road is a one-way, single lane loop road that circles around Fiesta Island. Along the causeway that connects Fiesta Island to East Mission Bay Drive, Fiesta Island Road is two-way and classified as a 2-Lane Collector. The posted speed limit is 30 mph for the length of the loop. While there is no defined parking, vehicles may park off pavement on the shoulder and sand that flanks both sides of the roadway. A Class III bicycle route is marked on the loop road with sharrows on the pavement in addition to “Share the Road” signs. There are no sidewalks or walking paths along the roadway for pedestrians. In some areas, dirt paths or “goat trails” have formed that define the worn pedestrian path of travel.



### Existing Intersections and Roadway Segment Level of Service

Peak hour intersection volumes and daily traffic volumes were collected within the project study area in April 2017 during weeks that coincided with Spring Break. The weather conditions when the data collection was typical for San Diego. Raw traffic count data is provided in **Appendix D**.

Traffic volume data was collected for a four-day period (Thursday through Sunday) to determine the variations in traffic conditions on a weekday versus a weekend condition. **Table 3-1** provides a comparison of the daily traffic data collected for three key locations within the study area. As shown in Table 3-1, the highest overall traffic onto and off of Fiesta Island occurs on Sunday, with a total inbound/outbound volume of 7,662 vehicles per day.

**Table 3-1: Comparison of Daily Traffic Volumes at Key Study Locations**

Roadway Segment	Existing Daily Traffic Volume by Day			
	Thursday	Friday	Saturday	Sunday
<b>Sea World Drive</b>				
S. Shores Pkwy to Friars Rd	37,428	37,846	36,178	32,284
Friars Rd to Pacific Hwy - E. Mission Bay Dr	32,163	32,187	32,573	28,720
Pacific Hwy - E. Mission Bay Dr to I-5 SB Off Ramps	34,270	35,202	37,188	33,734
<b>E. Mission Bay Drive</b>				
Sea World Dr to Fiesta Island Rd	9,227	9,847	11,521	11,969
<b>Friars Road</b>				
East of Sea World Dr	14,472	14,163	10,985	10,160
<b>Fiesta Island Road</b>				
E. Mission Bay Dr to Fiesta Island Loop	4,705	5,227	7,439	7,662

Traffic operating conditions for intersections and roadway segments were evaluated based on the methodology outlined in Section 2.0 of this report. **Table 3-2** summarizes the results of the intersection operating conditions for the weekday and weekend conditions. **Table 3-3** summarizes the results of the roadway segment operating conditions. Volumes used in this analysis are illustrated in **Figure 3-2** and **Figure 3-3** for weekdays and weekends, respectively. HCM LOS worksheets are provided in **Appendix E**.

As shown in Table 3-2, all intersections in the study area currently operate at an acceptable LOS (LOS D or better) with the exception of the E. Mission Bay Drive/Fiesta Island Road intersection during the weekend midday peak hour. The roadway segment analysis summarized in Table 3-3 shows that Sea World Drive from Mission Bay Park Way (South Shores Parkway Entrance) to Friars Road (defined throughout this study as “S. Shores Pkwy” in the analysis tables) operates at LOS E based on the current functional classification both weekdays and on the weekend. On the weekend, Sea World Drive also operates at LOS E from the I-5 ramps to E. Mission Bay Drive-Pacific Highway.

**Table 3-2: Existing Conditions Peak Hour Intersection Operations Analysis**

#	Intersection	Traffic Control	Peak Hour	Existing Conditions	
				Average Delay (sec)	LOS
UNSIGNALIZED INTERSECTION					
1	E. Mission Bay Dr and Fiesta Island Rd	OWSC <sup>1</sup>	AM	12.4	B
			PM	24.7	C
			Weekend MID	39.9	E
SIGNALIZED INTERSECTION					
2	Sea World Dr and E. Mission Bay Dr-Pacific Hwy	Signal	AM	36.5	D
			PM	37.2	D
			Weekend MID	23.2	C
3	Sea World Dr and I-5 SB On/Off Ramps	Signal	AM	19.5	B
			PM	12.3	B
			Weekend MID	13.0	B
4	Sea World Dr and I-5 NB On/Off Ramps	Signal	AM	27.9	C
			PM	37.9	D
			Weekend MID	48.7	D
5	Sea World Dr and Friars Rd	Signal	AM	17.6	B
			PM	23.9	C
			Weekend MID	14.8	B

**Notes:** <sup>1</sup> One-Way Stop Controlled (OWSC) from eastbound approach. The delay and LOS reported for this intersection is for the stop controlled eastbound approach.

**Table 3-3: Existing Conditions Roadway Segment Operations Analysis**

Roadway Segment	Classification <sup>(a)</sup>	Maximum Capacity at LOS E <sup>(a)</sup>	Existing Weekday			Existing Weekend		
			ADT	v/c Ratio	LOS	ADT	v/c Ratio	LOS
Sea World Drive								
S. Shores Parkway to Friars Rd	4-Lane Major Arterial	40,000	37,428	0.94	E	36,178	0.90	E
Friars Road to Pacific Hwy - E. Mission Bay Dr	4-Lane Major Arterial	40,000	32,163	0.80	D	32,573	0.81	D
Pacific Hwy - E. Mission Bay Dr to I-5 SB Off Ramps	4-Lane Major Arterial	40,000	34,270	0.86	D	37,188	0.93	E
E. Mission Bay Drive								
Sea World Dr to Fiesta Island Rd	2-Lane Collector (continuous left-turn lane)	15,000	9,227	0.62	C	11,521	0.77	D
Friars Road								
East of Sea World Dr	4-Lane Major Arterial	40,000	14,472	0.36	A	10,985	0.27	A
Fiesta Island Road								
E. Mission Bay Dr to Fiesta Island Loop	2-Lane Collector (no fronting property)	10,000	4,705	0.47	B	7,439	0.74	C

**Notes:**

(a) Based on the City's General Plan Mobility Element and Traffic Impact Study Manual

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E Mission Bay Drive @ Fiesta Island Road	Sea World Drive @ E. Mission Bay Drive	I-5 SB On/Off ramps @ Sea World Drive	I-5 NB On/Off Ramps @ Sea World Drive
<p>Diagram showing traffic volumes for the intersection of E Mission Bay Drive and Fiesta Island Road. The diagram includes arrows indicating the direction of traffic flow and the corresponding volume for each movement.</p>	<p>Diagram showing traffic volumes for the intersection of Sea World Drive and E. Mission Bay Drive. The diagram includes arrows indicating the direction of traffic flow and the corresponding volume for each movement.</p>	<p>Diagram showing traffic volumes for the intersection of I-5 SB On/Off ramps and Sea World Drive. The diagram includes arrows indicating the direction of traffic flow and the corresponding volume for each movement.</p>	<p>Diagram showing traffic volumes for the intersection of I-5 NB On/Off Ramps and Sea World Drive. The diagram includes arrows indicating the direction of traffic flow and the corresponding volume for each movement.</p>
Sea World Drive @ Friars Road	LEGEND		
<p>Diagram showing traffic volumes for the intersection of Sea World Drive and Friars Road. The diagram includes arrows indicating the direction of traffic flow and the corresponding volume for each movement.</p>	<p><b>LEGEND</b></p> <p>x,xxx = ADT volume</p> <p>xx / yy = AM / PM Peak-Hour Turning Movement Volumes</p>		



**Figure 3-2**  
**Existing Weekday Traffic Volumes**

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E Mission Bay Drive @ Fiesta Island Road	Sea World Drive @ E. Mission Bay Drive	I-5 SB On/Off Ramps @ Sea World Drive	I-5 NB On/Off Ramps @ Sea World Drive
<div> <div> <div>56</div> <div>228</div> </div> <div> <div>74</div> <div>230</div> </div> <div> <div>244</div> <div>222</div> </div> </div>	<div> <div> <div>260</div> <div>1221</div> <div>88</div> </div> <div> <div>235</div> <div>38</div> <div>172</div> </div> <div> <div>106</div> <div>37</div> <div>61</div> </div> </div> <div> <div>146</div> <div>877</div> <div>43</div> </div>	<div> <div>1071</div> <div>211</div> </div> <div> <div>951</div> <div>265</div> </div> <div> <div>532</div> <div>295</div> </div>	<div> <div>352</div> <div>445</div> </div> <div> <div>752</div> <div>419</div> </div> <div> <div>353</div> <div>0</div> <div>323</div> </div>
Sea World Drive @ Friars Road	LEGEND		
<div> <div> <div>1267</div> <div>197</div> </div> <div> <div>107</div> <div>274</div> </div> <div> <div>974</div> <div>282</div> </div> </div>	<p>x,xxx = ADT volume xx = Midday Peak-Hour Turning Movement Volumes</p>		



**Figure 3-3**  
**Existing Weekend Traffic Volumes**



### Existing Off-Site Pedestrian Access and Connectivity to Fiesta Island

Pedestrian access to Fiesta Island is provided along the pedestrian path that runs through along Mission Bay Park, travels along a portion of E. Mission Bay Drive, and connects with Sea World Drive. From the intersection of Sea World Drive-E. Mission Bay Drive, pedestrians and bicyclists have access to Sea World Drive, Friars Road and Pacific Highway. Although Class I trails run along Mission Bay Drive and the San Diego River Trail, there is a lack of pedestrian connectivity along these connecting roadways with missing or discontinuous sidewalks. Sea World Drive presents a challenge to pedestrians as it is a 4-Lane Major



*Pedestrians Crossing Fiesta Island Road at  
E. Mission Bay Drive*

arterial that lacks improved sidewalks on both sides of the street, with the exception of a segment on the east side of the street between E. Mission Bay Drive-Pacific Highway and Interstate 5 (I-5) southbound off ramps. The sidewalks along Friars Road do not connect to Sea World Drive, resulting in a gap in connectivity. There are no sidewalks on either side of Pacific Highway which is the primary route to Old Town and the Old Town Trolley Station. **Figure 3-4** illustrates the existing pedestrian and bicycle connections within the project study area.

City of San Diego applies the PEQE methodology for evaluating and defining the pedestrian conditions along roadways. **Table 3-4** summarizes the results of the existing conditions PEQE analysis for the roadways connecting Fiesta Island to the surrounding community.

**Table 3-4: Existing Conditions PEQE Analysis**

Intersection		Score	Ranking
1	E. Mission Bay Dr-Pacific Hwy & Fiesta Island Rd	4	Medium
2	Sea World Dr & E. Mission Bay Dr-Pacific Hwy	5	Medium
3	Sea World Dr & Interstate-5 SB Ramp (I-5 SB)	4	Medium
4	Sea World Dr & Interstate-5 NB Ramp (I-5 NB)	4	Medium
5	Sea World Dr & Friars Rd	3	Low

Segment			Score	Ranking
#	Street	Between		
1	E. Mission Bay Dr	Fiesta Island Rd and Sea World Dr	5	Medium
2	Pacific Hwy	East of Sea World Dr	0	Low
3	Sea World Dr	I-5 Ramps and E. Mission Bay Dr-Pacific Hwy	4	Medium
4	Sea World Dr	E. Mission Bay Dr-Pacific Hwy and Friars Rd	3	Low
5	Sea World Dr	Friars Rd and S. Shores Pkwy	2	Low
6	Friars Rd	East of Sea World Dr	0	Low

As shown in Table 3-4, the existing pedestrian environment is at medium quality at most of the intersections, and of low quality along the roadway segments. The main contributor to average rankings among the intersections is the lack of ADA-compliant curb ramps. The segment rankings are low quality due to lack of a sidewalk and inadequate lighting. The PEQE data forms were used to collect the data within the study area and are provided in **Appendix F** along with the City of San Diego PEQE analysis worksheets for each intersection and roadway segment.

### Existing Off-Site Bicycle Access and Connectivity to Fiesta Island

Bicycle access to Fiesta Island and Mission Bay Park is provided through a series of Class I paths, Class II bicycle lanes, and Class IV Cycle Track, as illustrated in Figure 3-4. Challenges for bicyclists traveling to/from the surrounding community from/to Fiesta Island include the lack of bicycle lanes through the I-5 interchange, which connects the residential communities on the east side of the I-5 freeway to Fiesta Island and the greater Mission Bay Park, and lack of bicycle lanes along Pacific Highway that connect Fiesta Island to Old Town. The San Diego River Trail and Mission Bay Park multi-use trails provide good connectivity to Fiesta Island, however the entry point (as discussed later in this report) to Fiesta Island poses challenges for both pedestrians and bicyclists alike. Pedestrians and bicyclists currently share the paved roadway or walk/ride on the dirt shoulder to access Fiesta Island. In addition, the inbound vehicles heading onto the causeway fail to yield to pedestrians and bicyclist crossing Fiesta Island Road, resulting in challenging crossing conditions.



*Class I Multi-use Facility along E.  
Mission Bay Drive*

The City of San Diego uses the Level of Traffic Stress (LTS) to define the bicycling conditions along roadways. This methodology was applied to the roadways connecting Fiesta Island to the surrounding community. The results of this analysis are summarized in **Table 3-5**. LTS analysis worksheets are provided in **Appendix G**.

**Table 3-5: Existing Conditions Level of Traffic Stress**

#	Segment	Between	LTS Score	Bicycling Conditions	Weakest Link Criteria Governing LTS Score
1	E. Mission Bay Dr	Fiesta Island Rd and Sea World Dr	3	No Bicycle Facility	Speed Limit and Street Width
2	Pacific Hwy	East of Sea World Dr	4	No Bicycle Facility	Speed Limit
3	Sea World Dr	I-5 Ramps and E. Mission Bay Dr - Pacific Hwy	4	No Bicycle Facility	Speed Limit
4	Sea World Dr	E. Mission Bay Dr - Pacific Hwy and Friars Rd	4	Bike Lane	Speed Limit
5	Sea World Dr	Friars Rd and S. Shores Pkwy	4	Bike Lane	Speed Limit
6	Friars Rd	East of Sea World Dr	1	Bike Lane (N Side) Cycle Track (S Side)	Speed Limit

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Figure 3-4  
Existing Pedestrian and Bicycle Facilities

As shown in Table 3-5, the existing bicycle conditions have a high LTS score, indicating a high level of stress for people cycling along the roadways in this area. The segments on Sea World Drive and Pacific Highway are rated at LTS 4 due to the high traffic speeds on the two lane and four lane roads and gaps in the bicycle network. The posted speed limit on E. Mission Bay Drive is much lower, but the lack of a bike lane places its LTS score at 3.

### Transit Service within Project Study Area

The Metropolitan Transit System (MTS) provides local transit within the San Diego region. Based on bus and trolley information available from MTS, public transit within the project study area does not currently extend to Fiesta Island. The closest bus route is Route 105 which has stops located on Morena Boulevard, approximately 0.5 miles from Fiesta Island. Commuter and light rail lines connect at the Old Town Transit Center, which is located approximately one mile from Fiesta Island.

Although there is no current transit service within the study area, the Mid-Coast Trolley Extension will add the Tecolote Road Station on Morena Boulevard as illustrated in **Figure 3-5**. This light rail transit corridor began construction in 2016 and should be open to the public by 2021 according to information available from SANDAG at the time this report was prepared. When constructed, this station will be located within 0.5 miles of the Fiesta Island entrance road.

### Existing On-Site Circulation and Parking

A single lane, one-way road circulates in a counterclockwise direction from the causeway around Fiesta Island. The approximate roadway width is 25 feet with a variable width shoulder that is typically covered by sand. The travel lane is striped 18 feet wide and sharrows are painted on the pavement at regular intervals along the roadway. Access to the existing campground and aquatics center are provided by a separate loop road that veers off the main road as illustrated in **Figure 3-6** and these access points are controlled by yield or stop signs.

There are no defined pedestrian and bicycle trails on Fiesta Island; however, there are several dirt walking paths that have developed over years of use that connect different sections of the island together. Bicycles share the road with automobiles and painted sharrows and signage are provided.

There are limited designated parking facilities on Fiesta Island as illustrated in **Figure 3-7**. There is a dirt parking lot at the entrance to the island that is heavily utilized by hikers and bicyclists on both weekends and weekdays. In addition, there is a paved parking area near the Youth Camp and Youth Aquatics Center on the northeast end of the island. Near the dog off leash area there is also a large dirt lot, which is used for the dog off leash area. All other visitors to the island park along the side of the road or pull into the sand, closer to the water's edge. Fences are placed around the island to control vehicular access and parking.

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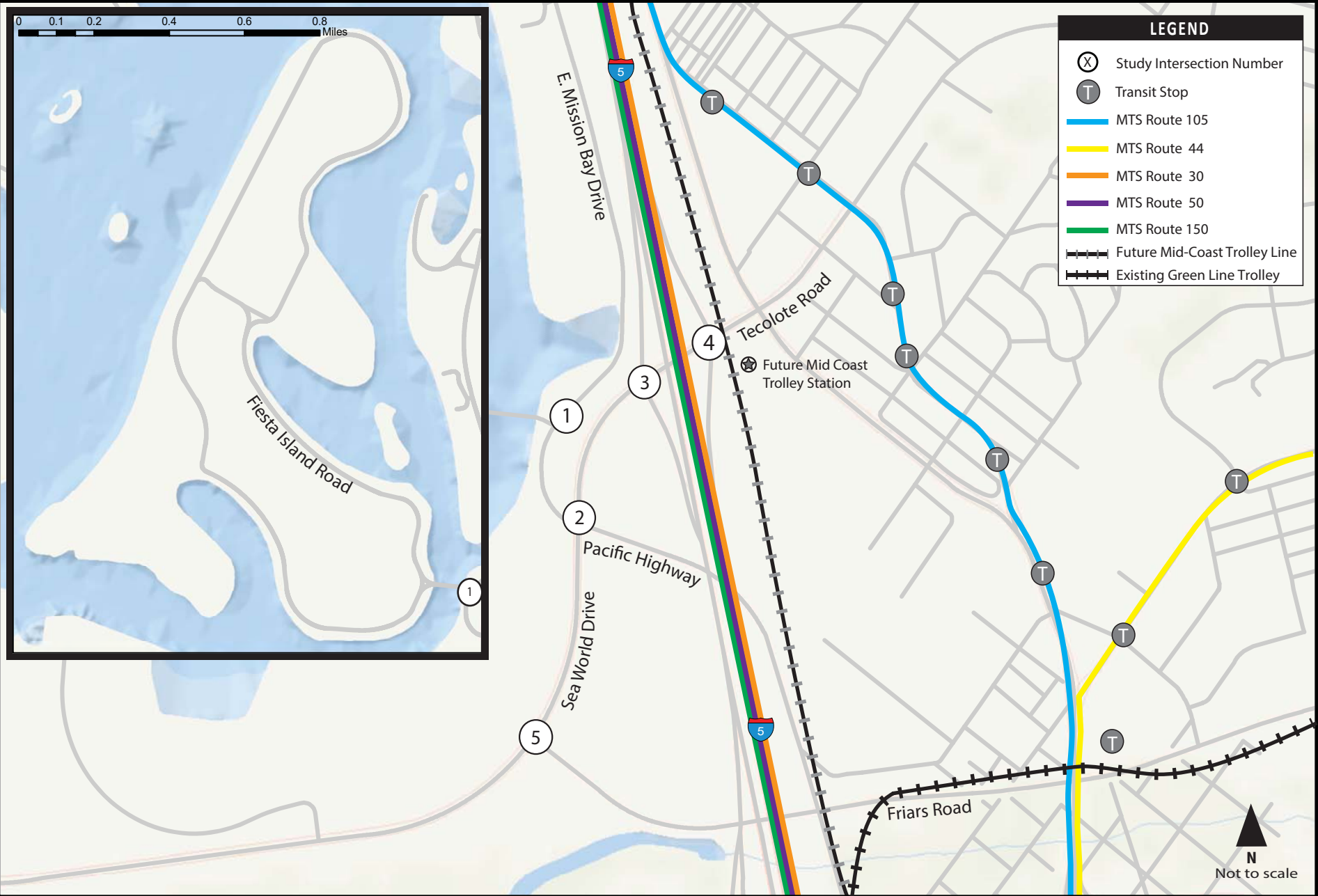


Figure 3-5  
Existing and Future Transit Lines



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Figure 3-6  
Fiesta Island Existing Circulation



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Figure 3-7  
Fiesta Island Existing Parking