3.12

TRANSPORTATION AND CIRCULATION

3.12.1 Introduction

This section describes the environmental setting for transportation and circulation, including marine transportation, within the PMPU area, identifies applicable regulations, and analyzes the potential impacts that could result from implementing the proposed Program. Mitigation measures and the significance of impacts after mitigation also are described.

The transportation analysis includes eight freeway/roadway segments and 34 key intersections that would be used by truck and automobile traffic to gain access to and from the PMPU area. These include the nearest Congestion Management Program (CMP) monitoring stations, assessed in conformance with Los Angeles County Metropolitan Transportation Authority (LACMTA) CMP guidelines (LACMTA 2010).

3.12.2 Environmental Setting

3.12.2.1 Ground Transportation

The PMPU serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port. In general, the PMPU area is bounded by the community of Wilmington to the north, lands surrounding the Consolidated Slip to the northeast, lands surrounding the Cerritos Channel and City of Los Angeles boundary to the east, Los Angeles Harbor to the south, and the community of San Pedro to the west.

Access to and from the Port is provided by a network of freeways and arterial routes, as shown on Figure 3.12-1. The freeway network consists of the Artesia Freeway (State route [SR]-91), Harbor Freeway (I-110), Long Beach Freeway (I-710), San Diego Freeway (I-405), and the Terminal Island Freeway (SR-103/ SR-47). The arterial street network includes Alameda Street, Anaheim Street, Harry Bridges Boulevard, Henry Ford Avenue, Ocean Boulevard/Seaside Avenue, Pacific Coast Highway (PCH), Santa Fe Avenue, Sepulveda Boulevard/Willow Street, Ferry Street, Earle Street, Navy Way, Reeves Avenue, and Terminal Way. The freeways and arterials are described below.

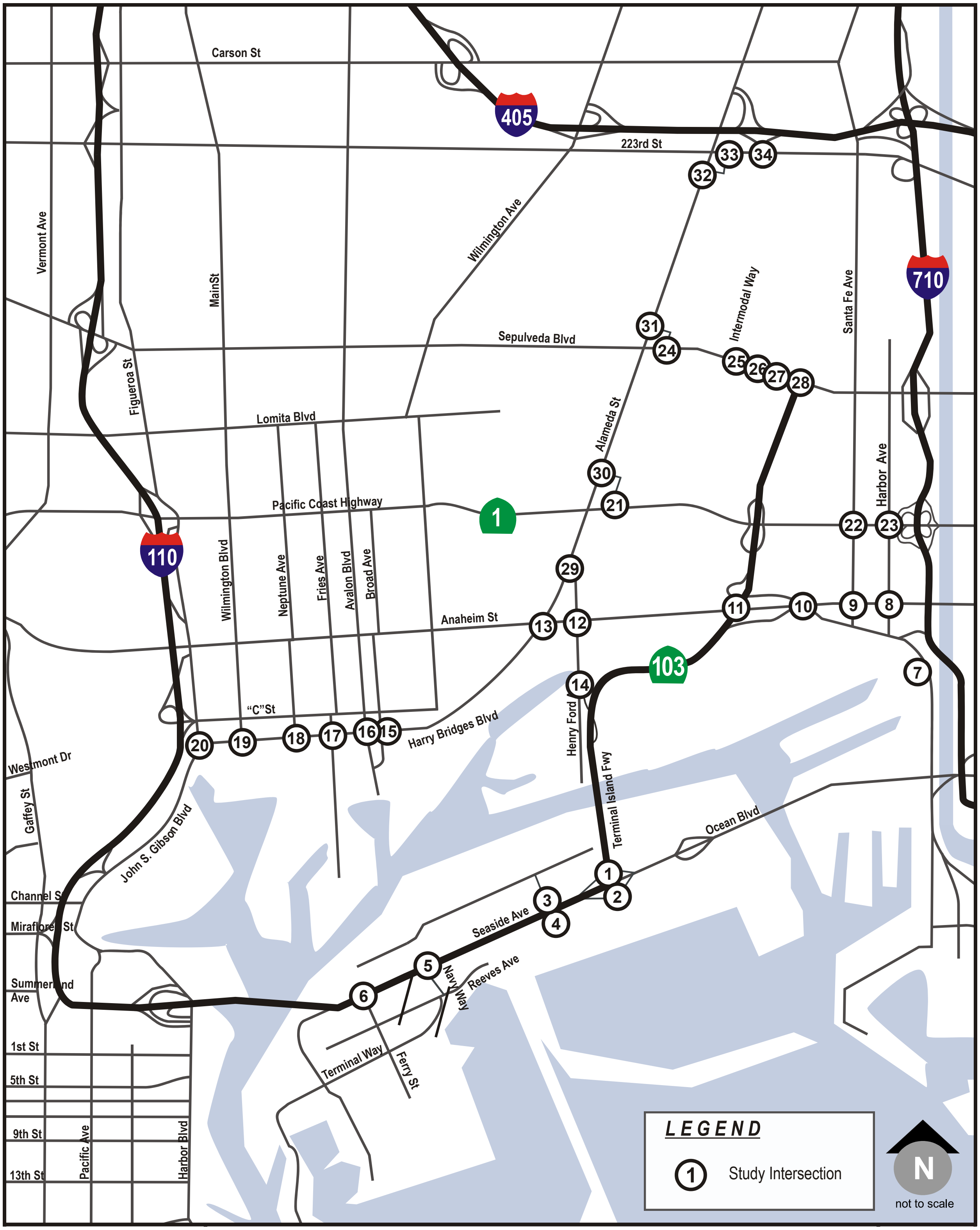

Figure 3.12-1. Proposed Program Study Area and Study Intersections

The Artesia Freeway (SR-91) is an east-west highway that extends from Vermont Avenue in Gardena east to the junction with the Pomona (SR-60 west of SR-91) and Moreno Valley (SR-60 and I-215 east of SR-91) freeways in Riverside. It has eight general purpose lanes and two high occupancy vehicle (HOV) lanes north of the harbor.

The Harbor Freeway (I-110) is a north-south highway that extends from Gaffey Street in San Pedro to downtown Los Angeles and Pasadena. It has six general purpose lanes in the vicinity of the harbor and widens to eight lanes to the north.

The Long Beach Freeway (I-710) is a north-south highway that extends from the Port area in Long Beach to Valley Boulevard in Alhambra. It has six general purpose lanes in the vicinity of the harbor and widens to eight lanes to the north.

The San Diego Freeway (I-405) is a north-south highway that extends from I-5 in Irvine to I-5 in the Mission Hills district of Los Angeles. It has eight general purpose lanes and two HOV lanes north of the harbor.

The Terminal Island Freeway (SR-103/SR-47) is a short highway that begins at Ocean Boulevard on Terminal Island, where it overlaps with SR-47. It then crosses the Schuyler Heim Bridge, and travels north to its terminus at Willow Street in Long Beach. It has six general purpose lanes on the southern segment, narrowing to four lanes north of Anaheim Street.

Alameda Street extends north from Harry Bridges Boulevard and serves as a key truck route between the harbor area and downtown Los Angeles. Alameda Street is grade separated at all major intersections south of SR-91. Alameda Street is striped variously as a four-lane and six-lane roadway in the PMPU area. Ultimately, Alameda Street is planned to be striped for six lanes over most of its length. Alameda Street is classified as a Major Highway Class II in the *City of Los Angeles General Plan* (City of Los Angeles 1999), and a Major Highway in the *City of Carson General Plan* (City of Carson 2002).

Anaheim Street is an east-west roadway that extends between Western Avenue (SR 213) in the City of Los Angeles and PCH (SR-1) in Long Beach. Anaheim Street is a four-lane roadway west of Henry Ford Avenue, a five-lane roadway (three eastbound lanes) between Henry Ford Avenue and West 9th Street/East I Street, and a six-lane facility from West 9th Street /East I Street to east of I-710. Anaheim Street is classified as a Major Highway Class II north of the PMPU area in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

Harry Bridges Boulevard is a four-lane east-west roadway that extends between John S. Gibson Boulevard and Alameda Street. It provides direct access to the container terminal at Berths 136-139 and provides access to Berths 142-147 via Neptune Avenue, which extends south from Harry Bridges Boulevard. Harry Bridges Boulevard is classified as a Major Highway Class II in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

Henry Ford Avenue provides a connection from the Terminal Island Freeway (SR-47) to Alameda Street. Henry Ford Avenue is a six-lane roadway from the Terminal Island Freeway (SR-47) to Anaheim Street and a four-lane roadway from Anaheim Street to Alameda Street. Northbound traffic on Alameda Street must use the northern 205 feet of Henry Ford Avenue to continue north on Alameda Street via the intersection with Denni Street. Henry Ford Avenue is classified as a Major Highway Class II in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

Ocean Boulevard/Seaside Avenue is a four to six-lane roadway that extends east-west near the PMPU area. At the eastern Los Angeles city boundary, Seaside Avenue is renamed Ocean Boulevard in Long Beach. Ocean Boulevard/Seaside Avenue extends from Belmont Shore in Long Beach, over the Gerald Desmond Bridge, to its terminus at the Terminal Island Freeway.

Pacific Coast Highway (SR-1) is a four to six-lane arterial highway that extends east-west, north of the PMPU area. PCH has interchanges with the I-710 freeway and the Terminal Island Freeway (SR-47/103), and connects to Alameda Street via East “O” Street. PCH is classified as a Major Highway Class II north of the PMPU area in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

Santa Fe Avenue is a four-lane north-south roadway that extends from 9th Street in Long Beach to Lynwood, east of the PMPU area. North of Weber Avenue in Lynwood, Santa Fe Avenue turns into State Street and continues north. Santa Fe Avenue is classified as a Major Arterial in the *City of Long Beach General Plan* (City of Long Beach 1991).

Sepulveda Boulevard/Willow Street is a four-lane roadway that extends east-west north of the PMPU area. Trucks are prohibited on Sepulveda Boulevard east of the Terminal Island Freeway (SR-103). Sepulveda Boulevard is classified as a Major Highway Class II in the *City of Los Angeles General Plan* (City of Los Angeles 1999) and a Major Highway in the *City of Carson General Plan* (City of Carson 2002). East of the Terminal Island Freeway (SR-103), Sepulveda Boulevard turns into Willow Street, and is classified as a Major Arterial in the *City of Long Beach General Plan* (City of Long Beach 1991).

Ferry Street is a four-lane north-south internal Port roadway that provides local access to Pier 300 and Pier 400 from Seaside Avenue/Ocean Boulevard and the Terminal Island Freeway (SR 47/SR 103). Ferry Street is classified as a Secondary Highway in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

Earle Street is a four-lane north-south roadway that extends from Pilchard Street through the PMPU area. Earle Street is unclassified in the *City of Los Angeles General Plan (*City of Los Angeles 1999).

Navy Way is an internal Port roadway that provides local access to Pier 300 and Pier 400 from Seaside Avenue/Ocean Boulevard and the Terminal Island Freeway (SR 47/SR 103). Navy Way is generally a four-lane north-south roadway, although south of the Terminal Way intersection, the southbound lanes turn into a single lane until the Seaside Way/Ocean Boulevard westbound off-ramp merges to form two southbound lanes. Navy Way is unclassified in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

Reeves Avenue is a two to three-lane roadway (two eastbound lanes and one westbound lane) that serves as the eastbound extension of Terminal Way between Navy Way and Nimitz Road. Reeves Avenue is unclassified in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

Terminal Way is a four to six-lane roadway that extends in a general east-west direction between Seaside Avenue and Navy Way. Terminal Way provides access to Pier 300 and the U.S. Coast Guard (USCG) Base. Terminal Way is unclassified in the *City of Los Angeles General Plan* (City of Los Angeles 1999).

The traffic setting for the proposed Program includes those streets and intersections that would be used by both automobile and truck traffic to gain access to and from the PMPU area, as well as those streets that would be used by construction traffic related to future development (i.e., equipment and commuting workers). Thirty-four study intersections that are located near or on routes serving the PMPU area were chosen for analysis. The 34 study intersections include the following (refer to Figure 3.12-1 for illustration of study intersection locations):

1. Ocean Boulevard Westbound/Terminal Island Freeway (SR-47) – City of Long Beach;
2. Ocean Boulevard Eastbound/Terminal Island Freeway (SR-47) – City of Long Beach;
3. Ocean Boulevard Westbound/Pier S Avenue – City of Long Beach;
4. Ocean Boulevard Eastbound/Pier S Avenue – City of Long Beach;
5. Seaside Avenue/Navy Way – City of Los Angeles;
6. Ferry Street/SR 47 Ramps – City of Los Angeles;
7. Pico Avenue/Pier B Street/9th Street/I-710 Ramps – City of Long Beach;
8. Anaheim Street/Harbor Avenue – City of Long Beach;
9. Anaheim Street/Santa Fe Avenue – City of Long Beach;
10. Anaheim Street/East I Street/West 9th Street – City of Long Beach;
11. Anaheim Street/Farragut Avenue – City of Los Angeles;
12. Anaheim Street/Henry Ford Avenue – City of Los Angeles;
13. Anaheim Street/Alameda Street – City of Los Angeles;
14. Henry Ford Avenue/Pier A Way/SR-47/103 Ramps – City of Los Angeles;
15. Harry Bridges Boulevard/Broad Avenue – City of Los Angeles;
16. Harry Bridget Boulevard/Avalon Boulevard – City of Los Angeles;
17. Harry Bridges Boulevard/Fries Avenue – City of Los Angeles;
18. Harry Bridges Boulevard/Neptune Avenue – City of Los Angeles;
19. Harry Bridges Boulevard/Wilmington Boulevard – City of Los Angeles;
20. Harry Bridges Boulevard/Figueroa Street – City of Los Angeles;
21. PCH/Alameda Street Ramp – City of Los Angeles;
22. PCH/Santa Fe Avenue – City of Long Beach;
23. PCH/Harbor Avenue – City of Long Beach;
24. Sepulveda Boulevard/Alameda Street Ramp – City of Carson;
25. Intermodal Way/Sepulveda Boulevard – City of Carson;

26. Intermodal Container Transfer Facility (ICTF) Driveway/Sepulveda Boulevard – City of Los Angeles;
27. Middle Road/Sepulveda Boulevard – City of Los Angeles;
28. Sepulveda Boulevard/SR-103 – City of Long Beach;
29. Alameda Street/Henry Ford Avenue – City of Los Angeles;
30. Alameda Street/PCH Ramp – City of Los Angeles;
31. Alameda Street/Sepulveda Boulevard Ramp – City of Carson;
32. Alameda Street/223rd Street Ramp – City of Carson;
33. Alameda Street Ramp/223rd Street – City of Los Angeles; and,
34. I-405 Southbound Ramps/223rd Street – City of Los Angeles.

A traffic impact analysis was also required at the following locations, pursuant to the Los Angeles County CMP (LACMTA 2010):

- CMP arterial monitoring intersections, including freeway on- or off-ramps, where the proposed Program would add 50 or more trips during either the A.M. or P.M. weekday peak hours; and,
- CMP freeway monitoring locations where the proposed Program would add 150 or more trips during either the A.M. or P.M. weekday peak hours.

Three CMP arterial monitoring stations are located either in, or within 5 miles of the PMPU area as follows:

- PCH/Santa Fe Avenue (study intersection #22);
- Alameda Street/ PCH (study intersection #30); and,
- PCH/Figueroa Street (not a study intersection - less than 50 peak hour trips added by the proposed Program).

The closest freeway monitoring stations include I-710 at Willow Street and I-110 at C Street; these are within 5 miles of the PMPU area (Figure 3.12-2 for illustration of study area freeway segment locations). However, to be conservative in the assessment of potential impacts, more monitoring stations were considered in the analysis including the following CMP freeway monitoring stations:

1. I-110 south of C Street (CMP freeway monitoring station – south of “C” Street);
2. SR-91 west of I-710 (CMP freeway monitoring station – east of Alameda Street and Santa Fe Avenue interchange);
3. I-405 between I-110 and I-710 (CMP freeway monitoring station – at Santa Fe Avenue);
4. I-710 north of I-405 (CMP freeway monitoring station – north of Jct. 405, south of Del Amo Boulevard);
5. I-710 north of PCH (CMP freeway monitoring station – north of Jct Rte 1 [PCH], Willow Street); and,
6. I-710 north of I-105 (CMP freeway monitoring station – north of Rte 105, north of Firestone Boulevard).

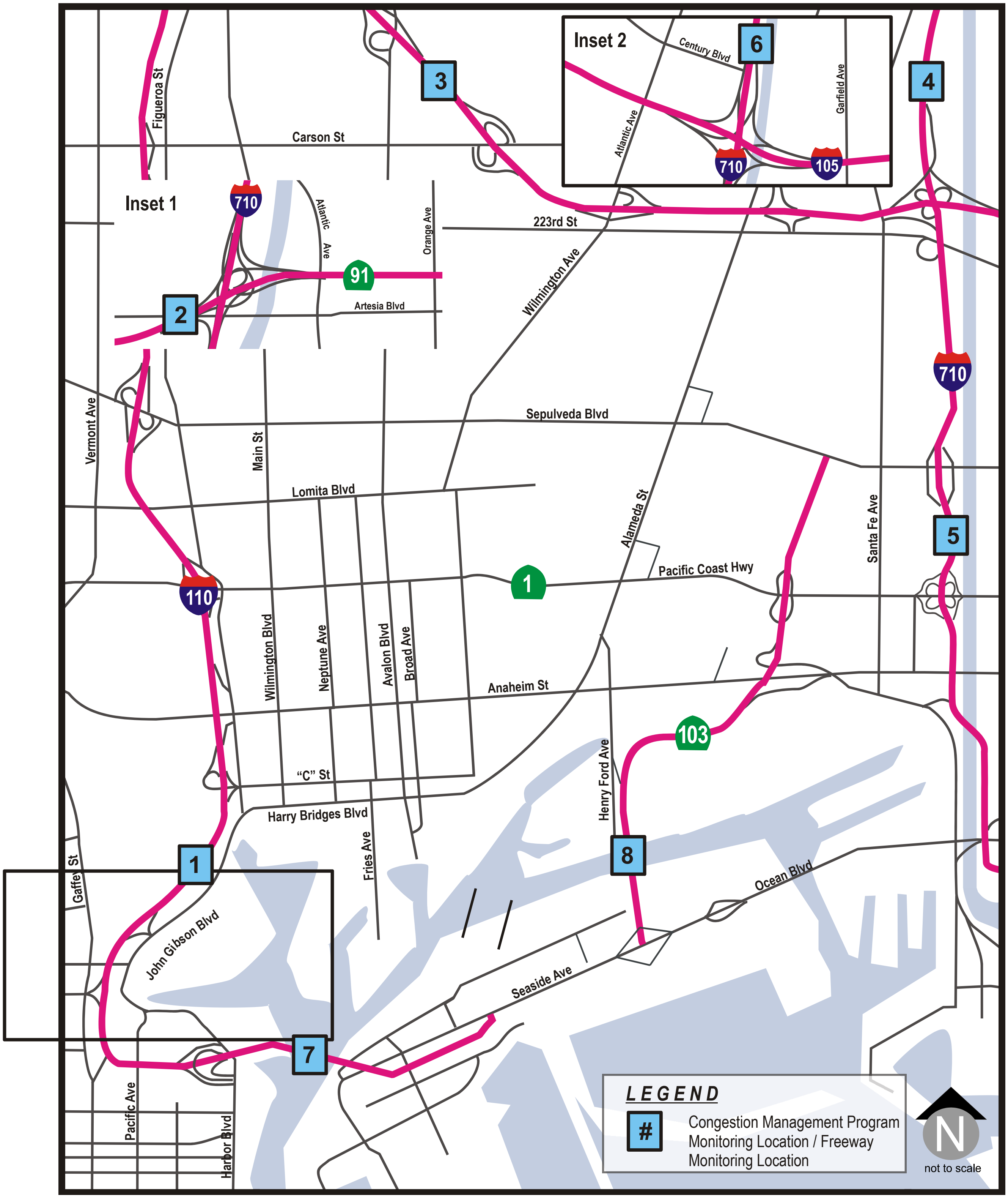

Figure 3.12-2. Proposed Program Study Area Freeway Segments

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Two additional non-CMP locations on the State Highway system were included for analysis, as also shown in Figure 3.12-2 on the basis of their location relative to the PMPU area and the potential for proposed Program-related traffic using the roadways. The locations are:

1. SR-47 at Vincent Thomas Bridge; and,
2. SR-47 at Commodore Schuyler Heim Bridge.

3.12.2.1.1 Existing Area Traffic Conditions

Existing truck and automobile traffic along study roadways and intersections, including automobiles, trucks servicing Port terminals, and other truck and regional traffic not related to the Port, was determined by collecting vehicle turning movement counts classified by vehicle type at all 34 study locations.

The peak hour was determined by assessing the highest volume of total traffic occurring during one consecutive hour at each location. Regional traffic occurring during the A.M. and P.M. peak hours is mainly due to commute trips, school trips, and other background trips. While the peak hour for Port-related truck traffic generally occurs sometime during the mid-day (M.D.) period, greater overall levels of traffic occur during the A.M. and P.M. peak hours due to the greater level of regional vehicular traffic combined with Port-related traffic. Port traffic forecasts indicate a more even traffic distribution throughout the day in future years, thus minimizing the M.D. peak associated with Port traffic. The data indicate that for the study intersections, the A.M. or P.M. peak hour represents the highest level of traffic and therefore the “worst case” for purposes of the traffic operations analysis. However, to ensure a conservative analysis the traffic analysis presents results for the A.M., M.D., and P.M. peak hours to account for the highest peak traffic at all locations.

At the time traffic count data was collected in 2012, construction was occurring along Harry Bridges Boulevard and some north-south cross streets were temporarily blocked. Therefore, for study intersections #15 through #20, the north-south street volumes were derived from earlier traffic counts in 2008 and combined with east-west counts collected for this analysis along Harry Bridges Boulevard.

Level of Service (LOS) is a qualitative indication of an intersection's operating conditions as represented by traffic congestion and delay and the volume to capacity ratio (V/C). For signalized intersections, LOS ranges from LOS A (excellent conditions) to LOS F (very poor conditions), with LOS D (V/C of less than 0.900, fair conditions) typically considered to be the threshold of acceptability. The relationship between V/C ratio and LOS for signalized intersections is shown in Table 3.12-1.

The study intersections are located in the City of Los Angeles, the City of Long Beach, and the City of Carson. For purposes of this analysis the locally-defined thresholds for significance at intersections in each jurisdiction are used. Although the three cities have approved different methods to assess operating conditions at intersections, the methodologies are similar and usually yield similar results and conclusions.

Table 3.12-1. Level of Service Criteria—Signalized Intersections

V/C Ratio	LOS	Traffic Conditions
0 to 0.600	A	**Excellent. Little or no delay/congestion.** No vehicle waits longer than one red light, and no approach phase is fully used.
>0.601 to 0.700	B	**Very Good. Slight congestion/delay.** An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
>0.701 to 0.800	C	**Good. Moderate delay/congestion.** Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
>0.801 to 0.900	D	**Fair. Significant delay/congestion.** 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.
>0.901 to 1.000	E	**Poor. Extreme congestion/delay.** Represents the most vehicles that the intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
> 1.000	F	**Failure. Intersection failure/gridlock.** Backups from nearby locations or 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 (TRB) 1980

For intersections in the City of Los Angeles, levels of service were assessed using the LADOT Critical Movement Analysis (CMA) method as published in the *Los Angeles Department of Transportation Traffic Study Policies and Procedures* (LADOT 2010). For signalized intersections, LOS values were determined by using CMA methodology contained in the Transportation Research Board's (TRB) *Circular No. 212 – Interim Materials on Highway Capacity* (TRB 1980).

Consistent with City of Long Beach guidelines for analyses, traffic conditions in the vicinity of the proposed Program and within the City of Long Beach jurisdiction were analyzed using intersection capacity-based methodology known as the *Intersection Capacity Utilization Methodology* (Trafficware™ 2003) which is referred to hereinafter as the ICU Methodology.

LOS analysis for the City of Carson intersections was conducted using the ICU methodology, representing the same methodology used for the City of Long Beach intersections.

For this analysis it was assumed that trucks use more roadway capacity than automobiles because of their size, weight, and acceleration capabilities when compared to autos. The concept of PCE was used in the study to adjust for the effect of trucks in the traffic stream. PCE is defined as the amount of capacity in terms of passenger cars used by a single heavy vehicle of a particular type under specified roadway, traffic, and control conditions. A PCE factor of 1.1 was applied to tractors (bobtails), and 2.0 was applied to chassis and container truck volumes for the LOS calculations. This means tractors were calculated as using 10 percent more roadway capacity that autos; and chassis and container trucks were calculated as using two times more roadway capacity than autos. These factors are consistent with factors applied in previous Port studies including the Draft *Port of Los Angeles Baseline Transportation Study* (Baseline Transportation Study) (Port 2004). They are also consistent with subsequent work conducted for various environmental studies in the Port and the Port of Long Beach areas.

Many of the methodologies employed in this traffic analysis are based on, and consistent with, the methodologies developed for the Baseline Transportation Study. This includes a computerized traffic analysis tool called the Port Area Travel Demand Model, the trip generation methodology, and the intersection analysis methodologies. However, the Baseline Transportation Study was not conducted specifically for this proposed Program, and the assumptions and figures used in preparation of this Draft PEIR are program specific. The Port Area Travel Demand Model has been updated to integrate with the SCAG Regional Transportation Plan (RTP) model.

Congestion Management Program Levels of Service Analysis

A traffic impact analysis is required at the following locations according to the CMP Traffic Impact Analysis (TIA) Guidelines (LACMTA 2010):

- CMP arterial monitoring intersections, including freeway on-ramp or off-ramp, where the proposed Program would add 50 or more trips to the intersection during either the A.M. or P.M. weekday peak hours; and,
- CMP freeway monitoring locations where the proposed Program would add 150 or more trips to the intersection during either the A.M. or P.M. weekday peak hours.

Freeway roadway segments were analyzed in compliance with the County of Los Angeles CMP (LACMTA 2010). The CMP is the official source of data for regional coordination of traffic studies in the County of Los Angeles. The CMP uses the V/C ratio to determine LOS. The relationship between the V/C ratio and LOS for freeway segments per the CMP is shown in Table 3.12-2.

Table 3.12-2. Freeway CMP Level of Service Criteria

Freeway LOS	*Volume/Capacity Ratio*
A	0.01-0.35
B	>0.35-0.54
C	>0.54-0.77
D	>0.77-0.93
E	>0.93-1.00
F(0)	>1.00-1.25
F(1)	>1.25-1.35
F(2)	>1.35-1.45
F(3)	>1.45
Source: LACMTA 2010	

LOS F(1) through F(3) designations are assigned where severely congested (less than 25 mph) conditions prevail for more than 1 hour, converted to an estimate of peak hour demand in Table 3.12-2.

CMP arterial monitoring stations were also analyzed in compliance with the County of Los Angeles CMP guidelines (LACMTA 2010). However, since the CMP guidelines permit intersection LOS calculations to be conducted using the CMA/Circular 212 method, the same analysis method used by the City of Los Angeles, no additional CMP analysis is required at CMP arterial monitoring stations located within the city.

Levels of Service Analysis

Based on peak-hour traffic volumes and V/C ratios, the corresponding LOS at study area intersections were determined, as summarized in Table 3.12-3. The data in the table indicate that all of the existing study intersections currently operate at LOS C or better during peak hours except intersection #22 PCH at Santa Fe Avenue which operates at LOS D in the P.M. peak hour.

The baseline freeway volumes at the CMP monitoring stations in the study area were obtained from 2010 Caltrans traffic counts and counts conducted for this analysis. Baseline freeway volumes and LOS are shown in Table 3.12-4.

Table 3.12-3. Baseline Intersection Level of Service

Int #	*Analysis Intersection*	*Baseline*					
		A.M.		*M.D.*		*P.M.*	
		LOS	*V/C*	*LOS*	*V/C*	*LOS*	*V/C*
1	Ocean Blvd (WB)/[Terminal Island Fwy[b]	A	0.335	A	0.398	A	0.375
2	Ocean Blvd (EB)/Terminal Island Fwy[b]	A	0.215	A	0.379	A	0.348
3	Ocean Blvd (WB)/Pier S Ave[b]	A	0.266	A	0.313	A	0.341
4	Ocean Blvd (EB)/Pier S Ave[b]	A	0.209	A	0.364	A	0.340
5	Seaside Ave/Navy Wy[a]	A	0.427	A	0.316	A	0.541
6	Ferry St (Seaside Ave)/SR-47 Ramps[a]	A	0.112	A	0.244	A	0.142
7	Pico Ave / Pier B St/9th St / I-710 Ramps[b]	A	0.435	A	0.519	A	0.499
8	Anaheim St/Harbor Ave[b]	A	0.453	A	0.455	A	0.560
9	Anaheim St/Santa Fe Ave[b]	A	0.473	A	0.508	A	0.578
10	Anaheim St/E I St / W 9th St[b]	A	0.501	A	0.525	A	0.529
11	Anaheim St/Farragut Ave[a]	A	0.277	A	0.228	A	0.286
12	Anaheim St/Henry Ford Ave[a]	A	0.300	A	0.416	A	0.560
13	Anaheim St/Alameda St[a]	A	0.361	A	0.325	A	0.468
14	Henry Ford Ave/Pier A Wy/SR-47/103 Ramps[a]	A	0.078	A	0.125	A	0.167
15	Harry Bridges Blvd/Broad Ave[a]	A	0.143	A	0.115	A	0.218
16	Harry Bridges Blvd/Avalon Blvd[a]	A	0.155	A	0.082	A	0.238
17	Harry Bridges Blvd/Fries Ave[a]	A	0.123	A	0.127	A	0.203
18	Harry Bridges Blvd/Neptune Ave[a]	A	0.053	A	0.028	A	0.127
19	Harry Bridges Blvd/Wilmington Blvd[a]	A	0.119	A	0.077	A	0.202
20	Harry Bridges Blvd/Figueroa St[a]	A	0.235	A	0.237	A	0.292
21	Pacific Coast Hwy/Alameda St Ramp[a]	A	0.505	A	0.411	A	0.561
22	Pacific Coast Hwy/Santa Fe Ave[b]	C	0.773	B	0.699	D	0.821
23	Pacific Coast Hwy/Harbor Ave[b]	B	0.628	B	0.603	C	0.733
24	Sepulveda Blvd/Alameda St Ramp[c]	B	0.679	A	0.484	B	0.612
25	Intermodal Way/Sepulveda Blvd[c]	A	0.371	A	0.310	A	0.403
26	ICTF Drwy/Sepulveda Blvd[a]	A	0.193	A	0.369	A	0.425
27	Middle Rd/Sepulveda Blvd[a]	A	0.223	A	0.254	A	0.481
28	Sepulveda Blvd/SR-10[b]	A	0.318	A	0.330	A	0.491
29	Alameda St/Henry Ford Ave[a]	A	0.057	A	0.183	A	0.207
30	Alameda St/Pacific Coast Hwy Ramp[a]	A	0.439	A	0.368	A	0.598
31	Alameda St/Sepulveda Boulevard Ramp[c]	A	0.389	A	0.463	A	0.588
32	Alameda St/223rd St Ramp[c]	A	0.509	A	0.484	A	0.565
33	Alameda St Ramp/223rd St[a]	A	0.342	A	0.504	C	0.758
34	I-405 SB Ramps/223rd St[a]	A	0.379	A	0.319	A	0.435

Notes:

a. City of Los Angeles intersection, analyzed using CMA methodology, according to City standards.
b. City of Long Beach intersection analyzed using ICU methodology, according to City standards.
c. City of Carson intersection analyzed using ICU methodology, according to City standards.

Table 3.12-4. Baseline Freeway Level of Service

Freeway	*Location*	*Capacity*	*Northbound/Eastbound*						*Southbound/Westbound*					
			A.M. Peak Hour			*P.M. Peak Hour*			*A.M. Peak Hour*			*P.M. Peak Hour*		
			Demand	*D/C*	*LOS*	*Demand*	*D/C*	*LOS*	*Demand*	*D/C*	*LOS*	*Demand*	*D/C*	*LOS*
#1 I-110	South of C Street (CMP monitoring station - south of "C" St)	8,000	4,375	0.55	C	2,490	0.31	A	3,375	0.42	B	4,205	0.53	B
#2 SR-91	West of I-710 (CMP monitoring station - east of Alameda St/Santa Fe Ave interchange)	12,000	6,060	0.51	B	8,928	0.74	C	10,660	0.89	D	7,205	0.60	C
#3 I-405	Between I-110 and I-710 (CMP monitoring station - Santa Fe Ave)	10,000	11,535	1.15	F(0)	9,865	0.99	E	9,545	0.95	E	11,160	1.12	F(0)
#4 I-710	North of PCH (CMP monitoring station- north of Jct Rte 1 [PCH], Willow St)	6,000	5,770	0.96	E	5,950	0.99	E	6,690	1.12	F(0)	5,660	0.94	E
#5 I-710	North of I-405 (CMP monitoring station n/o Jct. 405, south of Del Amo)	8,000	6,370	0.80	D	7,740	0.97	E	7,805	0.98	E	6,785	0.85	D
#6 I-710	North of I-105, north of Firestone	8,000	8,175	1.02	F(0)	9,120	1.14	F(0)	9,285	1.16	F(0)	9,105	1.14	F(0)
#7 SR-47	Vincent Thomas Bridge*	4,000	2,445	0.61	C	2,560	0.64	C	2,100	0.53	B	2,930	0.73	C
#8 SR-47	Commodore Schuyler Heim Bridge *	6,000	305	0.05	A	830	0.14	A	590	0.10	A	655	0.11	A

Notes: Capacity based on the methodology in the 2010 CMP for Los Angeles County (LACMTA 2010); D/C = demand to capacity ratio.
*Non-CMP location.

As shown in Table 3.12-4 all freeway locations currently operate at LOS D or better except for the following:

- I-405 at Santa Fe Avenue – LOS F(0) (northbound A.M. Peak Hour); LOS E (southbound A.M. Peak Hour); LOS E (northbound P.M. Peak Hour); LOS F(0) (southbound P.M. Peak Hour);
- I-710 north of PCH – LOS E (northbound A.M. Peak Hour); LOS F(0) (southbound A.M. Peak Hour); LOS E (northbound P.M. Peak Hour); LOS E (southbound P.M. Peak Hour);
- I-710 north of I-405, south of Del Amo Boulevard – LOS E (southbound A.M. Peak Hour); LOS E (northbound P.M. Peak Hour); and,
- I-710 north of I-105, north of Firestone Boulevard – LOS F(0) (northbound A.M. Peak Hour); LOS F(0) (southbound A.M. Peak Hour); LOS F(0) (northbound P.M. Peak Hour); LOS F(0) (southbound P.M. Peak Hour).

3.12.2.1.2 Existing Transit Conditions

Several transit agencies provide service in the vicinity of the PMPU area, including Los Angeles County Metro, the City of Los Angeles Municipal Area Express, Long Beach Transit, Torrance Transit and LADOT. Together, these transit agencies operate 13 transit routes within and/or near the PMPU area, as summarized in Table 3.12-5 and below.

Table 3.12-5. Baseline Transit Service

Transit Agency	*Line*	*Route Name*	*Days of Operation*	*Headways/Frequency**	
Metro	Express 445	San Pedro–Artesia Transit Center–Patsaouras Transit Plaza/Union Station Express	Monday–Friday	A.M.	30–60 minutes
				P.M.	30–60 minutes
			Saturday Peak		60 minutes
	Local 202	Willowbrook–Compton–Wilmington, via C St. and Alameda Street	Monday–Friday	A.M.	60 minutes
				P.M.	60 minutes
			Saturday Peak		-
	Local 232	Long Beach – LAX via Sepulveda Boulevard, PCH and Anaheim Street	Monday–Friday	A.M.	20–40 minutes
				P.M.	20–40 minutes
			Saturday Peak		30 minutes
	Local 246	San Pedro-Artesia Transit Center via Pacific Avenue and Avalon Boulevard	Monday–Friday	A.M.	20–25 minutes
				P.M.	20 minutes
			Saturday Peak		20 minutes
	Local 247	San Pedro-Artesia Transit Center via Pacific Avenue and Avalon Boulevard	Monday–Friday	A.M.	20–25 minutes
				P.M.	20 minutes
			Saturday Peak		20 minutes
Torrance Transit	Municipal Area Express 3X	San Pedro–El Segundo	Monday–Friday	A.M.	20–30 minutes
				P.M.	20–30 minutes
			Saturday Peak		-

Table 3.12-5. Baseline Transit Service

Transit Agency	Line	Route Name	Days of Operation	Headways/Frequency*	
	T3	Redondo Beach–Long Beach	Monday–Friday	A.M.	15 minutes
				P.M.	15 minutes
			Saturday Peak		60 minutes
Long Beach Transit	1	Downtown Long Beach–Wardlow Blue Line Station	Monday–Friday	A.M.	30 minutes
				P.M.	30 minutes
			Saturday Peak		40 minutes
	191	Downtown Long Beach–Del Amo/Bloomfield via Del Amo Boulevard	Monday–Friday	A.M.	15 minutes
				P.M.	15 minutes
			Saturday Peak		20 minutes
	192	Downtown Long Beach–Los Cerritos Center via South Street	Monday–Friday	A.M.	15 minutes
				P.M.	15 minutes
			Saturday Peak		20 minutes
	193	Downtown Long Beach–Del Amo Blue Line Station via Santa Fe	Monday–Friday	A.M.	15 minutes
				P.M.	15 minutes
			Saturday Peak		20 minutes
LADOT Commuter Express	142	San Pedro–Long Beach via Ocean Boulevard	Monday–Friday	A.M.	30 minutes
				P.M.	30 minutes
			Saturday Peak		30 minutes
LADOT DASH	LDWLM	Wilmington Area	Monday–Friday	A.M.	15 minutes
				P.M.	15 minutes
			Saturday Peak		15 minutes

Notes: *Headway/Frequency = scheduled time between successive transit vehicles along a route.

- **Metro Express Line 445 (San Pedro-Artesia Transit Center-Patsaouras Transit Plaza/Union Station Express).** Metro Transit Line 445 provides express bus service from downtown Los Angeles to San Pedro via the Harbor Freeway. Line 445 starts at Patsaouras Transit Plaza/Union Station in downtown Los Angeles and travels south to its final destination in San Pedro at Pacific and 21st Street. Days of operation are Monday through Sunday, including all major holidays. The A.M. and P.M. peak period headway (time between vehicles in a transit system) ranges between 30 minutes and 1 hour. Saturday mid-day peak period is 1 hour.
- **Metro Local Line 202 (Willowbrook-Compton-Wilmington).** Metro Transit Line 202 is a north-south local service that travels from Wilmington to Willowbrook along Alameda Street. Line 202 provides service from the Metro Blue Line, connecting at the Del Amo Blue Line Station. Days of operation are Monday through Friday only. Weekday A.M. and P.M. peak period headway is approximately 1 hour. Late Night and Owl service is provided between Compton and Willowbrook Monday through Sunday, including all major holidays.
- **Metro Local 232 (Long Beach – LAX via Sepulveda Boulevard).** Metro Transit Line 232 is a north-south route between El Segundo and Harbor City, and

an east-west route between Harbor City and Long Beach. Line 232 connects to the Metro Blue Line in downtown Long Beach. The A.M. and P.M. peak period headway ranges between 20 and 40 minutes. Saturday peak period headway is 30 minutes.

- **Metro Local 246 (San Pedro-Artesia Transit Center via Pacific Avenue and Avalon Boulevard).** Metro Transit Line 246 is a north-south route that travels from San Pedro to the Artesia Transit Center in Los Angeles. Line 246 traverses Line 247 between the Artesia Transit Center and Pacific Avenue and Front Street in San Pedro. At Pacific Avenue and Front Street, Line 246 continues south along Pacific Avenue to Paseo Del Mar and Gaffey Street. The A.M. and P.M. peak period headway ranges between 20 and 25 minutes. Saturday peak period headway is 20 minutes.
- **Metro Local 247 (San Pedro-Artesia Transit Center via Pacific Ave and Avalon Boulevard).** Metro Transit Line 247 is a north-south route that travels from San Pedro to the Artesia Transit Center in Los Angeles. Line 247 traverses Line 246 between the Artesia Transit Center and Pacific Avenue and Front Street in San Pedro. At Pacific Avenue and Front Street, Line 247 travels east to the Harbor Beacon Park and Ride Lot, then west to Patton Avenue and 7th Street. The A.M. and P.M. peak period headway ranges between 20 and 25 minutes. Saturday peak period headway is 20 minutes.
- **Municipal Area Express 3X (San Pedro-El Segundo Freeway Express).** Municipal Area Express 3X is a commuter bus service designed to address the commuting needs of South Bay residents who work in the El Segundo employment district. Line 3X is a special freeway express route that operates directly from San Pedro to El Segundo, starting at 25th Street near the U.S. Air Force housing and ending at South La Cienega Boulevard near the Airport Courthouse. Days of operation are Monday through Friday only, excluding major holidays. The A.M. and P.M. peak period headway ranges from 20 to 30 minutes.
- **Torrance Transit Line 3 (Redondo Beach-Downtown Long Beach).** Torrance Transit Line 3 is an east-west route between Redondo Beach and Carson, a north-south route between Carson and Wilmington, and an east-west route between Wilmington and downtown Long Beach. Line 3 travels along PCH through the PMPU area via PCH. The A.M. and P.M. peak period headway is approximately 15 minutes. Saturday mid-day peak period headway is 60 minutes.
- **Long Beach Transit Line 1 (Wardlow Station-Long Beach Transit Mall).** Long Beach Transit Line 1 runs both north-south and east-west primarily along Long Beach Boulevard, PCH, Easy Street, and Wardlow Road from the Long Beach Transit Mall in downtown Long Beach to the Wardlow Metro Blue Line Station. The A.M. and P.M. peak period headway is approximately 30 minutes. Saturday peak period headway is 40 minutes.
- **Long Beach Transit Line 191 (Santa Fe Avenue-Del Amo Boulevard).** Long Beach Transit Lines 191, 192, and 193 traverse similar routes between the Long Beach Transit Mall in downtown Long Beach and the Del Amo Blue Line Station. From the Del Amo Blue Line Station, Line 191 continues east along Del Amo Boulevard to its terminus at Bloomfield Street. The A.M. and P.M. peak period headway between Lines 191, 192 and 193 is approximately 15 minutes. Saturday peak period headway is 20 minutes.

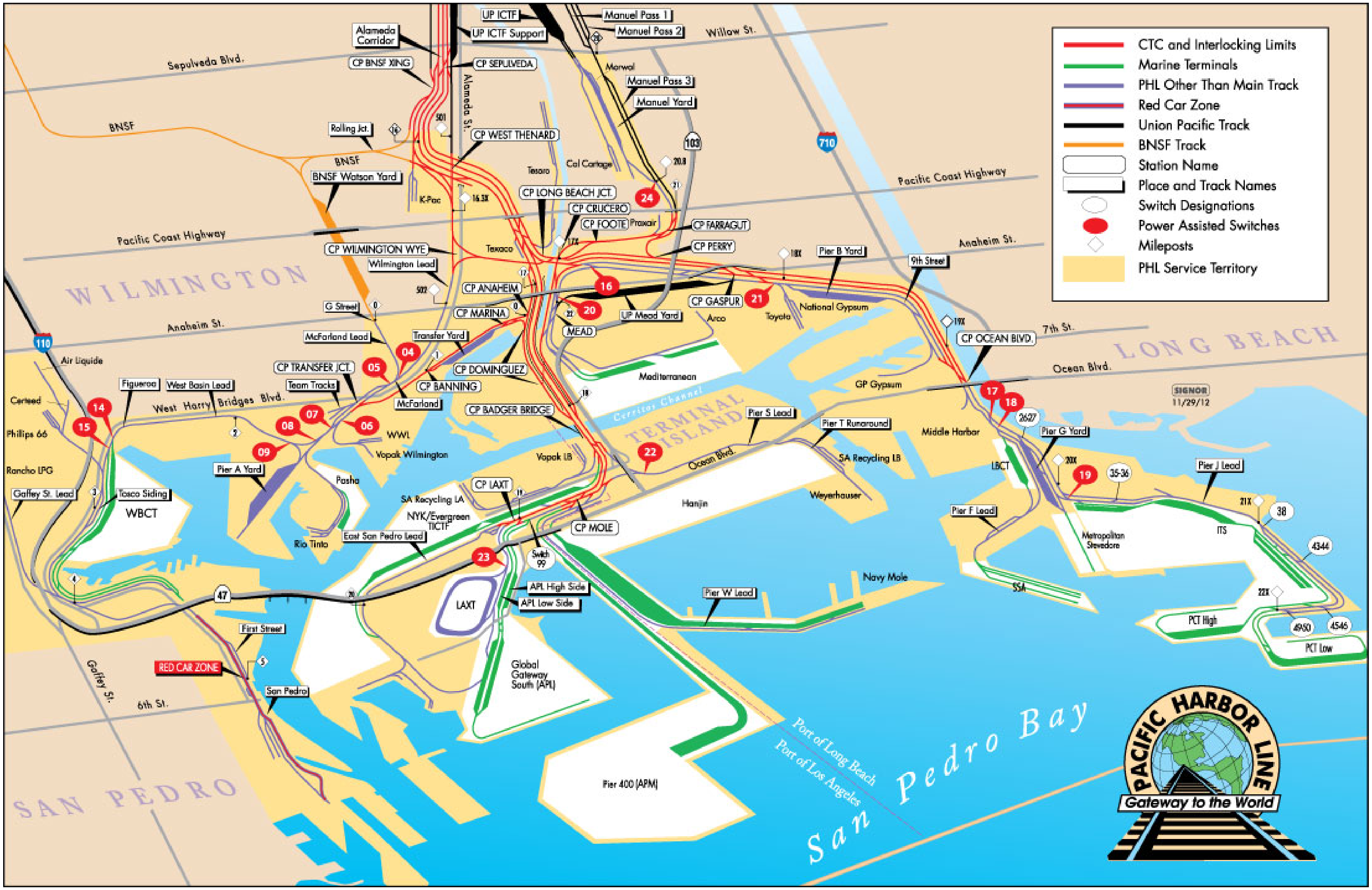
- **Long Beach Transit Line 192 (Santa Fe Avenue-South Street).** Long Beach Transit Lines 191, 192, and 193 traverse similar routes between the Long Beach Transit Mall in downtown Long Beach and the Del Amo Blue Line Station. From the Del Amo Blue Line Station, Line 192 travels north to South Street via Long Beach Boulevard, Market Street, and Atlantic Avenue to its terminus at the Los Cerritos Center. The A.M. and P.M. peak period headway between Lines 191, 192 and 193 is approximately 15 minutes. Saturday peak period headway is 20 minutes.
- **Long Beach Transit Line 193 (Santa Fe Avenue).** Long Beach Transit Lines 191, 192, and 193 traverse similar routes between the Long Beach Transit Mall in downtown Long Beach and the Del Amo Blue Line Station. While Lines 191 and 192 continue east, Line 193 terminates at the Del Amo Blue Line Station. The A.M. and P.M. peak period headway between Lines 191, 192 and 193 is approximately 15 minutes. Saturday peak period headway is 20 minutes.
- **LADOT Commuter Express Line 142 (Ports O'Call-Long Beach Transit Mall).** LADOT Commuter Express Line 142 runs east-west along Ocean Boulevard through the PMPU area from downtown Long Beach to San Pedro. The A.M. and P.M. peak period headway is approximately 30 minutes. Saturday peak period headway is 30 minutes.
- **LADOT DASH Wilmington Line (Clockwise-Counterclockwise Local Service).** The LADOT DASH Wilmington Line provides local service in the Wilmington community of the City of Los Angeles. Local clockwise service is provided primarily along Figueroa Street, PCH, Watson Avenue, East L Street, Avalon Boulevard and Anaheim Street. Local counterclockwise service is provided primarily along Wilmington Boulevard, PCH, Avalon Boulevard, Anaheim Street, West C Street, and Hawaiian Avenue. The A.M. and P.M. peak period headway is approximately 15 minutes. Saturday peak period headway is 15 minutes.

3.12.2.2 Existing Rail Transport Conditions

The Port and Port of Long Beach are served by two Class I railroads[1]: UP and the BNSF. PHL, a Class III railroad, provides rail transportation, maintenance and dispatching services on Port rail facilities. Rail lines in the harbor area are shown in Figure 3.12-3.

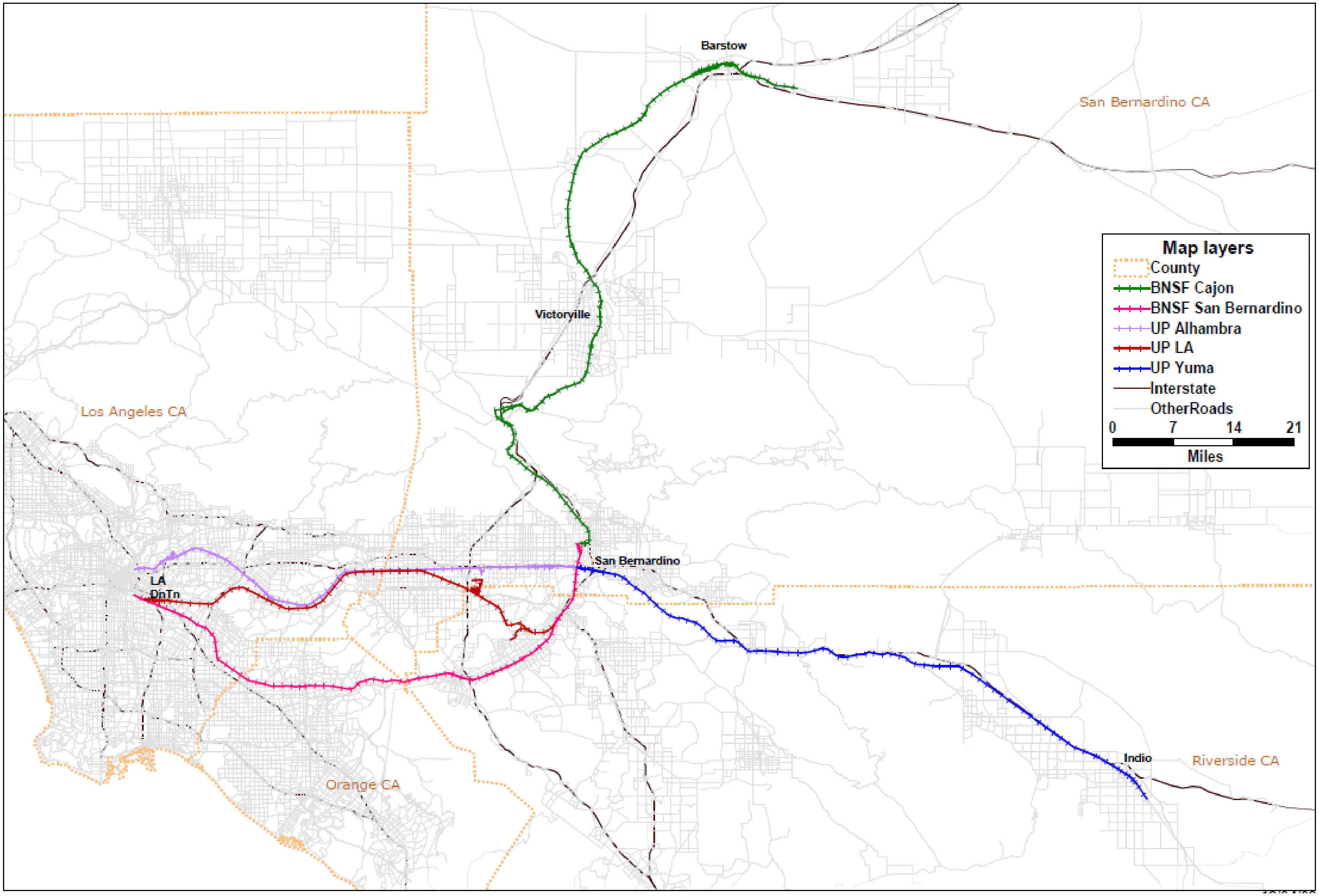
North of the port complex area, the ports are served by the Alameda Corridor, which was completed in 2002. All harbor-related trains of the UP and BNSF use the Alameda Corridor to access the railroad's mainlines, which begin near downtown Los Angeles. East of Los Angeles and beyond the proposed Program vicinity, port-related trains use the BNSF San Bernardino Subdivision, the UP Los Angeles Subdivision, or the UP Alhambra Subdivision. A map of the major lines is shown in Figure 3.12-4.

[1] For purposes of accounting and reporting, the Surface Transportation Board designates three classes of freight railroads based on their operating revenues for three consecutive years using the following scale: Class I - $250 million or more; Class II - less than $250 million but more than $20 million; and Class III - $20 million or less. These operating revenue thresholds are stated in 1991 dollars and are adjusted annually for inflation using a Railroad Freight Price Index developed by the Bureau of Labor Statistics.



Source: Pacific Harbor Line, Inc. http://www.anacostia.com/phl/phl_color_map.html

Figure 3.12-3. Rail Lines in the Harbor Area



Source: Cambridge Systematics, Inc. 2011

Figure 3.12-4. Map of Railroad Main Lines

To transition from the Alameda Corridor to the Alhambra Subdivision, the UP utilizes trackage rights over Metrolink's East Bank Line, which runs parallel to the Los Angeles River on the east side of downtown Los Angeles. The UP Los Angeles Subdivision terminates at West Riverside Junction where it joins the BNSF San Bernardino Subdivision. The BNSF San Bernardino Subdivision continues north of Colton Crossing and transitions to the BNSF Cajon Subdivision. The Cajon line continues north to Barstow and Daggett, and then east toward Needles, CA and beyond. UP trains exercise trackage rights over the BNSF Subdivision from West Riverside Junction to San Bernardino and over the Cajon Subdivision from San Bernardino to Daggett, east of Barstow. The UP Alhambra Subdivision and the BNSF San Bernardino Subdivision cross at Colton Crossing in San Bernardino County. East of Colton Crossing, the UP Yuma Subdivision passes through the Palm Springs area, Indio, and to Arizona and beyond.

The BNSF operates intermodal terminals for containers and trailers at Hobart Yard (in the City of Commerce) and at San Bernardino. UP operates intermodal terminals at:

- East Los Angeles Yard at the west end of the UP Los Angeles Subdivision;
- Los Angeles Transportation Center (LATC) at the west end of the UP Alhambra Subdivision;
- City of Industry on the UP Alhambra Subdivision; and,
- ICTF near the south end of the Alameda Corridor.

Both UP and BNSF operate trains hauling marine containers that originate or terminate at on-dock terminals within the Port and the Port of Long Beach.

UP also has a large carload freight classification yard at West Colton (at the east end of the Alhambra Subdivision). A large auto unloading terminal is located at Mira Loma (mid-way between Pomona and West Riverside on the Los Angeles Subdivision).

The BNSF San Bernardino Subdivision has two or more main tracks. There are segments of triple track between Hobart and Fullerton. The BNSF recently completed a third main track from San Bernardino to the summit of the Cajon Pass.

The UP Alhambra Subdivision is mostly single-track, while the UP Los Angeles Subdivision has two main tracks west of Pomona and a mixture of one and two tracks east of Pomona.

North from West Colton, UP operates the single-track-Centralized Traffic Control Mojave Subdivision to Northern California and Pacific Northwest points. This line closely parallels the BNSF Cajon Subdivision as the two lines climb the south slope of Cajon Pass. Connections are afforded at Keenbrook and Silverwood to enable UP trains to enter/exit the main tracks of the BNSF Cajon Subdivision. Beyond Silverwood to Palmdale, the UP Mojave Subdivision has very little train traffic.

East from Colton Crossing to Indio, UP operates its transcontinental Sunset Route main line, also known as the UP Yuma Subdivision. The line has two main tracks the entire distance to Indio. East of Indio, the Sunset Route has stretches of single-track, but construction of a second main track is underway.

The Alameda Corridor eliminated all of the at-grade crossings in the proposed Program vicinity between the ports and the intermodal rail yards located in downtown Los Angeles. There are existing at-grade grade crossings within the immediate PMPU area as shown in Figure 3.12-3. The Henry Ford crossing serves the China Shipping, Yang Ming, and TraPac terminals. The South Wilmington Grade Separation Project, which is under construction and will be completed in late 2014, will provide unimpeded vehicular access to/from the Port area south of Harry Bridges Boulevard, including the Wilmington Waterfront area. Additionally, Fries Avenue and Avalon Boulevard in the vicinity of the rail crossings are proposed to be vacated in the next three years to further improve safety. As such, the study area is limited to the existing at-grade rail crossing in the PMPU area at Henry Ford Avenue. Henry Ford Avenue is a north-south six-lane roadway extending from Anaheim Street on the north to the Dominguez Channel on the south. The railroad crossing is a single east-west track that provides access to the West Basin area of the Port.

Baseline Train Volumes at Henry Ford Crossing

The trains that cross Henry Ford Avenue at the study location include double-stack container trains, plus a variety of switchers and other PHL trains. PHL provided a detailed data base of all train movements at this crossing for a 4-week period from July 23, 2012 through August 17, 2012. Based on that information, the resulting baseline train volumes by length are shown in Table 3.12-6.

Table 3.12-6. Baseline Train Volumes at Henry Ford Avenue Crossing

Train Length (feet)	*Double Stack*		*Switchers*	*Other*					*Total*
	10,000	*8,000*	*1,000*	*5,000*	*4,000*	*3,000*	*2,000*	*1,000*	
Percentage by Category	33	67	100	20	20	20	20	20	
4-Week Total (7/23/12 through 8/17/12)	4.6	9.4	33.0	16.4	16.4	16.4	16.4	16.4	129.0
Average Weekday	0.2	0.5	1.7	0.8	0.8	0.8	0.8	0.8	6.4
Adjusted per day per PHL[a]	0.4	0.8	1.7	0.8	0.8	0.8	0.8	0.8	6.9
Adjusted per day for 2011 Base Year[b]	0.4	0.8	1.6	0.8	0.8	0.8	0.8	0.8	6.6

Notes:

a. Assumes one BNSF double stack train per day, and one UP double stack train per week (0.2 per day).

b. Adjusted by multiplying 2012 train volumes by ratio of total Port TEUs in July 2011 to total Port TEUs in July 2012.

During the four-week period in July and August 2012, there were a total of 129 train crossings of Henry Ford Avenue. This included 14 double-stack trains, 33 switchers, and 82 other trains. Based on consultations with PHL, double-stack trains are typically 8,000 or 10,000 feet long, switchers are approximately 1,000 feet long, and other trains vary in length from 1,000 feet to 5,000 feet in length. For this analysis it was assumed that two-thirds of the double-stack trains are 8,000 feet in length, and one-third are 10,000 feet in length. It was also assumed that the “other” trains were evenly split among 1,000, 2,000, 3,000, 4,000, and 5,000-foot trains. PHL confirmed that these were reasonable assumptions (Mike Stolzman 2012, personal communication). PHL averages about one BNSF double stack train per weekday and one UP double stack train per week at the Henry Ford crossing. During the 4-week period in July and August 2012, the distribution of trains by time period of day is shown in Table 3.12-7.

Table 3.12-7. Average Two-Way Distribution of Train Volumes at Henry Ford Avenue Crossing by Time Period of Day, July 23 to August 17, 2012

Time Period	*Trains Frequency*	*Time Period Percent of Total*
A.M. (6 A.M. – 9 A.M.)	12	9.3
Mid-Day (9 A.M. – 3 P.M.)	35	27.1
P.M. (3 P.M. – 7 P.M.)	14	10.9
Night (7 P.M. – 6 A.M.)	68	52.7
Total	**129**	**100.0**

3.12.2.3 Other Transportation Modes

Other modes of travel within the proposed Project area include pedestrian and bicycle. Bike lanes are not required or appropriate within the Port because of safety issues and limited recreation and coastal access within ports. The *2010 Bicycle Plan* (City of Los Angeles 2010) identifies PCH in the proposed Program vicinity as a Class II-designated bikeway that will include bicycle lanes in the future. Other parallel roadways such as Lomita Boulevard, Sepulveda Boulevard, and Anaheim Street are also designated as Class II bikeways, but do not currently have bicycle lanes in place save the section of Anaheim Street west of Santa Fe Avenue to East of Alameda Street. The 5-year implementation plan does not include PCH. However, Lomita Boulevard and Anaheim Street are included in the 5-year implementation plan as Priority 2 (second highest funding priority). John S. Gibson Boulevard is a Class II bicycle facility (bicycle lanes) from the I-110 northbound ramps to Figueroa Street. The City of Carson classifies the Dominguez Channel as a Class I bicycle path; however, it is not constructed and there is no public access to the Dominguez Channel right of way.

Pedestrians are allowed to use the sidewalks and to cross intersections within the PMPU area. The streets and intersections are designed by the Cities of Los Angeles and Long Beach to accommodate pedestrians. At intersections in the PMPU area, all pedestrian crossing areas are marked with crosswalks.

3.12.2.4 Marine Vessel Transportation

The Port is located in San Pedro Bay and is protected from Pacific Ocean surge conditions by the San Pedro, Middle, and Long Beach breakwaters. The openings between these breakwaters, known as Angels Gate and Queens Gate, provide entry to the Port and the Port of Long Beach, respectively. Vessel traffic channels are established in the Los Port and numerous aids to navigation have been developed.

Numerous types of vessels, including fishing boats, pleasure vessels, passenger-carrying vessels, tankers, auto carriers, container vessels, dry bulk carriers, and barges, call or reside in the Port. When approaching and leaving the Port, commercial vessels follow vessel traffic lanes established by the USCG. Designated traffic lanes converge at “Precautionary Area” (Figure 3.12-5). The Federal Channels in the port complex are maintained by the USACE.

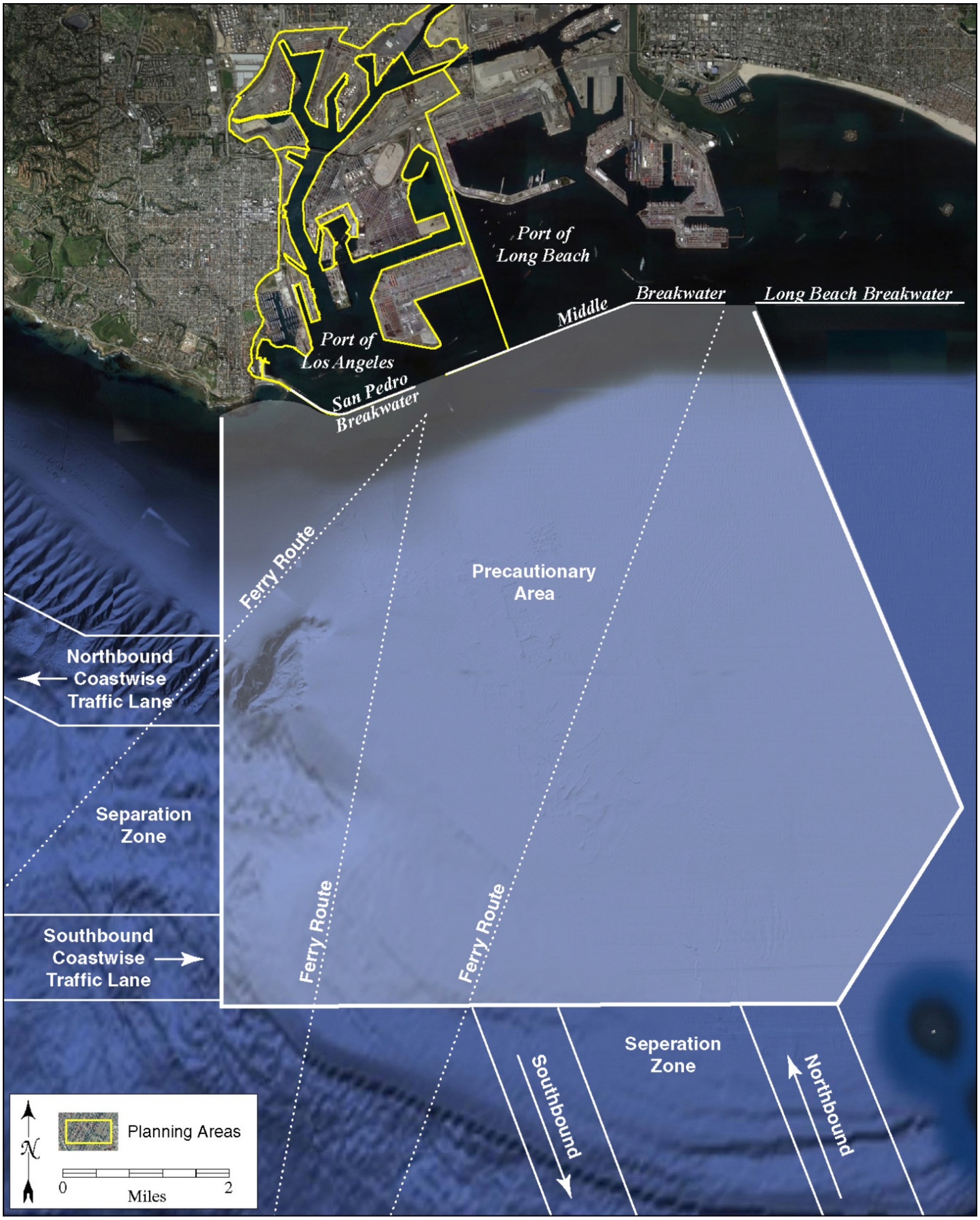


Figure 3.12-5. Breakwaters and Precautionary Area

3.12.2.4.1 Vessel Transportation Safety

Several measures are in place to ensure the safety of vessel navigation in the Port area. The Port utilizes a Vessel Traffic Service (VTS, see below) operated jointly by the USCG COTP and the Marine Exchange of Southern California (see below). Using shore-based radar, the VTS monitors traffic in the approach corridor traffic lanes to the port complex and the Precautionary Area (see below) to ensure that the total number of vessels transiting the Port does not exceed the design capacity of the federal channel limits. All power-driven vessels of 131-feet or more in length are required to report their position and destination to the VTS at certain times and locations and may also request information about traffic that could be encountered in the Precautionary Area. Ferry routes to Avalon and Two Harbors on Catalina Island are also indicated on Figure 3.12-5.

The Los Angeles and Long Beach pilot services (see below) and the Marine Exchange all operate radar systems to monitor vessel traffic in the port complex, and information is available to all vessels on request. The pilot services also manage the use of anchorages under an agreement with the USCG. A communication system links key operational centers: USCG COTP; VTS; Los Angeles Pilot Station; Long Beach Pilot Station; and Port of Long Beach Security. This system is used to exchange vessel-movement information and safety notices among the various organizations.

The USCG "Rules of the Road" apply to all marine vessels, regardless of size. To minimize the potential for accidents, all marine vessels in the port complex are required to follow vessel safety policies and regulations contained in the Navigation Rules: International and Inland (USCG Navigation Rule CG-169).

For the open seas, International Rules apply and as ratified at the Convention on the International Regulations for Preventing Collisions at Sea, 1972. The International Rules apply to all vessels of nations that ratified the treaty, in addition to the United Nations. The International Rules include 38 numbered rules organized into five parts: A – General; B – Steering and Sailing Rules; C – Lights and Shapes; D – Sound and Light Signals; and, E – Exemptions.

Efforts to unify and update various inland navigation rules culminated in 1980 with the enactment of the Inland Navigation Rules Act (22 CFR 83). The Inland Rules were established under the authorization of International Rule 1(b) to apply to all inland waters of the U.S. The Inland Rules numbered 1 through 38 closely match, in some cases exactly, the International Rules. All marine vessels in the Port are required to follow these vessel safety policies and regulations.

The measures enacted to ensure safe vessel navigation are regulated by various agencies and organizations, as described below.

Marine Exchange of Southern California

The Marine Exchange is a nonprofit organization affiliated with the Los Angeles Chamber of Commerce that was created to enhance navigation safety in the Precautionary Area and Harbor area of the Ports. The voluntary services provided consist of a coordinating office, specific reporting points, and very high frequency-

frequency modulation radio communications used with participating vessels. Vessel traffic channels and numerous aids to navigation (e.g., operating rules and regulations) have been established in the Port. The Marine Exchange also operates the Physical Oceanographic Real Time System (PORTS) as a service to organizations making operational decisions based on oceanographic and meteorological conditions in the vicinity of the Port. The PORTS collects and disseminates accurate real-time information on tides, visibility, winds, currents, and sea swell to maritime users to assist in the safe and efficient transit of vessels in the Port area.

Vessel Traffic Service

The VTS for Los Angeles-Long Beach Harbor and approaches has been established to monitor traffic and provide mariners with timely, relevant, and accurate information for the purpose of enhancing safe, environmentally sound and efficient maritime transportation. It is jointly operated by the Marine Exchange and the USCG, monitoring traffic with shore-based radar in both the main approach and departure lanes, including the Precautionary Area, as well as internal movement inside the port complex. VTS uses radar, radio, and visual inputs to collect real-time vessel traffic information and broadcasts traffic advisories to assist mariners. All power-driven vessels of 131 feet or more in length, commercial towing vessels 26-feet or more in length that are towing, and vessels certified to carry 50 or more passengers for hire are required to participate in the VTS User Requirements including vessel movement reporting requirements. These vessels are referred to as Active Users. All power-driven vessels of 65 feet or more in length and vessels of 100 gross tons or more carrying one or more passengers for hire must maintain radio listening, respond to the VTS center when hailed, and comply with Traffic Separation Scheme Rules. These vessels are referred to as Passive Users. Vessels that do not fall into the Active or Passive User categories are referred to as Non-Participants. While not required to participate with the VTS, they are encouraged to monitor communications and contact the VTS center for information, assistance, or to report emergencies. Non-Participants must still observe and obey all International Rules of the Road and comply with all other measures of safe navigation and prudent seamanship while operating within the VTS area.

VTS also implements the COTP's uniform procedures, including advance notification to vessel operators, vessel traffic managers, and Port Pilots identifying the locations of dredges, derrick barges, and any associated operational procedures or restrictions (e.g., one-way traffic), to ensure safe transit of vessels into and from the PMPU area.

Traffic Separation Schemes

A TSS is an internationally recognized vessel routing designation, which separates opposing flows of vessel traffic into lanes, including a zone between lanes where transit is to be avoided. TSSs have been designated to help direct offshore vessel traffic along portions of the California coastline, such as the Santa Barbara Channel. Vessels are not required to use a TSS, but failure to do so, if one is available, would be a major factor for determining liability in the event of a collision. TSS designations are proposed by the USCG, but they must be approved by the IMO, which is part of the United Nations.

Precautionary and Regulated Navigation Areas

A Precautionary Area is designated in congested areas near harbor entrances. The Precautionary Area enables harbor officials to set speed limits or to establish other safety precautions for ships entering or departing a harbor. A CNA is a water area within a defined boundary for which federal regulations have been established under 33 CFR 165.1109 for vessels navigating in this area. In the Port, CNA boundaries match the designated Precautionary Area. For example, 33 CFR 165.1152 identifies portions of the Precautionary Area as CNA.

The Precautionary Area for the Port is defined by a line that extends south from Point Fermin approximately 7 nm, then due east approximately 7 nm, then northeast for approximately 3 nm, and then back northwest (Figure 3.12-5). Ships are required to cruise at speeds of 12 knots or less on entering the Precautionary Area. A minimum vessel separation of 0.25 nm is also required in the Precautionary Area. The Marine Exchange of Southern California monitors vessel traffic within the Precautionary Area.

Pilotage

Use of a Port Pilot for transit in and out of the San Pedro Bay area and adjacent waterways is required for all vessels of foreign registry and U.S. vessels that do not have a federally licensed pilot on board (some U.S.-flag vessels have a trained and licensed pilot onboard and, thus, are not required to use a Port Pilot while navigating through the Port). Los Angeles Harbor Pilots provide pilotage to the ports and receive special training that is regulated by the Los Angeles/Long Beach Harbor Safety Committee. Pilots typically board the vessels at the Angels Gate entrance, and then direct the vessels to their destinations. Pilots normally leave the vessels after docking and reboard the vessels to pilot them back to sea or to other destinations within the Port. In addition, radar systems are operated by Los Angeles Harbor Pilots to monitor vessel traffic in the Port area. This information is available to all vessels on request. The pilot service also manages the use of anchorages under an agreement with the USCG.

The Port also enforces numerous federal navigation regulations (e.g., Port Tariffs) in the harbor. Specifically, larger commercial vessels (i.e., greater than 300 gross tons) are required to use a federally licensed pilot when navigating inside the breakwater. In most circumstances, vessels employ the services of a federally licensed local pilot from the Los Angeles Harbor Pilots. When a local pilot is not used, masters must have a local federal pilot license and receive approval from the USCG COTP prior to entering or departing the Port. Port Tariffs also require vessels to notify the affected pilot station(s) in situations when a pilot is not needed before entering, leaving, shifting, or moving between the ports.

Tug Assist/Tug Escort

"Tug Assist" refers to the positioning of tugboats alongside a vessel and applying force to assist in making turns, reducing speed, providing propulsion, and docking. Most ocean-going vessels are required to have tug assistance in the harbor (Los Angeles/Long Beach Harbor Safety Committee 2011). However, some vessels have internal "tugs" (typically bow and stern thrusters) that allow the vessel to propel without engaging the main engines, and thus accomplish maneuvers with the same precision as a tug-assisted vessel. These ships are not required to have external tug assistance.

"Tug Escort" refers to the stationing of tugboats in proximity to a vessel as it transits into port complex to provide immediate assistance should a steering or propulsion failure develop, thereby reducing the possibility of groundings or collisions and the risk of an oil spill. State regulations for inbound, laden (carrying as cargo a total volume of oil greater than or equal to 5,000 long tons) tank vessels require escort tug(s) to meet the tank vessel at specified sea buoy. The tug(s) then accompany the tank vessel to the berth and assist in berthing. Outbound, laden tank vessels must use escort tugs from departing the berth until clearing the breakwater entrance. Tractor tugs must be tethered during arrival and departure. Conventional tugs may be tethered on arrival but must be tethered on departure.

Five independent tugboat companies (AmNav, Crowley Marine Services, Foss Maritime, Millennium Maritime, and Sause Brothers) operate in the port complex. These companies provide dedicated ship and barge escort/assist services. The five companies operate approximately 25 tugboats in the harbors. All escort tugs must meet strict requirements, obtain a certificate of compliance, undergo a periodic inspection program, meet specific equipment requirements, and have their bollard pull (the maximum pulling force that they can exert on another ship) measured and verified.

The HSP establishes the criteria for matching tugs to tankers and barges (Los Angeles/Long Beach Harbor Safety Committee 2009). Tankers are matched according to a matrix that correlates a tanker's displacement with the braking force of the tug(s). Barges less than 20,000 displacement tons are matched based on the aggregate displacement tonnage of both the primary towing vessel and the tank barge. Barges with a displacement tonnage greater than 20,000 require a tethered escort and a one-to-one correlation between the sum of the total displacement tonnage of the primary towing vessel and its barge, and the escort tug(s). Tankers with double hulls, fully redundant steering and propulsion systems, integrated navigation systems, and bow thrusters are exempt from the tug escort requirement.

3.12.2.4.2 Navigational Hazards

Port Pilots are trained to identify fixed navigational hazards in the Ports, including breakwaters protecting the Outer Harbor, anchorage areas, and various wharfs and landmasses that compose the port complex. These hazards are easily visible on radar and are currently illuminated.

Bridges

Two fixed bridges (Vincent Thomas and Gerald Desmond) and two drawbridges (Commodore Heim highway bridge and adjacent Ford Avenue railroad bridge) span the navigable channels of the port complex. The drawbridges cross the Cerritos Channel. The narrow channel-width combined with restrictions on passing under the drawbridges limit traffic through Cerritos Channel (with extremely rare exceptions) to pleasure vessels, tugboats without tows and tugs with tows alongside or pushing ahead. However, tugs with bunker barges frequently pass under the bridges. Small tankers occasionally pass, given appropriate weather and the vessel's draft, trim, and beam. All four bridges are marked with lights and identified on charts.

Anchorages

Vessels that are waiting to enter the Port and moor at a berth can anchor at anchorages outside the breakwaters (Figure 3.12-5). Vessels do not require tug assistance to anchor outside the breakwater. The Port currently does not have any available anchorages inside the breakwater. VTS manages and monitors all anchorages outside the federal breakwater. Any vessel wanting to use one of these anchorages must advise VTS and be assigned an anchorage by the VTS watch. For safety reasons, VTS will not assign an anchorage in the first row of sites closest to the breakwater to vessels longer than 656 feet.

Vessel Accidents

Although marine safety is thoroughly regulated and managed, accidents can occur during marine navigation. Marine vessel accidents include vessel collisions (between two moving vessels); allisions (between a moving vessel and a stationary object, including another vessel), and vessel groundings. As shown in Table 3.12-8, the number of vessel allisions, collisions, and groundings (ACGs) in the port complex has remained fairly constant between 1996 and 2011. The number of ACGs ranged from 1 to 12 per year between 1996 and 2011, at an average of seven ACG incidents per year (U.S. Naval Academy 1999; Los Angeles/Long Beach Harbor Safety Committee 2004, 2007, and 2011). While there are no reliable data on the level of recreational boating incidents in the ports over this period, the level of commercial traffic transits has remained fairly constant (± 2 percent). During this time, there has also been a large amount of construction and channel deepening within the ports. Each of these accidents was subject to a USCG marine casualty investigation, and the subsequent actions taken were targeted at preventing future occurrences.

Table 3.12-8. Allisions, Collisions, and Groundings – Port Complex (1996-2011)

Year	*ACG Incidents*			*Total*
	Allisions	*Collisions*	*Groundings*	
1996	2	4	1	7
1997	1	3	2	6
1998	1	2	3	6
1999	3	4	2	9
2000	3	2	1	6
2001	4	1	0	5
2002	6	5	0	11
2003	4	2	2	8
2004	2	4	6	12
2005	0	1	3	4
2006	4	0	5	9
2007	3	1	6	10
2008	1	1	1	3
2009	3	0	0	3
2010	1	0	0	1
2011	7	0	1	8

Note: These commercial vessel accidents meet a reportable level defined in 46 CFR 4.05, but do not include commercial fishing vessel or recreational boating incidents.
Source: U.S. Naval Academy 1999; Los Angeles/Long Beach Harbor Safety Committee 2004, 2007, 2011, and 2012

According to the USCG vessels accidents database, the ports area has one of the lowest accident rates among all U.S. ports, with a 0.0038 percent probability of a vessel experiencing an ACG during a single transit, as compared to the average 0.025 percent ACG probability for all U.S. ports (U.S. Naval Academy 1999).

Close Quarters

To avoid vessels passing too close together, the VTS documents, reports, and takes action on “close-quarters” situations. VTS close-quarters situations are described as vessels passing an object or another vessel closer than 0.25 nm, or 500 yards. These incidents usually occur in the Precautionary Area. No reliable data are available for close-quarters incidents outside the VTS area. Normal action taken in response to close-quarters situations includes initiating informal USCG investigation, sending Letters of Concern to owners and operators, having the involved vessel master visit VTS and review the incident, and USCG enforcement boardings. A 10-year history of the number of close-quarters situations is presented in Table 3.12-9. Recent near-miss data for 2006 through 2008 were obtained from the 2009 HSP, which is also included in Table 3.12-8 (Los Angeles/Long Beach Harbor Safety Committee 2009). Given the relatively steady number of commercial transits over the past 5 years, a decreasing trend in close-quarters incidents is discernable (Los Angeles/Long Beach Harbor Safety Committee 2007, 2009). This is noticeable in the low number of near-miss situations from 2006 to 2008.

Table 3.12-9. Number of VTS-Recorded Close-Quarters Incidents, 1998-2008

Year	*No. of Close Quarters*
1998	9
1999	5
2000	1
2001	2
2002	6
2003	4
2004	0
2005	0
2006	0
2007	1
2008	1

Source: Los Angeles/Long Beach Harbor Safety Committee 2007, 2009

3.12.2.4.3 Factors Affecting Vessel Traffic Safety

This section summarizes environmental conditions that could affect vessel safety in the harbor area.

Fog

Fog is a well-known weather condition in southern California. Port-area fog occurs most frequently in April and from September through January, when visibility over San Pedro Bay is below 0.5 mile for 7 to 10 days per month. Fog at the Port is mostly a land (radiation) type fog that drifts offshore and worsens in the late night and early morning. Smoke from nearby industrial areas often adds to its thickness and persistence. Along the shore, fog drops visibility to less than 0.5 mile on 3 to 8 days per month from August through April and is generally the worst in December (Los Angeles/Long Beach Harbor Safety Committee 2011).

Winds

Wind conditions vary widely, particularly in fall and winter. Winds can be strongest when Santa Ana winds (prevailing winds from the northeast occurring from October through March) blow. Santa Ana winds, though infrequent, may be violent. A Santa Ana condition occurs when a strong high-pressure system resides over the plateau region of Nevada and Utah and generates a northeasterly to easterly flow over southern California. Aside from weather forecasts, there can be little warning of a Santa Ana wind onset. Good visibility and unusually low humidity often prevail for some hours before it arrives. Santa Ana wind may come at any time of day and can be reinforced by an early morning land breeze or weakened by an afternoon sea breeze (Los Angeles/Long Beach Harbor Safety Committee 2011).

Winter storms produce strong winds over San Pedro Bay, particularly southwesterly through northwesterly winds. Winds of 17 knots or greater occur about 1 to 2 percent of the time from November through May. Southwesterly through westerly winds begin to prevail in the spring and last into early fall (Los Angeles/Long Beach Harbor Safety Committee 2011).

Currents

The tidal currents follow the axes of the channels and rarely exceed 1 knot. The harbor area is subject to seiches (i.e., waves that surge back and forth in an enclosed basin as a result of earthquakes) and surge, with the most persistent and conspicuous oscillation having about a 1-hour period (Section 3.5, Geology). Near Reservation Point, the prominent hourly surge causes velocity variations as great as 1 knot. These variations often overcome the lesser tidal current, so that the current ebbs and flows at 0.5-hour intervals. The more restricted channel usually causes the surge through the Back Channel to reach a greater velocity at the east end of Terminal Island, rather than west of Reservation Point. In the Back Channel, hourly variation may be 1.5 knots or more. At times, the hourly surge, together with shorter, irregular oscillations, causes a very rapid change in water height and current direction/velocity, which may endanger vessels moored at the piers (Los Angeles/Long Beach Harbor Safety Committee 2011).

Water Depths

The Port is a deep-water, constructed port and does not have siltation problems like natural river ports. The only sediments deposited in the ports are carried by the Los Angeles River, Dominguez Channel, and several smaller local storm drains. Due to the dry local climate, these channels carry substantial quantities of water only on rare occasions during the winter, and silt settles out near the inlet mouth. The ports only need to dredge occasionally to maintain berth side design water depths.

The USACE maintains the Federal Channels in the Port region. Table 3.12-10 lists the average water depth at various locations in the Port.

Table 3.12-10. Water Depths within the Port

Channel/Basin	*Depth – feet MLLW*
Main Channel	-53
Turning Basin	-53
West Basin	-53
East Basin	-45
Pier 300/400 Channel	-53
North Turning Basin	-81
Approach and Entrance Channels	-81
Source: Los Angeles/Long Beach Harbor Safety Committee 2011	

3.12.2.4.4 Vessel Traffic

A total of 2,181 vessels called at the Port in 2011. Vessel traffic to the Port was relatively constant through 2007, declined in 2008 and 2009, and then increased slightly in 2010 and 2011 as indicated in Table 3.12-11. The increase in cargo volumes has been accommodated primarily by larger vessels, rather than additional vessels.

Table 3.12-11. Vessel Calls at the Port

Year	*Ship Calls*
1997	2,786
1998	2,569
1999	2,630
2000	3,060
2001	2,717
2002	2,526
2003	2,660
2004	2,850
2005	2,500
2006	2,701
2007	2,537
2008	2,239
2009	2,010
2010	2,182
2011	2,072
Source: USACE and LAHD 2009; Port 2010, 2012	

3.12.2.5 Applicable Regulations

Many laws and regulations are in place to regulate marine terminals, vessels calling at marine terminals, and emergency response/contingency planning. Responsibilities for enforcing or executing these laws and regulations fall to various international, federal, state, and local agencies. The various agencies and their responsibilities are summarized below. Regulations associated with safety are summarized in Section 3.7.3.2, Hazards and Hazardous Materials.

3.12.2.5.1 International Maritime Organization

The agency governing the movement of goods at sea is the IMO. This is done through a series of international protocols. Individual countries must approve and adopt these protocols before they become effective. The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78 and amendments) governs the movement of oil and specifies tanker construction standards and equipment requirements. Regulation 26 of Annex I of MARPOL 73/78 requires that every tanker of 150 gross tons and above shall carry on board a shipboard oil pollution emergency plan approved by IMO. The U.S. implemented MARPOL 73/78 with passage of the Act of 1980 to Prevent Pollution from Ships. The IMO (IMO 2001) has issued *Guidelines for the Development of Shipboard Oil Pollution Emergency Plans* to assist tanker owners in preparing plans that comply with the regulations and to assist governments in developing and enacting domestic laws that enforce the cited regulations. In 1990, the USEPA passed the OPA 90 and the State of California passed the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (California SB 2040) to meet IMO requirements. TSSs must be approved by the IMO. The TSS at the entrances to the Port and the Port of Long Beach has been approved by the IMO.

The IMO adopted an amendment to SOLAS with provisions entitled “Special Measures to Enhance Maritime Safety,” and which became effective in 1996. These provisions allow for operational testing during so-called state examinations to ensure that masters and crews for both U.S. and international vessels are familiar with essential shipboard procedures relating to ship safety. The USCG Marine Safety Office conducts these port state examinations as part of their vessel inspection program.

3.12.2.5.2 Federal Regulations

A number of federal laws regulate marine terminals and vessels. In general, these laws address design and construction standards, operational standards, and spill prevention and cleanup. Regulations to implement these laws are contained primarily in CFR Titles 33 (Navigation and Navigable Waters), 40 (Protection of Environment), and 46 (Shipping).

Maritime Security Transportation Act

MTSA is designed to protect the nation’s ports and waterways from a terrorist attack. This law is the U.S. equivalent of the ISPS, and was fully implemented on July 1, 2004. It requires vessels and port facilities to conduct vulnerability assessments and develop security plans that may include passenger, vehicle and baggage screening procedures; security patrols; establishing restricted areas; personnel identification procedures; access control measures; and/or installation of surveillance equipment.

U.S. Army Corps of Engineers

Since 1789, the federal government has authorized navigation channel improvement projects. The General Survey Act of 1824 established the role of the USACE as the agency responsible for the navigation system. Since then, ports have worked in partnership with the USACE to maintain waterside access to port facilities.

United States Coast Guard

The USCG, through Titles 33 and 46 of the CFR, is the federal agency responsible for vessel inspection, marine terminal operations safety, coordination of federal responses to marine emergencies, enforcement of marine pollution statutes, marine safety (navigation aids, etc.), and operation of the National Response Center for spill response. The USCG is the lead agency for offshore spill response. The USCG implemented a revised vessel-boarding program in 1994 designed to identify and eliminate substandard ships from U.S. waters. The program pursues this goal by systematically targeting the relative risk of vessels and increasing the boarding frequency on high-risk (potentially substandard) vessels. Each vessel's relative risk is determined through the use of a matrix that factors in the vessel's flag, owner, operator, classification society, vessel particulars, and violation history. Vessels are assigned a boarding priority from I to IV, with priority I vessels being the potentially highest risk.

Based on studies that have shown the use of double-hull vessels decreases the probability of releases when tank vessels are involved in accidents, the USCG issued regulations addressing double-hull requirements for tank vessels. The regulations establish a timeline for eliminating single-hull vessels from operating in the navigable waters or the EEZ of the U.S after January 1, 2010, and double-bottom or double-sided vessels by January 1, 2015. Only vessels equipped with a double hull, or with an approved double containment system will be allowed to operate after those times. The phase-out timeline is a function of vessel size, age, and whether it is equipped with a single hull, double bottom, or double sides. All new tankers delivered after 1993 must be double hulled. Double-bottom or double-sided vessels can essentially operate 5 years longer than single-hull vessels.

Bulk chemical tank vessels carrying particularly hazardous and/or toxic cargoes (including crude oil and intermediary products) are required to follow the Plan's tug escort standards and any additional USCG or appropriate port requirements for tug escort/assist deemed necessary. Bulk chemical tank vessels are those that carry in bulk any of the commodities listed under 46 CFR, Part 150, Table 1 (e.g., crude oil). Bulk is defined as cargoes pumped and/or dumped into any tank(s) or hold(s) integral to the vessel. This definition includes large independent tanks within or atop vessels, but not IMO tanks. Current USCG regulations require a federally licensed pilot aboard every tanker vessel mooring and unmooring at offshore marine terminals. At the request of the USCG, Los Angeles Pilots and Jacobsen Pilots have agreed to ensure continual service of a licensed pilot for vessels moving between the Port and the Port of Long Beach, outside the breakwater.

USCG regulations associated with safety are summarized in Section 3.7.3.2, Hazards and Hazardous Materials.

Department of Homeland Security

The DHS is discussed in Section in Section 3.7.3.2, Hazards and Hazardous Materials.

3.12.2.5.3 State Regulations

Chapter 1248 of the Statutes of 1990 (SB 2040), the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, established a comprehensive approach for the prevention of and response to oil spills. The majority of this regulation has to do with the prevention and response to oil spills and marine terminal safety, however, the regulation requires each major port to develop a HSP addressing navigational safety, including tug escort for tankers. The Los Angeles/Long Beach Harbor Safety Committee was formed in 1991 and issued its HSP shortly thereafter (Section 3.12.2.5.4, Local Regulations). Information on safety-related regulations under jurisdiction of CSLC, CDFG, and the CCC are summarized in Section 3.7.3.2, Hazards and Hazardous Materials.

CCR Title 14, Division 1, Subdivision 4, OSPR, Chapter 4 has specific requirements for tanker vessels, tug escort requirements, crew and supervisors requirements, tanker vessel equipment requirements, and tanker and tug(s) matching criteria. This subchapter also sets forth tank vessel escort requirements for tank vessels underway in the port complex and its approaches and speed limits for tank vessels transiting between the seaward limits of the pilot operating areas.

3.12.2.5.4 Local Regulations

Port of Los Angeles Tariff No. 4

Port of Los Angeles Tariff No. 4 describes the rates, charges, rules and regulations of the Port. Included is information on pilotage, dockage, wharfage, space assignments, berth assignments, anchorages, fairways, turning restrictions, navigation under bridges, controlled navigation areas, use of lights, towing, and speed restrictions.

Los Angeles/Long Beach Harbor Safety Plan

The Los Angeles/Long Beach Harbor Safety Committee was created under the authority of Government Code Section 8670.23(a), which requires the Administrator of the OSPR in the CDFG to create a Harbor Safety Committee for the Los Angeles/Long Beach Harbor area. The Harbor Safety Committee comprises members of the ports community including designees from the Port, Port of Long Beach, vessel operators, pilot services, commercial fishing, recreational boating, marine terminal operators, environmental organizations, CCC, California State Lands Marine Facilities Division, organized labor, USCG, U.S. Navy, and USACE. The Harbor Safety Committee is responsible for evaluating and planning the safe navigation and operation of tankers, barges, and other vessels in San Pedro Bay and approach areas. Their findings and recommendations are documented by the issuance of the HSP. The Harbor Safety Committee issued the original HSP in 1991 and since then has issued annual updates. Major issues facing the Harbor Safety Committee include the need for escort tugs, required capabilities of escort tugs, and the need for new or enhanced vessel traffic information systems to monitor and advise vessel traffic. On approval of the HSP and updates, the OSPR Administrator, in consultation with the Harbor Safety Committee, implements the HSP by proposing and adopting the necessary regulations. When federal authority or action is required to implement the HSP, or the recommendations therein, OSPR staff petitions the appropriate agency, or Congress, as necessary.

The Harbor Safety Committee developed a regulatory scheme to institutionalize Good Marine Practices and guide those involved in moving tanker vessels, including the minimum standards that are applicable under favorable circumstances and conditions. The master or pilot shall arrange for additional tug assistance if bad weather, unusual port congestion, or other circumstances so require.

The HSP provides specific rules for navigation of vessels in reduced visibility conditions. The HSP does not recommend transit for vessels greater than 150,000 deadweight tonnage if visibility is less than 1 nm. For all other vessels, transit is not recommended if visibility is less than 0.5 nm.

The HSP establishes vessel speed limits. In general, speeds should not exceed 12 knots inside the Precautionary Area or 6 knots in the port complex. These speed restrictions do not preclude the master or pilot from adjusting speeds to avoid or mitigate unsafe conditions. Weather, vessel maneuvering characteristics, traffic density, construction, dredging, and other possible issues are taken into account.

3.12.3 Impacts and Mitigation Measures

3.12.3.1 Traffic

3.12.3.1.1 Methodology

Vehicle Transportation

Traffic analysis in the State of California is guided by policies and standards set at the state level by Caltrans, at the county level by the County Congestion Management Agency, and by local jurisdictions. For the PMPU area, this includes the cities of Los Angeles, Long Beach, and Carson.

Impacts were assessed by quantifying differences between baseline conditions and baseline plus Program conditions under the proposed Program. For CEQA analysis, baseline conditions are year 2011 traffic volumes, which is consistent with the *Sunnyvale West Neighborhood Association vs. City of Sunnyvale City Council* court decision. A secondary analysis methodology was also performed, which uses a future traffic baseline and is the methodology typically used prior to the Sunnyvale decision as part of the Cumulative Analysis in Section 4.2.13. The cumulative methodology may be more conservative and representative of the conditions associated with this type of proposed Program. The cumulative methodology includes traffic from other projects, as well as regional growth, as part of the background conditions.

According to CMP requirements, traffic impacts are only required to be compared to a future condition (LACMTA 2010), meaning background growth related to cargo at a marine terminal, as analyzed as part of the Cumulative Analysis in Section 4.2.13. However, to be conservative and in compliance with CEQA, the proposed Program was compared to the CEQA baseline (2011) for the impact determination, in which no background growth in non-Port traffic is assumed.

CEQA does not prescribe any methodology or significance criteria for potential transportation impacts of proposed port projects on existing at-grade rail-roadway crossings. However, the Port and the Port of Long Beach have developed a standard methodology for evaluating potential transportation impacts under CEQA.

Impacts of the proposed Program are analyzed in terms of average vehicle delay in the peak hour at the study area grade crossings. Average vehicle delay is calculated by dividing the total vehicle delay caused by trains passing a crossing during the peak commute hour by the number of vehicles passing the at-grade crossing in that hour. This is a universally-accepted approach for evaluating vehicle delay at signalized intersections, consistent with methodologies contained in the *Highway Capacity Manual* (HCM) (TRB 2010). At-grade crossings operate similarly to traditional signalized intersections where some vehicles experience no delay (during a green phase or when the gate is up) and others are stopped for a certain period of time (during a red phase or when a train is crossing). While different approaches could be considered, the LOS procedures for signalized intersections were identified as the most logical and consistent approach for assessing the effects of average vehicle delays at at-grade crossings.[2]

For the past thirty years, the traffic engineering/transportation planning profession has relied on the HCM methodology to evaluate a proposed program's traffic effects. The fundamental technical approach entails measuring the impact of a train crossing a roadway at-grade during the peak commute hour. This is the same approach utilized for traditional traffic impact studies employed throughout the U.S. and Canada to evaluate the impact of incremental program vehicular traffic that utilizes roadway capacity and degrades traffic operating conditions (i.e., LOS). Analogously, trains crossing a roadway use up roadway capacity and degrade LOS. Per the HCM, LOS D includes delays of up to 55 seconds. LOS D is an acceptable level of service at signalized intersections in most urban areas in the southern California region. Anything exceeding this threshold is generally considered unacceptable.

The Port used the evaluation criteria shown in Table 3.12-12 to evaluate vehicle delay impacts at grade crossings in the peak hour[3]. If the LOS at the crossing is A-D, then the impact is considered minor (insignificant). With the proposed Program if the crossing is at LOS E (55 – 80 seconds of average vehicle delay), and the change in delay is 2 seconds or more, then the impact is considered significant. If the crossing is at LOS F (over 80 seconds of average vehicle delay), and the change in average delay is 1 second or more, then the impact is considered significant.

[2] Many jurisdictions in southern California use HCM methodologies to evaluate impacts at signalized intersections, including Caltrans, the Cities of Riverside and San Bernardino, and the County of Riverside.

[3] Ports of Los Angeles and Long Beach, Rail Impact Analysis Methodology, Table 3, page 17, June 2011.

Table 3.12-12. Threshold of Significance

LOS with Proposed Program	*Change in Average Delay per Vehicle in the Peak Hour*
A – D	Less Than Significant
E (55 – 80 seconds of average delay per vehicle)	Significant if ≥2 seconds
F (over 80 seconds of average delay per vehicle)	Significant if ≥1 second

LOS is calculated using peak hour average vehicle delay. Peak hour average vehicle delay is based on the train and vehicular volumes and calculated using the following data:

- Peak hour vehicle arrival and departure rates (vehicles per minute per lane);
- Gate down time (function of speed and length of train, width of intersection, clearance distance, lead and lag times of gate operation); and,
- Total number of vehicles arriving per period.

Port Travel Demand Model

The Port Travel Demand Model was originally developed for the *Ports of Long Beach/Los Angeles Transportation Study* (Port of Long Beach and Port 2001), and was subsequently revised and updated for several efforts including the Baseline Transportation Study (Port 2004). The model is a tool that is based on the SCAG Regional Travel Demand Forecasting Model. Elements of the SCAG Heavy-Duty Truck model were used. The use of the SCAG model to account for subregional and regional traffic growth beyond the general proximity of the PMPU area is an accepted practice by agencies/ jurisdictions. The SCAG model is used for the region's federally required RTP (SCAG 2012), and is also used for the SIP and the SCAQMD AQMP (SCAQMD 2007). TransCAD is the software platform used for modeling. The Port Travel Demand Model data are owned by the Port and housed and operated at consultant offices.

SCAG Regional Model

The SCAG Regional Model is the basis and "parent" of most sub-regional models in the southern California six-county region, comprising Ventura, Los Angeles, Orange, San Bernardino, Riverside, and Imperial counties. At the regional level, this model has the most comprehensive and current regional data – for both existing and future conditions – on housing, population, employment, and other socio-economic input variables used to develop regional travel demand forecasts. The model has more than 4,251 zones, including 90 zones in the Port area, and a complete network of regional transportation infrastructure, including more than 3,520 miles of freeways and over 18,650 miles of major, primary, and secondary arterials.

For purposes of sub-regional transportation analysis (such as at the Port), the SCAG Regional Model provides the most comprehensive and dynamic tool to forecast the magnitude of trips and distribution of travel patterns anywhere in the region. However, by virtue of its design and function, the Regional Model is not (and cannot be) very detailed in any specific area of the region. This is also the case in the Port and Port of Long Beach focus area. Therefore, the Port Travel Demand Model has been comprehensively updated and detailed for the focus area. In addition, typical "post-processing" of model data is used to reflect local conditions.

The SCAG Regional Heavy-Duty Truck model was developed as an adjunct component to the SCAG Regional Travel Demand Model. The Heavy-Duty Truck model develops explicit forecasts for heavy-duty vehicles with a gross vehicle weight (GVW) of 8,500 pounds and higher. The Heavy-Duty Truck model includes trip generation, trip distribution and network traffic assignment modules for heavy-duty trucks stratified by three heavy-duty truck GVW classifications, as follows:

- Light-Heavy – 8,500 to 14,000 pounds GVW;
- Medium-Heavy – 14,000 to 30,000 pounds GVW; and,
- Heavy-Heavy – over 30,000 pounds GVW.

The Heavy-Duty Truck Model utilizes the SCAG Regional Model network for its traffic assignment process without major refinements and additions to the network. However, several network modifications are implemented including: link capacity enhancements, truck prohibitions, and incorporation of truck PCE factors. All of these were carried forward into the Port Travel Demand Model focus area. The presence of vehicles other than passenger cars in the traffic stream affects traffic flow in two ways: 1) these vehicles, which are much larger than passenger cars, occupy more roadway space (and capacity) than individual passenger cars; and 2) the operational capabilities of these vehicles, including acceleration, deceleration and maintenance of speed, are generally inferior to passenger cars and result in formation of large gaps in the traffic stream that reduce the highway capacity. On long, sustained grades and segments with impaired capacities, where trucks operate considerably slower, formation of these large gaps can have a substantial impact on the traffic stream. The Port Travel Demand Model takes all of these factors into account.

The TransCAD model uses four periods to forecast traffic over a full 24-hour period. These periods are the A.M. period (6:00 A.M. to 9:00 A.M.), the midday period (9:00A.M. to 3:00 P.M.), the P.M. period (3:00 P.M. to 7:00 P.M.), and the night period (7:00 P.M. to 6:00 A.M.). The outputs of Port Travel Demand Model include daily and peak period roadway link volumes and speeds and peak period intersection turning movement volumes.

The following steps describe the development of refined intersection turning movement volumes from model produced raw forecasts used in the traffic analysis of the proposed Program.

- The base year 2011 model scenario and future year model scenarios forecast peak period intersection turning movement volumes were converted to peak hour approach and departure volumes by applying peak hour factors of 0.38, 0.18 and 0.28 for A.M., M.D., and P.M. peaks, respectively. Peak hour factors were developed to determine the proportion of peak period traffic that occurs in the peak hour using hourly state highway data in the PMPU area from the Caltrans Performance Measurement System (Caltrans 2012).
- For each leg (North, South, East, and West) of the study intersections, 2011 model-derived intersection approach and departure volumes were subtracted from the corresponding future year approach and departure volumes. This

calculation yielded a set of approach and departure volumes, which is representative of the growth volume between base year and future years.

- This estimated growth between the base year and future years was added to ground count data. This resulted in adjusted future year approach and departure forecast auto volumes at each leg of the study intersections, which were used to determine the future year turning movement volumes.
- The B-turn methodology is generally described in the National Cooperative Highway Research Program Report 255: Highway Traffic Data for Urbanized Area Project Planning and Design, Chapter 8. The B-turn method uses the base year turning movement percentages of each approach volume (based on actual traffic counts) and proceeds through an iterative computational technique to produce a final set of future year turning movement volumes. The computations involve alternatively balancing the rows (approaches) and the columns (departures) of a turning movement matrix until an acceptable convergence is obtained. The results are checked for reasonableness, and manual adjustments are sometimes necessary, such as when a change in Port Travel Demand Model network in a future scenario that would change travel patterns would not be comparable to the base year model network volumes or existing traffic counts. In this case, future raw model volumes are used.

The SCAG model is owned, developed and housed at SCAG offices, and is used by agencies and consultants for sub-regional planning work, such as for Port EIR/EIS studies.

Proposed Program Trip Generation

Program-related trip generation includes trips that would be generated by the proposed Program. Traffic growth related to the proposed Program was developed using the "QuickTrip" truck generation model. QuickTrip is a spreadsheet truck trip generation model that was developed for the *Ports of Long Beach/Los Angeles Transportation Study* (Port of Long Beach and Port 2001). QuickTrip estimates terminal truck flows by hour of the day based on TEU container throughput and using assumed terminal operating parameters. The QuickTrip model was run and tested against the gate data (gate counts and historical gate data from the terminals). These data (TEU per container ratio, monthly TEU throughput, mode split, hours of operation, dual move percentage, worker shift splits, and peaking factors) were input into QuickTrip for each terminal. QuickTrip was validated by comparing estimates of gate activity to actual gate counts conducted in the field. Results of the validation exercise indicate that the QuickTrip model is able to estimate truck movements by day and peak hour within 2 to 10 percent of actual counts for all terminals combined (both directions combined), depending on which peak hour is modeled.

Port-related trip generation is separated into four classes of vehicles:

- Bobtails: tractor-only;
- Chassis: tractor plus chassis;
- Container: tractor and chassis with loaded or empty container; and,
- Auto: employee automobile and other auto visitor trips.

Each of the analysis years was defined by changing operating parameters as follow: modified weekend activity; expanded terminal operating hours; increased on-dock rail use; and increased dual transactions within the terminal. These operating parameters affect the amount of truck traffic generated by the terminals to their estimated maximum capacity. Cargo volume (throughput) would increase over the years, and terminals would also change their operations to accommodate the increase in containers. Table 3.12-13 provides baseline and proposed TEUs. Accordingly, these operational changes are already being put into place. It should be noted that increased throughput does not directly translate into increased truck trips proportionately due to the different terminal operating parameters over the years. For example, truck trips could actually decrease at certain terminals in the future due to the implementation and expansion of on-dock rail, even with greater throughput. This is because the increase in on-dock capacity is even greater than the increase in throughput, thus resulting in fewer truck trips but more containers processed through the terminal. A rail yard capacity analysis was conducted for expanded terminals to ensure that the proposed Program could accommodate the projected on-dock container volumes (Starcrest Consulting Group, LLC. 2012).

Table 3.12-13. PMP and PMPU Container Terminal Net TEUs

Planning Area	*Location*	*TEUs (x 1,000)*		
		CEQA Baseline (2011)	*Proposed Program (2035)*	*Net TEUs*
Planning Area 2: West Basin and Wilmington	Berths 100-131 (West Basin Container Terminal-Yang Ming-China Shipping)	1,312	3,550	2,238
Planning Area 3: Terminal Island	Berths 302-305 (APL-Eagle Marine Services)	1,395	4,142	2,747
	Berths 212-225 (YTI)	1,022	3,557	2,535
	Total	**3,729**	**11,249**	**7,520**

Program-related trip generation was developed using existing intermodal facility traffic counts, tenant-supplied information, and the ports' QuickTrip truck generation model. Traffic that would be generated by the proposed Program was forecasted to determine potential impacts on study area roadways.

For the purposes of this analysis the residential distribution data of terminal employees, surveyed as part of the Longshore Worker place of residence, was used to distribute port-related employee auto trips in the Port Travel Demand Model.

The proposed Program trip generation was determined by using the proposed Program's TEU projections, the QuickTrip outputs, and specific trip generation from non-container truck trips at Fish Harbor (Planning Area 4). The resultant proposed Program's daily trip generation, distinguished between trips into and out of the Port ("In" and "Out", respectively), is shown in Table 3.12-14, and its peak hour trip generation is shown in Table 3.12-15.

Table 3.12-14. Proposed Program Daily Trip Generation

Planning Area	*Location*	*Autos*		*Non-container Trucks*		*Bobtails*		*Chassis*		*Containers*		*Total Vehicles*
		In	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	*In*	*Out*	
Planning Area 2: West Basin and Wilmington	Berths 100-131 (West Basin Container Terminal-Yang Ming-China Shipping)	1,155	940	-	-	1,010	950	315	135	2,020	2,255	8,780
Planning Area 3: Terminal Island	Berths 302-305 (APL-Eagle Marine Services)	1,410	1,145	-	-	1,475	1,395	235	350	2,810	2,795	11,615
Planning Area 4: Fish Harbor	Fish Harbor	-	-	25	25	-	-	-	-	-	-	50
	Total	**2,565**	**2,085**	**25**	**25**	**2,485**	**2,345**	**550**	**485**	**4,830**	**5,050**	**20,445**

Table 3.12-15. Proposed Program Peak Hour Trip Generation (in Passenger Car Equivalents)

Planning Area	*Location*	*A.M. Peak Hour*			*M.D. Peak Hour*			*P.M. Peak Hour*		
		In	*Out*	*Total*	*In*	*Out*	*Total*	*In*	*Out*	*Total*
Planning Area 2: West Basin and Wilmington	Berths 100-131 (West Basin Container Terminal-Yang Ming-China Shipping)	435	460	895	475	475	950	375	485	860
Planning Area 3: Terminal Island	Berths 302-305 (APL-Eagle Marine Services)	590	560	1,150	630	650	1,280	460	605	1,065
Planning Area 4: Fish Harbor	Fish Harbor	10	10	20	10	10	20	10	10	20
	Total	**1,035**	**1,030**	**2,065**	**1,115**	**1,135**	**2,250**	**845**	**1,100**	**1,945**

Rail

The only at-grade grade crossings within the PMPU area that could be affected by the proposed appealable/fill projects under the proposed Program are the Henry Ford crossing that serves the China Shipping and Yang Ming terminals and the Avalon and Fries crossings that serve TraPac and the relocated PHL rail yard at Berth 200. The Avalon and Fries crossings are planned to be phased out once the South Wilmington Grade Separation Project, which has been approved, is completed. A Supplemental EIR on the TraPac project will address closure of the Avalon and Fries crossings.

As stated previously, Port containers move on the BNSF San Bernardino Subdivision, the UP Los Angeles Subdivision, or the UP Alhambra Subdivision. While part of the regional rail system, they are not located in the vicinity of the PMPU area. The environmental analysis for future projects under the PMPU could include the project-specific evaluation of regional at-grade rail crossing impacts, if deemed appropriate.

3.12.3.1.2 Thresholds of Significance

CEQA does not prescribe any methodology or significance criteria for potential transportation impacts of proposed Port projects on existing at-grade rail-roadway crossings. However, the Port and the Port of Long Beach have developed a standard methodology for evaluating potential rail crossing delay transportation impacts for use in port EIRs. Specifically, if the LOS at the crossing is A-D, then the impact would be considered minor (insignificant). In contrast, if with the proposed Program the crossing is at LOS E (55 – 80 seconds of average vehicle delay), and the change in delay would be 2 seconds or more, the impact would be considered significant. If the crossing is at LOS F (over 80 seconds of average vehicle delay), and the change in average delay would be 1 second or more, the impact would be considered significant.

The following criteria were used to evaluate potential impacts on transportation:

TRANS-1: The proposed Program would result in short-term, temporary increases in truck and auto traffic.

The cities in the PMPU area have established threshold criteria to determine significant traffic impacts of programs/projects in their jurisdiction.

In the City of Los Angeles, the proposed Program would have a significant impact under CEQA on transportation and circulation during construction if it would increase an intersection's V/C ratio in accordance with the following guidelines:

- V/C ratio increase greater than or equal to 0.040 if final LOS is C; or
- V/C ratio increase greater than or equal to 0.020 if final LOS is D; or,
- V/C ratio increase greater than or equal to 0.010 if final LOS is E or F.

For intersections in the cities of Carson and Long Beach, the proposed Program would have a significant impact on transportation and circulation during construction if it increased an intersection's V/C ratio in accordance with the following guideline:

- V/C ratio of 0.02 or greater if the final LOS is E or F.

TRANS-2: The proposed Program would significantly impact at least one study location volume/capacity ratios or level of service for long-term vehicular traffic.

The cities in the PMPU area have established threshold criteria to determine significant traffic impacts of programs/projects in their jurisdiction.

In the City of Los Angeles, proposed Program operations would have a significant impact on transportation and circulation if it would increase an intersection's V/C ratio in accordance with the following guidelines:

- V/C ratio increase greater than or equal to 0.040 if final LOS is C; or,
- V/C ratio increase greater than or equal to 0.020 if final LOS is D; or,

- V/C ratio increase greater than or equal to 0.010 if final LOS is E or F.

For intersections in the Cities of Carson and Long Beach, operations associated with the appealable/fill projects would have a significant impact on transportation and circulation if it would increase an intersection's V/C ratio in accordance with the following guideline:

- V/C ratio of 0.02 or greater if the final LOS is E or F.

TRANS-3: The proposed Program would cause an increase in onsite employees due to operations, which would then result in a significant increase in public transit use.

The proposed Program would have an impact on local transit services if it would increase demand beyond the supply of such services anticipated at proposed Program build-out.

TRANS-4: The proposed Program would result in operations that would cause increases considered significant for freeway congestion.

According to the CMP Traffic Impact Analysis Guidelines, an increase of 0.02 or more in the demand-to-capacity (D/C) ratio with a resulting LOS F at a CMP freeway monitoring station would be deemed a significant impact (LACMTA 2010). This applies only if a program meets the minimum CMP thresholds for including the location in the analysis, which are 50 trips at a CMP intersection and 150 trips on a freeway segment. At non-CMP freeway segments, an increase of 0.02 or more in the D/C ratio with a resulting LOS F at a CMP freeway monitoring station would be deemed a significant impact.

TRANS-5: The proposed Program would result in operations that would cause a significant impact in vehicular delay at railroad grade crossings.

The proposed Program would be considered to have a significant impact at the affected at-grade crossings if the average vehicle delay in the peak hour caused by the proposed Program would exceed the levels shown in Table 3.12-16. If the LOS at the crossing is A – D, then the impact would be considered insignificant. If, with the proposed Program, the crossing is at LOS E (55 – 80 seconds of average vehicle delay), and the change in delay would be 2 seconds or more, then the impact would be considered significant. If the crossing is at LOS F (over 80 seconds of average vehicle delay), and the change in average delay would be 1 second or more, then the impact would be considered significant.

Table 3.12-16. Thresholds of Significance for At-Grade Crossings

LOS with Proposed Program	*Change in Average Delay per Vehicle in the Peak Hour*
A – D	Insignificant
E (55 – 80 seconds of average delay per vehicle)	Significant if ≥2 seconds
F (over 80 seconds of average delay per vehicle)	Significant if ≥1 second

TRANS-6: The proposed Program would substantially increase hazards due to a design feature or incompatible uses.

The proposed Program would be considered to have significant impacts if design features of the proposed appealable/fill projects would create or substantially increase traffic hazards.

TRANS-7: The proposed Program would result in inadequate emergency access.

The proposed Program would be considered to have significant impacts if the proposed appealable/fill projects would impede or substantially interfere with emergency access within the Port.

TRANS-8: The proposed Program would conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The proposed Program would be considered to have significant bicycle or pedestrian impacts if the proposed appealable/fill projects would impair existing or substantially impede policies, plans, or programs regarding public transit, bicycle or pedestrian facilities.

TRANS-9: The proposed Program would result in inadequate parking capacity.

The proposed Program would be considered to have significant parking impacts if the proposed appealable/fill projects would fail to provide adequate parking or substantially reduce available parking.

3.12.3.1.3 Impacts and Mitigation

Impact TRANS-1: The proposed Program would not result in a short-term, temporary increase in truck and auto traffic.

Impact TRANS-1 only pertains to construction, so operations impacts are not applicable for this evaluation.

Planning Areas 2 - 4

The proposed appealable/fill projects and land use changes in Planning Area 2 include the Berths 187-189 Liquid Bulk Relocation, Yang Ming Terminal Redevelopment, and China Shipping Fill. The Berths 187-189 Liquid Bulk Relocation would involve relocating bulk liquid storage from Slip 5 to Berths 191-194 in the East Basin. The Yang Ming Terminal Redevelopment Project would involve 6 acres of fill and 3 acres of cut (designated container areas), as well as eliminating the Kinder Morgan liquid bulk facility at Berths 118-120 and converting it to container area. The China Shipping Fill Project would involve 16 acres of fill at Berth 102 to expand the container area. An additional land use change would involve converting vacant land at an optional land use site on Mormon Island to liquid bulk or break bulk.

The proposed appealable/fill project in Planning Area 3 is the Berth 300 Development Project, which involves creating 18 acres of fill to be designated for container uses. Other land use changes include converting the break bulk and vacant area to mixed use at Berths 206-209 (container, break bulk, and/or dry bulk) and at Berths 210-211 (container and/or dry bulk), changing vacant land between Seaside Avenue and Reeves Avenue and south of Reeves Avenue to maritime support, changing institutional area along Ferry Street to maritime support, converting the existing liquid bulk area north of the TIWRP to container area, changing vacant land, commercial fishing, and industrial areas near Fish Harbor to container area, and changing Berth 301 to a liquid bulk or container handling facility.

The proposed appealable/fill projects in Planning Area 4 include the Tri Marine Expansion, 338 Cannery Street Adaptive Reuse, and Al Larson Marina. The Al Larson Marina Project would involve a land use change from recreational boating to maritime support. In addition, vacant land at the former Southwest Marine Shipyard would be changed to maritime support and break bulk. Vacant land, commercial fishing, liquid bulk, and institutional land uses at Fish Harbor would be replaced with commercial fishing, and maritime support.

Construction associated with the proposed appealable/fill projects and land use changes would involve a temporary increase in traffic associated with construction.

Construction

The total number of construction-related trips would vary during the construction activities related to the proposed appealable/fill projects. It is anticipated that the majority of construction materials (i.e., aggregate, concrete, asphalt, sand, and slurry) would be provided by local suppliers and stored at the contractors' existing facilities. The majority of construction materials would be imported during off-peak traffic hours (the main exception being cement trucks, which have a limited window for delivery times). Construction haul routes likely would be via the I-110 to SR-47 across the Vincent Thomas Bridge or via the I-710 to Ocean Boulevard across the Gerald Desmond Bridge to Navy Way via Seaside Avenue/Ocean Boulevard.

Workers would be required to arrive at the construction site prior to the A.M. peak period and depart prior to the P.M. peak period. Therefore, significant traffic impacts from construction workers' vehicles would not occur during the A.M. or P.M. peak periods.

A traffic management plan containing traffic control measures conforming to the requirements and guidance of the Los Angeles Department of Transportation (LADOT) and other responsible agencies would be required at the time construction permits are obtained. At a minimum, the traffic management plan shall contain the following:

- Detour plans;
- Coordination with emergency services and transit providers;
- Coordination during the entire construction period with surrounding property owners, businesses, residences, and tenants through the establishment of a community construction liaison and public noticing within at least a one mile radius of the project site (in English, Spanish, and other languages if necessary) via brochures, mailings, community meetings, and a project website;

- Advanced notification of temporary bus stop loss and/or bus line relocation;
- Identification of temporary alternative bus routes;
- Advanced notice of temporary parking loss;
- Identification of temporary parking replacement or alternative adjacent parking within a reasonable walking distance;
- Use of designated haul routes, use of truck staging areas; and,
- Observance of hours of operations restrictions and appropriate signing for construction activities.

The traffic management plan would be implemented for all construction work directly related to PMPU construction activities. The traffic management plans are submitted to LAHD for approval before beginning construction.

In the event that a temporary road and/or lane closure would be necessary during construction, the contractor would provide traffic control activities and personnel, as necessary and as required by LADOT, to minimize traffic impacts. This may include detour signage, cones, construction area signage, flagmen, and other measures as required for safe traffic handling in the construction zone.

Approved emergency equipment access standards would be incorporated into construction plans for the proposed appealable/fill projects, ensuring provisions for adequate roadway width, turning radii, and staging areas. Additionally, it is expected that any proposed lane closures would be modified as the design team refines the construction plans and traffic strategies.

Impact Determination

Construction

There would be increased travel on the study area roadway system during construction of the proposed appealable/fill projects; however the traffic would largely occur outside of peak travel periods. Generally, construction worker commuting trips occur prior to the morning and afternoon peak hours and do not contribute to peak hour traffic. In addition, provisions of the traffic management plan, which would be reviewed and approved prior to commencement of construction, would define delivery time windows to avoid peak traffic hours. As a consequence, construction traffic would not be of sufficient volume to degrade levels of service. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact TRANS-2: The proposed Program would not significantly impact at least one study location V/C ratios or level of service for long-term vehicular traffic.

Traffic conditions that would be associated with the proposed appealable/fill projects and land use changes under the proposed Program were compared to the applicable baseline to determine the proposed Program's incremental impacts, and the incremental impacts were assessed using the significance criteria described above in Section 3.12.3.1.2, Thresholds of Significance.

Planning Areas 2 - 4

Construction and Operations

The proposed appealable/fill projects (i.e., Berths 187-189 Liquid Bulk Relocation, Yang Ming Terminal Redevelopment, China Shipping Fill, Berth 300 Development, Tri Marine Expansion, 338 Cannery Street Adaptive Reuse, and Al Larson Marina) and land use changes would involve some increase in personnel during operations. Larger cargo volumes would also tend to increase truck traffic, although a larger fraction is expected to travel by rail in the future. Commuter and truck traffic associated with the proposed appealable/fill projects and land use changes under the PMPU would result in increases in traffic at some intersections.

Traffic conditions associated with the proposed Program were estimated by adding traffic resulting from the expanded container terminals and associated throughput growth and growth of non-container traffic autos and non-container trucks to the applicable CEQA baseline. Table 3.12-17 summarizes the TEU throughput for the CEQA baseline and the proposed Program and includes the assumed operating parameters that were used to develop trip generation forecasts. Traffic generated by buildout of the proposed appealable/fill projects and land use changes under the proposed Program was estimated to determine potential impacts on study area roadways.

Table 3.12-17. Trip Generation Analysis Assumptions and Input Data for the Proposed Program

	CEQA Baseline (2011)	*Proposed Program (2035)*
Annual TEUs	3,729,000	11,249,000
Peak Monthly TEUs	339,000	1,024,000
Trip Generation Results – A.M. Peak		
Program Added Auto Trips	-----	225
Program Added Truck Trips (PCE)	-----	1,840
Program Added Total Trips (PCE)	-----	2,065
Trip Generation Results – M.D. Peak		
Program Added Auto Trips	-----	110
Program Added Truck Trips (PCE)	-----	2,140
Program Added Total Trips (PCE)	-----	2,250
Trip Generation Results – P.M. Peak		
Program Added Auto Trips	-----	525
Program Added Truck Trips (PCE)	-----	1,420
Program Added Total Trips (PCE)	-----	1,945
Note: Trips generated for the proposed Program represent incremental increases compared to the CEQA baseline.		

The net increase in truck trip generation includes the increased percent of cargo moved via the expanded on-dock rail facilities, as noted. Trip generation estimates associated with the appealable/fill projects and land use changes are summarized in Table 3.12-14. TEU growth increases in the proposed Program, but peak hour trips do not increase proportionately with TEU growth. This is because with the proposed appealable/fill projects and land use changes under the proposed Program, on-dock rail usage would increase and work shift splits would change. Both of these actions would shift more activity to the second shift and night shift and away from the day shift. Therefore, although total trips would increase with the proposed Program, some of the increase would occur during off-peak time periods due to the operating parameters previously described.

As described in Section 3.12.3.1.1, Methodology, the Port travel demand model was used to estimate the growth in traffic from the proposed Program at the analysis locations. The trips shown in Table 3.12-17 were added to the model and distributed through the roadway network to determine the level of traffic added to baseline turning movement volumes by the proposed Program.

Impact Determination

Construction and Operations

Table 3.12-18 summarizes the CEQA baseline and CEQA baseline with Program operating conditions at each study intersection. The results of the traffic study, as presented in Table 3.12-18 and in the worksheets in Appendix F show that circulation system impacts from the proposed Program relative to CEQA baseline conditions would be less than significant.

The amount of Program-related traffic that would be added at all other study locations would not be of sufficient magnitude to meet or exceed the established thresholds of significance of the respective city. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact TRANS-3: The proposed Program would not cause an increase in onsite employees due to operations, which would then result in a significant increase in public transit use.

Impact TRANS-3 only pertains to operations, so construction impacts are not applicable for this evaluation.

Table 3.12-18. Intersection Level of Service Analysis – CEQA Baseline vs. Proposed Program

#	Study Intersection	CEQA Baseline (2011)						CEQA Baseline Plus Program						Changes in V/C			Significant Impact		
		A.M. Peak		M.D. Peak		P.M. Peak		A.M. Peak		M.D. Peak		P.M. Peak		A.M. Peak	M.D. Peak	P.M. Peak	A.M. Peak	M.D. Peak	P.M. Peak
		LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C						
1	Ocean Blvd (WB) / Terminal Island Fwy [b]	A	0.335	A	0.398	A	0.375	A	0.401	A	0.490	A	0.417	0.066	0.092	0.042	N	N	N
2	Ocean Blvd (EB) / Terminal Island Fwy [b]	A	0.215	A	0.379	A	0.348	A	0.295	A	0.447	A	0.381	0.080	0.068	0.033	N	N	N
3	Ocean Blvd (WB) / Pier S Ave[b]	A	0.266	A	0.313	A	0.341	A	0.325	A	0.400	A	0.386	0.059	0.087	0.045	N	N	N
4	Ocean Blvd (EB) / Pier S Ave[b]	A	0.209	A	0.364	A	0.340	A	0.297	A	0.453	A	0.385	0.088	0.089	0.045	N	N	N
5	Seaside Ave / Navy Wy A	A	0.427	A	0.316	A	0.541	A	0.494	A	0.383	A	0.596	0.068	0.067	0.055	N	N	N
6	Ferry St (Seaside Ave) / SR-47 Ramps[a]	A	0.112	A	0.244	A	0.142	A	0.114	A	0.258	A	0.153	0.002	0.014	0.011	N	N	N
7	Pico Ave / Pier B St / 9th St / I-710 Ramps[b]	A	0.435	A	0.519	A	0.499	A	0.455	A	0.528	A	0.499	0.020	0.009	0.000	N	N	N
8	Anaheim St / Harbor Ave[b]	A	0.453	A	0.455	A	0.560	A	0.518	A	0.478	A	0.566	0.065	0.023	0.006	N	N	N
9	Anaheim St / Santa Fe Ave[b]	A	0.473	A	0.508	A	0.578	A	0.503	A	0.519	A	0.585	0.030	0.011	0.007	N	N	N
10	Anaheim St / E I St / W 9th St[b]	A	0.501	A	0.525	A	0.529	A	0.548	A	0.561	A	0.542	0.047	0.036	0.013	N	N	N
11	Anaheim St / Farragut Ave[a]	A	0.277	A	0.228	A	0.286	A	0.326	A	0.268	A	0.305	0.049	0.040	0.019	N	N	N
12	Anaheim St / Henry Ford Ave[a]	A	0.300	A	0.416	A	0.560	A	0.391	A	0.468	A	0.592	0.091	0.052	0.032	N	N	N
13	Anaheim St / Alameda St[a]	A	0.361	A	0.325	A	0.468	A	0.418	A	0.391	A	0.468	0.057	0.066	0.000	N	N	N
14	Henry Ford Ave / Pier A Wy / SR-47 Ramps[a]	A	0.078	A	0.125	A	0.167	A	0.078	A	0.164	A	0.193	0.000	0.039	0.026	N	N	N
15	Harry Bridges Blvd / Broad Ave[a]	A	0.143	A	0.115	A	0.218	A	0.222	A	0.195	A	0.255	0.079	0.080	0.037	N	N	N
16	Harry Bridges Blvd / Avalon Blvd[a]	A	0.155	A	0.082	A	0.238	A	0.233	A	0.162	A	0.270	0.078	0.080	0.032	N	N	N
17	Harry Bridges Blvd / Fries Ave[a]	A	0.123	A	0.127	A	0.203	A	0.180	A	0.193	A	0.240	0.057	0.066	0.037	N	N	N
18	Harry Bridges Blvd / Neptune Ave[a]	A	0.053	A	0.028	A	0.127	A	0.125	A	0.100	A	0.163	0.072	0.072	0.036	N	N	N
19	Harry Bridges Blvd / Wilmington Blvd[a]	A	0.119	A	0.077	A	0.202	A	0.217	A	0.173	A	0.248	0.098	0.096	0.046	N	N	N
20	Harry Bridges Blvd / Figueroa St[a]	A	0.235	A	0.237	A	0.292	A	0.297	A	0.307	A	0.328	0.062	0.070	0.036	N	N	N
21	Pacific Coast Hwy / Alameda St Ramp[a]	A	0.505	A	0.411	A	0.561	A	0.533	A	0.450	A	0.575	0.028	0.039	0.014	N	N	N
22	Pacific Coast Hwy / Santa Fe Ave[b]	C	0.773	B	0.699	D	0.821	C	0.787	C	0.745	D	0.854	0.014	0.046	0.033	N	N	N
23	Pacific Coast Hwy / Harbor Ave[b]	B	0.628	B	0.603	C	0.733	B	0.635	B	0.636	C	0.758	0.007	0.033	0.025	N	N	N
24	Sepulveda Blvd / Alameda St Ramp[c]	B	0.679	A	0.484	B	0.612	B	0.679	A	0.492	B	0.612	0.000	0.008	0.000	N	N	N
25	Intermodal Way / Sepulveda Blvd[c]	A	0.371	A	0.310	A	0.403	A	0.371	A	0.310	A	0.403	0.000	0.000	0.000	N	N	N
26	ICTF Drwy / Sepulveda Blvd[a]	A	0.193	A	0.369	A	0.425	A	0.201	A	0.411	A	0.432	0.008	0.042	0.007	N	N	N
27	Middle Rd / Sepulveda Blvd[a]	A	0.223	A	0.254	A	0.481	A	0.223	A	0.254	A	0.481	0.000	0.000	0.000	N	N	N
28	Sepulveda Blvd / SR-103[b]	A	0.318	A	0.330	A	0.491	A	0.356	A	0.358	A	0.509	0.038	0.028	0.018	N	N	N
29	Alameda St / Henry Ford Ave[a]	A	0.057	A	0.183	A	0.207	A	0.147	A	0.273	A	0.262	0.090	0.090	0.055	N	N	N
30	Alameda St / Pacific Coast Hwy Ramp[a]	A	0.439	A	0.368	A	0.598	A	0.478	A	0.401	B	0.619	0.039	0.033	0.021	N	N	N
31	Alameda St / Sepulveda Boulevard Ramp[c]	A	0.389	A	0.463	A	0.588	A	0.422	A	0.492	B	0.606	0.033	0.029	0.018	N	N	N
32	Alameda St / 223rd St Ramp[c]	A	0.509	A	0.484	A	0.565	B	0.607	B	0.621	B	0.611	0.098	0.137	0.046	N	N	N
33	Alameda St Ramp / 223rd St[a]	A	0.342	A	0.504	C	0.758	A	0.374	A	0.542	C	0.772	0.032	0.038	0.014	N	N	N
34	I-405 SB Ramps / 223rd St[a]	A	0.379	A	0.319	A	0.435	A	0.389	A	0.330	A	0.439	0.010	0.011	0.004	N	N	N

Notes:

a. City of Los Angeles intersection, analyzed using CMA methodology according to City standards.
b. City of Long Beach intersection analyzed using ICU methodology according to City standards.
c. City of Carson intersection analyzed using ICU methodology according to City standards.

Planning Areas 2 - 4

Operations

The proposed appealable/fill projects (i.e., Berths 187-189 Liquid Bulk Relocation, Yang Ming Terminal Redevelopment, China Shipping Fill, Berth 300 Development, Tri Marine Expansion, 338 Cannery Street Adaptive Reuse, and Al Larson Marina) and land use changes would involve some increase in personnel during operations. Commuters in the Port tend to drive, meaning proposed appealable/fill projects under the PMPU would result in increases in traffic. Due to the need of many longshoremen and other Port workers for daily mobility since they work at different berths, public transit is generally not heavily utilized. The primary reason that workers generally would not use public transit is their work shift schedule. Most workers prefer to use a personal automobile to facilitate timely commuting. Also, Port workers' incomes are generally higher than similarly skilled jobs in other areas and higher incomes correlate to lower public transit usage. In addition, parking at the Port is readily available and free for employees, which encourages workers to drive to work. Further, some Port workers report first each day to union locations and are then are assigned to a Port terminal location. This requires the workers to have a car due since their work destination each day may vary. Finally, although there are 13 existing transit routes that serve the general vicinity surrounding the PMPU area, none of the existing routes stop within one mile of the PMPU area.

Impact Determination

Operations

Although the proposed appealable/fill projects and land use changes under the proposed Program would result in additional onsite employees, the increase in work-related trips using public transit would be negligible. Consequently, impacts on local transit services due to additional demand would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact TRANS-4: The proposed Program would result in operations that would cause increases considered significant for freeway congestion.

Impact TRANS-4 only pertains to operations, so construction impacts are not applicable for this evaluation.

Planning Areas 2 - 4

Operations

As noted above, the proposed appealable/fill projects in Planning Area 2 include the Berths 187-189 Liquid Bulk Relocation, Yang Ming Terminal Redevelopment, and China Shipping Fill. The Berths 187-189 Liquid Bulk Relocation Project would involve relocating liquid bulk storage from Slip 5 to Berths 191-194 in the East Basin. The proposed appealable/fill project in Planning Area 3 is the Berth 300 Development, which includes 18 acres of fill to be designated for container uses. The proposed appealable/fill projects in Planning Area 4 include the Tri Marine Expansion, 338 Cannery Street Adaptive Reuse, and Al Larson Marina. Likewise, additional proposed land use changes in Planning Areas 2 and 3, such as converting vacant land at an optional land use site on Mormon Island to liquid bulk in Planning Area 2; converting Berths 206-209 and 210-211 to mixed use; changing vacant land between Seaside Avenue and Reeves Avenue and south of Reeves Avenue to maritime support; changing the institutional area along Ferry Street to maritime support; converting liquid bulk in the area north of the TIWRP to container area; changing vacant land, commercial fishing, and industrial areas near Fish Harbor to container area; and the option of changing Berth 301 to a liquid bulk or container handling facility in Planning Area 3, would affect future operations at the Port. While the proposed appealable/fill projects and land use changes are not evenly distributed between planning areas, truck traffic associated with these projects would ultimately use the same freeways. The proposed appealable/fill projects would increase truck traffic on freeways in the vicinity of the Port, although more cargo is expected to be transported by rail in the future. These projects would also increase employment to some extent; however, as noted above, they would not be likely to substantially increase commuter traffic.

Most proposed appealable/fill projects and land use changes would involve some increase in personnel during operations. Larger cargo volumes would also tend to increase truck traffic, although a larger fraction of cargo is expected to travel by rail in the future. Commuter and truck traffic associated with the proposed appealable/fill projects and land use changes under the PMPU would result in increases in traffic on the freeway system.

A traffic impact analysis was conducted for the following locations, consistent with requirements under the CMP TIA Guidelines (LACMTA 2010):

- CMP arterial monitoring intersections, including freeway on-ramp or off-ramp, where the program would add 50 or more trips during either the A.M. or P.M. weekday peak hours;
- CMP freeway monitoring locations where the program would add 150 or more trips during either the A.M. or P.M. weekday peak hours. The CMP freeway monitoring stations potentially affected by appealable/fill projects under the proposed Program are located at the following locations:
  - I-405 at Santa Fe Avenue (CMP Station 1066);
  - SR-91 east of Alameda Street and Santa Fe Avenue (CMP Station 1033);
  - I-710 north of I-105 and north of Firestone Boulevard (CMP Station 1080);

- I-710 between I-405 and Del Amo Boulevard (CMP Station 1079);
- I-710 between PCH and Willow Street (CMP Station 1078);
- I-110 south of "C" Street (CMP Station 1045);
- SR-47 at Vincent Thomas Bridge; and,
- SR 47 at Commodore Schuyler Heim Bridge.

The proposed appealable/fill projects and land use changes under the proposed Program would result in additional truck trips on the surrounding freeway system. Tables 3.12-19 and 3.12-20 identify the change in LOS at freeway monitoring locations due to the proposed Program compared to baseline.

The analysis shows that the proposed Program would cause an increase of 0.02 or more of the D/C ratio at three freeway link locations operating at LOS F or worse, and exceed the threshold of significance of the CMP. Proposed appealable/fill projects under the proposed Program would result in significant freeway impacts relative to the CEQA baseline conditions at the following locations:

- I-710 north of PCH – northbound A.M. Peak Hour; southbound A.M. Peak Hour; northbound P.M. Peak Hour;
- I-710 north of I-405, south of Del Amo Boulevard – southbound A.M. Peak Hour; and,
- I-710 north of I-105, north of Firestone Boulevard – northbound A.M. Peak Hour.

The freeway link along I-710 between PCH and Firestone Boulevard is forecast to have more than 150 proposed Program-associated trips and operate at LOS F. That section of I-710 is a component of a broader I-710 Corridor EIS/EIR analyzing the range of possible improvement alternatives for the 18-mile I-710 corridor between the Port and the Port of Long Beach and the Pomona Freeway (SR-60) being conducted by Metro, Caltrans and five other agencies. The final I-710 Corridor EIS/EIR is scheduled to be approved by Caltrans in the first quarter of 2013. However, to be conservative in analyzing potential impact from the proposed Program, the I-710 Corridor improvements were not assumed in this analysis.

It should be noted that the Port is voluntarily collaborating with the state in addressing future traffic conditions on the I-710, as a funding and technical partner with Caltrans and Metro. The recently released I-710 Draft EIR/EIS (Caltrans and LACMTA 2012) identifies improvements to the corridor to accommodate all future year (2035) regional traffic. The Draft EIR/EIS analyses were based on a projected Port/Port of Long Beach container cargo forecast of 43.2 million TEUs (Caltrans and LACMTA 2012). The projected future year 2035 combined ports (Port and the Port of Long Beach) container forecast analyzed in this Draft PEIR is 42.8 million TEU, including the increment associated with the proposed Program. Therefore, the proposed Program is consistent with the I-710 Draft EIR/EIS since the proposed I-710 Corridor improvements will have accounted for the incremental traffic associated with the proposed Program.

Table 3.12-19. CEQA Baseline vs. Proposed Program Freeway Analysis – A.M. Peak Hour

Fwy.	Location	Capacity	Northbound/Eastbound								Southbound/Westbound							
			CEQA Baseline			CEQA Baseline Plus Program			Δ D/C	Proj Imp	CEQA Baseline			CEQA Baseline Plus Program			Δ D/C	Proj Imp
			Demand	D/C	LOS	Demand	D/C	LOS			Demand	D/C	LOS	Demand	D/C	LOS		
I-110	Wilmington, s/o "C" St.	8,000	4,375	0.55	C	4,540	0.57	C	0.02	No	3,375	0.42	B	3,540	0.44	B	0.02	No
SR-91	e/o Alameda Street/Santa Fe Ave	12,000	6,060	0.51	B	6,115	0.51	B	0.01	No	10,660	0.89	D	10,680	0.89	D	0.00	No
I-405	Santa Fe Ave.	10,000	11,535	1.15	F(0)	11,545	1.15	F(0)	0.00	No	9,545	0.95	E	9,550	0.96	E	0.00	No
I-710	n/o Jct Rte 1 (PCH), Willow St.	6,000	5,770	0.96	E	6,045	1.01	F(0)	0.05	Yes	6,690	1.12	F(0)	6,935	1.16	F(0)	0.04	Yes
I-710	n/o Jct Rte 405, s/o Del Amo	8,000	6,370	0.80	D	6,640	0.83	D	0.03	No	7,805	0.98	E	8,050	1.01	F(0)	0.03	Yes
I-710	n/o Rte 105, n/o Firestone	8,000	8,175	1.02	F(0)	8,375	1.05	F(0)	0.03	Yes	9,285	1.16	F(0)	9,440	1.18	F(0)	0.02	No
SR-47	Vincent Thomas Bridge	4,000	2,445	0.61	C	2,590	0.65	C	0.04	No	2,100	0.53	B	2,210	0.55	C	0.03	No
SR-47	Commodore Schuyler Heim Bridge	4,000	305	0.05	A	565	0.09	A	0.04	No	590	0.10	A	830	0.14	A	0.04	No

Table 3.12-20. CEQA Baseline vs. Proposed Program Freeway Analysis – P.M. Peak Hour

Fwy.	Location	Capacity	Northbound/Eastbound								Southbound/Westbound							
			CEQA Baseline			CEQA Baseline Plus Program			Δ D/C	Proj Imp	CEQA Baseline			CEQA Baseline Plus Program			Δ D/C	Proj Imp
			Demand	D/C	LOS	Demand	D/C	LOS			Demand	D/C	LOS	Demand	D/C	LOS		
I-110	Wilmington, s/o "C" St.	8,000	2,490	0.31	A	2,645	0.33	A	0.02	No	4,205	0.53	B	4,355	0.54	C	0.02	No
SR-91	e/o Alameda Street/Santa Fe Ave	12,000	8,925	0.74	C	8,955	0.75	C	0.00	No	7,205	0.60	C	7,210	0.60	C	0.00	No
I-405	Santa Fe Ave.	10,000	9,865	0.99	E	9,870	0.99	E	0.00	No	11,160	1.12	F(0)	11,165	1.12	F(0)	0.00	No
I-710	n/o Jct Rte 1 (PCH), Willow St.	6,000	5,950	0.99	E	6,170	1.03	F(0)	0.04	Yes	5,660	0.94	E	5,840	0.97	E	0.03	No
I-710	n/o Jct Rte 405, s/o Del Amo	8,000	7,740	0.97	E	7,960	1.00	E	0.03	No	6,785	0.85	D	6,925	0.87	D	0.02	No
I-710	n/o Rte 105, n/o Firestone	8,000	9,120	1.14	F(0)	9,270	1.16	F(0)	0.02	No	9,105	1.14	F(0)	9,190	1.15	F(0)	0.01	No
SR-47	Vincent Thomas Bridge	4,000	2,560	0.64	C	2,655	0.66	C	0.02	No	2,930	0.73	C	3,035	0.76	C	0.03	No
SR-47	Commodore Schuyler Heim Bridge	4,000	830	0.14	A	1,015	0.17	A	0.03	No	655	0.11	A	800	0.13	A	0.02	No

Impact Determination

Operations

If the entire I-710 Corridor Project, or components thereof, is approved for construction, the Port may voluntarily contribute funding in the future. This funding would be in addition to revenue from tolls on the truck facility and funds from other public sources such as Metro (e.g., Measure R, CMAQ, RTSP, etc.), the federal, and/or the state government. The Port is also providing input to Metro's private-public partnership study, which includes tolls as a fund source. As such, the I-710 Corridor EIS/EIR would address the traffic impact of overall Port area and regional growth on the I-710 corridor, which encompasses the significant impact determined as part of this analysis for the proposed Program. Until the I-710 Corridor Project is implemented, the proposed Program would cause a significant impact to the three freeway study locations along the I-710.

Mitigation Measures

The following mitigation measure would be implemented, as applicable, for the proposed appealable/fill projects and land use changes under the proposed Program. Project-specific environmental documents may adjust this mitigation measure as necessary to respond to project-specific conditions.

MM TRANS-1: Implement the I-710 Corridor Project. LAHD shall collaborate with Caltrans and Metro to secure funding and ensure timely implementation of the I-710 Corridor project by 2035 to alleviate the effects of future Port area and regional traffic growth on the I-710.

Mitigation measures such as lane additions or other potential freeway modifications that arise from the I-710 EIS/EIR may be sufficient to alleviate the LOS deficiency. However, it is not known at this time if this will be the case. Also, schedules for completion of the proposed appealable/fill projects and land use changes are not known at this time, and all of them will have project-specific environmental documentation conducted to readdress these potential impacts. Therefore, additional mitigation measures may need to be considered in those documents.

Residual Impacts

Residual impacts would be significant and unavoidable if the I-710 Corridor Project is not implemented by 2035.

Impact TRANS-5: The proposed Program would not result in operations that would cause a significant impact in vehicular delay at railroad grade crossings.

Impact TRANS-5 only pertains to operations, so construction impacts are not applicable for this evaluation.

Planning Areas 2 – 4

Operations

As noted above, the proposed appealable/fill projects in Planning Area 2 are the Berths 187-189 Liquid Bulk Relocation, Yang Ming Terminal Redevelopment, and China Shipping Fill. The Berths 187-189 Liquid Bulk Relocation Project would involve relocating bulk liquid storage from Slip 5 to Berths 191-194 in the East Basin. The proposed appealable/fill project in Planning Area 3 is the Berth 300 Development, which involves 18 acres of fill to be designated for container uses. Proposed appealable/fill projects in Planning Area 4 are the Tri Marine Expansion, 338 Cannery Street Adaptive Reuse, and Al Larson Marina. Likewise, a number of proposed land use changes in Planning Areas 2 and 3, such as converting vacant land at an optional land use site on Mormon Island to liquid bulk or break bulk in Planning Area 2; converting Berths 206-209 and Berths 210-211 to mixed use; changing the vacant land between Seaside Avenue and Reeves Avenue and south of Reeves Avenue to maritime support; changing institutional area along Ferry Street to maritime support; converting liquid bulk in the area north of the TIWRP to container area; changing vacant land, commercial fishing, and industrial areas near Fish Harbor to container area; and the option of changing Berth 301 to a liquid bulk or container handling facility in Planning Area 3, would affect future operations at the Port. As the analysis below demonstrates, the proposed appealable/fill projects in Planning Area 2, in particular, would increase train movements at the Henry Ford Avenue grade crossing.

Most of the proposed appealable/fill projects would involve some increase in personnel during operations, which would increase commuter traffic to some extent. Larger cargo volumes would also tend to increase truck traffic. There is one at-grade rail crossing in the PMPU area at Henry Ford Avenue. Henry Ford Avenue is a north-south, six-lane roadway extending from Anaheim Street on the north to the Dominguez Channel on the south. The railroad crossing is a single east-west track that provides access to the West Basin area of the Port.

Vehicular delays resulting from rail trips associated with the proposed Program were estimated by adding rail trips resulting from the expanded container terminal and associated throughput growth to the CEQA baseline traffic conditions at the PMPU area rail crossing at Henry Ford Avenue. Vehicular delay calculation at the grade crossing is based on the capacity of the roadway, the level of train activity, and the level of vehicular traffic.

The only at-grade grade crossing analyzed herein is the Henry Ford crossing. The Avalon and Fries at-grade crossings will be phased out once the South Wilmington Grade Separation Project, which has been approved, is completed. The Alameda Corridor eliminated all of the at-grade crossings in the proposed Program vicinity between the ports and the intermodal rail yards located on Washington Boulevard in the cities of Vernon (BNSF's Hobart yard) and Commerce (UP’s East Los Angeles yard). Regional at-grade crossings are outside the scope of this analysis.

For this Draft PEIR, the proprietary model Train Builder was used to estimate proposed Program intermodal train volumes to and from the proposed Program terminals. An on-dock yard that is currently under construction at TraPac was not in operation during the 2011 baseline year, but is assumed to be operating for purposes of cumulative impact evaluation. Using projected TEU levels for these terminals (percent on-dock rail) under the proposed Program, a total of 1.7 10,000-foot double stack trains and 3.3 8,000-foot double stack trains (Table 3.12-21) would be generated daily. Assumptions were that two-thirds of the trains would be 8,000 feet long, and one-third would be 10,000 feet long.

Table 3.12-21. Proposed Program (2035) Average Daily Train Volumes at Henry Ford Avenue

	Double Stack		*Switchers*	*Other*					*Total*
Train Length (feet)	10,000	8,000	1,000	5,000	4,000	3,000	2,000	1,000	
Percentage by Category	33	67	100	20	20	20	20	20	
WBCT	1.0	2.0	4.1	2.1	2.1	2.1	2.1	2.1	17.6
TraPac	0.7	1.3	2.7	1.3	1.3	1.3	1.3	1.3	11.2
Proposed Program per Day Total	1.7	3.3	6.8	3.4	3.4	3.4	3.4	3.4	28.8

It also was assumed that the volume of switchers and "other" trains is linearly related to the number of double-stack trains. In general, the switch movements support intermodal operations of the on-dock yards. The ratio of the number of switchers to the number of double-stack trains was 1.38 using the PHL data set for the 4 weeks noted above (7/23/12 to 8/17/12). The ratio of the number of "other" trains to double-stack trains was 3.42 for the 4 weeks. It was assumed that these ratios would apply to proposed Program conditions as well.

For the Henry Ford Avenue crossing, traffic delay impacts were analyzed in terms of:

- Total vehicle hours of delay per day, and,
- Average vehicle delay in the P.M. peak hour.

Total vehicle hours of delay per day is the sum of all vehicle delays from all trains over a 24-hour period. The average vehicle delay is calculated by dividing the total vehicle delay caused by trains passing a crossing during the P.M. peak commute hour by the number of vehicles passing the at-grade crossing in that hour.

The use of average vehicle delay for this type of analysis is a universally-accepted approach for evaluating vehicle delay at signalized intersections consistent with methodologies contained in the HCM. At-grade crossings operate similarly to traditional signalized intersections where some vehicles experience no delay (during a green phase or when the gate is up) and others are stopped for a certain period of time (during a red phase or when a train is crossing).

Highway traffic volumes are an important input to the grade crossing delay calculation. Baseline and proposed Program highway traffic volumes are shown in Table 3.12-22.

Table 3.12-22. Average Daily Traffic at Henry Ford Avenue, Baseline and Proposed Program

Period	*Time of Day*	*2011 Baseline*	*2011 Baseline Plus Program*
A.M. Peak (3 hours)	6 A.M. – 9 A.M.	1,302	1,539
M.D. (6 hours)	9 A.M. – 3 P.M.	3,264	4,016
P.M. Peak(4 hours)	3 P.M. – 7 P.M.	3,291	3,540
Night (11 hours)	7 P.M. – 6 A.M.	6,793	4,095
	Total	**14,650**	**16,124**

For baseline conditions, freight train volumes were assumed to be distributed per the distribution summarized in Table 3.12-23. For the 2011 baseline plus the proposed Program, freight train volumes were assumed to be uniformly distributed on an hourly basis over 24 hours and assigned to four different time periods of the day, as shown in Table 3.12-23. For example, the A.M. peak period consists of 3 hours, or 12.5 percent of a 24-hour day; correspondingly, 12.5 percent of the daily estimated freight trains were assigned to the A.M. peak period.

Table 3.12-23. Time Periods of the Day

Period	*Time of Day*	*Number of Hours*	*Percent of 24 Hours (uniform distribution)*
A.M. Peak Period	6:00 A.M. to 9:00 A.M.	3	12.5
M.D.	9:00 A.M. to 3:00 P.M.	6	25.0
P.M. Peak Period	3:00 P.M. to 7:00 P.M.	4	16.7
Night	7:00 P.M. to 6:00 A.M.	7	45.8
	Total Daily	**24**	**100.0**

The resulting estimated delays for the Henry Ford Avenue grade crossing for the three scenarios are shown in Table 3.12-24.

Table 3.12-24. Estimated Vehicular Delays at Henry Ford Avenue Grade Crossing

	2011 Baseline	*2011 Baseline Plus Program*
Vehicle Hours of Delay per Day	20.2	60.5
Average Delay per Vehicle in A.M. Peak Hour (seconds)	3.7	13.0
Level of Service A.M. Peak Hour	A	B
Average Delay per Vehicle in M.D. Peak Hour (seconds)	5.4	13.9
Level of Service M.D. Peak Hour	A	B
Average Delay per Vehicle in P.M. Peak Hour (seconds)	3.4	14.2
Level of Service P.M. Peak Hour	A	B
LOS E (55 – 80 seconds of average delay per vehicle)	Significant if >2 seconds	Significant if >2 seconds
LOS F (over 80 seconds of average delay per vehicle)	Significant if >1 second	Significant if >1 second
Significant?	No	No

Impact Determination

Operations

Based on the analysis of data on trains associated with the proposed Program, rail delays at at-grade crossings east of the Alameda Corridor would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact TRANS-6: The proposed Program would not substantially increase hazards due to a design feature or incompatible uses.

Planning Areas 2 – 4

Construction and Operations

Proposed appealable/fill projects in Planning Areas 2 through 4 are the Berths 187-189 Liquid Bulk Relocation, Yang Ming Terminal Redevelopment, China Shipping Fill, Berth 300 Development, Tri Marine Expansion, 338 Cannery Street Adaptive Reuse, and Al Larson Marina. Some of the proposed appealable/fill projects would involve modifications to entry or egress from existing roadways in the Port. While the proposed appealable/fill projects could result in design changes relative to transportation ingress/egress, such changes would be designed in accordance with building and safety code requirements and any new access roads or driveways would need to meet LADOT and Port engineering requirements. All design changes would be subject to review prior to permitting or leasing. Likewise there are a number of land use changes in Planning Areas 2 through 4 that would affect future operations at the Port, and new development would be subject to building and safety code requirements.

Impact Determination

Construction and Operations

Construction and operation of new development associated with the proposed appealable/fill projects and land use changes would be subject to environmental and design review and impacts related to hazards would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact TRANS-7: The proposed Program would not result in inadequate emergency access.

Planning Areas 2 - 4

Construction and Operations

Some of the proposed appealable/fill projects and development associated with proposed land use changes would involve some changes to entry or egress from existing roadways in the Port. However, any design changes or new designs would be subject to review prior to permitting or leasing. Project-specific reviews and approvals would ensure that operation of these projects would maintain emergency access. These reviews and approvals would include the Port Police, who have responsibility for the safety and security of all passenger, cargo, and vessel operations at the Port. The Port Police patrols of the waterfront would be accounted for in the design of all appealable/fill projects. The LAFD, with responsibility for fire suppression and emergency medical response at the Port, would be consulted for access to all future developments to ensure adequate access for vehicles and responders. Associated law enforcement and fire departments adjacent to the PMPU area would also be consulted. These agencies include: U.S. Customs Service, USCG, California Highway Patrol, County of Los Angeles Sheriff's Department, LAFD, LAPD Harbor Division, Long Beach Fire Department, Long Beach Police Department, Port of Long Beach Harbor Patrol, and the Long Beach Fire Department. Therefore, offsite emergency access associated with the proposed appealable/fill projects under the proposed Program would be adequate.

Impact Determination

Construction and Operations

Construction and operation of new development associated with the proposed appealable/fill projects and land use changes would be subject to agency review and impacts related to emergency access; therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact TRANS-8: The proposed Program would not conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Planning Areas 2 – 4

Construction and Operations

Construction and operation of the proposed appealable/fill projects and development associated with proposed land use changes in Planning Areas 2 through 4 would be subject to a comprehensive review of adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities to ensure that they do not decrease the performance or safety of such facilities.

As stated in Section 3.12.2.3, Other Transportation Modes, the City of Los Angeles Bicycle Master Plan (2010) identifies bikeways within the Port region. The proposed Program would not conflict with policies, plans, or programs regarding active transportation. Specifically, proposed appealable/fill project sites and land use changes are not adjacent to existing bicycle facilities, public transit access would continue on area roadways, bicycle facilities in the area would remain the same, and no pedestrian facilities would be removed as part of the construction or operations of the proposed Program.

Impact Determination

Construction and Operations

Construction and operation of new development associated with the proposed appealable/fill projects and land use changes would be subject to safety review and impacts regarding public transit, bicycle or pedestrian facilities. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

Impact TRANS-9: The proposed Program would not result in inadequate parking capacity.

Planning Areas 2 – 4

Construction and Operations

Most of the proposed appealable/fill projects and development resulting from proposed land use changes in Planning Areas 2 through 4 would involve some increase in personnel during construction and operations which would increase commuter traffic to some extent and the need for parking. However, parking is not currently limited within the Port and the large areas associated with marine terminals typically provide sufficient parking. In addition, the Port currently has excess parking available at many of its terminals. Future development associated with the proposed appealable/fill projects and land use changes would meet parking code requirements based on its land use designation and zoning.

Impact Determination

Construction and Operations

Construction and operation of new development associated with the proposed appealable/fill projects and land use changes would be subject to parking analyses and impacts regarding parking availability would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

3.12.3.2 Marine Vessel Transportation

3.12.3.2.1 Methodology

Impacts on marine transportation are assessed by determining the net increase in vessel traffic and changes in vessel types resulting from the proposed Program compared to existing conditions. This involves an assessment of how the Port can safely accommodate vessel traffic and manage the potential for proposed Program activities to increase risks associated with vessel traffic. Information regarding potential impacts due to changes in vessel traffic was evaluated based on historical data, interviews with relevant Port personnel, and information available from the Harbor Safety Committee and Port Pilots. The assessment of impacts assumed that existing regulations regarding vessel safety are designed to avoid minimize risks and are employed as standard practice.

3.12.3.2.2 Thresholds of Significance

The *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) is the basis for the following significance criteria and for evaluating the significance of impacts on marine transportation resulting from the proposed Program. Marine transportation impacts would be significant under the following conditions:

VT-1: The proposed Program would interfere with the operation of designated vessel traffic lanes and/or adversely affect the safety of vessels navigating within the Port of Los Angeles and its approaches.

3.12.3.2.3 Impacts and Mitigation

Impact VT-1: The proposed Program would not interfere with the operation of designated vessel traffic lanes and/or adversely affect the safety of vessels navigating within the Port of Los Angeles and its approaches.

Planning Areas 2 - 4

Proposed appealable/fill projects in Planning Area 2 are the Berths 187-189 Liquid Bulk Relocation, Yang Ming Terminal Redevelopment, and China Shipping Fill. The Berths 187-189 Liquid Bulk Relocation Project would involve relocating bulk liquid storage from Slip 5 to Berths 191-194 in the East Basin. The Yang Ming Terminal Redevelopment Project would involve 6 acres of fill and 3 acres of cut (designated container areas). The Berths 187-189 Liquid Bulk Relocation Project would eliminate the Kinder Morgan liquid bulk facility at Berths 118-120. The China Shipping Fill Project would involve 16 acres of fill at Berth 102 to expand the container area. The other proposed land use change in Planning Area 2 is the conversion of vacant land at an optional land use site on Mormon Island to liquid bulk or break bulk.

The proposed appealable/fill project in Planning Area 3 is the Berth 300 Development, which includes 18 acres of fill to be designated for container uses. Other land use changes in Planning Area 3 would involve converting Berths 206-209 and Berths 210-211 to mixed us, converting vacant land between Seaside Avenue and Reeves Avenue and south of Reeves Avenue to maritime support; changing institutional area along Ferry Street to maritime support; converting existing liquid bulk area north of the TIWRP to container area; changing vacant land, commercial fishing, and industrial areas near Fish Harbor to container area, and the option of changing Berth 301 to a liquid bulk or container handling facility.

Proposed appealable/fill projects for Planning Area 4 are the Tri Marine Expansion, 338 Cannery Street Adaptive Reuse, and Al Larson Marina. The Al Larson Marina would involve a land use change from recreational boating to maritime support. In addition, vacant land at Southwest Marine Shipyard would be changed to maritime support and break bulk, and vacant land, commercial fishing, liquid bulk, and institutional land uses at Fish Harbor would be replaced with commercial fishing, and maritime support.

Construction

Construction activities associated with the proposed appealable/fill projects and land use changes would involve vessels and barges for the delivery of equipment and supplies, support boats, derrick barges, tugboats, cranes, and pile drivers. The duration and number of trips would be a function of the proposed appealable/fill project. Table 3.12-25 presents the marine-based construction equipment associated with construction of the Berths 302-306 [APL] Container Terminal Project Draft EIS/EIR (LAHD and USACE 2011), as representative of construction of a container terminal expansion project.

Table 3.12-25. Marine-Based Construction Equipment Associated with a Representative Container Terminal Project

Proposed Project Element	*Activity*	*Equipment Type*	*Number of Active Equipment*	*Duration of Activity (Workdays)*	*Total Active Equipment Workdays*
New Wharf and Dredging					
Construct a 1,250 linear foot Wharf at Berth 306	Pile driving/ dredging	Derrick Barge Crane Hoist	1	44	44
		Support Boat	1	44	44
Crane Delivery and Installation		General Cargo Ship – Transit	1	2	2
		General Cargo Ship – Hoteling	1	7	7
		Tugboat	1	2	2
		Total	**5**	**93**	**93**
Average Number of Marine Equipment Workdays					0.13
Source: Starcrest Consulting Group, LLC. 2012					

Marine-based construction equipment has the potential to encroach on vessel movement during the construction period, however the equipment and vessels would be highly visible, well-marked, and relatively stationary, and would coordinate with the USCG on a daily basis as a condition of the construction permits. Generally, construction activities do not involve substantial vessel traffic that could interfere with other vessel traffic in the harbor. In-water/over-water construction activities are conducted routinely in the Port, and contractors performing this type of construction are subject to applicable rules and regulations stipulated in all LAHD contracts and USACE and RWQCB permits. Prior to activities that require anchoring vessels in the main navigation channels, standard vessel safety regulations of the Port require contractors to acquire an Anchorage Waiver Permit. This permit, issued by the USCG, requires notifying the COTP of expected activities, providing official and ongoing notice to mariners during construction, developing a mooring plan, and marking equipment and any debris for visibility. USACE Section 404/10 permits require contractors to notify the COTP of daily activities and to issue notices to mariners describing construction activities. Compliance with these permit requirements would minimize vessel conflicts during construction of an appealable/fill project involving in-water activities. In addition, permits and construction contracts would require contractors to coordinate with Port pilots on all construction activities, so that the pilots would avoid construction areas, activities, and vessels.

Operations

As noted in Section 3.12.2.4.4, Vessel Traffic, vessel traffic in the Port has remained fairly constant over the past 3 years, with an average of 2,088 per year since 2009. The proposed appealable/fill projects under the proposed Program would result in the construction of new facilities that, following completion, would generate additional operational vessel traffic in the Port. The numbers and types of vessels would depend on the proposed appealable/fill projects and development associated with land use changes; however, an estimated incremental number of additional vessel calls is included in Table 3.12-26 not counting vessel calls that may result from land use changes for which no data are available on which to base an estimate. Note also that future increases in the number of vessel calls will be less than the absolute increase of cargo as fewer, but larger, vessels are utilized in the future.

Table 3.12-26. Additional Vessel Trips Generated by the Proposed Appealable/Fill Projects and Land Use Changes

Planning Area	*Proposed Appealable/Fill Projects*	*Additional Annual Vessel Trips Generated*
Planning Area 2: West Basin and Wilmington	Berths 187-189 Liquid Bulk Relocation	0
	Yang Ming Terminal Redevelopment, including Cut and Fill (3-acre cut; 6-acre fill)	6[a]
	China Shipping Fill (16-acre fill)	156[b]
Planning Area 3: Terminal Island	Berth 300 Development (18-acre fill)	143[c]
Planning Area 4: Fish Harbor	Tri Marine Expansion	0
	338 Cannery Street Adaptive Reuse	0
	Al Larson Marina	0
Total		**299**

Notes:

a. Based on 6 additional acres, 10,000 TEUs per acre, and average of 10,000 TEUs per ship.

b. China Shipping EIR (difference between 2005 estimated and 2030 estimated vessel calls).

c. APL EIR (difference between baseline and 2027 estimated vessel calls.

As shown in Table 3.12-26, a total of approximately 299 additional vessels could call at the Port in the future as a result of the proposed appealable/fill projects (Table 3.12-26). Vessel traffic estimates obtained from other Port EIR/EISs used in the table include estimates out to the year 2030. The potential increase of 299 vessels added to the 2011 baseline number of vessel calls (2,072) results in a total of 2,371 annual vessel calls. This represents substantially less than the maximum number of vessel calls recorded for any single year (3,060 vessel calls in 2000). Also, the number of ACGs and Close Quarters Incidents in 2000 was comparable to that for other years with lower numbers of vessel calls, so the potential for incidents would not be increased over historic levels.

Given the continued use of standard practices, including adherence to HSP speed-limit regulations, adherence to limited-visibility guidelines, VTS monitoring requirements, and Port tariffs requiring vessels of foreign registry and U.S. vessels that do not have a federally licensed pilot on board to use a Port Pilot for transit in and out of the Port and adjacent waterways, increases in annual ship calls in the Port would not substantially decrease the margin of safety for marine vessels. Scheduling of ship calls from outside the breakwaters would continue to be authorized by the COTP to ensure that increases in vessel traffic would not result in changes to routing or vessel safety procedures. Continued implementation of COTP uniform procedures, including providing advanced notification to vessel operators, vessel traffic managers, and Port Pilots to identify the location of dredges, derrick barges, or other possible obstructions and any associated operational procedures or restrictions (e.g., one-way traffic), would ensure safe transit of vessels operating within the Port.

Impact Determination

Construction

Because standard safety precautions would be utilized by all contractors, the presence of the construction vessels would not substantially affect marine vessel safety in the main channels and connected basin areas. The short-term presence of construction vessels at construction sites would not reduce the existing level of safety for vessel navigation in the Port.

Operations

During operation of the proposed appealable/fill projects and new development associated with land use changes, the extensive vessel traffic management system in place would be able to safely manage the potential additional traffic associated with operations. The Harbor Safety Committee would continue to assess marine safety in the Port and recommend improvements and additional measures as warranted. Also, it is important to note that the maximum number of vessels expected in future years will be lower than the number that called in 2000 and well within the capacity of the Port and the marine safety systems in place. Therefore, impacts on vessel traffic from the proposed Program would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Residual impacts would be less than significant.

3.12.4 Summary Impact Determination

Table 3.12-27 summarizes the impact determinations of the proposed Program related to ground and vessel transportation. Identified potential impacts are based on federal, state, and City of Los Angeles significance criteria, LAHD guidance/policy, and the scientific judgment of the report preparers.

For each type of potential impact, the table describes the impact, notes the CEQA impact determination, and notes the residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in the table.

Table 3.12-27. Summary Matrix of Potential Impacts and Mitigation Measures for Transportation and Circulation Associated With the Proposed Program

Environmental Impacts	*Impact Determination*	*Mitigation Measures*	*Impact after Mitigation*
Construction			
TRANS-1: Construction of the proposed Program would not result in a short-term, temporary increase in truck and auto traffic.	Less than significant	No mitigation is required	Less than significant
TRANS-2: Construction of the proposed Program would not significantly impact at least one study location V/C ratios or level of service for long-term vehicular traffic.	Less than significant	No mitigation is required	Less than significant
TRANS-3: The proposed Program would not cause an increase in onsite employees due to operations, which would then result in a significant increase in public transit use.	No impact	No mitigation is required	No impact
TRANS-4: The proposed Program would not result in operations that would cause increases considered significant for freeway congestion.	No impact	No mitigation is required	No impact
TRANS-5: The proposed Program would not result in operations that would cause a significant impact in vehicular delay at railroad grade crossings.	No impact	No mitigation is required	No impact
TRANS-6: Construction of the proposed Program would not substantially increase hazards due to a design feature or incompatible uses.	Less than significant	No mitigation is required	Less than significant
TRANS-7: Construction of the proposed Program would not result in inadequate emergency access.	Less than significant	No mitigation is required	Less than significant
TRANS-8: Construction of the proposed Program would not conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than significant	No mitigation is required	Less than significant
TRANS-9: Construction of the proposed Program would not result in inadequate parking capacity.	Less than significant	No mitigation is required	Less than significant
VT-1: Construction of the proposed Program would not interfere with the operation of designated vessel traffic lanes and/or adversely affect the safety of vessels navigating within the Port of Los Angeles and its approaches.	Less than significant	No mitigation is required	Less than significant

Table 3.12-27. Summary Matrix of Potential Impacts and Mitigation Measures for Transportation and Circulation Associated With the Proposed Program

Environmental Impacts	*Impact Determination*	*Mitigation Measures*	*Impact after Mitigation*
Operations			
TRANS-1: The proposed Program would not result in a short-term, temporary increase in truck and auto traffic.	No impact	No mitigation is required	No impact
TRANS-2: Operation of the proposed Program would not significantly impact at least one study location V/C ratios or level of service for long-term vehicular traffic.	Less than significant	No mitigation is required	Less than significant
TRANS-3: Operation of the proposed Program would not cause an increase in onsite employees, which would then result in a significant increase in public transit use.	Less than significant	No mitigation is required	Less than significant
TRANS-4: Operation of the proposed Program would cause increases considered significant for freeway congestion.	Significant	**MM TRANS-1: Implement the I-710 Corridor Project**. LAHD shall collaborate with Caltrans and Metro to secure funding and ensure timely implementation of the I-710 Corridor project by 2035 to alleviate future Port area and regional traffic growth on the I-710.	Significant and unavoidable
TRANS-5: Operation of the proposed Program would not cause a significant impact in vehicular delay at railroad grade crossings.	Less than significant	No mitigation is required	Less than significant
TRANS-6: Operation of the proposed Program would not substantially increase hazards due to a design feature or incompatible uses.	Less than significant	No mitigation is required	Less than significant
TRANS-7: Operation of the proposed Program would not result in inadequate emergency access.	Less than significant	No mitigation is required	Less than significant
TRANS-8: Operation of the proposed Program would not conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than significant	No mitigation is required	Less than significant
TRANS-9: Operation of the proposed Program would not result in inadequate parking capacity.	Less than significant	No mitigation is required	Less than significant
VT-1: Operation of the proposed Program would not interfere with the operation of designated vessel traffic lanes and/or adversely affect the safety of vessels navigating within the Port of Los Angeles and its approaches.	Less than significant	No mitigation is required	Less than significant

3.12.5 Significant Unavoidable Impacts

Until the I-710 Corridor Project is implemented, the proposed Program would cause a significant and unavoidable impact to three freeway locations identified along the I-710 Freeway.

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