

### **3.2.1 Introduction**

This chapter discusses the potential traffic and circulation impacts associated with the proposed project. Technical data in this chapter were taken from the updated traffic impact study prepared by Kaku Associates, Inc. in October 2002, which is provided in Appendix B of the Draft SEIR. This chapter also draws upon information from the 1998 Draft SEIR, where applicable.

The traffic impact study was conducted to identify and evaluate the potential traffic impacts that would be generated by the proposed project. The process by which the study was conducted is summarized in this chapter and described in detail in Appendix B. Specific topics addressed in the study include existing traffic conditions on potentially affected roadways and intersections, estimates of project-related trip generation, construction-related traffic impacts, and cumulative impacts on traffic.

During the Notice of Preparation period for the 1998 Draft SEIR, LADOT set forth the traffic study parameters, including study intersections and analysis contents. Those parameters were consulted and adhered to in the preparation of the updated traffic analysis.

### **3.2.2 Setting**

A comprehensive data collection effort was undertaken by Kaku Associates, Inc. to develop a detailed description of existing conditions within the traffic study area. The assessment of conditions relevant to the study includes a description of the study area, an inventory of the local street system in the vicinity of the project site, a review of traffic volumes on these facilities, an assessment of the resultant operating conditions, and the current transit service in the study area. A detailed description of those elements is presented in the following sections.

## 3.2.2.1 Existing Circulation System

### Regional Roadway Network

Several freeways provide regional access to the project site, with the Harbor Freeway (Interstate 110) and the Terminal Island Freeway (State Route 47) providing primary access within the project study area. Other freeways serving the Port area include the Long Beach Freeway (Interstate 710) and the San Diego Freeway (Interstate 405). The Long Beach Freeway is a north-south highway that extends from the Port area to downtown Los Angeles. The San Diego Freeway passes through the Los Angeles region and is generally parallel to the coast.

Three highway bridges link these freeways to each other: the Vincent Thomas Bridge, the Gerald Desmond Bridge, and the Commodore Schuyler F. Heim Bridge. These bridges are all located north of the project site.

The two primary project-serving facilities are described below.

*Interstate 110 (I-110)* is primarily a north-south-oriented freeway that extends from I-210 in Pasadena to the north, through downtown Los Angeles, and terminates at Gaffey Street in San Pedro to the south.

*State Route 47 (SR-47)* is primarily a Port-serving freeway that begins in the north as the southerly extension of SR-103 and crosses to Terminal Island in Long Beach via the Heim Bridge. From Ocean Boulevard in Long Beach, SR-47 extends west along Terminal Island, crosses the Los Angeles Harbor Main Channel via the Vincent Thomas Bridge, and ultimately joins the southerly terminus of I-110 in San Pedro. The Vincent Thomas Bridge is a four-lane suspension bridge.

### Local Roadway Network

The study area for the traffic analysis is located in the area of San Pedro east of Gaffey Street. The proposed project is located near the intersection of Miner Street and 22<sup>nd</sup> Street in San Pedro, as shown in Figure 3.2-1. The majority of the Cabrillo Way Marina project is located west of Miner Street and south of 22<sup>nd</sup> Street in San Pedro. A portion of the project is located north of 22<sup>nd</sup> Street. The access driveways to the project site are located on 22<sup>nd</sup> and Miner Streets.

Gaffey Street, Pacific Avenue, and Harbor Boulevard provide local access to Miner Street and 22<sup>nd</sup> Street. Figure 3.2-1 illustrates the location of the proposed project in relation to the surrounding street system. Table 3.2-1 provides a description of the physical characteristics of all key streets within the study area, as summarized below.

**Table 3.2-1. Existing Surface Street Characteristics**

Segment	From	To	No. of Lanes		Median Type	Parking Restrictions		Speed Limit (mph)
			NB/EB	SB/WB		NB/EB	SB/WB	
Harbor Boulevard	I-110 NB on-ramp	SR-47 ramps	2	2	DY	NSAT	NSAT	35
	SR-47 ramps	Beacon Street	2	2	RM	NSAT	NSAT	35
	Beacon Street	Santa Cruz Street	2	2	RM	NSAT	2 hours between 8 a.m. and 6 p.m.	35
	Santa Cruz Street	5 <sup>th</sup> Street	2	2	RM	PA	PA	35
	5 <sup>th</sup> Street	6 <sup>th</sup> Street	2	2	RM	NSAT	PA	35
	6 <sup>th</sup> Street	7 <sup>th</sup> Street	2	2	RM	NSAT	NSAT	35
	7 <sup>th</sup> Street	Crescent Avenue	2	2	RM	PA	PA	35
22 <sup>nd</sup> Street	Via Cabrillo Way	Halfway to Miner Street	2	2	DY	3 hours between 10 a.m. and 10 p.m.	NSAT	25
	Halfway to Miner Street	Miner Street	2	2	DY	NSAT	NSAT	25
	Miner Street	Sampson Way	2	2	DY	NSAT	NSAT	25
	Sampson Way	Signal Place	2	2	DY	Angle – 1 hour	NSAT	25
Miner Street	Crescent Way	22 <sup>nd</sup> Street	2	2	DY	NSAT	NSAT	35
	22 <sup>nd</sup> Street	End	1	1	SDY	NSAT	NSAT	25
Via Cabrillo Marina	22 <sup>nd</sup> Street	End	2	2	RM	NSAT	NSAT	25
6 <sup>th</sup> Street	Centre Street	Harbor Street	1	1	DY	2 hours between 8 a.m. and 6 p.m.	2 hours between 8 a.m. and 6 p.m.	25

Segment	From	To	No. of Lanes		Median Type	Parking Restrictions		Speed Limit (mph)
			NB/EB	SB/WB		NB/EB	SB/WB	
Sampson Way	5 <sup>th</sup> Street	6 <sup>th</sup> Street	1	1	SDY	2 hours between 8 a.m. and 6 p.m.	Angle, 2 hours between 8 a.m. and 6 p.m.	25
	6 <sup>th</sup> Street	Nagoya Way	1	1	2LT	NSAT	NSAT	25
	Nagoya Way	Skytower Way	2	2	DY	NSAT	NSAT	25
	Skytower Way	Signal Place	1	1	DY	NSAT	NSAT	25
	Signal Place	22 <sup>nd</sup> Street	2	2	DY	NSAT	NSAT	25
Crescent Avenue	21 <sup>st</sup> Street	20 <sup>th</sup> Street	1	1	DY	NSAT	PA	35
	20 <sup>th</sup> Street	17 <sup>th</sup> Street	1	1	SDY	NSAT	PA	35
	17 <sup>th</sup> Street	Miner Street	1	1	DY	NSAT	NSAT	35
Notes:								
RM	Raised Median	EB	Eastbound	NSAT	No Saturday Parking			
2LT	Dual Left Turn	NB	Northbound	PA	Parking Available			
SDY	Single SD Yellow	SB	Southbound					
DY	Double Yellow	WB	Westbound					
UD	Undivided Lane							

*Harbor Boulevard* is a north-south major arterial roadway located northeast of the project site. Two through travel lanes are provided in each direction on Harbor Boulevard between the regional freeway network to the north and Crescent Avenue to the south. On-street parking is allowed in selected areas, and the major intersections are signalized. South of Crescent Avenue, Harbor Boulevard transitions to Miner Street.

*Miner Street* is the southerly extension of Harbor Boulevard south of Crescent Avenue. Miner Street is a north-south roadway located east of the project site. Two through travel lanes are provided in each direction on Miner Street between Crescent Avenue and 22<sup>nd</sup> Street. South of 22<sup>nd</sup> Street, Miner Street has one lane in each direction with poor pavement conditions, and generally forms the eastern project site boundary. The intersection with 22<sup>nd</sup> Street is signalized.

*22<sup>nd</sup> Street* is an east-west arterial that bisects the northern and southern portions of the project site. Along the project frontage, 22<sup>nd</sup> Street provides two through travel lanes in each direction. A two-way continuous left-turn lane is provided through the study area. The intersections with Miner Street and Via Cabrillo Marina are signalized.

*Via Cabrillo Marina* is a north-south roadway located just west of the project site; it serves the existing Cabrillo Marina Phase I development. Two through travel lanes are provided in each direction on Via Cabrillo Marina, with a southerly terminus at Shoshonean Road, which is the subject of study as a possible boater access road to the existing Cabrillo Beach boat launch site (see section 2.1.2, “Boat Launch Facility Options,” in Chapter 2, “Project Description”).

*6<sup>th</sup> Street* is a four-lane east-west street that provides the primary access way to the Ports O’ Call area at the Harbor Boulevard intersection. The intersection with Harbor Boulevard is signalized.

*Signal Street and Sampson Way* would not generally be used for vehicular access to the project site. The primary north-south access to the project site along Harbor Boulevard is more direct. Signal Street is a 2-lane north-south street that runs about 0.2 miles northeast of the project site. Sampson Way is a 2-lane north-south street located about 0.2 miles north of the project site. It runs generally parallel to the Los Angeles Harbor Main Channel and extends through the Ports O’ Call area.

Diagrams of the existing lane configurations at each of the six analyzed intersections are illustrated in the traffic study (Appendix B).

## Existing Intersection Operations

This section presents the existing peak hour turning movement traffic volumes for each of the intersections analyzed in the study, describes the methodology used to assess the traffic conditions at each intersection, and analyzes the

resulting operating conditions at each, indicating volume/capacity ratios and levels of service.

## Terminology

The following terms are used in this chapter to describe and evaluate the traffic and circulation impacts associated with the proposed project.

- **Level of Service (LOS).** LOS is a method used to describe how well a roadway is operating. Based on a roadway's volume-to-capacity (V/C) ratio, a letter designation is assigned that qualitatively represents traffic flow conditions. The letter designations A through F represent progressively declining operating conditions, with A indicating excellent maneuverability and stable speeds and F indicating a breakdown of flow and unstable, erratic speeds. LOS D is typically recognized as the minimum acceptable level of service in urban areas. Level of service definitions for signalized intersections are provided in Table 3.2-2.
- **V/C Ratio.** The V/C ratio measures the percentage of actual traffic volume on a roadway compared to the total traffic capacity of that roadway. Table 3.2-2 defines the ranges of V/C ratios and corresponding levels of service for signalized intersections.

**Table 3.2-2.** Level of Service Definitions for Signalized Intersections

LOS	V/C Ratio	Definition
A	$\leq 0.600$	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	$> 0.600 \leq 0.700$	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	$> 0.700 \leq 0.800$	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	$> 0.800 \leq 0.900$	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	$> 0.900 \leq 1.000$	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	$> 1.000$	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: Transportation Research Board, *Transportation Research Circular No. 212, Interim Materials on Highway Capacity*, 1980.

**Table 3.2-3.** Intersection Levels of Service Analysis—Existing Conditions (Year 2002)

Intersection	Weekday and Weekend Peak Hour		
	Peak Hour	V/C or Delay	LOS
1. Harbor Boulevard and Interstate 110 NB on-ramp	AM	0.429	A
	PM	0.451	A
	Weekend	0.543	A
2. Harbor Boulevard and SR-47 Ramps/Swinford Street	AM	0.700	C
	PM	0.873	D
	Weekend	0.857	D
3. Harbor Boulevard and 6 <sup>th</sup> Street	AM	0.379	A
	PM	0.438	A
	Weekend	0.679	B
4. Harbor Boulevard/Miner Street and Crescent Avenue	AM	0.308	A
	PM	0.357	A
	Weekend	0.233	A
5. Miner Street and 22 <sup>nd</sup> Street	AM	0.348	A
	PM	0.358	A
	Weekend	0.321	A
6. Via Cabrillo Marina and 22 <sup>nd</sup> Street	AM	0.192	A
	PM	0.131	A
	Weekend	0.221	A

## Methodology

Kaku Associates, Inc. conducted a traffic impact study for the proposed project in 2002 (Appendix B). The scope of work for the study was developed in conjunction with LADOT. The base assumptions and technical methodologies were discussed as part of the study approach. LADOT identified the following six intersections to be analyzed as part of the scope of work for the project traffic study.

1. Harbor Boulevard and the I-110 northbound (NB) on-ramp;
2. Harbor Boulevard and the SR-47 ramps/Swinford Street;
3. Harbor Boulevard and 6<sup>th</sup> Street;
4. Harbor Boulevard/Miner Street and Crescent Avenue;
5. Miner Street and 22<sup>nd</sup> Street; and
6. Via Cabrillo Marina and 22<sup>nd</sup> Street

The locations of these six analyzed intersections are illustrated in Figure 3.2-1. Four of the six analyzed intersections are controlled by traffic signals. The “Critical Movement Analysis-Planning” (Transportation Research Board 1980) method of intersection capacity analysis was used to determine the intersection V/C ratio and corresponding level of service for the turning movements and intersection characteristics at the signalized intersections.

The intersection of Harbor Boulevard/Miner Street and Crescent Avenue is stop-controlled and the intersection of Harbor Boulevard and the I-110 NB on-ramp is uncontrolled. In accordance with the LADOT analysis methodology, these two intersections were also analyzed as signalized intersections to evaluate the significance of project-related traffic.

### Congestion Management Program

As required by the CMP for Los Angeles County (Los Angeles County Metropolitan Transportation Authority 1997), designated monitoring locations on the CMP highway system have been reviewed for potential impacts. There are no CMP arterial monitoring intersections or freeway monitoring locations in the vicinity of the proposed project. The CMP monitoring station nearest to the project study area is the intersection of Gaffey Street and 9<sup>th</sup> Street. Most site-generated traffic will use Harbor Boulevard, and the project will not add more than 50 vehicle trips to the intersection of Gaffey and 9<sup>th</sup> Streets during either the a.m. or p.m. weekday peak hour. Furthermore, the proposed project would not add 150 or more trips (in either direction) during either the a.m. or p.m. weekday peak hours at CMP mainline freeway-monitoring locations (identified on page D-2 of Appendix D in the CMP manual as the threshold criteria for a traffic impact assessment). Accordingly, no CMP traffic impact assessment is required for the Cabrillo Way Marina project. Because no impact is expected, the CMP is not discussed further in this chapter.



## Existing Intersection Levels of Service

The peak hour intersection traffic volumes presented in Figures 3 and 4 in Appendix B were analyzed using the intersection capacity analysis methodology described above to determine the current operating conditions at the six study intersections.

Table 3.2-3 summarizes the results of this analysis, indicating the existing weekday morning and evening peak hour V/C ratio, weekend midday peak hour V/C ratio, and corresponding level of service at each analyzed intersection. As indicated in the table, all of the intersections are currently operating at an acceptable level of service (i.e., LOS D or better) during all analyzed time periods.

It is important to note that the traffic conditions reflect a certain amount of trips generated by existing project site uses. Those existing uses include marina slips, boat yards, recreational vessel dry storage yards, warehousing, and related activities. The trips generated by existing uses are subtracted from the project-related increase, resulting in a net project-related traffic impact.

## Existing Transit Service

Several public transit organizations, including LADOT, the Metropolitan Transit Authority (MTA), and the Municipal Area Express (MX), currently provide bus service within the study area and within the vicinity of the project. The travel routes of the transit lines are illustrated in Figure 3.2-2.

Transit stops are not present at the project site, nor do any MTA or LADOT transit lines serve Harbor Boulevard in the immediate project vicinity. However, the Waterfront Red Car Line parallels Harbor Boulevard from the World Cruise Center south to Miner and 22<sup>nd</sup> Streets, adjacent to the project site. Between Gaffey and Pacific, MTA Route 445 serves 22<sup>nd</sup> Street. No transit service is provided on Miner Street.

## Existing Rail Facilities

A railroad track runs parallel to and on the eastern side of Harbor Boulevard. The Waterfront Red Car Line currently runs on that north-south alignment adjacent to Harbor Boulevard from the Cruise Ship Terminal at Swinford Street, 1.5 miles south to 22<sup>nd</sup> and Miner Streets, adjacent to the project site. Intermediate stops are provided at 6<sup>th</sup> Street and Ports O' Call Village. The use of the railroad provides no significant delay to the traffic operations of Harbor Boulevard and its intersections.

## Existing Marine Vessel Circulation

The Port is located in San Pedro Bay. Three breakwaters protect the bay: San Pedro Breakwater, Middle Breakwater, and Long Beach Breakwater. The openings between these breakwaters, known as Angels Gate and Queen's Gate, provide entry to the Port of Los Angeles and the Port of Long Beach, respectively.

Vessels of many types—including fishing boats, pleasure vessels, passenger-cruise vessels, tankers, auto carriers, container vessels, dry bulk carriers, and barges—call or reside in the Port. Commercial vessels follow vessel traffic lanes established by the USCG when approaching and leaving the harbor (see Figure 3.2-3). These traffic lanes meet at the Precautionary Area, where incoming and outgoing traffic crosses.

A number of measures are in place in the harbor area to enhance the safety of vessel navigation. A Vessel Traffic Information Service (VTIS), operated by the Marine Exchange (see the next paragraph) and the USCG, has been established within the main approaches to the harbor. This system has shore-based radar to monitor traffic in the Precautionary Area and the immediate vicinity. In addition, covered vessels are required to report their positions and destinations to the VTIS at certain times and locations, and may also request information about traffic they could encounter in the Precautionary Area. (*Covered vessels* refers mostly to commercial vessels. Recreational vessels, in general, do not meet the criteria for participation in the VTIS.)

The Marine Exchange is a nonprofit organization affiliated with the Los Angeles Chamber of Commerce. The organization is supported by subscriptions from Port-related organizations that recognize the need for such an organization and use its services. This voluntary service is designed to enhance vessel safety in the main approaches (i.e., the Precautionary Area). Although the service is voluntary, all vessels are encouraged to participate in the interests of safety and prudent seamanship. The service consists of a coordinating office, specific reporting points, and VHF-FM radio communications used to communicate with participating vessels. Vessel traffic channels have been established in the harbor and numerous aids to navigation have been placed. Other operating rules and regulations have been established as needed.

Vessel operating rules and regulations outside the harbor entrances have been developed over the years as a result of past experience. The rules and regulations are dynamic and are continuously being updated by the USCG with input from the pilots, Ports of Los Angeles and Long Beach, U.S. Navy, shipping lines, and other involved entities. They are published in the Code of Federal Regulations and U.S. Coast Pilot, on nautical charts, and in Port Tariffs.

Within the Port, local rules are established and enforced by the Port Police of the Harbor Department. In general, the harbor speed limit in narrow channels is 6 knots.

### 3.2.2.2 Regulatory Setting

Because roadways traverse different city and county jurisdictions, maintenance is undertaken by the appropriate city/county public works department, and state roadways are maintained by Caltrans. In the study area, Caltrans has primary responsibility for I-110 and SR-47, and the City of Los Angeles has primary responsibility for the various roadways that compose the local roadway network.

The Circulation Element of the General Plan addresses requirements and guidelines relating to traffic. The City's Subdivision Ordinance contains design standards for roadways in the city.

## 3.2.3 Impacts and Mitigation

### 3.2.3.1 Traffic Impact Analysis Scenarios

In order to properly evaluate the potential impact of the proposed project on the local street system, it was necessary to develop estimates of future traffic conditions both with and without the project. The traffic study analyzes potential project-generated traffic impacts on the adjacent street system, assuming completion of the project by the year 2008. The analysis of future year traffic forecasts is based on projected conditions in 2008 both with and without the addition of the project traffic. The following traffic scenarios have been developed and analyzed as part of the study:

- **Existing 2002 conditions.** The analysis of existing traffic conditions provides a basis for the remainder of the study. Analysis of the existing conditions includes a description of the street system serving the site, current traffic volumes, and an assessment of the operating conditions at these locations.
- **Cumulative base (2008) conditions.** Future traffic conditions without the proposed project were developed for the year 2008. The objective of this analysis was to project future traffic growth and operating conditions that could be expected to result from regional growth and related projects in the vicinity of the project site by the year 2008.
- **Cumulative (2008) plus project conditions.** This traffic scenario provides projected traffic volumes and an assessment of operating conditions under future conditions with the addition of project-generated traffic. The impacts of the proposed project on future traffic operating conditions are then identified.

### 3.2.3.2 Thresholds of Significance

The *Draft LA CEQA Thresholds Guide* (City of Los Angeles 1998) divides transportation impacts into several categories. Determinations of impact significance in this chapter are based on the transportation criteria in the *Thresholds Guide*, where applicable. By category, the proposed project is considered to have a significant traffic and circulation impact if it would:

#### Intersection Capacity

**TRANS-1:** The proposed project will result in a significant traffic and circulation impact if it causes an increase in the V/C ratio on intersection operating conditions after the addition of project traffic, as determined by the following criteria:

Intersection Condition with Project Traffic		Project-Related Increase in V/C Ratio
LOS	V/C Ratio	
C	0.701–0.800	Equal to or greater than 0.040
D	0.801–0.900	Equal to or greater than 0.020
E, F	> 0.900	Equal to or greater than 0.010

Using these criteria, for example, a project would not have a significant impact at an intersection if it is operating at LOS C after the addition of project traffic and the incremental change in the V/C ratio is less than 0.040. However, if the intersection is operating at a LOS F after the addition of project traffic and the incremental change in the V/C ratio is 0.010 or greater, the project would be considered to have a significant impact at this location.

In accordance with LADOT analysis procedures, all intersections were analyzed as signalized intersections to determine a V/C ratio.

#### Street Segment Capacity

The *Thresholds Guide* indicates that street segment capacity impacts are generally evaluated in program-level analyses (such as specific plans or long-range development projects). As determined through consultation with LADOT, it is not necessary to evaluate street segment capacity impacts in addition to intersection capacity impacts. Therefore, street segment capacity impacts are not discussed further.

## Freeway Capacity

**TRANS-2:** A project would normally have a significant freeway capacity impact if project traffic causes an increase in the demand to capacity (D/C) ratio on a freeway segment or freeway on- or off-ramp of 2% or more capacity (D/C increase  $>0.02$ ), which causes or worsens LOS F conditions (D/C  $>1.00$ ).

## Neighborhood Intrusion Impacts

This issue involves the impacts of traffic generated by the project (and/or traffic diverted or shifted due to the project) on local streets in residential neighborhoods. Since the project will not result in increased traffic volumes on neighborhood streets or increased delays for vehicles exiting neighborhoods, the numeric criteria in the *Thresholds Guide* are not applicable to this study. As indicated in the 1998 EIR, “*since no residential streets will coincide with the travel paths of the site-generated traffic, there will not be any residential street impact.*” Therefore, neighborhood intrusion impacts are not discussed further.

## Project Access

**TRANS-3:** The project would have a significant project access impact if the intersections nearest the primary site access are projected to operate at LOS E or F during the a.m. or p.m. peak hour, under cumulative plus project conditions, and the project would cause an increase in the V/C ratio on the intersection operating condition after the addition of project traffic, as determined by bicycle, pedestrian, and vehicular safety factors.

## Transit System Capacity

**TRANS-4:** The project would result in a significant transit impact if it would exceed projected available transit capacity.

## Parking

**TRANS-5:** The project would result in a significant parking impact if the project provides less parking than needed.

## In-Street Construction Impacts

**TRANS-6:** The project would result in significant in-street construction impacts if it would cause substantial temporary traffic impacts, temporary loss of access, or temporary loss of bus stops or rerouting of bus lines.

## Maritime Traffic

The *Draft L.A. CEQA Thresholds Guide* does not provide specific guidance with regard to maritime traffic. The criteria used will be the following:

**TRANS-7** The project would result in significant maritime traffic impacts if it would reduce current safety levels for vessels navigating the Main Channel area and/or the project vicinity.

### 3.2.3.3 “No Net Increase” Policy

On October 10, 2001, the Board of Harbor Commissioners, acting on the request of Major Jim Hahn, adopted an environmental policy regarding the Port of Los Angeles operations. Specifically, the Board stated “... our goal will that there will be no net increase in air emissions or traffic impact from future Port operations.” The vehicle for this goal is to be the conduct of environmental studies to be carried out by LAHD staff in coordination with the newly formed Port Community Advisory Committee (PCAC). At the PCAC meeting of March 21, 2002, Board President, Commissioner Tonsich, also established that the date for establishing the baseline for meeting the goal of “no net increase” would be October 10, 2001.

In accordance with the wishes of the Board, LAHD staff prepared a concept plan for the Board and PCAC, which was made available in January 2002 and provided to the PCAC for their review. That plan includes as a first step developing an air emission inventory against which the baseline can be measured. To date, the inventory portion of the “no net increase” air quality work has begun but has not yet been completed. The focus of the air study is diesel particulates from Port operations. Even though the “no net increase” goal has been established by the LAHD, it is not meant to be included as an additional mitigation measure for each Port project. In the context of the CEQA, LAHD Port staff are directed to apply feasible mitigation measures to individual projects, which will help meet the Board’s no net increase goal. However, LAHD staff do not believe it is the intention of the Board to hold individual projects immediately accountable for achieving “no net increase.” Consequently, the no net increase goal is not used as a significance criteria in this traffic analysis of the Cabrillo Marina project.

### 3.2.3.4 Project Impacts

#### Direct and Indirect Impacts

##### **Impact TRANS-1: The Project Will Cause a Significant Increase in the V/C Ratio on Intersection Operating Conditions After the Addition of Project Traffic**

##### **Project-Related Trip Generation**

The proposed Cabrillo Way Marina project consists of redeveloping the existing site to accommodate a variety of land uses. Trip generation rates from the *Trip Generation, 6<sup>th</sup> Edition* (Institute of Transportation Engineers [ITE] 1997) were used to estimate the number of new trips associated with the development of the proposed project, as well as the number of existing trips to be removed. Trip generation rates used in the traffic study are shown in Table 3.2-4. The estimate of net future trips expected to be generated by the proposed project is summarized in Table 3.2-5.

The numbers of vehicle trips generated by the project facilities have been reduced to reflect the internally captured trips. Internally captured trips are trips that are generated in a multi-use development and make more than one stop within the development during a single visit. For example, a boat slip tenant may dine in one of the restaurants in the proposed development. The number of round trips in and out of the development driveways will only be one, instead of two as in the case of two stand-alone establishments. Since this effect is not accounted for when applying straight ITE trip generation rates, the process of internally captured trip reduction was necessary to reflect the multiple land use condition.

With the internal capture adjustment, the total numbers of trips generated by the project site are estimated to be 5,647 per weekday and 6,746 per weekend day (Table 3.2-5). The net increases in the number of daily trips (after factoring out the existing trips that will be replaced) are 3,867 per weekday and 5,194 per weekend day. By comparison, the 1998 Cabrillo Marina Phase II project would have generated daily net increases of 4,500 trips per weekday and 6,130 trips per weekend day.

The proposed project is expected to generate approximately 131 trips during the morning peak hour, 262 trips during the evening peak hour, and 585 trips during the weekend midday peak hour. The proposed project would result in a net increase of existing weekday trips along local roadways by up to 73 one-way vehicles during the a.m. peak-hour period and by 138 one-way vehicle trips during the p.m. peak-hour period. During the weekend midday peak hour, the project would result in a net increase of up to 295 one-way vehicle trips.

##### **Project-Related Trip Distribution**

The geographic distribution of the traffic generated by the proposed project depends on several factors. These factors include the type and density of the

**Table 3.2-4. Cabrillo Marina Trip Generation Rates**

Land Use	Unit (sf)	Code/ Source (ITE) <sup>(a)</sup>	Weekday Trip Rate						Weekend Trip Rate				Internal Capture Reduction Rate (%)	
			Daily	Total	AM Peak		PM Peak		Daily	Total	Peak Hour			
					In (%)	Out (%)	Total	In (%)			Out (%)	In (%)		Out (%)
Boat Slips	Slips	420 <sup>(b)</sup>	2.96	0.08	33	67	0.19	60	40	3.22	0.38	40	60	0
Dry Stack Boat Storage	Boat use	420 <sup>(b)</sup>	2.96	0.08	33	67	0.19	60	40	3.22	0.38	40	60	0
Marine Retail	1,000	814	40.67	1.20	60	40	2.59	43	57	42.04	4.93	57	43	30
Yacht Brokers	1,000	841	37.50	2.21	73	27	2.80	40	60	21.03	2.97	51	49	30
Restaurant	1,000	832	130.34	9.27	52	48	10.86	60	40	158.37	20.00	63	37	60
Restaurant	1,000	831	89.95	0.81	60	40	7.49	67	33	94.36	10.82	59	41	50
Marina Club	1,000	495	22.88	1.32	66	34	1.75	34	66	13.60	1.48	56	44	80
Boat Mall and Trailer Storage	1,000	841	37.50	2.21	73	27	2.80	40	60	21.03	2.97	51	49	30
Yacht Club and Storage Area	1,000	495	22.88	1.32	66	34	1.75	34	66	13.60	1.48	56	44	0
Storage Building	1,000	151	2.50	0.15	59	41	0.26	51	49	2.33	0.40	50	50	90
Market/Delicatessen	1,000	815	56.63	0.99	66	34	4.24	50	50	72.03	7.66	51	49	70
Plaza	Negligible new trips													
<b>Trips to be Replaced by Proposed Project</b>														
Existing Boat Slips	Slips	420 <sup>(b)</sup>	2.96	0.08	33	67	0.19	60	40	3.22	0.38	40	60	0
Warehouse <sup>(c)</sup>	1,000	150 <sup>(c)</sup>	1.24	0.11	82	18	0.13	76	24	0.31	0.03	64	36	0

Notes:

- a) All rates from *Trip Generation*, 6<sup>th</sup> Edition, Institute of Transportation Engineers unless otherwise stated.
- b) Weekend peak hour rate from Everest 1998.
- c) ITE warehouse rates reduced by 75% to reflect lower than average level of activity at these warehouses.



**Table 3.2-5. Cabrillo Marina Project Trip Generation**

Land Use	Unit (sf)	Size	Site-Generated Weekday Trips <sup>(b)</sup>							Site-Generated Weekend Trips <sup>(b)</sup>			
			Daily	AM Peak Hour			PM Peak Hour			Daily	Peak Hour		
				Total	In	Out	Total	In	Out		Total	In	Out
Boat Slips	Slips	675	1,998	54	18	36	128	77	51	2,174	257	103	154
Dry Stack Boat Storage	Boat use	1,000 <sup>(a)</sup>	148	4	1	3	10	6	4	966	114	46	68
Marine Retail	1,000	42	1,196	35	21	14	76	33	43	1,236	145	83	62
Yacht Brokers	1,000	25	656	39	28	10	49	20	29	368	52	27	25
Restaurant	1,000	5	261	19	10	9	22	13	9	317	40	25	15
Restaurant	1,000	10	450	4	2	2	37	25	12	472	54	32	22
Marina Club	1,000	10	46	3	2	1	4	1	2	27	3	2	1
Boat Mall and Trailer Storage	1,000	20	525	31	23	8	39	16	24	294	42	21	20
Yacht Club and Storage Area	1,000	10	229	13	9	4	18	6	12	136	15	8	7
Storage Building	1,000	20	5	0	0	0	1	0	0	5	1	0	0
Market/Delicatessen	1,000	5	85	1	1	1	6	3	3	108	11	6	6
Boat Storage	Spaces	335 <sup>(a)</sup>	50	1	0	1	3	2	1	643	38	15	23
Plaza	Negligible new trips												
<b>Total Trips Generated by Project</b>			<b>5,647</b>	<b>204</b>	<b>115</b>	<b>89</b>	<b>392</b>	<b>201</b>	<b>191</b>	<b>6,746</b>	<b>771</b>	<b>367</b>	<b>404</b>
Warehouse 6 <sup>(c, d)</sup>	1,000	30	37	3	3	1	4	1	3	9	1	1	0
Warehouses 9 and 10 <sup>(d)</sup>	1,000	135	167	15	12	3	17	4	13	41	4	3	1
Chilean Fruit Warehouse (Shed Berths 54–56) <sup>(d)</sup>	1,000	161	200	18	15	3	21	5	16	49	5	3	2
Existing Boat Slips	Slips	530 <sup>(e)</sup>	1,376	37	12	25	88	53	35	1,452	177	71	106
<b>Net New Trips</b>			<b>3,867</b>	<b>131</b>	<b>73</b>	<b>58</b>	<b>262</b>	<b>138</b>	<b>124</b>	<b>5,194</b>	<b>585</b>	<b>290</b>	<b>295</b>

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Notes:

- a) Assume 5% (50 boats) and 30% (300 boats) of boat storage to be actively used during weekday and weekend, respectively.
  - b) Trips have been adjusted for internal capture. See internal capture rates in "Trip Generation Rates" Table.
  - c) The actual size of Warehouse 6 is 74,100 sf. Only 40% of the existing space is currently occupied.
  - d) ITE rates reduced by 75% to reflect lower than average level of activity at these warehouses.
  - e) Considers only 85% of existing slips (i.e., 451 slips) for conservative estimate.
-

proposed land uses, the geographic distribution of population from which the employees and potential patrons of the proposed development are drawn, and the location of the project in relation to the surrounding street system. The specific distribution pattern for this project is illustrated in Figure 3.2-4.

### **Project-Related Traffic Assignment**

The traffic expected to be generated by the proposed project was assigned to the street network using the distribution pattern shown in Figure 3.2-4. The assignment of the project traffic for each of the six intersections analyzed is shown in Figure 14 of Appendix B for the weekday morning and evening peak hour periods and in Figure 15 of Appendix B for the weekend midday peak hour period.

## **Cumulative Base (2008) Traffic Projections**

The future year 2008 Cumulative Base traffic projections reflect growth in traffic from two primary sources. The first source is background, or ambient, growth in the existing traffic volumes, which reflects the effects of overall regional growth both in and outside the study area. The second source is the traffic generated by specific projects located within, or in the vicinity of, the study area.

The LADOT staff indicated that traffic volumes near the study area have increased historically at a rate of about 1% per year. Future increases in the background traffic volumes due to regional growth and development are assumed to continue at this rate. With the assumed completion date of 2008, the existing 2002 traffic volumes were adjusted upward by a factor of 6% to reflect this area-wide regional growth. The resulting Existing Plus Ambient Growth traffic volumes are illustrated in Figure 6 of Appendix B for the weekday morning and evening peak hour volumes and Figure 7 of Appendix B for the weekend midday peak hour volumes.

As indicated, the second major source of traffic growth in the study area is expected from other future development projects in the area. These “cumulative projects” are those planned developments expected to be completed within the same general timeframe as the proposed project. Data describing cumulative projects in the area were obtained from the LADOT and the LAHD. Twelve cumulative projects were identified within the study area and are summarized in Table 3.2-6.

### **Cumulative Base (2008) Trip Generation**

Trip generation estimates for each of the cumulative projects were developed using trip generation rates contained in *Trip Generation, 6<sup>th</sup> Edition* (ITE 1997). As summarized in Table 3.2-6, the cumulative projects are expected to generate approximately 1,659 trips during the weekday morning peak hour, 3,602 trips during the weekday evening peak hour, and 3,855 trips during the weekend midday peak hour.

**Table 3.2-6. Cumulative Project Trip Generation**

No.	Element	ITE LU Code Size Units			Weekday									Saturday		
					Daily Total	AM Peak Hour			PM Peak Hour			Daily Total	Midday Peak Hour			
						In	Out	Total	In	Out	Total		In	Out	Total	
1	West Basin Marine Terminal Improvements—POLA Automobiles <sup>(a)</sup>	N/A	N/A	N/A	400	110	15	125	70	110	180	400	70	33	103	
2	Carnival Cruise Terminal—Relocation <sup>(b)</sup>	N/A	N/A	N/A	2,627	152	152	304	51	48	99	2,627	209	162	371	
2A	Carnival Cruise Terminal—Removal <sup>(b)</sup>	N/A	N/A	N/A	(2,627)	(152)	(152)	(304)	(51)	(48)	(99)	(2,627)	(209)	(162)	(371)	
3	Fisherman’s Village and Day Cruises—Relocation															
	High-Turnover Restaurant <sup>(c)</sup>	832	70	KSF	9,124	67	62	130	228	152	380	11,086	882	518	1,400	
	Day Cruise Ships <sup>(d)</sup>	N/A	8	Ships	531	39	0	39	37	132	169	468	68	83	151	
	Remove Ex. Rio Doce Pasha <sup>(e)</sup>	010	(17)	Acres	(203)	(7)	(11)	(19)	(8)	(9)	(17)	(101)	(7)	(11)	(19)	
	Net New Trips				9,452	99	51	150	257	275	532	11,453	943	590	1,532	
3A	Fisherman’s Village and Day Cruises—Removal															
	High-Turnover Restaurant	832	70	KSF	(9,124)	(67)	(62)	(130)	(228)	(152)	(380)	(11,086)	(882)	(518)	(1,400)	
	Day Cruise Ships <sup>(d)</sup>	N/A	8	Ships	(531)	(39)	0	(39)	(37)	(132)	(169)	(468)	(68)	(83)	(151)	
	Net New Trips				(9,655)	(106)	(62)	(169)	(265)	(284)	(549)	(11,554)	(950)	(601)	(1,551)	
4	Pacific Corridor Redevelopment Project <sup>(f)</sup>															
	Commercial/Retail <sup>(g)</sup>	820	602	KSF	25,836	378	242	620	1,081	1,171	2,251	25,294	1,556	1,436	2,992	
	Manufacturing	140	223	KSF	854	126	38	163	60	106	165	333	31	31	63	
	Residential	220	1,380	DU	9,149	113	591	704	573	282	856	8,818	481	237	718	
	Net New Trips				30,463	524	740	1,264	1,456	1,325	2,781	29,278	1,758	1,448	3,206	
5	Nightclub/Sports Bar <sup>(h)</sup>	N/A	17	KSF	932	14	7	21	181	85	266	932	181	85	266	
6	Mt. Sinai Missionary Baptist Church	N/A	15	KSF	374	30	30	60	37	26	63	144	36	13	48	
7	Regal Theater <sup>(i)</sup>	N/A	1	Screen	153	0	0	0	51	38	89	529	52	43	90	
8	Gas Station and Mini-Mart <sup>(h)</sup>	N/A	1	KSF	1,953	61	61	121	81	81	161	1,953	81	81	161	
9	15 <sup>th</sup> Street Elementary School—San Pedro	520	300	Students	306	51	36	87	36	42	78	0	0	0	0	

No.	Element	ITE LU Code Size Units			Weekday							Saturday			
					Daily Total	AM Peak Hour		PM Peak Hour			Daily Total	Midday Peak Hour			
						In	Out	Total	In	Out		Total	In	Out	Total
10	Pedestrian Promenade	N/A	N/A	N/A	Negligible trips										
11	Fishing Reef	N/A	N/A	N/A	Negligible trips										
12	Cabrillo Beach Aquarium Expansion	N/A	N/A	N/A	Negligible trips										
<b>Total Net New Trips</b>					<b>34,378</b>	<b>783</b>	<b>877</b>	<b>1,659</b>	<b>1,904</b>	<b>1,698</b>	<b>3,602</b>	<b>33,135</b>	<b>2,169</b>	<b>1,692</b>	<b>3,855</b>

Notes:

- a) Note: Sizes of the existing Ports O’ Call Village, Fisherman’s Village, 22nd Street Landing Uses, Westways Terminal and Rio Doce Pasha sites are estimated.
- b) Weekday midday and daily totals used for weekend totals. This is a conservative estimate.
- c) Based on data from “Traffic and Parking Study for the Carnival Cruise Passenger Terminal” for the Port of Long Beach (Kaku Associates 2000), p. 23.
- d) Based on field observations at this location, a.m. weekday trips were assumed to be 20% of the ITE rate and p.m. weekday trips were assumed to be 50% of the ITE rate.
- e) Based on an assumed typical operating scenario.
- f) Peak hour rates based on percentage of peak hour to daily of LU 030 (Truck Terminal); assume that Saturday trip generation equals 50% of weekday and that Saturday peak hour equals weekday a.m. peak hour.
- g) Based on data from “Pacific Corridor Redevelopment Project, Final EIR, Appendix F” for the City of LA (Meyer, Mohaddes Associates 2001). The Net New Trips reflects a 15% reduction in trips due to local “linked” trip estimates.
- h) ITE Trip Generation, 6<sup>th</sup> Edition. Rates for AM and Saturday Peak Hours estimated based on proportions in the data on Shopping Centers (ITE LU 820). Pass-by trips were assumed to be 25% of all retail commercial trips.
- i) Weekend midday rates assumed to be the same as the weekday p.m. peak rates.
- j) Theater is to be 2,714 sf. This size supports the assumption of a single screen auditorium.

### **Cumulative Base (2008) Trip Distribution**

The geographic distribution of the traffic generated by the cumulative projects was determined in the same manner as described for the project-related trips alone. Traffic related to the relocation of Fisherman's Village (Cumulative Project 2) would not be new traffic, but would rather be shifted from its existing distribution. This has resulted in a net negative assignment through certain intersection movements.

### **Cumulative Base (2008) Traffic Assignment**

The trip generation estimates were assigned to the local street system using the trip distribution pattern described above. The resulting Cumulative Project Only traffic volumes are illustrated in Figure 9 of Appendix B for the weekday morning and evening peak hour volumes and Figure 10 of Appendix B for the weekend midday peak hour volumes. These volumes, which were then added to the existing traffic volumes after the adjustment for ambient growth, are illustrated in Figures 11 and 12 of Appendix B. They represent Cumulative Base conditions (i.e., future conditions without the proposed project).

### **Cumulative Base (2008) Traffic Conditions**

The year 2008 Cumulative Base peak hour traffic volumes were analyzed to determine the projected V/C ratio and level of service for each analyzed intersection. Table 3.2-7 summarizes the future levels of service. As indicated, five of the six study intersections are projected to operate at an acceptable level of service (LOS D or better) during all analyzed time periods. The intersection of Harbor Boulevard and the SR-47 ramps/Swinford Street is projected to operate at LOS F during both the weekday evening peak hour and weekend midday peak hour.

## **Future Year 2008 Traffic Impact Analysis**

### **Cumulative Plus Project Traffic Impacts**

The project-generated traffic volumes cited previously were added to the Cumulative Base traffic volumes to develop Cumulative Plus Project weekday morning and evening peak hour traffic volumes, as well as Cumulative Plus Project weekend midday peak hour traffic volumes (illustrated in Figures 16 and 17 of Appendix B, respectively).

The traffic impact analysis compares the projected levels of service at each study intersection under the Cumulative Base and Cumulative Plus Project conditions to estimate the incremental increase in the V/C ratio caused by the proposed project. This provides the information needed to assess the potential impact of the project using significance criteria established by LADOT.

The proposed intersection of Miner Street and 22<sup>nd</sup> Street and the new project access intersection west of Miner on 22<sup>nd</sup> Street were analyzed under the Cumulative Plus Project conditions and were found to operate at acceptable levels of service.

**Table 3.2-7. Intersection Levels of Service Analysis/Future Base Conditions (Year 2008)**

Intersection	Peak Hour	Cumulative Base	
		V/C or Delay	LOS
1. Harbor Boulevard and I-110 NB on-ramp	AM	0.494	A
	PM	0.571	A
	Weekend	0.653	B
2. Harbor Boulevard and SR-47 Ramps/Swinford Street	AM	0.802	D
	PM	1.092	F
	Weekend	1.087	F
3. Harbor Boulevard and 6 <sup>th</sup> Street	AM	0.393	A
	PM	0.516	A
	Weekend	0.661	B
4. Harbor Boulevard/Miner Street and Crescent Avenue	AM	0.327	A
	PM	0.383	A
	Weekend	0.251	A
5. Miner Street and 22 <sup>nd</sup> Street (realigned and reconfigured)	AM	0.369	A
	PM	0.380	A
	Weekend	0.340	A
6. Via Cabrillo Marina and 22 <sup>nd</sup> Street	AM	0.204	A
	PM	0.138	A
	Weekend	0.234	A

**Table 3.2-8.** Intersection Levels of Service Analysis/Future Conditions Plus Project (Year 2008)

Intersection	Peak Hour	Cumulative Base		Cumulative Base Plus Project			
		V/C or Delay	LOS	V/C or Delay	LOS	Increase in V/C	Significant Impact
1. Harbor Boulevard and I-110 NB on-ramp	AM	0.494	A	0.509	A	0.015	No
	PM	0.571	A	0.605	B	0.034	No
	Weekend	0.653	B	0.731	C	0.078	No*
2. Harbor Boulevard and SR-47 Ramps/Swinford Street	AM	0.802	D	0.835	D	0.033	Yes
	PM	1.092	F	1.155	F	0.063	Yes
	Weekend	1.087	F	1.227	F	0.140	Yes
3. Harbor Boulevard and 6 <sup>th</sup> Street	AM	0.393	A	0.408	A	0.015	No
	PM	0.516	A	0.556	A	0.040	No
	Weekend	0.661	B	0.735	C	0.074	No*
4. Harbor Boulevard/Miner Street and Crescent Avenue	AM	0.327	A	0.344	A	0.017	No
	PM	0.383	A	0.397	A	0.014	No
	Weekend	0.251	A	0.337	A	0.086	No
5. Miner Street and 22 <sup>nd</sup> Street (realigned and reconfigured)	AM	0.369	A	0.278	A	-0.091	No
	PM	0.380	A	0.409	A	0.029	No
	Weekend	0.340	A	0.449	A	0.109	No
6. Via Cabrillo Marina and 22 <sup>nd</sup> Street	AM	0.204	A	0.209	A	0.005	No
	PM	0.138	A	0.147	A	0.009	No
	Weekend	0.234	A	0.255	A	0.021	No

\*Considered not significant as explained in the Cumulative Plus Project Traffic Impacts section above.



In the cumulative plus project conditions, the future intersection of 22<sup>nd</sup> Street at the project entrance west of Miner Street is projected to operate at LOS A during all analyzed time periods, as summarized below.

<b>Analysis Period</b>	<b>V/C Ratio</b>	<b>LOS</b>
Weekday a.m. peak hour	0.221	A
Weekday p.m. peak hour	0.240	A
Weekend midday peak hour	0.407	A

The results of the Cumulative Plus Project analysis, which are presented in Table 3.2-8, indicate that the project would cause the intersection of Harbor Boulevard and 6<sup>th</sup> Street to decline from LOS B to LOS C in the weekend peak hour and the intersection of Harbor Boulevard and the I-110 NB on-ramp to decline from LOS A to LOS B in the weekday PM peak hour and from LOS B to LOS C in the weekend peak hour. However, as determined by LADOT during the review of the 1998 proposed project, the impacts at the intersections of Harbor Boulevard and the I-110 NB on-ramp and Harbor Boulevard and 6<sup>th</sup> Street are not considered significant strictly based on V/C ratio increases for the following reasons:

- The intersections will operate at a reasonably good level of service ‘C’ under the Cumulative Plus Project conditions.
- The traffic impact from the project is seasonal and occurs only during the summer weekend period, rather than on a typical weekday.
- Intersection improvements for these seasonal/weekend impacts may cause undesirable disruption during other non-peak times.

From the evaluation of the Cumulative Plus Project Analysis, it was determined that the proposed project would result in the following significant impact:

- Project-related traffic will exacerbate the intersection deficiency at Harbor Boulevard and the SR-47 ramps/Swinford Street intersection, which will operate at LOS F during all analyzed time periods.

**MM TRANS-1:** Implement Eastbound Intersection Improvement Measures for Harbor Boulevard and SR-47 ramps/Swinford Street

To improve the intersection operation and to reduce the left-turn congestion on the northbound approach, a second left-turn lane shall be added to the northbound approach. The resulting lane configuration shall be two left-turn lanes, two through lanes, and one shared through/right-turn lane. This change shall include removing the raised median and re-striping the intersection.

**Residual Impacts**

During the 1998 review of the previously proposed project on the site, LADOT staff prepared a preliminary design plan that demonstrated the feasibility of the

MM TRANS-1 improvements. The existing and future year 2008 study area intersection configurations are illustrated on Figure 3.2-5.

The effectiveness of the recommended mitigation improvements was further analyzed by re-evaluating the significantly impacted intersection. The effectiveness of the mitigation improvements was analyzed by re-evaluating the significantly impacted intersection. This analysis was based on the same methodologies and techniques as in the preceding Cumulative Base and Cumulative Plus Project analyses, with the exception that the mitigation measures were assumed to be “in place” at the affected intersection. The results of the Cumulative Plus Project with Mitigations analysis, which are presented in Table 3.2-9, indicate that the intersection of Harbor Boulevard and SR-47 ramps/Swinford Street is projected to operate at LOS B during the a.m. peak hour and at LOS E during the p.m. peak hour and weekend mid-day peak hour, effectively mitigating the project-related impacts. Therefore, with implementation of Mitigation Measure TRANS-1, this impact would be reduced to a level that is less than significant.

### **Impact TRANS-2: The Project Would Not Result in Significant Freeway Capacity Impacts**

The project-related effects on freeway capacity are expressed in terms of study area intersection performance. Those impacts are addressed in detail under Impact TRANS-1 in the previous section.

Additionally, the project will not exceed a level of service standard established for CMP designated roads or highways. As indicated previously, there are no CMP arterial monitoring intersections or freeway monitoring locations in the vicinity of the proposed project, nor does the project trigger an analysis at the nearest CMP monitoring station. Accordingly, no CMP traffic impacts will result from project implementation.

#### **Mitigation Measures**

No mitigation is required.

#### **Residual Impacts**

This impact would be less than significant.

**Table 3.2-9.** Intersection Levels Of Service Analysis—Future Conditions With Mitigations (Year 2008)

Intersection	Peak Hour	Cumulative Base		Cumulative Base Plus Project				Cumulative Base Plus Project with Mitigations			
		V/C or Delay	LOS	V/C or Delay	LOS	Increase in V/C	Significant Impact	V/C or Delay	LOS	Increase in V/C	Significant Impact
2. Harbor Boulevard and SR-47 Ramps/ Swinford Street	AM	0.802	D	0.835	D	0.033	Yes	0.657	B	-0.145	No
	PM	1.092	F	1.155	F	0.063	Yes	0.956	E	-0.136	No
	Weekend	1.087	F	1.227	F	0.140	Yes	0.997	E	-0.090	No

### **Impact TRANS-3: The Project Would Not Have a Significant Project Access Impact at the Intersections Nearest the Primary Site Access, Nor Would it Cause an Increase in the V/C Ratio on Intersection Operating Conditions after the Addition of Project Traffic, as Determined by Bicycle, Pedestrian, and Vehicular Safety Factors**

Two ingress/egress locations would be created at the project site: one at Miner Street and 22<sup>nd</sup> Street, and a second on 22<sup>nd</sup> Street west of Miner Street, as shown in Figure 2-4 (Conceptual Site Plan). West of Miner Street, the future intersection on 22<sup>nd</sup> Street would link the boat mall and 22<sup>nd</sup> Street Landing parking lot with the plaza, the pedestrian promenade, and other visitor-oriented retail and marina uses along the waterfront. The project proposes that this location would be signalized to facilitate traffic flow and to assist pedestrians in safely crossing 22<sup>nd</sup> Street to reach the various uses proposed on the site.

The proposed project would provide four driveways along Miner Street south of 22<sup>nd</sup> Street, each of which would be controlled by a stop sign. The site plan for the proposed project shows this segment of Miner Street (south of 22<sup>nd</sup> Street) as a 2-lane roadway divided by an unbroken raised and landscaped center median, similar to the existing Via Cabrillo Marina. The project will include breaks in the raised median and left-turn pockets will be provided at these driveways to facilitate the flow of traffic into and out of the parking lots located in this area of the project. All proposed vehicular traffic controls will facilitate pedestrian movements along the proposed promenade, and no significant impacts will result.

At the new signalized project intersection west of Miner on 22<sup>nd</sup> Street, the northbound and the southbound driveways would each provide a shared left-turn/through lane and a right-turn lane. The project proposes that the eastbound and westbound approaches to this future intersection would each provide a shared left-turn/through lane and a shared right-turn/through lane.

While not required as mitigation for the proposed project, it is recommended that 22<sup>nd</sup> Street be re-striped provide left-turn lanes at this location, resulting in eastbound and westbound lane configurations of one left-turn lane, one through lane and one shared through/right-turn lane, to provide storage for vehicles entering the project site and to improve traffic flow on 22<sup>nd</sup> Street.

#### **Traffic Hazards**

The proposed intersection modifications at Miner and 22<sup>nd</sup> Streets would shift the southern leg of the intersection eastward by approximately 100 feet to allow the development of the proposed dry stack storage building. Intersection improvements would also include abandoning the existing railroad grade crossing on 22<sup>nd</sup> Street and the rail line parallel to Miner Street from that point southward.

The proposed Miner/22<sup>nd</sup> intersection realignment would shift the northern leg of the intersection eastward beginning approximately 600 feet north of 22<sup>nd</sup> Street in order to align it directly with the shifted southern leg. The road alignment would require relocating the existing Red Car Line tracks about 120–190 feet eastward, and moving the existing station southeast of the proposed new Miner/22<sup>nd</sup> intersection. A new at-grade crossing is proposed to permit the continued operation of the Red Car Line across 22<sup>nd</sup> Street. Traffic flow on 22<sup>nd</sup> Street would be temporarily disrupted during train passage events, although the extent of this disruption cannot currently be quantified because future operating plans for this rail line are not available.

While the creation of any new grade crossing necessitates the careful control of vehicular traffic, the geometry of the crossing that would be created is not unusual. Because the railroad tracks would cross 22<sup>nd</sup> Street at a right angle, vehicles approaching the crossing would not be likely to accidentally drive around lowered gate arms during the presence of a train. Given the width of the roadway at this point and the length of the rail line that would need to be protected, it is likely that the crossing could be controlled with a single gate arm on each approach. The creation of this new grade crossing would require the approval of the California Public Utilities Commission, which oversees rail safety in the State. If the existing rail line were not relocated east of the shifted Miner Street, a new grade crossing would be created at Miner Street and additional safety issues would arise. For this reason, the project proposes relocation of the existing rail line.

Additionally, the proposed reconfiguration of the Miner Street/22<sup>nd</sup> Street intersection will require the removal and relocation of signalization, new directional and thematic signage, and appropriate roadway lighting, striping and markings. The proposed improvements will ensure adequate provision of rail, vehicle, and pedestrian separation and safety.

### **Pedestrian Circulation**

Major pedestrian gateways into the Cabrillo Way Marina are proposed at the new intersection on 22<sup>nd</sup> Street, west of Miner Street, at the plaza. The intersection will be signalized, including pedestrian signal heads and push buttons, to facilitate traffic movements and protect pedestrian movements across 22<sup>nd</sup> Street between parking lots and destinations. The project would include north-south and east-west pedestrian crossings at the new 22<sup>nd</sup> Street intersection. No unique design issues have been encountered that would require special mitigation of potential pedestrian or rail safety impacts. This impact is considered less than significant.

Pedestrian circulation would occur along nearly the entire perimeter of the project site south of 22<sup>nd</sup> Street. The relocated Red Car Line station would create pedestrian activity along 22<sup>nd</sup> Street between the relocated station (east of Miner Street) and the proposed plaza at the new 22<sup>nd</sup> Street project entrance. The future signalized intersection of the project driveways with 22<sup>nd</sup> Street would be provided with pedestrian crosswalks. The existing Cabrillo Marina Phase I promenade would be extended eastward into the project site along the waterfront to the proposed plaza. From that point, the pedestrian pathway would continue

southward, and would be adjacent to the plaza, marine retail uses, yacht brokers, the marina club, and restaurants. The pedestrian pathway would then follow the shoreline northward to the dry stack launching area where it would continue along northward, eastward and southward parallel to the dry stack building. It would then rejoin the waterfront and continue southward to the proposed yacht club near the southern end of the project site. For safety reasons, pedestrians would not be allowed to pass through the dry stack launching area, nor would they be allowed through the proposed boat launch area at the southern end of the project site. In addition to the proposed pedestrian pathway along the waterfront, the project would construct a sidewalk along the western side of the realigned segment of Miner Street south of 22<sup>nd</sup> Street.

The provision of the proposed pedestrian pathway along the waterfront areas of this project appears to be consistent with the concept of providing continuous public access to the waterfront. The technical report for the *Waterfront Access Program* (Max Development LLC and Los Angeles Harbor Watts Economic Development Corporation, 2002) shows a promenade alignment along the entire waterfront of the project area, but notes that its specific routing and design would be subject to redevelopment plans for pier sites.

### **Emergency Access**

The key circulation improvements described in Chapter 2, “Project Description,” are designed to accommodate public and emergency access to the proposed project. The project circulation plan has been designed in accordance with the emergency access standards of the LAFD, the LAPD, and the Port Police. As indicated in Chapter 3.12, “Public Services and Utilities,” those agencies were contacted and have confirmed that emergency response times would be adequate to serve the proposed project. This impact is considered less than significant.

Concerning the use of Shoshonean Road as a dedicated ingress to the existing Cabrillo Beach boat launch parking area, Shoshonean Road currently serves as a secondary emergency access road to Cabrillo Beach. Preliminary discussions with the LAFD indicate that the Fire Department favors unlocking the gates at the southern terminus, and that limited boater traffic would not interfere with emergency access. With two 12-foot travel lanes, the road can accommodate most fire apparatus, even with a full queue of boater vehicles. This impact is considered less than significant.

### **Mitigation Measures**

No mitigation is required.

### **Residual Impacts**

This impact would be less than significant.

### **Impact TRANS-4: The Project Would Not Result in a Significant Transit Impact Since it Will not Exceed Projected Available Transit Capacity**

The project does not conflict with adopted policies, plans, or programs supporting alternative transportation. As indicated previously, bus transit stops are not present at the project site. No MTA or LADOT transit lines serve the immediate project vicinity; however, they may be extended to serve the Cabrillo Way Marina and Cabrillo Marina Phase I areas if ridership demand is present. Continued coordination among the LAHD and transit agencies will ensure the adequate provision of transit, if deemed appropriate.

The Waterfront Red Car Line parallels Harbor Boulevard from the World Cruise Center south to Miner Street and 22<sup>nd</sup> Street, adjacent to the project site. The proposed project would not interfere with the continued operation of the Red Car Line.

#### **Mitigation Measures**

No mitigation is required.

#### **Residual Impacts**

This impact would be less than significant.

### **Impact TRANS-5: The Project Would Not Result in a Significant Parking Impact since the Project Provides More Parking Than Needed**

Parking for the proposed boat slips is provided as per the *Layout and Design Guidelines for Small Craft Berthing Facilities* of the California Department of Boating and Waterways (DBAW). Other uses are based on City of L.A. standards and will be located for convenience in proportion to the specific and mixed uses being served. The total planned number of parking spaces is 1,696. The project site plan includes four parking areas. The location and total spaces for each lot is as follows:

- Parking Lot 1 (735 spaces), located near the retail/dry stack area;
- Parking Lot 2 (204 spaces), located on the north side of 22<sup>nd</sup> Street and along Miner Street;
- Parking Lot 3 (605 spaces), located at the Watchorn Basin; and
- Replacement of 22<sup>nd</sup> Street Landing parking (152 spaces), located on the north side of 22<sup>nd</sup> Street.

Table 3.2-10 estimates a total parking requirement of 1,664 parking spaces, based on relevant City of L.A. and DBAW standards, plus the full replacement of the existing parking on the site that now serves 22<sup>nd</sup> Street Landing. Because the

**Table 3.2-10. Cabrillo Marina Parking Requirement and Proposed Supply**

Land Use	Size	Unit (s.f.)	Assumed Parking Ratio	Parking Requirement
Boat Slips	675	Slips	0.6/slip	405
Dry Stack Boat Storage <sup>(a)</sup>	1,000	Boat use	0.33/boat	330
Marine Retail	42	1,000	5/1,000	210
Yacht Brokers	25	1,000	4/1,000	100
Restaurant	5	1,000	10/1,000	50
Restaurant	10	1,000	10/1,000	100
Marina Club	10	1,000	5/1,000	50
Boat Mall and Trailer Storage	20	1,000	5/1,000	100
Yacht Club and Storage	10	1,000	4/1,000	40
Storage Building	20	1,000	1/1,000	20
Market/Delicatessen	5	1,000	5/1,000	25
Boat Storage	335	Spaces	0.25/boat	84
Replacement Parking for 22 <sup>nd</sup> Street Landing	150	Spaces	1 space/1 space	150
Parking Required				1,664
Parking Provided				1,696

<sup>a</sup> Assumes 30% of boat storage (i.e., 300 boats) to be actively used.

Source: Project Applicant, based on City of Los Angeles Planning and Zoning Code, Section 12.21, 9/13/2000 revision and California Department of Boating & Waterways standards.



proposed parking supply of 1,696 parking spaces exceeds the required parking supply, no significant parking impact will result.

#### **Mitigation Measures**

No mitigation is required.

#### **Residual Impacts**

This impact would be less than significant.

### **Impact TRANS-6: The Project Would Not Result in Significant In-Street Construction Impacts Since it Would not Cause Substantial Temporary Traffic Impacts, Temporary Loss of Access, or Temporary Loss of Bus Stops or Rerouting of Bus Lines**

Generally, the geographical distribution of construction traffic generated by a development site is dependent on several factors. These factors range from location of demolition contractors, materials and equipment haulers and construction employees to the locations of access points relative to surrounding streets, congestion, delays, physical characteristics of adjacent streets, etc. The directional distribution pattern used in this analysis reflects the same patterns developed for operational traffic conditions. Site access is limited to only several primary routes, and large construction vehicles may be further restricted by vehicle weight limits on light-duty streets.

The primary construction vehicle entrance to the site will be at 22<sup>nd</sup> and Miner Streets. Since only existing on-site uses will be affected by project construction, the project will not cause a temporary loss of access to any offsite existing uses. Furthermore, the project site is not within ¼ mile of any established bus routes and will not affect their continued operation during the construction period.

The Miner/22<sup>nd</sup> intersection realignment would temporarily disrupt the Waterfront Red Car Line service as the existing station is permanently relocated south of 22<sup>nd</sup> Street during construction, as described previously. The remainder of the Red Car Line would be unaffected by project construction. The construction-related disruption of Red Car Line service at its southern terminus is not considered a significant transit impact since it serves as a tourist amenity rather than as a commuter necessity.

#### **Mitigation Measures**

No mitigation is required.

#### **Residual Impacts**

This impact would be less than significant.

## **Impact TRANS-7: The Project Would Not Result in Significant Maritime Traffic Impacts Since it Would Not Reduce Current Safety Levels for Vessels Navigating the Main Channel Area and/or the Project Vicinity**

### **Construction**

During construction, there will be no impacts to vessels navigating the Main Channel and/or the project vicinity in the West Channel area. There will actually be a reduction of vessels from existing conditions while the new marina is constructed. This will result in fewer vessels from this marina being involved in recreational activities. There will be some vessels related to the construction phases of the project (e.g., land cut removal, dredging, landfill construction, revetment work, and installation of the replacement floating dock system with guide piles, etc.), but the number of vessels still will be fewer than under existing conditions. Furthermore, the vessels related to the construction effort will be localized in the project area, and will not be leaving the area to go to the Outer Harbor or the Main Channel.

### **Operation**

At full buildout, the marina vessels are expected to operate in the Outer Harbor or leave the federal breakwater for various recreational boating activities. These activities include, but are not limited to, fishing trips, visits to Catalina Island, and other group activities such as regattas. Very few are expected to go north along the Main Channel; therefore, the Main Channel will not be discussed further here. This analysis will concentrate on congestion and related safety concerns for the project site vessels that will be going to and from the project site and out of the San Pedro breakwater at Angels Gate via the Outer Los Angeles Harbor to reach their recreational destinations.

The West Channel will maintain at a minimum width of 300 feet between the farthest extension of docks from the east and west sides of the channel. This would leave ample maneuvering room for bi-directional vessel traffic to navigate in the West Channel area where the two marinas would be on either side. The marina layout was developed to optimize the number of slips, access to restrooms and the parking area, and vessel circulation. This will help decrease vessel access conflicts between those vessels being launched at the dry stack area and others being serviced at the fuel dock/pumpout station, and those needing egress/ingress to a given fairway to access their slip. Careful consideration was placed on developing a layout to optimize use of available water area and to minimize travel distances between slips and parking areas.

Estimating the number of vessels that will need access to and from the project site to the various recreational destinations inside and/or outside the federal breakwater will help determine whether or not there may be any impacts to navigation and safety. Historical usage patterns for dry stack operations show a 20–30% usage rate on a weekend day, 5–10% on weekdays, and 30% on holiday periods. The maximum number of boats that could be launched on any one day would be 40%, but only on a few unique days such as the Fourth of July

(Koll/Westrec 1997). However, this is an atypical day and will not be used as the worst-case day. A more realistic worst-case day would be based on 30%.

The typical dry stack boat launch cycle ranges from 3 to about 6 minutes from identification to vessel launching and staging. Thus 10 to 20 boats per hour per lift operator could be launched. With up to 3 forklifts planned for the site, this facility would average 45 boats an hour launching capacity.

In general, for day use recreational activities, the most active window for boat launching is typically from 7 a.m. to 11 a.m. Boats being returned after use would be staged in the wet slips adjacent to the launch area for retrieval and replacement into the storage facility. The retrieval operations would then typically occur from 4 p.m. to 8 p.m.

This indicates that during the four-hour morning peak launch operation, 180 vessels could be launched under average conditions. Launching can continue to occur throughout the day (11 a.m. to 4 p.m.) at reduced rates (10 per hour per operator for a total of 30 per hour), which can result in an additional 150 vessel launches. This represents the potential for launching more than 330 vessels per day. The retrievals would occur at the same rates or could be managed in conjunction with the wet slip staging areas. Further, depending on the operations, a forklift can launch a vessel and pick up a vessel to be returned to the stack in a single operational cycle. This operational scenario supports the total number of launches or movements of the 30% usage rate for the dry stack operations based on infrastructure constraints and boater operational behavior (i.e., 30% of the total dry stack storage capacity is 300 boats).

In typical wet slip marinas, the number of boats that actually leave their slips on holidays for various recreational activities is approximately 15 – 20%. This means that the estimated boats leaving the marina will be about 101 – 135 boats per day based on the 675 proposed number of slips. Therefore, the total number of boats leaving the combined berthing options would be approximately 465 per peak day ( $465 = 330 + 135$ ).

Once the boats leave their respective locations, the question is whether or not it results in any congestion in the vicinity of the project site and related safety concerns. Recreational vessels normally do not stay inside the federal breakwater when going out for recreational activities. This also avoids the use of anchorage Outer Harbor areas, which are intended for, and used by, commercial vessels. There is ample space for recreational vessels to maneuver about in the Outer Harbor en route to exiting the Angels Gate, and there is more area once they are out of the federal breakwater. It should be noted that recreational vessels are not “covered” vessels and do not need to report to the VTIS or any other entity; their only responsibility is following USCG rules and regulations for safety. Under existing conditions, when recreational vessels leave the West Channel marina area, they exit the federal breakwater via Angels Gate. Once out of the federal breakwater, they are encouraged to stay outside of the Precautionary Area and the Vessel Traffic Separation Scheme (VTSS) lanes (coastwise traffic approach lanes to the San Pedro Bay port complex), which they do for the most part.

Further, safety concerns related to congestion are not expected due to the recent trend in the reduction of commercial vessel calls since the early 1990s. While the commercial vessel calls are continuing to decrease, the number of recreational vessels will not increase, except for those vessels leaving and later returning to the West Channel area. Therefore, access conflicts between commercial and recreational vessels will not significantly increase as a result of the proposed project. The proposed project will increase the number of recreational vessels that will be using some of the same channels and areas used by commercial vessels, but only as transit points en route to their respective recreational destinations. Therefore, the safety navigational levels in the region of influence will not be affected.

**Mitigation Measures**

No mitigation is required.

**Residual Impacts**

This impact would be less than significant.

**Cumulative Impacts**

As stated in the traffic analysis methodology, cumulative traffic impacts from annual background growth and related projects were addressed in the future year (2008) impact analysis. The project impacts are determined to be incrementally mitigable and cumulatively less than significant, as indicated throughout this chapter. Therefore, the project would not make a considerable contribution to the cumulative impacts related to traffic and circulation.

### 3.2.3.5 Mitigation Monitoring Plan Summary

Impact	Mitigation Measure	Timing and Method	Responsible Parties	Residual Impacts
<p>TRANS-1: The project will cause a significant increase in the V/C ratio on intersection operating conditions after the addition of project traffic.</p>	<p>MM TRANS-1: Implement Eastbound Intersection Improvement Measures for Harbor Boulevard and SR-47 ramps/Swinford Street</p> <p>To improve the intersection operation and to reduce the left-turn congestion on the northbound approach, a second left-turn lane shall be added to the northbound approach. The resulting lane configuration shall be two left-turn lanes, two through lanes, and one shared through/right-turn lane. This change shall include removing the raised median and re-striping the intersection.</p>	<p>Timing: Prior to or concurrent with the third phase of project construction.</p> <p>Methods: These measures shall be implemented by the LAHD in consultation with the LADOT and Caltrans. Assurance of implementation shall be provided to LADOT prior to commencement of the third phase of project construction, and shall consist of improvement plans and a construction schedule meeting the criteria set forth by LADOT and Caltrans.</p>	<p>LAHD Staff, LADOT, Caltrans</p>	<p>Less than significant</p>